



Metropolis[®] DMX Access Multiplexer

Release 3.0

Alarm Messages and Trouble Clearing Guide

365-372-302 R3.0
Issue 6
July 2002



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This document was developed by the Lucent Learning Organization (LLO).

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Metropolis[®] DMX Access Multiplexer, Release 3.0 Alarm Messages and Trouble Clearing Guide

365-372-302 R3.0 Issue 6 Date: July 2002

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About this Information Product

Purpose This Alarm Messages and Trouble Clearing Guide (AMTCG) provides the following information about the Metropolis[®] DMX Access Multiplexer (Metropolis[®] DMX), Release 3.0:

- Maintenance and trouble clearing information and tasks
- A central directory of alarm messages

Reason for reissue This is the fifth issue of the *Metropolis[®] DMX Access Multiplexer Alarm Messages and Trouble Clearing Guide*, 365-372-302. This document has been updated to include Release 3.0 features.

Significant changes in this issue are noted by bars (|) in the left margin.

Safety labels This document may contain safety labels in the form of **DANGER**, **WARNING**, and **CAUTION**. These admonishments have the following definitions:



DANGER

Indicates the presence of a hazard that will cause death or severe personal injury if the hazard is not avoided.



WARNING

Indicates the presence of a hazard that can cause death or severe personal injury if the hazard is not avoided.



CAUTION

Indicates the presence of a hazard that will or can cause minor personal injury or property damage if the hazard is not avoided. Caution is also used for property-damage-only accidents, including equipment damage, loss of software, or service interruption.

Intended audience

The Metropolis[®] DMX Alarm Messages and Trouble Clearing Guide is intended primarily for technicians in the field of telecommunications and communications network providers.

Descriptive material in this document may be used by anyone desiring specific information or knowledge on the operational functions and features of Metropolis[®] DMX.

Procedural material (tasks) in this document is written primarily for maintenance, operation, and provisioning personnel responsible for the operation and maintenance of the Metropolis[®] DMX.

How to use this information product

The *Metropolis[®] DMX Alarm Messages and Trouble Clearing Guide* includes both descriptive, reference chapters and procedural, task chapters.

Assumptions

This document assumes that its readers have an understanding of the following:

- Basic principles of telecommunication transmission
- Common telecommunication and system terminology (a glossary is provided in this manual to assist you)
- Test sets and tools used in the telecommunication industry
- Local operations and functional procedures of your company
- Personal computer (PC) operation, common PC terminology, and navigational procedures in a windows-style user interface

Chapter contents

The following table provides a brief description of each chapter in the *Metropolis® DMX Access Multiplexer Alarm Messages and Trouble Clearing Guide, 365-372-302*.

Table 1 Chapter Contents

Chapter	Contents
Chapter 1, "Alarm List"	This chapter provides the alarm list for Metropolis® DMX.
Chapter 2, "Alarms, Conditions, and Error Messages"	This chapter provides a brief explanatory table for each alarm message generated by Metropolis® DMX.
Chapter 3, "Maintenance Overview"	This chapter outlines the various features available to monitor and maintain Metropolis® DMX.
Chapter 4, "Trouble Clearing Tasks"	This chapter provides the procedures required to clear conditions that cause alarms.
Chapter 5, "Supporting Tasks"	This chapter provides procedures for performing supporting tasks, including removing and inserting circuit packs.
Glossary	Defines terms used throughout the Metropolis® DMX documentation.
Index	Provides detailed access to the contents of this document.

Conventions used The following conventions are used in this document.

- **Commands** and *Parameters*
- *Document References*, 123-456-789
- Cross-reference/page number:
[“Task 602: Replace 28DS1/28DS1PM \(LNU6/LNU7\) Circuit Pack” \(5-25\)](#)

Related documentation The following table lists the documents included in the Metropolis® DMX documentation set.

Table 2 Metropolis® DMX Documentation Set

Comcode	Document Number	Title
NA	365-372-304 R3.0	<i>Metropolis® DMX Access Multiplexer Installation Manual</i>
109 251 496	365-372-300 R3.0	<i>Metropolis® DMX Access Multiplexer Applications and Planning Guide</i>
NA	365-372-306 R3.0	<i>Metropolis® DMX Access Multiplexer TL1 Command Manual</i>
109 251 470	365-372-301 R3.0	<i>Metropolis® DMX Access Multiplexer User Operations Guide</i>
109 251 488	365-372-302 R3.0	<i>Metropolis® DMX Access Multiplexer Alarm Messages and Trouble Clearing Guide</i>
109 246 686	NA	<i>Metropolis® DMX Access Multiplexer Release 3.0 Documents</i>

Laser safety information

Optical fiber telecommunication systems, their associated test sets, and similar operating systems use semiconductor laser transmitters that emit infrared (IR) light at wavelengths between approximately 800 nanometers (nm) and 1600 nm. The emitted light is above the red end of the visible spectrum, which is normally not visible to the human eye. Although radiant energy at near-IR wavelengths is officially designated invisible, some people can see the shorter wavelength energy even at power levels several orders of magnitude below any that have been shown to cause injury to the eye.

Conventional lasers can produce an intense beam of monochromatic light. The term monochromatic light means a single wavelength output of pure color that may be visible or invisible to the eye. A conventional laser produces a small-size beam of light, and because the beam size is small the power density (also called irradiance) is very high. Consequently, lasers and laser products are subject to federal and applicable state regulations as well as international standards for their safe operation.

A conventional laser beam expands very little over distance, or is said to be very well collimated. Thus, conventional laser irradiance remains relatively constant over distance. However, lasers used in lightwave systems have a large beam divergence, typically 10 to 20 degrees. Here, irradiance obeys the inverse square law (doubling the distance reduces the irradiance by a factor of 4) and rapidly decreases over distance.

Lasers and eye damage

The optical energy emitted by laser and high-radiance LEDs in the 400-1400 nm range may cause eye damage if absorbed by the retina. When a beam of light enters the eye, the eye magnifies and focuses the energy on the retina magnifying the irradiance. The irradiance of the energy that reaches the retina is approximately 105 or 100,000 times more than that at the cornea and, if sufficiently intense, may cause a retinal burn.

The damage mechanism at the wavelengths used in an optical fiber telecommunications is thermal in origin, for example, damage caused by heating. Therefore, a specific amount of energy is required for a definite time to heat an area of retinal tissue. Damage to the retina occurs only when one looks at the light sufficiently long that the product of the retinal irradiance and the viewing time exceeds the damage threshold. Optical energies above 1400 nm cause corneal and skin burns, but do not affect the retina. The thresholds for injury at wavelengths greater than 1400 nm are significantly higher than for wavelengths in the retinal hazard region.

Classification of lasers

Manufacturers of lasers and laser products in the United States are regulated by the Food and Drug Administration's Center for Devices and Radiological Health (FDA/CDRH) under 21 CFR 1040. These regulations require manufacturers to certify each laser or laser product as belonging to one of four major Classes: I, II, IIa, IIIa, IIIb, or IV. The International Electro-technical Commission (IEC) is an international standards body that writes laser safety standards. Classification schemes are similar with Classes divided into Classes 1, 2, 3A, 3B, and 4. Lasers are classified according to the accessible emission limits and their potential for causing injury. Optical fiber telecommunication systems are generally classified as Class I/1, because, under normal operating conditions, all energized laser transmitting circuit packs are terminated on optical fibers which enclose the laser energy with the fiber sheath forming a protective housing. Also, a protective housing/access panel is typically installed in front of the laser circuit pack shelves. The circuit packs themselves, however, may be FDA/CDRH Class I or IIIb or IEC Class 1, 3A, or 3B.

Laser safety precautions for optical fiber telecommunications systems

In its normal operating mode, an optical fiber telecommunication system is totally enclosed and presents no risk of eye injury. It is a Class I/1 system under the FDA/CDRH and IEC classifications.

The fiber optic cables that interconnect various components of an optical fiber telecommunication system can disconnect or break, and may expose people to lightwave emission. Also, certain measures and maintenance procedures may expose the technician to emission from the semiconductor laser during installation and servicing. Unlike more familiar laser devices, such as solid-state and gas lasers, the emission pattern of a semiconductor laser results in a highly divergent beam. In a divergent beam, the irradiance (power density) decreases rapidly with distance. The greater the distance, the less energy will enter the eye and the less potential risk for eye injury. Inadvertently viewing an unterminated fiber or damaged fiber with the unaided eye at distances greater than 5 to 6 inches normally will not cause eye injury provided the power in the fiber is less than a few milliwatts at the near IR wavelengths and a few tens of milliwatts at the far IR wavelengths. However, damage may occur if an optical instrument such as a microscope, magnifying glass, or eye loupe is used to stare at the energized fiber end.



CAUTION

Use of controls, adjustments and procedures other than those specified herein may result in hazardous laser radiation exposure.

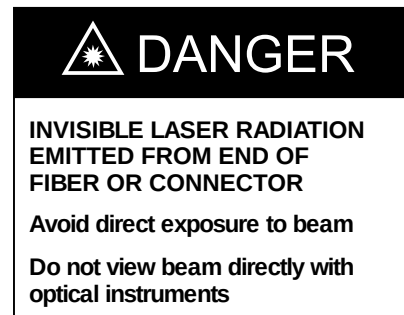
Laser safety precautions for enclosed systems

Under normal operating conditions, optical fiber telecommunication systems are completely enclosed; nonetheless, the following precautions shall be observed:

- Because of the potential for eye damage, technicians should not stare into optical connectors or broken fibers.
- Under no circumstance shall laser/fiber optic operations be performed by a technician before satisfactorily completing an approved training course.
- Since viewing lightwave emission directly in excess of Class I/1 limits with an optical instrument such as an eye loupe greatly increases the risk of eye damage, appropriate labels must appear in plain view, in close proximity to the optical port on the protective housing/access panel of the terminal equipment.

Figure 1 illustrates the FDA Class IIIb non-interlocked protective housing label.

Figure 1 Protective Housing Label



NC-USM-111

Laser safety precautions for unenclosed systems

During service, maintenance, or restoration, an optical fiber telecommunication system is considered unenclosed. Under these conditions, follow these practices:

- Only authorized, trained personnel shall be permitted to do service, maintenance, and restoration. Avoid exposing the eye to emissions from unterminated, energized optical connectors at close distances. Laser modules associated with the optical ports of laser circuit packs are typically recessed, which limits the exposure distance. Optical port shutters and automatic power reduction (APR), and automatic power shut down (APSD) are engineering controls that are also used to limit the emissions. However, technicians removing or replacing laser circuit packs should not stare or look directly into the optical port with optical instruments or magnifying lenses. (Normal eye wear or indirect viewing instruments, such as a Find-R-Scopes, are not considered magnifying lenses or optical instruments.)
- Only authorized, trained personnel shall use the optical test equipment during installation or servicing since this equipment contains semiconductor lasers. (Some examples of optical test equipment are Optical Time Domain Reflectometers [OTDRs], Hand-Held Loss Test Sets, and Feature Finders.)
- Under no circumstances shall any personnel scan a fiber with an optical test set without verifying that all laser sources on the fiber are turned off.
- All unauthorized personnel shall be excluded from the immediate area of the optical fiber telecommunication systems during installation and service.

Consult *ANSI Z136.1*, American National Standard for Safe Use of Lasers in the United States or outside the United States, IEC-60825, Part 2 for guidance on the safe use of optical fiber optic communication systems in the workplace.

Electrostatic discharge (ESD) considerations

This section describes the precautions required because of ESD.

Circuit pack handling precautions

Industry experience has shown that all integrated circuit packs can be damaged by static electricity that builds up on work surfaces and personnel. The static charges are produced by various charging effects of movement and contact with other objects. Dry air allows greater static charges to accumulate. Higher potentials are measured in areas with low relative humidity, but potentials high enough to cause damage can occur anywhere.

Observe the following precautions when handling circuit packs/units to prevent damage by electrostatic discharge:

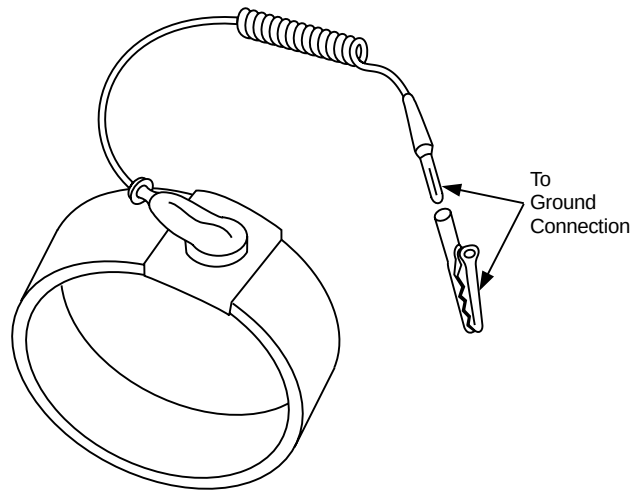
- Assume all circuit packs contain solid-state electronic components that can be damaged by ESD.
- When handling circuit packs (storing, installing, removing, etc.) or when working on the backplane, always wear a grounded wrist strap or wear a heel strap and stand on a grounded, static-dissipating floor mat.
- Handle all circuit packs by the faceplate or latch and by the top and bottom outermost edges. Never touch the components, conductors, or connector pins.
- Observe all warning labels on bags and cartons. Whenever possible, do not remove circuit packs from antistatic packaging until ready to insert them into slots.
- If possible, open all circuit packs at a static-safe work position, using properly grounded wrist straps and static-dissipating table mats.
- Always store and transport circuit packs in static-safe packaging. Shielding is not required unless specified.
- Keep all static-generating materials such as food wrappers, plastics, and *Styrofoam*® containers away from all circuit packs. When removing circuit packs from a shelf, immediately place the circuit packs in static-safe packages.
- Whenever possible, maintain relative humidity above 20 percent.

Important! Any connectors on the shelf interconnection panel that are not cabled should be fitted with a plastic dust cap to provide ESD protection.

Static control wrist straps

To reduce the possibility of ESD damage, the Metropolis® DMX shelf is equipped with an ESD grounding jack to enable personnel to ground themselves using wrist straps (Figure 2), while handling circuit packs or working on the shelf. The wrist straps should be checked periodically with a wrist strap tester to ensure that they are working properly.

Figure 2 Static Control Wrist Strap



NC-USM-110

Important! The grounding jack is located on the front of the shelf, on the lower right-hand corner.

**Important safety
instructions**

READ AND UNDERSTAND ALL INSTRUCTIONS.

When installing, operating, or maintaining this equipment basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Follow all warnings and instructions marked on this product.
2. This equipment is to be installed only in Restricted Access Areas.
3. To be powered only by Safety Extra Low Voltage (SELV) -48 V DC sources.
4. Disconnect up to Two (2) power supply connections when removing power from the system.
5. This product should be only operated from the type of power sources indicated on the marking label.
6. Connect this product only to the type of power sources recommended by Lucent Technologies. For information on the powering instructions, consult the Installation Instructions section of the installation manual.
7. This equipment must be provided with a readily accessible disconnect device as part of the building installation.
8. Installation must include an independent frame ground drop to the building ground.
9. This equipment is suitable for mounting on a concrete or other noncombustible surface only.
10. For information on proper mounting instructions, consult the Instructions section of the installation manual.
11. Install only equipment identified in the installation manual. Use of other equipment may result in improper connection of circuitry leading to fire or injury to persons.
12. The telecommunication interfaces should not leave the building premises unless connected to telecommunication devices providing primary and secondary protection, as possible.
13. Do not use this product near water, for example, in a wet basement.
14. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
15. Use caution when installing or modifying telecommunications lines.
16. Never install telecommunications wiring during a lightning storm.
17. Never install telecommunications connections in wet locations.

18. Never touch uninsulated telecommunication wires or terminals unless the telecommunication line has been disconnected at the network interface.
19. Never touch uninsulated wiring or terminals carrying direct current or ringing current, or leave this wiring exposed. Protect and tape uninsulated wiring and terminals to avoid risk of fire, electric shock, and injury to service personnel.
20. Never push objects of any kind into this product through slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock. Never spill liquids of any kind on the product.
21. Slots and openings in the unit are provided for ventilations, to protect it from overheating, and these openings must not be blocked or covered. This product should not be placed in a built-in installation unless proper ventilation is provided.
22. To reduce the risk of an electrical shock, do not disassemble this product. Service should be performed by trained personnel only. Opening or removing covers and/or circuit packs may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electrical shock when the unit is subsequently used.
23. Some of the Metropolis[®] DMX Access Multiplexer system circuit packs contain FDA/CDRH Class I/IEC Class 1 single-mode laser products that are enclosed lightwave transmission systems. Under normal operating conditions, lightwave transmission systems are completely enclosed; nonetheless, the following precaution must be observed because of the potential for eye damage:
 - Do not disconnect any lightwave cable or splice and stare into the optical connectors terminating the cables.
 - Lightwave/lightguide operations should not be performed by a technician who has not satisfactorily completed an approved training course.
 - Do not use optical instruments such as an eye loupe to view a fiber or unterminated connector.
 - More information about laser safety can be found in the installation manual.

SAVE THESE INSTRUCTIONS.

User interface to system

Users interact with the Metropolis® DMX Access Multiplexer system using a PC and a windows-like graphical user interface (GUI). The GUI is called the WaveStar® Craft Interface Terminal (WaveStar® CIT), which permits you to perform system operations such as administration, provisioning, fault management, and more.

Using the WaveStar® CIT

Procedures or tasks presented in this document expect users to be familiar with operating the WaveStar® CIT and navigating through the screens of information relating to a particular operation. The screens are designed to be straightforward and to contain all information relating to a particular operation. The tasks presented in this document rely heavily on the information provided in the screen displays. Therefore, it is imperative that a user read all the information provided in a particular screen before continuing an operational function.

The WaveStar® CIT Tutorial in Appendix A of the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301 will familiarize you with the interactions of the WaveStar® CIT and the network element.

Use the tutorial only with a network element that is out of service.

Using the tasks

To find instructions for performing specific tasks, first determine what category the task you wish to perform would be found in. After determining the task category, go to the individual chapter labeled with that task category and search the chapter's table of contents for the type of task you're looking for.

Using task elements

Task elements are main tasks containing step-by-step instructions to accomplish a distinct user task. The main tasks contained in [Chapter 4](#), [“Trouble Clearing Tasks”](#) of this manual are classified as “task elements:”

All task elements in each task category are numbered and are listed in numerical order. However, you should never perform any of the tasks in numerical order unless directed by the main task you are performing.

Important! Perform all **steps** in a task sequentially, unless that step sends you to another step, task, supporting element (SE), or a supporting task.

Unless otherwise instructed, if one task element sends you to another task element or supporting task, you must return to the first task element after you complete the second. After you have completed the first main task element, you have finished the task.

Using supporting tasks

The tasks in [Chapter 5, “Supporting Tasks”](#) are not main task elements. Supporting tasks may be referenced from multiple main task elements to support a job function you are performing.

Go to a supporting task only when it is referred to by a main task element. Supporting tasks are not to be accessed directly except by very experienced personnel.

Important! Perform all steps in a supporting task in numeric order unless a step sends you to another task element, or supporting task.

Unless otherwise instructed, if one task element sends you to another task element or supporting task, you must return to the first task element after you complete the second. After you have completed the first main task element, you have finished the task.

If/Then statements in a task or supporting element

If .../Then ... columns in a task element contain only one condition that is true in a table cell under the If ... column. You perform the action in the related table cell under the Then ... column. You then continue to the next sequential step or as directed by the action under the Then ... column.

Verifying actions

Sometimes you will be asked to verify that actions have occurred. This may take the form of a formal statement of the expected response.

Screen display and equipment designation fonts

The tasks in this manual use a MONOSPACE font to identify text on a screen or a response displayed from the network. A BOLD font identifies the lettering designations on panels, shelves, and circuit packs.

Documentation ordering information

This section describes how to order

- Additional copies of this document
- Electronic documentation (CD-ROMs)

ILEC/CLEC Customers

ILEC/CLEC customers should process orders through your Company Documentation Coordinator.

Commercial Customers

The following table provides the information necessary for commercial customers to order standard documentation or request placement on the standing order list (for reissues of any document) by mail, telephone, or fax.

Table 3 Placing an Order (Mail, Email, Phone, or Fax)

Addresses	Telephone Numbers	Fax Numbers
Mailing Address: Lucent Learning Organization Attention: Order Entry 2855 N. Franklin Road P.O. Box 19901 Indianapolis, IN 46219 Email: intlorders@lucent.com	From USA: 1-888-LUCENT-8 (1-888-582-3688)	1-800-566-9568
	From Canada, North American Region: +1-317-322-6615	+1-317-322-6699
	From Europe, the Middle East, and Africa (EMEA), Asia, Pacific Region, and China; Caribbean, Latin America (CALA): +1-317-322-6416	+1-317-322-6699

The following table provides the information necessary for customers to order standard documentation or request placement on the standing order list (for reissues of any document) via the internet.

Table 4 Placing an Order via the Internet

Customer	Web-Site
Commercial Customers	http://www.lucentdocs.com
	http://www.lucent8.com
Lucent Associates	http://www.cic.lucent.com

Methods of payment

Lucent Associates are billed using an FML organization number/cost center and location code.

Commercial customers may use one of the following methods of payment:

- Check (payable to Lucent Technologies)
- Money order (payable to Lucent Technologies)
- Invoice upon receipt of a purchase order.
(Purchase orders may be faxed or mailed using the information provided above.)
- Credit card:
 - Visa
 - MasterCard
 - American Express

Important! For orders totaling \$1000 or less, either a credit card or prepayment by check/money order is required.

Worldwide Services

Lucent Worldwide Services provides a full life-cycle of services and solutions to help you plan, design, implement, and operate your network in today's rapidly changing and complex environment.

Engineering Services

Engineering Services provide information and technical support to customers during the planning, implementation, and placement of equipment into new or existing networks. We determine the best, most economical equipment solution for a customer and help ensure equipment is configured correctly for the customer's network needs, works as specified, and is ready for installation on delivery. These services consist of the following:

- Equipment engineering
- Software engineering
- Site records
- Engineering consulting
- Additional engineering services (for example, Network Realignment, System Capacity Planning, System Health Assessment)

Installation Services

Lucent Technologies offers Installation Services focused on providing the technical support and resources customers need to efficiently and cost-effectively install their network equipment. We offer a variety of options that provide extensive support and deliver superior execution to help ensure the system hardware is installed, tested, and functioning as engineered and specified. Installation Services provides a complete flexible solution tailored to meet customers' specific needs. These services consist of the following:

- Equipment installation
- Specialized equipment installation
- Network connectivity services
- Installation support services

Technical Support

Lucent Technologies provides the following Technical Support Services:

- Remote Technical Support (RTS) - remote technical support to troubleshoot and resolve system problems.
- On-site Technical Support (OTS) - on-site assistance with operational issues and remedial maintenance.
- Repair and Replacement (R&R) - technical support services for device repair/return or parts replacement.
- Lucent OnLine Customer Support - online access to information and services that can help resolve technical support requests.

Important! Technical Support Services are available 24 hours a day, 7 days a week.

Customers inside the United States and Canada

Technical Support Services can be reached at **1-866-LUCENT8** (866-582-3688): *Prompt 1.*

Customers outside the United States

Technical Support Services can be reached at **+1-630-224-4672**: *Prompt 2.*

Web-Site

For additional information regarding Worldwide Services, refer to the Lucent Technologies' web-site at <http://www.lucent.com/products>

1. Click on **Browse the catalog**
2. Click on **Worldwide Services Solutions**
3. Select the desired service to display:
 - Engineering and Installation
 - Technical Support Services

Training This document expects a user to be familiar with the basic functions of the system before performing tasks that could damage the system, affect system operations, or impede communication traffic within the system. Understanding the descriptive material provided in this manual and attending the recommended training courses should allow you to perform the tasks necessary to operate and maintain Metropolis® DMX. Refer to <https://www.lucent-product-training.com> for descriptions of the training courses available for Metropolis® DMX.

Registering for a course

To review the available courses or to enroll in a training course at one of Lucent's corporate training centers,

- Within the United States,
 - Visit <https://www.lucent-product-training.com>
 - Call **1-888-LUCENT8** (888-582-3688): *Prompt 2.*
- Outside the continental United States,
 - Visit <https://www.lucent-product-training.com>
 - Contact your in-country training representative
 - Call: **+1-407-767-2798**
 - Fax: **+1-407-767-2677**

Suitcasing

To arrange for a suitcase session at your facility,

- Within the United States, call **1-888-LUCENT8** (888-582-3688): *Prompt 2.*
- Outside the continental United States,
 - Contact your in-country training representative
 - Call: **+1-407-767-2798**
 - Fax: **+1-407-767-2677**

How to comment Because customer satisfaction is extremely important to Lucent Technologies, every attempt is made to encourage feedback from customers about our information products.

Customer comment form

A customer comment form is located immediately after the title page of this document. Please fill out the form and fax it to the number provided on the form.

Is the form missing?

If the customer comment form is missing, you may submit comments by fax, email, or on-line.

Fax: 1-407-767-2760

Email: ctiphotline@lucent.com

URL: <http://www.lucent-info.com/comments>





1 Alarm List

Overview

Purpose This chapter contains the alarm list for the Metropolis[®] DMX Access Multiplexer.

Contents The following information is included in this chapter:

Alarm List with Alarm Levels	1 - 3



Alarm List with Alarm Levels

Overview This section provides the alarm list, including the alarm level(s).

Important! The alarm level for certain alarms is provisionable. In the table below, a bold **X** identifies the default alarm level for alarm messages that have provisionable levels. If there are multiple levels listed, yet there is no bold X, the alarm level for that alarm or condition is determined by the provisioning of the equipment. For example, for CP removed: the removal of an unprotected, active CP is always Critical (SA) and the removal of a protected CP is always Minor (NSA).

Alarm list Table 1-1 Metropolis® DMX, Release 3.0 Alarm List

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
-48V power/fuse FA failed	PWR			X		Task 500: Clear “-48V power/fuse FA or FB failed” Alarm (4-5)
-48V power/fuse FB failed	PWR			X		
ACO active	INHAUDB				X	No action necessary.
AGNE communication failure	PRCDERR		X			Task 501: Clear “AGNE communication failure” Alarm (4-11)
controln	MISC				X	Task 502: Clear “controln” Condition (4-17)
copy program IP	EOC				X	No action necessary.
CP firmware incompatibility	T3TERM	X		X		Task 503: Clear “CP firmware incompatibility” Alarm (4-21)

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
CP not allowed - crs	FETERM GETERM OC192TERM OC48TERM OC12TERM OC3TERM T3TERM TMUXTERM	X		X		Task 504: Clear “CP not allowed - crs” Alarm (4-31)
CP not allowed - eqpt	T1TERM		X	X		Task 505: Clear “CP not allowed - eqpt” Alarm (4-35)
CP removed	FETERM GETERM OC192TERM OC48TERM OC12TERM OC3TERM T1TERM T3TERM TMUXTERM	X		X		Task 506: Clear “CP removed” Alarm (4-39)
CPY-MEM backup IP	EOC				X	No action necessary.
CPY-MEM download IP	EOC				X	
CPY-MEM restore IP	EOC				X	
Default K-bytes	BLSR-DKB		X			Task 507: Clear “Default K-bytes” Alarm (4-45)
dormant/exec code mismatch	EOC				X	Task 508: Clear “dormant/exec code mismatch” Condition (4-53)
DS1 CP failed	T1TERM	X		X		Task 602: Replace 28DS1/28DS1PM (LNW6/LNW7) Circuit Pack (5-25)

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
DS1 loopback (to DSX)	LPBKNETWORK				X ²	Task 509: Clear “DS1 loopback (to DSX)” Condition (4-59)
DS1 loopback (to Fiber)	LPBKNETWORK				X ²	Task 510: Clear “DS1 loopback (to Fiber)” Condition (4-63)
DS1 trmsn test IP	LPBKNETWORK				X ²	Task 511: Clear “DS1 trmsn test IP” Condition (4-67)
DS3 loopback (to DSX)	LPBKNETWORK				X ²	Task 509: Clear “DS1 loopback (to DSX)” Condition (4-59)
DS3 loopback (to Fiber)	LPBKNETWORK				X ²	Task 513: Clear “DS3 loopback (to Fiber)” Condition (4-77)
DS3 trmsn test IP	LPBKNETWORK				X ²	Task 514: Clear “DS3 trmsn test IP” Condition (4-81)
DS3EC1 CP failed	T3TERM	X		X		Task 603: Replace 12DS3/EC1 (LNW16) Circuit Pack (5-31)
Duplicate Ring Node	DUPL-RNG		X			Task 515: Clear “Duplicate Ring Node” Alarm (4-85)
duplicate TID	PRCDRERR		X			Task 516: Clear “duplicate TID” Alarm (4-91)
EC1 loopback (to DSX)	LPBKNETWORK				X ²	Task 517: Clear “EC1 loopback (to DSX)” Condition (4-95)
EC1 loopback (to Fiber)	LPBKNETWORK				X ²	Task 518: Clear “EC1 loopback (to Fiber)” Condition (4-99)
environmentn	MISC	X	X	X	X	Task 519: Clear “environmentn” Alarm (4-103)

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
excessive holdover	LHI		X			Task 520: Clear “excessive holdover” Alarm (4-107)
fan shelf failed	EXT			X		Task 521: Clear “fan shelf failed” Alarm (4-113)
FE-LAN CP failed	FETERM	X				Task 606: Replace 10/100T Fast Ethernet (LNW66) Circuit Pack (5-57)
forced switch	WKSWPR-1 WKSWPR-2				X ²	Task 522: Clear “forced switch” Condition (4-119)
GB-LAN CP failed	GETERM	X				Task 607: Replace 1GSX/1GLX (LNW67/68) Gigabit Ethernet Circuit Packs (5-59)
holdover mode active	HLDOVRSYNC				X	Task 523: Clear “holdover mode active” Condition (4-123)
illegal CP type	FETERM OC192TERM OC48TERM OC12TERM OC3TERM T1TERM T3TERM TMUXTERM	X		X		Task 524: Clear “illegal CP type” Alarm (4-129)
Improper APS Codes	APSPROV		X			Task 541: Clear “Inconsistent APS Codes” Alarm (4-239)

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
inc. DS1 sync. ref. AIS	SYNC			X		Task 526: Clear “inc. DS1 sync. ref.” Alarms (4-139)
inc. DS1 sync. ref. BER	SYNCOOS		X			
inc. DS1 sync. ref. EOOFF	SYNC			X		
inc. DS1 sync. ref. LOF	SYNCOOS		X			
inc. DS1 sync. ref. LOS	SYNC			X		
inc. DS1 sync. ref. OOL	SYNCOOS		X			
inc. DS3 Cbit Mismatch	CBITMM	X	X	X		Task 527: Clear “inc. DS3 Cbit Mismatch” Alarm (4-145)
inc. (from DSX) DS1 LOS	LOS		X	X	X	Task 528: Clear “inc. DS1” Alarms (4-151)
inc. (from DSX) DS1 sig fail	T-BERL		X	X	X	
inc. (from DSX) DS3 LOS	LOS	X	X	X	X	Task 529: Clear “inc. DS3” Alarms (4-157)
inc. (from DSX) DS3 sig fail	T-BERL	X	X	X	X	
inc. (from fiber) DS3 AIS	AIS				X	
inc. (from fiber) DS3 OOF	LOF				X	
inc. EC1 line AIS	AIS	X	X	X	X	Task 530: Clear “inc. EC1” Alarms (4-165)
inc. EC1 LOF	LOF	X	X	X	X	
inc. EC1 LOS	LOS	X	X	X	X	
inc. EC1 RDI-L	FERF		X	X	X	
inc. EC1 sig degrade (BER)	T-BERL	X	X	X	X	
inc. EC1 sig failed (BER)	T-BERL	X	X	X	X	
inc. FE-LAN ANM	ANM	X				Task 531: Clear “inc. FE-LAN ANM” Alarm (4-173)
inc. FE-LAN LOS	LOS	X				Task 532: Clear “inc. FE-LAN LOS” Alarm (4-181)
inc. GE-LAN ANM	ANM	X				Task 533: Clear “inc. GE-LAN ANM” Alarm (4-189)
inc. GE-LAN LOS	LOS	X				Task 534: Clear “inc. GE-LAN LOS” Alarm (4-195)

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
inc. OCN line AIS	AIS	X	X	X	X	Task 535: Clear “inc. OCN” Alarms (4-203)
inc. OCN LOF	LOF	X		X		
inc. OCN LOS	LOS	X		X		
inc. OCN RDI-L	FERF		X	X	X	
inc. OCN sig degrade (BER)	T-BERL	X		X		
inc. OCN sig. failed (BER)	T-BERL	X		X		
inc. STS-1 LOM	LOM				X	Task 536: Clear “inc. STS-1 LOM” Condition (4-209)
inc. STS-1 SQM	SQM				X	Task 537: Clear “inc. STS-1 SQM” Condition (4-215)
inc. STSN ³ AIS	AIS	X		X	X	Task 538: Clear “inc. STSN” Conditions/ Alarms (4-221)
inc. STSN LOP	LOP	X		X		
inc. STSN RDI-P	YEL				X	
inc. STSN sig degrade (BER)	T-BERP	X		X		
inc. STSN sig failed (BER)	T-BERP	X		X		
inc. STSN unequipped	SLMF	X		X		
inc. VCG Fail	LOS	X				Task 539: Clear “inc. VCG Fail” Alarm (4-227)
inc. VT AIS	AIS		X	X	X	Task 540: Clear “inc. VT” Conditions/ Alarms (4-233)
inc. VT LOP	LOP		X	X		
inc. VT RDI-V	YEL				X	
inc. VT sig. degrade (BER)	T-BERP		X	X		
inc. VT unequipped	SLMF		X	X		
Inconsistent APS Codes	APSC		X			Task 541: Clear “Inconsistent APS Codes” Alarm (4-239)
inconsistent DCC switches	EOC		X			Task 542: Clear “inconsistent DCC switches” Alarm (4-243)

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
Inconsistent Ring Prot Mode	RNG-IRPM		X			Task 543: Clear “Inconsistent Ring Prot Mode ” Alarm (4-249)
inhibit switch	INHSWPR				X ²	Task 544: Clear “inhibit switch” Condition (4-253)
install program IP	SWFTDWN				X	No action necessary.
Line Automatic Switch	LAS			X		Task 545: Clear “Line Automatic Switch” Alarm (4-257)
lockout of protection	INHSWPR				X ²	Task 546: Clear “lockout of protection” Condition (4-265)
manual sync. mode switch	HLDOVRSYNC				X	Task 547: Clear “manual sync. mode switch” Condition (4-269)
Node ID Mismatch	NID-CONFL		X			Task 548: Clear “Node ID Mismatch” Alarm (4-271)
NTP server(s) unreachable	MISC				X	Task 549: Clear “NTP server(s) unreachable” Condition (4-281)
OLIU CP failed	OC192TERM OC48TERM OC12TERM OC3TERM	X		X		Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs (5-39) or Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49).

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
Protection switch, OC48 port, Forced switch, FSR, 2F Protection switch, OC192 port, Forced switch, FSR, 2F	WKSWPR-2: switch to protection WKSWBK: switch to working GP: change in the state of the switching algorithm, but no change in the switch selection state				X ²	Task 550: Clear “Protection switch, OC-N port, Forced switch, FSR, 2F” Condition (4-285)
Protection switch, OC48 port, Lockout switch, LPS, 2F Protection switch, OC192 port, Lockout switch, LPS, 2F					X ²	Task 551: Clear “Protection switch, OC-N port, Lockout switch, LPS, 2F” Condition (4-289)
Protection switch, OC48 port, Manual switch, MSR, 2F Protection switch, OC192 port, Manual switch, MSR, 2F					X ²	Task 552: Clear “Protection switch, OC-N port, Manual switch, MSR, 2F” Condition (4-293)
Ring Discovery In Progress	RNG-DSCVY				X	No action necessary.
Ring Incomplete	RNG-INC		X			Task 553: Clear “Ring Incomplete” Alarm (4-297)
Ring Prot Switching Suspended	OVRDSW		X			Task 554: Clear “Ring Prot Switching Suspended” Alarm (4-309)
ring upgrade mode	RINGUPGRADE				X	No action necessary.
section DCC channel failed	EOC		X	X		Task 555: Clear “section DCC channel failed ” Alarm (4-313)
SYSCTL CP failed	CONTR		X			Task 608: Replace SYSCTL (LNW1) Circuit Pack (5-63)
Temporarily NUT Provisioned	NUTTMPPRV				X	Task 556: Clear “Temporarily NUT Provisioned” Condition (4-319)
TMUX CP failed	TMUXTERM	X		X		Task 620: Replace TMUX (LNW18) Circuit Pack (5-185)

Alarm/Condition Name	Alarm/Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC ¹	
Traffic Squelched	RNG-SQUELCH		X			Task 557: Clear “Traffic Squelched” Alarm (4-323)
unexpected CP type	FETERM GETERM OC192TERM OC48TERM OC12TERM OC3TERM T1TERM T3TERM TMUXTERM	X		X		Task 558: Clear “unexpected CP type” Alarm (4-331)
Unknown Ring Type	RNG-URT				X	Task 559: Clear “Unknown Ring Type” Condition (4-337)
X.25 communication failure	MISC		X			Task 560: Clear “X.25 communication failure” Alarm (4-341)

Notes:

1. SC (standing condition) indicates a reported event (often referred to as a near-end activity condition). SC conditions are reported as Not Alarmed as they are not alarms; they are events (often user initiated). However, they are included in the alarm list and the alarm reports.
2. These are standing conditions (SC) that are reported in the alarm list as a Not Alarmed (SC) but are identified on the SYSCTL faceplate with a lighted ABN LED.
3. STSN represent STS-1, STS-3c, STS-12c, and STS-48c.





2 Alarms, Conditions, and Error Messages

| Overview

Purpose This chapter contains brief descriptions of the alarm messages for the Metropolis[®] DMX Access Multiplexer.

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-48V power/fuse failed

-48V power/fuse FA failed

The -48 volt power feeder “A” failed or interrupted or a circuit breaker “A” on the shelf has tripped.

Alarm Data	Value/Meaning
Alarm Level(s)	Minor (MN)
AID (type)	fuse
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	COM
Affect on Service	NSA
Alarm Entity Type	PWR
Description	-48V power/fuse FA failed
Probable Cause	A -48 volt power feeder “A” failed or interrupted or a circuit breaker “A” on the shelf has tripped.
Visible indication	Lighted MN LED on SYSCTL faceplate.
Action	Proceed to Task 500: Clear “-48V power/fuse FA or FB failed” Alarm (4-5) .

-48V power/fuse FB failed

The -48 volt power feeder “B” failed or interrupted or a circuit breaker “B” on the shelf has tripped.

Alarm Data	Value/Meaning
Alarm Level(s)	Minor (MN)
AID (type)	fuse
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	COM
Affect on Service	NSA
Alarm Entity Type	PWR
Description	-48V power/fuse FB failed
Probable Cause	A -48 volt power feeder “B” failed or interrupted or a circuit breaker “B” on the shelf has tripped.
Visible indication	Lighted MN LED on SYSCTL faceplate.
Action	Proceed to Task 500: Clear “-48V power/fuse FA or FB failed” Alarm (4-5) .



ACO active

ACO active Audible office alarms (normally active) are being suppressed.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	INHAUDB
Affect on Service	SC
Alarm Entity Type	COM
Description	ACO active
Likely Cause	User entered an opr-aco command through the WaveStar® CIT command: Fault > Alarm Cutoff... or pressed the ACO TEST push-button on SYSCTL circuit pack.
Visible indication	Lighted ACO LED on SYSCTL faceplate.
Action	No action necessary. Condition clears automatically when a new alarm is detected.



AGNE communication failure

AGNE communication failure

Metropolis[®] DMX cannot establish communication with the designated alarm gateway network element (AGNE), or the AGNE cannot establish communication with a network element in the same alarm group or the AGNE has lost communication with a network element in the same alarm group.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	PRCDRERR
Affect on Service	NSA
Alarm Entity Type	COM
Description	AGNE communication failure
Likely Cause	AGNE has not been provisioned or has failed.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 501: Clear “AGNE communication failure” Alarm (4-11) .



controln

controln A provisioned environmental condition (four available) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Environmental Control Output
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	MISC
Affect on Service	SC
Alarm Entity Type	COM
Description	control1, control2, control3, control4
Likely Cause	A provisioned miscellaneous discrete control output (for example, sprinklers or lights turning on) was operated by selecting Fault > Operate Output Misc Discretes....
Visible indication	None
Action	Proceed to Task 502: Clear “controln” Condition (4-17) .



copy program IP

copy program IP

The system is copying the software generic from the dormant area to a remote NE.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EOC
Affect on Service	SC
Alarm Entity Type	COM
Description	copy program IP
Likely Cause	User executed the cpy-prgm command through the WaveStar [®] CIT command: Configuration > Software > Copy Software....
Visible indication	None
Action	No action necessary. Condition clears automatically when the generic is copied to the dormant area of the destination NE.



CP firmware incompatibility

CP firmware incompatibility

The firmware in the 12DS3/EC1 circuit pack does not match the active software generic running on the NE.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T3TERM
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	CP firmware incompatibility
Likely Cause	A new version of the software generic was applied to the shelf and the 12DS3/EC1 circuit pack did not update automatically or a new 12DS3/EC1 circuit pack was inserted into the shelf and the active software generic on the shelf does not match the new circuit pack.
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 503: Clear “CP firmware incompatibility” Alarm (4-21) .



CP not allowed

CP not allowed - crs An unsupported cross-connection (crs) is provisioned on the indicated circuit pack.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	FETERM, GETERM, OC192TERM, OC48TERM, OC12TERM, OC3TERM, T3TERM, TMUXTERM,
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	CP not allowed - crs
Likely Cause	A circuit pack was inserted into a slot that was already provisioned with cross-connects, and those provisioned cross-connections are not supported by the new circuit pack.
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 504: Clear “CP not allowed - crs” Alarm (4-31) .

CP not allowed - eqpt

An electrical pack (28DS1/28DS1PM, 12DS3EC1, TMUX, 10/100T) circuit pack was inserted into a Growth slot.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T1TERM
Affect on Service	MJ = SA MN = NSA
Alarm Entity Type	EQPT
Description	CP not allowed - eqpt
Likely Cause	A electrical circuit pack was inserted into a Growth slot; these circuit packs are not allowed in the Growth slots.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate and a lighted FAULT LED on the circuit pack that is the wrong type for the provisioned slot.
Action	Proceed to Task 505: Clear “CP not allowed - eqpt” Alarm (4-35) .



CP removed

CP removed A circuit pack was removed from the shelf.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	FETERM, GETERM, OC192TERM, OC48TERM, OC12TERM, OC3TERM, T1TERM, T3TERM, TMUXTERM
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	CP removed
Likely Cause	A circuit pack carrying service or unprotected was removed from the shelf - CR (SA). Ethernet CP removals (FETERM and GETERM) are always (CR) SA. A protection (not active) or protected circuit pack was removed from the shelf - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 506: Clear “CP removed” Alarm (4-39) .



CPY-MEM <class> IP

CPY-MEM backup IP

Remote backup of provisioned data via file transfer protocol (FTP) is in progress.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EOC
Affect on Service	SC
Alarm Entity Type	COM
Description	CPY-MEM backup IP
Likely Cause	User executed the cpy-mem command through the WaveStar [®] CIT command: Configuration > Software > Remote Backup or a previously scheduled backup isn now executing.
Visible indication	None
Action	No action necessary. Condition clears automatically when the backup is complete.

CPY-MEM download IP Download of a software generic via FTP is in progress.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EOC
Affect on Service	SC
Alarm Entity Type	COM
Description	CPY-MEM download IP
Likely Cause	User executed the cpy-mem command through the WaveStar® CIT command: Configuration > Software > Download Software.
Visible indication	None
Action	No action necessary. Condition clears automatically when the download is complete.

CPY-MEM restore IP

Restoration of provisioned data from the backup file is in progress.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EOC
Affect on Service	SC
Alarm Entity Type	COM
Description	CPY-MEM restore IP
Likely Cause	User executed the cpy-mem command through the WaveStar® CIT command: Configuration > Software > Remote Restore.
Visible indication	None
Action	No action necessary. Condition clears automatically when the restore is complete.



Default K-bytes

Default K-bytes A bidirectional line-switched ring (BLSR) is detecting default K-bytes. When this alarm is present, protection switching at the BLSR node is unavailable.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	OC-48/OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	BLSR-DKB
Affect on Service	NSA
Alarm Entity Type	OC48 OC192
Description	Default K-bytes
Likely Cause	A node is added or deleted from the BLSR; an adjacent node on the ring is being initialized; an adjacent node on the ring is being powered-up or powered-down; the provisioning of the nodes on the ring is inconsistent (for example, one or more nodes on the ring are provisioned as UPSR rather than BLSR).
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 507: Clear “Default K-bytes” Alarm (4-45) .



dormant/exec code mismatch

dormant/exec code mismatch

The software generic in the dormant area does not match the generic currently running on the NE.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EOC
Affect on Service	SC
Alarm Entity Type	COM
Description	dormant/exec code mismatch
Likely Cause	User downloaded, but did not apply, a software generic to the dormant area that is different than the software generic currently running on the NE.
Visible indication	None.
Action	Proceed to



DS1 CP failed

DS1 CP failed Internal equipment failure of the specified 28DS1/28DS1PM circuit pack (DS1 components) or communications problem between the pack and the system controller (SYSCTL) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T1TERM
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	DS1 CP failed
Likely Cause	A 28DS1 (LNW6) or 28DS1PM (LNW7) circuit pack carrying service or unprotected failed - CR (SA). A protection (not active) or protected 28DS1/28DS1PM circuit pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 602: Replace 28DS1/28DS1PM (LNW6/LNW7) Circuit Pack (5-25) .



DS1 loopback

DS1 loopback (to DSX) A loopback (toward the DSX) is active on the specified T1 port.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	T1
Description	DS1 loopback (to DSX)
Likely Cause	User executed the opr-lpbk command through the WaveStar® CIT command: Fault > Loopback .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 509: Clear “DS1 loopback (to DSX)” Condition (4-59) .

DS1 loopback (to Fiber)

A loopback (toward the optical fiber) is active on the specified T1 port. Generally used during system start-up as a maintenance tool.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	T1
Description	DS1 loopback (to FIBER)
Likely Cause	User executed the opr-lpbk command through the WaveStar® CIT command: Fault > Loopback .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 510: Clear “DS1 loopback (to Fiber)” Condition (4-63) .



DS1 trmsn test IP

DS1 trmsn test IP

A transmission test using the internal test signal generator and monitor is in progress on the specified T1 port.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	T1
Description	DS1 trmsn test IP
Likely Cause	User executed the test-trmsn-t1 command through the WaveStar [®] CIT command: Fault > Test > Test Transmission .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 511: Clear “DS1 trmsn test IP” Condition (4-67) .



DS3 loopback

DS3 loopback (to DSX) A loopback (toward the DSX) is active on the specified T3 port.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	T3
Description	DS3 loopback (to DSX)
Likely Cause	User executed the opr-lpbk command through the WaveStar® CIT command: Fault > Loopback .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 512: Clear “DS3 loopback (to DSX)” Condition (4-73) .

DS3 loopback (to Fiber)

A loopback (toward the optical fiber) is active on the specified T3 port. Generally used during system start-up as a maintenance tool.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	T3
Description	DS3 loopback (to Fiber)
Likely Cause	User executed the opr-lpbk command through the WaveStar® CIT command: Fault > Loopback .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 513: Clear “DS3 loopback (to Fiber)” Condition (4-77) .



DS3 trmsn test IP

DS3 trmsn test IP

A transmission test using the internal test signal generator and monitor is in progress on the specified T3 port.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	T3
Description	DS3 trmsn test IP
Likely Cause	User executed the test-trmsn-t3 command through the WaveStar® CIT command: Fault > Test > Test Transmission .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 514: Clear “DS3 trmsn test IP” Condition (4-81) .



DS3EC1 CP failed

DS3EC1 CP failed

Internal equipment failure of the specified 12DS3/EC1 circuit pack (DS3 or EC-1 components) or communications problem between the pack and the system controller (SYSCTL) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T3TERM
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	DS3EC1 CP failed
Likely Cause	A 12DS3/EC1 (LNW16) circuit pack carrying service or unprotected failed - CR (SA). A protection (not active) or protected 12DS3/EC circuit pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 603: Replace 12DS3/EC1 (LNW16) Circuit Pack (5-31) .



Duplicate Ring Node

Duplicate Ring Node Two nodes in the BLSR have the same system target identifier (TID) or the total number of nodes in the ring is more than 16.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	BLSR Protection Group
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	DUPL-RNG
Affect on Service	NSA
Alarm Entity Type	COM
Description	Duplicate Ring Node
Likely Cause	Two nodes on the BLSR have been provisioned with the same node ID or a seventeenth ring node has been added to the ring.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 516: Clear “duplicate TID” Alarm (4-91) .



duplicate TID

duplicate TID Two or more NEs have same TID (Target IDentifier, or system name). DCC communication may be lost.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	SYSCTL Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	PRCDRERR
Affect on Service	NSA
Alarm Entity Type	EQPT
Description	duplicate TID
Likely Cause	One of the NEs is provisioned incorrectly.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 516: Clear “duplicate TID” Alarm (4-91) .



EC1 loopback

EC1 loopback (to DSX) A loopback (toward the DSX) is active on the specified EC-1 port.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	EC-1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	EC1
Description	EC1 loopback (to DSX)
Likely Cause	User executed the opr-lpbk command through the WaveStar® CIT command: Fault > Loopback .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 517: Clear “EC1 loopback (to DSX)” Condition (4-95) .

EC1 loopback (to Fiber)

A loopback (toward the optical fiber) is active on the specified EC-1 port. Generally used during system start-up as a maintenance tool.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	EC-1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LPBKNETWORK
Affect on Service	SC
Alarm Entity Type	EC1
Description	EC1 loopback (to Fiber)
Likely Cause	User executed the opr-lpbk command through the WaveStar® CIT command: Fault > Loopback .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 518: Clear “EC1 loopback (to Fiber)” Condition (4-99) .



environmentn

environmentn The specified environmental alarm point (miscellaneous discrete input) is active. The actual message that appears in the alarm and status report for this condition can be provisioned; environment is the default message. It is provisioned via the **set-attr-env** command or from the WaveStar® CIT System View via **Configuration > Misc. Discretes**.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! MN is the default level.
AID (type)	Environmental Alarm Input
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	MISC
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	ENV (CR, MJ, MN) COM (SC)
Description	environment1 . . . environment14 Environment15 is used for fan failure; it cannot be provisioned. environment16 . . . environment19
Likely Cause	Some external equipment has operated a contact closure connected to that input.
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 519: Clear “environmentn” Alarm (4-103) .



excessive holdover

excessive holdover

The system has been in holdover mode for more than 4 hours. This may cause degraded performance (high error rates) on the transmitted and/or received signals. Whenever this condition exists, the condition “holdover mode active” also exists.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LHI
Affect on Service	SA
Alarm Entity Type	COM
Description	excessive holdover
Likely Cause	The system was manually switched to holdover mode (with the opr-syncsw command or WaveStar® CIT System View Fault > Timing/Sync Protection Switch > Clock Mode Switch) and the switch has not been reset. The system is provisioned for sync message signaling, but the upstream system from which it line-times has not been provisioned for sync message signaling. The system automatically switched to holdover mode due to failure of the timing references, as follows: • The reference failures have not cleared. • The system is provisioned for nonrevertive synchronization mode switching. • The system is provisioned for External timing and no external timing references are available. • The system is provisioned for line-timed operation and the optical line or OLIU circuit pack has failed, or a message indicating an upstream clock problem has been received on the sync message bits of the optical line.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 520: Clear “excessive holdover” Alarm (4-107) .



fan shelf failed

fan shelf failed The fan shelf failed.

Alarm Data	Value/Meaning
Alarm Level(s)	Minor (MN)
AID (type)	System Control slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EXT
Affect on Service	NSA
Alarm Entity Type	COM
Description	fan shelf failed
Likely Cause	The fan shelf failed.
Visible indication	Lighted MN LED on SYSCTL faceplate.
Action	Proceed to Task 521: Clear “fan shelf failed” Alarm (4-113) .



FE-LAN CP failed

FE-LAN CP failed Internal equipment failure of the specified 10/100T (LWN66) circuit pack or communications problem between the Ethernet pack and the system controller (SYSCTL) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	FETERM
Affect on Service	SA
Alarm Entity Type	EQPT
Description	FE-LAN CP failed
Likely Cause	A 10/100T (LWN66) circuit pack carrying service failed - CR (SA). A failure on an Ethernet pack is always CR (SA) as the Ethernet packs are unprotected.
Visible indication	Lighted CR LED on SYSCTL faceplate.
Action	Proceed to Task 606: Replace 10/100T Fast Ethernet (LWN66) Circuit Pack (5-57) .



forced switch

forced switch The protection line of a 1+1 protected OC-N line pair or the protection pack of a 1+1 protected equipment pair is selected, unless there is an existing lockout or forced protection switching request.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	OC-48 line pair OC-12 line pair OC-3 line pair Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	WKSWPR-1 WKSWPR-2
Affect on Service	SC
Alarm Entity Type	OC48 OC12 OC3 Slot = EQPT
Description	forced switch
Likely Cause	From the WaveStar® CIT System View, selected Fault > Protection Switch and highlighted a 1+1 Equip or 1+1 Line Protection Group, and provisioned the Switch Type as Forced .
Visible indication	Lighted ABN LED on SYSCTL faceplate.
Action	Proceed to Task 522: Clear “forced switch” Condition (4-119) .



GB-LAN CP failed

GB-LAN CP failed

Internal equipment failure of the specified 1GSX or 1GLX (LNU67/LNU68) circuit pack or communications problem between the Ethernet pack and the system controller (SYSCTL) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	GETERM
Affect on Service	SA
Alarm Entity Type	EQPT
Description	GB-LAN CP failed
Likely Cause	A 1GSX or 1GLX (LNU67/LNU68) circuit pack carrying service failed - CR (SA). A failure on an Ethernet pack is always CR (SA) as the Ethernet packs are unprotected.
Visible indication	Lighted CR LED on SYSCTL faceplate.
Action	Proceed to Task 607: Replace 1GSX/1GLX (LNU67/68) Gigabit Ethernet Circuit Packs (5-59) .



holdover mode active

holdover mode active

The system is in holdover synchronization mode.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	HOLDOVRSYNC
Affect on Service	SC
Alarm Entity Type	OC-N = COM Synch reference (external) = T1
Description	holdover mode active
Likely Cause	The system was manually switched to holdover mode (with the opr-syncsw command or WaveStar® CIT System View Configuration > Timing Sync) and the switch has not been reset. The system is provisioned for sync message signaling, but the upstream system from which it line-times has not been provisioned for sync message signaling. The system automatically switched to holdover mode due to failure of the timing references, as follows: • The reference failures have not cleared. • The system is provisioned for nonrevertive synchronization mode switching. • The system is provisioned for External timing and no external timing references are available. • The system is provisioned for line-timed operation and the optical line or OLIU circuit pack has failed, or a message indicating an upstream clock problem has been received on the sync message bits of the optical line.
Visible indication	None.
Action	Proceed to Task 523: Clear “holdover mode active” Condition (4-123) .



illegal CP type

illegal CP type A circuit pack is present in a slot in a shelf configuration not supported by the software to provide transmission.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	FETERM, GETERM, OC192TERM, OC48TERM, OC12TERM, OC3TERM, T1TERM, T3TERM, TMUXTERM
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	illegal CP type
Likely Cause	An illegal or unknown circuit pack type has been inserted into the shelf = MN (NSA). A slot was occupied and provisioned for a supported circuit pack type. The supported circuit pack was removed and an unsupported circuit pack type was inserted into that slot = CR (SA). An 10/100T (LNW66) circuit pack was inserted into a growth slot.
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 524: Clear “illegal CP type” Alarm (4-129) .



Improper APS Codes

Improper APS Codes

Received automatic protection switch (APS) codes are not appropriate for the current bidirectional line-switched ring (BLSR) switch state. Therefore, the switch request on the BLSR does not complete properly.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	OC-48 or OC-192 line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	APSPROV
Affect on Service	NSA
Alarm Entity Type	OC48 OC192
Description	Improper APS Codes
Likely Cause	A node in the BLSR is isolated due to • A high-speed (main) OC-48/OC-192 OLIU circuit pack failure • A SYSCTL circuit pack failure, reset, or initialization • An inc. OC-48/OC-192 sig degrade or inc. OC-48/OC-192 sig. failed alarm at some point on the BLSR.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 525: Clear “Improper APS Codes” Alarm (4-135) .



inc. DS1 sync. ref. AIS

inc. DS1 sync. ref. AIS DS1 alarm indication signal (AIS) is being received from the DS1 synchronization reference signal.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Synch reference (external)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SYNCOOS (MJ) SYNC (MN)
Affect on Service	MJ and MN = NSA
Alarm Entity Type	T1
Description	inc. DS1 sync. ref. AIS
Likely Cause	Failure of the timing supply that provides the DS1 timing reference.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 526: Clear “inc. DS1 sync. ref.” Alarms (4-139) .



inc. DS1 sync. ref. BER

inc. DS1 sync. ref. BER

The bit error ratio (BER) in the DS1 synchronization reference signal exceeds 10^{-3} .

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Synch reference (external)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SYNCOOS (MJ) SYNC (MN)
Affect on Service	MJ and MN = NSA
Alarm Entity Type	T1
Description	inc. DS1 sync. ref. BER
Likely Cause	Failure of the timing supply that provides the DS1 timing reference. See DS1 sync. ref LOS.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 526: Clear “inc. DS1 sync. ref.” Alarms (4-139) .



inc. DS1 sync. ref. EEOF

inc. DS1 sync. ref. EEOF Excessive out-of-frame (EEOF) events were detected in the DS1 synchronization reference signal. Excessive OOF is defined as more than 512 out-of-frame events in one day.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Synch reference (external)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SYNCOOS (MJ) SYNC (MN)
Affect on Service	MJ and MN = NSA
Alarm Entity Type	T1
Description	inc. DS1 sync. ref. EEOF
Likely Cause	Failure of the timing supply that provides the DS1 timing reference.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 526: Clear “inc. DS1 sync. ref.” Alarms (4-139) .



inc. DS1 sync. ref. LOF

inc. DS1 sync. ref. LOF

The system has detected a DS1 loss-of-frame (LOF) condition for the incoming DS1 synchronization reference signal.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Synch reference (external)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SYNCOOS (MJ) SYNC (MN)
Affect on Service	MJ and MN = NSA
Alarm Entity Type	T1
Description	inc. DS1 sync. ref. LOF
Likely Cause	Failure of the timing supply that provides the DS1 timing reference.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 526: Clear “inc. DS1 sync. ref.” Alarms (4-139) .



inc. DS1 sync. ref. LOS

inc. DS1 sync. ref. LOS The system has detected a DS1 loss-of-signal (LOS) condition for the incoming DS1 synchronization reference signal.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Synch reference (external)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SYNCOOS (MJ) SYNC (MN)
Affect on Service	MJ and MN = NSA
Alarm Entity Type	T1
Description	inc. DS1 sync. ref. LOS
Likely Cause	Failure of the timing supply that provides the DS1 timing reference.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 526: Clear “inc. DS1 sync. ref.” Alarms (4-139) .



inc. DS1 sync. ref. OOL

inc. DS1 sync. ref. OOL The incoming DS1 synchronization reference signal is out of lock (OOL). The frequency of the clock providing the DS1 reference signal is out of specification.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Synch reference (external)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SYNCOOS (MJ) SYNC (MN)
Affect on Service	MJ = SA MN = NSA
Alarm Entity Type	T1
Description	inc. DS1 sync. ref. OOL
Likely Cause	Failure of the timing supply that provides the DS1 timing reference.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 526: Clear “inc. DS1 sync. ref.” Alarms (4-139) .



inc. DS3 Cbit Mismatch

inc. DS3 Cbit Mismatch Indicates a difference between the framing of the incoming DS3 signal (from the DSX) and the provisioned framing mode of the receiving port.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN) Important! CR is the default level.
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	CBITMM
Affect on Service	CR and MJ = SA MN = NSA
Alarm Entity Type	T3
Description	inc. DS3 Cbit Mismatch
Likely Cause	The incoming DS3 signal is provisioned as M13 and the port is provisioned for CBIT; the incoming DS3 signal is provisioned as CBIT and the port is provisioned for M13. The alarm also occurs when a DS3 signal that is provisioned for M13 is electrically looped back onto itself.
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 527: Clear “inc. DS3 Cbit Mismatch” Alarm (4-145) .



inc. (from DSX) DS1 LOS

inc. (from DSX) DS1 LOS

At least 128 consecutive zeros are received in the DS1 signal incoming from the DSX-1, or the energy at the DS1 input is below a preset threshold.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! SC is the default level.
AID (type)	DS1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOS
Affect on Service	MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	T1
Description	inc. (from DSX) DS1 LOS
Likely Cause	Hard failure of upstream equipment or facility (towards DSX-1). The DS1 input is disconnected at the backplane or the DSX-1; equipment is failed or removed at DSX-1.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 528: Clear “inc. DS1” Alarms (4-151) .



inc. (from DSX) DS1 sig fail

inc. (from DSX) DS1 sig fail

The bit error ratio (BER) in the DS1 signal incoming from the DSX-1 exceeds the provisioned failure threshold, 10^{-3} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! SC is the default level.
AID (type)	DS1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERL
Affect on Service	MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	T1
Description	inc. (from DSX) DS1 sig fail
Likely Cause	Mismatch of line code (AMI/B8ZS); failure of upstream equipment or facility (towards the DSX-1); cross-talk in office wiring; failure of the 28DS1/28DS1PM circuit pack.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 528: Clear “inc. DS1” Alarms (4-151) .



inc. (from fiber) DS3 AIS

inc. (from fiber) DS3 AIS DS3 alarm indication signal (AIS) is being received from the far-end DS3 termination.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	AIS
Affect on Service	SC
Alarm Entity Type	T3
Description	inc. (from fiber) DS3 AIS
Likely Cause	Upstream equipment failed or was removed. Input disconnected at the Metropolis [®] DMX backplane.
Visible indication	None
Action	Proceed to Task 529: Clear “inc. DS3” Alarms (4-157) .



inc. (from DSX) DS3 LOS

inc. (from DSX) DS3 LOS At least 128 consecutive zeros are received in the DS3 signal incoming from the DSX-3, or the energy at the DS3 input is below a present threshold.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! CR is the default level.
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOS
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	T3
Description	inc. (from DSX) DS3 LOS
Likely Cause	Hard failure of upstream equipment or facility (towards the DSX-3). The DS3 input is disconnected at the backplane or the DSX-3; equipment is failed or removed at DSX-3.
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 529: Clear “inc. DS3” Alarms (4-157) .



inc. (from fiber) DS3 OOF

inc. (from fiber) DS3 OOF

The system has detected an DS3 out-of-frame (OOF) condition from fiber.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOF
Affect on Service	SC
Alarm Entity Type	T3
Description	inc. (from fiber) DS3 OOF
Likely Cause	Upstream equipment failed or was removed. Input disconnected at the Metropolis [®] DMX backplane.
Visible indication	None
Action	Proceed to Task 529: Clear “inc. DS3” Alarms (4-157) .



inc. (from DSX) DS3 sig fail

inc. (from DSX) DS3 sig fail The bit error ratio (BER) in the DS3 signal incoming from the DSX-3 exceeds the provisioned failure threshold, 10^{-3} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! CR is the default level.
AID (type)	DS3 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERL
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	T3
Description	inc. (from DSX) DS3 sig fail
Likely Cause	Failure of the upstream equipment or facility (towards the DSX-3); cross talk in office wiring; failure of DS3 circuit pack (12DS3/EC1 or TMUX).
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 529: Clear “inc. DS3” Alarms (4-157) .



inc. EC1 line AIS

inc. EC1 line AIS The system has detected an EC-1 alarm indication signal (AIS) for the specified EC-1 signal.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! CR is the default level.
AID (type)	EC-1 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	AIS
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	EC1
Description	inc. EC1 line AIS
Likely Cause	Failure of upstream equipment or facility (towards the DSX).
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 530: Clear “inc. EC1” Alarms (4-165) .



inc. EC1 LOF

inc. EC1 LOF The system has detected an EC-1 loss-of-frame (LOF) condition.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! CR is the default level.
AID (type)	EC-1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOF
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	EC1
Description	inc. EC1 LOF
Likely Cause	Upstream equipment failed or was removed. Input disconnected at the DSX or at the Metropolis® DMX backplane.
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 530: Clear “inc. EC1” Alarms (4-165) .



inc. EC1 LOS

inc. EC1 LOS At least 128 consecutive zeros are received in the incoming EC-1 signal, or the energy at the EC-1 input is below a present threshold.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! CR is the default level.
AID (type)	EC-1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOS
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	EC1
Description	inc. EC1 LOS
Likely Cause	Upstream equipment failed or was removed. Input disconnected at the DSX or at the Metropolis® DMX backplane
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 530: Clear “inc. EC1” Alarms (4-165) .



inc. EC1 RDI-L

inc. EC1 RDI-L The system has detected a remote defect indication line (RDI-L) returned to a transmitting terminal, indicating that the receiving terminal has detected an incoming signal failure. Previously called far-end-receive-failure (FERF).

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! SC is the default level.
AID (type)	EC-1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	FERF
Affect on Service	MJ and MN = NSA Not Alarmed = SC
Alarm Entity Type	EC1
Description	inc. EC1 RDI-L
Likely Cause	Alarm condition detected at the far-end EC-1 pack.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 530: Clear “inc. EC1” Alarms (4-165) .



inc. EC1 sig degrade (BER)

inc. EC1 sig degrade (BER)

The bit error ratio (BER) in the specified EC-1 signal exceeds the provisioned soft error threshold, 10^{-6} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! CR is the default level.
AID (type)	EC-1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERL
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	EC1
Description	inc. EC1 sig degrade (BER)
Likely Cause	Failure of the 12DS3/EC1 circuit pack at the near-end, failure of the receive fiber.
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 530: Clear “inc. EC1” Alarms (4-165) .



inc. EC1 sig failed (BER)

inc. EC1 sig failed (BER) The bit error ratio (BER) in the incoming EC-1 signal exceeds the provisioned failure threshold, 10^{-3} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! CR is the default level.
AID (type)	EC-1 Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERL
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	EC1
Description	inc. EC1 sig failed (BER)
Likely Cause	Failure of the upstream equipment or facility (towards the DSX-3); cross talk in office wiring; failure of EC-1 circuit pack (12DS3/EC1).
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 530: Clear “inc. EC1” Alarms (4-165) .



inc. FE-LAN ANM

inc. FE-LAN ANM

Incoming Auto Negotiation Mismatch (ANM) is detected on 10/100T LAN port (LNW66). Indicates that a signal is received but the LAN port is unable to negotiate a mutually acceptable transmission option for full/half duplex mode.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	Ethernet 10/100T Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	ANM
Affect on Service	SA
Alarm Entity Type	FE
Description	inc. FE-LAN ANM
Likely Cause	The full/half duplex modes and or signal type 10Base-TX/100Base-TX on the near-end and far-end LAN ports do not match.
Visible indication	Lighted CR LED on SYSCTL faceplate.
Action	Proceed to Task 531: Clear “inc. FE-LAN ANM” Alarm (4-173) .



inc. FE-LAN LOS

inc. FE-LAN LOS Indicates a loss of signal (LOS) at an input of the 10/100T Ethernet circuit pack (LNW66). This condition indicates that at least 128 consecutive zeros were detected in the Ethernet signal received by the LAN port.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	Ethernet 10/100T Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOS
Affect on Service	SA
Alarm Entity Type	FE
Description	inc. FE-LAN LOS
Likely Cause	Disconnected LAN cable or fiber, or failure or removal of interfacing LAN equipment.
Visible indication	Lighted CR LED on SYSCTL faceplate.
Action	Proceed to Task 532: Clear “inc. FE-LAN LOS” Alarm (4-181) .



inc. GE-LAN ANM

inc. GE-LAN ANM

Incoming Auto Negotiation Mismatch (ANM) is detected on 1GSX/LX LAN port (LNX67/LNX68). Indicates that a signal is received but the LAN port is unable to negotiate a mutually acceptable transmission option for full/half duplex mode.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	Ethernet 1GbE Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	ANM
Affect on Service	SA
Alarm Entity Type	1GE
Description	inc. GE-LAN ANM
Likely Cause	The full/half duplex modes on the near-end and far-end LAN ports do not match.
Visible indication	Lighted CR LED on SYSCTL faceplate.
Action	Proceed to Task 533: Clear “inc. GE-LAN ANM” Alarm (4-189) .



inc. GE-LAN LOS

inc. GE-LAN LOS Loss of signal (LOS) indicates that a 1GSX/LX LAN port (LNW67/LNW68) does not detect the presence of an incoming IEEE 802.3 compliant signal.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	Ethernet 1GbE Port
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOS
Affect on Service	SA
Alarm Entity Type	1GE
Description	inc. GE-LAN LOS
Likely Cause	Disconnected LAN cable or fiber, or failure or removal of interfacing LAN equipment.
Visible indication	Lighted CR LED on SYSCTL faceplate.
Action	Proceed to Task 534: Clear “inc. GE-LAN LOS” Alarm (4-195) .



inc. OCN line AIS

inc. OCN line AIS

The system has detected OC-N line alarm indication signal (AIS) on an incoming OC-3/OC-12/OC-48/OC-192 line.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! SC is the default level.
AID (type)	OC-N Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	AIS
Affect on Service	CR and MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	OC3, OC12, OC48, or OC192
Description	inc. OC3 line AIS, inc. OC12 line AIS, inc. OC48 line AIS, or inc. OC192 line AIS
Likely Cause	Failure of the OC-N OLIU circuit pack at the far-end.
Visible indication	Lighted CR, MJ, or MN LED on SYSCTL faceplate.
Action	Proceed to Task 535: Clear “inc. OCN” Alarms (4-203) .



inc. OCN LOF

inc. OCN LOF The system has detected a loss-of-frame (LOF) condition in an incoming OC-N signal. LOF is defined as an out-of-frame (OOF) condition (four consecutive errored STS-1 framing patterns) that lasts for at least 3 milliseconds.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	OC-N Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOF
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	OC3, OC12, OC48, or OC192
Description	inc. OC3 LOF, inc. OC12 LOF, inc. OC48 LOF, or inc. OC192 LOF
Likely Cause	Failure of the OC-N OLIU circuit pack at the near-end, failure of the OLIU circuit pack at the far-end, or failure of the receiver fiber. A line/port carrying service or unprotected failed - CR (SA). A protection (not active) or protected line/port failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 535: Clear “inc. OCN” Alarms (4-203) .



inc. OCN LOS

inc. OCN LOS The system has detected a loss-of-signal (LOS) condition on the OC-3/OC-12/OC-48/OC-192 line.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	OC-N Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOS
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	OC3, OC12, OC48, or OC192
Description	inc. OC3 LOS, inc. OC12 LOS, inc. OC48 LOS, or inc. OC192 LOS
Likely Cause	Failure of the OC-N OLIU circuit pack at the near-end, failure of the receive fiber, or failure of the OLIU circuit pack at the far-end. An OLIU carrying service or unprotected failed - CR (SA). A protection (not active) or protected OLIU failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 535: Clear “inc. OCN” Alarms (4-203) .



inc. OCN RDI-L

inc. OCN RDI-L The system has detected a remote defect indication line (RDI-L) returned to a transmitting terminal, indicating that the receiving terminal has detected an incoming signal failure. Previously called far-end-receive-failure (FERF).

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! SC is the default level.
AID (type)	OC-N Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	FERF
Affect on Service	MJ and MN = NSA Not Alarmed = SC
Alarm Entity Type	OC3, OC12, OC48, or OC192
Description	inc. OC3 RDI-L, inc. OC12 RDI-L, inc. OC48 RDI-L, or inc. OC192 RDI-L
Likely Cause	Alarm condition detected at the far-end OC-N OLIU. An OLIU carrying service or unprotected failed - MJ (SA). A protection (not active) or protected OLIU failed - MN (NSA).
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 535: Clear “inc. OCN” Alarms (4-203) .



inc. OCN sig degrade (BER)

inc. OCN sig degrade (BER)

The bit error ratio (BER) in the specified OC-N signal exceeds the provisioned soft error threshold, 10^{-6} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN))
AID (type)	OC-N Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERL
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	OC3, OC12, OC48, or OC192
Description	inc. OC3 sig degrade (BER), inc. OC12 sig degrade (BER), inc. OC48 sig degrade (BER), or inc. OC192 sig degrade (BER)
Likely Cause	Failure of the OC-N OLIU circuit pack at the near-end, failure of the receive fiber, or failure of the OLIU circuit pack at the far-end, or there is problem with the optical attenuator usage. An OLIU carrying service or unprotected failed - CR (SA). A protection (not active) or protected OLIU failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 535: Clear “inc. OCN” Alarms (4-203) .



inc. OCN sig. failed (BER)

inc. OCN sig. failed (BER) The bit error ratio (BER) in the incoming OC-N signal exceeds the provisioned failure threshold, 10^{-3} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN))
AID (type)	OC-N Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERL
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	OC3, OC12, OC48, or OC192
Description	inc. OC3 sig. failed, inc. OC12 sig. failed, inc. OC48 sig. failed, or inc. OC192 sig. failed
Likely Cause	Failure of the OC-N OLIU circuit pack at the near-end, failure of the receive fiber, or failure of the OLIU circuit pack at the far-end. An OLIU carrying service or unprotected failed - CR (SA). A protection (not active) or protected OLIU failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 535: Clear “inc. OCN” Alarms (4-203) .



inc. STS-1 LOM

inc. STS-1 LOM

For ring applications, the system has detected a loss of multiframe (LOM), or the specified STS-N exceeds the signal fail threshold 10^{-3} or 10^{-6} .

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	STS-1 Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOM
Affect on Service	SC
Alarm Entity Type	STS1
Description	inc. STS-1 LOM
Likely Cause	Circuit failure in an Ethernet circuit pack (near end [NE] or far end [FE]) that terminates the associated VCG. May be caused by a misrouted STS-1.
Visible indication	None
Action	Proceed to Task 536: Clear “inc. STS-1 LOM” Condition (4-209) .



inc. STS-1 SQM

inc. STS-1 SQM The system has detected a sequence number mismatch (SQM) in an incoming STS-1.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	STS-1 Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SQM
Affect on Service	SC
Alarm Entity Type	STS1
Description	inc. STS-1 SQM
Likely Cause	Circuit failure in an Ethernet circuit pack (near end [NE] or far end [FE]) that terminates the associated VCG. May be caused by a misrouted STS-1.
Visible indication	None
Action	Proceed to Task 537: Clear “inc. STS-1 SQM” Condition (4-215) .



inc. STSN AIS

inc. STSN AIS The system has detected an incoming STS-1 alarm indication signal (AIS) in an OC-3/OC-12/OC-48/OC-192 or EC-1 line.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN), Not Alarmed (Standing Condition) Important! MN is the default level.
AID (type)	STS-1, STS-3c, STS-12c, or STS-48c Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	AIS
Affect on Service	CR = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	STS1, STS3C, STS12C, or STS48C
Description	inc. STS1 AIS, inc. STS3C AIS, inc. STS12C AIS, or inc. STS48C AIS
Likely Cause	Incomplete or incorrect cross-connect provisioning in an end-to-end network; unprotected removal or failure of a 28DS1/28DS1PM, 12DS3/EC1, TMUX, or OC-3/OC-12/OC-48/OC-192 OLIU circuit pack at the far-end; unprotected optical line failure.
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 538: Clear “inc. STSN” Conditions/Alarms (4-221) .



inc. STSN LOP

inc. STSN LOP The system has detected a loss-of-pointer (LOP) condition. A valid STS-N pointer could not be found for eight consecutive frames in the identified STS-N signal.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	STS-1, STS-3c, STS-12c, or STS-48c Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOP
Affect on Service	CR = SA/ MN = NSA
Alarm Entity Type	STS1, STS3C, STS12C, or STS48C
Description	inc. STS1 LOP, inc. STS3C LOP, inc. STS12C LOP, or inc. STS48C LOP
Likely Cause	If this condition occurs on only one OC-N line, the likely cause is failure of an OC-N OLIU circuit pack at the near-end or far-end of the line. If the condition affects the same pointer in both OC-N lines of an OC-N interface, the cause could be unprotected failure of an STS cross-connected circuit pack (DS3) in the adjacent upstream network element or cross-connect mismatch between STS-1, STS-3c, STS-12c, STS-48c. A pack carrying service or unprotected failed - CR (SA). A protection (not active) or protected pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 538: Clear “inc. STSN” Conditions/Alarms (4-221) .



inc. STSN RDI-P

inc. STSN RDI-P

The system has detected a remote defect indication path (RDI-P) indicating that the receiving terminal has detected an incoming signal failure. Previously called Yellow (YEL).

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	STS-1, STS-3c, STS-12c, or STS-48c Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	YEL
Affect on Service	SC
Alarm Entity Type	STS1, STS3C, STS12C, or STS48C
Description	inc. STS1 RDI-P, inc. STS3C RDI-P, inc. STS12C RDI-P, or inc. STS48C RDI-P
Likely Cause	An upstream STS-N cross-connect has been deleted; an upstream failure (for example, LOS or LOF) has been detected.
Visible indication	None
Action	Proceed to Task 538: Clear “inc. STSN” Conditions/Alarms (4-221) .



inc. STSN sig degrade (BER)

inc. STSN sig degrade (BER)

For STS-N path switched ring applications, the bit error ratio (BER) of the specified STS-N signal exceeds the provisioned soft error threshold, 10^{-6} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	STS-1, STS-3c, STS-12c, or STS-48c Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERP
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	STS1, STS3C, STS12C, or STS48C
Description	inc. STS1 sig degrade (BER), inc. STS3C sig degrade (BER), inc. STS12C sig degrade (BER), or inc. STS48C sig degrade (BER)
Likely Cause	Failure at a fiber or failure of an OC-N OLIU circuit pack at some point in the STS-N path. A pack carrying service or unprotected failed - CR (SA). A protection (not active) or protected pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 538: Clear “inc. STSN” Conditions/Alarms (4-221) .



inc. STSN sig failed (BER)

inc. STSN sig failed (BER)

For STS-N path switched ring applications, the bit error ratio (BER) of the specified STS-N signal exceeds the provisioned soft error threshold, 10^{-3} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	STS-1, STS-3c, STS-12c, or STS-48c Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERP
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	STS1, STS3C, STS12C, or STS48C
Description	inc. STS1 sig failed (BER), inc. STS3C sig failed (BER), inc. STS12C sig failed (BER), or inc. STS48C sig failed (BER)
Likely Cause	Failure of the near-end OC-N OLIU circuit pack reporting the STS-N failure, failure of the far-end OLIU, failure of the receive fiber if the OC-N is also reporting a failure, or failure of a nonadjacent fiber in the receive path. A pack carrying service or unprotected failed - CR (SA). A protection (not active) or protected pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 538: Clear “inc. STSN” Conditions/Alarms (4-221) .



inc. STSN unequipped

inc. STSN unequipped The system has detected the unequipped code (SONET path overhead signal code label byte=0) on an in-service STS-N channel.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	STS-1, STS-3c, STS-12c, or STS-48c Ring Channel (Path pair)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SLMF
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	STS1, STS3C, STS12C, or STS48C
Description	inc. STS1 unequipped, inc. STS3C unequipped, inc. STS12C unequipped, or inc. STS48C unequipped
Likely Cause	An upstream STS-N cross-connect error was made or a cross-connect was deleted. A pack carrying service or unprotected failed - CR (SA). A protection (not active) or protected pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 538: Clear “inc. STSN” Conditions/Alarms (4-221) .



inc. VCG Fail

inc. VCG Fail Indicates a failure condition in an incoming virtual concatenation group (VCG). The failure of any STS-1 in the VCG causes a VCG failure.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	VCG
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOS
Affect on Service	SA
Alarm Entity Type	VCG
Description	inc. VCG Fail
Likely Cause	Circuit failure in an Ethernet circuit pack (near end [NE] or far end [FE]) or an intermediate SONET circuit pack. Cross-connect error in one or more STS-1s in the VCG.
Visible indication	Lighted CR LED on SYSCTL faceplate.
Action	Proceed to Task 539: Clear “inc. VCG Fail” Alarm (4-227) .



inc. VT AIS

inc. VT AIS The system has detected a virtual tributary (VT) path alarm indication signal (AIS) incoming from the active OC-N line. The system responds by transmitting DS1 AIS toward the DSX-1 and VT RDI-V back toward the fiber from which the AIS is being received.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN), Not Alarmed (Standing Condition) Important! MN is the default level.
AID (type)	VT1.5 Ring Channel (Path)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	AIS
Affect on Service	MJ = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	VT1
Description	inc. VT AIS
Likely Cause	Incomplete or incorrect cross-connect provisioning in end-to-end network; unprotected removal or failure of a DS1 circuit pack at the far-end. In ring applications, a non-service affecting VT AIS alarm message may result from an upstream OLIU or fiber failure affecting only one ring direction. A VT RDI-V alarm message is not returned for a non-service affecting VT AIS.
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 540: Clear “inc. VT” Conditions/Alarms (4-233) .



inc. VT LOP

inc. VT LOP The system has detected a virtual tributary (VT) loss-of-pointer (LOP) condition. A valid VT pointer could not be found for eight consecutive frames in the identified virtual channel.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	VT1.5 Ring Channel (Path)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LOP
Affect on Service	MJ = SA MN = NSA
Alarm Entity Type	VT1
Description	inc. VT LOP
Likely Cause	Unprotected failure of the OC-N OLIU at the near-end; failure of an OLIU or DS1 circuit pack at the far-end. A pack carrying service or unprotected failed - MJ (SA). A protection (not active) or protected pack failed - MN (NSA).
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 540: Clear “inc. VT” Conditions/Alarms (4-233) .



inc. VT RDI-V

inc. VT RDI-V The system has detected a remote defect indication VT (RDI-V) indicating that the receiving terminal has detected an incoming signal failure. Previously called Yellow (YEL)

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	VT1.5 Ring Channel (Path)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	YEL
Affect on Service	SC
Alarm Entity Type	VT1
Description	inc. VT RDI-V
Likely Cause	Alarm condition detected at the far-end OLIU.
Visible indication	None
Action	Proceed to Task 540: Clear “inc. VT” Conditions/Alarms (4-233) .



inc. VT sig degrade (BER)

inc. VT sig degrade (BER)

In a virtual tributary (VT) path switched ring, the system has detected a VT error rate that exceeds the provisioned threshold, 10^{-6} (default).

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	VT1.5 Ring Channel (Path)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	T-BERP
Affect on Service	MJ = SA MN = NSA
Alarm Entity Type	VT1
Description	inc. VT sig degrade (BER)
Likely Cause	An OC-N OLIU circuit pack failure or a fiber failure at some point on the failed ring. A pack carrying service or unprotected failed - MJ (SA). A protection (not active) or protected pack failed - MN (NSA).
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 540: Clear “inc. VT” Conditions/Alarms (4-233) .



inc. VT unequipped

inc. VT unequipped The system has detected the unequipped code (SONET path overhead VT signal code label byte=0) on an in-service VT1.5 channel.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	VT1.5 Ring Channel (Path)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SLMF
Affect on Service	MJ = SA MN = NSA
Alarm Entity Type	VT1
Description	inc. VT unequipped
Likely Cause	An upstream VT1.5 cross-connect has been deleted. A pack carrying service or unprotected failed - MJ (SA). A protection (not active) or protected pack failed - MN (NSA).
Visible indication	Lighted MJ or MN LED on SYSCTL faceplate.
Action	Proceed to Task 540: Clear “inc. VT” Conditions/Alarms (4-233) .



Inconsistent APS Codes

Inconsistent APS Codes

In bidirectional line-switched rings (BLSRs), there is a rolling window of 12 frames in which 3 consecutive frames must have identical K-bytes. If this requirement is violated, an inconsistent APS codes alarm is generated.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	OC-48 or OC-192 line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	APSC
Affect on Service	NSA
Alarm Entity Type	OC48 OC192
Description	Inconsistent APS Codes
Likely Cause	A node in the BLSR is isolated due to • A fiber cut • A high-speed (main) OC-48/OC-192 OLIU circuit pack failure • A SYSCTL circuit pack failure, reset, or initialization • An inc. OC-48/OC-192 sig. degrade alarm at some point on the BLSR.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 541: Clear “Inconsistent APS Codes” Alarm (4-239) .



inconsistent DCC switches

inconsistent DCC switches The “User/Network” parameter values are set the same at both ends of the DCC.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	Section Data Communications Channel (DCC)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EOC
Affect on Service	NSA
Alarm Entity Type	COM
Description	inconsistent DCC switches
Likely Cause	Fibers are misconnected or user network parameter was incorrectly provisioned.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 542: Clear “inconsistent DCC switches” Alarm (4-243) .



Inconsistent Ring Prot Mode

Inconsistent Ring Prot Mode

Some nodes in the BLSR are provisioned as UPSR.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	BLSR Protection Group
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	RNG-IRPM
Affect on Service	NSA
Alarm Entity Type	COM
Description	Inconsistent Ring Prot Mode
Likely Cause	An NE that is provisioned as a UPSR was added to the BLSR ring map.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 543: Clear “Inconsistent Ring Prot Mode” Alarm (4-249) .



inhibit switch

inhibit switch Inhibited switch to protection, the active and protection states of a 1+1 protected equipment pair is cannot be changed. Also indicates automatic sync. reference switching is inhibited.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Slot Synch reference (external)
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	INHSWPR
Affect on Service	SC
Alarm Entity Type	EQPT = slot T1 = Synch reference (external)
Description	inhibit switch
Likely Cause	From the WaveStar® CIT System View, selected Fault > Protection Switch and highlighted a 1+1 Equip Portection Group and provisioned the Switch Type as Inhibit . From the WaveStar® CIT System View, selected Fault > Timing/Synch Protection Switch > System Timing Reference/Source Switch and selected the Switch Command Inhibit .
Visible indication	Lighted ABN LED on the SYSCTL faceplate.
Action	Proceed to Task 544: Clear “inhibit switch” Condition (4-253) .



install program IP

install program IP

A new software generic is currently being downloaded to the dormant area of the NE.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	SWFTDWN
Affect on Service	SC
Alarm Entity Type	COM
Description	install program IP
Likely Cause	From the WaveStar® CIT System View, selected Configuration > Software > Software Download.
Visible indication	None.
Action	No action necessary. Condition clears when download is complete.



Line Automatic Switch

Line Automatic Switch An automatic BLSR protection switch occurred in response to a signal degrade or failed condition.

Alarm Data	Value/Meaning
Alarm Level(s)	Minor (MN)
AID (type)	OC-48/OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	LAS
Affect on Service	NSA
Alarm Entity Type	OC48, OC192
Description	Line Automatic Switch
Likely Cause	An inc. OC-48/OC-192 sig degrade or inc. OC-48/OC-192 sig failed alarm was detected at some point on the BLSR.
Visible indication	Lighted MN LED on SYSCTL faceplate.
Action	Proceed to Task 545: Clear “Line Automatic Switch” Alarm (4-257) .



lockout of protection

lockout of protection

Selection of the protection line of the 1+1 protected OC-N line pair is prevented, until the condition is cleared. If the protection tributaries are currently selected when this request is issued, traffic switches back to the service tributaries.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	OC-N Line pair
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	INHSWPR
Affect on Service	SC
Alarm Entity Type	OC3, OC12, OC48
Description	lockout of protection
Likely Cause	From the WaveStar [®] CIT System View, selected Fault > Protection Switch and highlighted 1+1 Line Protection Group, and provisioned the Switch Type as Lockout .
Visible indication	Lighted ABN LED on the SYSCTL faceplate.
Action	Proceed to Task 546: Clear “lockout of protection” Condition (4-265) .



manual sync. mode switch

manual sync. mode switch System timing has been forced to holdover.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	HLDOVRSYNC
Affect on Service	SC
Alarm Entity Type	T1
Description	manual sync. mode switch
Likely Cause	From the WaveStar® CIT System View, selected Fault > Timing/Sync Protection Switch > Clock Mode Switch and selected the Switch Command HLDOVR. From the WaveStar® CIT System View, selected Fault > Timing/Sync Protection Switch > System Timing Reference/Source Switch and selected the Switch Command Manual.
Visible indication	None.
Action	Proceed to Task 547: Clear “manual sync. mode switch” Condition (4-269) .



Node ID Mismatch

Node ID Mismatch

The Node ID Mismatch alarm is generated when:

- The received Source Node ID does not match an entry in the node's ring map.
- The Destination Node ID is equal to the node's own Node ID and the Source Node ID is not an adjacent node according to the node's ring map.
- The received Destination Node ID in a short path message is not equal to the node's own Node ID or the Source Node ID is not an adjacent node according to the node's ring map.
- The Destination Node ID is equal to the node's own Node ID and the Source Node ID is not an adjacent node according to the node's ring map.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	OC-48, OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	NID-CONFL
Affect on Service	NSA
Alarm Entity Type	OC48 OC192
Description	Node ID Mismatch
Likely Cause	The manual ring map was not provisioned correctly.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 548: Clear "Node ID Mismatch" Alarm (4-271) .



NTP server(s) unreachable

NTP server(s) unreachable The NE is provisioned for network time protocol (NTP) and the NE cannot communicate with the NTP server.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	OC-48, OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	MISC
Affect on Service	SC
Alarm Entity Type	COM
Description	NTP server(s) unreachable
Likely Cause	Incorrect provisioning of the NTP feature, Lan or network failures.
Visible indication	None.
Action	Proceed to Task 549: Clear “NTP server(s) unreachable” Condition (4-281) .



OLIU CP failed

OLIU CP failed

Internal equipment failure of the specified OC-3/OC-12/OC-48/OC-192 OLIU circuit pack or communications problem between the pack and the system controller (SYSCTL) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	OC3TERM OC12TERM OC48TERM OC192TERM
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	OLIU CP failed
Likely Cause	A OLIU circuit pack carrying service or unprotected failed - CR (SA). A protection (not active) or protected OLIU circuit pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL faceplate.
Action	Proceed to Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs (5-39) or Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49) .



Protection switch, OC48/192 port, Forced switch, FSR, 2F

Protection switch, OC48/192 port, Forced switch, FSR, 2F

The protection tributaries (in the specified direction [East or West] on the 2-fiber BLSR) are selected unless there is an existing lockout or forced protection switching request.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	OC-48/OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	WKSWPR-2 - switch to protection WKSWBK - switch back to working GP - change in the state of the switching algorithm, but no change in the switch selection state
Affect on Service	SC
Alarm Entity Type	OC48 OC192
Description	Protection Switch, OC48 port, Forced switch, FSR, 2F Protection Switch, OC192 port, Forced switch, FSR, 2F
Likely Cause	User executed a manual switch on the 2-fiber BLSR via the WaveStar [®] CIT command: Fault > Protection Switch and selected Force To Protection, Ring.
Visible indication	Lighted ABN LED on the SYSCTL faceplate.
Action	Proceed to Task 550: Clear “Protection switch, OC-N port, Forced switch, FSR, 2F” Condition (4-285) .



Protection switch, OC48/192 port, Lockout switch, LSP, 2F

Protection switch, OC48/OC192 port, Lockout switch, LSP, 2F

Selection of the protection tributaries (in the specified direction [East or West] on the 2-fiber BLSR) is prevented, until the condition is cleared. If the protection tributaries are currently selected when this request is issued, traffic switches back to the service tributaries.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	OC-48/OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	WKSWPR-2 - switch to protection WKSWBK - switch back to working GP - change in the state of the switching algorithm, but no change in the switch selection state
Affect on Service	SC
Alarm Entity Type	OC48 OC192
Description	Protection Switch, OC48 port, Lockout switch, LPS, 2F Protection Switch, OC192 port, Lockout switch, LPS, 2F
Likely Cause	User executed a manual switch on the 2-fiber BLSR via the WaveStar [®] CIT command: Fault > Protection Switch and selected Lockout Of Protection, Span.
Visible indication	Lighted ABN LED on the SYSCTL faceplate.
Action	Proceed to Task 551: Clear “Protection switch, OC-N port, Lockout switch, LPS, 2F” Condition (4-289) .



Protection switch, OC48/192 port, Manual switch, MSR, 2F

Protection switch, OC48/192 port, Manual switch, MSR, 2F

The protection tributaries (in the specified direction [East or West] on the 2-fiber BLSR) are selected, provided they are good and there are no existing higher priority protection switching requests.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	OC-48/OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	WKSWPR-2 - switch to protection WKSWBK - switch back to working GP - change in the state of the switching algorithm, but no change in the switch selection state
Affect on Service	SC
Alarm Entity Type	OC48 OC192
Description	Protection Switch, OC48 port, Manual switch, MSR, 2F Protection Switch, OC192 port, Manual switch, MSR, 2F
Likely Cause	User executed a manual switch on the 2-fiber BLSR via the WaveStar® CIT command: Fault > Protection Switch and selected Manual To Protection, Ring.
Visible indication	Lighted ABN LED on the SYSCTL faceplate.
Action	Proceed to Task 552: Clear “Protection switch, OC-N port, Manual switch, MSR, 2F” Condition (4-293) .



Ring Discovery In Progress

Ring Discovery In Progress

The system is in the process of searching for a provisioned BLSR or searching for neighbors or nodes newly added to an existing ring map.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	BLSR Protection Group
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	RNG-DSCVY
Affect on Service	SC
Alarm Entity Type	COM
Description	Ring Discovery In Progress
Likely Cause	Metropolis [®] DMX has been added to a ring and the system is searching for the existing ring map.
Visible indication	None
Action	No action necessary. Wait for Automatic Ring Discovery to complete a valid ring map.



Ring Incomplete

Ring Incomplete The during automatic ring discovery, the ring map could not be completed. Each ring node gets five chances to establish a correct ring topology, at intervals of one minute.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	BLSR Protection Group
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	RNG-INC
Affect on Service	NSA
Alarm Entity Type	COM
Description	Ring Incomplete
Likely Cause	Manual ring map provisioning was not applied or was the ring map was not provisioned correctly. During auto discovery, the ring map could not be completed, because • ring discovery timed-out (5 minutes) • no OSI association to the neighboring nodes • no LinkID or LinkID mismatch
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 553: Clear “Ring Incomplete” Alarm (4-297) .



Ring Prot Switching Suspended

Ring Prot Switching Suspended

Ring protection switching is temporarily suspended due to the lack of a valid ring map or a node does not yet have a Node ID.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	OC-48 or OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	OVRDSW
Affect on Service	NSA
Alarm Entity Type	OC48 OC192
Description	Ring Prot Switching Suspended
Likely Cause	A new node is introduced to the ring and does not have a ring map, or the ring map is invalid; ring protection switching for that BLSR is disabled.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 554: Clear “Ring Prot Switching Suspended” Alarm (4-309) .



Ring Upgrade Mode

Ring Upgrade Mode The system is upgrading and OC-48 UPSR to an OC-192 UPSR.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	RINGUPGRADE
Affect on Service	SC
Alarm Entity Type	COM
Description	Ring Upgrade Mode
Likely Cause	A UPSR is being upgraded
Visible indication	None.
Action	No action necessary. Condition clears automatically when a ring upgrade is complete.



section DCC channel failed

section DCC channel failed

The system cannot communicate with the far-end system through the SONET section data communications channel (DCC) or IAO LAN.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Section Data Communications Channel (DCC) or IAO LAN
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	EOC
Affect on Service	MJ and MN = NSA
Alarm Entity Type	COM
Description	section DCC channel failed
Likely Cause	SYSCCTL circuit pack failure, reset, or initialization at the far-end; failed program installation at far-end; program installation in progress at the far-end; OC-N OLIU circuit pack failure at the near-end.
Visible indication	Lighted MJ or MN LED on SYSCCTL
Action	Proceed to Task 555: Clear “section DCC channel failed ” Alarm (4-313) .



SYSCTL CP failed

SYSCTL CP failed

Internal equipment failure of the SYSCTL circuit pack.

While this alarm is resnt, some types of failures cannot be reported because the SYSCTL circuit pack cannot function under these conditions.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	CONTR
Affect on Service	NSA
Alarm Entity Type	EQPT
Description	SYSCTL CP failed
Likely Cause	Internal equipment failure of the SYSCTL circuit pack.
Visible indication	None or lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 608: Replace SYSCTL (LNW1) Circuit Pack (5-63) .



Temporarily NUT Provisioned

Temporarily NUT Provisioned

A node in the BLSR in a local NUT configuration has a timeslot set to Temp Not Protected.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	BLSR Protection Group
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	NUTTMPPRV
Affect on Service	SC
Alarm Entity Type	COM
Description	Temporarily NUT provisioned
Likely Cause	User selected the WaveStar® CIT command: Configuartion > Provision , selected a 2F BLSR protection group and provisioned the NUT feature.
Visible indication	None.
Action	Proceed to Task 556: Clear “Temporarily NUT Provisioned” Condition (4-319) .



TMUX CP failed

TMUX CP failed Internal equipment failure of the specified TMUX circuit pack or communications problem between the pack and the system controller (SYSCTL) was detected on SYSCTL

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	TMUXTERM
Affect on Service	CR = SA MN = NSA
Alarm Entity Type	EQPT
Description	TMUC CP failed
Likely Cause	A TMUX circuit pack (LNU18) carrying service or unprotected failed - CR (SA). A protection (not active) or protected TMUX circuit pack failed - MN (NSA).
Visible indication	Lighted CR or MN LED on SYSCTL
Action	Proceed to Task 620: Replace TMUX (LNU18) Circuit Pack (5-185) .



Traffic Squelched

Traffic Squelched

Multiple failures have isolated a node or nodes in a ring. At switching nodes, an alarm indication signal (AIS) is inserted on any traffic coming to/from an isolated node(s) to protect against improperly connecting traffic. Extra traffic, if supported, is squelched at the drop nodes.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	OC-48 or OC-192 Line
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	RNG-SQUELCH
Affect on Service	NSA
Alarm Entity Type	OC48 OC192
Description	Traffic Squelched
Likely Cause	Ring segmentation due to multiple failures in the ring; inc. OC-48/OC-192 line AIS, inc. OC-48/OC-192 LOS, or inc. OC-48/OC-192 LOF alarms are detected at two nodes on the ring; node power failure at another node in the ring; simultaneous forced switches on different spans in the ring.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 557: Clear “Traffic Squelched” Alarm (4-323) .



unexpected CP type

unexpected CP type

This alarm indicates that a different but supported circuit pack is inserted in a slot that is already already provisioned for another type of circuit pack

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	FETERM, GETERM, OC192TERM, OC48TERM, OC12TERM, OC3TERM, T1TERM, T3TERM, TMUXTERM
Affect on Service	CR = SA (all TERM types except T1TERM) MJ = SA (only T1TERM) MN = NSA (all TERM types)
Alarm Entity Type	EQPT
Description	unexpected CP type
Likely Cause	The wrong circuit pack was inserted into an active slot that was carrying unprotected service. - CR (SA). 28DS1/28DS1PM circuit pack was inserted into the wrong slot - MJ (SA). The wrong circuit pack was inserted into a protection (not active) slot - MN (NSA).
Visible indication	Lighted CR, MJ (T1TERM), or MN LED on SYSCTL faceplate.
Action	Proceed to Task 557: Clear “Traffic Squelched” Alarm (4-323) .



Unknown Ring Type

Unknown Ring Type Metropolis[®] DMX does not recognize the ring type.

Alarm Data	Value/Meaning
Alarm Level(s)	Not Alarmed (Standing Condition)
AID (type)	BLSR Protection Group
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	RNG-URT
Affect on Service	SC
Alarm Entity Type	COM
Description	Unknown Ring Type
Likely Cause	Automatic ring discovery did not time out but the ring type could not be determined.
Visible indication	None.
Action	Proceed to Task 559: Clear “Unknown Ring Type ” Condition (4-337) .



X.25 communication failure

X.25 communication failure X.25 link failure.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	Blank
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	MISC
Affect on Service	NSA
Alarm Entity Type	COM
Description	X.25 communication failure
Likely Cause	X.25 packet network is down.
Visible indication	Lighted MJ LED on SYSCTL faceplate.
Action	Proceed to Task 560: Clear “X.25 communication failure” Alarm (4-341) .





3 Maintenance Overview

| Overview

Purpose This chapter provides an overview of maintenance issues in the Metropolis[®] DMX Access Multiplexer.

Contents The following topics are discussed in this chapter:

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Introduction

Overview This chapter defines the maintenance philosophy and describes the features available to monitor and maintain Metropolis[®] DMX Access Multiplexer (Metropolis[®] DMX).

Objectives This chapter provides information to perform the following

- Define the maintenance philosophy for Metropolis[®] DMX.
- Recognize the types of protection switching performed by Metropolis[®] DMX
- Describe the features that are available to monitor and maintain Metropolis[®] DMX

Related tasks For related tasks, refer to [Chapter 4, “Trouble Clearing Tasks”](#) in this document.



System Maintenance using the WaveStar® CIT

Overview The Metropolis® DMX shelf is controlled using a PC and a PC-based control program. The two are collectively referred to as the WaveStar® Craft Interface Terminal (or WaveStar® CIT). Using the WaveStar® CIT, maintenance personnel can control and monitor the performance of a Metropolis® DMX shelf, either locally using a serial line and one of the two RS-232 serial ports on the shelf, or remotely using the Metropolis® DMX TCP/IP interface.

WaveStar® CIT introduction The WaveStar® CIT provides three basic methods for controlling the Metropolis® DMX shelf using either the

- TL1 command-line interface (cut-through)
- TL1 Type Command Builder
- graphical user interface (GUI)

Reference Refer to [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#) in [Chapter 5, “Supporting Tasks”](#) for additional information about the WaveStar® CIT.



Maintenance Philosophy

Overview Metropolis[®] DMX allows operation and maintenance of network elements in a network from a centralized location. Metropolis[®] DMX continuously monitors the equipment and incoming signals, and reports any current or potential troubles. This enables the user to take the appropriate corrective action.

Types of maintenance Metropolis[®] DMX supports proactive and reactive maintenance.

Proactive maintenance

Proactive maintenance refers to the process of detecting degrading conditions not severe enough to initiate protection switching or alarming, but indicative of an impending failure.

Proactive maintenance consists of monitoring performance parameters associated with the SONET sections, lines, and paths within the network. Metropolis[®] DMX also monitors Ethernet parameters such as bytes and frames.

Reactive maintenance

Reactive maintenance occurs after a failure. The LEDs on the circuit pack faceplates report internal troubles. Most troubles can be detected and corrected at this level. The optical network (ON) craft interface terminal (CIT) or TL1 interface may be used to retrieve detailed reports about performance monitoring, alarm and status, and configurations for network elements in a network. Metropolis[®] DMX can also be configured for TCP/IP interface conforming with standard IEEE 802.3.



Maintenance Signals

Overview Metropolis[®] DMX provides maintenance signaling compliant with the SONET standard (ANSI T1.105). When Metropolis[®] DMX detects failure conditions on transmission signals, maintenance signals are inserted into the transmission signals in the upstream or downstream direction to notify other network elements.

Metropolis[®] DMX supports the following maintenance signals:

- Alarm indication signals (AIS)
- Remote defect indication (RDI) signals
- Signal degrade and signal fail (BER)
- Path unequipped signals

Alarm indication signals (AIS) Alarm indication signals (AIS) notify downstream equipment that a failure has been detected and alarmed by some upstream equipment. Metropolis[®] DMX generates the following alarm indication signals:

- SONET path AIS: A SONET path AIS signal is generated downstream after a loss of signal (LOS), loss of frame (LOF) or loss of pointer (LOP) condition is detected on the incoming SONET signal. (SONET Path AIS is a combination of STS-N AIS and VT AIS.)
- STS-N AIS: An STS AIS signal is generated in the OC-N transmit direction after a loss of signal (LOS) or loss of frame (LOF) condition is detected on the incoming STS channel.
- VT AIS: A virtual tributary (VT) AIS signal is generated in the OC-N transmit direction after a loss of pointer (LOP) or signal degradation is detected in the incoming VT signal path.

Remote defect indication (RDI) signals

Remote defect indication (RDI) signals notify upstream equipment that a downstream failure has been detected. Metropolis[®] DMX generates the following remote defect indication signals:

- **EC-1 line RDI signal:** An EC-1 line RDI signal is generated upstream after a LOS, LOF, or line AIS condition is detected on the incoming EC-1 signal.
- **SONET line RDI signal:** A SONET OC-N line RDI signal is generated in the OC-N transmit direction after a loss of signal (LOS) or loss of frame (LOF) condition is detected on the incoming SONET signal.
- **SONET path RDI signal:** A SONET STS-N path RDI signal is generated upstream after a loss of pointer (LOP) or path alarm indication signal is detected on the incoming SONET signal.
- **SONET virtual tributary RDI signal:** A SONET virtual tributary (VT) RDI signal is generated upstream after a loss of pointer (LOP) or a VT alarm indication signal (AIS) is detected on the incoming VT channel.

Important! RDI-P/RDI-V is not reported at non-path terminating points because it is not actionable and because the service affected is by definition not terminated at that node.

Path unequipped signals

Metropolis[®] DMX supports STS-N and VT1.5 path unequipped signals. Path unequipped signals are transmitted to notify downstream equipment that the path is incomplete (for example, a slot in the OOS-MA-AS state or the absence of a valid cross-connection).



Alarm and Status Conditions Reporting

Overview Metropolis® DMX continuously monitors its internal condition and incoming signals according to the state of the tributaries and ports.

Fault detection If a port or tributary is in the IS (in service) state, Metropolis® DMX monitors the port/tributary and activates the appropriate indicators when a failure occurs. The following table shows the incoming signals and the associated failures Metropolis® DMX monitors and detects. Refer to [Chapter 1, “Alarm List”](#) for a complete list of alarms and status conditions.

Table 3-1 Monitored and Detected Incoming Signal Failure Conditions

Incoming Signals	Monitored/Detected Failures
DS1 ¹	inc. (from DSX) DS1 LOS inc. (from DSX) DS1 sig. failed (BER)
DS1 sync. ref.	inc. DS1 sync. ref. AIS inc. DS1 sync. ref. BER inc. DS1 sync. ref. EEOF inc. DS1 sync. ref. LOF inc. DS1 sync. ref. LOS inc. DS1 sync. ref. OOL
DS3 ²	inc. (from fiber) DS3 AIS inc. (from fiber) DS3 LOS inc. (from DSX) DS3 OOF inc. (from DSX) DS3 sig. failed (BER) inc. DS3 CBit Mismatch
EC-1	inc. EC1 line AIS inc. EC1 LOF inc. EC1 LOS inc. EC1 sig. failed (BER) inc. EC1 sig. degrade (BER)

Incoming Signals	Monitored/Detected Failures
10/100BASE-TX Ethernet or 1000BASE-SX/LX optical Ethernet	inc. VCG failed inc. GELAN LOS inc. GELAN ANM inc. FELAN LOS inc. FELAN ANM
OC-192 OC-48 OC-12 OC-3	inc. OCN line AIS inc. OCN LOF inc. OCN LOS inc. OCN RDI-L inc. OCN sig. degrade (BER) inc. OCN sig. failed (BER)
STS-48c STS-12c STS-3c STS-1	inc. STS1 RDI-P inc. STSN AIS inc. STSN LOP inc. STSN sig. degrade (BER) inc. STSN sig. failed (BER) inc. STSN unequipped
VT1.5	inc. VT AIS inc. VT LOP inc. VT RDI-V inc. VT sig. degrade (BER) inc. VT unequipped

Notes:

1. The BER thresholds for DS1 are based on bipolar 8-zero substitution (B8ZS) or alternate mark inversion (AMI) violations depending on line coding.
2. The BER thresholds for DS3 are based on bipolar 3-zero substitution (B3ZS) coding violations.

Fault isolation When a failure is detected, Metropolis® DMX employs automatic diagnostics to isolate the failed circuit pack or signal. Most failures are isolated to an incoming signal failure (inc. sig. failed) or to a single circuit pack, but some failures may be isolated to more than one circuit pack. Failures are reported to the local technician and operations systems so that repair decisions can be made. If desired, operations system personnel and the local technician can use the WaveStar® CIT to gain more detailed information on the trouble condition.

Fault reporting All failures detected and isolated by Metropolis® DMX are stored and made available to be reported, on demand, through the WaveStar® CIT. In addition, a history of the past 500 notifications is maintained and available for on-demand reporting. Each alarm notification is date and time stamped.

If the diagnostic determines that a circuit pack has failed, the red **FAULT** LED on that circuit pack is turned on. If an incoming electrical signal from the DSX fails, the red **FAULT** LED on the affected circuit pack flashes on and off in one-second intervals. A failed incoming optical signal has the same effect.

Metropolis® DMX provides alarm holdoff and clear delays. The alarm holdoff delays prevent transient failures from causing unnecessary maintenance activity. The office alarms are not activated, and the operating systems (OSs) are not notified until a failure lasts at least as long as the alarm holdoff delay. Alarm clear delays prevent premature clearing of alarms. Alarm indications are not cleared until a fault condition has been clear for at least as long as the alarm clear delay.

Service affecting (SA) vs. non-service affecting (NSA) Metropolis® DMX declares an alarm service affecting (SA) or non-service affecting (NSA) based on protection switch status. A condition is declared "NSA" (non-service affecting) if the system is successfully providing protection switching in response to the condition, or if the failed entity (circuit pack or signal) is in the standby (not active) state. If protection switching is not successful, or if the entity is unprotected, the condition is declared "SA" (service affecting).

Alarm masking

Metropolis[®] DMX automatically masks (suppresses the reporting of) secondary or consequential conditions, allowing the operator to quickly identify the root cause of a problem and the services that are affected.

To minimize the number of alarm conditions reported by an NE, related alarms/status conditions are arranged in hierarchical groups. When more than one alarm or status condition in a hierarchical group exists in a single NE, only the top level condition in that hierarchy is reported.

As a result, Metropolis[®] DMX reports alarm conditions that either

- are (or might be) directly actionable at the NE, OR
- do (or might) affect service to a customer.

Important! Service affecting (SA) conditions are never masked.

Metropolis[®] DMX does NOT report (in other words, Metropolis[®] DMX masks) alarm conditions that are both

- the direct consequence of another condition that is detected and reported by the system, AND
- not actionable; that is, cannot be repaired or corrected directly, but can be repaired or corrected by clearing the other condition of which this condition is a direct consequence.

Important! Pre-existing lower-level alarms within a hierarchical group are masked (cleared for the alarm list) when a higher level alarm is detected and reported

Example

Consider a DS1 service for which VT1.5 UPSR protection is provided.

1. An STS-1 AIS is detected on the associated STS-1 tributary on one side of the ring and the condition is reported as a non-service-affecting inc. STS-1 AIS.
2. A VT AIS is generated in response to the STS-1 AIS. This condition is **masked** (not reported) because it is internally generated by a reported condition and it is not service affecting (because the system automatically switches to the signal received on the other side of the ring).
3. The system then detects a VT1.5 AIS on the signal received on the other side of the ring. Because the system is not able to switch to the other side of the ring, this second VT1.5 AIS is reported as an service-affecting inc. VT AIS.



Protection Switching

Overview Metropolis® DMX provides different types of protection switching, described in the subsequent sections of this chapter:

- “2-Fiber Bidirectional Line-Switched Ring (BLSR) Switching” (3-15)
- “Unidirectional Path-Switched Ring Switching” (3-21)
- “1+1 Line Protection Switching” (3-24)
- “1+1 Equipment Protection Switching” (3-25)
- “Spanning Tree” (3-26)
- “Synchronization Reference Protection Switching” (3-27)

Application modes There are four types of protection modes applicable to the optical interfaces (line pairs) as shown below:

- BLSR: The “BLSR” application mode provides revertive, bidirectional ring line protection switching on high-speed OC-48 and OC-192 interfaces (main OC-48 and OC-192 OLIUs). This option is user-provisionable on a per-port basis.
- BLSR: The “BLSR” application mode provides revertive, bidirectional ring line protection switching on low-speed OC-48 a (LS OC-48 OLIUs [LNW31]). This option is user-provisionable on a per-port basis.
- UPSR (1+1): The “UPSR” application mode, used in 1+1 protected configurations, provides unidirectional STS-N/VT1.5 ring path protection switching on low-speed OC-3, OC-12, and OC-48 interfaces and high-speed OC-48 and OC-192 interfaces. This option is user-provisionable on a per-port basis and supports single- and dual-homed ring-on-ring topologies.
- 1+1: The “1+1” application mode, provides SONET 1+1 protection for OC-3, OC-12, and OC-48 line pairs. This option is user-provisionable on a per-port basis and supports single- and dual-homed ring-on-ring topologies.
- 0x1: The 0x1 application mode is an unprotected mode used on low-speed OC-N interfaces when protection is not desired. This option is user-provisionable on a per-port basis and supports single- and dual-homed ring-on-ring topologies.

From the WaveStar® CIT System View menu, select **Configuration > Provision** to set the protection modes.

Mixed protection modes	Metropolis® DMX supports mixed protection modes (UPSR, 1+1, or 0+1) on different ports of the same OLIU. For example, the quad OC-3 interface could have two ports provisioned for 1+1 mode, one for UPSR mode, and one for 0x1 mode. Protection modes cannot be mixed on the same OLIU port. The port is an OC-N line pair.
Ethernet interface protection	On the WAN (SONET) side of the network, Metropolis® DMX provides protection via an STS-1 UPSR configuration (for point-to-point applications) or an IEEE 802.1W rapid spanning tree protocol.
Provisioning protection switching	From the WaveStar® CIT System View menu, select Fault > Protection Switch to provision protection switching. A popup window then appears offering a choice of the switch protected devices on the shelf. The type of protection switching provisioned for each device is shown next to the device location. Double clicking on one of the protection groups calls up the elements of the group or a second popup display offering a choice of user-defined protection switch modes. The choices are as follows: • 1+1 Equipment Protection (Pack): Inhibit, Forced, Normal, or Reset. • 1+1 Line Protection (Port): Lockout, Forced, Manual, or Reset. • 2F BLSR: Clear; Lockout of Protection, Span; Forced to Protection, Ring; Manual to Protection, Ring. • Path Protection: Manual. Selecting a switching mode and clicking the Apply button at the bottom of the screen enables the switching mode in the selected device.

UPSR protection switching priorities

Metropolis[®] DMX uses standard UPSR protection switching priorities as follows:

- **Inhibit:** inhibits protection switching in the protection group in which it is set.
- **Reset:** resets circuitry of the shelf.
- **Protection Lockout:** allows the operator to prevent the selection of the protection line until the line is released. If the protection line is currently selected, service is switched to the service line.
- **Forced switch:** selects the standby line unless there is an existing lockout or forced protection switch request in place.
- **Automatic switch - signal fail:** Metropolis[®] DMX uses optional SONET 1+1 unidirectional, nonrevertive automatic line protection switch (APS) procedures. After a cut service fiber is repaired, a location does not switch back (revert) to the fiber/OLI that was originally active. Rather, service remains active on the fiber/OLI that was originally the standby.
A signal fail (SF) is declared for incoming loss of signal (LOS), loss of frame (LOF), line AIS, or a BER exceeding either 10^{-3} or 10^{-6} (10^{-3} default).
- **Automatic switch - signal degrade:** Automatic line switches are initiated by signal fail and signal degrade conditions received on the OC-N signal. This signal's bit error rate (BER) is calculated from violations in the SONET line overhead B2 parity byte. A line protection switch is completed within 60 milliseconds of the onset of a hard failure such as a fiber cut.
A signal degrade condition is declared on signals with a BER exceeding a provisionable 10^{-5} to 10^{-9} threshold (10^{-6} default).
- **Manual switch:** selects the standby line or ring path provided the standby line or ring path is good and there are no existing protection switching requests in place.



2-Fiber Bidirectional Line-Switched Ring (BLSR) Switching

Introduction The Metropolis® DMX Access Multiplexer system performs 2-fiber bidirectional line-switched ring (BLSR) protection switching in response to automatically detected faults in OC-48 or OC-192 lines and external commands from the WaveStar® CIT or operations system (OS). For more information about the **Fault > Protection Switch...** command, refer to the online help available with the WaveStar® CIT.

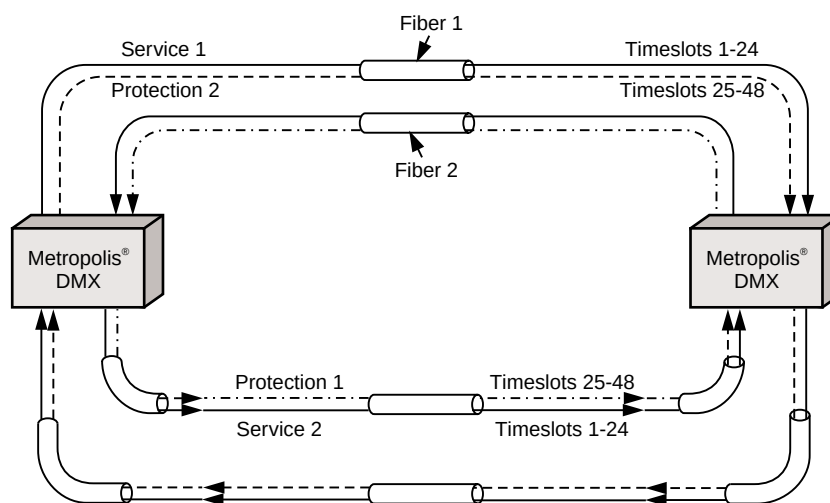
Ring definition A ring is a collection of nodes that form a closed loop, where each node is connected to the adjacent nodes. BLSRs provide redundant bandwidth and/or equipment to ensure system integrity in the event of any transmission failure, including a fiber cut or node failure.

2-fiber OC-48 BLSR traffic capacity

In a 2-fiber OC-48 BLSR, each bidirectional OC-48 line carries 24 STS-1 equivalent timeslots of service capacity (1-24) and 24 STS-1 equivalent timeslots of protection capacity (25-48).

Figure 3-1 illustrates the service and protection traffic capacities in a 2-fiber OC-48 BLSR.

Figure 3-1 Traffic Capacity in an 2-Fiber OC-48 BLSR



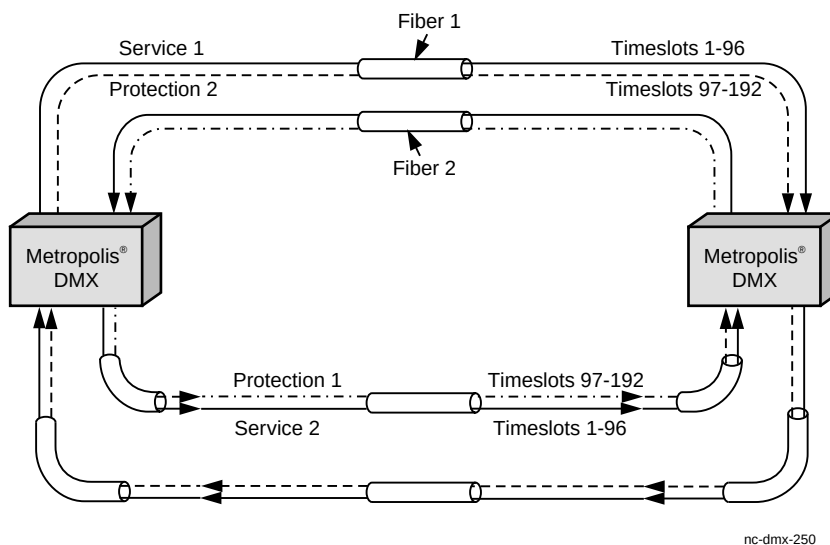
nc-dmx-217

2-fiber OC-192 BLSR traffic capacity

In a 2-fiber OC-192 BLSR, each bidirectional OC-192 line carries 96 STS-1 equivalent timeslots of service capacity (1-96) and 96 STS-1 equivalent timeslots of protection capacity (97-192).

Figure 3-2 illustrates the service and protection traffic capacities in a 2-fiber OC-192 BLSR.

Figure 3-2 Traffic Capacity in an 2-Fiber OC-192 BLSR



Switch request priorities

The following table shows the 2-fiber BLSR protection switch priorities (in descending order of priority) used by Metropolis® DMX system.

Important! If a higher or equal priority switch request exists, a new switch request is denied.

Table 3-2 BLSR Switching Priorities

Switch Priorities (Descending Order)	Source of Request
Clear ¹	WaveStar® CIT or OS
Lockout of Protection - Span	WaveStar® CIT or OS
Forced of Service to Protection, Ring	WaveStar® CIT or OS
Signal Fail - Ring	Automatic
Signal Degrade - Ring	Automatic
Manual Switch to Protection - Ring	WaveStar® CIT or OS
Wait to Restore	Automatic
Reverse Request - Ring	Automatic
No Request	Automatic

Notes:

1. The Clear request does not affect Signal Fail, Signal Degrade, Reverse Request, or No Request.

Bidirectional revertive protection switching

The optical line uses bidirectional revertive 2-fiber ring protection switching. Bidirectional refers to protection switching that is performed in the transmit and receive directions simultaneously. The traffic switches from the working tributaries of one line to the protection tributaries of the line in the opposite direction when a fault is detected. In revertive switching when the fault and wait-to-restore interval clear, the traffic switches back (reverts) to the working tributaries.

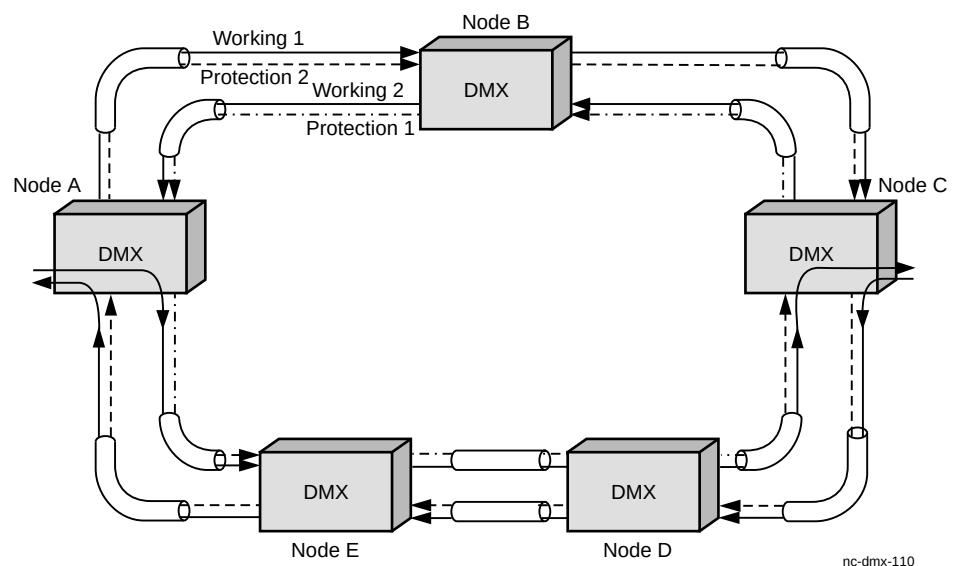
Self-healing rings

A 2-fiber BLSR is a self-healing (transport is automatically restored after node or fiber failures) ring configuration in which traffic is bidirectional between each pair of adjacent nodes and is protected by redundant bandwidth on the bidirectional lines that interconnect the nodes in the ring. Because traffic flow is bidirectional between the nodes, traffic can be added at one node and dropped at the next without traveling around the entire ring. This capability leaves the spans between other nodes available for additional traffic. Therefore, with distributed traffic patterns, a bidirectional line-switched ring can carry more traffic than the same facilities could carry if configured for a unidirectional path-switched ring. Additionally, you can use the protection capacity to provide unprotected transport for extra traffic when no failures are present. Up to 16 nodes are supported on a ring. Each OC-48 line carries 24 STS-1 equivalent timeslots of working capacity plus 24 STS-1 equivalent timeslots of protection capacity. Each OC-192 line carries 96 STS-1 equivalent timeslots of working capacity plus 96 STS-1 equivalent timeslots of protection capacity. In the event of a fiber or node failure, service is restored by switching traffic from the working capacity of the failed line to the protection capacity in the opposite direction around the ring. (See [Figure 3-3](#) and [Figure 3-4](#).)

2-fiber BLSR traffic flow

The figure below shows normal (non-protection-switched) traffic flow on a 2-fiber BLSR.

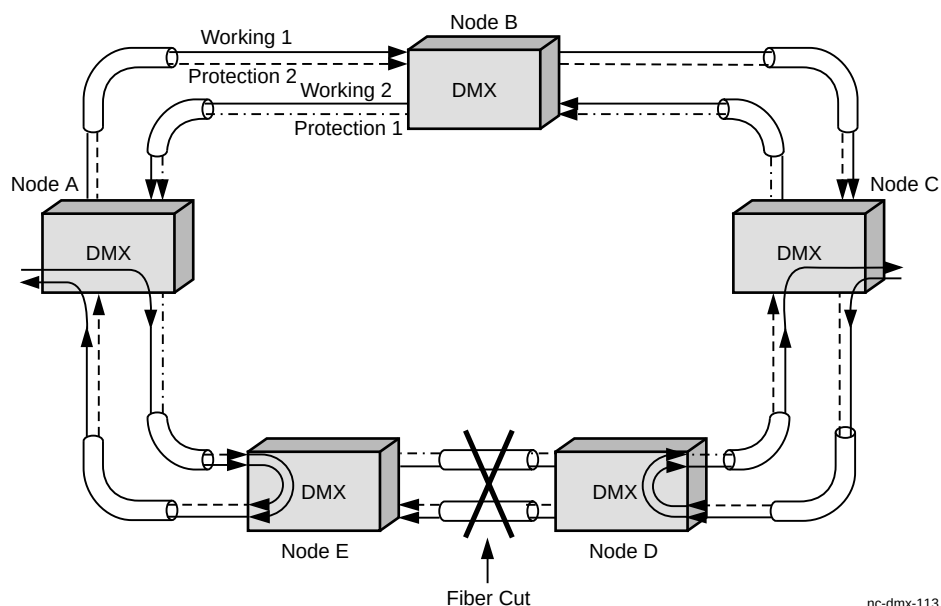
Figure 3-3 Normal Traffic Flow in a 2-Fiber BLSR



Protection switching When a line failure triggers a protection switch, the nodes adjacent to the failure switch traffic on to protection capacity. Traffic heading toward the failure is looped back on to the protection capacity traveling away from the failure to reach its destination by traveling the opposite way around the ring (see the figure below). Service is reestablished on the protection capacity in ≤ 50 milliseconds after detection of the failure (for catastrophic failures in rings without existing protection switches or extra traffic).

Fiber cut example [Figure 3-4](#) illustrates a 2-fiber BLSR protection switch that results from a fiber cut.

Figure 3-4 Loopback Protection Switch in a 2-Fiber BLSR



Protection traffic flow

For 2-fiber ring protection switching, the nodes adjacent to the failure make connections to bridge the add and through traffic to the protection tributaries of the line in the other direction. All drop and through traffic is selected from the protection tributaries of the line in the other direction.

In the figure above, traffic going from Node A to Node C that normally passes through Node E and Node D on “working 2” capacity is switched at Node E on to the “protection 2” capacity of the line leaving Node E in the direction of Node A. The traffic loops back through Nodes A, B, and C to Node D where it is looped back to Node C. Similarly, traffic going from Node C to Node A that normally passes through Node D and Node E on “working 1” capacity is switched at Node D on to the “protection 1” capacity of the line leaving Node D in the direction of Node C. The traffic loops back through Nodes C, B, and A to Node E where it is looped back to Node A. Note that only the nodes adjacent to the failure perform loopback protection switches. The same approach is used for a node failure. For example, if Node D fails, Nodes C and E perform loopback protection switches to provide an alternate route for ring traffic.



Unidirectional Path-Switched Ring Switching

Introduction Metropolis[®] DMX supports path switched ring applications in accordance with the path protection switching schemes described in Telcordia Technologies GR-1400.

UPSR is the Metropolis[®] DMX default mode. Metropolis[®] DMX performs UPSR switching in response to automatically detected faults in paths and external commands from a WaveStar[®] CIT or operations system (OS). Metropolis[®] DMX supports UPSR switching for VT1.5 and STS-N signals on OC-N interfaces (OC-3/OC-12/OC-48/OC-192 OLIUs).

Path protection switching functions are available from the WaveStar[®] CIT System View menu when you select **Fault > Protection Switch**.

Path protection switching can also be controlled using the command builder and the following commands: **opr-protnsw-sts1**, **opr-protnsw-sts3c**, **opr-protnsw-sts12c**, and **opr-protnsw-sts48c**. Manual VT path switching is user-controllable through the **opr-protnsw-vt1** command.

Protection switching priorities

The following table shows the UPSR protection switch priorities (in descending order of priority) used by Metropolis[®] DMX.

Table 3-3 UPSR Switch Priorities

Switch Priorities (Descending Order)	Source of Request
Automatic Switch: Signal Fail or Signal Degrade	Automatic
Manual Switch	WaveStar [®] CIT or OS

Automatic path selector criteria

Metropolis® DMX performs automatic UPSR switching based on the automatic path selector criteria. The automatic path selector criteria uses the following hierarchy of signal impairments (ordered from top to bottom in increasing signal quality):

- line LOS, LOF, AIS, and UNEQ (most impaired - worst signal quality)
- STS-N Path BER exceeding a signal fail or signal degrade threshold
- STS-N VT Path BER exceeding a signal degrade threshold
- Path-level signal with no impairments.

Important! Metropolis® DMX selects the path-level signal with the best quality.

Unidirectional switching

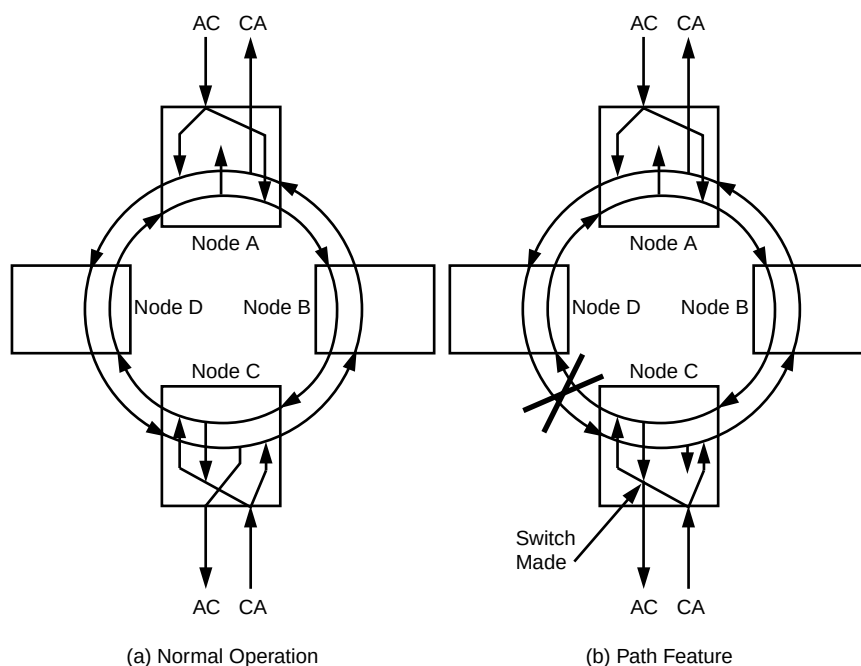
Unidirectional switching refers to protection switching that is performed in the receive direction only. The transmitting terminal transmits the same path-level signal on two paths. The receiving terminal monitors the two path-level signals independently and chooses one path-level signal as the working (active) path and the other path-level signal as the protection path. Metropolis® DMX selects the incoming path-level signal with the best quality (based on the automatic path selector criteria).

Nonrevertive switching

UPSR switching is nonrevertive. When a protection switch occurs, the receiving terminal selects the signal from the protection path. In nonrevertive switching, when the fault clears the receiving terminal does *not* switch back to the original working path.

UPSR architecture Figure 3-5 illustrates an example of UPSR protection switching. The UPSR switching is performed in the receive direction. If the active incoming path-level signal fails, the circuit pack chooses the stand-by path-level signal. In the transmit direction, the circuit pack bridges the same path-level signal to the working and protection paths.

Figure 3-5 UPSR Switching Example



NC-Xpress-070

Path protection rings feed a SONET payload (STS-N or VT) from the ring entry point, simultaneously in both rotations of the ring, to the signal's ring drop or exit point as shown by traffic AC and CA. This duplication of the signal that enters the ring is called a "head-end bridge." The node that drops the signal from the ring monitors both ring rotations and is responsible for selecting the signal that has the highest quality based on LOS, LOF, path AIS, LOP, STS-N/VT unequipped, and STS-N/VT path BER performance. This function at the ring exit point is called a "tail-end switch."

1+1 Line Protection Switching

Introduction Metropolis[®] DMX supports SONET standard 1+1, unidirectional, nonrevertive line protection switching on low-speed OC-3, OC-12 and OC-48 optical interfaces. Protection switches are caused by automatically detected faults in the circuit packs or low-speed optical lines and by external commands from the WaveStar[®] CIT or OS interface.

1+1 protection switching is provisioned from the WaveStar[®] CIT System View menu, the **Configuration > Provision** menu and its supporting displays.

Protection switch priorities are set from the WaveStar[®] CIT System View menu, **Fault > Protection Switch** menu and its supporting displays.

Automatic line protection In multispan applications each OC-N span switches independently. For example, in hubbing applications, a switch on the central office-to-hub span does not cause switches on any of the hub-to-remote spans. Similarly, a line switch on a hub-to-remote span will not propagate to other hub-to-remote or central office-to-hub spans.

1+1 application mode To support a 1+1 protection compatibility, the OC-3, OC-12, or OC-48 ring interface must be provisioned to the “1+1” mode for 1+1 applications using the Switch Protection display or the ent-ocn command.

Line protection switching can also be controlled using the command builder and the **opr-protnsw-oc3**, **opr-protnsw-oc12**, **opr-protnsw-oc48**, **rls-protnsw-oc3**, **rls-protnsw-oc12**, **rls-protnsw-oc48** TL1 commands.

For more information on setting up protection switching, refer to the *Metropolis[®] DMX Access Multiplexer User Operations Guide*, 365-372-301.



1+1 Equipment Protection Switching

Introduction Metropolis[®] DMX provides optional, nonrevertive, 1+1 equipment protection on all 28DS1/8DS1PM, 12DS3/EC1, TMUX, OC-3, OC-12, OC-48, and OC-192 OLIU circuit packs. The 1+1 equipment protection switching takes place in response to automatically detected faults and external commands from the WaveStar[®] CIT or operations system (OS). Protection switching is provisioned from the WaveStar[®] CIT System View menu, the **Configuration > Provision** menu and its supporting displays or by using the sw-toprotn and sw-towkg commands or the Switch Protection display.

Protection switching priorities The following table lists the 1+1 equipment protection switch priorities (in descending order of priority) used by Metropolis[®] DMX.

Table 3-4 Protection Switching Priorities

Switch Priorities (Descending Order)	Source of Request
Reset	WaveStar [®] CIT or OS switch to working
Inhibit Switch	WaveStar [®] CIT or OS switch to protection
Forced Switch	WaveStar [®] CIT or OS switch to protection
Automatic Switch	Automatic
Manual Switch	WaveStar [®] CIT or OS switch to protection

1+1 nonrevertive protection switching In 1+1 nonrevertive protection switching, the Main OLIUs (M1 and M2) receive signals from the same “active” function unit circuit pack (either in slot 1 or slot 2). One side is active (working) and the other side is in standby. Green ACTIVE LEDs on the faceplates of these circuit packs indicate which packs are active and should be on. When a protection switch occurs, the standby side becomes the new active (working) side. The original active (working) side becomes the standby side. The status remains the same (nonrevertive) after the fault clears.

Unprotected equipment If protection is not desired, SONET interfaces can be provisioned for no protection by equipping only slot 1 of a Function Unit group with a particular circuit pack. For example, if Function Unit slot A1 is equipped with a 12DS3/EC1 circuit pack, then slot A2 remains empty .



Spanning Tree

Overview The spanning tree algorithm and protocol simplifies the configuration and connection of an active network topology from the arbitrarily connected components of a bridged LAN. Frames are forwarded through some of the bridge ports in the bridged LAN and not through others held in a blocking state. At any time, the bridges created effectively connect the LANs to which ports in a forwarding state are attached. Frames are forwarded both directions through bridge ports that are in the forwarding state. The ports in a blocking state do not forward frames in either direction but may be included in the active topology.

Algorithm The spanning tree algorithm and its associated bridge protocol operate to support and maintain the quality of MAC service. In order to perform this function, the algorithm:

- Configures the active topology of the bridged LAN into a single spanning tree, so that there is at most one data route between any two end stations. This eliminates data loops.
- Provides for fault tolerance by the automatic reconfiguration of the spanning tree to cope with a bridge failure or a breakdown in a data path within the confines of the bridged LAN components.
- Accommodates the addition of a bridge or bridged port to the LAN components without the formation of any transient data loops.

Reference For more information on setting up a spanning tree, refer to the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.



Synchronization Reference Protection Switching

Overview Metropolis® DMX provides protection for all system synchronization references. Synchronization reference protection switching occurs in response to automatically detected faults and external commands from an WaveStar® CIT or operations system (OS).

Protection switching priorities The following table shows the synchronization reference protection switch priorities (in descending order of priority) used by Metropolis® DMX.

Table 3-5 DS1 Synchronization Reference Protection Switch Priorities

Switch Types	Source of Request
Clear Reference Switch (See Note 1)	WaveStar® CIT or OS (opr-syncnsw)
Lockout (See Note 1)	WaveStar® CIT or OS (opr-syncnsw)
Forced Switch (See Note 1)	WaveStar® CIT or OS (opr-syncnsw)
Reference Failure	Automatic
Manual Switch	WaveStar® CIT or OS (opr-syncnsw)

Notes:

1. Applicable to DS1 external timing references only.

Operation In line timing modes, the synchronization references are 1+1 protected. If neither reference is available, the system automatically switches to “holdover” timing mode. When Metropolis® DMX is provisioned for synchronization messaging, the system can determine the quality of the line timing references by reading the synchronization messages in the OC-N transport overhead bytes.

If automatic synchronization reconfiguration is enabled, Metropolis® DMX automatically selects the highest quality reference. Sync messaging and automatic synchronization reconfiguration can be provisioned using the **set-syncn** command or from the WaveStar® CIT System View, **Configuration > Timing/Sync**.

**Synchronization mode
protection switching**

The system can be provisioned to revertive or nonrevertive timing mode switching. If provisioned for revertive mode switching (default), the system automatically switches from holdover mode to the provisioned timing mode (internal free-running timing or line timing) when a timing reference failure clears. If provisioned for nonrevertive mode switching, the system must be manually switched from holdover mode to the provisioned timing mode (external timing or line timing) when an timing reference failure clears.

The sources used to supply line timing (either main-1-1 or main-2-1) can be manually selected in the Line timing mode.

Timing modes may be provisioned using the set-syncn command or from the WaveStar® CIT System View menu, select **Provision > Timing/Sync**.



Loopbacks

Introduction Metropolis® DMX provides the following types of loopbacks:

- Low-speed port loopbacks
- Optical loopbacks

Metropolis® DMX provides loopbacks on all low-speed interfaces. Low-speed DS1 and DS3 electronic loopbacks and EC-1 optical loopbacks, directed toward the high-speed OC-48 interface, can be individually controlled from the WaveStar® CIT. Facility loopbacks can also be set up towards the DSX on individual low-speed DS1, DS3, or EC-1 interfaces.

Active low-speed port loopbacks are indicated by a continuously lit **ABN** LED on the SYSCTL circuit pack and in the reports generated when entering the **rtrv-lpbk-rr**, and **rtrv-cond** or by clicking on the **Alarm List** button from the WaveStar® CIT System View.

Electronic loopbacks

Electronic loopbacks may be implemented using the **opr-lpbk-rr** command, released using the **rls-lpbk-rr** command, retrieved using the **rtrv-lpbk-rr** command, or can be provisioned using the WaveStar® CIT graphical display.

From the WaveStar® CIT System View, select **Fault > Loopback** and then select the circuit pack and the desired port. Choose either Facility or Terminal for Loopback Type and click on **Operate** or **Release**.

Optical loopbacks

Metropolis® DMX also supports optical loopbacks on all OC-N, optical interfaces through the optical connectors. This loopback is constructed by connecting a fiber jumper from the optical output to the optical input. An optical attenuator is required.



Tests

Overview Metropolis® DMX provides the following self tests:

- an LED test
- an IAO LAN test
- a system controller test
- a transmission test.

LED test The LED test verifies that the SYSCTL and circuit pack faceplate LEDs are operating properly in a shelf. The test consists of one or more test iterations (cycles) repeated as many times as specified.

In each test iteration the circuit pack faceplate LEDs (including SYSCTL) are lighted for up to 10 seconds and turned off for up to 10 seconds. This repeats for each test iteration specified. The PWR ON LED is always on if the shelf is powered and cannot be tested.

The LEDs revert to normal operation after the LED test is completed.

A LED test can be performed using the **test-led** command. From the WaveStar® CIT System View menu, select **Fault > Test > LED** to test LEDs.

IAO LAN test When the **test-iaolan** command is executed, the IntraOffice LAN (IAO LAN) test sets up an internal loopback that can be used to verify that the Metropolis® DMX shelf's IAO LAN is capable of interfacing with an IAO LAN hub.

From the WaveStar® CIT System View menu, select **Fault > Test > Test IAO LAN** to verify that the IAO LAN is capable of interfacing with an IAO LAN hub.

System Controller test The system controller test performs a basic sanity check of the system controller on the SYSCTL circuit pack. The test results in a pass/fail indication of the processor's health.

Use the **test-sysctl** command or select **Fault > Test > Test System Controller** from the WaveStar® CIT System View menu to test the system controller.

Transmission test

Metropolis[®] DMX provides internal testing capabilities for installation and manual troubleshooting. DS1 and DS3 test signal generators and detectors are integrated in the system, eliminating the need for external test equipment to do DS1/DS3 transmission testing.

Specific signals and system components may be tested. For example, technicians can manually enable the integrated test signal generators and detectors for a DS1 or DS3 low-speed interface.

Use the **test-trmsn** command or select **Fault > Test > Test Transmission** from the WaveStar[®] CIT System View menu to test transmission.

Additional popup screens are used to facilitate the specific transmission tests.



Reports

Introduction Reports provide parameters and status information for a range of equipment. For example, a report may show the parameters for all the transmission ports on a shelf.

Equipment lists From the WaveStar® CIT System View menu, select **Reports > Equipment Lists >** to view reports for

- **Pack...** (view details of circuit packs)
- **Port...** (view ports of the selected circuit pack)
- **VCG...** (view VCG groups being supported by the selected shelf)
- **Trib...** (view tributaries supported by the selected shelf [or device])
- **Misc. Discretes...** (view all miscellaneous discretes)

Equipment data (including the equipage and version information for one or more slots) can also be obtained using the **rtrv-eqpt** command.

Status lists From the WaveStar® CIT System View menu, select **Reports > Status Lists >** to view detailed status information for

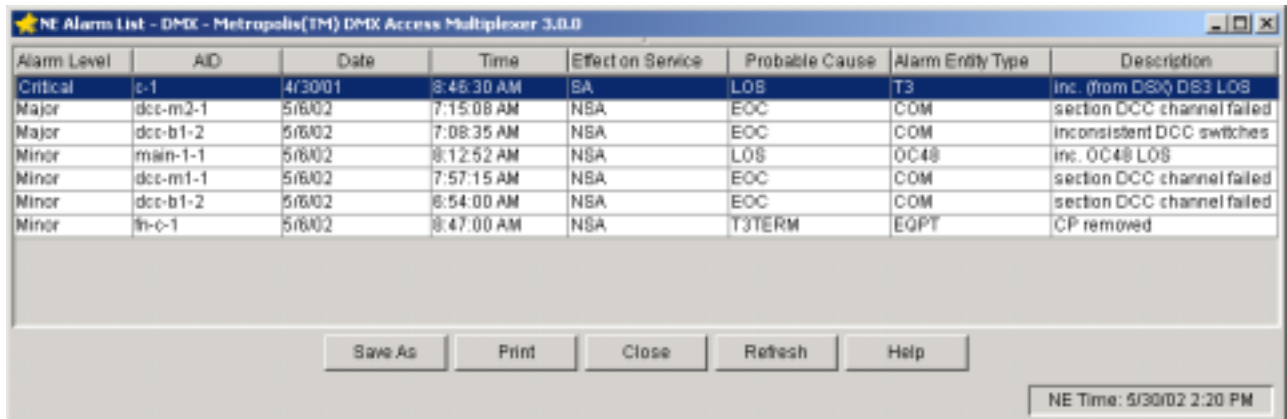
- **Pack...** (display circuit pack status and alarm information)
- **Port...** (display port status and alarm and fault information)
- **Trib...** (display tributary status and alarm and fault information)

Path protection list From the WaveStar® CIT System View menu, select **Reports > Path Protection List...** to view specific information about the UPSRs (for example, current role [active or standby] for the specific AIDs on the ring[s]).

Cross-connection list From the WaveStar® CIT System View menu, select **Reports > Cross-Connection List...** to view specific information about the cross-connects on the selected circuit pack, port, or tributary.

Alarm list Metropolis® DMX provides a report that lists all active alarms. This alarm report can be reached by clicking the Alarm List button in the upper right-hand corner of the System View window.

Figure 3-6 Alarm List



The screenshot shows a window titled "NE Alarm List - DMX - Metropolis(TM) DMX Access Multiplexer 3.0.0". It contains a table with the following data:

Alarm Level	AID	Date	Time	Effect on Service	Probable Cause	Alarm Entity Type	Description
Critical	c-1	4/30/01	8:46:30 AM	SA	LOS	T3	inc. from DS0q DS3 LOS
Major	dcc-m2-1	5/6/02	7:15:08 AM	NSA	EOC	COM	section DCC channel failed
Major	dcc-b1-2	5/6/02	7:08:35 AM	NSA	EOC	COM	inconsistent DCC switches
Minor	main-1-1	5/6/02	8:12:52 AM	NSA	LOS	OC48	inc. OC48 LOS
Minor	dcc-m1-1	5/6/02	7:57:15 AM	NSA	EOC	COM	section DCC channel failed
Minor	dcc-b1-2	5/6/02	8:54:00 AM	NSA	EOC	COM	section DCC channel failed
Minor	tn-c-1	5/6/02	8:47:00 AM	NSA	T3TERM	EQPT	CP removed

At the bottom of the window, there are buttons for "Save As", "Print", "Close", "Refresh", and "Help". A status bar at the bottom right shows "NE Time: 5/30/02 2:20 PM".

The identity of the condition (for example, OLIU CP failed, or inc. DS3 sig. failed) is included in the report along with a time stamp indicating when the condition was detected.

This summary contains real time and date stamps indicating when each condition was detected and when it cleared. WaveStar® CIT events contain a time stamp indicating when the command was entered. Alarm and status entries in the retrieve-history report are not subject to holdoff and clear delay.

Alarm filtering

By selecting the **Reports > NE Alarm List** or **Fault > NE Alarm List**, the user can select different categories from the Alarm Selection Panel, which then “filter” the alarm list accordingly. For example, you can view only the service affecting alarms.

Figure 3-7 Alarm Selection Panel

The screenshot shows a window titled "Alarm Selection Panel for LT-DMX". Inside the window, there are four rows of controls, each with a label and a dropdown menu:

- Alarm Category:** The dropdown menu is set to "Communication".
- Alarm Level:** The dropdown menu is set to "Minor".
- Effect On Service:** The dropdown menu is set to "Service Affecting".
- Signal Level Affected:** The dropdown menu is set to "OC48".

Below these controls is a large, empty rectangular area. At the bottom of the window, there are three buttons: "OK", "Close", and "Help".

The following table lists the different sorting options available from the Alarm Selection Panel.

Table 3-6 Alarm Filtering Options

Field	Options
Alarm Category	All
	Communication
	Equipment
	Environment
	Common Equipment
Alarm Level	All
	Critical
	Major
	Minor
	Not Alarmed
Effect on Service	All
	Service Affecting
	Non-Service affecting
Signal Level Affected	T1
	T3
	EC1
	OC3
	OC12
	OC48
	OC192
	STS1
	STS3c
	STS12c
	STS48c
	VT1

Important! The alarm information can also be obtained using the **rtrv-alm**, **rtrv-alm-env**, and **rtrv-cond** commands.

Remote NE alarms list Metropolis[®] DMX provides a list of alarms on remote NEs in the same alarm group. The list includes the TID of the remote NE, the date of the alarm, the AID, the alarm level, and a description of the event/alarm. This alarm list can be retrieved by selecting **Reports > Remote NE Alarms List**.

NE history log Metropolis[®] DMX lists recent events on the NE, including alarms. This history log can be retrieved by selecting **Reports > NE History Log**.





4 Trouble Clearing Tasks

Overview

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Purpose This chapter contains the trouble clearing tasks for the Metropolis[®] DMX Access Multiplexer.

Safety precautions Many trouble clearing procedures require actions that are service affecting. These actions are indicated by a caution message indicating the extent of the service disruption.
For example:



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Contents

The following information is included in this chapter:

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Clear “DS1 loopback (to Fiber)” Condition	4 - 63
Clear “DS1 trmsn test IP” Condition	4 - 67
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Clear “inc. FE-LAN ANM” Alarm	4 - 173
Clear “inc. FE-LAN LOS” Alarm	4 - 181
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Clear “unexpected CP type” Alarm	4 - 331
Clear “Unknown Ring Type ” Condition	4 - 337
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Task 500: Clear “-48V power/fuse FA or FB failed” Alarm

Purpose This procedure is used to clear a -48V power/fuse failed alarm indicated by a lighted Minor (**MN**) LED on the SYSCTL faceplate and reported as minor in the WaveStar® CIT Alarm List. The alarm list identifies which power source is affected, either A or B.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Power meter

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 3, “Maintenance Overview”](#)
- *Metropolis® DMX Access Multiplexer User Operations Guide, 365-372-301*
- *Metropolis® DMX Access Multiplexer TL1 Command Manual, 365-372-306*

- Before you begin**
- Prior to beginning this task, you must:

 1. If not previously completed, install generic and WaveStar® CIT software on the PC.
Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task

Complete the following steps to identify and clear a Minor (MN) -48V power/fuse failed alarm.

- 1
- Are both of the power indicators lit on the top of the Metropolis® DMX shelf (**BRK A 20A ON** and **BRK B 20A ON**) or the Metropolis® DMX High Capacity Shelf (**BRK A 30A ON** and **BRK B 30A ON**)?

If...	Then...
Yes	Proceed to Step 17 .
No	Continue with Step 2 .

- 2
- Perform a thorough visual inspection of the shelf backplane and side-mounted power connectors. Look for signs of damage or a loose power connection.

Important! Each -48V power feeder supplies redundant power to the shelf circuit packs. It is highly unlikely that a circuit pack failure would cause a circuit breaker to trip. The more probable cause of a failure in a feeder/circuit breaker is a short in the backplane feeder path or a problem with a circuit pack connector.

.....

3 Were any problems found involving the power connections?

If...	Then...
Yes	Broken or shorted power line: repair the short or break, or replace the shelf, as appropriate. Loose power connection: reseal and secure the connector.
No	Continue with Step 4 .

.....

4 Monitor the DC power supplied to the shelf at the P14 and P15 power connectors on the rear of the shelf (backplane).

Important! A minor -48 VDC power alarm indicates the loss one of the two redundant -48 VDC power feeds.

.....

5 Is the DC voltage normal (-48 VDC) at both connectors?

If...	Then...
Yes	Continue with Step 6 .
No	Check the DC power distribution lines supplying power to the shelf.

.....

6 Unseat the SYSCTL circuit pack from the shelf and reset the tripped circuit breaker.

.....

7 Does the circuit breaker remain reset?

If...	Then...
Yes	Return the removed SYCTL circuit pack for repair. Replace the SYCTL with a spare, Task 608: Replace SYCTL (LNW1) Circuit Pack (5-63) .
No	Reinstall the removed circuit pack and proceed to the next circuit pack.

Important! After replacing the SYCTL circuit pack, you must log back into the WaveStar® CIT.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

.....

8 Remove the protection circuit packs on the shelf, one at a time. After each removal, reset the tripped circuit breaker.



CAUTION

Service affecting

Before removing a transmission circuit pack, verify that the circuit pack is not carrying service.

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

.....

9 Does the circuit breaker remain reset?

If...	Then...
Yes	Return the removed circuit pack for repair.
No	Reinstall the removed circuit pack and proceed to the next circuit pack.

-
- 10** For those transmission circuit packs where protection circuit packs are available, switch the service to the protection circuit pack by selecting select **Fault > Protection Switch** from the System View menu.

**CAUTION****Service affecting**

Before removing a transmission circuit pack, verify that the circuit pack is not carrying service.

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

-
- 11** Highlight the Pack x for the circuit pack that you are removing and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

-
- 12** From the Switch Type: pull-down menu, select **Forced** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

-
- 13** On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.

-
- 14** To verify that the switch has occurred:

1. From the System View menu, select **View > Protection**.
2. Highlight the circuit pack that you are replacing and click **Select**.
3. Verify that Protection Switch State: reads Standby and the Equipment State: reads Out of Service.
4. Verify that Protection Switch Priority: reads Forced.

-
- 15** Replace the service circuit packs (now Out of Service) one at a time.
After each removal, reset the tripped circuit breaker.
-

- 16** Does the circuit breaker remain reset?

If...	Then...
Yes	Return the removed circuit pack for repair.
No	Reinstall the removed circuit pack and proceed to the next circuit pack.

-
- 17** From the System View, click the Alarm List button and click **Refresh**.

Result: The -48V power/fuse failed alarm is no longer present.

.....

- 18** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 501: Clear “AGNE communication failure” Alarm

Purpose This procedure is used to clear an AGNE communication failure alarm indicated by a lighted major (**MJ**) LED on the SYSCTL faceplate and reported as major in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to identify and clear a Major (**MJ**) AGNE communication failure alarm.

- 1 From the WaveStar® CIT System View, select **Administration > View NE Administration**, to check the provisioning of the AGNE for that NE's alarm group.

Result: The following screen appears.

Figure 501-1 View NE Administration

View NE Administration for DMX											
TID/NE Name: DMX											
NE Type: Metropolis(TM) DMX Access Multiplexer											
Release: 3.0.0											
NE Parameters											
Remote NE Status: enabled											
Alarm Gateway: yes											
Alarm Group: 5											
Alarm Gateway Address List: n3-5-dmx-8 n3-5-dnp-9											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">AID</th> <th style="width: 60%;">NSAP</th> <th style="width: 15%;">AFI</th> <th style="width: 10%;">ID</th> </tr> </thead> <tbody> <tr> <td>system</td> <td>39840F80000000000000000000000000601D2CBC1800</td> <td>39</td> <td>E</td> </tr> </tbody> </table>				AID	NSAP	AFI	ID	system	39840F80000000000000000000000000601D2CBC1800	39	E
AID	NSAP	AFI	ID								
system	39840F80000000000000000000000000601D2CBC1800	39	E								
AFI: Authority and Format ID ID: Initial Domain ID IDP: Initial Domain Part, it is divided into AFI and IDI DFI: DSP Format ID ORG: Organization ID RES: Reserved RD: Routing Domain AREA: Network Area SYS: IEEE administered MAC address SEL: NSAP selector											
Save As Print Close Help											

-
- 2** Is the local NE the alarm gateway network element (AGNE)?
Alarm Gateway: yes ([Figure 501-1](#)).

If...	Then...
Yes	There is a provisioned AGNE for the alarm group. Proceed to Step 4 .
No	Continue with Step 3 .

-
- 3** Can you determine the AGNE for the alarm group?

If...	Then...
Yes	Record the TID and log into that NE and select Administration > View NE Administration . Continue with Step 4 .
No	Proceed to Step 7

-
- 4** Is Remote NE status enabled for the AGNE?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 7 .

-
- 5** Log into each NE in the alarm group and select **Administration > View NE Administration** from the System View menu.

Reference: Alarm Gateway Address List ([Figure 501-1](#))

.....

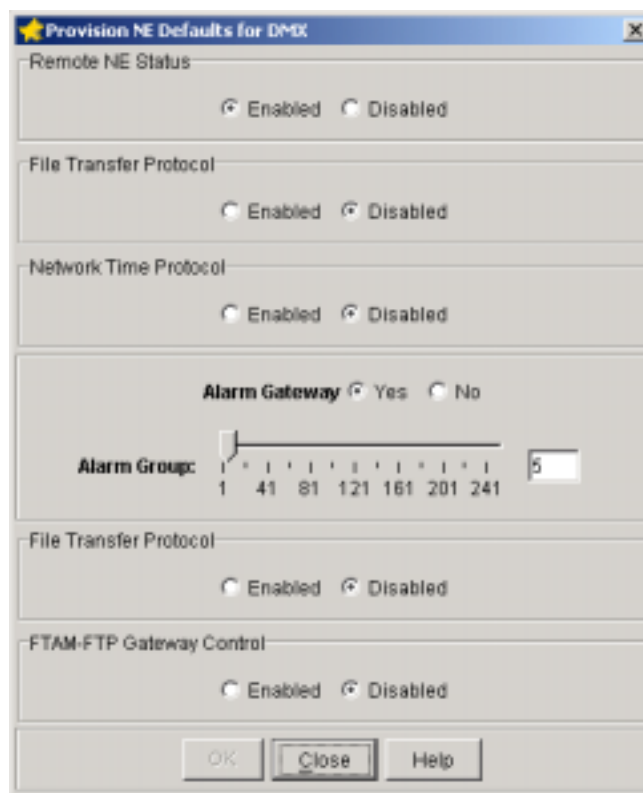
6 Is Remote NE status enabled?

If...	Then...
Yes	Repeat Step 5 and Step 6 for each NE in the alarm group. Proceed to Step 13 .
No	Continue with Step 7 .

.....

7 From the System View menu, select **Administration > Set NE**.

Result: The Provision NE Defaults window opens.



.....

8 For Remote NE Status, select **Enabled** to enable Remote NE Status.

Important! Note that Remote NE Status must be Enabled in order to provision the alarm group functions.

-
- 9** For Alarm Gateway, select **Yes** to provision one NE in the alarm group as the alarm gateway network element (AGNE). Otherwise, select **No**.
-

- 10** Enter or select the Alarm Group number (1-255) being assigned to the alarm group for this NE .

Important! The Alarm Group number must be the same for all NEs in that alarm group.

.....

- 11** Ensure the other parameters in the window have not been changed, unless you are provisioning them also. Click **OK** at the bottom of the window.
-

- 12** Read the warning message, then click **Yes** to execute the command.

Important! An AGNE communication failure alarm may occur if an AGNE has not yet been provisioned for the alarm group. If you need to clear the alarm, select **Administration** > **Set NE**, then select **Disabled** to disable the Remote NE Status. You will have to enable the remote NE status again once the AGNE has been established in order for this NE to be part of the alarm group.

.....

- 13** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The AGNE communication failure alarm is no longer present.

.....
14 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S
.....
☐

Task 502: Clear “controln” Condition

.....

Purpose This procedure is used to clear a controln condition reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The alarm list identifies the control output as 1, 2, 3, or 4.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a controln condition.

-
- 1** From the WaveStar® CIT System View, click on the Alarm List button and locate the controln condition in the resulting alarm list and note the corresponding AID.

-
- 2** From the System View menu, select **View > Misc. Discretes...** and click **Output**.

Result: The View Miscellaneous Discretes window opens.

-
- 3** Can you clearly identify the cause of the alarm?

If...	Then...
Yes	Clear using local procedures. Proceed to Step 14 .
No	Continue with Step 4 .

-
- 4** Do you wish to reprovision the control output or do you wish to release the condition?

If...	Then...
Reprovision control output	Continue with Step 5 .
Release control output	Proceed to Step 10 .

-
- 5** From the System View menu, select **Configuration > Misc. Discretes...**

Result: The Configure Miscellaneous Discretes window opens.

-
- 6** Select an available MDO Output you want to provision or an existing MDO you want to edit, then click **Select**.

Result: The provisionable parameters display for the selected output.

.....

7 Enter or edit the name for the MDO output in the **Control Type** box.

.....

8 Click **Apply** to activate your changes.

Result: A warning appears which indicates that the NE service may be affected by the changes.

.....

9 Click **Yes** to execute the command and then proceed to [Step 14](#).

.....

10 To operate an MDO output, select **Fault > Operate Output Misc. Discretes...** from the System View menu.

.....

11 Expand the Output list, select an output, and then click **Select**.

.....

12 Under Control State, select **Release Control Point** to turn off the output.

.....

13 Click **Apply** to make your changes. Read the warning message, then click **Yes** to execute the command. Click **Close** to exit.

.....

14 From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The controln condition is no longer present.

.....

15 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 503: Clear “CP firmware incompatibility” Alarm

Purpose This procedure is used to clear a CP firmware incompatibility alarm indicated by a lighted Critical (**CR**) or Minor (**MN**) LED on the SYSCTL faceplate, and reported as critical or minor in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Critical (**CR**) or Minor (**MN**) CP firmware incompatibility alarm.

1 From the WaveStar® CIT System View, click the Alarm List button and locate the CP firmware incompatibility alarm in the resulting alarm list.

2 Determine the alarm level(s) for the active CP firmware incompatibility alarm(s) (for example, CR or MN). Clear the alarms in order of severity, CR (SA) and then MN (NSA).

Important! The CP firmware incompatibility alarm is either CR (SA) when the circuit pack is active (either working and unprotected or the protection switch failed) or MN (NSA) when the circuit pack is protected and protection switch operated normally.

3 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack was removed and note the corresponding AID.

4 Un-seat and then re-seat the alarmed circuit pack.

Result: SYSCTL reinitializes the pack and should automatically update the firmware on the newly installed pack.

5 From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

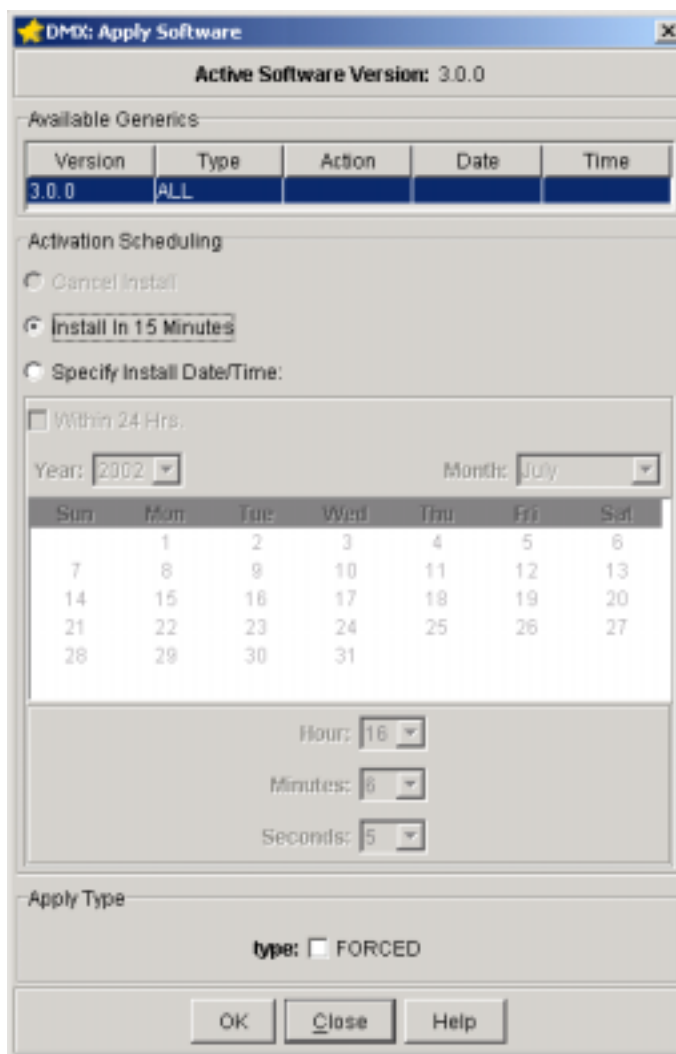
6 Is the CP firmware incompatibility alarm still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 19 .

-
- 7 From the System View menu, select **Configuration > Software > Apply Software....**

Result: The Apply Software window appears.

Figure 503-1 Apply Software Window



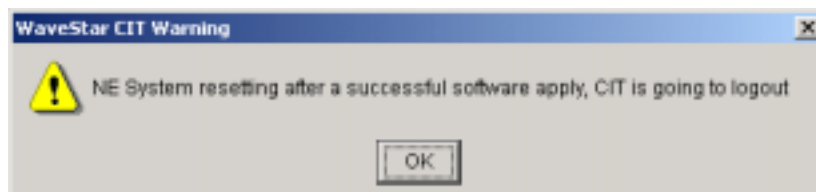
-
- 8** Select and/or enter the following information in the Apply Software window (Figure 503-1):
1. From the **Available Generics** panel, select the software generic to be activated.
 2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
 - Select **Install In 15 Minutes**
The software will install 15 minutes after you click **Okay**.
 - Select **Specify Install Date/Time** and select the **Year, Month, Date** and **Time**.
In this case, the **Hour, Minute**, and **Second** fields are used to enter a 24-hour clock time (13 hours and 15 minutes means that the software will apply at 1:15 PM on the date specified).
 - Select **Specify Install Date/Time and Within 24 Hours**.
In this case, the **Hour, Minute**, and **Second** fields are used to enter the time within 24 hours of the current date and time after you click **OK**.
 3. Click **OK**.

Important! You may cancel the scheduled apply by returning to the **Apply Software** menu at any time before the software applies and selecting the generic and **Cancel Install** and then clicking **OK**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 9** After approximately 15 minutes the apply is complete.

Result: The following warning screen appears Click **OK**.



Important! Following a Metropolis® DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

Reference: [Task 621: Set Date and Time \(5-191\)](#)

-
- 10** Log back into the shelf.

-
- 11** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

-
- 12** Is the CP firmware incompatibility alarm still present?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 19 .

-
- 13** From the System View menu, select **Configuration > Software > Apply Software....**

Important! This time you will perform a Forced Apply.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Result: The Apply Software window appears.

Figure 503-2 Apply Software Window (Forced)

DMX: Apply Software

Active Software Version: 3.0.0

Available Generics

Version	Type	Action	Date	Time
3.0.0	ALL			

Activation Scheduling

☐ Cancel Install

☒ Install in 15 Minutes

☐ Specify Install Date/Time:

☐ Within 24 Hrs.

Year: 2002 Month: July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Hour: 19 Minutes: 36 Seconds: 14

Apply Type

type: ☒ FORCED

OK Close Help

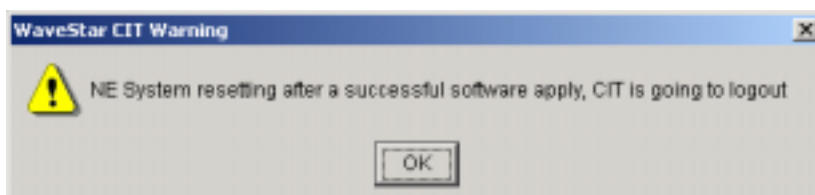
-
- 14** Select and/or enter the following information in the Apply Software window (Figure 503-1):
1. From the **Available Generics** panel, select the software generic to be activated.
 2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
 - Select **Install In 15 Minutes**
The software will install 15 minutes after you click **Okay**.
 - Select **Specify Install Date/Time** and select the **Year, Month, Date** and **Time**.
In this case, the **Hour, Minute, and Second** fields are used to enter a 24-hour clock time (13 hours and 15 minutes means that the software will apply at 1:15 PM on the date specified).
 - Select **Specify Install Date/Time and Within 24 Hours**.
In this case, the **Hour, Minute, and Second** fields are used to enter the time within 24 hours of the current date and time after you click **OK**.
 3. From the **Apply Type** panel, you must select type: **FORCED**.
This selection ensures that the generic in the dormant area is applied to **all** installed circuit packs.
 4. Click **OK**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 15** The completion time for the forced apply will vary depending upon the number and type of circuit packs installed in the shelf.

Important! The Forced Apply will affect service.

Result: When the apply is complete, the following warning screen appears. Click **OK**.



Important! Following a Metropolis® DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

Reference: [Task 621: Set Date and Time \(5-191\)](#)

-
- 16** Log back into the shelf.

-
- 17** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

-
- 18** Is the CP firmware incompatibility alarm still present?

If...	Then...
Yes	You may need to replace the pack. Contact your next level of support.
No	Continue with Step 19 .

19 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

END OF STEPS



Task 504: Clear “CP not allowed - crs” Alarm

Purpose This procedure is used to clear a CP not allowed - crs alarm indicated by a lighted Critical (**CR**) or Minor (**MN**) LED on the SYSCCTL faceplate and reported as critical or minor in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

- 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

- 2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a CP not allowed - crs alarm.

-
- 1** From the WaveStar® CIT System View, click the Alarm List button and locate the CP not allowed - crs alarm in the resulting alarm list.

-
- 2** Determine the alarm level(s) for the active CP not allowed - crs alarm(s) (for example, CR or MN). Clear the alarms in order of severity, CR (SA) and then MN (NSA).

Important! The CP not allowed - crs alarm is either CR (SA) when the circuit pack is active (either working and unprotected or the protection switch failed) or MN (NSA) when the circuit pack is protected and protection switch operated normally.

-
- 3** Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack was removed and note the corresponding AID.

-
- 4** From the System View menu, select **View > Cross-connections** and select the circuit pack. Are there any cross-connection present on that circuit pack that are not supported by that circuit pack type?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 7 .

-
- 5** From the WaveStar® CIT System View menu, select **Configuration > Cross-connection**, select the circuit pack, and follow the wizard to **delete** any unsupported cross-connections to/from that circuit pack.
-

- 6** From the WaveStar® CIT System View menu, select **Configuration > Cross-connection**, select the circuit pack, and follow the wizard to **reprovision** a supported cross-connection to/from that circuit pack.
-

- 7** From the System View, click the Alarm List button and click **Refresh**.
-

Result: The CP not allowed - crs alarm is no longer present.

.....

- 8** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 505: Clear “CP not allowed - eqpt” Alarm

Purpose This procedure is used to clear a CP not allowed - eqpt alarm indicated by a lighted Major (**MJ**) or Minor (**MN**) LED on the SYSCTL faceplate, and reported as major or minor in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

- Before you begin**
- Prior to beginning this task, you must:
1.

If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2.

Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task

Complete the following steps to clear a Major (**MJ**) or Minor (**MN**) CP not allowed - eqpt alarm.

-
- 1

From the WaveStar® CIT System View, click on the Alarm List button and locate the CP not allowed - eqpt alarm in the resulting alarm list.

.....
- 2

Determine the alarm level(s) for the active CP not allowed - eqpt alarm(s) (for example, MJ or MN). Clear the alarms in order of severity, MJ (SA) and then MN (NSA).

Important!

The CP not allowed - eqpt alarm is either MJ (SA) when the circuit pack is active (either working and unprotected or the protection switch failed) or MN (NSA) when the circuit pack is protected and protection switch operated normally.

.....
- 3

Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack was removed, and note the corresponding AID.

.....
- 4

Is there an electrical circuit pack (28DS1/28DS1PM, 12DS3/ EC1, TMUX, 10/100T) installed in Growth slot G1 or G2?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 8 .

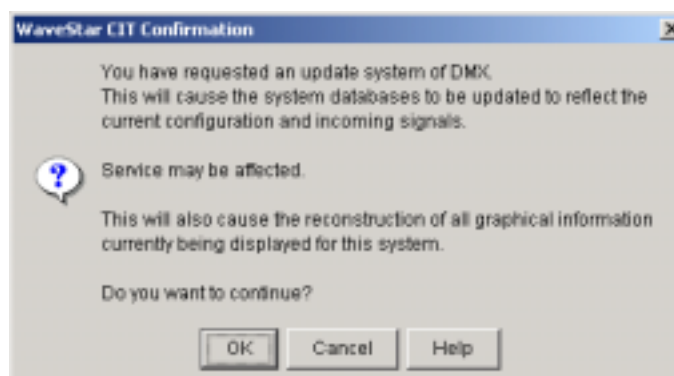
-
- 5 Remove the electrical circuit pack from G1 or G2 and (if desired) replace with the appropriate Gigabit Ethernet circuit pack 1GSX or 1GLX.

Reference: [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

.....

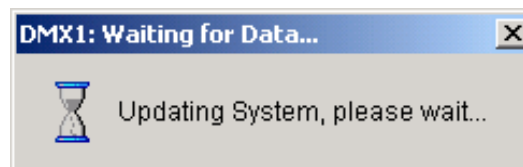
- 6 From the System View menu, select **Configuration > Update System**.

Result: The following confirmation appears.



-
- 7 Click **OK**.

Result: The following window appears.



-
- 8 From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The CP not allowed - eqpt alarm is no longer present.

.....
9 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S
.....
☐

Task 506: Clear “CP removed” Alarm

Purpose This procedure is used to clear a CP removed alarm indicated by a lighted Critical (**CR**) or Minor (**MN**) LED on the SYSCTL faceplate, and reported as critical or minor in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Replacement circuit pack of the appropriate type (if necessary)

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

- Before you begin**
- Prior to beginning this task, you must:
1.

If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2.

Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)
3.

As appropriate, have the on-site craft turn-off the audible alarm by pressing the **ACO/TEST** button, which is located on the front of the SYSCCTL circuit pack.

- Task**
- Complete the following steps to clear a Critical (**CR**) or Minor (**MN**) CP removed alarm.
-

1

From the WaveStar® CIT System View, click the Alarm List button and locate the CP removed alarm in the resulting alarm list.

.....

2

Determine the alarm level(s) for the active CP removed alarm(s) (for example, CR or MN). Clear the alarms in order of severity, CR (SA) and then MN (NSA).

Important! The CP removed removed alarm is generally either CR (SA) when the circuit pack is active (either working and unprotected or the protection switch failed) or MN (NSA) when the circuit pack is protected and protection switch operated normally.

.....

3

Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack was removed and note the corresponding AID.

.....

4 Was the circuit pack removed intentionally?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 11 .

.....

5 From the WaveStar® CIT System View menu, select **View > Cross-connections** and select the circuit pack. Are there any cross-connection present on that circuit pack?

If...	Then...
Yes	Continue with Step 6 .
No	Proceed to Step 7 .

.....

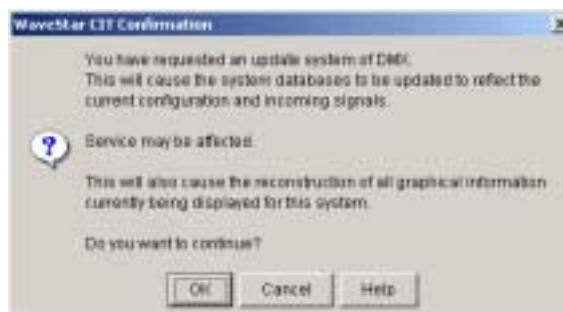
6 From the WaveStar® CIT System View menu, select **Configuration > Cross-connection**, select the circuit pack, and follow the wizard to remove any existing cross-connections.

.....

7 If the alarm is a result of a deliberate circuit pack removal, remove the circuit pack(s) from the equipment list. From the System View menu, select **Configuration > Update System**.

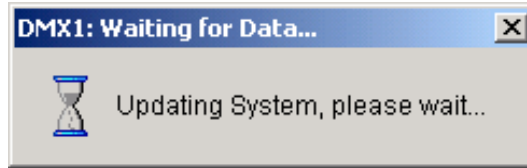
Important! This system update clears all current CP removed alarms.

Result: The following confirmation appears.



-
- 8** Click **OK**.

Result: The following window appears.



-
- 9** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The CP removed alarm is no longer present.

.....

- 10** Proceed to [Step 13](#).

-
- 11** Reinstall the removed circuit pack (with the same circuit pack or a replacement).

Important! The tasks referenced below also include instructions on removing the specified circuit pack. If you are clearing a CP removed alarm, the circuit pack has already been removed.

If...	Then...
T1TERM	A 28DS1 or 28DS1PM circuit pack was removed; replace the pack. Proceed to Task 602: Replace 28DS1/28DS1PM (LNW6/LNW7) Circuit Pack (5-25) .
T3TERM	A 12DS3/EC1 circuit pack was removed; replace the pack. Proceed to Task 603: Replace 12DS3/EC1 (LNW16) Circuit Pack (5-31) .
TMUXTERM	A TMUX circuit pack was removed; replace the pack. Proceed to Task 620: Replace TMUX (LNW18) Circuit Pack (5-185) .
OC3TERM	A low-speed OC-3 OLIU was removed; replace the pack. Proceed to Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49) .
OC12TERM	A low-speed OC-12 OLIU was removed; replace the pack. Proceed to Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49) .
OC48TERM and the AID begins with <i>fn</i>	A low-speed OC-48 OLIU was removed; replace the pack. Proceed to Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49) .
OC48TERM and the AID begins with <i>main</i>	A high-speed main OC-48 OLIU was removed; replace the pack. Proceed to Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs (5-39) .
OC192TERM	A high-speed main OC-192 OLIU was removed. Proceed to Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs (5-39) .

If...	Then...
FETERM	A 10/100T circuit pack was removed; replace the pack. Proceed to Task 606: Replace 10/100T Fast Ethernet (LNW66) Circuit Pack (5-57) .
GETERM	A 1GSX or 1GLX circuit pack was removed; replace the pack. Proceed to Task 607: Replace 1GSX/1GLX (LNW67/68) Gigabit Ethernet Circuit Packs (5-59) .

-
- 12** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The CP removed alarm is no longer present.

.....

- 13** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....

Task 507: Clear “Default K-bytes” Alarm

Purpose This procedure is used to clear a Default K-bytes alarm indicated by a lighted major (**MJ**) LED on the SYSCTL faceplate and reported as major in the WaveStar® CIT Alarm list.

Important! When this alarm is present, protection switching at the BLSR node is unavailable.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) Default K-bytes alarm.

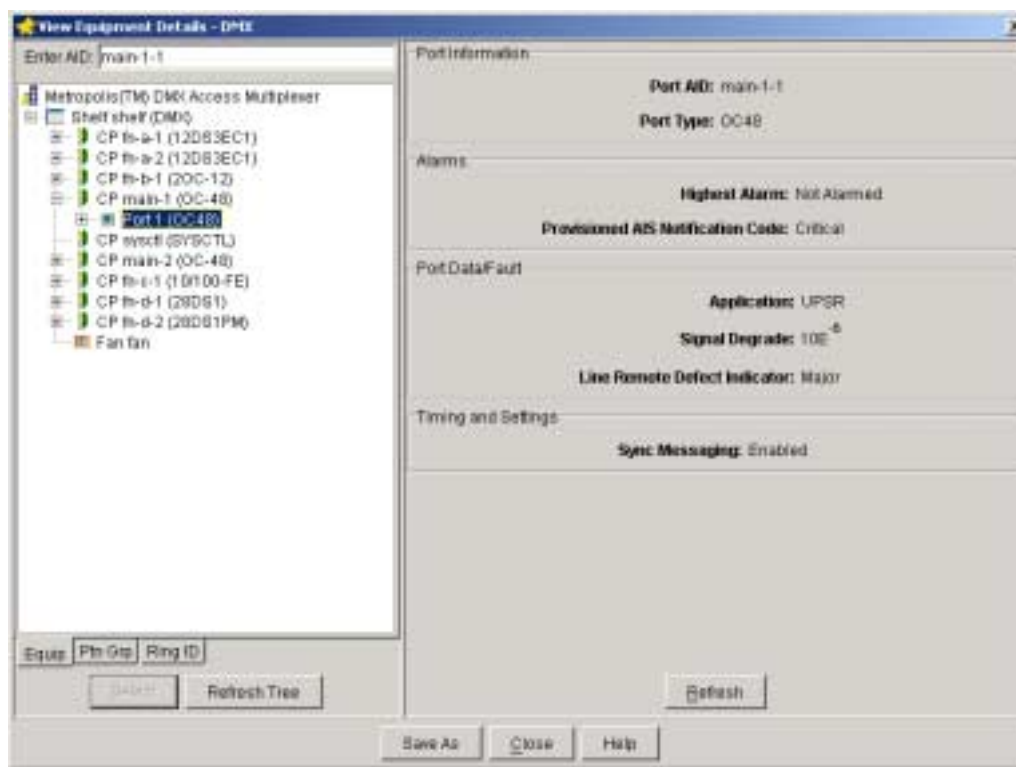
- 1** In the alarm list, are there any inc. OCN or inc. STSN alarms present?

If...	Then...
Yes	Proceed to the appropriate task to clear each alarm in order of severity.
No	Continue with Step 2 .

- 2** Verify that all nodes in the ring have been changed to the BLSR application mode from the default UPSR application mode.

- 3** From the System View, select **View > View Equipment Details**, expand the circuit pack, highlight the desired port, and click **Select**.

Result: The following screen appears.

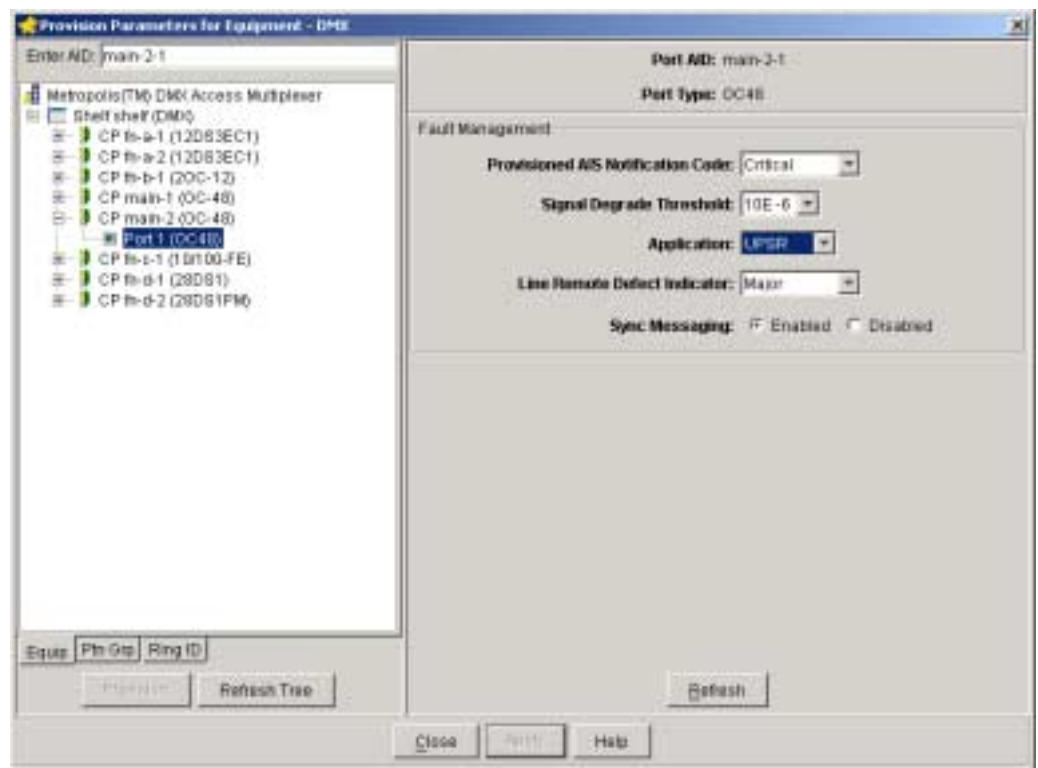


-
- 4 In the Port Data/Fault section of the *View Equipment Details* window, does the Application: read UPSR?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 7 .

-
- 5 From the System View, select **Configuration > Provision**, expand the circuit pack, and then highlight the desired port and click **Provision**.

Result: The following screen appears.



-
- 6** In the Fault Management section of the *Provision Parameters for Equipment* window, change Application to 2F BLSR from UPSR and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
 Click **Yes**. In the *Provision Parameters for Equipment* window, click **Close**.

-
- 7** From the System View, click the Alarm List button and click **Refresh**.

-
- 8** Is the Default K-bytes alarm still present?

If...	Then...
Yes	Continue with Step 9 .
No	Proceed to Step 14 .

-
- 9** From the System View menu, select **Reports > Remote NE Alarms List...**

Result: The *Remote NE Alarms List* screen appears.

-
- 10** Are there any alarms present on the remote NEs?

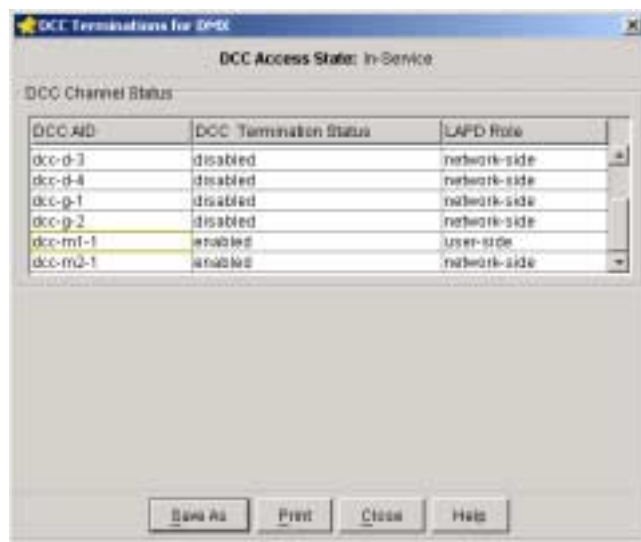
If...	Then...
Yes	Log in to the remote NE and clear all alarms in order of severity and then continue with Step 11 .
No	Continue with Step 11 .

-
- 11** In the alarm list, is there an inconsistent DCC switches or section DCC channel failed alarm?

If...	Then...
Yes	Continue with Step 12 .
No	Proceed to Step 16 .

-
- 12** From the System View menu, select **View > DCC Terminations**.

Result: The following screen appears.



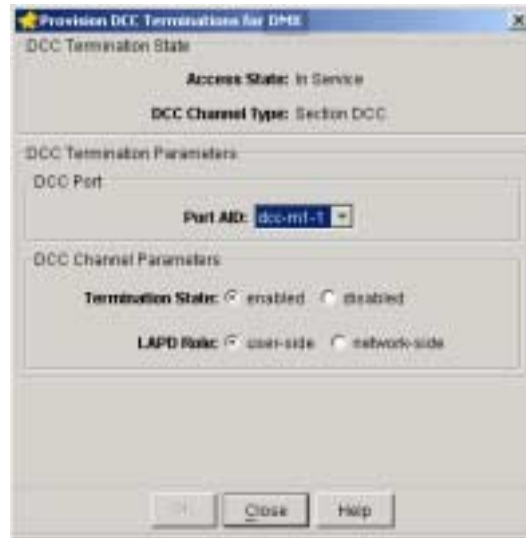
-
- 13** For the DCC AIDs: dcc-x1-1 and dcc-x2-1, does the DCC termination Status column read **enabled** AND does LAPD Role column read **user** or **network side** appropriately?

Important! Usually, dcc-x1-1 is provisioned as user side and dcc-x2-2 is network side. A user side must be adjacent to a network side and a network side must be adjacent to a user side.

If...	Then...
Yes	Proceed to Step 16 .
No	Continue with Step 14 .

-
- 14** From the System View menu, select **Configuration > DCC Terminations**.

Result: The following screen appears.



-
- 15** From the Provision DCC Terminations screen,
1. Under DCC Termination Parameters > DCC Port, select the Port AID that you wish to reprovision.
 2. Under DCC Channel Parameters > Termination State, select **enabled**.
 3. Under DCC Channel Parameters > LAPD Role, select **user-side** or **network-side**.
(LAPD = link access protocol of the D-channel)
 4. Click **OK**.

Result: The following warning message appears:
Execution will affect the DCC termination for the (TID). Do you want to execute this command?
 Click **Yes**.

5. Click **Close** on the Provision DCC Terminations screen.
-

- 16** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

.....

17 Is the Default K-bytes alarm still present?

If...	Then...
Yes	Continue with Step 18 .
No	Proceed to Step 20 .

.....

18 From the System View menu, select **View > Ring Map > Ring Map....** Select the required ring and click on **Select**. Verify that the ring map was provisioned correctly.

Result: The *Ring Map* screen appears.

.....

19 Is either the West Link or the East Link *Isolated*?

If...	Then...
Yes	The adjacent node on the corresponding side (East or West) is either being initialized, powered up, powered down. What for the node to come up again.
No	Continue with Step 20 .

.....

20 From the System View, click the Alarm List button and click **Refresh**.

.....

21 Is the Default K-bytes alarm still present?

If...	Then...
Yes	Contact your next level of support.
No	Proceed to Step 22 .

.....
22 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S
.....
☐

Task 508: Clear “dormant/exec code mismatch” Condition

Purpose This procedure is used to clear a dormant/exec code mismatch condition, reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a dormant/exec code mismatch.

- 1 From the System View menu, select **Configuration > Software > Apply Software....**

Result: The Apply Software window appears.

Figure 508-1 Apply Software Window

DMC: Apply Software

Active Software Version: 3.0.0

Available Generics

Version	Type	Action	Date	Time
3.0.0	ALL			

Activation Scheduling

☐ Cancel Install

☒ Install in 15 Minutes

☐ Specify Install Date/Time:

☐ Within 24 Hrs.

Year: 2002 Month: July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Hour: 16 Minutes: 6 Seconds: 5

Apply Type

type: ☐ FORCED

OK Close Help

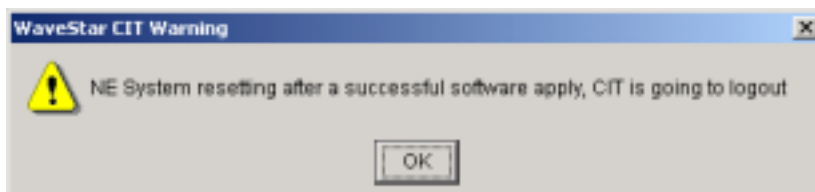
-
- 2 Select and/or enter the following information in the Apply Software window (Figure 503-1):
 1. From the **Available Generics** panel, select the software generic to be activated.
 2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
 - Select **Install In 15 Minutes**
The software will install 15 minutes after you click **Okay**.
 - Select **Specify Install Date/Time** and select the **Year, Month, Date** and **Time**.
In this case, the **Hour, Minute, and Second** fields are used to enter a 24-hour clock time (13 hours and 15 minutes means that the software will apply at 1:15 PM on the date specified).
 - Select **Specify Install Date/Time and Within 24 Hours**.
In this case, the **Hour, Minute, and Second** fields are used to enter the time within 24 hours of the current date and time after you click **OK**.
 3. Click **OK**.

Important! You may cancel the scheduled apply by returning to the **Apply Software** menu at any time before the software applies and selecting the generic and **Cancel Install** and then clicking **OK**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 3 After approximately 15 minutes the apply is complete.

Result: The following warning screen appears Click **OK**.



Important! Following a Metropolis® DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

Reference: [Task 621: Set Date and Time \(5-191\)](#)

.....

- 4 Log back into the shelf.
-

- 5 From the System View, click the Alarm List button and click **Refresh**.

Result: The dormant/exec code mismatch condition is no longer present.

.....

6 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 509: Clear “DS1 loopback (to DSX)” Condition

- Purpose** This procedure is used to clear a DS1 loopback (to DSX) condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a user initiated a DS1 facility loopback.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a DS1 loopback (to DSX) condition.

Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the DS1 circuit being tested.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the DS1 loopback (to DSX) condition in the resulting alarm list.

-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine note the corresponding AID.

-
- 3 From the System View menu, select **Fault > Loopback**, expand the appropriate 28DS1 or 28DS1PM circuit pack, expand the appropriate VT Group, select the affected DS1 port, and then click **Select**.

Result: The following Loopback screen appears.



-
- 4** From the Loopback screen, select Facility and click **Release**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 5** From the System View, click the Alarm List button and click **Refresh**.

Result: The DS1 loopback (to DSX) condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 510: Clear “DS1 loopback (to Fiber)” Condition

- Purpose** This procedure is used to clear a DS1 loopback (to Fiber) condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a user initiated a DS1 terminal loopback.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a DS1 loopback (to Fiber) condition.

Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the DS1 circuit being tested.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the DS1 loopback (to Fiber) condition in the resulting alarm list.

-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine note the corresponding AID.

-
- 3 From the System View menu, select **Fault > Loopback**, expand the appropriate 28DS1 or 28DS1PM circuit pack, expand the appropriate VT Group, select the affected DS1 port, and click **Select**.

Result: The following Loopback screen appears.



-
- 4** From the Loopback screen, select Terminal and click **Release**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 5** From the System View, click the Alarm List button and click **Refresh**.

Result: The DS1 loopback (to Fiber) condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 511: Clear “DS1 trmsn test IP” Condition

Purpose This procedure is used to clear a DS1 trmsn test IP condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a DS1 transmission test is in progress.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a DS1 trmsn test IP condition.

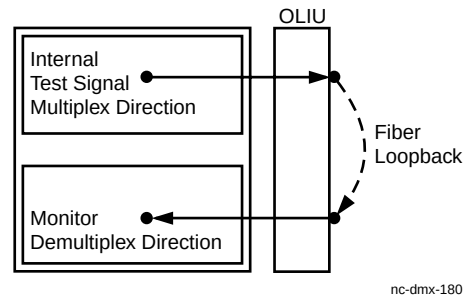
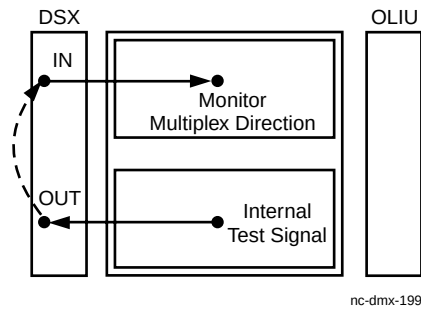
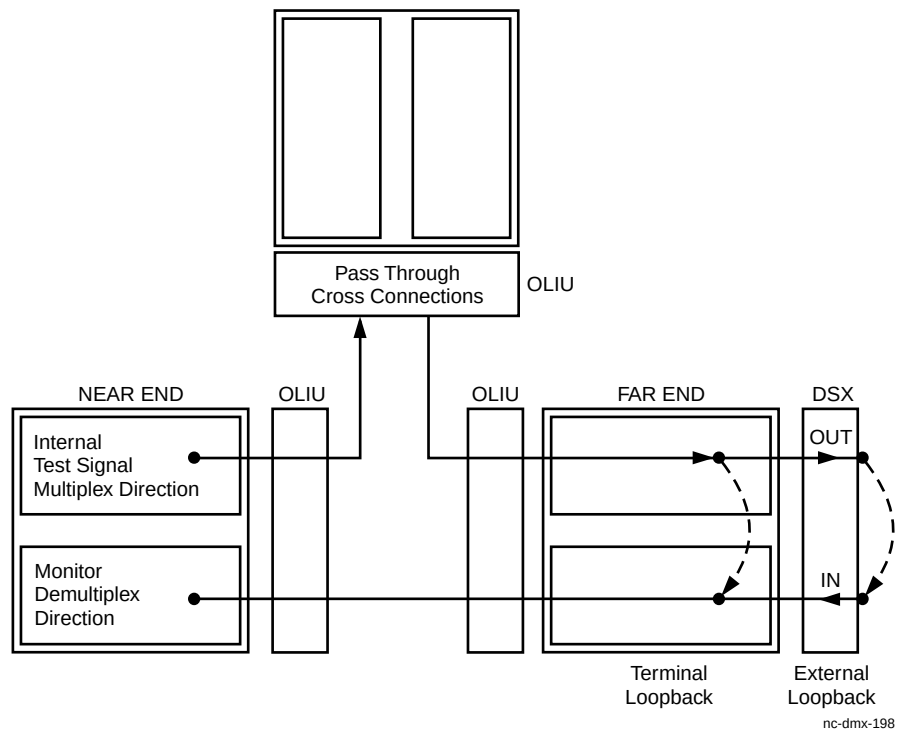
Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the DS1 circuit being tested.

Important! The condition will clear automatically when the transmission test completes - approximately 1 minute.

1 Determine the type of transmission test that was performed.

If the DS1 transmission test was performed ...	Then...
at a standalone shelf in the <i>Terminal</i> direction (toward the fiber),	At the Main OLIUs, the fiber is loop backed. (Refer to Figure 511-1.) User performed a <i>terminal</i> transmission test on the DS1 using the Fault > Test > Test Transmission command, or connected a DS1 test set to the port to be tested at the DSX panel and applied a DS1 test signal.
at a standalone shelf in the <i>Facility</i> direction (toward the DSX),	At the DSX, a patch cord is connected from the OUT jack to the IN jack associated with the DS1 circuit being tested. (Refer to Figure 511-2.) User performed a <i>facility</i> transmission test on the DS1 using the Fault > Test > Test Transmission command.
in a Metropolis® DMX network (end-to-end)	At the far end DSX, a patch cord is connected from the OUT jack to the IN jack associated with the DS1 circuit being tested, User performed a <i>terminal</i> transmission test on the DS1 using the Fault > Test > Test Transmission command, or connected a DS1 test set to the port to be tested at the DSX panel and applied a DS1 test signal, or user logged in to the far end Metropolis® DMX shelf and performed a <i>Terminal</i> loopback on the DS1 circuit being tested using the Fault > Loopback command. (Refer to Figure 511-3.)

Result: The following figures show the test arrangements.

Figure 511-1 Standalone Shelf with Main OLIU Loop Back**Figure 511-2 Standalone Shelf with DSX Loop Back****Figure 511-3 End-to-End DS1 Circuit with Far End Loop Back**

-
- 2** From the WaveStar® CIT System View, click the Alarm List button and locate the DS1 loopback (to DSX) condition in the resulting alarm list.

Result: ADS1 trmsn test IP condition appears in the alarm list and will persist for the duration of the test, approximately 1 minute.

.....

- 3** After approximately a minute, click **Refresh** on the Alarm List.

Result: The DS1 trmsn test IP condition is no longer present.

.....

- 4** At the near-end, disconnect the DS1 test set from the DSX-1 panel or the DS1 port, if required.
-

- 5** Delete any cross-connections entered to perform this procedure.

Reference: *Metropolis® DMX Access Multiplexer User Operations Guide, 365-372-301*

.....

- 6** At the far-end, release the *terminal* loopback using the **Fault > Loopback** command, or remove the patch cords at the DSX panel for the circuit under test.
-

- 7** From the System View, click the Alarm List button and click **Refresh**.

Result: The DS1 trmsn test IP condition is no longer present.

.....

- 8** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 512: Clear “DS3 loopback (to DSX)” Condition

- Purpose** This procedure is used to clear a DS3 loopback (to DSX) condition indicated by a lighted Abnormal (**ABN**) LED on the SYSC TL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a user initiated a DS3 facility loopback.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a DS3 loopback (to DSX) condition.

Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the DS3 circuit being tested.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the DS3 loopback (to DSX) condition in the resulting alarm list.

-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine note the corresponding AID.

-
- 3 From the System View menu, select **Fault > Loopback**, expand the appropriate 12DS3/EC1 or TMUX circuit pack, select the affected DS3 port, and click **Select**.

Result: The following Loopback screen appears.



-
- 4** From the Loopback screen, select Facility and click **Release**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 5** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The DS3 loopback (to DSX) condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S
.....



Task 513: Clear “DS3 loopback (to Fiber)” Condition

- Purpose** This procedure is used to clear a DS3 loopback (to Fiber) condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a user initiated a DS3 terminal loopback.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a DS3 loopback (to Fiber) condition.

Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the DS3 circuit being tested.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the DS3 loopback (to Fiber) condition in the resulting alarm list.

-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine note the corresponding AID.

-
- 3 From the System View menu, select **Fault > Loopback**, expand the appropriate 12DS3/EC1 or TMUX circuit pack, select the affected DS3 port, and click **Select**.

Result: The following Loopback screen appears.



-
- 4** From the Loopback screen, select Terminal and click **Release**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 5** From the System View, click the Alarm List button and click **Refresh**.

Result: The DS3 loopback (to Fiber) condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 514: Clear “DS3 trmsn test IP” Condition

Purpose This procedure is used to clear a DS3 trmsn test IP condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a DS3 transmission test is in progress.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a DS3 trmsn test IP condition.

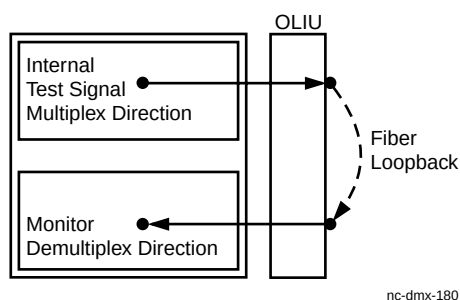
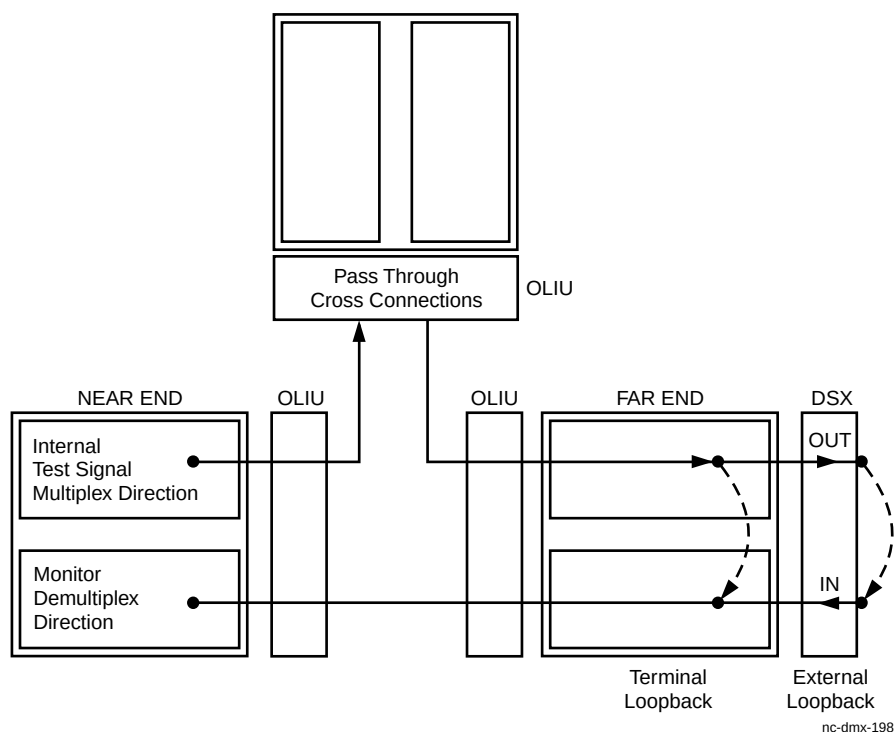
Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the DS3 circuit being tested.

Important! The condition will clear automatically when the transmission test completes - approximately 1 minute.

1 Determine the type of transmission test that was performed.

If the DS3 transmission test was performed ...	Then...
at a standalone shelf in the <i>Terminal</i> direction (toward the fiber),	At the Main OLIUs, the fiber is loop backed. (Refer to Figure 514-1 .) User performed a <i>terminal</i> transmission test on the DS3 using the Fault > Test > Test Transmission command, or connected a DS3 test set to the port to be tested at the DSX panel and applied a DS3 test signal.
in a Metropolis® DMX network (end-to-end)	At the far end DSX, a patch cord is connected from the OUT jack to the IN jack associated with the DS3 circuit being tested, User performed a <i>terminal</i> transmission test on the DS3 using the Fault > Test > Test Transmission command, or connected a DS3 test set to the port to be tested at the DSX panel and applied a DS3 test signal, or user logged in to the far end Metropolis® DMX shelf and performed a <i>Terminal</i> loopback on the DS3 circuit being tested using the Fault > Loopback command. (Refer to Figure 514-2 .)

Result: The following figures show the test arrangements.

Figure 514-1 Standalone Shelf with Main OLIU Loop Back**Figure 514-2 End-to-End DS3 Circuit with Far End Loop Back**

- 2 From the WaveStar® CIT System View, click the Alarm List button and locate the DS1 loopback (to DSX) condition in the resulting alarm list.

Result: ADS3 trmsn test IP condition appears in the alarm list and will persist for the duration of the test, approximately 1 minute.

- 3 After approximately a minute, click **Refresh** on the Alarm List.

Result: The DS3 trmsn test IP condition is no longer present.

-
- 4 At the near-end, disconnect the DS3 test set from the DSX-3 panel or the DS3 port, if required.
-
- 5 Delete any cross-connections entered to perform this procedure.
- Reference:** *Metropolis® DMX Access Multiplexer User Operations Guide, 365-372-301*
-
- 6 At the far-end, release the *terminal* loopback using the **Fault > Loopback** command, or remove the patch cords at the DSX panel for the circuit under test.
-
- 7 From the System View, click the Alarm List button and click **Refresh**.
- Result:** The DS3 trmsn test IP condition is no longer present.
-
- 8 Are there any alarms listed?
- | If... | Then... |
|-------|---|
| Yes | Proceed to the appropriate task to clear the alarm. |
| No | STOP! END OF TASK. |
-
- END OF STEPS
-
- ☐

Task 515: Clear “Duplicate Ring Node” Alarm

- Purpose** This procedure is used to clear a Duplicate Ring Node alarm indicated by a lighted major (MJ) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
- Reference:** [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2. Connect PC and establish a WaveStar® CIT session.
- Reference:** [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) Duplicate Ring Node alarm.

-
- 1** From the System View menu, select **View > Ring Map > Ring Map...**, highlight the affected ring, and click **Select**.

Result: The *Ring Map* screen appears.

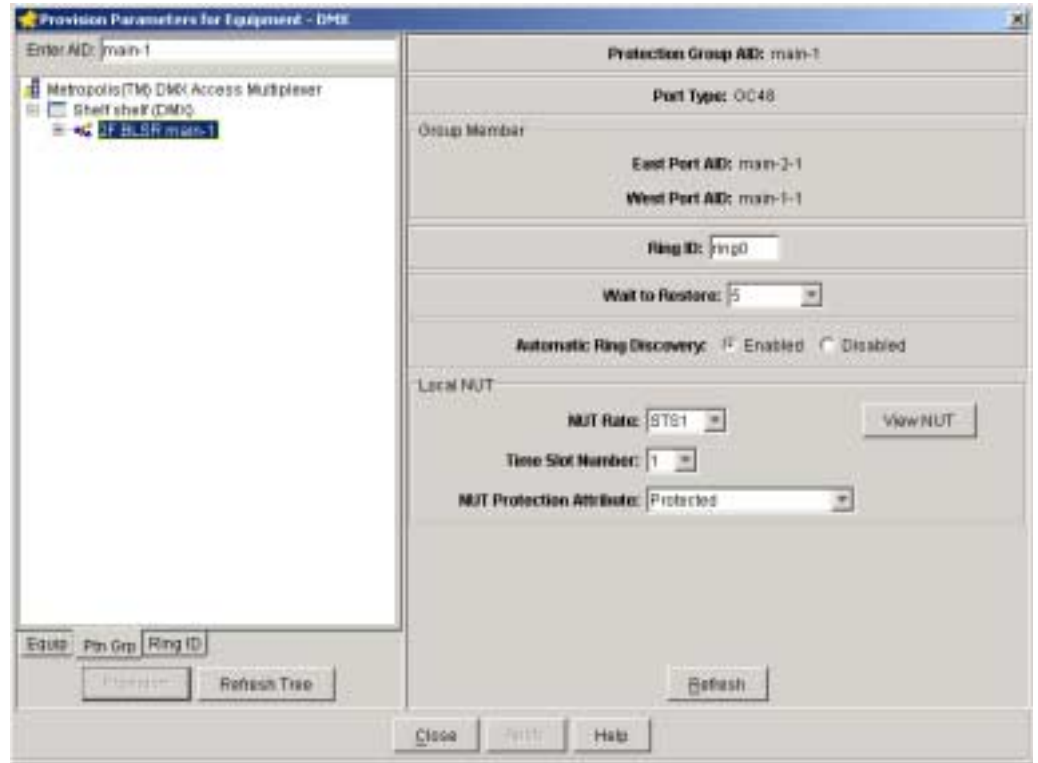
.....

- 2** Determine the number of nodes in the ring. Is the ring map currently showing 16 nodes in the ring?

If...	Then...
Yes	A BLSR supports a maximum of 16 nodes, a seventeenth node may be trying to join the ring. Remove all nodes after the 16th.
No	Continue with Step 3 .

-
- 3 From the System View menu, select **Configuration > Provision** and click on the **Ptn Grp** tab, select the appropriate 2F BLSR Protection Group, and click **Provision**.

Result: The following screen appears.

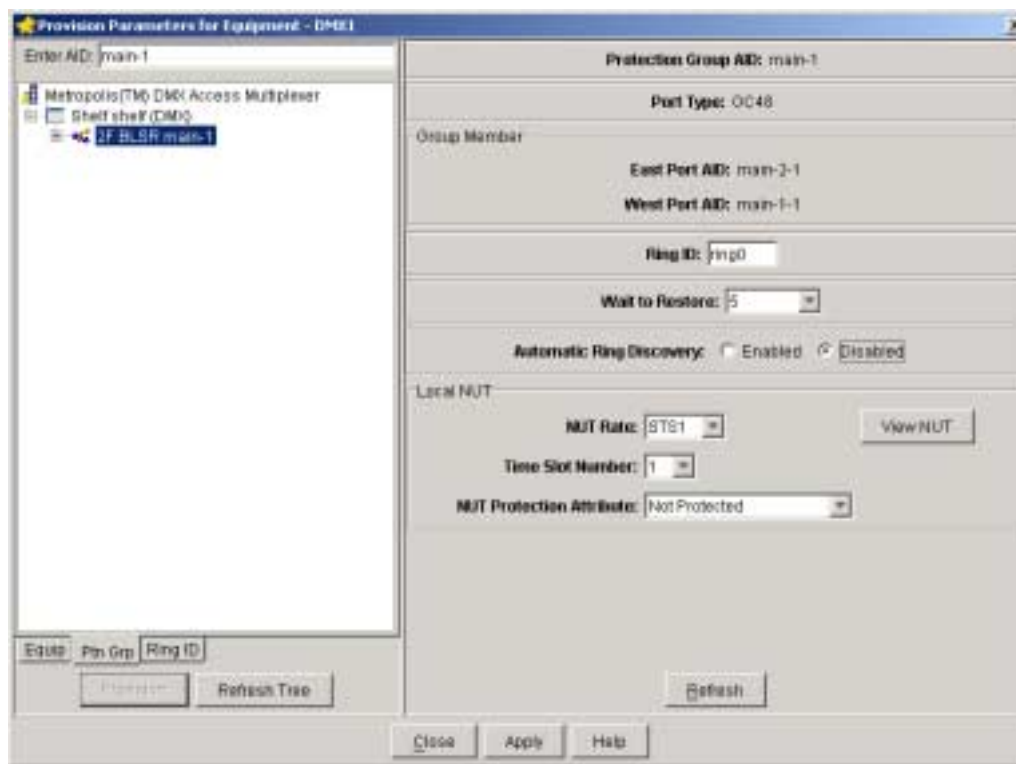


-
- 4 Is Automatic Ring Discovery *enabled*?

If...	Then...
Yes	Proceed to Step 7 .
No	Continue with Step 5 .

-
- 5 From the System View menu, select **Configuration > Provision** and click on the **Ptn Grp** tab, select the appropriate 2F BLSR Protection Group, and click **Provision**.

Result: The following screen appears.



-
- 6 From the *Provision Parameters for Equipment* window, select **Enabled** for Automatic Ring Discovery and click **Apply**.

Result: The following warning message appears:

Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**. In the *Provision Parameters for Equipment* window, click **Close**.

-
- 7 Repeat [Step 3](#) through [Step 6](#) for all nodes in the BLSR protection group.

-
- 8** From the WaveStar® CIT System View, click the Alarm List button and Click **Refresh**.
-

- 9** Is the Duplicate Ring Node alarm still present?

If...	Then...
Yes	Contact your next level of support.
No	Continue with Step 13 .

-
- 10** Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 516: Clear “duplicate TID” Alarm

Purpose This procedure is used to clear a duplicate TID alarm as indicated by a lighted Major (**MJ**) LED on SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Many of the trouble clearing procedures, that follow, require actions that are service affecting. These actions are indicated by a caution message indicating the extent of the service disruption.

For example:



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

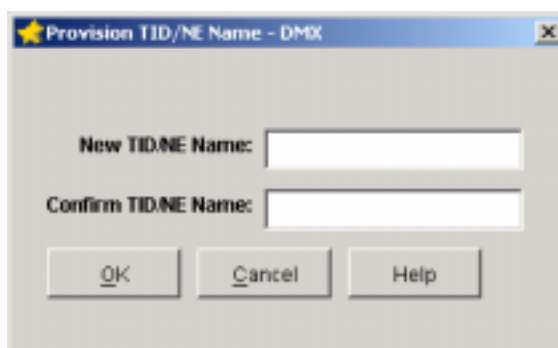
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to identify and clear a Major (**MJ**) duplicate TID alarm.

-
- 1 Log in to the NE (local or remote) that you wish to rename.
-

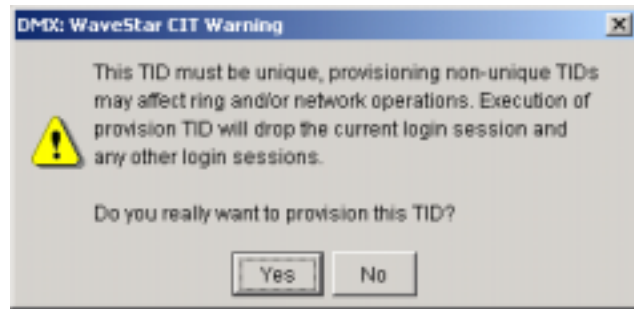
- 2 From the WaveStar® CIT System View, select **Administration > Set TID** to provision a different TID.

Result: The following screen appears.



-
- 3 Enter the desired TID in both fields and click **OK**.

Result: The following confirmation screen appears.



-
- 4 Read the warning and click **Yes**.

Result: The system logs you out.

-
- 5 Log back into the original NE that generated the alarm.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

-
- 6 From the System View, click the Alarm List button and click **Refresh**.

Result: The duplicate TID alarm is no longer present.

-
- 7 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 517: Clear “EC1 loopback (to DSX)” Condition

- Purpose** This procedure is used to clear an EC-1 loopback (to DSX) condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a user initiated an EC-1 facility loopback.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a EC1 loopback (to DSX) condition.

Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the EC-1 circuit being tested.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the EC1 loopback (to DSX) condition in the resulting alarm list.

-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine note the corresponding AID.

-
- 3 From the System View menu, select **Fault > Loopback**, expand the appropriate 12DS3/EC1 circuit pack, select the affected EC-1 port, and click **Select**.

Result: The following Loopback screen appears.



-
- 4** From the Loopback screen, select Facility and click **Release**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 5** From the System View, click the Alarm List button and click **Refresh**.

Result: The EC1 loopback (to DSX) condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 518: Clear “EC1 loopback (to Fiber)” Condition

- Purpose** This procedure is used to clear an EC1 loopback (to Fiber) condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List. The condition indicates that a user initiated an EC-1 terminal loopback.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a EC1 loopback (to Fiber) condition.

Important! Proper terminating and pass through cross-connections must exist at each shelf (including stand-alone shelves) to establish continuity for the EC-1 circuit being tested.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the EC1 loopback (to Fiber) condition in the resulting alarm list.

-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine note the corresponding AID.

-
- 3 From the System View menu, select **Fault > Loopback**, expand the appropriate 12DS3/EC1 circuit pack, select the affected EC-1 port, and click **Select**.

Result: The following Loopback screen appears.



-
- 4** From the Loopback screen, select Terminal and click **Release**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 5** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The EC1 loopback (to Fiber) condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S
.....



Task 519: Clear “environmentn” Alarm

Purpose This procedure is used to clear an environmentn alarm reported in the WaveStar® CIT Alarm List. The alarm levels are provisionable per input (except for 15) as either Critical, Major, Minor (Default), or Status Condition. The alarm list identifies the affected environmental input as 1 through 19; 15 is always the fan.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- [Chapter 3, “Maintenance Overview”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an environmentn alarm/condition.

-
- 1

From the WaveStar® CIT System View, click on the Alarm List button and locate the environmentn alarm/condition in the resulting alarm list.
-
- 2

Determine the alarm level(s) for the active environmentn alarm(s). Clear the alarms in order of severity, CR (SA), MJ (SA), MN (NSA), and then SC (NSA).
-
- 3

Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), and note the corresponding AID.
-
- 4

From the System View menu, select **View > Misc. Discretes...** and click on **Output**.

Result: The View Miscellaneous Discretes window opens.

-
- 5

Can you clearly identify the cause of the condition?

If...	Then...
Yes	Clear using local procedures. Proceed to Step 13 .
Yes: It is environment 15: fan failure	Proceed to Task 521: Clear “fan shelf failed” Alarm (4-113) .
No	Continue with Step 6 .

-
- 6

Do you wish to reprovision the environmental input?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 13 .

-
- 7** From the System View menu, select **Configuration > Misc. Discretes...**

Result: The Configure Miscellaneous Discretes window opens.

.....

- 8** Select an available MDI Input you want to provision or an existing MDI you want to edit, then click **Select**.

Result: The provisionable parameters display for the selected input.

.....

- 9** Enter or edit the name for the MDI input in the **Name** box.
-

- 10** Enter or verify the **Alarm Type** and **Alarm Level**.
-

- 11** Click **Apply** to activate your changes.

Result: A warning appears which indicates that the NE service may be affected by the changes.

.....

- 12** Click **Yes** to execute the command.
-

- 13** From the System View, click the Alarm List button and click **Refresh**.

Result: The environment condition is no longer present.

.....

- 14** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 520: Clear “excessive holdover” Alarm

Purpose This procedure is used to clear an excessive holdover alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

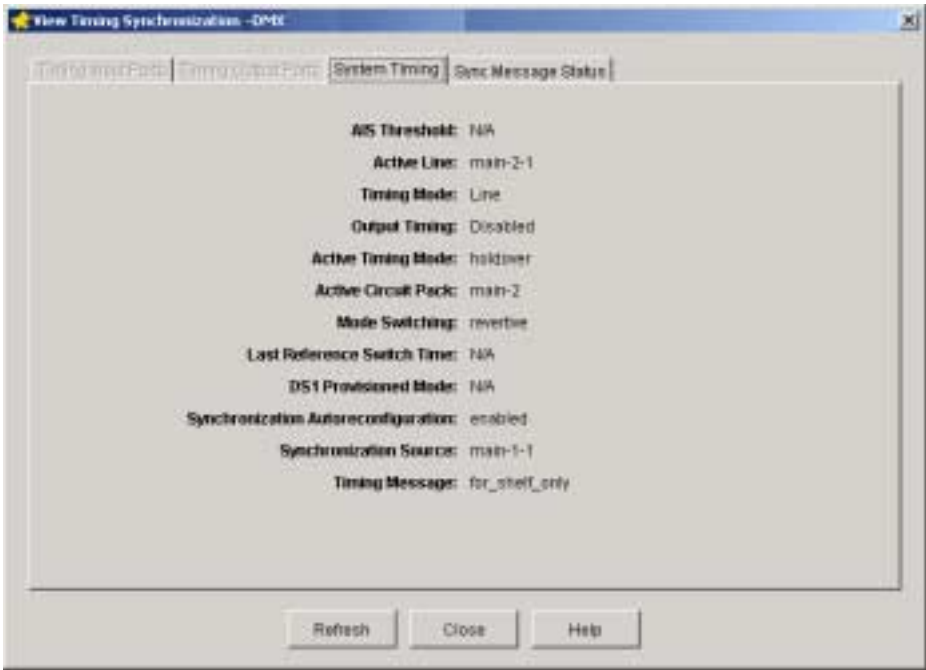
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) excessive holdover alarm.

- 1 From the **System View** menu, select **View > Timing/Sync**.

Result: The View Timing Synchronization window appears.



- 2 Is your Timing Mode Line?

Important! The Active Timing Mode is Holdover.

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 9 .

-
- 3** Confirm that Synchronization Autoreconfiguration is *Enabled* and Mode Switching is *Revertive*?

If...	Then...
Yes	Proceed to Step 6 .
No	Continue with Step 4 .

-
- 4** From the **System View** menu, select **Configuration > Timing/Sync**.

-
- 5** Select **Revertive** for Mode Switching and **Enabled** for Synchronization Autoreconfiguration and click **OK**.

Result: The following warning message appears:
Execution of this command may affect the NE. Do you want to execute this command?
 Click **Yes**.

-
- 6** From the WaveStar® CIT System View, click the Alarm List button and Click **Refresh**.

-
- 7** Is the excessive holdover alarm still present?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 13 .

-
- 8** Are there any OC-N alarms listed (especially on M1 or M2)?

If...	Then...
Yes	Proceed to the appropriate task to clear the other alarm.
No	STOP! END OF TASK.

.....

9 Is your Timing Mode External?

Important! The Active Timing Mode is Holdover.

If...	Then...
Yes	Continue with Step 10 .
No	Proceed to Step 11 .

.....

10 The system automatically switched to holdover mode due to failure of the external timing references. Repair the Timing references according to local procedures.

.....

11 The system may have been forced to Holdover. From the System View menu, select **Fault > Timing/Sync Protection Switch > Clock Mode Switch**, select **Norm**, and click **OK**.

Important! This window also provides an Apply button. Clicking on Apply executes the command AND leaves the window open for further provisioning. Clicking on OK executes the command and closes the window. It is not necessary to click both Apply and OK.

Result: The following warning message appears:
Execution of this command may affect the NE. Do you want to execute this command?
 Click **Yes**.

.....

12 From the System View, click the Alarm List button and click **Refresh**.

Result: The excessive holdover alarm is no longer present.

.....

13 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 521: Clear “fan shelf failed” Alarm

- Purpose** This procedure is used to clear a fan shelf failed alarm as indicated by a lighted Minor (**MN**) LED on the SYSCTL faceplate, and reported as minor in the WaveStar® CIT Alarm List.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
 - Small phillips-head screwdriver
 - Small flat-blade screwdriver
 - Spare Fan Shelf (if necessary)
 - Spare Fan Filter (if necessary)
 - For Metropolis® DMX
comcode: 408 456 770
 - For Metropolis® DMX high capacity shelf
comcode: 408 682 615
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- *Metropolis® DMX Access Multiplexer User Operations Guide, 365-372-301*
 - *Metropolis® DMX Access Multiplexer Installation Manual, 365-372-304*

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to isolate and clear a fan failure.

-
- 1 Is the power indicator (**PWR ON**) LED lighted on the the Metropolis® DMX fan shelf?

If...	Then...
Yes	Proceed to Step 5 .
No	Continue with Step 2 .

-
- 2 The Fan Shelf has no power. Check power and alarm cables. If cables are not connected, install power and alarm cables to Fan Shelf and tighten screw locks.

-
- 3 Is Fan Shelf powered and running properly?

Important! The Metropolis® DMX Fan Shelf needs four fans operating to provide the minimum required airflow.

If...	Then...
Yes	STOP! END OF TASK.
No	Continue with Step 4 .

-
- 4 Is the red Fault (**FAULT**) LED lighted on the Fan Shelf?

If...	Then...
Yes	Continue with Step 5 .

If...	Then...
No	Proceed to Step 6 .

-
- 5** From the System View, click the Alarm List button and click **Refresh**.
-

- 6** Are any other alarms present?

If...	Then...
Yes	Proceed to the appropriate task to clear the other alarm(s).
No	Proceed to Step 8 .

-
- 7** Is Fan Shelf running and working properly (**FAULT** LED off)?

If...	Then...
Yes	STOP! END OF TASK.
No	Continue with Step 8 .

-
- 8** Replace the fan filter.

Reference: [Task 613: Replace Fan Filter \(5-133\)](#)

.....

- 9** Is Fan Shelf running and working properly (**PWR ON** LED lighted, **FAULT** LED off)?

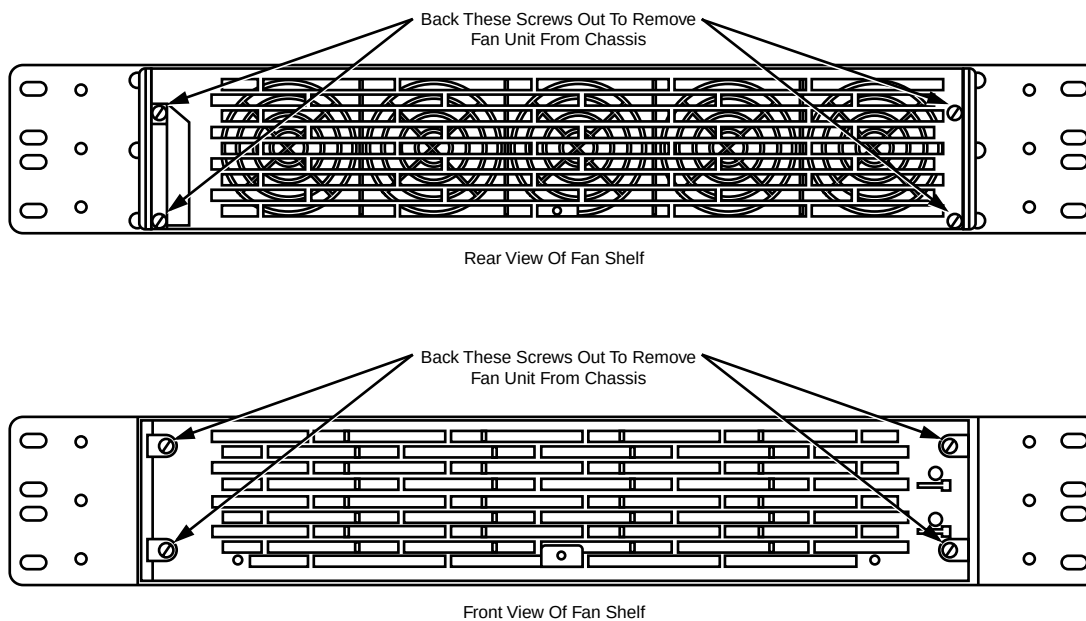
If...	Then...
Yes	STOP! END OF TASK.
No	Continue with Step 10 to replace Fan Shelf.

-
- 10** Unscrew screw-locks and disconnect power and alarm cables from fan on the Metropolis[®] DMX shelf or the Metropolis[®] DMX high capacity shelf.

- 11 Back out the screws securing the fan unit.

Figure 521-1 illustrates the location of the screws on the Metropolis® DMX shelf.

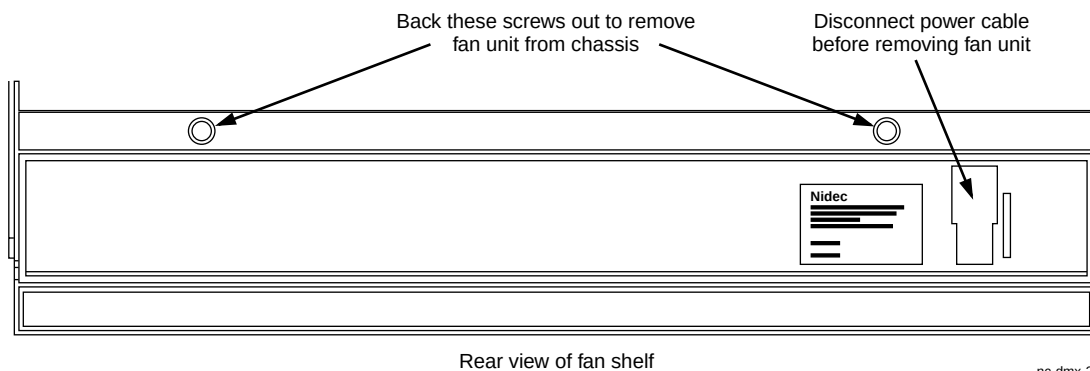
Figure 521-1 Metropolis® DMX Fan Unit Screws



nc-dmx-197

Figure 521-2 illustrates the location of the screws on the Metropolis® DMX high capacity shelf.

Figure 521-2 Metropolis® DMX High Capacity Shelf Fan Unit Screws



nc-dmx-216

- 12 Slide the old fan out from the fan chassis.

-
- 13** Slide the new fan unit back into the fan chassis. Tighten all screws located in the front and back of the fan unit for the Metropolis® DMX shelf or the Metropolis® DMX high capacity shelf.

Hand tighten the #4 steel thread fasteners until “snug tight” and then 1/2 turn with a wrench/screwdriver (torque should be approximately 8 in.-lb.).

-
- 14** Reconnect the power and alarm cables to the back of the fan shelf on the Metropolis® DMXshelf or the Metropolis® DMX high capacity shelf.

.....
E N D O F S T E P S
.....



Task 522: Clear “forced switch” Condition

Purpose This procedure is used to clear a forced switch condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following chapters in this document:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

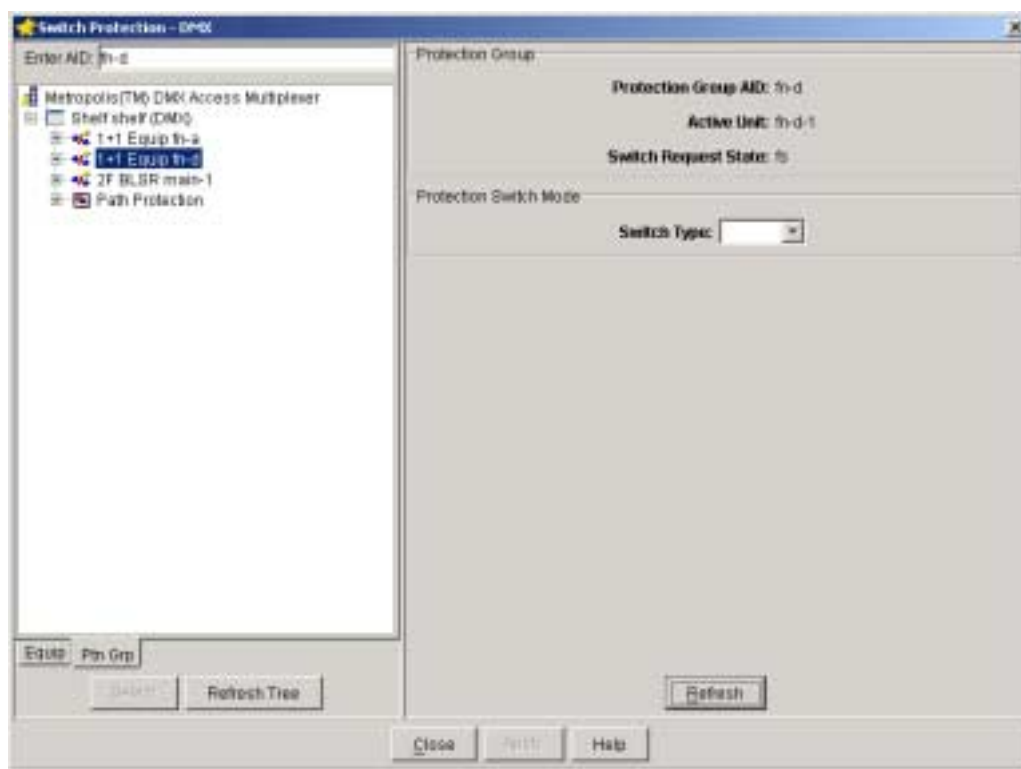
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a forced switch condition.

- 1 From the WaveStar® CIT System View, click on the Alarm List button and locate the forced switch condition in the resulting alarm list and note the corresponding AID and the Alarm Entity Type (either OCN or EQPT).
- 2 From the System View menu, select **Fault > Protection switch**, highlight the appropriate Protection Group, and then click **Select**.

Important! The affected AID may be either a pack (fn-a-1) with an Alarm Entity Type of EQPT or an OC-N line (fn-a-1-1) with an Alarm Entity Type of OC3, OC12, or OC48.

The following screen appears. (This example illustrates a 1+1 Equip Protection Group.)



-
- 3** In the Protection Switch Mode section of the window, click on the drop down menu for Switch Type and select **Reset**, and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 4** In the *Switch Protection* window, click **Close**.
-

- 5** From the System View, click the Alarm List button and click **Refresh**.

Result: The forced switch condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 523: Clear “holdover mode active” Condition

Purpose	This procedure is used to clear a holdover mode active condition, reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.
Required equipment	The following list of equipment is required in order to complete this procedure: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information	For related information, refer to the following: • Chapter 1, “Alarm List” • Chapter 2, “Alarms, Conditions, and Error Messages”
Before you begin	Prior to beginning this task, you must: 1. If not previously completed, install generic and WaveStar® CIT software on the PC. Reference: Task 601: Install Generic and WaveStar® CIT Software on the PC (5-13) 2. Connect PC and establish a WaveStar® CIT session. Reference: Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session (5-3)

Task Complete the following steps to clear a Not Alarmed holdover mode active condition.

-
- 1** From the WaveStar® CIT System View, click the Alarm List button.

-
- 2** Is there manual sync. mode switch Not Alarmed condition also present (in addition to holdover mode active)?

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 6 .

-
- 3** The system was forced to Holdover. From the System View menu, select **Fault > Timing/Sync Protection Switch > Clock Mode Switch**, select **Norm**, and click **OK**.

Important! This window also provides an Apply button. Clicking on Apply executes the command AND leaves the window open for further provisioning. Clicking on OK executes the command and closes the window. It is not necessary to click both Apply and OK.

Result: The following warning message appears:
Execution of this command may affect the NE. Do you want to execute this command?
 Click **Yes**.

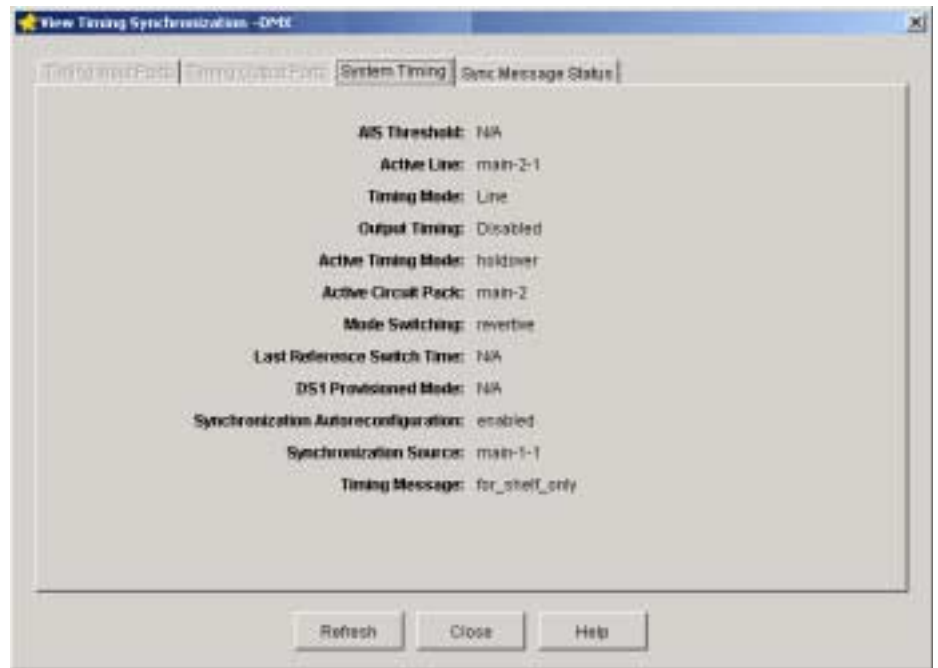
-
- 4** From the System View, click the Alarm List button and click **Refresh**.

-
- 5** Is the holdover mode active condition still present?

If...	Then...
Yes	Continue with Step 6 .
No	Proceed to Step 13 .

-
- 6** From the **System View** menu, select **View > Timing/Sync**.

Result: The View Timing Synchronization window appears.



-
- 7** Is your Timing Mode Line?

Important! The Active Timing Mode is Holdover.

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 14 .

-
- 8** Confirm that Synchronization Autoreconfiguration is *Enabled* and Mode Switching is *Revertive*?

If...	Then...
Yes	Proceed to Step 11 .
No	Continue with Step 9 .

-
- 9** From the **System View** menu, select **Configuration > Timing/Sync**.

-
- 10** Select **Revertive** for Mode Switching and **Enabled** for Synchronization Autoreconfiguration and Click **OK**.

Result: The following warning message appears:
Execution of this command may affect the NE. Do you want to execute this command?
 Click **Yes**.

-
- 11** From the WaveStar® CIT System View, click the Alarm List button and Click **Refresh**.

-
- 12** Is the holdover mode active condition still present?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 17 .

-
- 13** Are there any OC-N alarms listed (especially on M1 or M2)?

If...	Then...
Yes	Proceed to the appropriate task to clear the OC-N alarm.
No	STOP! END OF TASK.

.....

14 Is your Timing Mode External?

Important! The Active Timing Mode is Holdover.

If...	Then...
Yes	Continue with Step 15 .
No	Proceed to Step 16 .

.....

15 The system automatically switched to holdover mode due to failure of the external timing references. Repair the Timing references according to local procedures.

.....

16 From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The holdover mode active condition is no longer present.

.....

17 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 524: Clear “illegal CP type” Alarm

Purpose This procedure is used to clear an illegal CP type alarm indicated by a lighted Critical (**CR**) or Minor (**MN**) LED on the SYSCTL faceplate, and reported as critical or major in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Replacement circuit pack of the appropriate type (if necessary)

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following chapters in this document:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin

Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)
3. As appropriate, have the on-site craft turn-off the audible alarm by pressing the **ACO/TEST** button, which is located on the front of the SYSCTL circuit pack.

Task Complete the following steps to clear a Critical (**CR**), Major (**MJ**), or Minor (**MN**) illegal CP type alarm.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the illegal CP type alarm in the resulting alarm list.

.....
 - 2 Determine the alarm level(s) for the active illegal CP type alarm(s) (for example, CR or MN). Clear the alarms in order of severity, CR (SA) and then MN (NSA).

Important! The illegal CP type alarm is generally either CR (SA) when the circuit pack is active (either working and unprotected or the protection switch failed) or MN (NSA) when the circuit pack is protected and protection switch operated normally.

.....
 - 3 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack was removed and note the corresponding AID.

-
- 4 Is there a 10/100T Ethernet circuit pack installed in a Growth slot?

If...	Then...
Yes	10/100T circuit packs are not supported in the Growth slots. Continue with Step 5 .
No	Proceed to Step 10 .

-
- 5 Remove the 10/100T, and replace it with a 1GSX or 1GLX circuit pack in desired.

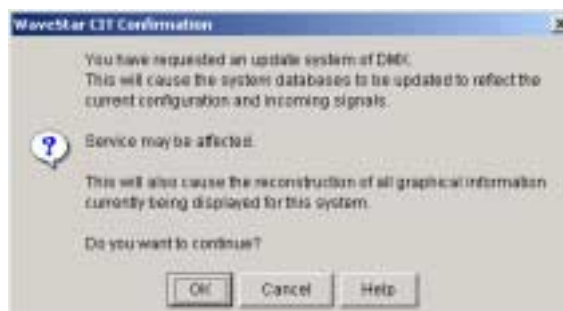
Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#) and [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

.....

- 6 Update the equipment list. From the System View menu, select **Configuration > Update System**.

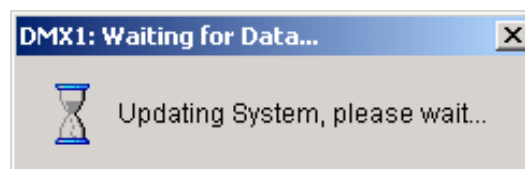
Important! This system update clears all current illegal CP type alarms.

Result: The following confirmation appears.



-
- 7 Click **OK**.

Result: The following window appears.



-
- 8** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The illegal CP type alarm is no longer present.

.....

- 9** Proceed to [Step 17](#).
-

- 10** Disengage the circuit pack completely from the shelf.
1. Release both latches.
 2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.

Result: The **ACTIVE** and **FAULT** LEDs on the pack extinguish.

3. Re-seat the pack in the shelf.
-

- 11** From the System View, click the Alarm List button and click **Refresh**.
-

- 12** Is the illegal CP type alarm still present?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 17 .

.....

- 13** From the System View menu, select **Reports > Equipment Lists > Pack...**, highlight Shelf, and click **Select**.

Result: The Circuit Pack List displays. Print or Save this list.

.....

- 14** Verify that the circuit pack in question is supported by the current software generic.
-

- 15** From the System View, click the Alarm List button and click **Refresh**.

.....

16 Is the illegal CP type alarm still present?

If...	Then...
Yes	Contact your next level of support.
No	Continue with Step 17 .

.....

17 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 525: Clear “Improper APS Codes” Alarm

- Purpose** This procedure is used to clear an Improper APS Codes alarm indicated by a lighted major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following chapters in this document:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
- Reference:** [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2. Connect PC and establish a WaveStar® CIT session.
- Reference:** [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) Improper APS Codes alarm.

.....

1 From the WaveStar® CIT System View, click on the Alarm List button and locate the Improper APS Codes alarm in the resulting alarm list and note the corresponding AID.

.....

2 Is there also an inc. OC48/OC192 sig degrade (BER) or inc. OC48/OC192 sig failed (BER) associated with that AID?

If...	Then...
Yes	Proceed to the appropriate task to clear that alarm.
No	Continue with Step 3 .

.....

3 Check optical connections for the presence of an incoming signal.

.....

4 Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

5 If the LBO receptacle is acceptable, replace the near-end and then the far-end OC-48 or OC-192 OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

6 From the System View, click the Alarm List button and click **Refresh**.

.....

7 Is the Improper APS Codes alarm still present?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 15 .

.....

8 Is there an OLIU CP failed alarm in the alarm list?

If...	Then...
Yes	Continue with Step 9 .
No	Proceed to Step 12 .

.....

9 Replace the OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

10 From the System View, click the Alarm List button and click **Refresh**.

.....

11 Is the Improper APS Codes alarm still present?

If...	Then...
Yes	Continue with Step 12 .
No	Proceed to Step 15 .

.....

12 Is there a SYSCTL CP failed alarm in the alarm list?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 15 .

.....

13 Replace the SYSCTL circuit pack.

Reference: [Task 608: Replace SYSCTL \(LNW1\) Circuit Pack \(5-63\)](#)

.....

14 From the System View, click the Alarm List button and click **Refresh**.

Result: The Improper APS Codes alarm is no longer present.

.....

15 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....

Task 526: Clear “inc. DS1 sync. ref.” Alarms

Purpose This procedure is used to clear all inc. DS1 sync. ref. alarms, including:

- inc. DS1 sync. ref. AIS
- inc. DS1 sync. ref. BER
- inc. DS1 sync. ref. EEOF
- inc. DS1 sync. ref. LOF
- inc. DS1 sync. ref. LOS
- inc. DS1 sync. ref. OOL

These alarms are indicated by either a lighted MJ or MN LED on the SYSCTL faceplate, and reported as major or minor in the WaveStar® CIT Alarm List.

Important! An alarm on one reference is reported as MN. If the the other reference is also alarmed, that alarm is reported as MJ.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

- 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

- 2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) and/or Minor (**MN**) inc. DS1 sync. ref alarm.

.....

- 1** Is the alarm inc. DS1 sync. ref. EOF?

If...	Then...
Yes	No action necessary, alarm automatically clears at midnight.
No	Continue with Step 2 .

.....

- 2** Is the alarm inc. DS1 sync. ref. OOL?

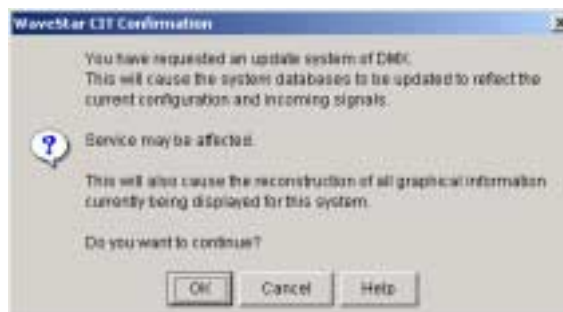
If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 6 .

.....

- 3** Repair the Timing references according to local procedures.

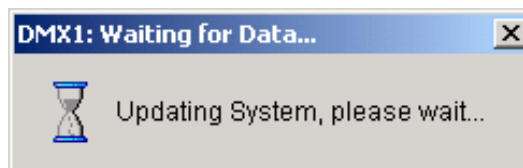
-
- 4 From the System View menu, select **Configuration > Update System**.

Result: The following confirmation appears.



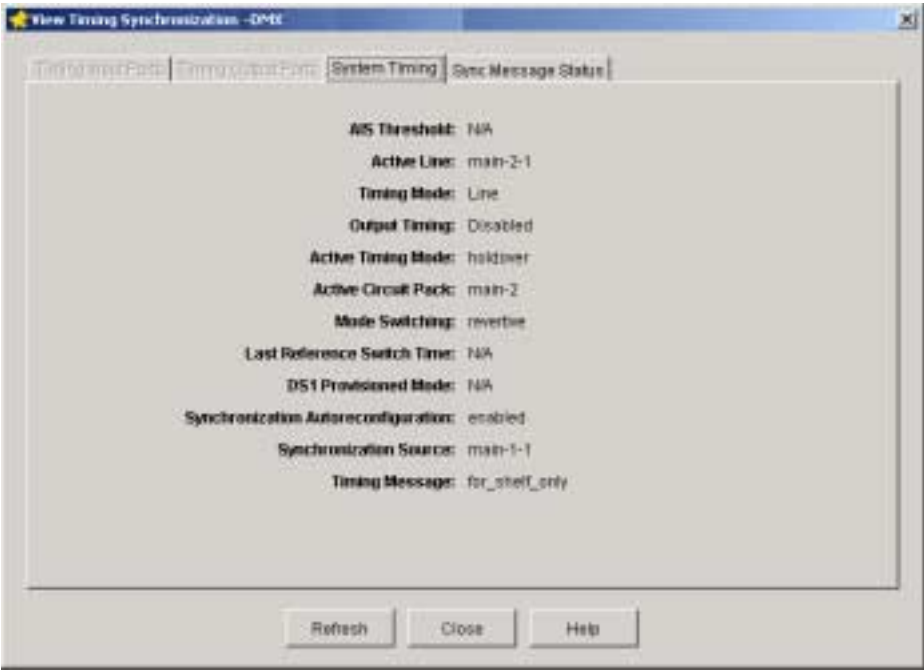
-
- 5 Click **OK**.

Result: The following window appears.



-
- 6 From the **System View** menu, select **View > Timing/Sync**.

Result: The View Timing Synchronization window appears.



.....

7 What is your Active Timing Mode?

If...	Then...
Holdover	Both references have alarms, Continue with Step 8 .
Ref-1	Proceed to Step 9 .
Ref-2	Proceed to Step 9 .

.....

8 The system automatically switched to holdover mode due to the indicated failure of both external timing references.
Repair the Timing references according to local procedures and then proceed to [Step 10](#).

.....

9 The system automatically switched to the other timing reference due to the indicated failure of one timing references. Repair the Timing reference according to local procedures.

-
- 10** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

Result: The inc. DS1 sync. ref. alarm is no longer present.

.....

- 11** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 527: Clear “inc. DS3 Cbit Mismatch” Alarm

- Purpose** This procedure is used to clear an inc. DS3 Cbit Mismatch alarm indicated by a lighted Critical (**CR**), Major (**MJ**), or Minor (**MN**) LED on the SYSCTL faceplate, and reported as critical, major, or minor (user-provisionable) in the WaveStar® CIT Alarm List.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following chapters in this document:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
- Reference:** [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2. Connect PC and establish a WaveStar® CIT session.
- Reference:** [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

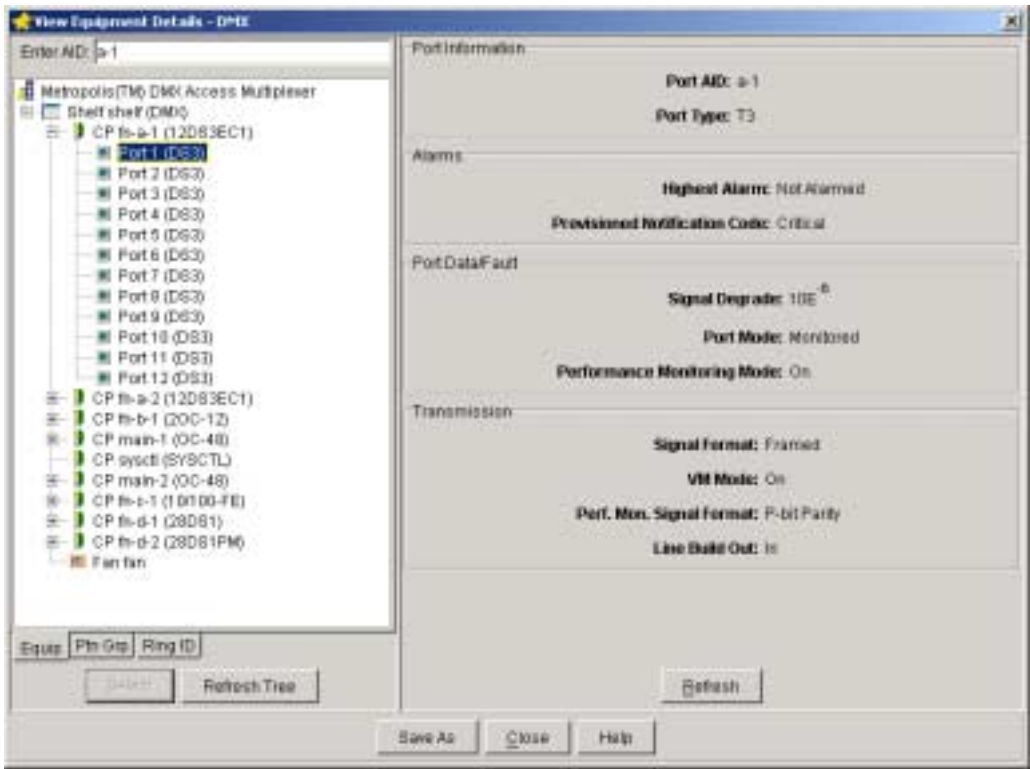
Task Complete the following steps to clear a Major (**MJ**) inc. DS3 Cbit Mismatch alarm.

-
- 1

From the WaveStar® CIT System View, click the Alarm List button and locate the inc. DS3 Cbit Mismatch alarm in the resulting alarm list and note the corresponding AID.
-
- 2

From the System View menu, select **View > View Equipment Details**, expand the circuit pack, highlight the alarmed port, and then click **Select**.

Result: The following screen appears.

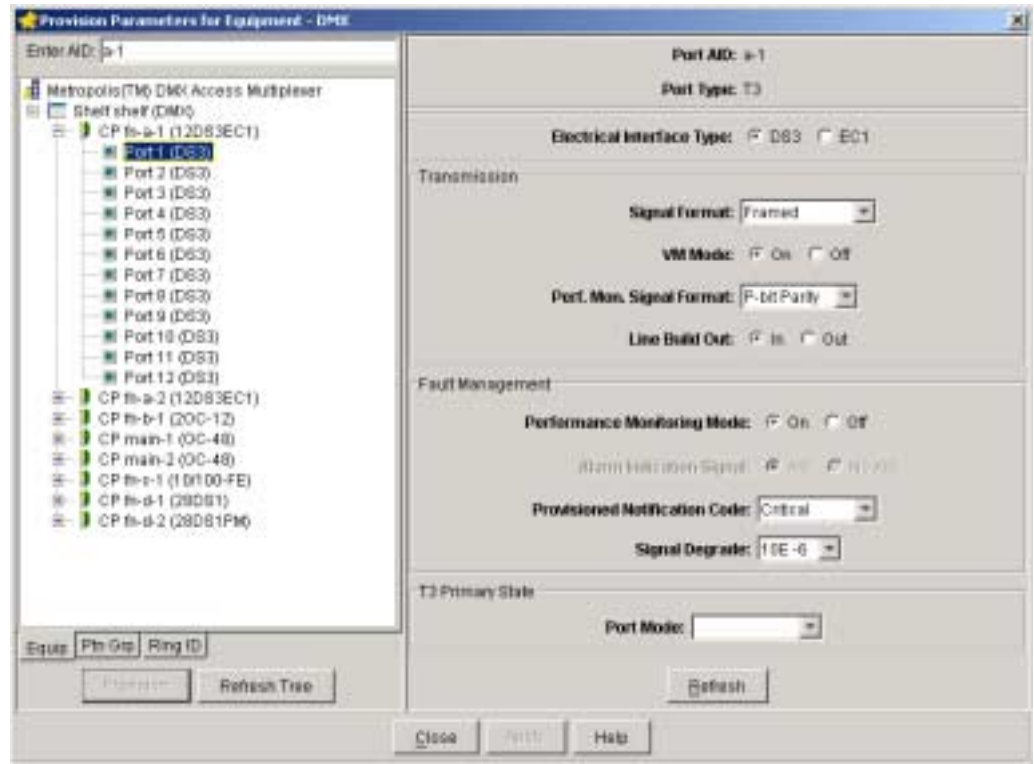


-
- 3

In the Transmission section on the window, locate and record the provisioned signal format.

-
- 4 From the System View, select **Configuration > Provision**, expand the circuit pack, and then highlight the desired port, and then click **Provision**.

Result: The following screen appears.



-
- 5 Is the affected port currently looped back on itself, connected to test equipment, or in service?

If...	Then...
Looped Back on Itself	Continue with Step 6 .
Connected to Test equipment	Proceed to Step 8 .
In service	Proceed to Step 10 .

-
- 6** If the port is provisioned as Framed (M13) format, and it is electrically looped back onto itself, you have two options to clear the alarm.

1. Remove the loopback, or
2. Change the provisioning of the port that is looped back (continue with [Step 7](#)).

-
- 7** In the Transmission section of the *Provision Parameters for Equipment* window, change the Signal Format parameter for the port to either C-Bit or Clear Channel and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**. Proceed to [Step 11](#).

-
- 8** If the port is connected to test equipment, you have two options to clear the alarm.

1. Change the test set DS3 set-up to match the Signal Format parameter for that port: either Framed (M13), C-bit, or Clear Channel.
2. Change the provisioning of the port that is connected to the test equipment (continue with [Step 9](#)).

-
- 9** In the Transmission section of the *Provision Parameters for Equipment* window, change the Signal Format parameter for that port to match the test set DS3 set-up: either Framed (M13), C-Bit, or Clear Channel and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**. Proceed to [Step 11](#).

-
- 10** In the Transmission section of the *Provision Parameters for Equipment* window, change the Signal Format parameter for that port to Clear Channel or another appropriate signal type and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**. Continue with [Step 11](#).

-
- 11** Click **Close** on the *Provision Parameters for Equipment* window.

-
- 12** From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. DS3 Cbit Mismatch alarm is no longer present.

-
- 13** Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
 E N D O F S T E P S



Task 528: Clear “inc. DS1” Alarms

.....

Purpose This procedure is used to clear the following inc. DS1 alarms:

- inc. (from DSX) DS1 LOS
- inc. (from DSX) DS1 sig fail

Refer [Chapter 1, “Alarm List”](#) and [Chapter 2, “Alarms, Conditions, and Error Messages”](#) for the possible alarm levels for the different alarms.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION
Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information	For related information, refer to the following: • Chapter 1, “Alarm List” • Chapter 2, “Alarms, Conditions, and Error Messages”
Before you begin	Prior to beginning this task, you must: 1. If not previously completed, install generic and WaveStar® CIT software on the PC. Reference: Task 601: Install Generic and WaveStar® CIT Software on the PC (5-13) 2. Connect PC and establish a WaveStar® CIT session. Reference: Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session (5-3)
Task	Complete the following steps to clear an inc. DS1 alarm. 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. DS1 alarm in the resulting alarm list. 2 Determine the alarm level(s) for the active inc. DS1 alarm(s) (for example, MJ or MN). Clear the alarms in order of severity, MJ (SA), MJ (NSA), MN (NSA), and then Not Alarmed (SC) conditions. 3 Refer to the Probable Cause column in your alarm list (example in Step 1), determine which circuit pack is affected by the inc. DS1 alarm and note the corresponding AID.

.....

4 Are there other incoming signal alarms present?

If...	Then...
Yes	Proceed to the appropriate task to clear those alarms.
No	Proceed to Step 7 .

.....

5 From the System View, click the Alarm List button and click **Refresh**.

.....

6 Is the inc. DS1 alarm still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 18 .

.....

7 Check cable connections on the backplane and the circuit pack for damage and replace as necessary.

.....

8 From the System View, click the Alarm List button and click **Refresh**.

.....

9 Is the inc. DS1 alarm still present?

If...	Then...
Yes	Continue with Step 10 .
No	Proceed to Step 18 .

-
- 10** Is the Fault (**FAULT**) LED on the near-end 28DS1/28DS1PM circuit pack continuously lit?

If...	Then...
Yes	Continue with Step 11 .
No	Proceed to Step 12 .

Important! A continuously lit **FAULT** LED on a 28DS1/28DS1PM circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

.....

- 11** Replace the near-end 28DS1/28DS1PM circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 602: Replace 28DS1/28DS1PM \(LNW6/LNW7\) Circuit Pack \(5-25\)](#)

-
- 12** Is the Fault (**FAULT**) LED on the near-end 28DS1/28DS1PM circuit pack flashing?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 17 .

Important! A flashing FAULT LED on a 28DS1/28DS1PM circuit pack indicates a failure in the incoming signal which may mean:

- a failure of the near-end receiver
 - a failure of the transmitter
 - a failure in an intermediate SONET circuit pack, (SONET alarms should also be indicated)
 - a loss of synchronization.
-

- 13** Was the far-end 28DS1/28DS1PM circuit pack removed when the alarm occurred?

If...	Then...
Yes	Continue with Step 14 .
No	Proceed to Step 17 .

.....

- 14** Determine the reason the far-end circuit pack was removed. If the circuit pack is to be reinserted, simply reinstall the circuit pack. If the circuit pack is not to be reinserted, momentarily depress the **UPD/INIT** button on the SYSCtl to remove the circuit pack from the inventory.
-

- 15** Is the Fault (**FAULT**) LED on the near-end 28DS1/28DS1PM circuit pack still flashing?

If...	Then...
Yes	Continue with Step 16 .
No	Proceed to Step 17 .

-
- 16** Replace the far-end 28DS1/28DS1PM circuit pack.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 602: Replace 28DS1/28DS1PM \(LNW6/LNW7\) Circuit Pack \(5-25\)](#)

-
- 17** From the System View on the near-end NE, click the Alarm List button and click **Refresh**.

Result: The inc. DS1 alarm is no longer present.

-
- 18** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 529: Clear “inc. DS3” Alarms

.....

Purpose This procedure is used to clear all inc. DS3 alarms, including:

- inc. (from DSX) DS3
- inc. (from DSX) DS3 sig fail
- inc. (from fiber) DS3 AIS
- inc. (from fiber) DS3 OOF

Refer [Chapter 1, “Alarm List”](#) and [Chapter 2, “Alarms, Conditions, and Error Messages”](#) for the possible alarm levels for the different alarms.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION
Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information	For related information, refer to the following: • Chapter 1, “Alarm List” • Chapter 2, “Alarms, Conditions, and Error Messages”
Before you begin	Prior to beginning this task, you must: 1. If not previously completed, install generic and WaveStar® CIT software on the PC. Reference: Task 601: Install Generic and WaveStar® CIT Software on the PC (5-13) 2. Connect PC and establish a WaveStar® CIT session. Reference: Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session (5-3)
Task	Complete the following steps to clear an inc. DS3 alarm. 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. DS3 alarm in the resulting alarm list. 2 Determine the alarm level(s) for the active inc. DS3 alarm(s) (for example, CR, MJ, or MN). Clear the alarms in order of severity, CR, (SA), MJ (SA), MJ (NSA), MN (NSA), and then Not Alarmed (SC) conditions. 3 Refer to the Probable Cause column in your alarm list (example in Step 1), determine which circuit pack is affected by the inc. DS3 alarm and note the corresponding AID.

-
- 4** Are there other incoming signal alarms present?

If...	Then...
Yes	Proceed to the appropriate task to clear those alarms.
No	Continue with Step 5 .

-
- 5** From the System View menu, select **View > View Equipment Details**, expand the circuit pack, highlight the alarmed port, and then click **Select**.

Result: The *View Equipment Details* screen appears.

-
- 6** In the Port Information section of the window, locate and record the Port Type.

-
- 7** Repeat [Step 5](#) and [Step 6](#) for the terminating port on far-end 12DS3/EC1 or TMUX pack.

-
- 8** Is the Port Type = DS3 for both the near-end and the far-end ports?

If...	Then...
Yes	Proceed to Step 11 .
No	Continue with Step 9 .

-
- 9** From the System View of the near-end or far-end NE (depending on which you wish to reprovision), select **Configuration > Provision**, expand the circuit pack, highlight the desired port, and then click **Provision**.

Result: The *Provision Parameters for Equipment* window appears.

-
- 10** In the *Provision Parameters for Equipment* window, change the Electrical Interface Type to DS3 and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
 Click **Yes**.

.....

- 11** From the System View, click the Alarm List button and click **Refresh**.
-

- 12** Is the inc. DS3 alarm still present?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 24 .

.....

- 13** Is the Fault (**FAULT**) LED on the near-end 12DS3/EC1 or TMUX circuit pack continuously lit?

If...	Then...
Yes	Continue with Step 14 .
No	Proceed to Step 15 .

Important! A continuously lit **FAULT** LED on a 12DS3/EC1 or TMUX circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

-
- 14** Replace the near-end 12DS3/EC1 or TMUX circuit pack.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 603: Replace 12DS3/EC1 \(LNW16\) Circuit Pack \(5-31\)](#) or [Task 620: Replace TMUX \(LNW18\) Circuit Pack \(5-185\)](#)

-
- 15** Is the Fault (**FAULT**) LED on the near-end 12DS3/EC1 or TMUX circuit pack flashing?

If...	Then...
Yes	Continue with Step 16 .
No	Proceed to Step 19 .

Important! A flashing FAULT LED on a 12DS3/EC1 or TMUX circuit pack indicates a failure in the incoming signal which may mean:

- a failure of the near-end receiver
- a failure of the transmitter
- a failure in an intermediate SONET circuit pack, (SONET alarms should also be indicated)
- a loss of synchronization.

-
- 16** Was the far-end 12DS3/EC1 or TMUX circuit pack removed when the alarm occurred?

If...	Then...
Yes	Continue with Step 17 .
No	Proceed to Step 19 .

-
- 17** Determine the reason the far-end circuit pack was removed. If the circuit pack is to be reinserted, simply reinstall the circuit pack. If the circuit pack is not to be reinserted, momentarily depress the **UPD/INIT** button on the SYSCTL to remove the circuit pack from the inventory.
-

- 18** Is the Fault (**FAULT**) LED on the near-end 12DS3/EC1 or TMUX circuit pack still flashing?

If...	Then...
Yes	Continue with Step 19 .
No	Proceed to Step 23 .

-
- 19** Check cable connections on the backplane and the circuit pack for damage and replace as necessary.
-

- 20** From the System View, click the Alarm List button and click **Refresh**.
-

- 21** Is the inc. DS3 alarm still present?

If...	Then...
Yes	Continue with Step 22 .
No	Proceed to Step 24 .

-
- 22** Replace the far-end 12DS3/EC1 or TMUX circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 603: Replace 12DS3/EC1 \(LNW16\) Circuit Pack \(5-31\)](#) or [Task 620: Replace TMUX \(LNW18\) Circuit Pack \(5-185\)](#)

-
- 23** From the System View on the near-end NE, click the Alarm List button and click **Refresh**.

Result: The inc. DS3 alarm is no longer present.

-
- 24** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 530: Clear “inc. EC1” Alarms

.....

Purpose This procedure is used to clear all inc. EC1 alarms, including:

- inc. EC1 line AIS
- inc. EC1 LOF
- inc. EC1 LOS
- inc. EC1 RDI-L
- inc. EC1 sig degrade (BER)
- inc. EC1 sig failed (BER)

Refer [Chapter 1, “Alarm List”](#) and [Chapter 2, “Alarms, Conditions, and Error Messages”](#) for the possible alarm levels for the different alarms.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION
Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information	For related information, refer to the following: • Chapter 1, “Alarm List” • Chapter 2, “Alarms, Conditions, and Error Messages”
Before you begin	Prior to beginning this task, you must: 1. If not previously completed, install generic and WaveStar® CIT software on the PC. Reference: Task 601: Install Generic and WaveStar® CIT Software on the PC (5-13) 2. Connect PC and establish a WaveStar® CIT session. Reference: Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session (5-3)
Task	Complete the following steps to clear an inc. EC1 alarm. 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. EC1 alarm in the resulting alarm list. 2 Determine the alarm level(s) for the active inc. EC1 alarm(s) (for example, CR, MJ, or MN). Clear the alarms in order of severity, CR, (SA), MJ (SA), MJ (NSA), MN (NSA), and then Not Alarmed (SC) conditions. 3 Refer to the Probable Cause column in your alarm list (example in Step 1), determine which circuit pack is affected by the inc. EC1 alarm and note the corresponding AID.

.....

4 Are there other incoming signal alarms present?

If...	Then...
Yes	Proceed to the appropriate task to clear those alarms.
No	Continue with Step 5 .

.....

5 From the System View menu, select **View > View Equipment Details**, expand the circuit pack, highlight the alarmed port, and then click **Select**.

Result: The *View Equipment Details* screen appears.

.....

6 In the Port Information section of the window, locate and record the Port Type.

.....

7 Repeat [Step 5](#) and [Step 6](#) for the terminating port on far-end 12DS3/EC1 pack.

.....

8 Is the Port Type = EC1 for both the near-end and the far-end ports?

If...	Then...
Yes	Proceed to Step 11 .
No	Continue with Step 9 .

.....

9 From the System View of the near-end or far-end NE (depending on which you wish to reprovision), select **Configuration > Provision**, expand the circuit pack, highlight the desired port, and then click **Provision**.

Result: The *Provision Parameters for Equipment* window appears.

-
- 10** In the *Provision Parameters for Equipment* window, change the Electrical Interface Type to EC1 and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
 Click **Yes**.

-
- 11** From the System View, click the Alarm List button and click **Refresh**.

-
- 12** Is the inc. EC1 alarm still present?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 24 .

-
- 13** Is the Fault (**FAULT**) LED on the near-end 12DS3/EC1 circuit pack continuously lit?

If...	Then...
Yes	Continue with Step 14 .
No	Proceed to Step 15 .

Important! A continuously lit **FAULT** LED on a 12DS3/EC1 circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

-
- 14** Replace the near-end 12DS3/EC1 circuit pack.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 603: Replace 12DS3/EC1 \(LNW16\) Circuit Pack \(5-31\)](#)

.....

- 15** Is the Fault (**FAULT**) LED on the near-end 12DS3/EC1 circuit pack flashing?

If...	Then...
Yes	Continue with Step 16 .
No	Proceed to Step 19 .

Important! A flashing FAULT LED on a 12DS3/EC1 circuit pack indicates a failure in the incoming signal which may mean:

- a failure of the near-end receiver
 - a failure of the transmitter
 - a failure in an intermediate SONET circuit pack, (SONET alarms should also be indicated)
 - a loss of synchronization.
-

- 16** Was the far-end 12DS3/EC1 circuit pack removed when the alarm occurred?

If...	Then...
Yes	Continue with Step 17 .
No	Proceed to Step 19 .

-
- 17** Determine the reason the far-end circuit pack was removed. If the circuit pack is to be reinserted, simply reinstall the circuit pack. If the circuit pack is not to be reinserted, momentarily depress the **UPD/INIT** button on the SYSCTL to remove the circuit pack from the inventory.
-

- 18** Is the Fault (**FAULT**) LED on the near-end 12DS3/EC1 circuit pack still flashing?

If...	Then...
Yes	Continue with Step 19 .
No	Proceed to Step 23 .

-
- 19** Check cable connections on the backplane and the circuit pack for damage and replace as necessary.
-

- 20** From the System View, click the Alarm List button and click **Refresh**.
-

- 21** Is the inc. EC1 alarm still present?

If...	Then...
Yes	Continue with Step 22 .
No	Proceed to Step 24 .

-
- 22** Replace the far-end 12DS3/EC1 circuit pack.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 603: Replace 12DS3/EC1 \(LNW16\) Circuit Pack \(5-31\)](#)

-
- 23** From the System View on the near-end NE, click the Alarm List button and click **Refresh**.

Result: The inc. EC1 alarm is no longer present.

-
- 24** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 531: Clear “inc. FE-LAN ANM” Alarm

.....

Purpose This procedure is used to clear an inc. FE-LAN ANM alarm indicated by a lighted Critical (**CR**) LED on the SYSCTL and reported as critical in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

- 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

- 2. Connect PC and establish a WaveStar® CIT session.

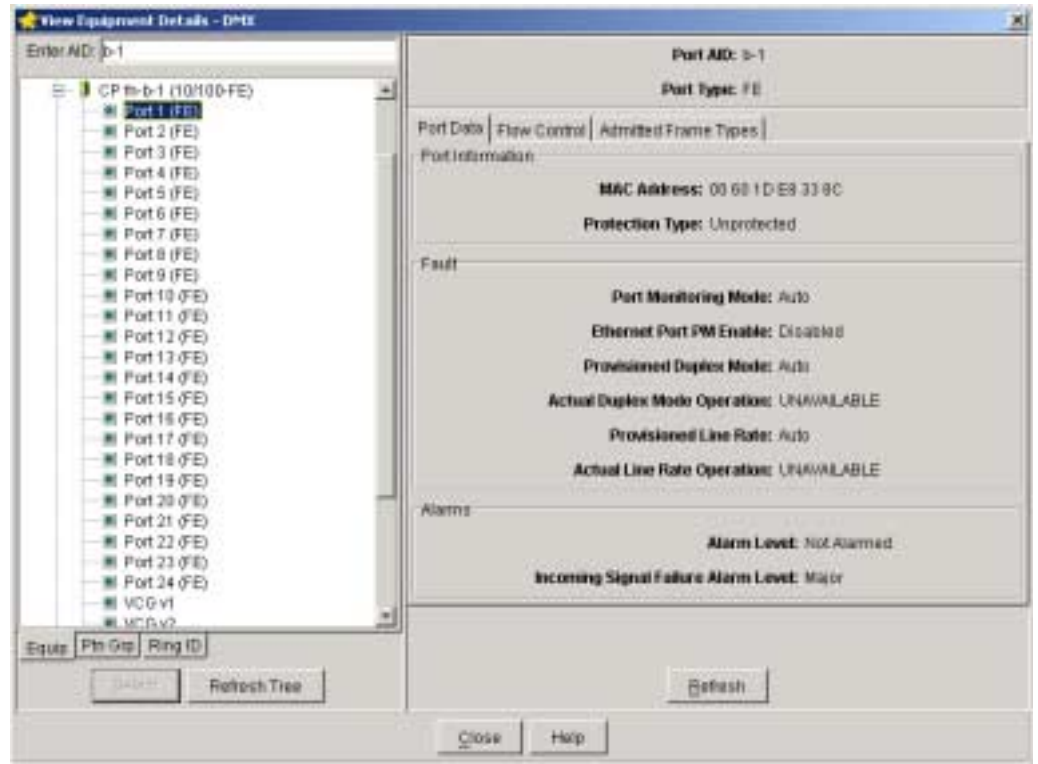
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. FE-LAN ANM alarm.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. FE-LAN ANM alarm in the resulting alarm list.
-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine which circuit pack is affected by the inc. FE-LAN ANM alarm and note the corresponding AID.

-
- 3 From the System View menu, select **View > View Equipment Details**, expand the circuit pack, highlight the alarmed port, click **Select**, and then click on the Port Data tab.

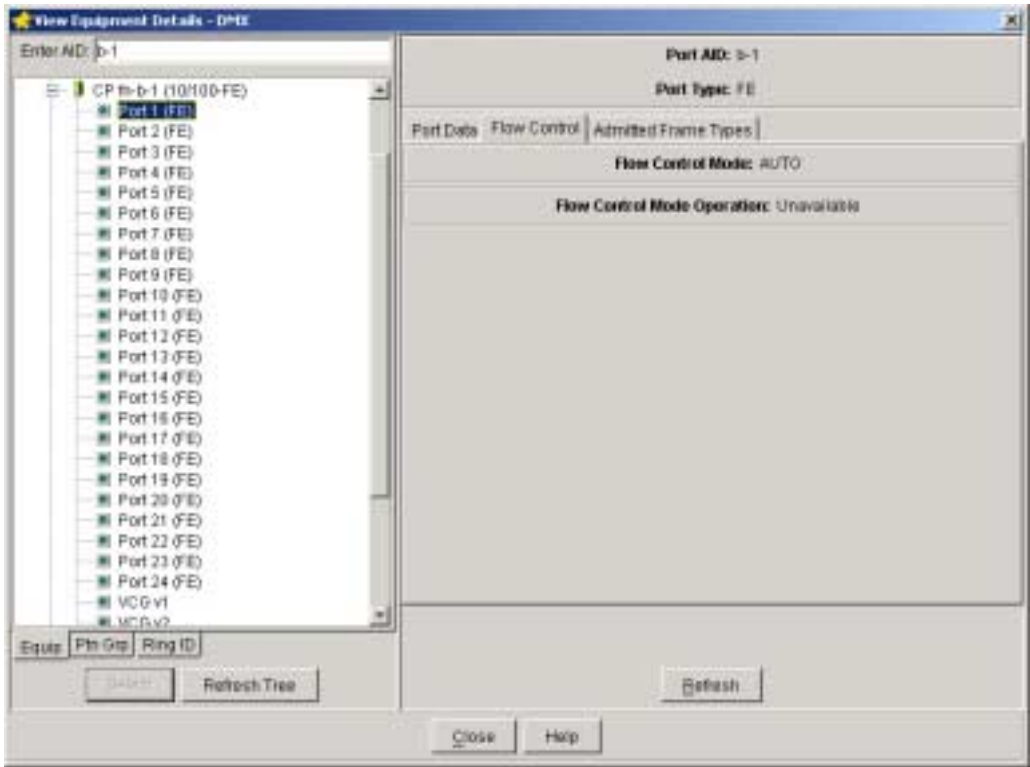
Result: The following screen appears.



-
- 4 Record the following information:
 - Provisioned Duplex Mode; the options are Half, Full, and Auto.
 - Provisioned Line Rate; the options are 10 M, 100M, and Auto.

-
- 5 From the *View Equipment Details* window, click on the Flow Control tab.

Result: The following screen appears.



-
- 6 Record the Flow Control Mode; the options are Auto, Enable and Disable.

-
- 7 Log in to the far end NE and repeat [Step 3](#) through [Step 6](#).

-
- 8 Do all the provisioned modes match on both the near-end and far-end NE?

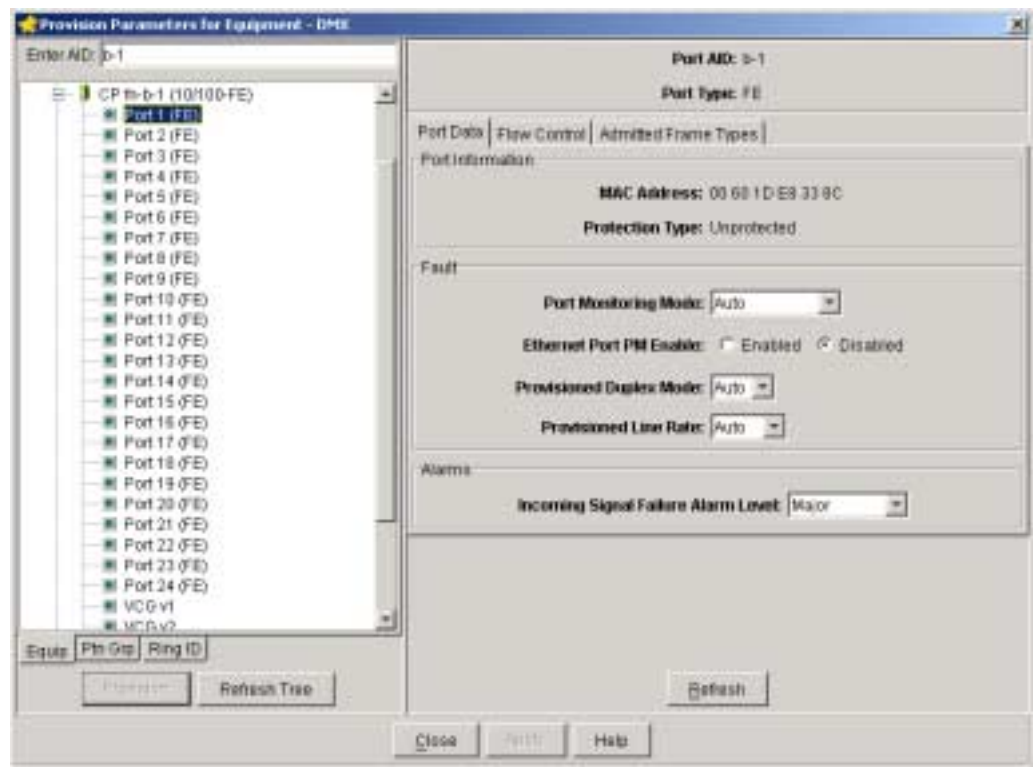
If...	Then...
Yes	Proceed to Step 16 .
No	Continue with Step 9 .

-
- 9** Do the Duplex Mode and the Line Rate match on both the near-end and far-end NE?

If...	Then...
Yes	Proceed to Step 13 .
No	Continue with Step 10 .

-
- 10** From the System View of the near-end or far-end NE (depending on which you want to reprovision), select **Configuration > Provision**, expand the 10/100T circuit pack, highlight the desired port, click **Provision**, and then click the Port Data tab.

Result: The following screen appears.



-
- 11** In the Provisioned Duplex Mode section of the *Provision Parameters for Equipment* window, change to the appropriate mode to match the other NE (Half, Full, or Auto) and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
 Click **Yes**.

-
- 12** In the Provisioned Line Rate section of the *Provision Parameters for Equipment* window, change to the appropriate mode to match the other NE (10 M, 100 M, or Auto) and then click **Apply**.

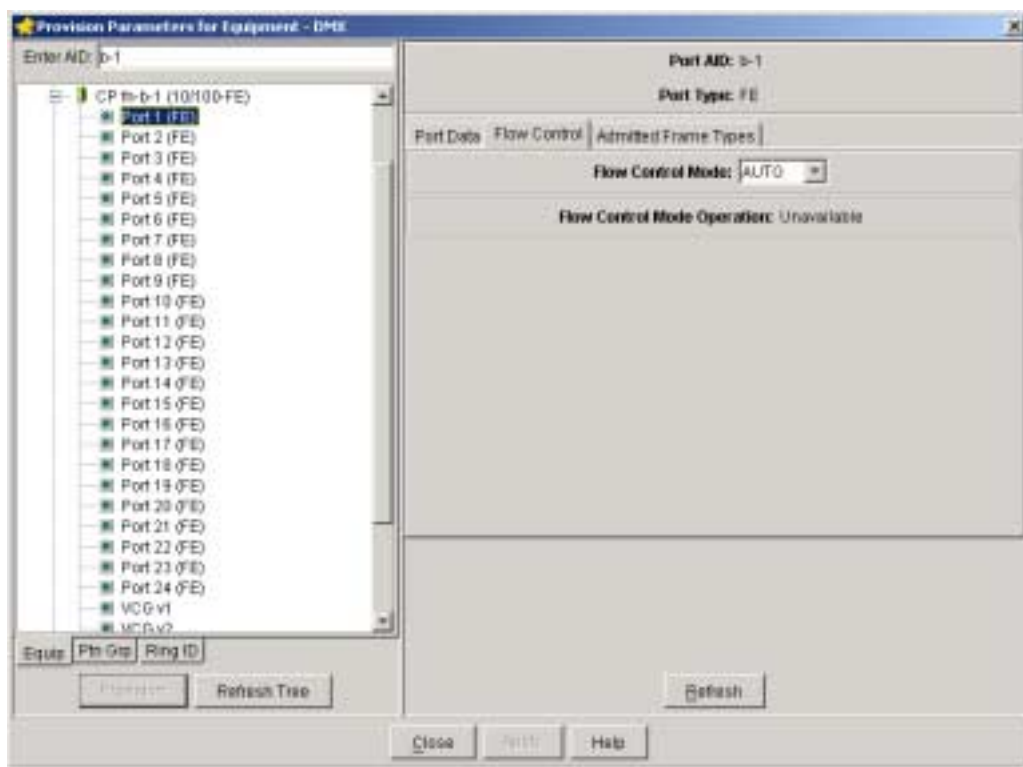
Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
 Click **Yes**.

-
- 13** Does the Flow Control Mode match on both the near-end and far-end NE?

If...	Then...
Yes	Proceed to Step 16 .
No	Proceed to Step 14 .

-
- 14** From the System View of the near-end or far-end NE (depending on which you want to reprovision), select **Configuration > Provision**, expand the 10/100T circuit pack, highlight the desired port, click **Provision**, and then click the Flow Control tab.

Result: The following screen appears.



-
- 15** In the Flow Control section of the *Provision Parameters for Equipment* window, change to the appropriate mode to match the other NE (Auto, Enable, or Disable) and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
 Click **Yes**.

.....

- 16** From the System View on the near-end NE, click the Alarm List button and click **Refresh**.

Result: The inc. FE-LAN ANM alarm is no longer present.

.....
17 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S
.....
☐

Task 532: Clear “inc. FE-LAN LOS” Alarm

Purpose This procedure is used to clear an inc. FE-LAN LOS alarm indicated by a lighted Critical (**CR**) LED on the SYSCTL and reported as critical in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

- 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

- 2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. FE-LAN LOS alarm.

-
- 1** From the WaveStar® CIT System View, click the Alarm List button and locate the inc. FE-LAN LOS alarm in the resulting alarm list.

-
- 2** Are there other inc. signal alarms in the alarm list?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm. Continue with Step 3 .
No	Continue with Step 3 .

-
- 3** Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack is affected by the inc. FE-LAN LOS alarm and note the corresponding AID.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

- 4 Disengage the affected circuit pack completely from the shelf.
 1. Release both latches.
 2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.

Result: The **ACTIVE** and **FAULT** LED on the pack extinguish.

3. Re-seat the pack in the shelf.

- 5 From the System View, click the Alarm List button and click **Refresh**.

- 6 Is the inc. FE-LAN LOS alarm still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 20 .

-
- 7** Is the Fault (**FAULT**) LED on the near-end Ethernet circuit pack (10/100T) continuously lit?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 9 .

Important! A continuously lit **FAULT** LED on an Ethernet circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

Ethernet circuit packs 10/100BASE-TX (LNW66) do not include an automatic equipment protection switching feature. Therefore, any critical alarm occurring in a Ethernet signal path is assumed to be service affecting. If a replacement circuit pack is not immediately available, traffic flowing through a failed Ethernet circuit pack should be rerouted through another node, before the Ethernet circuit pack is removed from the Metropolis® DMX shelf.

-
- 8** Replace the near-end Ethernet circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#)

-
- 9** Is the Fault (**FAULT**) LED on the near-end Ethernet circuit pack (10/100T) flashing?

If...	Then...
Yes	Continue with Step 10 .
No	Proceed to Step 20 .

Important! A flashing FAULT LED on an Ethernet circuit pack indicates a failure in the incoming signal which may mean:

- a failure of the near-end Ethernet receiver
 - a failure of the Ethernet transmitter
 - a failure of the intermediate OC-N fiber optic line (SONET alarms should also be indicated)
 - a failure in an intermediate SONET circuit pack, (SONET alarms should also be indicated)
 - A loose or disconnected connection in the 100Base-TX Ethernet line (for the 10/100T Ethernet circuit pack)
 - a loss of synchronization.
-

- 10** Was the far-end Ethernet circuit pack removed when the alarm occurred?

If...	Then...
Yes	Continue with Step 11 .
No	Proceed to Step 16 .

.....

- 11** Determine the reason the far-end Ethernet circuit pack was removed. If the circuit pack is to be reinserted, simply reinstall the circuit pack. If the circuit pack is not to be reinserted, momentarily depress the **UPD/INIT** button on the SYSCTL to remove the circuit pack from the inventory.

-
- 12** Is the Fault (**FAULT**) LED on the near-end Ethernet circuit pack (10/100T) still flashing?

If...	Then...
Yes	Continue with Step 13 .
No	STOP! END OF TASK.

-
- 13** Check the fast Ethernet lines for loose connections or signs of damage.

-
- 14** Was a problem found with the lines?

If...	Then...
Yes	Replace any damaged cable and reconnect the line to circuit pack
No	Continue with Step 15 .

-
- 15** Replace the near-end Ethernet circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#)

-
- 16** From the System View, click the Alarm List button and click **Refresh**.

-
- 17** Is the inc. FE-LAN LOS alarm still present?

If...	Then...
Yes	Continue with Step 18 .
No	Proceed to Step 20 .

-
- 18** Replace the far-end Ethernet circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNU66\) Circuit Pack \(5-57\)](#)

-
- 19** From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. FE-LAN LOS alarm is no longer present.

-
- 20** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 533: Clear “inc. GE-LAN ANM” Alarm

Purpose This procedure is used to clear an inc. GE-LAN ANM alarm indicated by a lighted Critical (**CR**) LED on the SYSCTL and reported as critical in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

- 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

- 2. Connect PC and establish a WaveStar® CIT session.

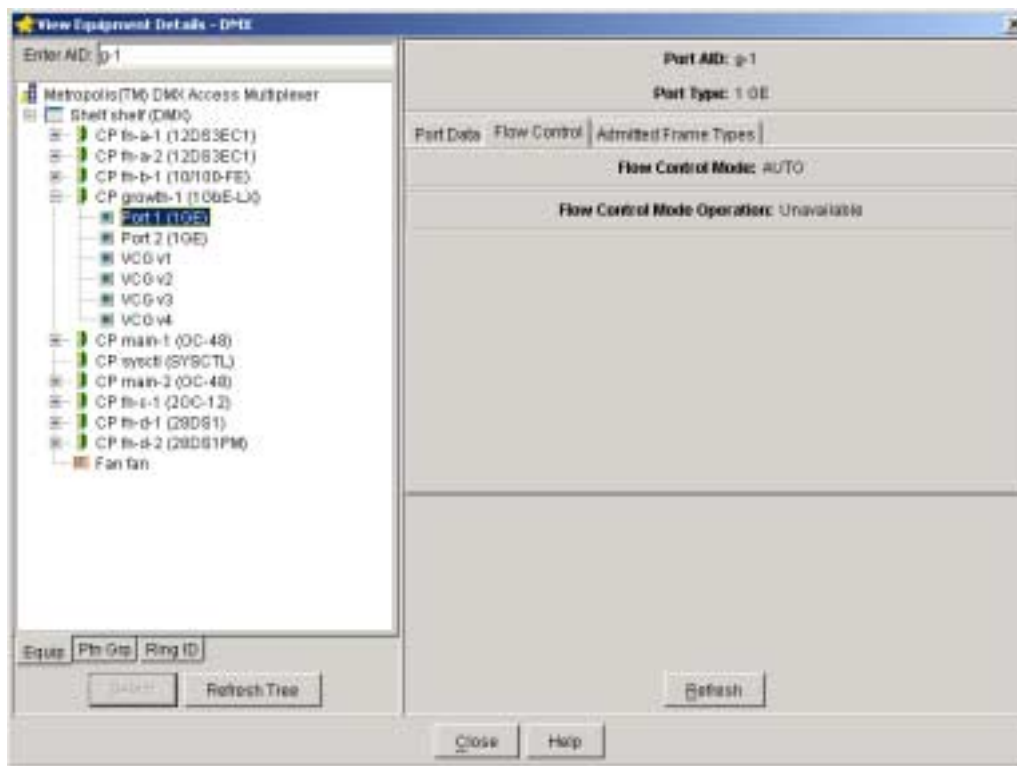
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. GE-LAN ANM alarm.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. GE-LAN ANM alarm in the resulting alarm list.
-
- 2 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine which circuit pack is affected by the inc. GE-LAN ANM alarm and note the corresponding AID.

-
- 3 From the System View menu, select **View > View Equipment Details**, expand the circuit pack, highlight the alarmed port, click **Select**, and then click on the Flow Control tab.

Result: The following screen appears.

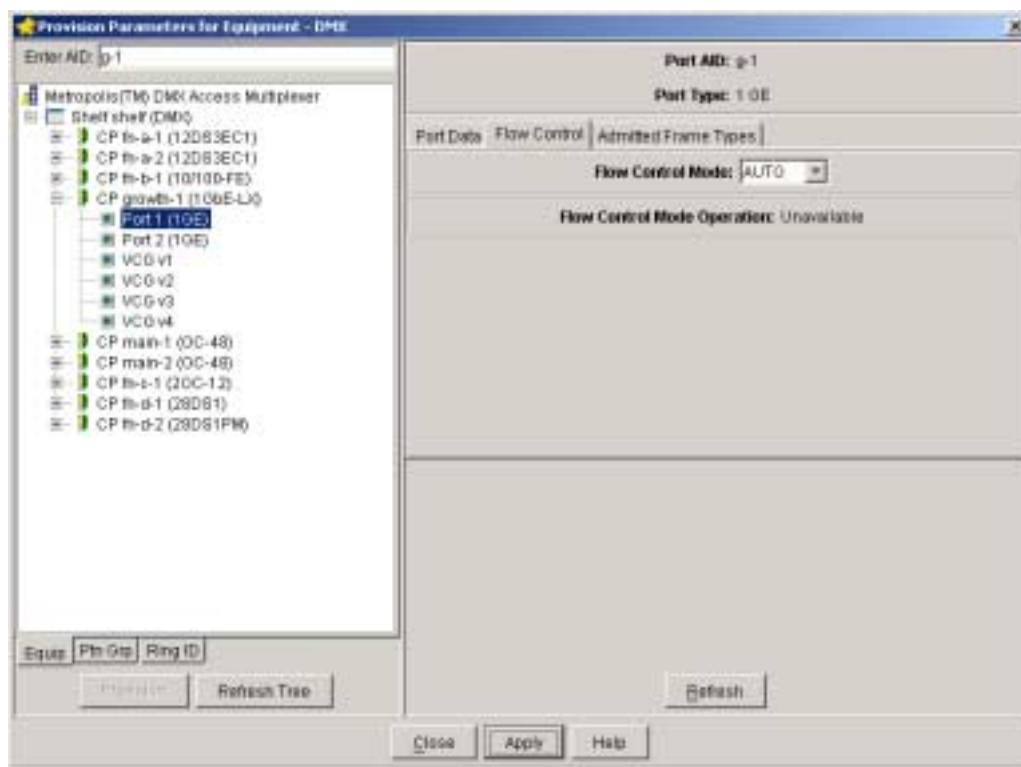


-
- 4 Record the Flow Control Mode; the options are Auto, Enable and Disable.
-
- 5 Log in to the far end NE and repeat [Step 3](#) and [Step 4](#).
-
- 6 Does the provisioned mode match on both the near-end and far-end NE?

If...	Then...
Yes	Proceed to Step 9 .
No	Continue with Step 7 .

- 7 From the System View of the near-end or far-end NE (depending on which you want to reprovision), select **Configuration > Provision**, expand the Gigabit circuit pack, highlight the desired port, click **Provision**, and then click the Flow Control tab.

Result: The following screen appears.



- 8 In the Flow Control section of the *Provision Parameters for Equipment* window, change to the appropriate mode to match the other NE (Auto, Enable, or Disable) and then click **Apply**.

Result: The following warning message appears:

Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**.

- 9 From the System View on the near-end NE, click the Alarm List button and click **Refresh**.

Result: The inc. GE-LAN ANM alarm is no longer present.

.....

10 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 534: Clear “inc. GE-LAN LOS” Alarm

Purpose This procedure is used to clear an inc. GE-LAN LOS alarm indicated by a lighted Critical (**CR**) LED on the SYSCTL and reported as critical in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

- 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

- 2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. GE-LAN LOS alarm.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. GE-LAN LOS alarm in the resulting alarm list.

-
- 2 Are there other inc. signal alarms in the alarm list?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm. Continue with Step 3 .
No	Continue with Step 3 .

-
- 3 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack is affected by the inc. GE-LAN LOS alarm and note the corresponding AID.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

- 4 Disengage the affected circuit pack completely from the shelf.
 1. Release both latches.
 2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.

Result: The **ACTIVE** and **FAULT** LED on the pack extinguish.

3. Re-seat the pack in the shelf.

- 5 From the System View, click the Alarm List button and click **Refresh**.

- 6 Is the inc. GE-LAN LOS alarm still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 20 .

-
- 7** Is the Fault (**FAULT**) LED on the near-end Ethernet circuit pack (1GSX/1GLX) continuously lit?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 9 .

Important! A continuously lit **FAULT** LED on an Ethernet circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

Ethernet circuit packs 1000BASE-SX (LNW67) and 1000BASE-LX (LNW68) do not include an automatic equipment protection switching feature. Therefore, any critical alarm occurring in a Ethernet signal path is assumed to be service affecting. If a replacement circuit pack is not immediately available, traffic flowing through a failed Ethernet circuit pack should be rerouted through another node, before the Ethernet circuit pack is removed from the Metropolis® DMX shelf.

-
- 8** Replace the near-end Ethernet circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 9** Is the Fault (**FAULT**) LED on the near-end Ethernet circuit pack (1GSX/1GLX) flashing?

If...	Then...
Yes	Continue with Step 10 .
No	Proceed to Step 16 .

Important! A flashing FAULT LED on an Ethernet circuit pack indicates a failure in the incoming signal which may mean:

- a failure of the near-end Ethernet receiver
- a failure of the Ethernet transmitter
- a failure of the intermediate OC-N fiber optic line (SONET alarms should also be indicated)
- a failure in an intermediate SONET circuit pack, (SONET alarms should also be indicated)
- a break in an incoming (receive) fiber (for the Gigabit Ethernet circuit packs)
- a loss of synchronization.

-
- 10** Was the far-end Ethernet circuit pack removed when the alarm occurred?

If...	Then...
Yes	Continue with Step 11 .
No	Proceed to Step 16 .

-
- 11** Determine the reason the far-end Ethernet circuit pack was removed. If the circuit pack is to be reinserted, simply reinstall the circuit pack. If the circuit pack is not to be reinserted, momentarily depress the **UPD/INIT** button on the SYSCTL to remove the circuit pack from the inventory.

-
- 12** Is the Fault (**FAULT**) LED on the near-end Ethernet circuit pack (1GSX/1GLX) still flashing?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 16 .

-
- 13** Check the Gigabit Ethernet fibers for loose connections or signs of damage.

-
- 14** Was a problem found with the fibers?

If...	Then...
Yes	Replace any damaged cable and reconnect the fiber to circuit pack
No	Continue with Step 15 .

-
- 15** Replace the near-end Ethernet circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 607: Replace 1GSX/1GLX \(LNU67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 16** From the System View, click the Alarm List button and click **Refresh**.

-
- 17** Is the inc. GE-LAN LOS alarm still present?

If...	Then...
Yes	Continue with Step 18 .
No	Proceed to Step 20 .

-
- 18** Replace the far-end Ethernet circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 607: Replace 1GSX/1GLX \(LNU67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 19** From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. GE-LAN LOS alarm is no longer present.

-
- 20** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 535: Clear “inc. OCN” Alarms

Purpose This procedure is used to clear all inc. OCN alarms, including:

- inc. OCN line AIS
- inc. OCN LOF
- inc. OCN LOS
- inc. OCN RDI-L
- inc. OCN sig degrade (BER)
- inc. OCN sig failed (BER)

Refer [Chapter 1, “Alarm List”](#) and [Chapter 2, “Alarms, Conditions, and Error Messages”](#) for the possible alarm levels for the different alarms.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION
Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. OCN alarm.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. OCN alarm in the resulting alarm list.

.....
 - 2 Determine the alarm level(s) for the active inc. OCN alarm(s) (for example, CR, MJ, or MN). Clear the alarms in order of severity, CR, (SA), MJ (SA), MJ (NSA), MN (NSA), and then Not Alarmed (SC) conditions.

.....
 - 3 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine which circuit pack is affected by the inc. OCN alarm and note the corresponding AID.

-
- 4 Is the Fault (**FAULT**) LED on the near-end OLIU circuit pack continuously lit?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 6 .

Important! A continuously lit **FAULT** LED on an OCN OLIU circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

.....

- 5 Replace the near-end OLIU circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

-
- 6** Is the Fault (**FAULT**) LED on the near-end OCN OLIU circuit pack flashing?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 10 .

Important! A flashing FAULT LED on an OLIU circuit pack indicates a failure in the incoming signal which may mean:

- a failure of the near-end receiver
 - a failure of the transmitter
 - a failure of the intermediate OC-N fiber optic line (SONET alarms should also be indicated)
 - a failure in an intermediate SONET circuit pack, (SONET alarms should also be indicated)
 - a loss of synchronization.
-

- 7** Was the far-end OLIU circuit pack removed when the alarm occurred?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 10 .

-
- 8** Determine the reason the far-end circuit pack was removed. If the circuit pack is to be reinserted, simply reinstall the circuit pack. If the circuit pack is not to be reinserted, momentarily depress the **UPD/INIT** button on the SYSCTL to remove the circuit pack from the inventory.
-

- 9** Is the Fault (**FAULT**) LED on the near-end OLIU circuit pack still flashing?

If...	Then...
Yes	Continue with Step 10 .
No	Proceed to Step 16 .

.....

10 Check optical connections for the presence of an incoming signal.

.....

11 Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

12 If the LBO receptacle is acceptable, replace the near-end OCN OLIU circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

13 From the System View, click the Alarm List button and click **Refresh**.

.....

14 Is the inc. OCN alarm still present?

If...	Then...
Yes	Continue with Step 15 .
No	Proceed to Step 17 .

-
- 15** Replace the far-end OCN OLIU circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

-
- 16** From the System View on the near-end NE, click the Alarm List button and click **Refresh**.

Result: The inc. OCN alarm is no longer present.

-
- 17** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 536: Clear “inc. STS-1 LOM” Condition

Purpose	This procedure is used to clear an inc. STS-1 LOM condition reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.
Required equipment	The following list of equipment is required in order to complete this procedure: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

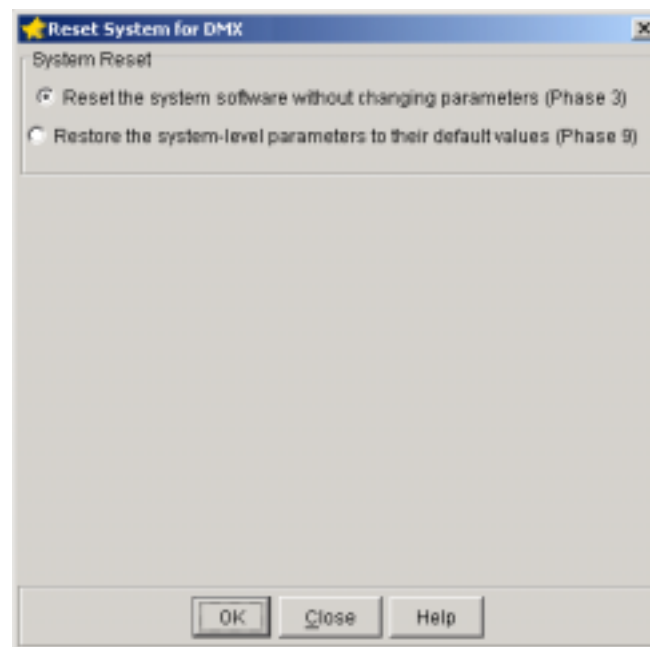
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. STS-1 LOM condition.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. STS-1 LOM condition in the resulting alarm list.

-
- 2 From the System View menu, select **Fault > Reset > System Controller....**

Result: The following screen appears.



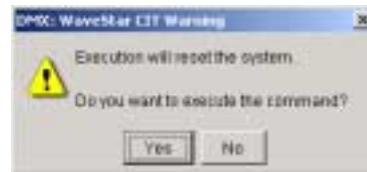
-
- 3** Select the Phase 3 option, “Reset the system software without changing parameters” and click **OK**.

Result: The following screen appears.



-
- 4** Select **Yes** or **No**.

Result: The following screen appears. Click **Yes** and the system resets.



-
- 5** From the System View, click the Alarm List button and click **Refresh**.
-

- 6** Is the inc. STS-1 LOM condition still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 16 .

-
- 7** Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack is affected by the inc. STS-1 LOM condition and note the corresponding AID.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

- 8** Disengage the affected circuit pack completely from the shelf.
- 1. Release both latches.
 - 2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.
- Result:** The **ACTIVE** and **FAULT** LED on the pack extinguish.
- 3. Re-seat the pack in the shelf.

- 9** From the System View, click the Alarm List button and click **Refresh**.

- 10** Is the inc. STS-1 LOM condition still present?

If...	Then...
Yes	Continue with Step 11 .
No	Proceed to Step 16 .

-
- 11** Replace your near-end Ethernet circuit pack.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#) or [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 12** From the System View, click the Alarm List button and click **Refresh**.
-

- 13** Is the inc. STS-1 LOM condition still present?

If...	Then...
Yes	Continue with Step 14 .
No	Proceed to Step 16 .

-
- 14** Replace your far-end Ethernet circuit pack.



CAUTION
Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#) or [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 15** From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. STS-1 LOM alarm is no longer present.

-
- 16** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 537: Clear “inc. STS-1 SQM” Condition

Purpose	This procedure is used to clear an inc. STS-1 SQM condition reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.
Required equipment	The following list of equipment is required in order to complete this procedure: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

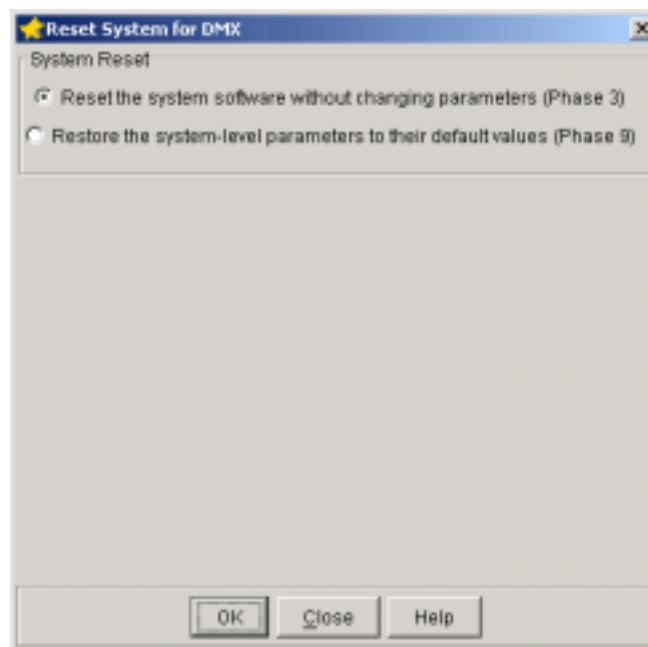
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. STS-1 SQM condition.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. STS-1 SQM condition in the resulting alarm list.

-
- 2 From the System View menu, select **Fault > Reset > System Controller....**

Result: The following screen appears.



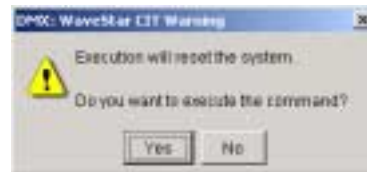
-
- 3 Select the Phase 3 option, “Reset the system software without changing parameters” and click **OK**.

Result: The following screen appears.



-
- 4 Select **Yes** or **No**.

Result: The following screen appears. Click **Yes** and the system resets.



-
- 5 From the System View, click the Alarm List button and click **Refresh**.
-

- 6 Is the inc. STS-1 SQM condition still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 16 .

.....

- 7 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack is affected by the inc. STS-1 SQM condition and note the corresponding AID.



CAUTION
Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

- 8** Disengage the affected circuit pack completely from the shelf.
- 1. Release both latches.
 - 2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.
- Result:** The **ACTIVE** and **FAULT** LED on the pack extinguish.
3. Re-seat the pack in the shelf.

-
- 9** From the System View, click the Alarm List button and click **Refresh**.
-

- 10** Is the inc. STS-1 SQM condition still present?

If...	Then...
Yes	Continue with Step 12 .
No	Proceed to Step 16 .

-
- 11** Replace your near-end Ethernet circuit pack.



CAUTION

Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#) or [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 12** From the System View, click the Alarm List button and click **Refresh**.

-
- 13** Is the inc. STS-1 SQM condition still present?

If...	Then...
Yes	Continue with Step 14 .
No	Proceed to Step 16 .

-
- 14 Replace your far-end Ethernet circuit pack.



CAUTION
Service affecting

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#) or [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 15 From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. STS-1 SQM alarm is no longer present.

-
- 16 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 538: Clear “inc. STSN” Conditions/Alarms

Purpose This procedure is used to clear all inc. STSN conditions/alarms, including:

- inc. STSN AIS
- inc. STSN LOP
- inc. STSN RDI-P
- inc. STSN sig degrade (BER)
- inc. STSN sig failed (BER)
- inc. STSN unequipped

Refer [Chapter 1, “Alarm List”](#) and [Chapter 2, “Alarms, Conditions, and Error Messages”](#) for the possible alarm levels for the different alarms.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.

**CAUTION****Electrostatic discharge**

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. STSN alarm.

-
- 1** From the WaveStar® CIT System View, click the Alarm List button and locate the inc. STSN alarm in the resulting alarm list.

-
- 2** Determine the alarm level(s) for the active inc. STSN alarm(s) (for example, CR or MN). Clear the alarms in order of severity, CR (SA), MN (NSA), and then Not Alarmed (SC) conditions.

-
- 3** Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine which circuit pack is affected by the inc. STSN alarm and note the corresponding AID.

-
- 4** Note the source address of the STSN alarm/condition reported (for example, m-1-1). Based on the circuit layout or other office records, determine the other shelf where that time slot is terminated (for example, cross-connected to a DS1 or DS3 termination).

-
- 5** Log in to the terminating shelf.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

-
- 6** From the System View menu, select the **View > Cross Connections**.

-
- 7** Are there incomplete or incorrect cross-connects?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 9 .

-
- 8** From the System View menu, select **Configuration > Cross-Connection** to start the Cross Connection Wizard. Use the Cross Connection Wizard to correct the provisioning.

-
- 9** From the System View, click the Alarm List button and click **Refresh**.
-

- 10** Is the inc. STSN alarm still present?

If...	Then...
Yes	Continue with Step 11 .
No	Proceed to Step 19 .

.....

- 11** One at a time, log in to every shelf where the service should be pass-through cross-connected (for example, m-1-1 to m-1-1 for STS-N). Select the **View > Cross Connections** command from the System View menu at each shelf to determine if the time slot identified in [Step 4](#) is cross-connected as specified in circuit layout or other office records.
-

- 12** At any shelves with missing cross-connects, select **Configuration > Cross-Connection** to start the Cross Connection Wizard. Use the Cross Connection Wizard to provision the correct pass-through cross-connection (for example, m-1-1 to m-1-1 for STS-N).
-

- 13** From the System View, click the Alarm List button and click **Refresh**.
-

- 14** Is the inc. STSN alarm still present?

If...	Then...
Yes	Continue with Step 15 .
No	Proceed to Step 19 .

.....

- 15** Check optical connections for the presence of an incoming signal.

-
- 16** Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

- 17** If the LBO receptacle is acceptable, replace the terminating OCN OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

- 18** From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. STSN alarm is no longer present.

.....

- 19** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 539: Clear “inc. VCG Fail” Alarm

.....

Purpose This procedure is used to clear an inc. VCG Fail alarm indicated by a lighted Critical (**CR**) LED on the SYSCTL and reported as critical in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

- 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

- 2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. VCG Fail alarm.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. VCG Fail alarm in the resulting alarm list.

-
- 2 Are there other inc. signal alarms in the alarm list?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	Continue with Step 3 .

-
- 3 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack is affected by the inc. VCG Fail alarm and note the corresponding AID.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

- 4** Disengage the affected circuit pack completely from the shelf.
 1. Release both latches.
 2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.

Result: The **ACTIVE** and **FAULT** LED on the pack extinguish.

3. Re-seat the pack in the shelf.

- 5** From the System View, click the Alarm List button and click **Refresh**.

- 6** Is the inc. VCG Fail alarm still present?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 12 .

-
- 7 Replace your near-end Ethernet circuit pack.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#) or [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

.....

- 8 From the System View, click the Alarm List button and click **Refresh**.
-

- 9 Is the inc. VCG Fail alarm still present?

If...	Then...
Yes	Continue with Step 10 .
No	Proceed to Step 12 .

-
- 10** Replace your far-end Ethernet circuit pack.

**CAUTION****Service affecting**

Before taking action, determine the extent of service disruption caused by disconnecting cables or replacing a circuit pack. Then, perform the action(s) deemed appropriate in light of the traffic being carried and the nature of the failure.

Reference: [Task 606: Replace 10/100T Fast Ethernet \(LNW66\) Circuit Pack \(5-57\)](#) or [Task 607: Replace 1GSX/1GLX \(LNW67/68\) Gigabit Ethernet Circuit Packs \(5-59\)](#)

-
- 11** From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. VCG Fail alarm is no longer present.

-
- 12** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 540: Clear “inc. VT” Conditions/Alarms

Purpose This procedure is used to clear all inc. VT conditions/alarms, including:

- inc. VT AIS
- inc. VT LOP
- inc. VT RDI-V
- inc. VT sig degrade (BER)
- inc. VT unequipped

Refer [Chapter 1, “Alarm List”](#) and [Chapter 2, “Alarms, Conditions, and Error Messages”](#) for the possible alarm levels for the different alarms.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.

**CAUTION****Electrostatic discharge**

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inc. VT alarm.

.....

1 From the WaveStar® CIT System View, click the Alarm List button and locate the inc. VT alarm in the resulting alarm list.

.....

2 Determine the alarm level(s) for the active inc. VT alarm(s) (for example, MJ or MN). Clear the alarms in order of severity, MJ (SA), MN (NSA), and then Not Alarmed (SC) conditions.

.....

3 Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine which circuit pack is affected by the inc. VT alarm and note the corresponding AID.

.....

4 Note the source address of the VT alarm/condition reported (for example, m-1-1). Based on the circuit layout or other office records, determine the other shelf where that time slot is supposed to be terminated (cross-connected to a DS1 termination).

.....

5 Log in to the terminating shelf.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

.....

6 From the System View menu, select the **View > Cross Connections**.

.....

7 Are there incomplete or incorrect cross-connects?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 9 .

.....

8 From the System View menu, select **Configuration > Cross-Connection** to start the Cross Connection Wizard. Use the Cross Connection Wizard to correct the provisioning.

-
- 9** From the System View, click the Alarm List button and click **Refresh**.
-

- 10** Is the inc. VT alarm still present?

If...	Then...
Yes	Continue with Step 11 .
No	Proceed to Step 19 .

.....

- 11** One at a time, log in to every shelf where the service should be pass-through cross-connected (for example, m-1-1 to m-1-1 for STS-N). Select the **View > Cross Connections** command from the System View menu at each shelf to determine if the time slot identified in [Step 4](#) is cross-connected as specified in circuit layout or other office records.
-

- 12** At any shelves with missing cross-connects, select **Configuration > Cross-Connection** to start the Cross Connection Wizard. Use the Cross Connection Wizard to provision the correct pass-through cross-connection (for example, m-1-1 to m-1-1 for STS-N).
-

- 13** From the System View, click the Alarm List button and click **Refresh**.
-

- 14** Is the inc. VT alarm still present?

If...	Then...
Yes	Continue with Step 15 .
No	Proceed to Step 19 .

.....

- 15** Check optical connections for the presence of an incoming signal.

-
- 16** Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

- 17** If the LBO receptacle is acceptable, replace the terminating OCN OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

- 18** From the System View, click the Alarm List button and click **Refresh**.

Result: The inc. VT alarm is no longer present.

.....

- 19** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 541: Clear “Inconsistent APS Codes” Alarm

Purpose This procedure is used to clear an Inconsistent APS Codes alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) Inconsistent APS Codes alarm.

.....

1 From the WaveStar® CIT System View, click the Alarm List button and locate the Inconsistent APS Codes alarm in the resulting alarm list and note the corresponding AID.

.....

2 Is there also an inc. OC48/OC192 sig degrade (BER) or inc. OC48/OC192 sig failed (BER) associated with that AID?

If...	Then...
Yes	Proceed to the appropriate task to clear that alarm.
No	Continue with Step 3 .

.....

3 Check optical connections for the presence of an incoming signal.

.....

4 Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

5 If the LBO receptacle is acceptable, replace the near-end and then the far-end OC-48 or OC-192 OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

6 From the System View, click the Alarm List button and click **Refresh**.

.....

7 Is the Inconsistent APS Codes alarm still present?

If...	Then...
Yes	Continue with Step 8 .
No	Proceed to Step 10 .

.....

8 Is there a SYSCTL CP failed alarm in the alarm list?

If...	Then...
Yes	Continue with Step 9 .
No	Proceed to Step 10 .

.....

9 Replace the SYSCTL circuit pack.

Reference: [Task 608: Replace SYSCTL \(LNW1\) Circuit Pack \(5-63\)](#)

.....

10 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 542: Clear “inconsistent DCC switches” Alarm

Purpose This procedure is used to clear an inconsistent DCC switches alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.

Important! When this alarm is present, protection switching at the BLSR node is unavailable.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

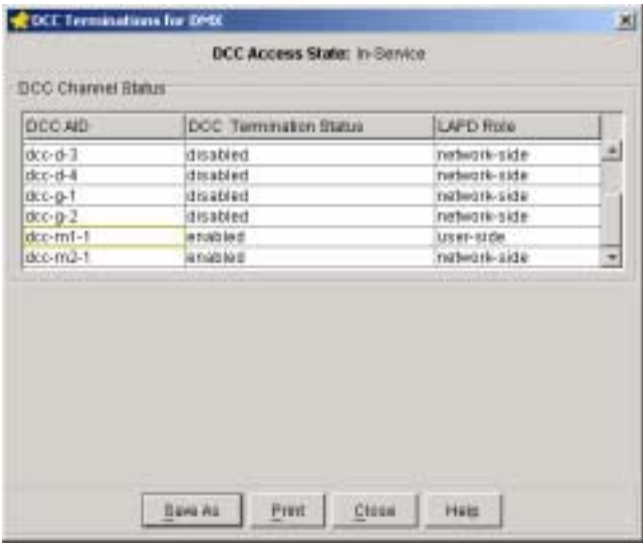
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) inconsistent DCC switches alarm.

- 1 From the System View menu, select **View > DCC Terminations**.

Result: The following screen appears.



- 2 For the DCC AIDs dcc-x1-1 and dcc-x2-1, does the DCC termination Status column read **enabled** AND does LAPD Role column read user or network side appropriately?

Important! Usually, dcc-x1-1 is provisioned as user side and dcc-x2-2 is network side. A user side must be adjacent to a network side and a network side must be adjacent to a user side.

If...	Then...
Yes	Proceed to Step 5 .
No	Continue with Step 3 .

-
- 3 From the System View menu, select **Configuration > DCC Terminations**.

Result: The following screen appears.



-
- 4 From the Provision DCC Terminations screen,
1. Under DCC Termination Parameters > DCC Port, select the Port AID that you wish to reprovision.
 2. Under DCC Channel Parameters > Termination State, select **enabled**.
 3. Under DCC Channel Parameters > LAPD Role, select **user-side or network-side**.
(LAPD = link access protocol of the D-channel)
 4. Click **OK**.

Result: The following warning message appears:
Execution will affect the DCC termination for the (TID). Do you want to execute this command?
 Click **Yes**.

5. Click **Close** on the Provision DCC Terminations screen.
-

- 5 From the System View, click the Alarm List button and click **Refresh**.

.....

6 Is the inconsistent DCC switches alarm still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 9 .

.....

7 From the System View menu, select **View > Ring Map > Ring Map....** Select the required ring and click on **Select**. Verify that the inactive manual ring map was provisioned correctly.

Result: The *Ring Map* screen appears.

.....

8 Is either the West Link or the East Link *Isolated*?

If...	Then...
Yes	The adjacent node on the corresponding side (East or West) is either being initialized, powered up, powered down. What for the node to come up again.
No	Continue with Step 9 .

.....

9 From the System View, click the Alarm List button and click **Refresh**.

.....

10 Is the inconsistent DCC switches alarm still present?

If...	Then...
Yes	Contact your next level of support.
No	Proceed to Step 11 .

.....

11 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 543: Clear “Inconsistent Ring Prot Mode ” Alarm

Purpose This procedure is used to clear a Inconsistent Ring Prot Mode alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

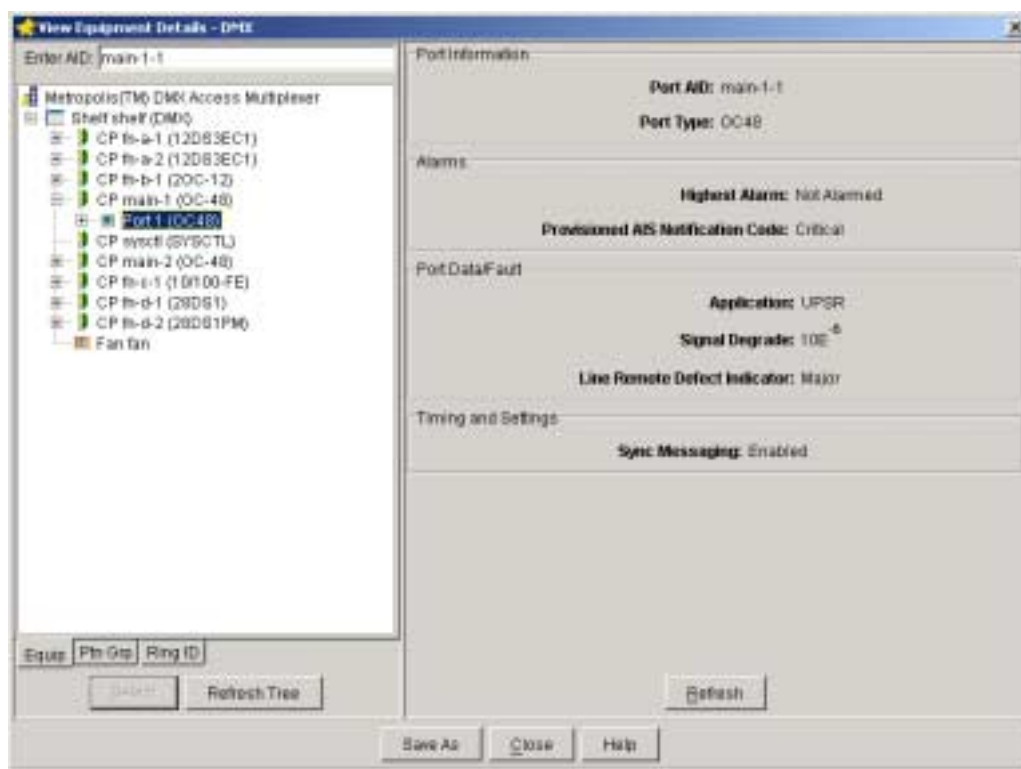
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) Inconsistent Ring Prot Mode alarm.

- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the Inconsistent Ring Prot Mode alarm in the resulting alarm list and note the corresponding AID.
- 2 Verify that all nodes in the ring have been changed to the BLSR application mode from the default UPSR application mode.
- 3 From the WaveStar® CIT System View, select **View > View Equipment Details**, expand the circuit pack, highlight the desired port, and then click **Select**.

Result: The following screen appears.

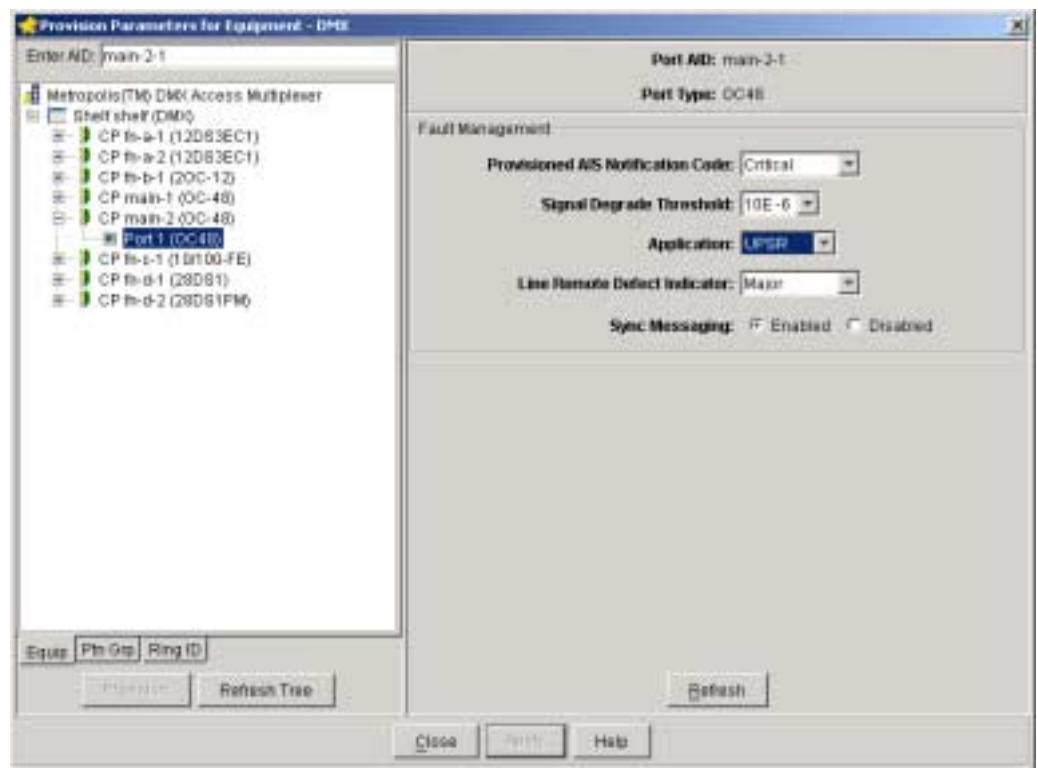


-
- 4 In the Port Data/Fault section of the *View Equipment Details* window, does the Application: read UPSR?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 8 .

-
- 5 From the System View, select **Configuration > Provision**, expand the circuit pack, highlight the desired port, and then click **Provision**.

Result: The following screen appears.



-
- 6 In the Fault Management section of the *Provision Parameters for Equipment* window, change Application to 2F BLSR from UPSR and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 7 In the *Provision Parameters for Equipment* window, click **Close**.

-
- 8 From the System View, click the Alarm List button and click **Refresh**.

Important! While the Automatic Ring Discovery (ARD) feature updates the ring map, there will be momentary alarms, such as Ring Prot Switching Suspended, Ring Discovery In Progress. These alarms will clear automatically when the ARD completes.

Result: The Inconsistent Ring Prot Mode alarm is no longer present.

-
- 9 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 544: Clear “inhibit switch” Condition

Purpose This procedure is used to clear an inhibit switch condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an inhibit switch condition.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the inhibit switch condition in the resulting alarm list and note the corresponding AID and the Alarm Entity Type.

-
- 2 Does the Alarm Entity Type type = T1 and the AID = ref-1 or ref-2?

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 5 .

-
- 3 From the System View menu, select **Fault > Timing/Sync Protection Switch > System Timing Reference/Source Switch** and select the Switch Command **Reset** and click **OK**.

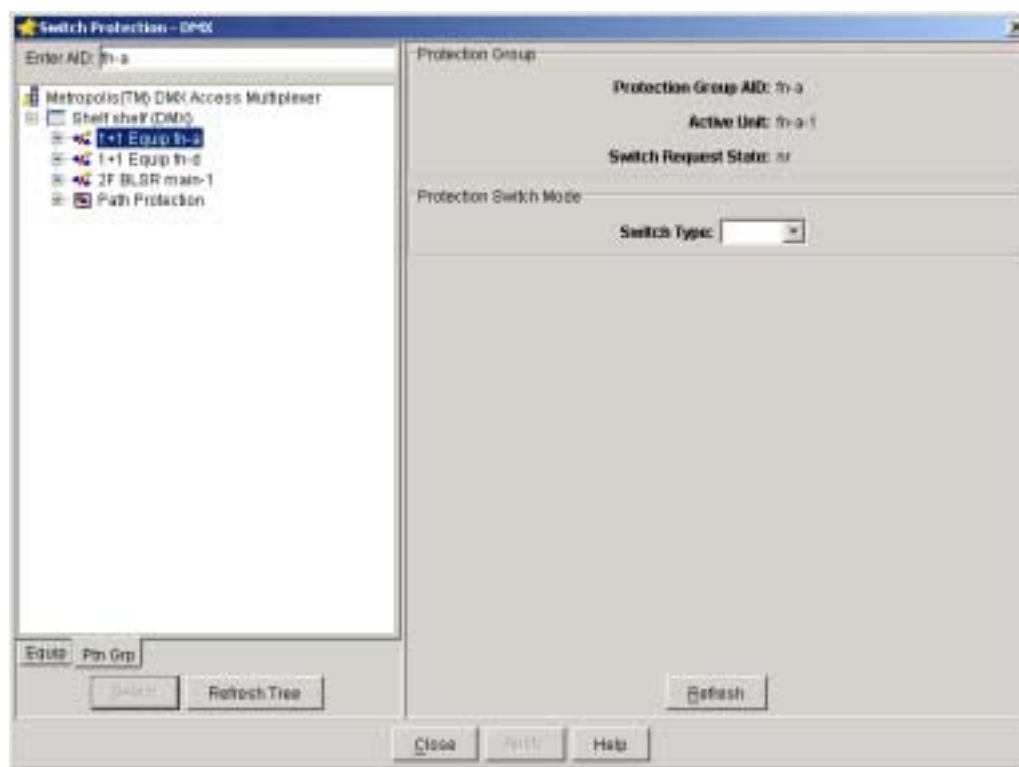
Important! This window also provides an Apply button. Clicking on Apply executes the command AND leaves the window open for further provisioning. Clicking on OK executes the command and closes the window. It is not necessary to click both Apply and OK.

Result: The following warning message appears:
Execution of Switch may affect the NE. Do you want to execute this command?
 Click **Yes**.

-
- 4 Proceed to [Step 8](#).

-
- 5 From the WaveStar® CIT System View menu, select **Fault > Protection switch**, and highlight the appropriate 1+1 Equip Protection Group and click **Select**.

Result: The following screen appears.



-
- 6 In the Protection Switch Mode section of the window, click on the drop down menu for Switch Type and select **Reset** and then click **Apply**.

Result: The following warning message appears:

Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**.

-
- 7 In the *Switch Protection* window, click **Close**.

-
- 8 From the System View, click the Alarm List button and click **Refresh**.
- Result:** The inhibit switch condition is no longer present.
-

- 9 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....

☐

Task 545: Clear “Line Automatic Switch” Alarm

- Purpose** This procedure is used to clear a Line Automatic Switch alarm indicated by a lighted Minor (**MN**) LED on the SYSCTL faceplate, and reported as minor in the WaveStar® CIT Alarm List.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
- Reference:** [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2. Connect PC and establish a WaveStar® CIT session.
- Reference:** [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Minor (**MN**) Line Automatic Switch alarm.

-
- 1** From the WaveStar® CIT System View, click the Alarm List button and locate the Line Automatic Switch alarm in the resulting alarm list and note the corresponding AID.

Important! This alarm is generated in response to an automatic protection switch in the BLSR. In order to clear this alarm, you must determine and clear the underlying cause of the protection switch. When the causative alarm is cleared and the provisioned Wait to Restore (WTR) time passes, the BLSR will revert to its original state and this alarm will clear.

.....

- 2** Is there also an inc. OC48/OC192 sig degrade (BER) or inc. OC48/OC192 sig failed (BER) associated with that AID?

If...	Then...
Yes	Proceed to the appropriate task to clear that alarm.
No	Continue with Step 3 .

.....

- 3** Check optical connections for the presence of an incoming signal.
-
- 4** Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

- 5** If the LBO receptacle is acceptable, replace the near-end and then the far-end OC-48 or OC-192 OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

-
- 6** From the System View menu, select **Reports > Remote NE Alarms List....**

Result: The *Remote NE Alarms List* screen appears.

.....

- 7** Are there any alarms present on the remote NEs?

If...	Then...
Yes	Log in to the remote NE and clear all alarms in order of severity and then continue with Step 8 .
No	Continue with Step 8 .

.....

- 8** From the System View menu, select **View > Ring Map > Ring Map....** Select the required ring and click on **Select**. Verify that the inactive manual ring map was provisioned correctly.

Result: The *Ring Map* screen appears.

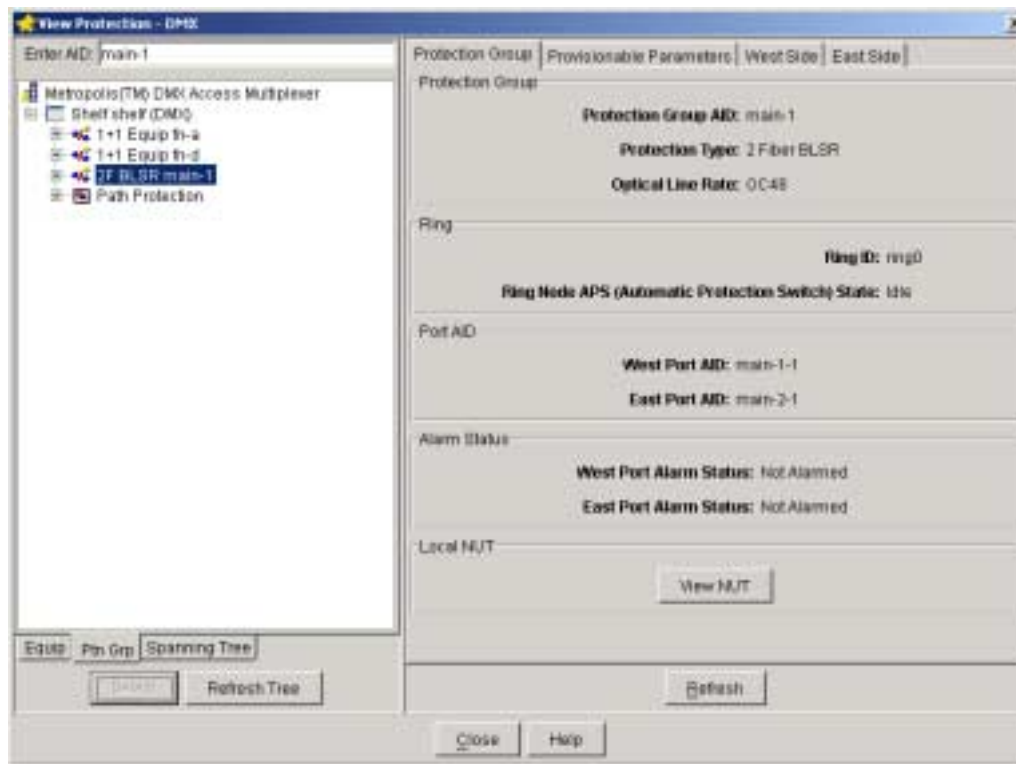
.....

- 9** Is either the West Link or the East Link *Isolated*?

If...	Then...
Yes	The adjacent node on the corresponding side (East or West) is either being initialized, powered up, powered down. What for the node to come up again.
No	Continue with Step 10 .

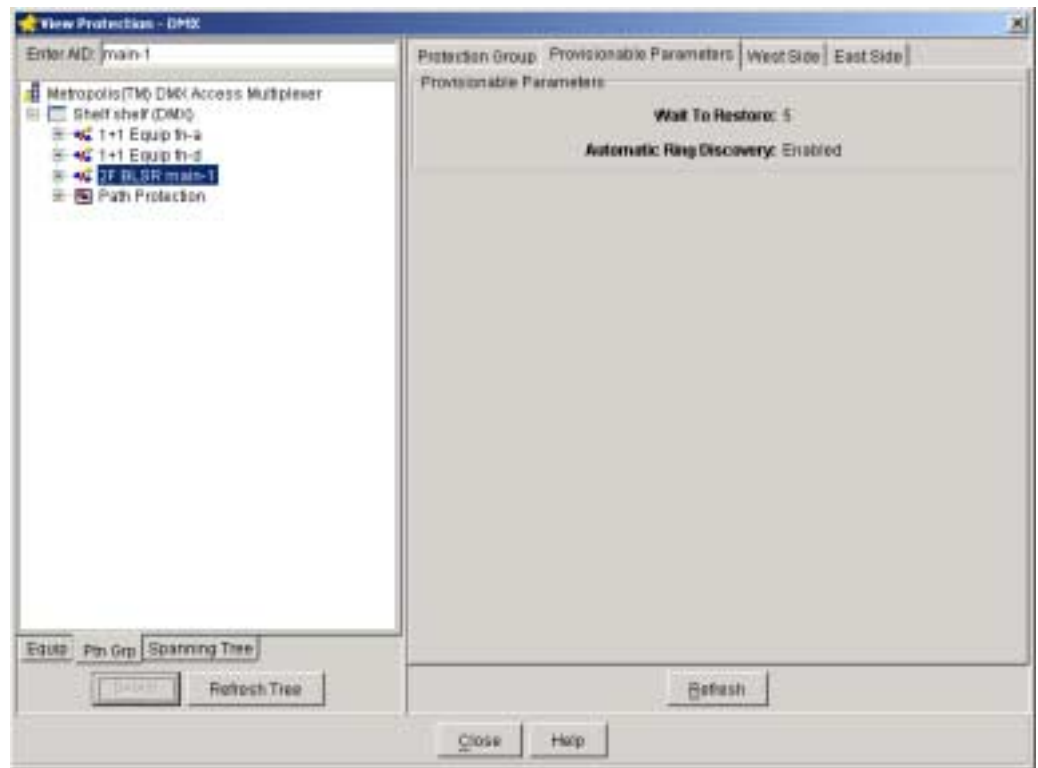
-
- 10 From the System View menu, select **View > Protection** and click on the **Ptn Grp** tab, select the appropriate 2F BLSR Protection Group, and click **Select**.

Result: The following screen appears.



-
- 11** From the View Protection window, click on the **Provisionable Parameters** tab and note the Wait to Restore time (minutes).

Result: The following screen appears.

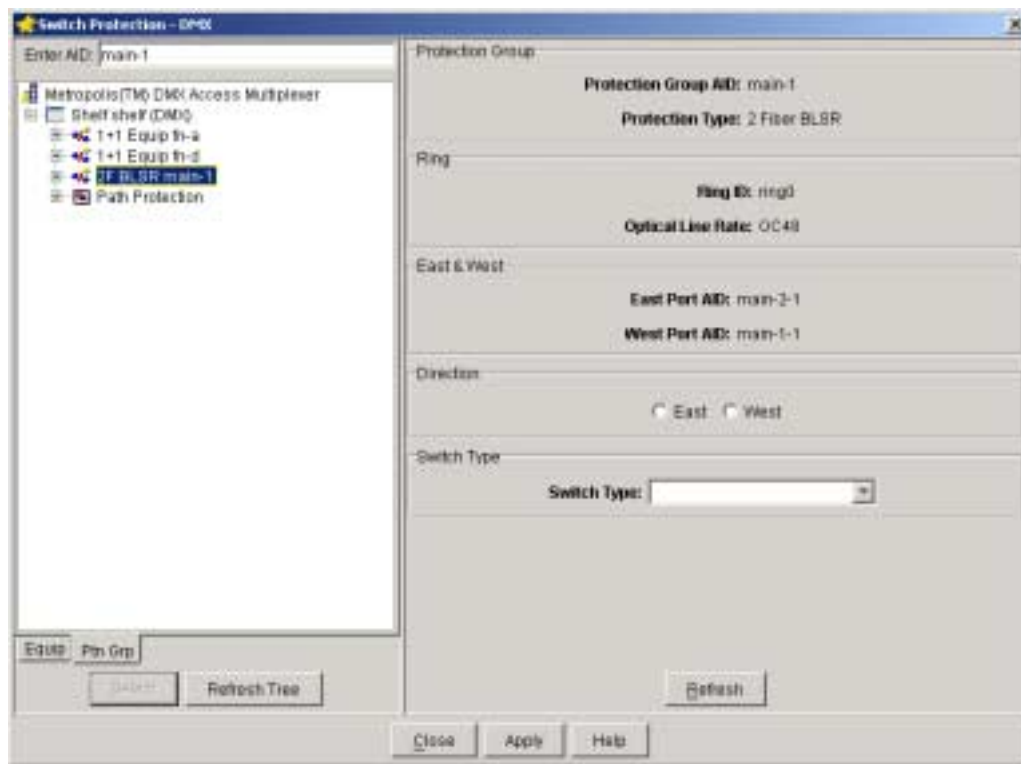


-
- 12** What is the Wait to Restore time

If...	Then...
0	Line Automatic Switch alarm clears when the causative condition clears, no waiting time. Proceed to Step 18 .
1-98 (default is 5)	Determine if you are willing to wait the provisioned time for the alarm to clear. If not, continue with Step 13 .
99	Continue with Step 13 .

-
- 13** From the System View menu, select **Fault > Protection switch**, and highlight the appropriate 2F BLSR Protection Group and click **Select**.

Result: The following screen appears.



-
- 14** From the East & West section of the resulting window, identify the AID of your affected port as either EAST or WEST.

Example: In the example above, the East port is main-2-1 and the West port is main-1-1.

-
- 15** In the Direction section of the window, select the *SAME* direction as D port.

Example: If your alarmed AID is the West port, select West.

-
- 16** In the Switch Type section of the window, click on the drop down menu and select Clear and the click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 17** In the Switch Protection window, click **Close**.

-
- 18** From the System View, click the Alarm List button and click **Refresh**.

Result: The Line Automatic Switch alarm is no longer present.

-
- 19** Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 546: Clear “lockout of protection” Condition

Purpose This procedure is used to clear a lockout of protection condition indicated by a lit Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following chapters in this document:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

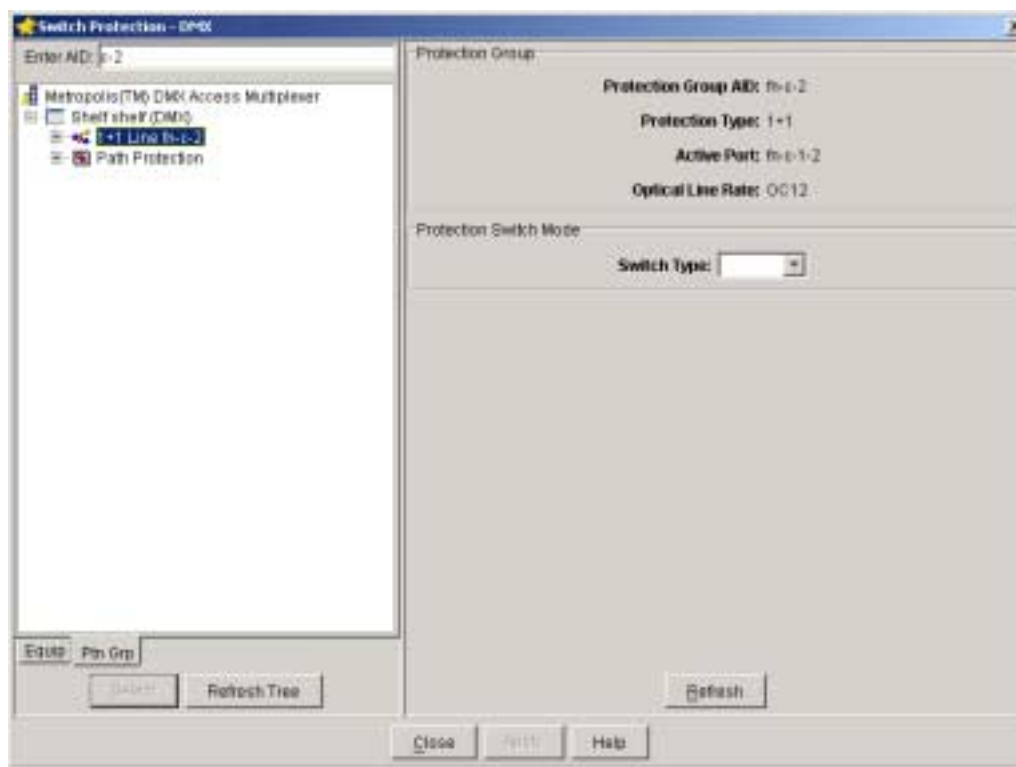
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a lockout of protection condition.

- 1 From the WaveStar® CIT System View, click on the Alarm List button and locate the lockout of protection condition in the resulting alarm list and note the corresponding AID.
- 2 From the WaveStar® CIT System View menu, select **Fault > Protection switch**, highlight the appropriate 1+1 Line Protection Group, and then click **Select**.

Result: The following screen appears.



-
- 3** In the Protection Switch Mode section of the window, click on the drop down menu for Swithc Type and select **Reset** and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 4** In the *Switch Protection* window, click **Close**.
-

- 5** From the System View, click the Alarm List button and click **Refresh**.

Result: The lockout of protection condition is no longer present.

.....

- 6** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 547: Clear “manual sync. mode switch” Condition

Purpose This procedure is used to clear a manual sync. mode switch condition, reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a manual sync. mode switch condition.

-
- 1** The system was forced to Holdover. From the System View menu, select **Fault > Timing/Sync Protection Switch > Clock Mode Switch**, select **Norm**, and click **OK**.

Result: The following warning message appears:
Execution of this command may affect the NE. Do you want to execute this command?
Click **Yes**.

-
- 2** From the System View, click the Alarm List button and click **Refresh**.

Result: The manual sync. mode switch condition is no longer present.

-
- 3** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 548: Clear “Node ID Mismatch” Alarm

- Purpose** This procedure is used to clear a Node ID Mismatch alarm indicated by a lighted major (**MJ**) LED on the SYSCTL faceplate and reported as major in the WaveStar® CIT Alarm list.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.
- Reference:** [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2. Connect PC and establish a WaveStar® CIT session.
- Reference:** [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (MJ) Node ID Mismatch alarm.

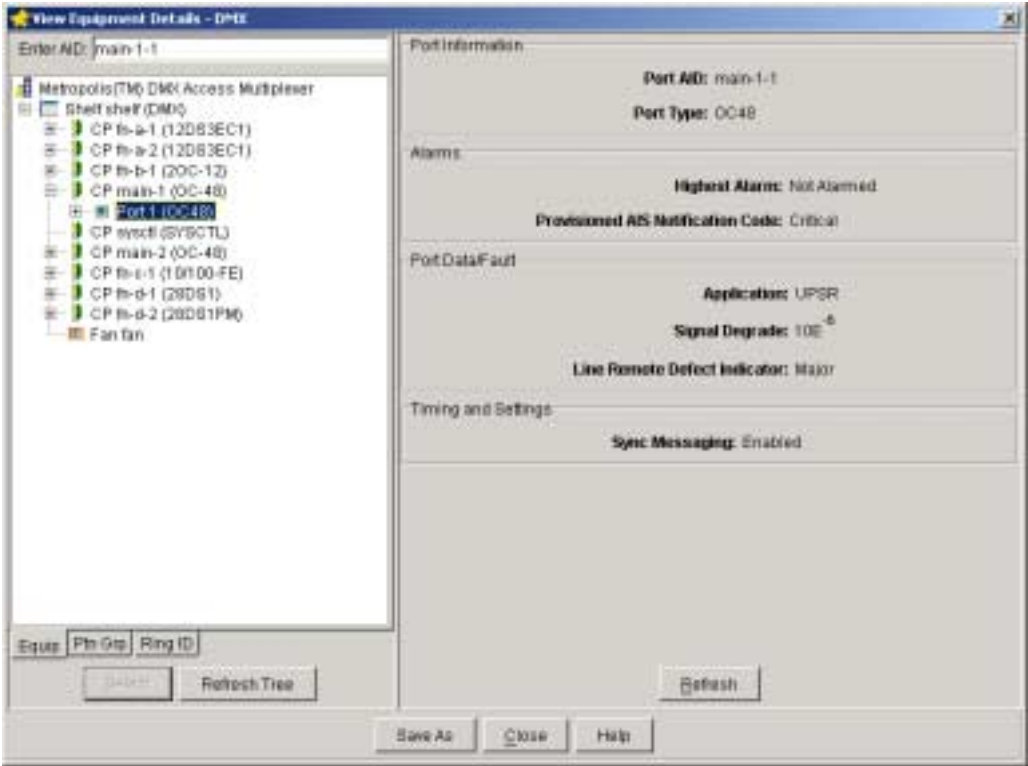
1 Is there a Default K-bytes alarm present?

If...	Then...
Yes	Proceed to Task 507: Clear “Default K-bytes” Alarm (4-45)
No	Continue with Step 2 .

2 Verify that all nodes in the ring have been changed to the BLSR application mode from the default UPSR application mode.

3 From the System View, select **View > View Equipment Details**, expand the circuit pack, highlight the desired port, and click **Select**.

Result: The following screen appears.

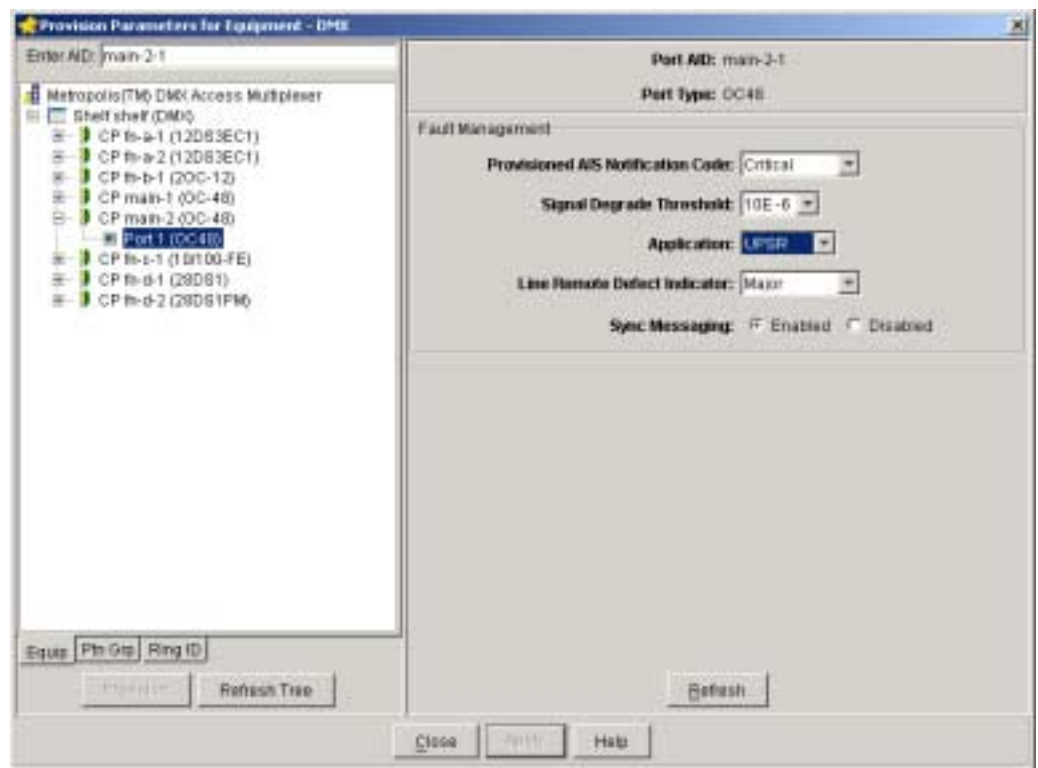


-
- 4 In the Port Data/Fault section of the *View Equipment Details* window, does the Application: read UPSR?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 10 .

-
- 5 From the System View, select **Configuration > Provision**, expand the circuit pack, and then highlight the desired port and click **Provision**.

Result: The following screen appears.



-
- 6 In the Fault Management section of the *Provision Parameters for Equipment* window, change Application to 2F BLSR from UPSR and click **Apply**.

Result: The following warning message appears:

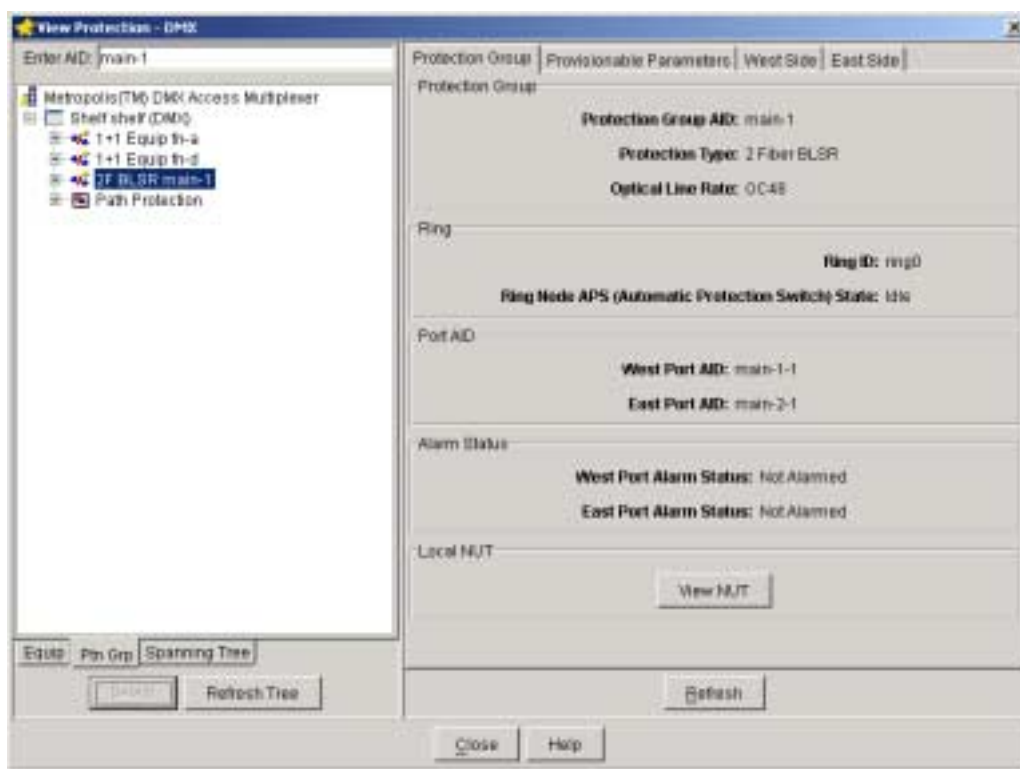
Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**. In the *Provision Parameters for Equipment* window, click **Close**.

.....

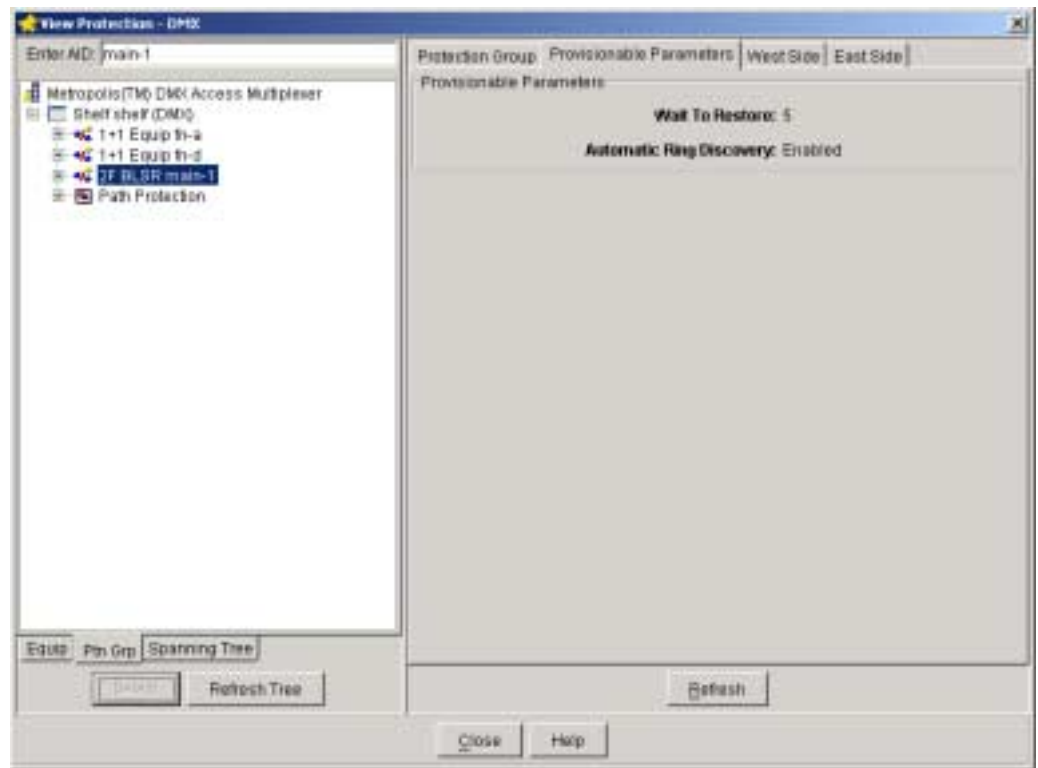
- 7 From the System View menu, select **View > Protection** and click on the **Ptn Grp** tab, select the appropriate 2F BLSR Protection Group, and click **Select**.

Result: The following screen appears.



-
- 8 From the View Protection window, click on the **Provisionable Parameters** tab.

Result: The following screen appears.

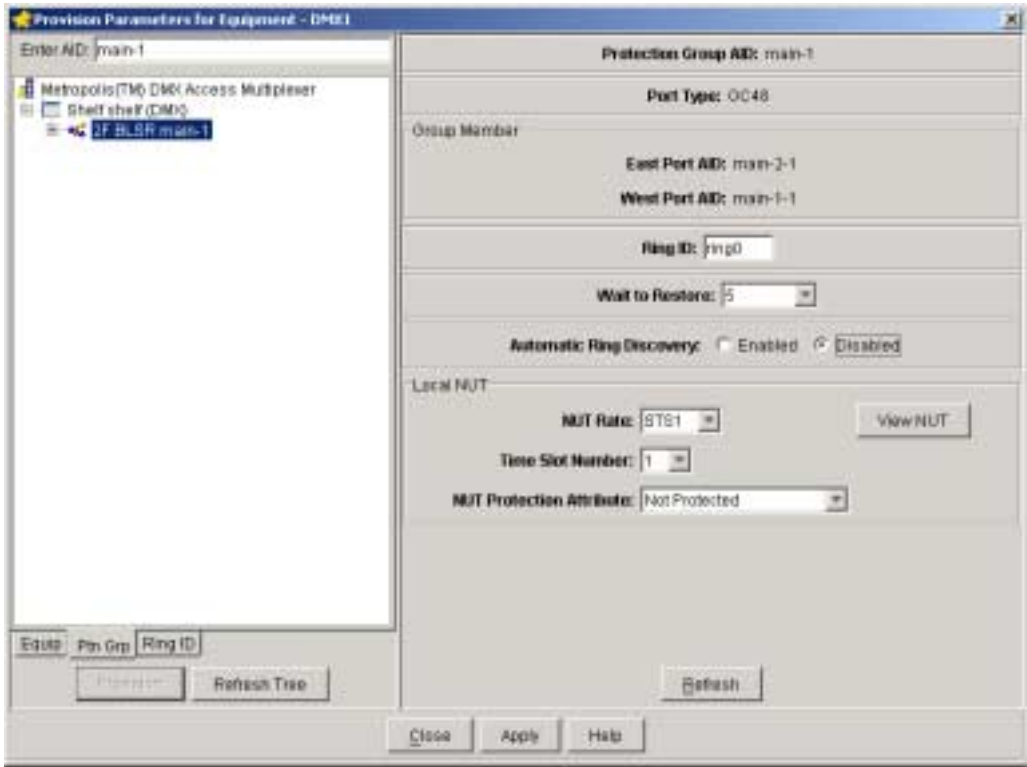


-
- 9 Is Automatic Ring Discovery either enabled or disabled on all nodes in the ring?

If...	Then...
Yes	Proceed to Step 13 .
No	Continue with Step 11 to provision all nodes in the ring in the same manner.

-
- 10** From the System View menu, select **Configuration > Provision** and click on the **Ptn Grp** tab, select the appropriate 2F BLSR Protection Group, and click **Provision**.

Result: The following screen appears.



-
- 11** From the *Provision Parameters for Equipment* window, select the provisioning you want for Automatic Ring Discovery on your ring, either **Enabled** or **Disabled** and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**. In the *Provision Parameters for Equipment* window, click **Close**.

-
- 12** Repeat [Step 10](#) and [Step 11](#) for all nodes in the ring.

.....

13 Did you enable Automatic Ring Discovery?

If...	Then...
Yes	Continue with Step 14 .
No	Proceed to Step 17 .

.....

14 From the System View, click the Alarm List button and click **Refresh**.

Result: Ring Discovery In Progress condition is present. Wait for the discovery to complete.

.....

15 From the System View, click the Alarm List button and click **Refresh**.

Result: The Node ID Mismatch alarm and the Ring Discovery In Progress condition are no longer present.

.....

16 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

17 Select **Configuration > Configure Manual Ring Map...**

Result: The *Configure Manual Ring Map* screen appears.

.....

18 Click on the required Ring ID and **Select**.

Result: The *Configure Manual Ring* screen appears.

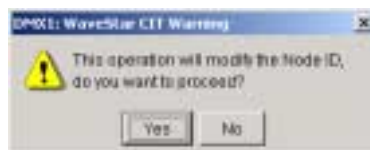
-
- 19** Right-click on the node that you wish to modify with a different Node ID.

Result: The following screen appears.



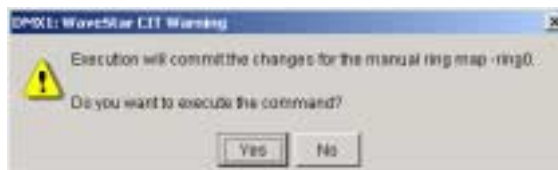
-
- 20** Enter as new Node ID and click **OK**.

Result: The following confirmation window appears.



-
- 21** Click **Yes** and then click **Apply** in the *Configure Manual Ring* screen.

Result: The following confirmation window appears.



-
- 22** Select **View > Ring Map > Ring Map....** Select the required Ring ID and click on **Select**. Verify that the inactive manual ring map was provisioned correctly and click on **Close**.

-
- 23** Select **Configuration > Activate Manual Ring Map...**

Result: The *Apply Manual Ring Map* screen appears.

.....

- 24** Select the required Ring ID and click **Select**.

Result: A dialog box appears asking you to confirm activating the manual ring map. Click on **OK**. The inactive manual ring map is now activated.

.....

- 25** From the System View menu, select **Reports > Remote NE Alarms List...**

Result: The *Remote NE Alarms List* screen appears.

.....

- 26** Are there any alarms present on the remote NEs?

If...	Then...
Yes	Log in to the remote NE and clear all alarms in order of severity and then continue with Step 27 .
No	Continue with Step 27 .

.....

- 27** From the System View, click the Alarm List button and click **Refresh**.

Result: The Node ID Mismatch alarm is no longer present.

.....

- 28** Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 549: Clear “NTP server(s) unreachable” Condition

Purpose This procedure is used to clear a iNTP server(s) unreachable condition reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

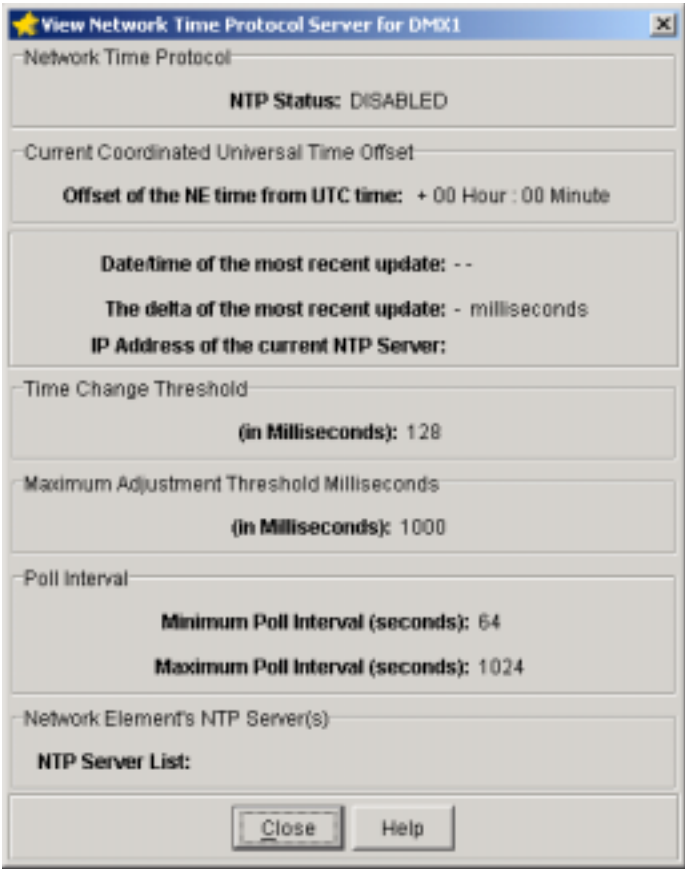
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a NTP server(s) unreachable condition.

-
- 1** In the System View menu, select **Administration > View Network Time Protocol....**

Result: The following screen appears.
Note: this example does not have NTP enabled, therefore the NTP Server List blank.



-
- 2** Verify that NTP is ENABLED and the provisioned NTP server is available.

.....

3 Do you wish to change the NTP provisioning?

If...	Then...
Yes	Proceed to Task 621: Set Date and Time (5-191) .
No	Continue with Step 4 .

.....

4 From the System View, click the Alarm List button and click **Refresh**.

Result: The NTP Server(s) unreachable condition is no longer present.

.....

5 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 550: Clear “Protection switch, OC-N port, Forced switch, FSR, 2F” Condition

Purpose This procedure is used to clear a Protection switch, OC48/OC192 port, Forced switch, FSR, 2F condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following chapters in this document:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

- Before you begin

Prior to beginning this task, you must:

 - If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

 - Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)
- Task

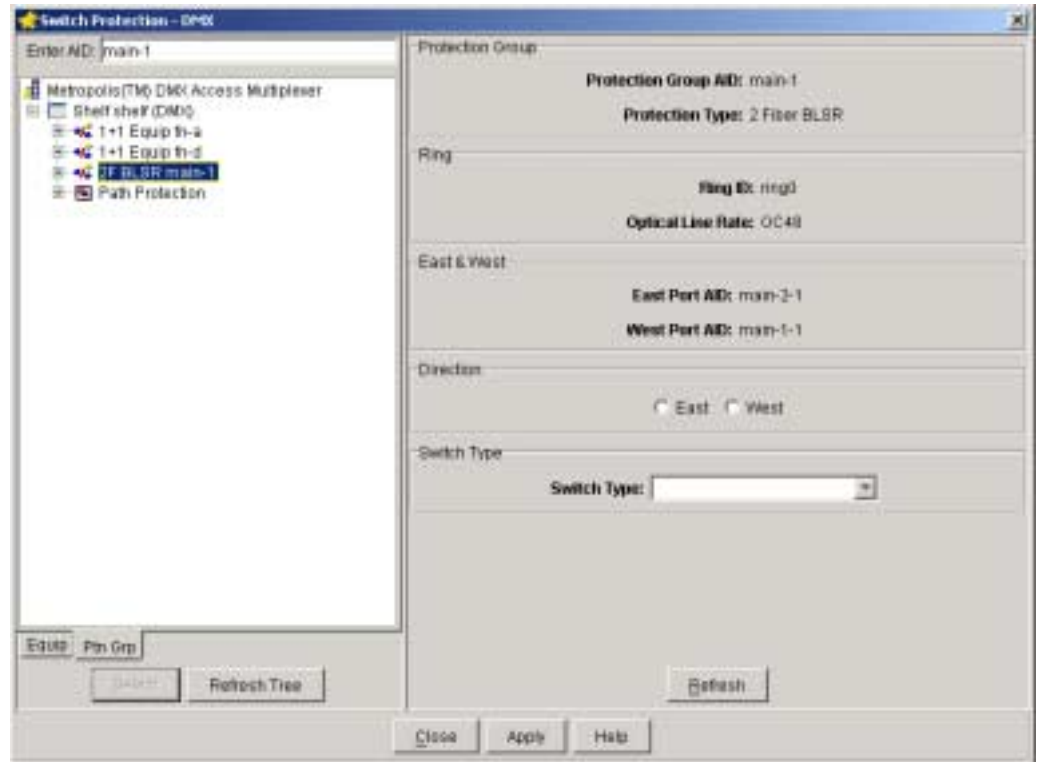
Complete the following steps to clear a Protection switch, OC-N port, Forced switch, FSR, 2F condition.

.....

 - From the WaveStar® CIT System View, click the Alarm List button and locate the Protection switch, OC-N port, Forced switch, FSR, 2F condition in the resulting alarm list and note the corresponding AID.

-
- 2 From the System View menu, select **Fault > Protection switch**, highlight the appropriate 2F BLSR Protection Group, and then click **Select**.

Result: The following screen appears.



-
- 3 From the East & West section of the resulting window, identify the AID of your affected port as either EAST or WEST.

Example: In the example above, the East port is main-2-1 and the West port is main-1-1.

-
- 4 In the Direction section of the window, select the *SAME* direction as the port.

Example: If your alarmed AID is the West port, select West.

-
- 5

In the Switch Type section of the window, click on the drop down menu and select Clear and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....
- 6

In the *Switch Protection* window, click **Close**.

.....
- 7

From the System View, click the Alarm List button and click **Refresh**.

Result: The Protection switch, OC-N port, Forced switch, FSR, 2F condition is no longer present.

.....
- 8

Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....

☐

Task 551: Clear “Protection switch, OC-N port, Lockout switch, LPS, 2F” Condition

Purpose This procedure is used to clear a Protection switch, OC48/OC192 port, Lockout switch, LPS, 2F condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following chapters in this document:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

- Before you begin**
- Prior to beginning this task, you must:

 1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

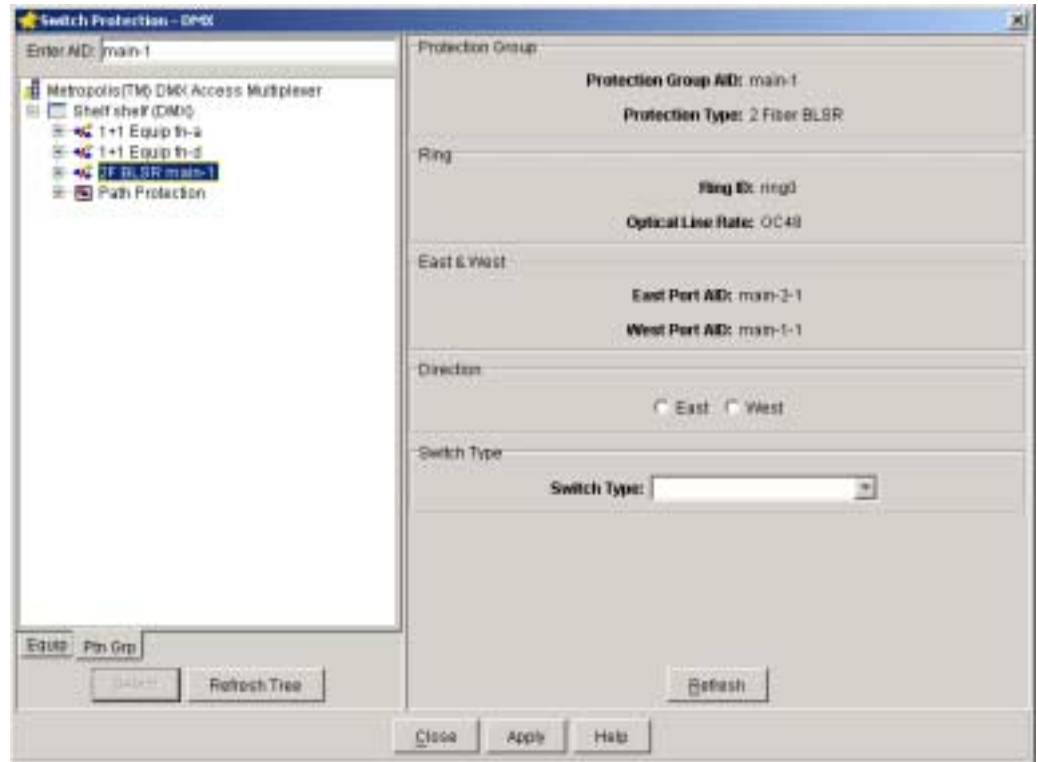
- Task**
- Complete the following steps to clear a Protection switch, OC-N port, Lockout switch, LPS, 2F condition.

.....

 - 1 From the WaveStar® CIT System View, click the Alarm List button and locate the Protection switch, OC-N port, Lockout switch, LPS, 2F condition in the resulting alarm list and note the corresponding AID.

- 2 From the System View menu, select **Fault > Protection switch**, highlight the appropriate 2F BLSR Protection Group, and then click **Select**.

Result: The following screen appears.



- 3 From the East & West section of the resulting window, identify the AID of your affected port as either EAST or WEST.

Example: In the example above, the East port is main-2-1 and the West port is main-1-1.

- 4 In the Direction section of the window, select the *SAME* direction as the port.

Example: If your alarmed AID is the West port, select West.

-
- 5 In the Switch Type section of the window, click on the drop down menu and select Clear and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 6 In the *Switch Protection* window, click **Close**.
-

- 7 From the System View, click the Alarm List button and click **Refresh**.

Result: The Protection switch, OC-N port, Lockout switch, LPS, 2F condition is no longer present.

.....

- 8 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S ☐

Task 552: Clear “Protection switch, OC-N port, Manual switch, MSR, 2F” Condition

Purpose This procedure is used to clear a Protection switch, OC48/OC192 port, Manual switch, MSR, 2F condition indicated by a lighted Abnormal (**ABN**) LED on the SYSCTL faceplate, and reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following chapters in this document:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

- Before you begin**
- Prior to beginning this task, you must:
1.

If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
2.

Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task

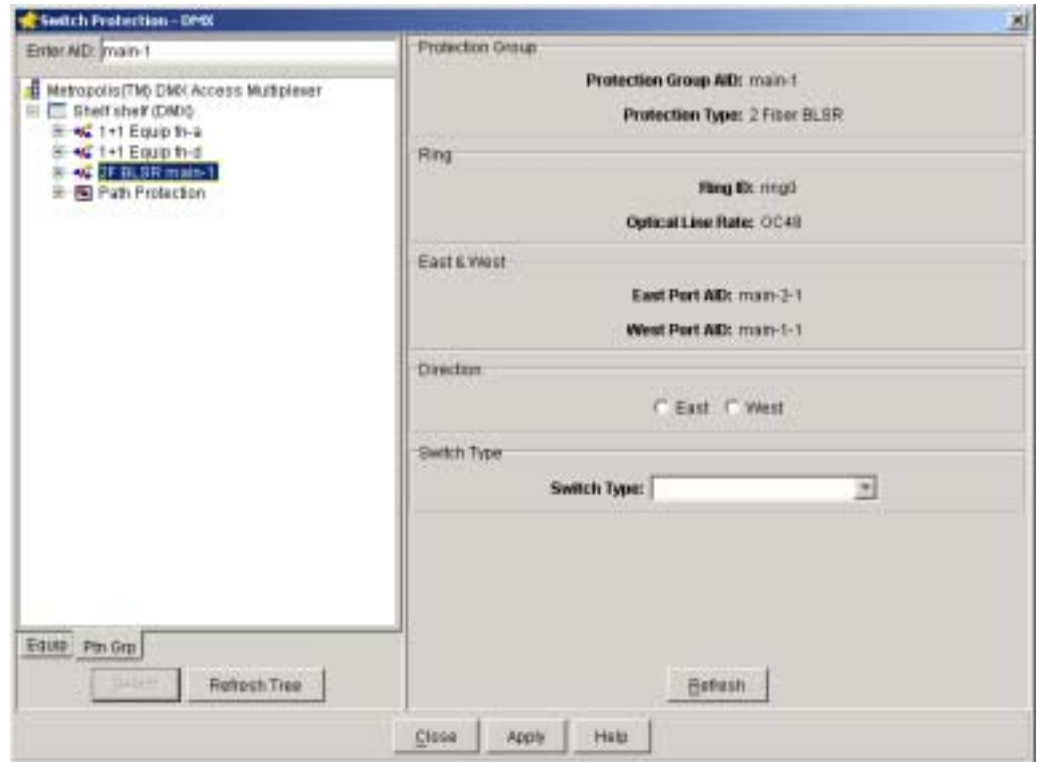
Complete the following steps to clear a Protection switch, OC-N port, Manual switch, MSR, 2F condition.

-
- 1

From the WaveStar® CIT System View, click the Alarm List button and locate the Protection switch, OC-N port, Manual switch, MSR, 2F condition in the resulting alarm list and note the corresponding AID.

- 2 From the System View menu, select **Fault > Protection switch**, highlight the appropriate 2F BLSR Protection Group, and then click **Select**.

Result: The following screen appears.



- 3 From the East & West section of the resulting window, identify the AID of your affected port as either EAST or WEST.

Example: In the example above, the East port is main-2-1 and the West port is main-1-1.

- 4 In the Direction section of the window, select the *SAME* direction as the port.

Example: If your alarmed AID is the West port, select West.

-
- 5 In the Switch Type section of the window, click on the drop down menu and select Clear and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

.....

- 6 In the *Switch Protection* window, click **Close**.
-

- 7 From the System View, click the Alarm List button and click **Refresh**.

Result: The Protection switch, OC-N port, Manual switch, MSR, 2F condition is no longer present.

.....

- 8 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

END OF STEPS

.....

☐

Task 553: Clear “Ring Incomplete” Alarm

- Purpose** This procedure is used to clear a Ring Incomplete alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate and reported as major in the WaveStar® CIT Alarm list.
- Required equipment** The following list of equipment is required in order to complete this procedure:
- Personal computer (PC) with WaveStar® CIT software installed
 - Wrist strap
- Safety precautions** To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

- Related information** For related information, refer to the following:
- [Chapter 1, “Alarm List”](#)
 - [Chapter 2, “Alarms, Conditions, and Error Messages”](#)
- Before you begin** Prior to beginning this task, you must:
1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) Ring Incomplete alarm.

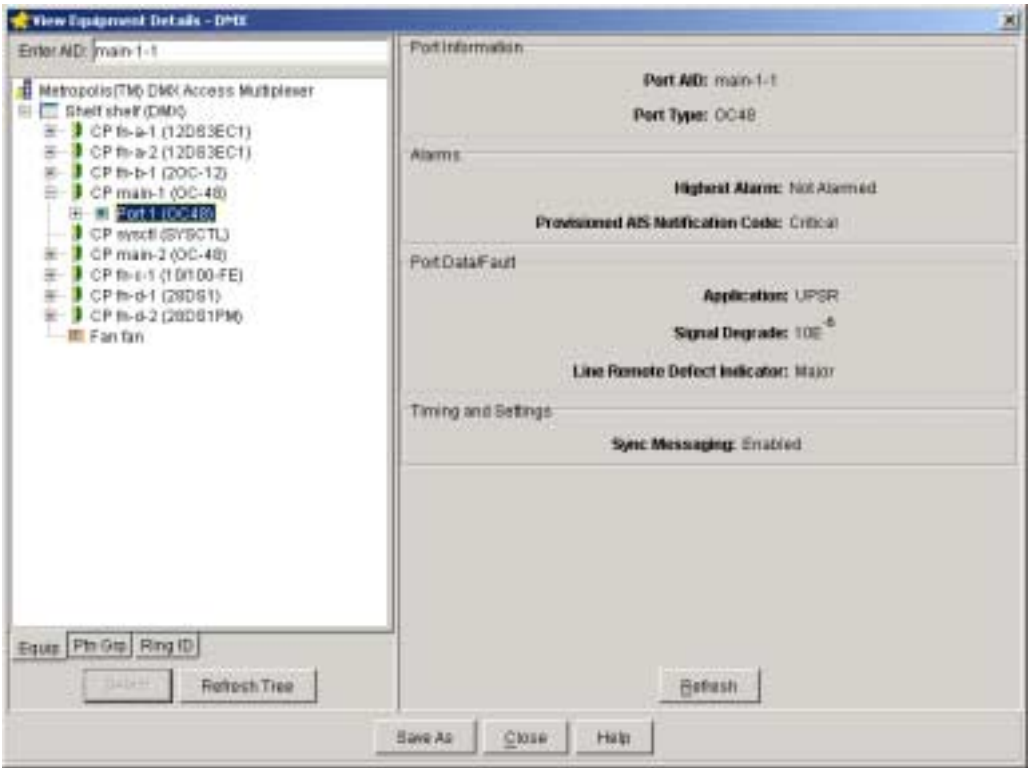
1 In the alarm list, are there any inc. OCN or inc. STSN alarms present?

If...	Then...
Yes	Proceed to the appropriate task to clear each alarm in order of severity.
No	Continue with Step 2 .

2 Verify that all nodes in the ring have been changed to the BLSR application mode from the default UPSR application mode.

3 From the System View menu, select **View > View Equipment Details**, expand the circuit pack, highlight the desired port, and click **Select**.

Result: The following screen appears.

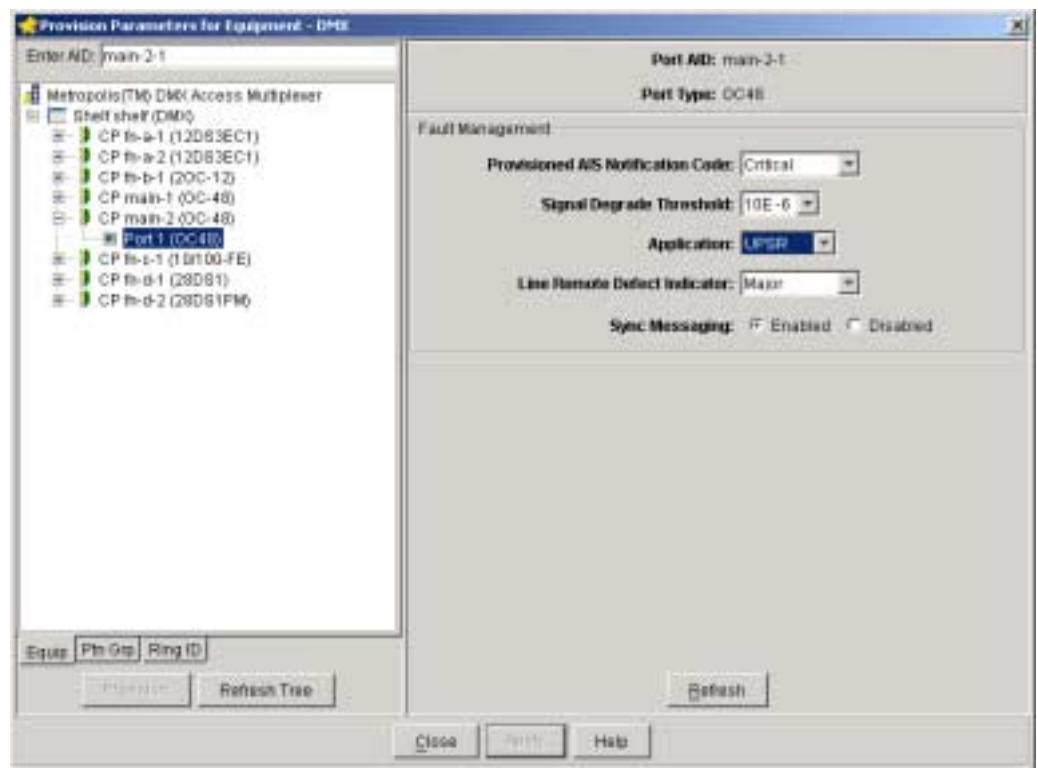


-
- 4 In the Port Data/Fault section of the *View Equipment Details* window, does the Application: read UPSR?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 7 .

-
- 5 From the System View, select **Configuration > Provision**, expand the circuit pack, highlight the desired port, and then click **Provision**.

Result: The following screen appears.



-
- 6** In the Fault Management section of the *Provision Parameters for Equipment* window, change Application to 2F BLSR from UPSR and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**. In the *Provision Parameters for Equipment* window, click **Close**.

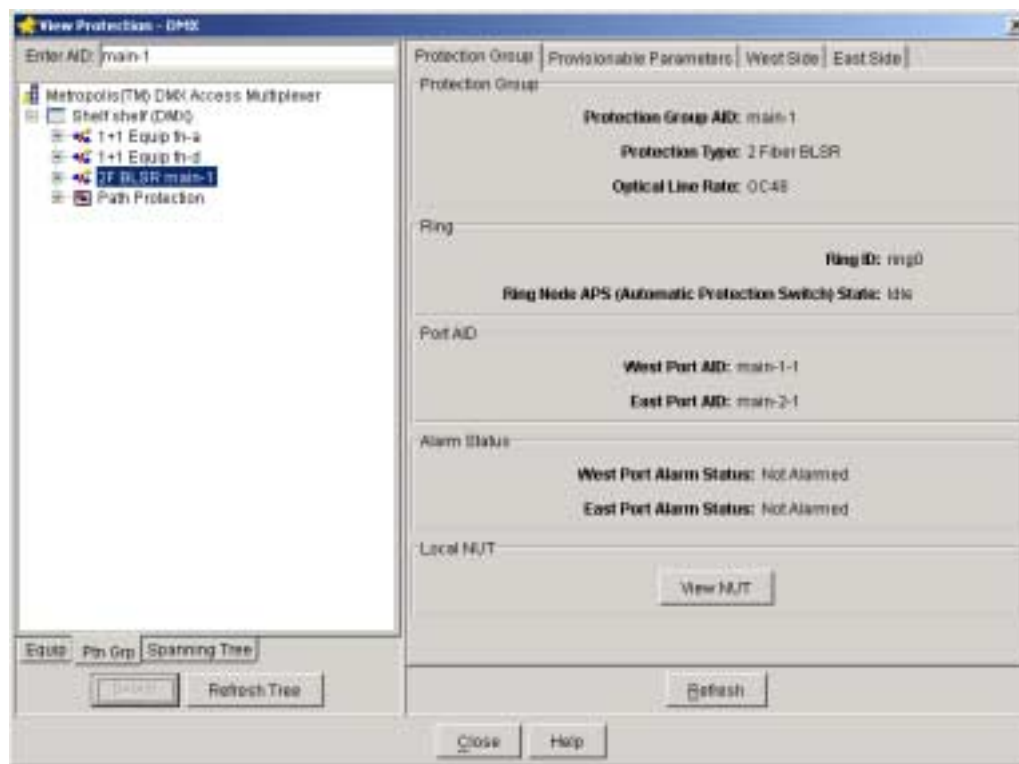
-
- 7** From the System View, click the Alarm List button and click **Refresh**.

-
- 8** Is the Ring Incomplete alarm still present?

If...	Then...
Yes	Continue with Step 9 .
No	Proceed to Step 35 .

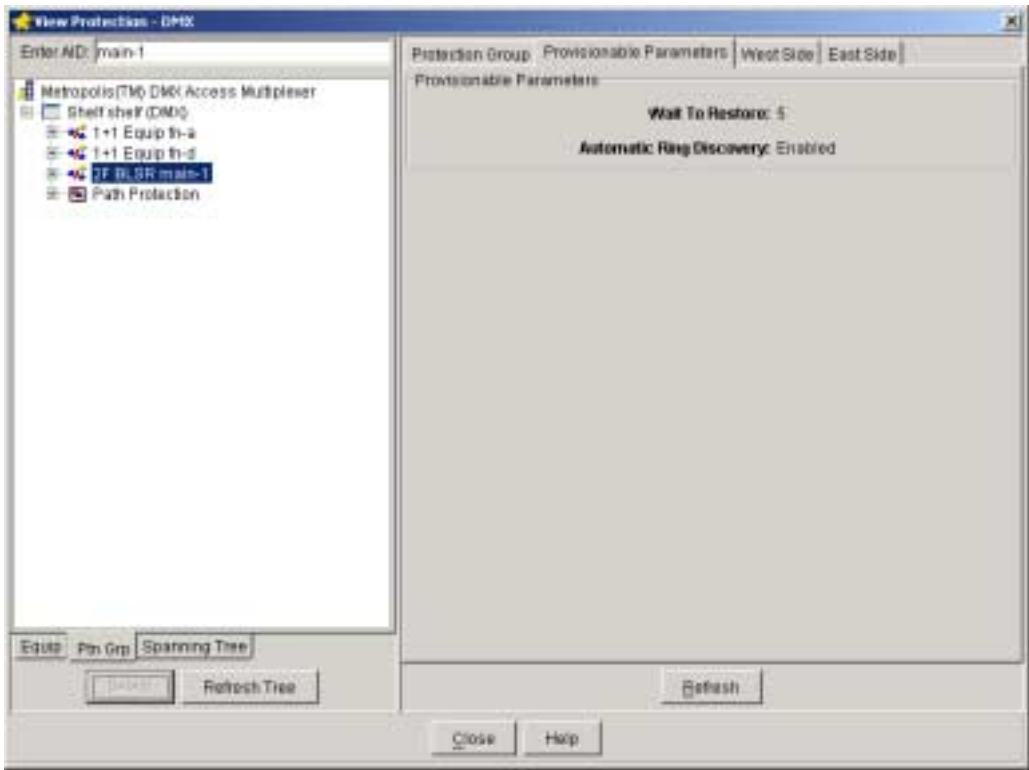
-
- 9 From the System View menu, select **View > Protection** and click on the **Ptn Grp** tab, select the appropriate 2F BLSR Protection Group, and click **Select**.

Result: The following screen appears.



-
- 10** From the View Protection window, click on the **Provisionable Parameters** tab.

Result: The following screen appears.

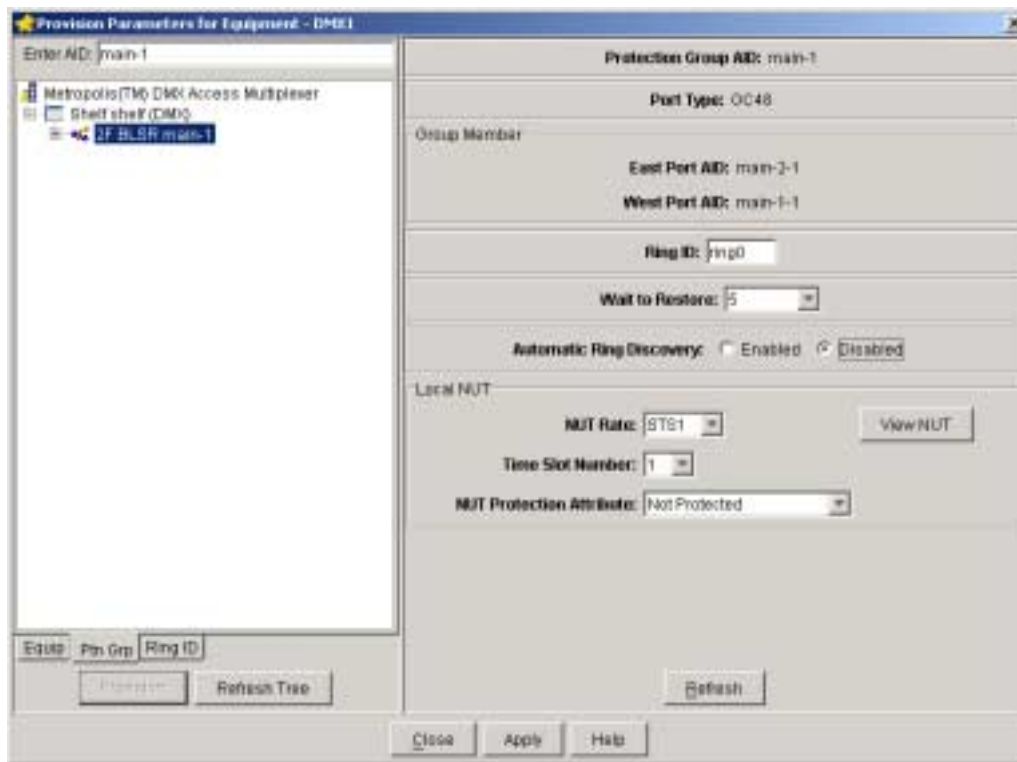


-
- 11** Is Automatic Ring Discovery enabled all nodes in the ring?

If...	Then...
Yes	Proceed to Step 15 .
No	Continue with Step 12 .

-
- 12** From the System View menu, select **Configuration > Provision** and click on the **Ptn Grp** tab, select the appropriate 2F BLSR Protection Group, and click **Provision**.

Result: The following screen appears.



-
- 13** From the *Provision Parameters for Equipment* window, select the provisioning you want for Automatic Ring Discovery on your ring, either **Enabled** or **Disabled** and click **Apply**.

Result: The following warning message appears:

Execution of Provision may affect the NE service. Do you want to execute this command?

Click **Yes**. In the *Provision Parameters for Equipment* window, click **Close**.

-
- 14** Repeat [Step 12](#) and [Step 13](#) for all nodes in the ring.

-
- 15** From the System View, click the Alarm List button and click **Refresh**.

.....

16 Is the Ring Incomplete alarm still present?

If...	Then...
Yes	Continue with Step 17 .
No	Proceed to Step 35 .

.....

17 From the System View menu, select **Reports > Remote NE Alarms List...**

Result: The *Remote NE Alarms List* screen appears.

.....

18 Are there any alarms present on the remote NEs?

If...	Then...
Yes	Log in to the remote NE and clear all alarms in order of severity and then continue with Step 19 .
No	Continue with Step 19 .

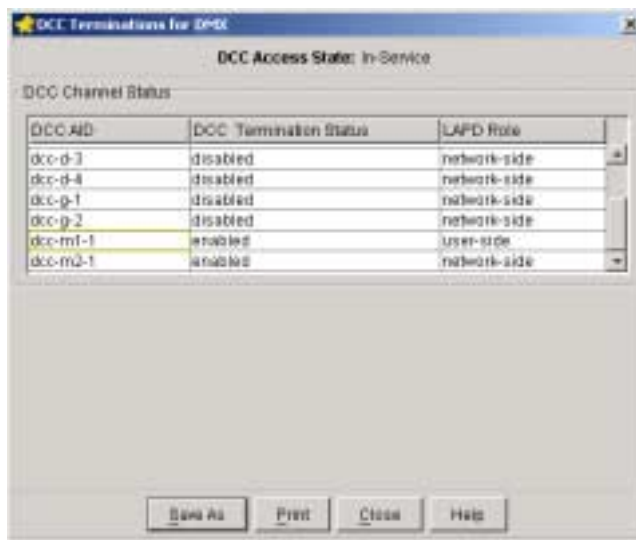
.....

19 In the alarm list, is there an inconsistent DCC switches OR section DCC channel failed alarm?

If...	Then...
Yes	Continue with Step 20 .
No	Proceed to Step 24 .

-
- 20** From the System View menu, select **View > DCC Terminations**.

Result: The following screen appears.



-
- 21** For the DCC AIDs dcc-x1-1 and dcc-x2-1, does the DCC termination Status column read **enabled** AND does LAPD Role column read user or network side appropriately?

Important! Usually, dcc-x1-1 is provisioned as user side and dcc-x2-2 is network side. A user side must be adjacent to a network side and a network side must be adjacent to a user side.

If...	Then...
Yes	Proceed to Step 24 .
No	Continue with Step 22 .

-
- 22** From the System View menu, select **Configuration > DCC Terminations**.

Result: The following screen appears.



-
- 23** From the Provision DCC Terminations screen,
1. Under DCC Termination Parameters > DCC Port, select the Port AID that you wish to reprovision.
 2. Under DCC Channel Parameters > Termination State, select **enabled**.
 3. Under DCC Channel Parameters > LAPD Role, select **user-side** or **network-side**.
(LAPD = link access protocol of the D-channel)
 4. Click **OK**.

Result: The following warning message appears:
Execution will affect the DCC termination for the (TID). Do you want to execute this command?
 Click **Yes**.

5. Click **Close** on the Provision DCC Terminations screen.
-

- 24** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

.....

25 Is the Ring Incomplete alarm still present?

If...	Then...
Yes	Continue with Step 26 .
No	Proceed to Step 35 .

.....

26 From the System View menu, select **View > Ring Map > Ring Map....** Select the required ring and click on **Select**. Verify that the ring map was provisioned correctly.

Result: The *Ring Map* screen appears.

.....

27 Is either the West Link or the East Link *Isolated*?

If...	Then...
Yes	The adjacent node on the corresponding side (East or West) is either being initialized, powered up, powered down. What for the node to come up again.
No	Continue with Step 28 .

.....

28 From the System View, click the Alarm List button and click **Refresh**.

.....

29 Is the Ring Incomplete alarm still present?

If...	Then...
Yes	Continue with Step 30 .
No	Proceed to Step 35 .

.....

30 Check optical connections for the presence of an incoming signal.

-
- 31** Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

- 32** If the LBO receptacle is acceptable, replace the near-end and then the far-end OC-48 or OC-192 OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

- 33** From the System View, click the Alarm List button and click **Refresh**.
-

- 34** Is the Ring Incomplete alarm still present?

If...	Then...
Yes	Contact your next level of support.
No	Continue with Step 35 .

.....

- 35** Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 554: Clear “Ring Prot Switching Suspended” Alarm

Purpose This procedure is used to clear a Ring Prot Switching Suspended alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following chapters in this document:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major Ring Prot Switching Suspended alarm.

-
- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the Ring Prot Switching Suspended condition in the resulting alarm list and note the corresponding AID.

-
- 2 Is there a Protection switch, OC-N port, Lockout switch, LPS, 2F condition listed?

If...	Then...
Yes	Protection switching on the BSLR has been disabled. Proceed to Task 551: Clear “Protection switch, OC-N port, Lockout switch, LPS, 2F” Condition (4-289) .
No	Continue with Step 3 .

-
- 3 Is a new node being added to the ring?

If...	Then...
Yes	Wait for Automatic Ring Discovery to complete a valid ring map.
No	Continue with Step 4 .

-
- 4 From the System View menu, select **View > Ring Map > Ring Map....** Select the required ring and click on **Select**. Verify that the ring map was provisioned correctly.

Result: The *Ring Map* screen appears.

.....

5 Is either the West Link or the East Link *Isolated*?

If...	Then...
Yes	The adjacent node on the corresponding side (East or West) is either being initialized, powered up, powered down. What for the node to come up again.
No	Continue with Step 6 .

.....

6 Clear any BLSR-related alarms or conditions present in the alarm list.

.....

7 From the System View, click the Alarm List button and click **Refresh**.

Result: The Ring Prot Switching Suspended alarm is no longer present.

.....

8 Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS



Task 555: Clear “section DCC channel failed ” Alarm

Purpose This procedure is used to clear a section DCC channel failed alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm List.

Important! When this alarm is present, protection switching at the BLSR node is unavailable.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

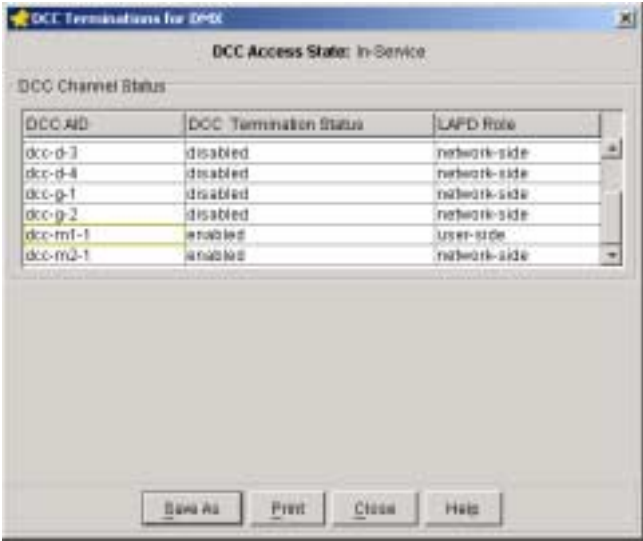
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) section DCC channel failed alarm.

- 1 From the System View menu, select **View > DCC Terminations**.

Result: The following screen appears.



- 2 For the DCC AIDs dcc-x1-1 and dcc-x2-1, does the DCC termination Status column read **enabled** AND does LAPD Role column read user or network side appropriately?

Important! Usually, dcc-x1-1 is provisioned as user side and dcc-x2-2 is network side. A user side must be adjacent to a network side and a network side must be adjacent to a user side.

If...	Then...
Yes	Proceed to Step 5 .
No	Continue with Step 3 .

-
- 3 From the System View menu, select **Configuration > DCC Terminations**.

Result: The following screen appears.



-
- 4 From the Provision DCC Terminations screen,
1. Under DCC Termination Parameters > DCC Port, select the Port AID that you wish to reprovision.
 2. Under DCC Channel Parameters > Termination State, select **enabled**.
 3. Under DCC Channel Parameters > LAPD Role, select **user-side** or **network-side**.
(LAPD = link access protocol of the D-channel)
 4. Click **OK**.

Result: The following warning message appears:

Execution will affect the DCC termination for the (TID). Do you want to execute this command?

Click **Yes**.

5. Click **Close** on the Provision DCC Terminations screen.
-

- 5 From the System View, click the Alarm List button and click **Refresh**.

-
- 6** Is the section DCC channel failed alarm still present?

If...	Then...
Yes	Continue with Step 7 .
No	Proceed to Step 9 .

-
- 7** From the System View menu, select **View > Ring Map > Ring Map....** Select the required ring and click on **Select**. Verify that the inactive manual ring map was provisioned correctly.

Result: The *Ring Map* screen appears.

.....

- 8** Is either the West Link or the East Link *Isolated*?

If...	Then...
Yes	The adjacent node on the corresponding side (East or West) is either being initialized, powered up, powered down. What for the node to come up again.
No	Continue with Step 9 .

-
- 9** From the System View, click the Alarm List button and click **Refresh**.
-

- 10** Is the section DCC channel failed alarm still present?

If...	Then...
Yes	Continue with Step 11 .
No	Proceed to Step 15 .

-
- 11** Check optical connections for the presence of an incoming signal.

-
- 12** Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

.....

- 13** If the LBO receptacle is acceptable, replace the near-end and then the far-end OC-48 or OC-192 OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

.....

- 14** From the System View, click the Alarm List button and click **Refresh**.

Result: The section DCC channel failed alarm is no longer present.

.....

- 15** Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 556: Clear “Temporarily NUT Provisioned” Condition

Purpose This procedure is used to clear a Temporarily NUT Provisioned condition reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

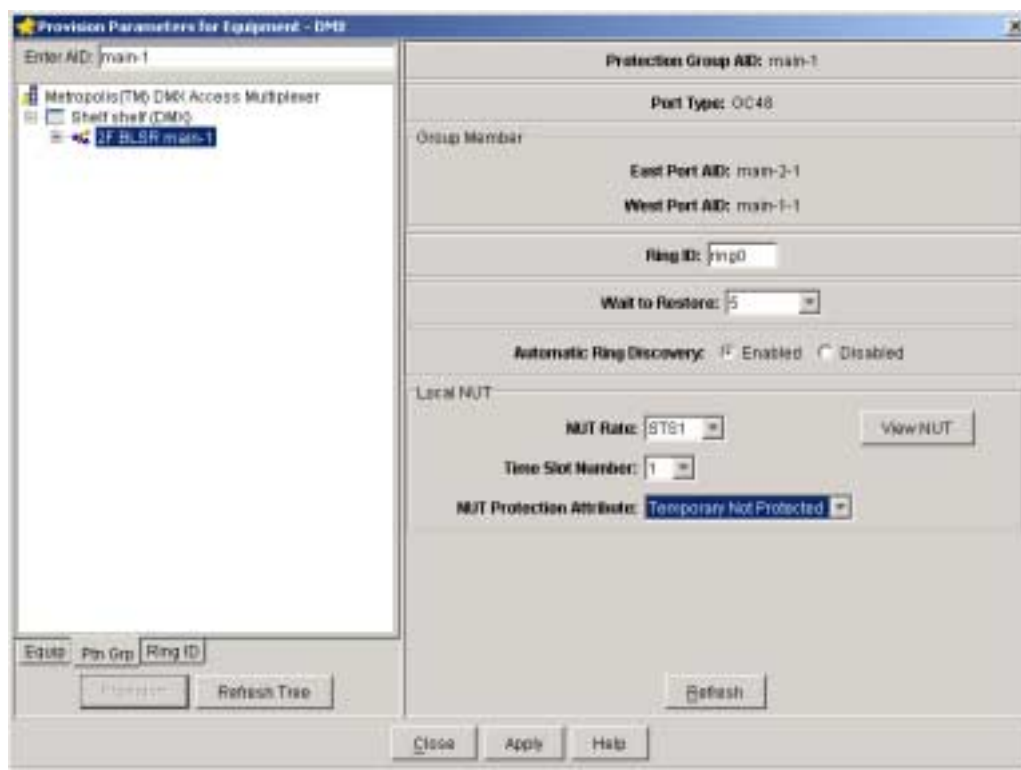
Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Temporarily NUT Provisioned condition.

- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the Temporarily NUT Provisioned condition in the resulting alarm list and note the corresponding AID.

- 2 From the System View, select **Configuration > Provision**, click on the **Ptn Grp** tab, highlight the desired 2F BLSR main, and then click **Provision**.

Result: The following screen appears.



-
- 3** In the Local NUT section of the *Provision Parameters for Equipment* window, change NUT Protection Attribute to “Protected” from “Temporary not Protected”, and then click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 4** In the *Provision Parameters for Equipment* window, click **Close**.

-
- 5** From the System View, click the Alarm List button and click **Refresh**.

Result: The Temporarily NUT Provisioned condition is no longer present.

-
- 6** Are there any other conditions listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S



Task 557: Clear “Traffic Squelched” Alarm

Purpose This procedure is used to clear a Traffic Squelched alarm indicated by a lighted Major (**MJ**) LED on the SYSCTL faceplate and reported as major in the WaveStar® CIT Alarm list.

Important! When this alarm is present, protection switching at the BLSR node is unavailable.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) Traffic Squelched alarm.

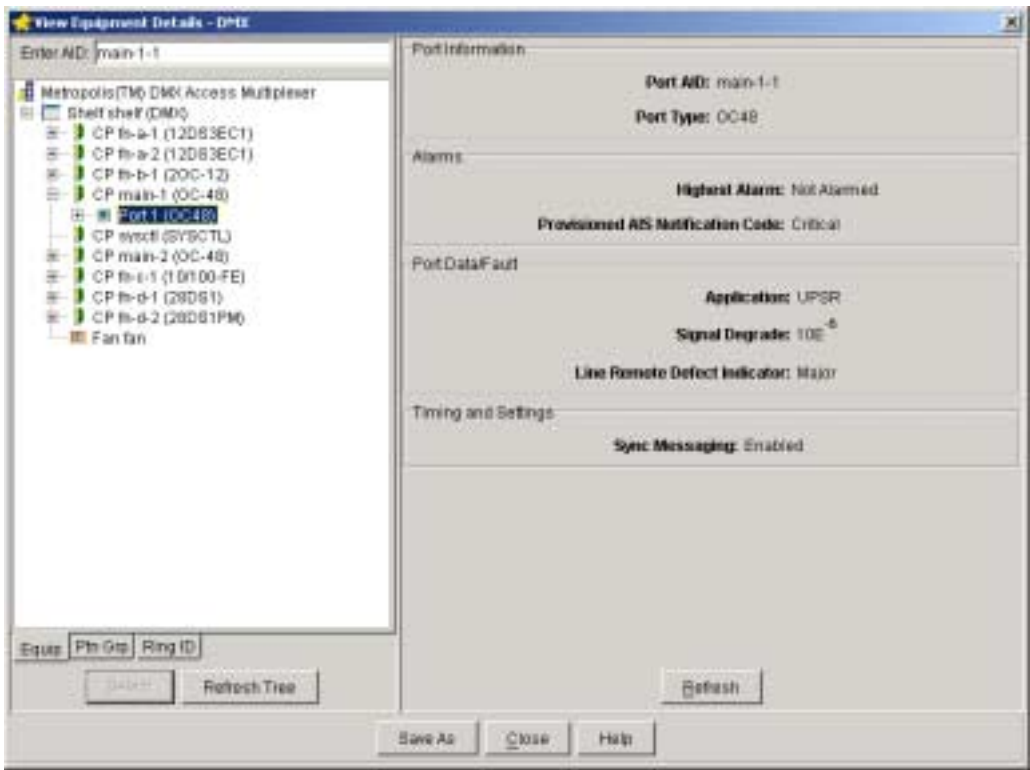
1 In the alarm list, are there any inc. OCN or inc. STSN alarms present?

If...	Then...
Yes	Proceed to the appropriate task to clear each alarm in order of severity.
No	Continue with Step 2 .

2 Verify that all nodes in the ring have been changed to the BLSR application mode from the default UPSR application mode.

3 From the System View menu, select **View > View Equipment Details**, expand the circuit pack, highlight the desired port, and then click **Select**.

Result: The following screen appears.

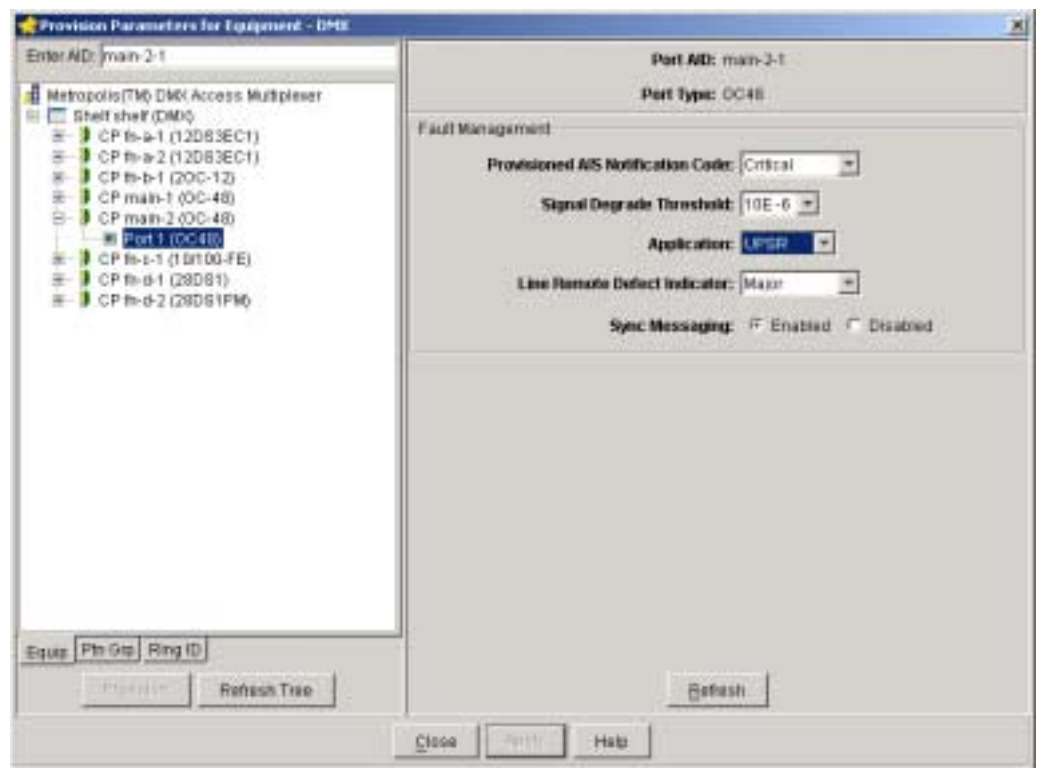


-
- 4 In the Port Data/Fault section of the *View Equipment Details* window, does the Application: read UPSR?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 7 .

-
- 5 From the System View, select **Configuration > Provision**, expand the circuit pack, highlight the desired port, and then click **Provision**.

Result: The following screen appears.



-
- 6** In the Fault Management section of the *Provision Parameters for Equipment* window, change Application to 2F BLSR from UPSR and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**. In the *Provision Parameters for Equipment* window, click **Close**.

-
- 7** From the System View, click the Alarm List button and click **Refresh**.

-
- 8** Is the traffic squelched alarm still present?

If...	Then...
Yes	Continue with Step 9 .
No	Proceed to Step 21 .

-
- 9** From the System View menu, select **Reports > Remote NE Alarms List...**

Result: The *Remote NE Alarms List* screen appears.

-
- 10** Are there alarms present on the remote NEs, especially forced switches on multiple ring nodes?

If...	Then...
Alarms	Log in to the remote NE and clear all alarms in order of severity and then continue with Step 11 .
Forced Switched	Clear automatic or user-initiated ring switches until ring segmentation/isolation is eliminated and the ring is supporting a single switch request. See Task 522: Clear “forced switch” Condition (4-119)
No	Continue with Step 11 .

-
- 11** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

-
- 12** Is the Traffic Squelched alarm still present?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 15 .

-
- 13** From the System View menu, select **View > Ring Map > Ring Map....** Select the required ring and click on **Select**. Verify that the ring map was provisioned correctly.

Result: The *Ring Map* screen appears.

-
- 14** Is either the West Link or the East Link *Isolated*?

If...	Then...
Yes	The adjacent node on the corresponding side (East or West) is either being initialized, powered up, powered down. What for the node to come up again.
No	Continue with Step 15 .

-
- 15** From the WaveStar® CIT System View, click the Alarm List button and click **Refresh**.

-
- 16** Is the Traffic Squelched alarm still present?

If...	Then...
Yes	Continue with Step 17 .
No	Proceed to Step 20 .

-
- 17** Check optical connections for the presence of an incoming signal.

-
- 18** Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

Reference: [Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\) \(5-139\)](#)

-
- 19** If the LBO receptacle is acceptable, replace the near-end and then the far-end OC-48 or OC-192 OLIU circuit pack.

Reference: [Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs \(5-39\)](#) or [Task 605: Replace Low-Speed OC-N OLIU Circuit Packs \(5-49\)](#)

-
- 20** From the System View, click the Alarm List button and click **Refresh**.

Result: The Traffic Squelched alarm is no longer present.

.....

- 21** Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 558: Clear “unexpected CP type” Alarm

Purpose This procedure is used to clear an unexpected CP type alarm indicated by a lighted Critical (**CR**), Major (**MJ**), or Minor (**MN**) LED on the SYSCTL faceplate, and reported as critical, major, or minor in the WaveStar® CIT Alarm list.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Replacement circuit pack of the appropriate type (if necessary)

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION **Electrostatic discharge**

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

- Before you begin

Prior to beginning this task, you must:

 - If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)
 - Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)
 - As appropriate, have the on-site craft turn-off the audible alarm by pressing the **ACO/TEST** button, which is located on the front of the SYSCCTL circuit pack.
- Task

Complete the following steps to clear a Critical (**CR**), Major (**MJ**), or Minor (**MN**) unexpected CP type alarm.

.....

 - From the WaveStar® CIT System View, click the Alarm List button and locate the unexpected CP type alarm in the resulting alarm list.

.....
 - Determine the alarm level(s) for the active unexpected CP type alarm(s) (for example, CR or MN). Clear the alarms in order of severity, CR (SA) and then MN (NSA).

Important! The unexpected CP type alarm is generally either CR (SA) when the circuit pack is active (either working and unprotected or the protection switch failed) or MN (NSA) when the circuit pack is protected and protection switch operated normally.

.....
 - Refer to the Probable Cause column in your alarm list (example in [Step 1](#)), determine what type of circuit pack was removed and note the corresponding AID.

.....

4 Was the original circuit pack removed and replaced intentionally?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 11 .

.....

5 From the WaveStar® CIT System View menu, select **View > Cross-connections** and select the circuit pack. Are there any cross-connection present on that circuit pack?

If...	Then...
Yes	Continue with Step 6 .
No	Proceed to Step 7 .

.....

6 From the System View menu, select **Configuration > Cross-connection**, select the circuit pack, and follow the wizard to remove any existing cross-connections.

.....

7 Update the equipment list. From the System View menu, select **Configuration > Update System**.

Important! This system update clears all current unexpected CP type alarms.

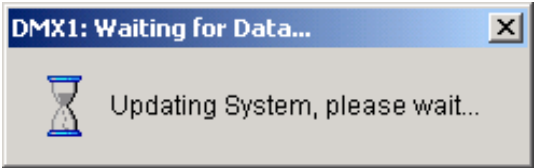
Result: The following confirmation appears.



.....

8 Click **OK**.

Result: The following window appears.



.....

9 From the System View, click the Alarm List button and click **Refresh**.

Result: The unexpected CP type alarm is no longer present.

.....

10 Proceed to [Step 13](#).

-
- 11** Reinstall the original removed circuit pack (with the same circuit pack or a replacement).

Important! The tasks referenced below also include instructions on removing the specified circuit pack. If you are clearing an unexpected CP type alarm, you may have to refer to another task to remove the currently installed CP (not desired) before replacing it with the original CP type.

If...	Then...
T1TERM	A 28DS1 or 28DS1PM circuit pack was removed; replace the pack. Proceed to Task 602: Replace 28DS1/28DS1PM (LNW6/LNW7) Circuit Pack (5-25) .
T3TERM	A 12DS3/EC1 circuit pack was removed; replace the pack. Proceed to Task 603: Replace 12DS3/EC1 (LNW16) Circuit Pack (5-31) .
TMUXTERM	A TMUX circuit pack was removed; replace the pack. Proceed to Task 620: Replace TMUX (LNW18) Circuit Pack (5-185) .
OC3TERM	A low-speed OC-3 OLIU was removed; replace the pack. Proceed to Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49) .
OC12TERM	A low-speed OC-12 OLIU was removed; replace the pack. Proceed to Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49) .
OC48TERM and the AID begins with <i>fn</i>	A low-speed OC-48 OLIU was removed; replace the pack. Proceed to Task 605: Replace Low-Speed OC-N OLIU Circuit Packs (5-49) .
OC48TERM and the AID begins with <i>main</i>	A high-speed main OC-48 OLIU was removed; replace the pack. Proceed to Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs (5-39) .

If...	Then...
OC192TERM	A high-speed main OC-192 OLIU was removed. Proceed to Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs (5-39) .
FETERM	A 10/100T circuit pack was removed; replace the pack. Proceed to Task 606: Replace 10/100T Fast Ethernet (LNW66) Circuit Pack (5-57) .
GETERM	A 1GSX or 1GLX circuit pack was removed; replace the pack. Proceed to Task 607: Replace 1GSX/1GLX (LNW67/68) Gigabit Ethernet Circuit Packs (5-59) .

-
- 12** From the System View, click the Alarm List button and click **Refresh**.

Result: The unexpected CP type alarm is no longer present.

.....

- 13** Are there any alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 559: Clear “Unknown Ring Type ” Condition

Purpose This procedure is used to clear a Unknown Ring Type condition reported as Not Alarmed (SC) in the WaveStar® CIT Alarm List.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

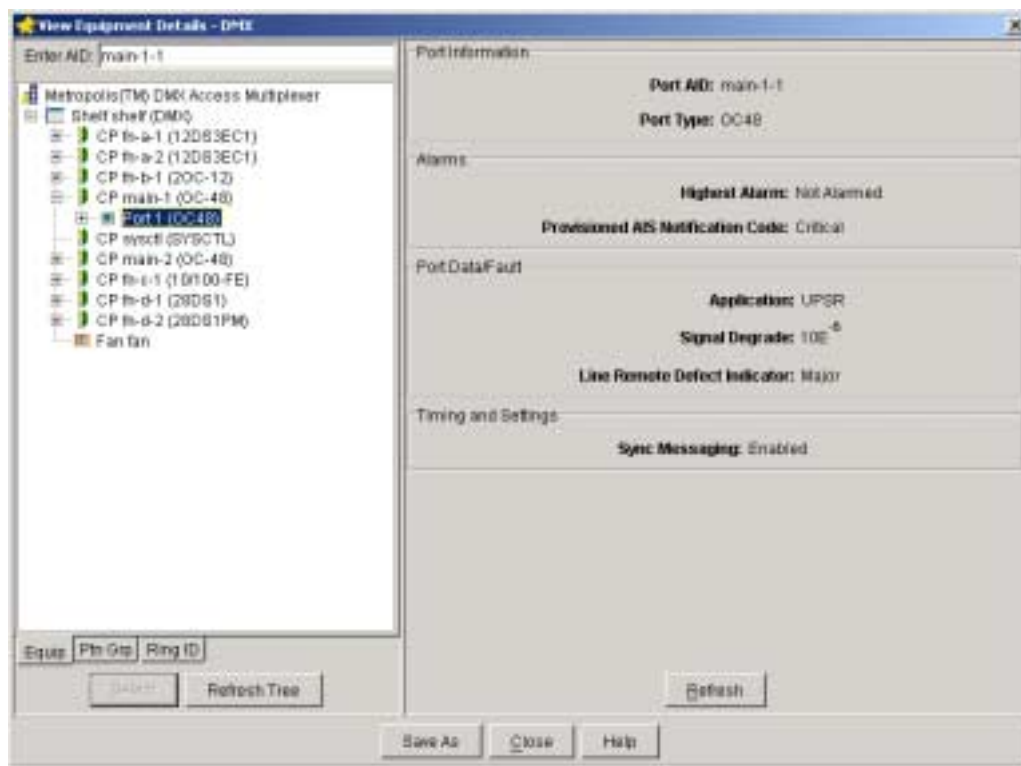
2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear an Unknown Ring Type condition.

- 1 From the WaveStar® CIT System View, click the Alarm List button and locate the Unknown Ring Type condition in the resulting alarm list and note the corresponding AID.
- 2 Verify that all nodes in the ring have been changed to the BLSR application mode from the default UPSR application mode.
- 3 From the WaveStar® CIT System View, select **View > View Equipment Details**, expand the circuit pack, highlight the desired port, and then click **Select**.

Result: The following screen appears.

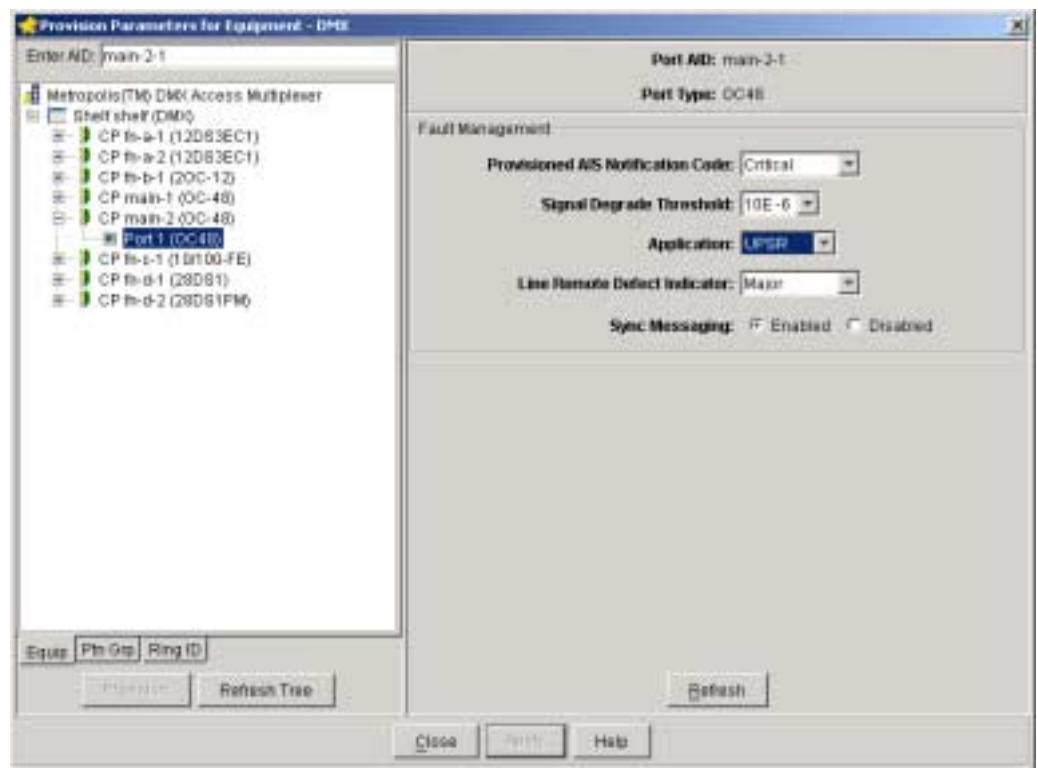


-
- 4 In the Port Data/Fault section of the *View Equipment Details* window, does the Application: read UPSR?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 8 .

-
- 5 From the System View, select **Configuration > Provision**, expand the circuit pack, highlight the desired port, and then click **Provision**.

Result: The following screen appears.



-
- 6 In the Fault Management section of the *Provision Parameters for Equipment* window, change Application to 2F BLSR from UPSR and click **Apply**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 7 In the *Provision Parameters for Equipment* window, click **Close**.

-
- 8 From the System View, click the Alarm List button and click **Refresh**.

Important! While the Automatic Ring Discovery (ARD) feature updates the ring map, there will be momentary alarms, such as Ring Prot Switching Suspended, Ring Discovery In Progress. Theses will clear automatically when the ARD completes.

Result: The Unknown Ring Type condition is no longer present.

-
- 9 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

.....
E N D O F S T E P S
.....



Task 560: Clear “X.25 communication failure” Alarm

Purpose This procedure is used to clear a X.25 communication failure alarm indicated by a lighted major (**MJ**) LED on the SYSCTL faceplate, and reported as major in the WaveStar® CIT Alarm list.

Required equipment The following list of equipment is required in order to complete this procedure:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand all warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, refer to the following:

- [Chapter 1, “Alarm List”](#)
- [Chapter 2, “Alarms, Conditions, and Error Messages”](#)

Before you begin Prior to beginning this task, you must:

1. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [Task 601: Install Generic and WaveStar® CIT Software on the PC \(5-13\)](#)

2. Connect PC and establish a WaveStar® CIT session.

Reference: [Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session \(5-3\)](#)

Task Complete the following steps to clear a Major (**MJ**) X.25 communication failure alarm.

- 1 Verify that the X.25 cable is connected correctly to **J10 X.25** on the backplane. See [Figure 560-1](#) and [Figure 560-2](#).

Figure 560-1 Metropolis® DMX Shelf Backplane Connectors

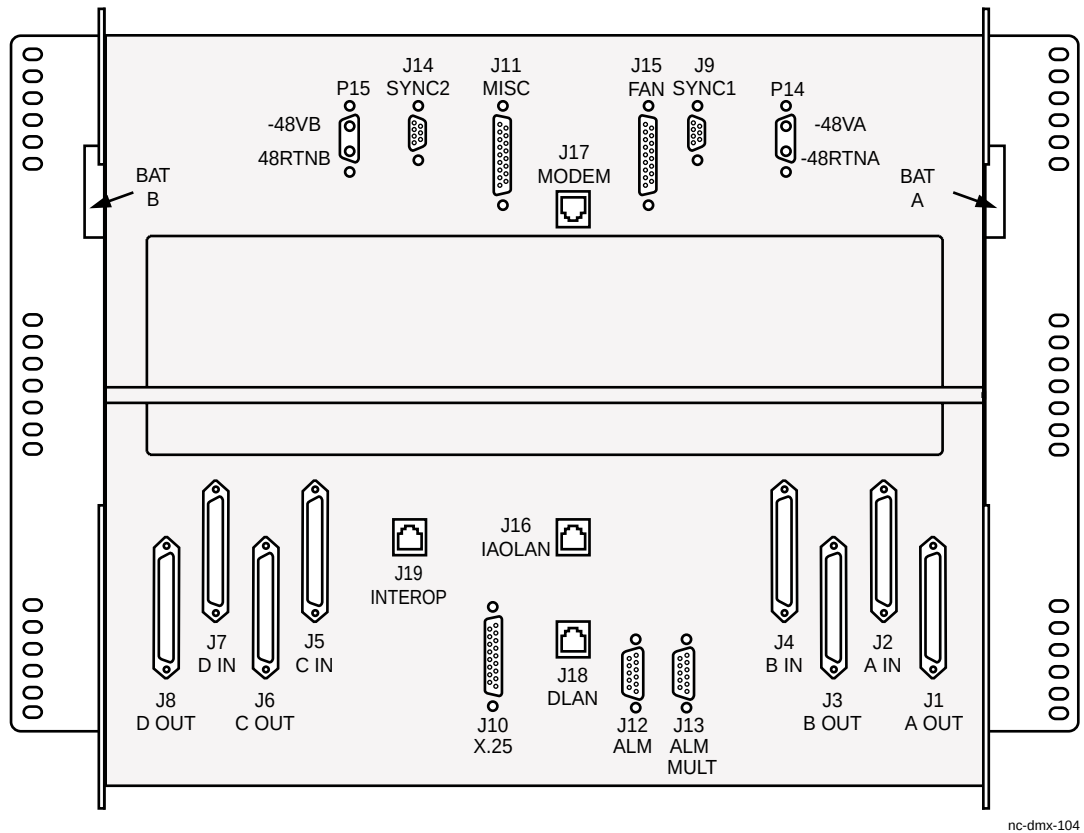
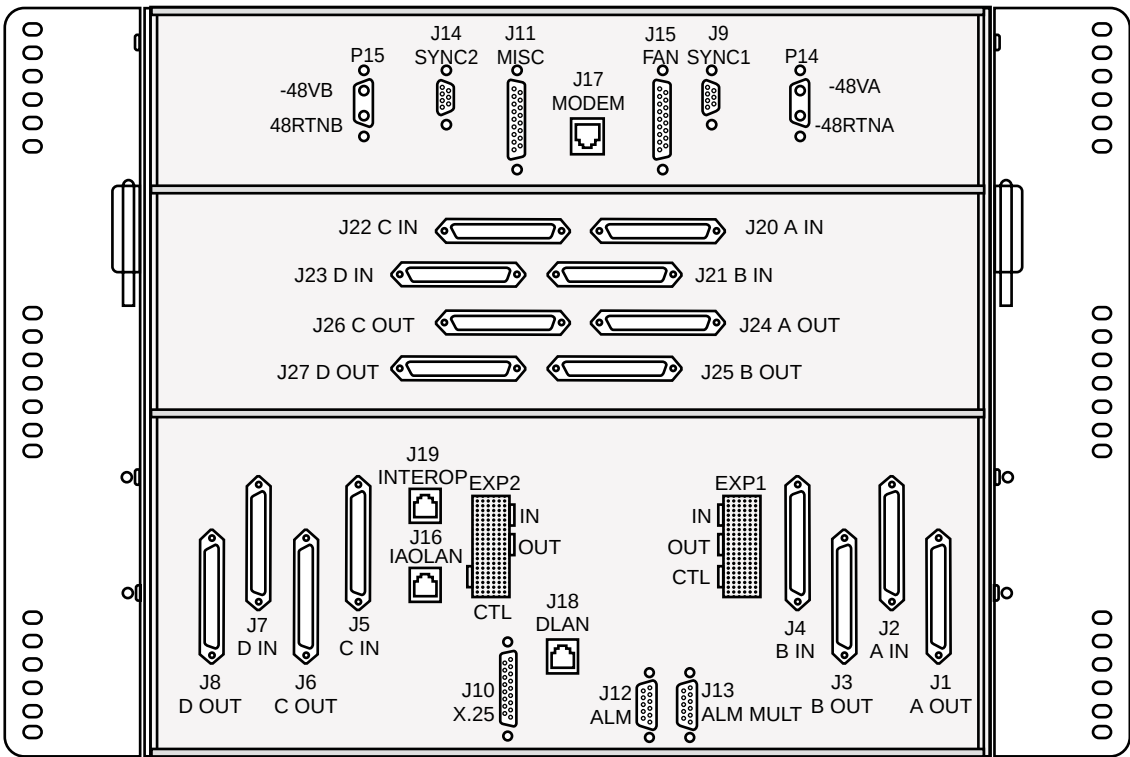


Figure 560-2 Metropolis® DMX High Capacity Shelf Backplane Connectors



NC-DMX-156

2 From the System View, click the Alarm List button and click **Refresh**.

3 Is the X.25 communication failure alarm still present?

If...	Then...
Yes	Continue with Step 4 to reprovision the X.25 parameters.
No	Proceed to Step 12 .

4 From the System View menu, select **Administration > Data Communications**.

Result: The Data Communications parameters window opens.

-
- 5 Select the **X.25 Gateway** tab.

Result: The X.25 Gateway parameters window opens.

.....

- 6 Note the X.25 Port Status **Access State**. If the **Access State** is **In Service** you may continue to provision the X.25 Gateway parameters. If the **Access State** is **Lockout**, the parameters are *not* provisionable at this time.
-

- 7 Select the **X.25 Packet Size**:, as required. Value may be **128** or **256** (default).

Important! Changing the X.25 packet size parameter at an NE with an active X.25 link will cause that X.25 link to be reset and all active TL1 logins will be automatically dropped. All established SVCs on the affected X.25 link will have to be reestablished.

.....

- 8 Provision the X.25 Gateway Host List, as required. Click on the sunglasses icon to add/modify/delete a gateway host. Follow the instructions in the subsequent window.

- **OS Address** – The X.25 subnetwork point of attachment (SNPA) address for the OS.

For a permanent virtual circuit (PVC), this is the logical channel number (LCN) 1, 2, 3, 4, 5, 6, 7, 8 or 9.

For an switched virtual circuit (SVC), this is the Data Terminal Equipment (DTE) calling address, from a minimum of 1 to a maximum of 15 digits.

Up to a total of nine virtual circuits may be mapped to any combination of PVCs and SVCs (that is, PVCs can be removed and replaced by SVCs).

- **OS Type** – Allows you to select the Application Context Identifier from one of the following:
 - **TL1PeerComm** (By default, TL1 Command Response Only; SNPA=1). No autonomous message reporting.
 - **TL1Maintenance** (By default, TL1 Alarms, Events, and Command Responses; SNPA=2)

- **TL1MemoryAdministration** (By default, TL1 Database Changes and Command Responses; SNPA=3)
- **TL1Test** (By default, TL1 Test and Command Response Only)
- **TL1CR** (By default, TL1 Command Response Only) No autonomous message reporting.
- **TL1OTHER1** (Other OS1) No autonomous message reporting.
- **TL1OTHER2** (Other OS2) No autonomous message reporting.
- **Virtual Circuit Type** – Allows you to assign the virtual circuit type. This parameter may be one of the following:
 - **SVC** – Switched Virtual Circuit
 - **PVC** – Permanent Virtual Circuit

- 9 Click **Apply** at bottom of the window, read the warning message, then click **Yes** to execute the command.

- 10 From the WaveStar® CIT System View, click the Alarm List button and Click **Refresh**.

- 11 Is the X.25 communication failure alarm still present?

If...	Then...
Yes	X.25 packet network is down. Refer the problem to your next level of support.
No	Proceed to Step 12 .

- 12 Are there any other alarms listed?

If...	Then...
Yes	Proceed to the appropriate task to clear the alarm.
No	STOP! END OF TASK.

END OF STEPS





5 Supporting Tasks

Overview

.....

Purpose This chapter contains supporting tasks for the Metropolis® DMX Access Multiplexer.

Contents The following information is included in this chapter:

Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session	5 - 3
Task 601: Install Generic and WaveStar® CIT Software on the PC	5 - 13
Task 602: Replace 28DS1/28DS1PM (LNW6/LNW7) Circuit Pack	5 - 25
Task 603: Replace 12DS3/EC1 (LNW16) Circuit Pack	5 - 31
Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs	5 - 39
Task 605: Replace Low-Speed OC-N OLIU Circuit Packs	5 - 49
Task 606: Replace 10/100T Fast Ethernet (LNW66) Circuit Pack	5 - 57
Task 607: Replace 1GSX/1GLX (LNW67/68) Gigabit Ethernet Circuit Packs	5 - 59
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Task 609: Release 3.0.0 Software Generic Upgrade for Local Shelf (In-Service System)	5 - 67
Task 610: Release 3.0.0 Software Generic Copy to Remote Shelf (In-Service System)	5 - 87
Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation	5 - 97
Task 612: Retrieve Generic Software Version ID	5 - 129
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Task 614: Perform LED Test	5 - 135
Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts (LBOs)	5 - 139
Task 616: Connect OLIU Optical Loopbacks	5 - 149
Task 617: Install/Remove LC Lightguide Buildouts (LBOs)	5 - 155
Task 619: Backup and Restore	5 - 175
Task 620: Replace TMUX (LNW18) Circuit Pack	5 - 185
Task 621: Set Date and Time	5 - 191



Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session

Purpose Use this task to connect PC and establish session.

Required equipment The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Wrist Strap
- At least one of the following cables:
 - RS-232 cable with an RJ-45 connector on one end and a PC serial connector on the other (typically DB9) for the **RS-232 CIT** port
 - CAT5 Ethernet cable with either a 10/100 hub or a cross-over cable for the **LAN CIT** or **IAO LAN** ports

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

Before you begin Ensure that the descriptions and syntax of the various features and parameters of the Metropolis® DMX that may be set using the PC are understood prior to starting this task.

Task Complete the following steps to connect PC and establish a session.
.....

1 Connect your PC (using the appropriate cable[s]) to one or two of the following ports:

- **CIT RS-232** serial port on the faceplate of the SYSCTL circuit pack to COM1 port of the PC
- **LAN** port on the faceplate of the SYSCTL circuit pack to the NIC card of PC
- **J16 IAO LAN** port on the rear of the Metropolis® DMX shelf to the NIC card of PC

Important! You can be connected to the **CIT RS-232** and the front **LAN** or the rear **J16 IAO LAN**.

Important! If you are uncertain that the LAN ports have already been provisioned, connecting via the serial port is recommended.

-
- 2 Start the WaveStar® CIT software on the PC by double-clicking on the WaveStar® CIT icon on your desktop (created by the installation procedure).

Figure 5-1 WaveStar® CIT Welcome Screen

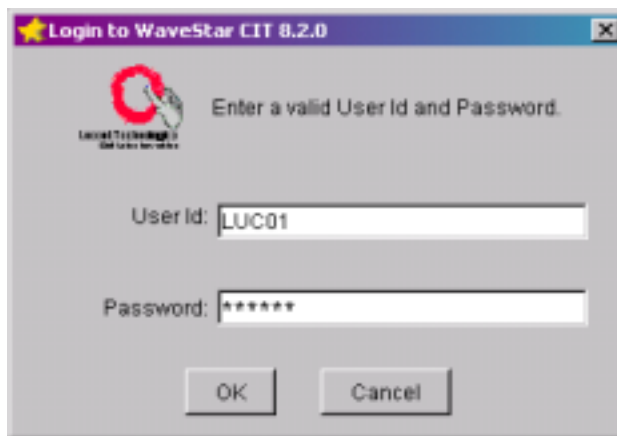


-
- 3 Enter the following in the Login window (login information is case sensitive) to login to the WaveStar® CIT:

User ID: LUC01

Password: LUC+01

Figure 5-2 WaveStar® CIT Login Screen



Important! LUC01/LUC+01 and LUC02/LUC+02 are the default logins/passwords for the WaveStar® CIT. It is highly recommended that you change these logins and passwords during your first session to preserve the security of your equipment.

Important! Logins must adhere to the following guidelines:

- Logins must be five to ten alphanumeric characters in length.
- Logins are case sensitive.

Important! Passwords must adhere to the following guidelines:

- Passwords must be six to ten characters in length.
- Passwords must begin with a letter.
- Passwords must contain at least three non-alphabetic characters (numbers or symbols).

At least one of the non-alphabetic characters must be a symbol

Symbols may *not* include space (), ampersand (&), “at” (@), comma (,), colon (:), semicolon (;), horizontal bar [underscore] (_), equals (=), question (?), or quotation (“).

- Passwords are case sensitive.

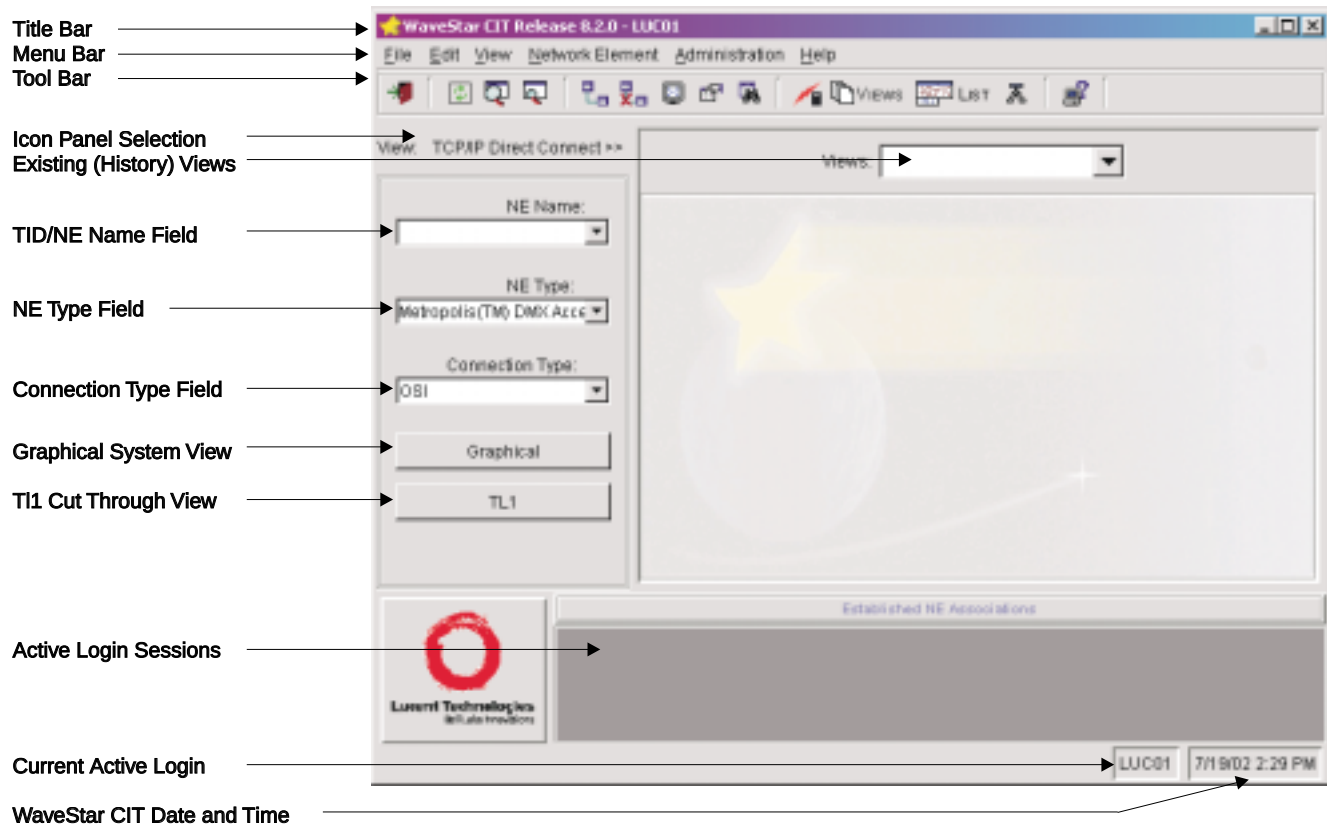
-
- 4 Click **OK** to bring up the Legal Notice.

Figure 5-3 Legal Notice



- 5 Read the Legal Notice and click **OK** to bring up the **Network View**.

Figure 5-4 Network View



- 6 Enter the NE name/TID of the Metropolis® DMX shelf that you wish to communicate with in the **NE Name:** field.

Important! The default TID is LT-DMX.

- 7 In the **NE Type:** field, click on the drop-down arrow and select Metropolis® DMX Access Multiplexer.

.....

8 In the **Connection Type:** field, click on the drop-down arrow and select the appropriate connection type.

- OSI - if connected to the rear **J16 IAO LAN** or front **LAN** port
- Serial - if connected to the serial **CIT RS-232** port
- TCP/IP - if connected to the rear **J16 IAO LAN** or front **LAN** port

Important! When selecting TCP/IP...

- The TCP/IP option requires the NE to be provisioned to accept TCP/IP connections.
- A one-hour timeout interval exists with TCP/IP connections.

.....

9 After completing the three fields, click on the **Graphical** button.

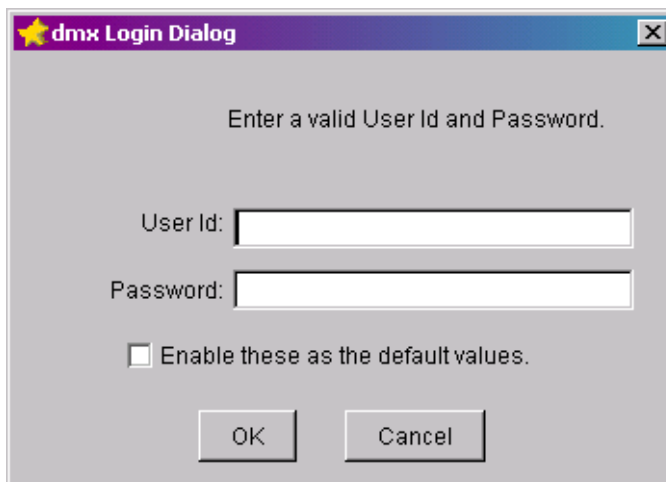
If you select the TCP/IP option, you must also enter the IP address of your NE and then click **OK**.

Important! All tasks in this manual assume that the **Graphical** button is used. However, the other option is the **TL1** button to perform maintenance using a **TL1** command line interface or the TL1 Command Builder interface.

Result: The shelf name can now be selected from the pull-down menu under the **NE Name** window.

- 10 An NE Login screen (Figure 5-1) appears:

Figure 5-1 NE Login



Enter the following in the Login window (login information is case sensitive) to login to the NE:

User ID: **LUC01**

Password: **DMX2.5G10G**

By selecting the **Enable these as the default values** checkbox, you will be able to reconnect to this NE without entering the User ID and Password. User ID and Password is stored for the duration of the CIT session and must be re-entered when the CIT is restarted.

Important! LUC01, LUC02, LUC03 and DMX2.5G10G are the default privileged logins/password for Metropolis® DMX. It is highly recommended that you change all three logins and passwords during your first session to preserve the security of your equipment.

-
- 11** After a successful login, the NE Legal Notice screen appears.

Important! Your NE software Release number and User Privilege Level may be different. Your screen should be similar to [Figure 5-2](#).

Figure 5-2 NE Level Legal Notice



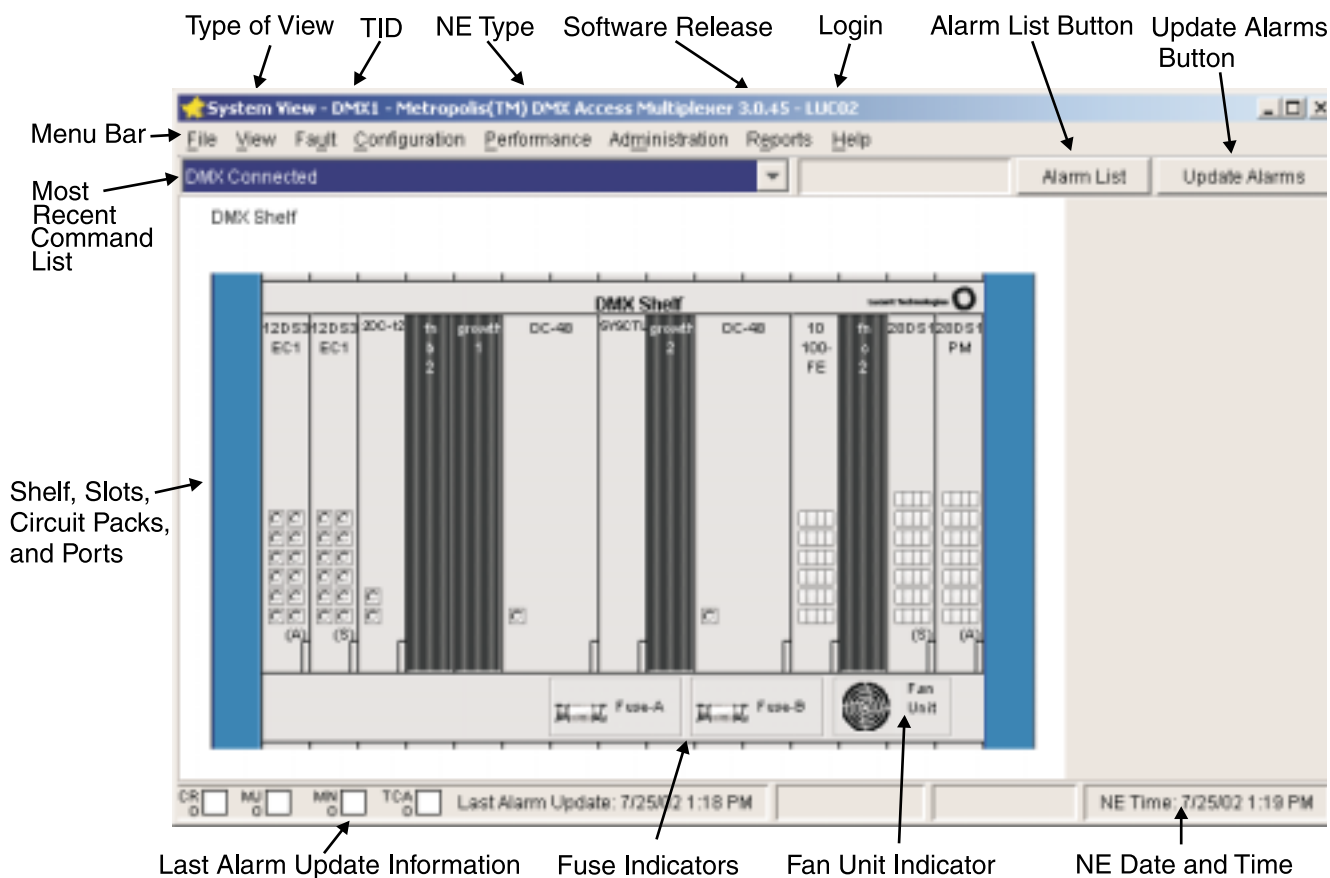
-
- 12** Read and observe the software Release (for example, **3.0.0**), and the User Privilege Level (for example, **Privileged**). Click on **OK** to continue.

-
- 13** Familiarize yourself with the different aspects of the graphical presentation of the shelf, including the toolbars, and status indicators.

The WaveStar® CIT has a menu bar across the top of the screen, a toolbar immediately below the menu bar, and status indicators across the bottom of the screen. Each item on the menu bar has a pull-down menu. Some menu items have additional submenu items.

The WaveStar® CIT is designed to Microsoft Windows® standards.

Figure 5-3 System View (Graphical)



Note: Release numbers and time/date stamps on your WaveStar® CIT may not match those displayed in [Figure 5-3](#).

.....

END OF STEPS

.....

Task 601: Install Generic and WaveStar® CIT Software on the PC

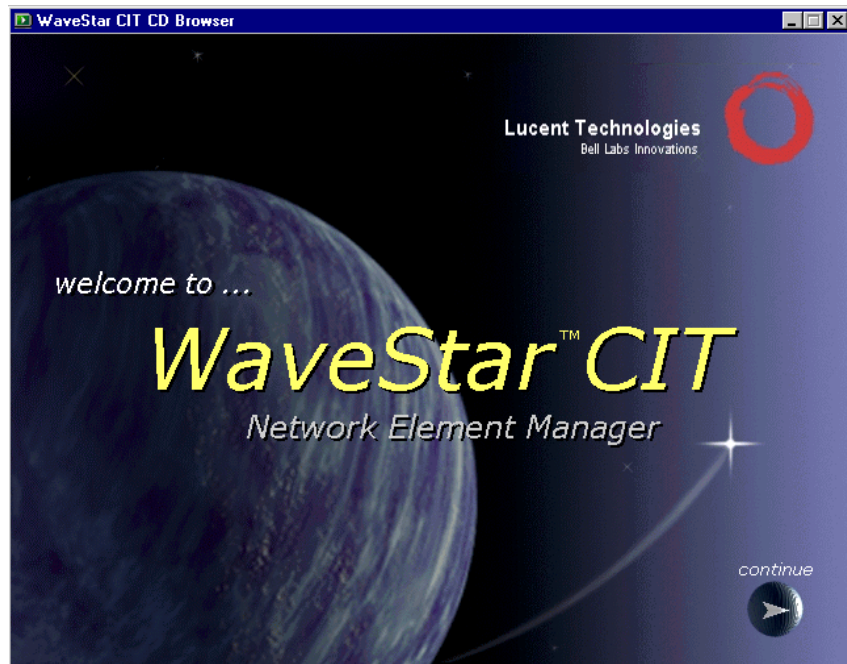
.....

Purpose	Use this task to prepare for software download.
Required equipment	The following equipment is required: • Personal Computer (PC) with at least one network interface card (NIC) • Working copy of the new system generic software program on CD-ROM • Current <i>Metropolis® DMX Access Multiplexer Software Release Description</i> for the software generic being installed.
Safety precautions	There are no safety precautions required for this task.
Related information	For related information, see the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.
Before you begin	Before beginning the software installation procedure, complete the following steps: Preinstallation Steps 1. Become familiar with the characteristics and operating procedures of your PC and the operating system installed. If you are using multiple NICs, know the IP address of the NIC you will be using for this interface. <i>If you are using DHCP with multiple NICs, you may need to temporarily remove all NICs except the one you plan to use for this interface.</i> 2. Operate laptop PCs on AC power during download procedures. 3. Follow proper procedures in handling the CD-ROM. 4. Read the <i>Metropolis® DMX Access Multiplexer Software Release Description</i> for the software generic being installed.

Task Complete the following steps to install system software and the WaveStar® CIT software on your PC.

- 1 With the PC *not* connected to the Metropolis® DMX shelf, insert the CD-ROM into the PC.

Result: The CD autoruns and the following screen appears:

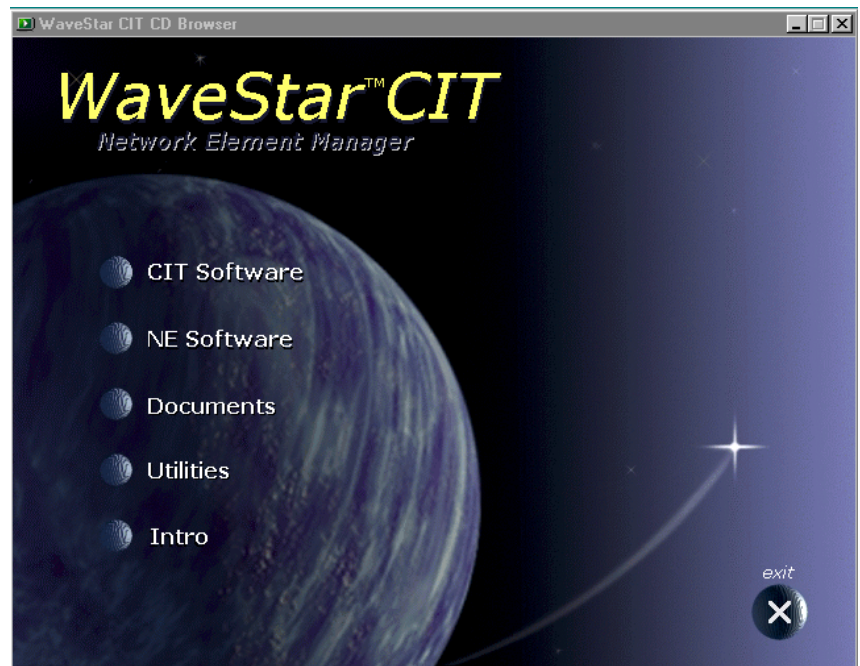


Important! If the CD-ROM does not autorun, verify that the CD is inserted properly in your CD-ROM drive.

1. Double-click on My Computer on your desktop.
2. Double-click on your Compact Disc icon (often identified as drive D:)
3. Double-click on setup.exe

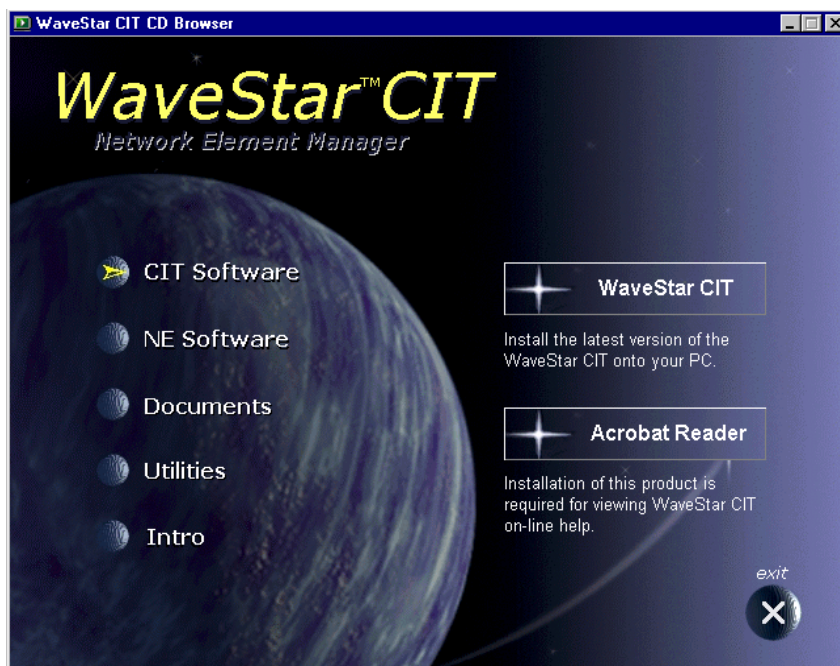
- 2 Click *continue*.

Result: The following screen appears:



-
- 3 Click **CIT Software** to install the WaveStar® CIT software.

Result: The following screen appears:

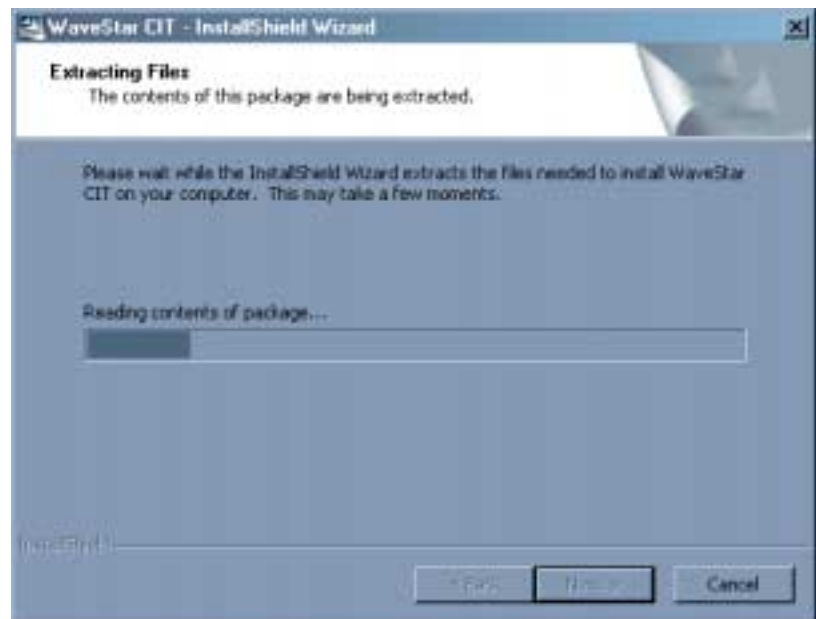


-
- 4 Click **WaveStar CIT** on the right.

Result: The InstallShield® Wizard appears.



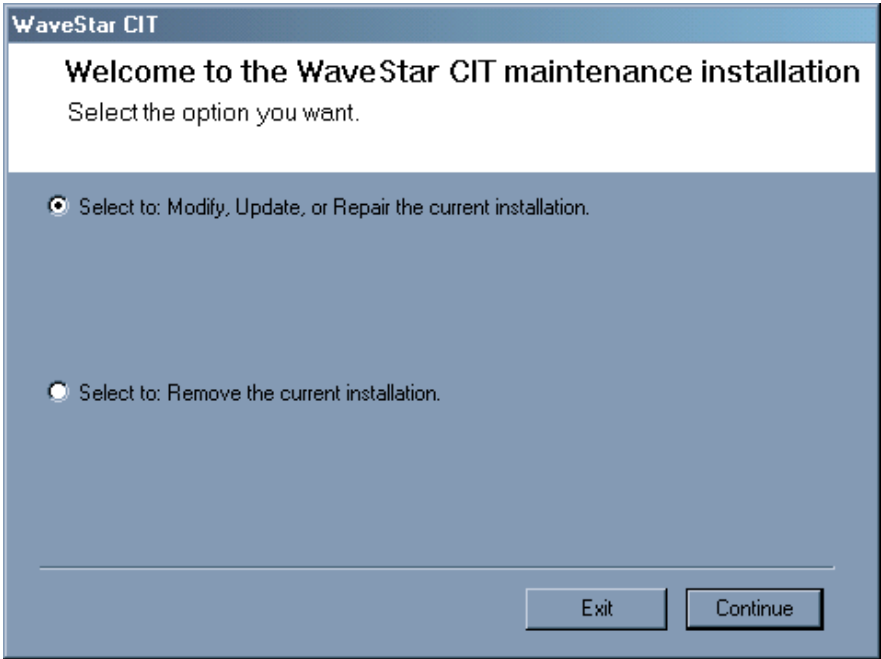
Click **Next** and the InstallShield Wizard begins extracting files.



-
- 5 Do you have a previous version of the WaveStar® CIT installed on your computer?

IF...	THEN...
Yes	Continue with Step 6 .
No	Proceed to Step 7 .

-
- 6 When the following screen appears, select *Select to: Modify, Update, or Repair the current installation* and click **Continue**.

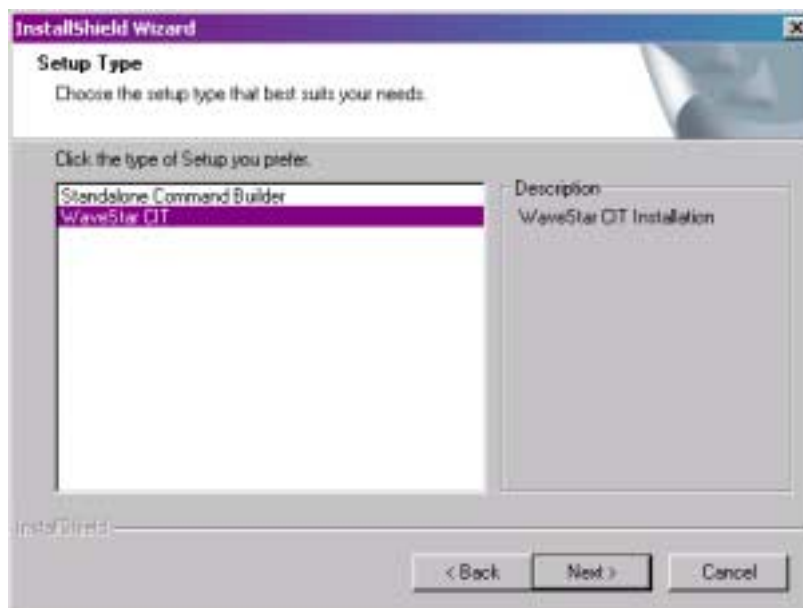


Proceed to [Step 9](#).

-
- 7 Follow the instructions on the different InstallShield® Wizard screens, including reading and agreeing to the License Agreements.



-
- 8 When the following screen appears, enter the type of installation you want. Select WaveStar CIT.

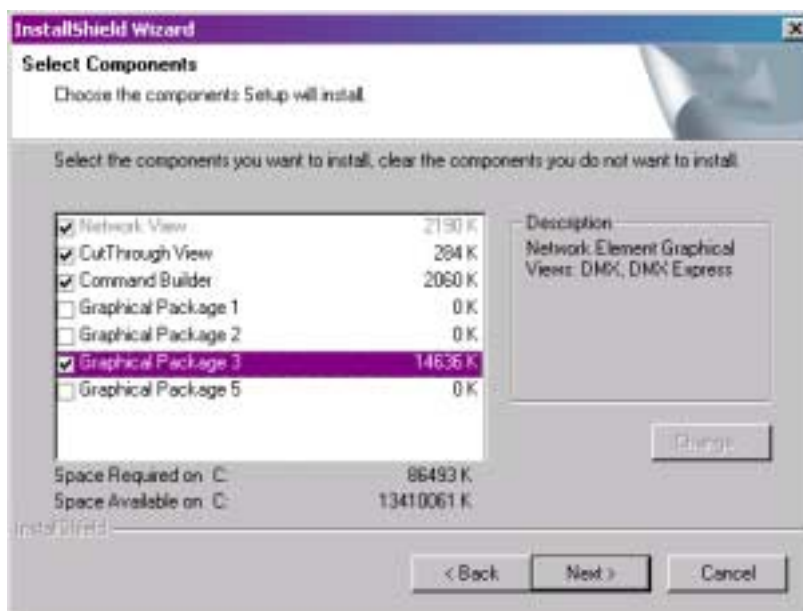


.....

9 When this screen appears, select the following components to complete the WaveStar® CIT installation.

- Network View
- CutThrough View
- Command Builder
- Graphical Package 3

Important! In order to save valuable disc space, deselect **Graphical Package 1**, **Graphical Package 2**, and **Graphical Package 5** (unless you plan to use this WaveStar® CIT with the other products indicated under Description in the following screen).

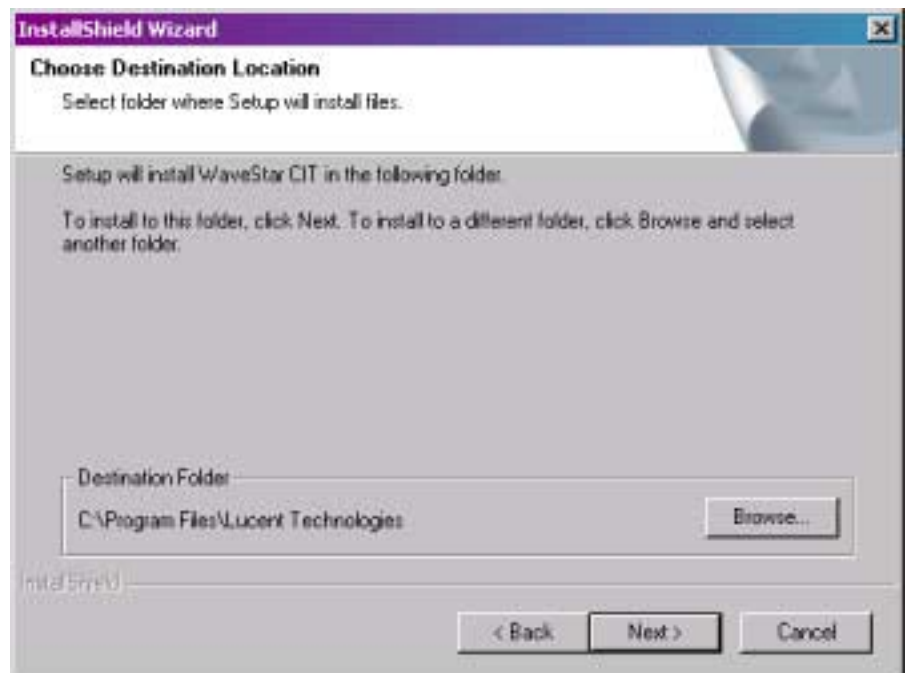


Important! If you have multiple NICs installed, you will be asked to select one in [Step 11](#).

.....

10 When the following screen appears, select where you want the WaveStar® CIT software installed on your PC.

- Select the default Destination Folder:
C:\Program Files\Lucent Technologies\
OR
- Click **Browse** and navigate to your desired directory.

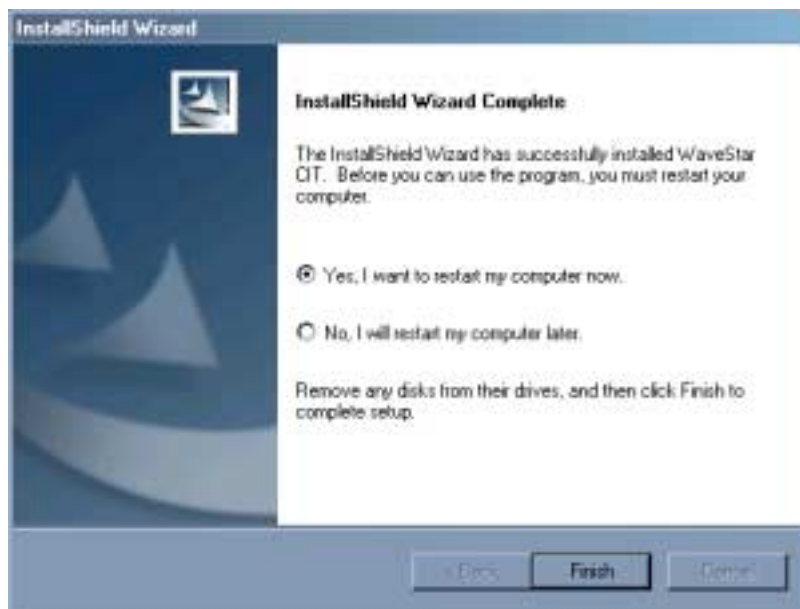


Click **Next**.

Result: The InstallShield® Wizard installs the required files.

-
- 11** If you have more than one Network Card on your PC, select the card you wish to use to connect to the NE.

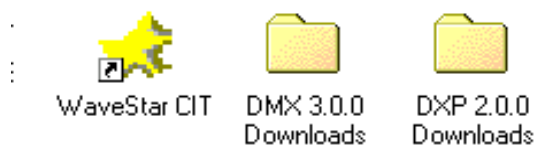
Result: The InstallShield® Wizard continues to install the required files. The following screen appears when the installation is completed.



-
- 12** Select *No, I will restart my computer later.* and click **Finish**.

Important! Before using your new WaveStar® CIT, you *MUST* reboot your computer. This task allows you to continue with the copying the NE software to the PC before rebooting.

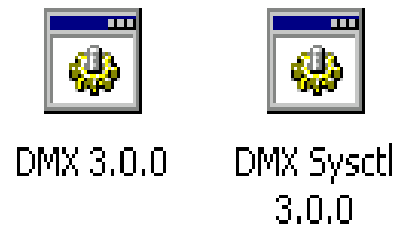
Result: You will see the following additional icons on your desktop.



Important! If you had a previous version of Metropolis® DMX software on your PC, you may also have icons for those download releases.

-
- 13** Double click on the **DMX 3.0.0 Downloads** icon.

Result: The *DMX 3.0.0 Downloads* folder contains the following two icons.



-
- 14** Return to the WaveStar CIT CD Browser window and click on **NE Software**.

Result: The following screen appears:



-
- 15** Click **NE Software (Copy the NE Software to the PC)** on the right.

Result: A “Copying files, please wait...” window appears. When the window closes, the software files are successfully copied into the following directories on your PC:

C:\Program Files\Lucent Technologies\WaveStar CIT\generics\dmx\3.0.0\p

This directory contains bundled software and is accessible by double-clicking on the DMX 3.0.0 icon that is found within the DMX 3.0.0 Downloads folder. (Refer to [Step 13](#) for an illustration of the icon.) This directory is used for initial R3.0.0 installations and upgrades from R1.1.x or later to R3.0.0.

C:\Program Files\Lucent Technologies\WaveStar CIT\generics\dmx\3.0.0\DMX

This directory contains R3.0.0 software and is accessible by double-clicking on the DMX Sysctl 3.0.0 icon that is found within the DMX 3.0.0 Downloads folder. (Refer to [Step 13](#) for an illustration of the icon.) This directory is used for downloads to upgrade a Metropolis® DMX running R1.0.x or initial software download to a 1.x.x factory-fresh SYSCTL circuit pack.

-
- 16** On the WaveStar CIT CD Browser window, click **Exit**.

-
- 17** Restart your PC before using the new WaveStar® CIT.

.....
E N D O F S T E P S
.....



Task 602: Replace 28DS1/28DS1PM (LNW6/LNW7) Circuit Pack

Purpose	Use this task to replace 28DS1/28DS1PM (LNW6/LNW7) circuit pack(s).
Required equipment	The following equipment is required: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information	For related information, see the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.

Before you begin Prior to beginning this task:

1. Ensure that 28DS1/28DS1PM circuit pack(s) is available for replacement.
2. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [“Task 601: Install Generic and WaveStar® CIT Software on the PC” \(5-13\)](#)

3. Connect PC and establish a WaveStar® CIT session.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

Task Complete the following steps to replace 28DS1/28DS1PM circuit pack(s).

-
- 1** From the System View menu, select **View > Protection** to view the current protection on the circuit pack you are replacing.

-
- 2** Does 1+1 Equip appear next to the 28DS1/28DS1PM circuit pack that you wish to replace?

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 10 .

-
- 3** Highlight the Function Unit (for example: **1+1 Equip Fn-b** represents Function Unit B) containing the circuit pack you wish to replace and click **Select**.

-
- 4** Does the **Circuit Pack State** for the circuit pack that you wish to replace read **In Service**?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 10 .

-
- 5** From the System View menu, select **Fault > Protection Switch**.

-
- 6** Highlight the Pack x (1 or 2) for the 28DS1/28DS1PM circuit pack that you are replacing and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

-
- 7 From the Switch Type: pull-down menu, select **Forced** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

- 8 On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.
-

- 9 To verify that the switch has occurred:

1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you are replacing and click **Select**.
 3. Verify that Protection Switch State: reads Standby and the Circuit Pack State: reads Out of Service.
 4. Verify that Protection Switch Priority: reads Forced Switch.
-

- 10 Remove the 28DS1/28DS1PM circuit pack by grasping the inner edge of the locking-levers, and applying a constant pressure, pull the levers forward and remove the circuit pack.
-

- 11 Seat the new 28DS1/28DS1PM circuit pack in the vacated Function Unit slot by applying steady pressure to both faceplate latches.

Result: **FAULT** LED on the 28DS1/28DS1PM circuit pack lights for approximately 20 seconds, then goes off. **ACTIVE** LED remains off. However, if your circuit pack was in-service and unprotected (refer to [Step 2](#)), then the **FAULT** LED on your replacement pack flashes until the signal is verified to be free of errors.

.....

- 12 From the System View menu, select **Fault > Protection Switch**.
-

- 13 Highlight the 28DS1/28DS1PM circuit pack that you force-switched and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

-
- 14** From the Switch Type: pull-down menu, select **Reset** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

- 15** On the confirmation window, click **Yes** to ensure that the protection switch is reset.
-

- 16** To verify that the forced switch is removed:

1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you replaced and click **Select**.
 3. Verify that Switch Request State: reads nr (no request).
 4. Verify that Protection Switch Priority: reads -.
-

- 17** Do you wish to restore the original Active/Standby states?

If...	Then...
Yes	Continue with Step 18 .
No	Proceed to Step 23 .

.....

- 18** From the System View menu, select **Fault > Protection Switch**.
-

- 19** Highlight Pack x (1 or 2) that Protection Switch State: reads Standby and the Circuit Pack State: reads Out of Service and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

.....

- 20** From the Switch Type: pull-down menu, select **Normal** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

21 On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.

.....

22 To verify that the switch has occurred:

1. From the System View menu, select **View > Protection**.
2. Highlight the circuit pack that you replaced and click **Select**.
3. Verify that Protection Switch State: reads Active and the Circuit Pack State: reads In Service.
4. Verify that Protection Switch Priority: reads -.

.....

23 From the System View menu, select **View > Equipment Details** and verify that the new circuit pack is recognized by the SYSCTL and all the parameters previously applied to the circuit pack are visible.

.....

24 Do you wish to change any circuit pack and/or port parameters at this time?

If...	Then...
Yes	Refer to the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301
No	STOP! END OF TASK.

.....

END OF STEPS



Task 603: Replace 12DS3/EC1 (LNW16) Circuit Pack

Purpose	Use this task to replace 12DS3/EC1 (LNW16) circuit pack(s).
Required equipment	The following equipment is required: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information	For related information, see the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.

Before you begin	Prior to beginning this task: 1. Ensure that 12DS3/EC1 circuit pack(s) is available for replacement. 2. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [“Task 601: Install Generic and WaveStar® CIT Software on the PC” \(5-13\)](#)

3. Connect PC and establish a WaveStar® CIT session.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

Task Complete the following steps to replace 12DS3/EC1 circuit pack(s).

- 1 From the System View menu, select **View > Protection** to view the current protection on the circuit pack you are replacing.

- 2 Does 1+1 Equip appear next to the 12DS3/EC1 circuit pack that you wish to replace?

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 10 .

- 3 Highlight the Function Unit (for example: **1+1 Equip Fn-b** represents Function Unit B) containing the circuit pack you wish to replace and click **Select**.

Result: The “Status” window appears.

- 4 Does the **Circuit Pack State** for the circuit pack that you wish to replace read **In Service**?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 10 .

- 5 From the System View menu, select **Fault > Protection Switch**.

- 6 Highlight the Pack x (1 or 2) for the 12DS3/EC1 circuit pack that you are replacing and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

-
- 7** From the Switch Type: pull-down menu, select **Forced** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

- 8** On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.
-

- 9** To verify that the switch has occurred:

1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you are replacing and click **Select**.
 3. Verify that Protection Switch State: reads Standby and the Circuit Pack State: reads Out of Service.
 4. Verify that Protection Switch Priority: reads Forced Switch.
-

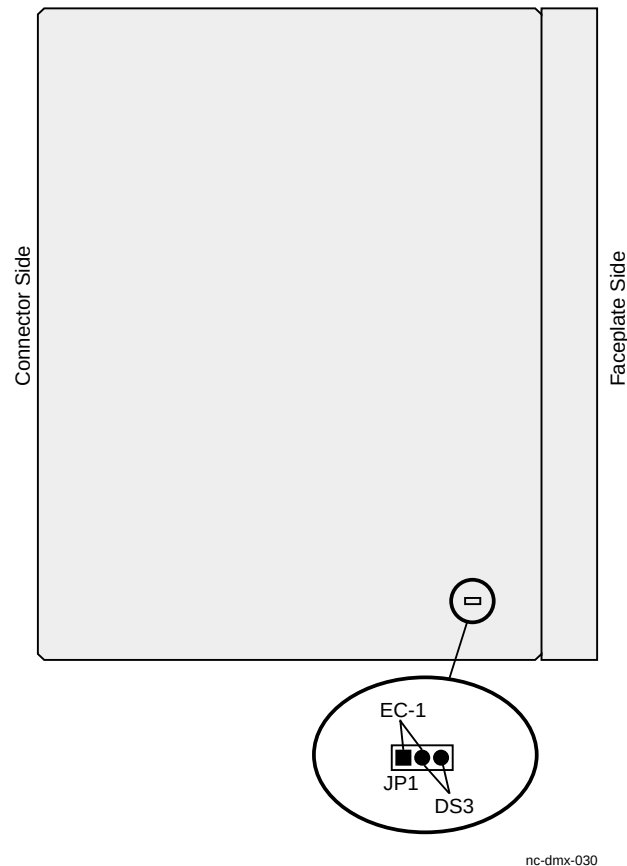
- 10** Remove the 12DS3/EC1 circuit pack by grasping the inner edge of the locking-levers, and applying a constant pressure, pull the levers forward and remove the circuit pack.
-

- 11** Are you are using the new circuit pack for DS3 or EC-1 service?

If...	Then...
DS3	From office records, determine the length of the DS3 cabling between Metropolis [®] DMX and the DSX-3 cross-connect point and any other circuit pack parameters to be set. Continue with Step 12 .
EC-1	Continue with Step 12 .

-
- 12** Set the jumper on the new 12DS3/EC1 circuit pack for either DS3 or EC-1 service as illustrated in [Figure 5-4](#).

Figure 5-4 Jumper Settings



Important! Metropolis® DMX, Release 3.0 supports port provisioning via the WaveStar® CIT. The new electrical interface (EIF) parameter has possible values of DS3 or EC-1. If you set the jumper and therefore the whole pack for DS3 or EC-1, you can still provision the ports individually for either DS3 or EC-1 service. The jumper setting only determines how the ports will come up during the initial installation of the circuit pack.

-
- 13** Seat the new 12DS3/EC1 circuit pack in the vacated Function Unit slot by applying steady pressure to both faceplate latches.

Important! A 75-ohm termination or loopback cable is required for each DS3 port at the DSX to prevent incoming alarms.

Result: **FAULT** LED on the 12DS3/EC1 circuit pack lights for approximately 20 seconds, then goes off. **ACTIVE** LED remains off. However, if your circuit pack was in-service and unprotected (refer to [Step 2](#)), then the **FAULT** LED on your replacement pack flashes until the signal is verified to be free of errors.

-
- 14** From the System View menu, select **Fault > Protection Switch**.

-
- 15** Highlight the 12DS3/EC1 circuit pack that you force-switched and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

-
- 16** From the Switch Type: pull-down menu, select **Reset** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

-
- 17** On the confirmation window, click **Yes** to ensure that the protection switch is reset.

-
- 18** To verify that the forced switch is removed:

1. From the System View menu, select **View > Protection**.
2. Highlight the circuit pack that you replaced and click **Select**.
3. Verify that Switch Request State: reads nr (no request).
4. Verify that Protection Switch Priority: reads -.

-
- 19 Do you wish to restore the original Active/Standby states?
- | If... | Then... |
|-------|---|
| Yes | Continue with Step 20 . |
| No | Proceed to Step 25 . |
-
- 20 From the System View menu, select **Fault > Protection Switch**.
-
- 21 Highlight Pack x (1 or 2) that Protection Switch State: reads Standby and the Circuit Pack State: reads Out of Service and click **Select**.
- Result:** On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.
-
- 22 From the Switch Type: pull-down menu, select **Normal** and click **Apply**.
- Result:** A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”
-
- 23 On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.
-
- 24 To verify that the switch has occurred:
1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you replaced and click **Select**.
 3. Verify that Protection Switch State: reads Active and the Circuit Pack State: reads In Service.
 4. Verify that Protection Switch Priority: reads -.
-
- 25 From the System View menu, select **View > Equipment Details** and verify that the new circuit pack is recognized by the SYSCTL and all the parameters previously applied to the circuit pack are visible.

-
- 26** Do you wish to change any circuit pack and/or port parameters at this time?

If...	Then...
Yes	Refer to the <i>Metropolis[®] DMX Access Multiplexer User Operations Guide, 365-372-301</i>
No	STOP! END OF TASK.

.....

E N D O F S T E P S

.....



Task 604: Replace Main High-Speed OC-48/OC-192 OLIU Circuit Packs

Purpose Use this task to replace high-speed OC-48/OC-192 OLIU circuit packs that are installed in the main slots (M1 and M2).

Required equipment The following equipment is required:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Optical loopback cables, LBOs, and optical fiber cleaning tools (if loopbacks are performed)

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION **Electrostatic discharge**

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

- Before you begin
- Prior to performing this task:
1.

Ensure that correct OC-48/OC-192 OLIU circuit packs are available for replacement.
2.

If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13)

3.

Connect PC and establish a WaveStar® CIT session.

Reference: “Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session” (5-3)

4.

Obtain the work instructions for this task.

Important! If responses are not correct when replacing OC-48/OC-192 OLIU circuit packs, check the connections. If the connections are correct, replace the circuit pack with the wrong response. (The red **FAULT** LED normally flashes when an OLIU circuit pack is monitored and there is no signal present.)

Task

Complete the following steps to replace OC-48/OC-192 OLIU circuit packs that are installed in M1 and/or M2.

-
- 1

From the System View menu, select **View > Timing/Sync** and select the **System Timing** tab. The Active Circuit Pack item reads either main-1 or main-2.

-
- 2

Is the OLIU circuit pack that you wish to replace the active circuit pack?

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 7 .

-
- 3** Is the Metropolis® DMX shelf line timed from the OC-48/OC-192 OLIU that you are replacing?

If...	Then...
Yes	Continue with Step 4 .
No	Proceed to Step 7 .

-
- 4** From the System View menu, select **View > Timing/Sync** and click the **System Timing** tab.

-
- 5** Is autoreconfiguration enabled?

If...	Then...
Yes	Proceed to Step 7 .
No	Continue with Step 6 .

-
- 6** From the System View menu, select **Configuration > Timing/Sync** and click the **System Timing** tab. Select **Enable** in the Synchronization Autoreconfiguration field. Click **OK**.

Important! Enable synchronization autoreconfiguration before removing the active circuit pack to ensure synchronization reference protection switching. If synchronization autoreconfiguration is disabled, and the active circuit pack is removed, the system enters holdover.

-
- 7** Remove the optical cables from the pack and remove the OLIU circuit pack by grasping the inner edge of the locking-levers, and applying a constant pressure, pull the levers forward to remove the circuit pack.

.....

8 Are you replacing LNW121B-159B or LNW221-259 OLIU circuit pack?

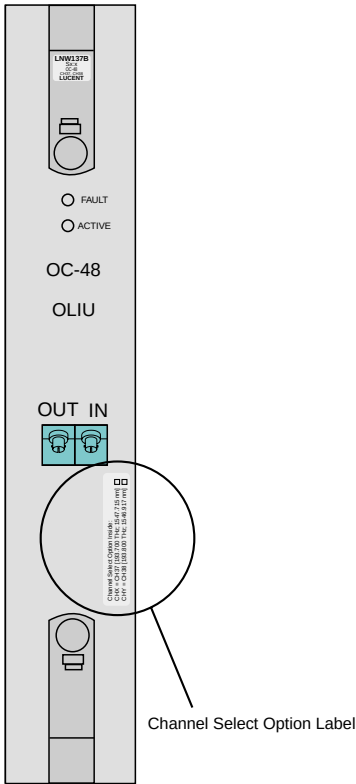
If...	Then...
Yes	Continue with Step 9 .
No	Proceed to Step 12 .

.....

9 From your work orders, determine the wavelength that you wish to set on the LNW121B-LNW159B or LNW221-LNW259 circuit pack. Use the Channel Select Option Label on the faceplate of the circuit pack to determine the correct channel.

Example: From the Channel Select Option Label on the faceplate of the LNW137B (Figure 5-5), we determine that for the desired CH37 wavelength (193.700 THz; 1547.715 nm), we must select CH X.

Figure 5-5 Channel Select Option Label on LNW137B



nc-dmx-196

10 If you are installing an...

- LNW121B-159B (Figure 5-6)
 - Set the channel selection jumper on your circuit pack to either **CH X** or **CH Y** for your desired wavelength/channel.
 - Set the enhanced/normal jumper on your circuit pack to either **Enhanced** (switch fabric can cross-connect VT across any 12 STS-1s) or **Normal** (switch fabric can cross-connect VT across any 6 STS-1s).
- LNW221-259 (Figure 5-7)
 - Set the channel selection jumper on your circuit pack to either **CH X** or **CH Y** for your desired wavelength/channel.

Figure 5-6 Jumper Settings for LNW121B-159B

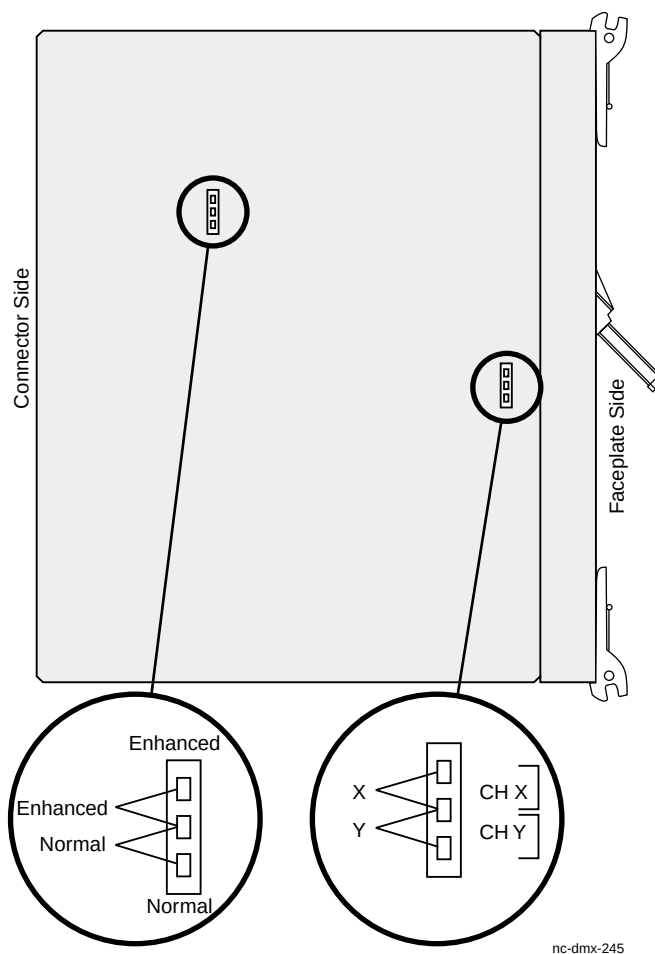
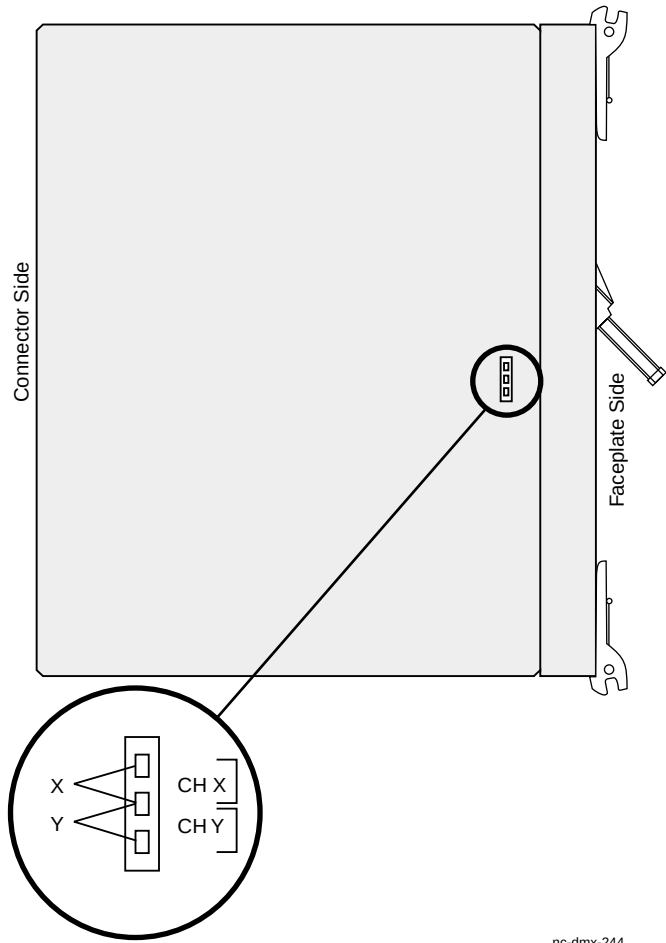


Figure 5-7 Jumper Settings for LNW221-259



nc-dmx-244

-
- 11

Using an erasable marker or pencil, check the appropriate box on the Channel Select Option Label ([Figure 5-5](#)) that corresponds to your jumper setting.

Important! This label is the only means available to identify the wavelength selected when the pack is fully-seated and/or in-service.

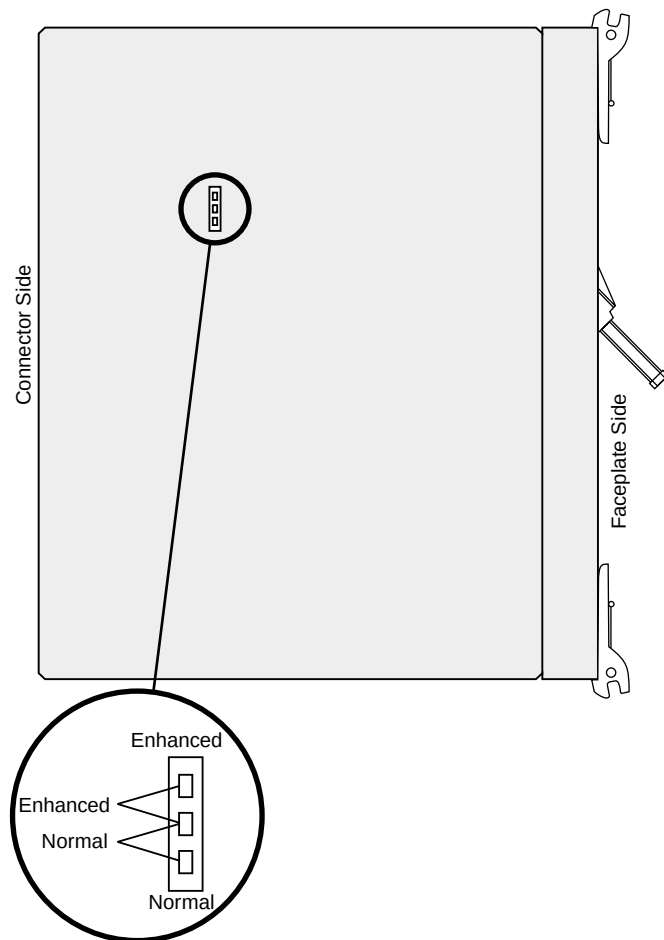
.....

- 12
- Are you installing an LNW26B OLIU circuit pack?

If...	Then...
Yes	Continue with Step 13 .
No	Proceed to Step 14 .

-
- 13** Set the enhanced/normal jumper on your circuit pack to either **Enhanced** (switch fabric can cross-connect VT across any 12 STS-1s) or **Normal** (switch fabric can cross-connect VT across any 6 STS-1s) ([Figure 5-8](#)).

Figure 5-8 Jumper Settings for LNW26B



nc-dmx-246

-
- 14** Ensure all optical fiber connectors and couplings are properly cleaned on the replacement OC-48/OC-192 OLIU.

Important! Signal performances may be degraded if the connections and couplings are not cleaned properly.

Reference: [“Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\)” \(5-139\)](#)

-
- 15

Seat OC-48/OC-192 OLIU circuit pack in the vacant slot (M1 or M2) by applying steady pressure to both faceplate latches.

Result: **FAULT** LED and **ACTIVE** LED lights. **FAULT** LED begins flashing after about 20 seconds. MJ or MN and NE alarm LEDs on the SYSCTL circuit pack light when an OC-48/OC-192 OLIU circuit pack is installed.
-
- 16

Reconnect the optical cables.

Result: **FAULT** LED goes off.
-
- 17

From the System View window, click on **Alarm List** button to determine if there are any alarms, lockouts, loopbacks, or switches are present for the ports on the circuit packs just installed.

Result: The “NE Alarm List” window opens.
-
- 18

Are there any alarms associated with the newly installed OC-48/OC-192 OLIU circuit pack(s)?

If...	Then...
Yes	Continue with Step 19 .
No	STOP! END OF TASK.
-
- 19

Note the existing alarms associated with the OLIUs just installed, then click **Close** at the bottom of the **NE Alarm List** window.
-
- 20

Do you want to clear the alarms associated with the newly installed OC-48/OC-192 OLIU circuit packs?

If...	Then...
Yes	Continue with Step 21 .
No	STOP! END OF TASK.

-
- 21** Is there a signal present on the newly installed OC-48/OC-192 OLIU circuit pack(s)?

If...	Then...
Yes	Proceed to Step 23 .
No	Continue with Step 22 .

-
- 22** Install optical loopbacks on the ports of all OC-48/OC-192 OLIU circuit packs with alarms.

Result: Alarms clear. **FAULT** LED goes off after about 15 seconds.

Reference: [“Task 616: Connect OLIU Optical Loopbacks” \(5-149\)](#)

-
- 23** Refer to the appropriate task in [Chapter 4, “Trouble Clearing Tasks”](#) to clear the alarm.

.....
E N D O F S T E P S



Task 605: Replace Low-Speed OC-N OLIU Circuit Packs

Purpose Use this task to replace low-speed OC-N (OC-3/OC-12/OC-48) OLIU circuit packs. These packs are installed in Function Unit slots (A1/A2, B1/B2, C1/C2, D1/D2), and Growth Unit slots (G1/G2).

Required equipment The following equipment is required:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Optical loopback cables, LBOs, and optical fiber cleaning tools (if loopbacks are performed)

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



WARNING

Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

Before you begin Prior to performing this task:

- 1. Ensure that correct low-speed OC-3/OC-12/OC-48 OLIU circuit pack(s) is available for replacement.
- 2. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13)

- 3. Connect PC and establish a WaveStar® CIT session.

Reference: “Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session” (5-3)

- 4. Obtain work instructions for this task.

Important! If responses are not correct when replacing OC-3/OC-12/OC-48 OLIU circuit packs, check the connections. If the connections are correct, replace the circuit pack with the wrong response. (The red **FAULT** LED normally flashes when an OLIU circuit pack is monitored and there is no signal present.)

Task Complete the following steps to replace OC-3/OC-12/OC-48 OLIU circuit packs.

-
- 1 From the System View menu, select **View > Protection** and view protection group for the circuit pack you are replacing.

-
- 2 Does 1+1 Line appear next to the protection group for the OC-3/OC-12/OC-48 OLIU circuit pack that you wish to replace?

Important! Be aware that the individual ports (for example, four ports on an OC-3 OLIU) could each be provisioned differently (1+1, UPSR, BLSR).

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 4 .

-
- 3** Highlight the protection group (for example: **1+1 Line growth-1** represents the growth slots [G1, G2]) containing the circuit pack you wish to replace and click **Select**.
-

- 4** Does the **Active Port** indicate the circuit pack that you wish to replace?

If...	Then...
Yes	Continue with Step 5 .
No	Proceed to Step 11 .

-
- 5** From the System View menu, select **Fault > Protection Switch**.
-

- 6** Highlight the Pack x (1 or 2) for the OC-3/OC-12/OC-48 OLIU protection group that you are replacing and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

.....

- 7** From the Switch Type: pull-down menu, select **Forced** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

- 8** On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function or Growth Group.

-
- 9** To verify that the switch has occurred:
1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you are replacing and click **Select**.
 3. Verify that the Active Port is now of the other pack in the protection group.
 4. Verify that Switch Request State: reads fs (forced).
-
- 10** Remove the optical cables from the pack.
-
- 11** Remove the OC-3/OC-12/OC-48 OLIU circuit pack by grasping the inner edge of the locking-levers, and applying a constant pressure, pull the levers forward and remove the circuit pack.
-
- 12** Ensure all optical fiber connectors and couplings are properly cleaned on the replacement OC-3/OC-12/OC-48 OLIU.
- Important!** Signal performances may be degraded if the connections and couplings are not cleaned properly.
- Reference:** [“Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\)” \(5-139\)](#)
-
- 13** Seat OC-3/OC-12/OC-48 OLIU circuit pack in the vacant slot by applying steady pressure to both faceplate latches.
- Result:** **FAULT** LED and **ACTIVE** LED lights. **FAULT** LED begins flashing after about 20 seconds.
-
- 14** Reconnect the optical cables.
- Result:** **FAULT** LED goes off.
-
- 15** From the System View menu, select **Fault > Protection Switch**.

-
- 16** Highlight the OC-N OLIU circuit pack that you force-switched and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

.....

- 17** From the Switch Type: pull-down menu, select **Reset** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

- 18** On the confirmation window, click **Yes** to ensure that the protection switch is reset.
-

- 19** To verify that the forced switch is removed:

1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you replaced and click **Select**.
 3. Verify that Switch Request State: reads nr (no request).
-

- 20** Do you wish to restore the original Active port state?

If...	Then...
Yes	Continue with Step 21 .
No	Proceed to Step 26 .

.....

- 21** From the System View menu, select **Fault > Protection Switch**.
-

- 22** Highlight the Pack x (1 or 2) for the OC-3/OC-12/OC-48 OLIU protection group that you replaced and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

.....

23 From the Switch Type: pull-down menu, select **Manual** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

24 On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.

.....

25 To verify that the switch has occurred:

1. From the System View menu, select **View > Protection**.
2. Highlight the circuit pack that you replaced and click **Select**.
3. Verify that the Active Port is now of the original pack that you replaced.
4. Verify that Protection Switch Priority: reads nr (no request).

.....

26 From the System View window, click on **Alarm List** button to determine if there are any alarms, lockouts, loopbacks, or switches are present for the ports on the circuit packs just installed.

Result: The “Alarm List” window opens.

.....

27 Are there any alarms associated with the newly installed OLIU circuit pack(s)?

If...	Then...
Yes	Continue with Step 28 .
No	STOP! END OF TASK.

.....

28 Note the existing alarms associated with the OLIUs just installed, then click **Close** at the bottom of the **Alarm List** window.

-
- 29** Do you want to clear the alarms associated with the newly installed OC-N OLIU circuit packs?

If...	Then...
Yes	Continue with Step 30 .
No	STOP! END OF TASK.

-
- 30** Is there a signal present on the newly installed OC-N OLIU circuit pack(s)?

If...	Then...
Yes	Proceed to Step 32 .
No	Continue with Step 31 .

-
- 31** Install optical loopbacks on the ports of all OC-N OLIU circuit packs with alarms.

Result: All alarms clear. **FAULT** LED goes off after about 15 seconds.

Reference: [“Task 616: Connect OLIU Optical Loopbacks”](#) (5-149)

-
- 32** Refer to the appropriate task in [Chapter 4, “Trouble Clearing Tasks”](#) to clear the alarm.

.....

END OF STEPS



Task 606: Replace 10/100T Fast Ethernet (LNW66) Circuit Pack

Purpose Use this task to replace 10/100T Fast Ethernet circuit packs.

Required equipment The following equipment is required:

- Personal computer (PC) with WaveStar® CIT software installed
- Wrist strap

Safety precautions To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION **Electrostatic discharge**

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

- Before you begin** Prior to beginning this task:
1. Ensure that 10/100T circuit pack(s) is available for replacement.
 2. If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13)

3. Connect PC and establish a WaveStar® CIT session.

Reference: “Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session” (5-3)

Task Complete the following steps to replace 10/100T circuit pack(s).

-
- 1 Remove the 10/100T circuit pack by grasping the inner edge of the locking-levers, and applying a constant pressure, pull the levers forward and remove the circuit pack.
-
- 2 Seat the 10/100T Ethernet circuit pack in vacated Function Unit slot A1, B1, C1, or D1.

Result: **FAULT** LED on the circuit pack lights. After approximately 60 seconds, the **ACTIVE** LED lights and the **FAULT** LED goes off.

.....
E N D O F S T E P S ☐

Task 607: Replace 1GSX/1GLX (LNW67/68) Gigabit Ethernet Circuit Packs

Purpose	Use this task to replace the 1GSX/1GLX gigabit Ethernet circuit packs.
Required equipment	The following equipment is required: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION **Electrostatic discharge**

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information	For related information, see the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.

Before you begin	Prior to beginning this task: 1. Ensure that 1GSX/1GLX Gigabit Ethernet circuit pack(s) is available for replacement. 2. If not previously completed, install generic and WaveStar® CIT software on the PC. Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13) 3. Connect PC and establish a WaveStar® CIT session. Reference: “Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session” (5-3)
Task	Complete the following steps to replace 1GSX/1GLX Gigabit Ethernet circuit pack(s). 1 Remove the optical cables from the pack. 2 Remove the 1GSX/1GLX circuit pack by grasping the inner edge of the locking-levers, and applying a constant pressure, pull the levers forward and remove the circuit pack. 3 Ensure all optical fiber connectors and couplings are properly cleaned on the replacement 1GSX/1GLX circuit pack. Important! Signal performances may be degraded if the connections and couplings are not cleaned properly. Reference: “Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts (LBOs)” (5-139) 4 Seat the 1GSX/1GLX Gigabit Ethernet circuit pack in vacated Function Unit slot A1, B1, C1, D1 or G1. Result: FAULT LED on the 1GSX/1GLXGigabit Ethernet circuit pack lights. After approximately 60 seconds, the ACTIVE LED lights and the FAULT LED goes off.

-
- 5** Reconnect the optical cables.

Result: **FAULT** LED goes off.

-
- 6** From the System View window, click on **Alarm List** button to verify that no alarms, lockouts, loopbacks, or switches are present for the ports on the circuit packs just installed.

Result: The “NE Alarm List” window opens.

.....
E N D O F S T E P S



Task 608: Replace SYSCTL (LNW1) Circuit Pack

Purpose	Use this task to replace the SYSCTL (LNW1) circuit pack.
Required equipment	The following equipment is required: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information	For related information, see the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.
Before you begin	Prior to beginning this task: 1. Ensure that a SYSCTL circuit pack is available for replacement. 2. If not previously completed, install generic and WaveStar® CIT software on the PC. Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13) 3. Connect PC and establish a WaveStar® CIT session. Reference: “Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session” (5-3)

Task Complete the following steps to replace a SYSCTL circuit pack.

-
- 1

Remove the failed SYSCTL circuit pack.
-
- 2

Seat the replacement SYSCTL circuit pack and allow a few minutes for the pack to complete initialization.



CAUTION
Service affecting

Initializing the SYSCTL in the following steps will momentarily interrupt service if protection switches are activated.

-
- 3

Observe one of the following indications on the **IND** display. Note the indication and follow the suggested task.

Indications in the SYSCTL **IND** display:

- Nothing displayed indicates compatible software installed in the SYSCTL.
STOP! END OF TASK.
- Letter “**P**” indicates no software installed in the SYSCTL and 1.x boot code. Find circuit pack with compatible software and repeat task or install new software.
Reference: “[Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation](#)” (5-97)
- Alternating letter “**P**” and number “**2**” indicates no software installed in the SYSCTL and 2.0 boot code. Find circuit pack with compatible software and repeat task or install new software.
Reference: “[Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation](#)” (5-97)
- Alternating letter “**P**” and number “**2.**” and number “**1**” indicates no software installed in the SYSCTL and 2.1 boot code. Find circuit pack with compatible software and repeat task or install new software.

Reference: “Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation” (5-97)

- Alternating letter “P” and number “3” indicates no software installed in the SYSCTL and 3.0 boot code, install the new software generic.

Reference: “Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation” (5-97)

- Letter “P” followed by a period “P.” indicates a previous download attempt has failed. Find circuit pack with compatible software and repeat task or install new software.

Reference: “Task 609: Release 3.0.0 Software Generic Upgrade for Local Shelf (In-Service System)” (5-67) or “Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation” (5-97)

- Letter “C” indicates software is installed in the SYSCTL, but the system is running software that is incompatible with the SYSCTL. Find circuit pack with compatible software and repeat task or proceed to [Step 6](#) to return the SYSCTL to its original factory-fresh boot code.
- Letter “E” indicates SYSCTL must be replaced. Get replacement SYSCTL and repeat this task.
- Letter “F” indicates that SYSCTL faceplate latches are not fully seated. Unplug SYSCTL and repeat this task, properly seating the faceplate latch.
- Letter “L” indicates a low voltage condition (brownout) on the shelf.

-
- 4 Refer to the *Metropolis® DMX Access Multiplexer Software Release Description* associated with the version of software stored on this SYSCTL and decide if the system should run this current version of software or if another version (original version or new version) of software should be downloaded.

-
- 5 STOP! END OF TASK.

-
- 6** Simultaneously depress the **SEL** button and **UPD/INIT** recessed push-button on the faceplate of the SYSCTL.

Result: The SYSCTL is now able to accept a software download.

.....

- 7** Observe the **IND** display on the SYSCTL; the display indicates which boot code is installed in the SYSCTL. Proceed to “[Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation](#)” (5-97).

.....
E N D O F S T E P S
.....



Task 609: Release 3.0.0 Software Generic Upgrade for Local Shelf (In-Service System)

Purpose Use this task to upgrade a local Metropolis® DMX shelf that is in-service to the new R3.0.0 software generic.

Required equipment The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Cable to connect the PC to Metropolis® DMX
- Working copy of the new system generic software program on CD-ROM
- Current *Metropolis® DMX Access Multiplexer Software Release Description* for the software generic being installed.

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

Before you begin Before beginning the software installation, refer to the *Metropolis® DMX Access Multiplexer Software Release Description* for the software being installed for a description of any special considerations required when installing this version of the software.

Important! A privileged login is required to perform this task.

- Task** Complete the following steps to install and upgrade your system software.
-
- 1

If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13)

.....
- 2

Observe the SYSCTL **IND** display. Note that there is nothing displayed indicating that compatible software is installed and running in the SYSCTL.

.....
- 3

Depress and hold the **ACO TEST** push-button on the SYSCTL for about 4 seconds.

Result: All LEDs on the shelf light. **8.** appears in the **IND** display on the SYSCTL.

.....
- 4

Release the **ACO TEST** push-button on the SYSCTL when the **8.** disappears in the **IND** display.

Result: The current software generic appears in the **IND** display on the SYSCTL and the shelf LEDs return to their previous status.

-
- 5 Double-click on **DMX 3.0.0 Downloads** folder on you PC desktop.

Result: The *DMX 3.0.0 Downloads* folder contains the following two icons.

Figure 5-9 Contents of DMX 3.0.0 Downloads Folder



-
- 6 What is the current software generic (as determined in [Step 4](#)) on the local shelf?

If...	Then...
R1.0.x	Double-click on the <i>DMX Sysctl 3.0.0</i> icon. Continue with Step 7 .
R1.1.x	Double-click on the <i>DMX 3.0.0</i> icon. Proceed to Step 14 .
R2.0.x or later and you have serial connectivity	Double-click on the <i>DMX 3.0.0</i> icon. Proceed to Step 14 .
R2.0.x or later and you have TCP/IP connectivity	Proceed to “ Task 618: Release 3.0.0 Software Generic Download and Upgrade via FTP (In-Service System) ” (5-159).

Important! A download using FTP takes approximately 12 minutes; a download using INS-PRGM ([Step 7](#) and [Step 14](#)) takes approximately 45 minutes.

-
- 7 Using the appropriate cable, connect the **COM1** port of your PC to the **CIT RS-232** serial port on the faceplate of the SYCTL circuit pack.

Important! DO NOT establish a WaveStar[®] CIT session.

8 Follow the instructions on the subsequent screens.

```
DMX Sysctl 3.0.0
*****
*** This program establishes a terminal interface to a DMX system
*** from which a new DMX software program may be installed on the SYSCtl.
***
*** NOTE: COM1 has been selected
***
*** To alter the COM PORT selection, type ctrl-C now, type y to terminate
*** the batch job and enter the command "TERM COM1" or "TERM COM2". The file
*** README.txt contains additional information. To read this file,
*** type ctrl-C now, type y to terminate the batch job and enter the
*** command "MORE < README.txt" or, in a Windows environment, double-click
*** on readme.txt.
***
*** When downloading a generic to a controller for the first time, or
*** when doing a forced download, the baudrate of the PC must match the
*** default for the controller, or the download will not start. The default
*** for both the front CIT and the terminal emulator (ctrm) is 9600. If
*** you're not sure what baud rate the front CIT is configured for and
*** communication is not working, type "alt-c" to show the menu and
*** directions on how to change the "speed" parameter.
***
*****
Press any key to continue . . . _
```

```
DMX Sysctl 3.0.0
*****
*** When ctrm is first started up, pressing carriage return a couple of times
*** should display the /* SYSTEM TID: */ message indicating the SID of the
*** local shelf. The "act-user" command is then required to log into the local
*** and any remote network elements. The format and syntax is:
***
***   act-user:tid:uid:ctag::pid;
***
***   tid  = SYSTEM TID (or SID) of the local or remote shelf.
***   uid  = User ID (this field is case-sensitive)
***   ctag = one to six alphanumeric characters or just specify ctag
***   pid  = Password ID (this field is case-sensitive)
***
*** If a local "ins-prgm" is being executed, the format and syntax is:
***
***   ins-prgm:tid::ctag::;
***
***   tid  = SYSTEM TID (or SID) of the local shelf.
***   ctag = one to six alphanumeric characters or just specify ctag
***
*** NOTE: Make note of ALL characters - all are required.
***
*****
Press any key to continue . . .
```

```

DMX Sysctl 3.0.0
*****
*** After completion of the "ins-prgm" command, the user should log back into
*** the shelf using the "act-user" command and execute the "apply" command to
*** schedule when the new software should be installed. The format and syntax
*** is:
***
***      apply:tid::ctag::[time],[date],;
***
***      tid = SYSTEM TID (or SID) of the local or remote shelf.
***      ctag = one to six alphanumeric characters or just specify ctag
***      time = HHMMSS (e.g. 220000 is equal to 10:00PM)
***      date = YYMMDD (e.g. 010425 is equal to April 25, 2001)
***
*** If time/date are NOT specified, the apply will be scheduled 15 minutes
*** from when the command is received.
***
*** NOTE: The square brackets indicates that the time and date fields
***       are not required and are not part of the syntax. However, all
***       other characters within the command must be specified.
***
*****
Press any key to continue . . . _

```

```

DMX Sysctl 3.0.0

METROPOLIS DMX NETWORK USER INTERFACE
      Version 1.1,
      Lucent Technologies
      All Rights Reserved.

  Cnfg   Speed   Char   Stop   Parity   Flow   Local
  ----   ----   ----   ----   ----   ----   ----
   * 1    9600    8      1     none    xon/xoff  n
   2    9600    8      1     none    xon/xoff  n

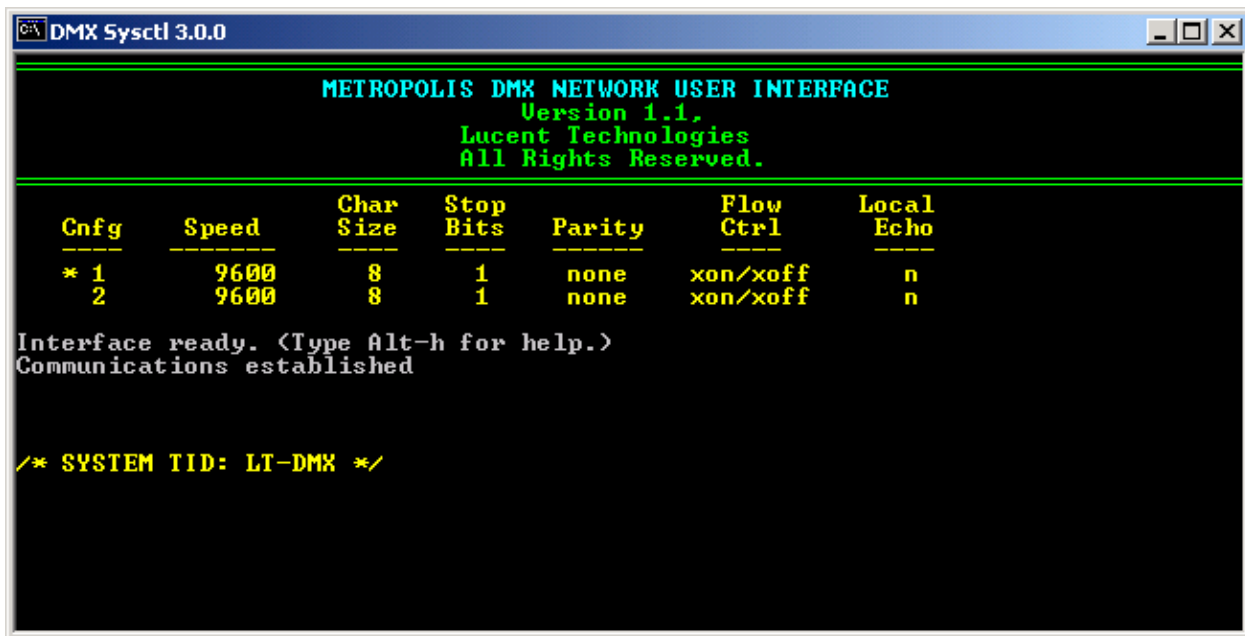
Interface ready. <Type Alt-h for help.>
Communications established

```

9 Press Enter.

Result: The following screen appears with the response
/* SYSTEM TID: LT-DMX */.

Important! LT-DMX is the default TID of a new system. If your system is currently in service, your TID could be different.



```
DMX Sysctl 3.0.0

METROPOLIS DMX NETWORK USER INTERFACE
Version 1.1,
Lucent Technologies
All Rights Reserved.

Cnfg   Speed   Char  Stop  Parity  Flow   Local
----   -
* 1    9600     8     1     none   xon/xoff  n
 2    9600     8     1     none   xon/xoff  n

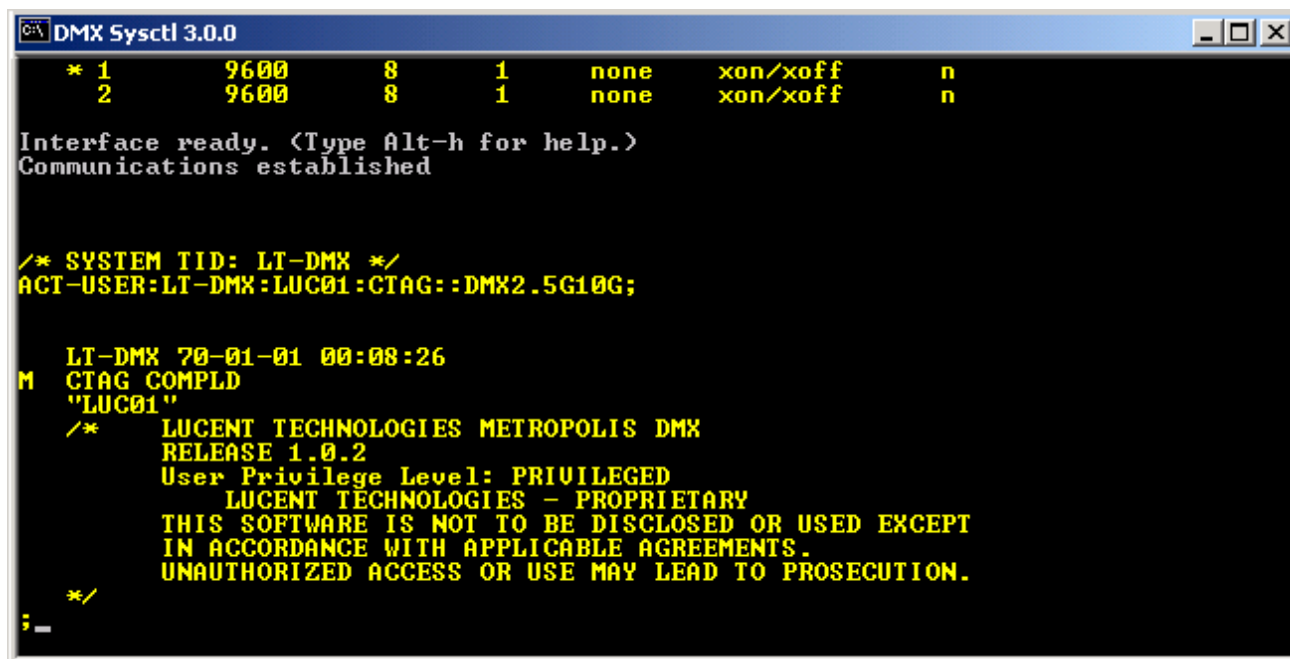
Interface ready. <Type Alt-h for help.>
Communications established

/* SYSTEM TID: LT-DMX */
```

.....
10 Press Enter and type ACT-USER:LT-DMX:LUC01:CTAG::DMX2.5G10G;

Important! Replace LT-DMX with your TID.

Result: The following screen appears.



```
DMX Sysctl 3.0.0
* 1      9600      8      1      none      xon/xoff      n
  2      9600      8      1      none      xon/xoff      n

Interface ready. <Type Alt-h for help.>
Communications established

/* SYSTEM TID: LT-DMX */
ACT-USER:LT-DMX:LUC01:CTAG::DMX2.5G10G;

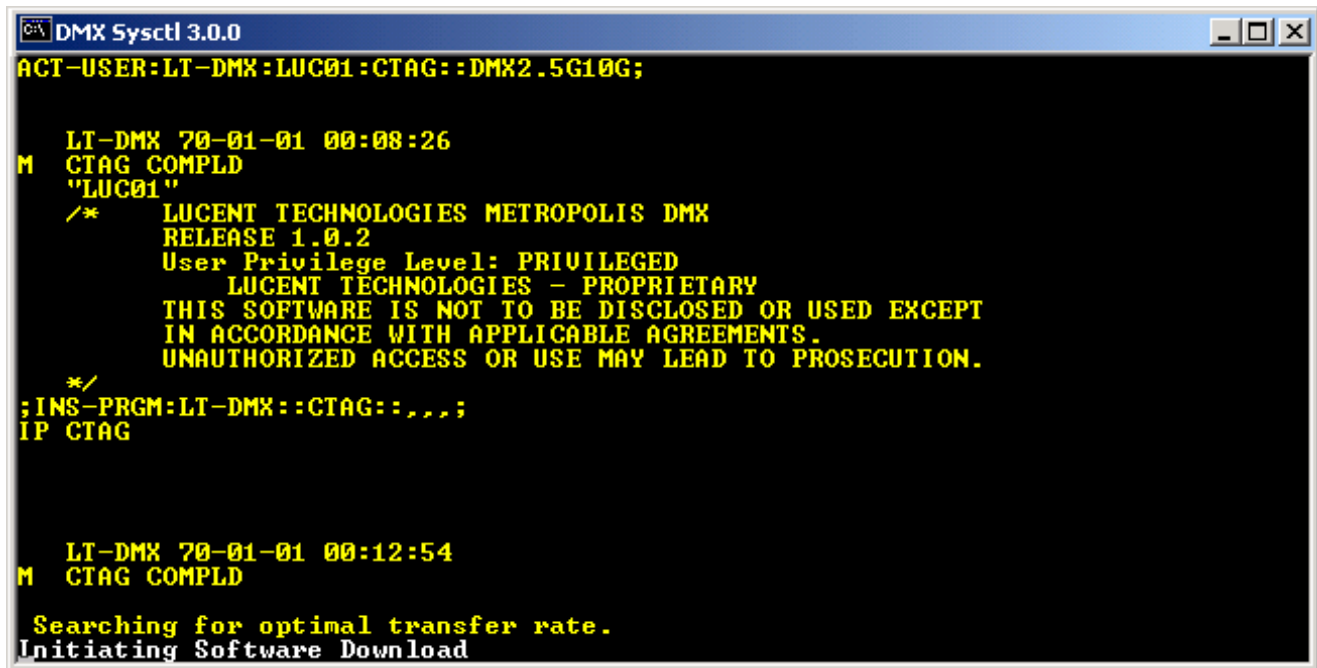
LT-DMX 70-01-01 00:08:26
M CTAG COMPLD
  "LUC01"
/*   LUCENT TECHNOLOGIES METROPOLIS DMX
      RELEASE 1.0.2
      User Privilege Level: PRIVILEGED
      LUCENT TECHNOLOGIES - PROPRIETARY
      THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
      IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
      UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
  */
```

11 Enter INS-PRGM:LT-DMX::CTAG::,,;;

Result: System returns CTAG COMPLD and initiates the software download.

Important! Replace LT-DMX with your TID.

The software download takes approximately 45 minutes.



```
DMX Sysctl 3.0.0
ACT-USER:LT-DMX:LUC01:CTAG::DMX2.5G10G;

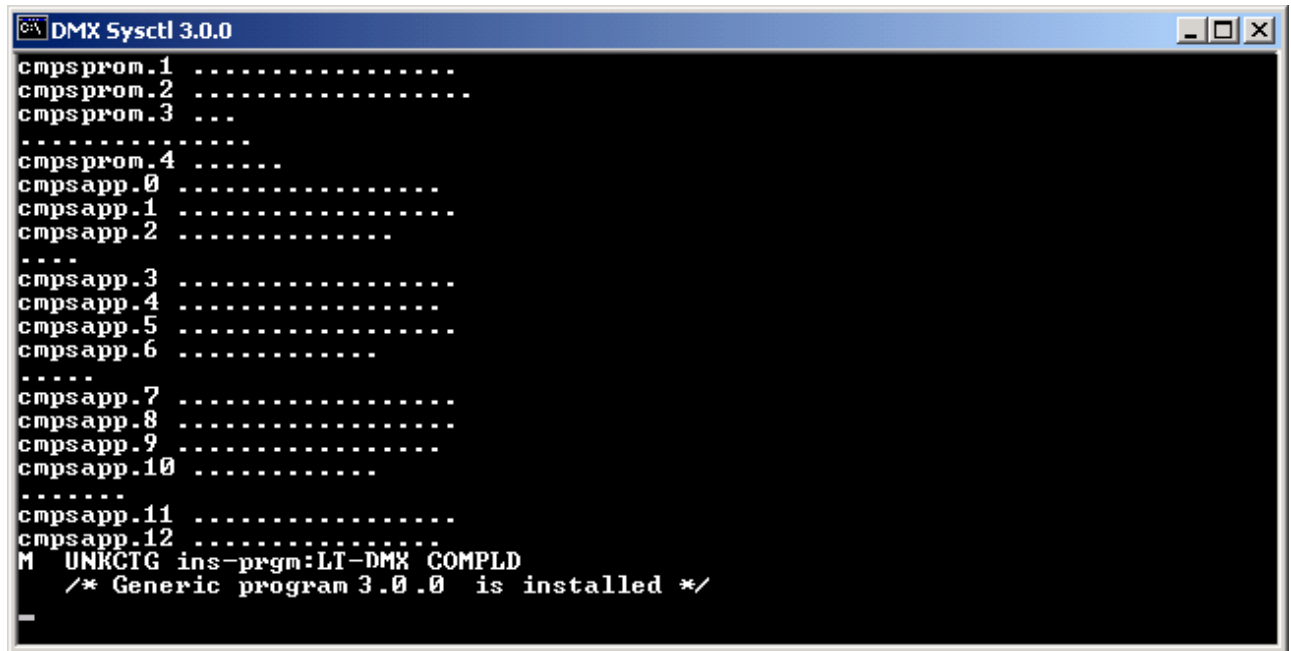
  LT-DMX 70-01-01 00:08:26
M  CTAG COMPLD
  "LUC01"
  /*    LUCENT TECHNOLOGIES METROPOLIS DMX
        RELEASE 1.0.2
        User Privilege Level: PRIVILEGED
        LUCENT TECHNOLOGIES - PROPRIETARY
        THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
        IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
        UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
  */
;INS-PRGM:LT-DMX::CTAG::,,;;
IP CTAG

  LT-DMX 70-01-01 00:12:54
M  CTAG COMPLD

  Searching for optimal transfer rate.
  Initiating Software Download
```


-
- 12** When the software download is complete, the following screen appears.

Important! The downloaded software has been installed in the dormant area.



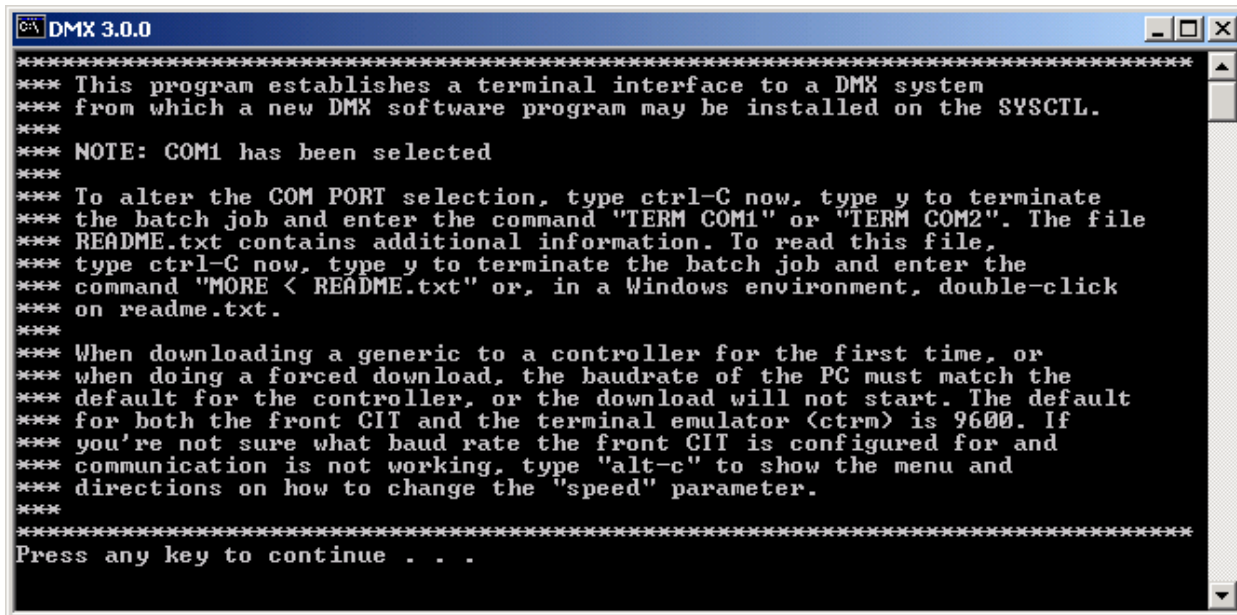
```
DMX Sysctl 3.0.0
cmpsprom.1 .....
cmpsprom.2 .....
cmpsprom.3 ...
.....
cmpsprom.4 .....
cmpsapp.0 .....
cmpsapp.1 .....
cmpsapp.2 .....
.....
cmpsapp.3 .....
cmpsapp.4 .....
cmpsapp.5 .....
cmpsapp.6 .....
.....
cmpsapp.7 .....
cmpsapp.8 .....
cmpsapp.9 .....
cmpsapp.10 .....
.....
cmpsapp.11 .....
cmpsapp.12 .....
M UNKCTG ins-prgm:LT-DMX COMPLD
/* Generic program 3.0.0 is installed */
```

-
- 13** Exit the Term program using **ALT+F2**. Proceed to [Step 21](#).
-

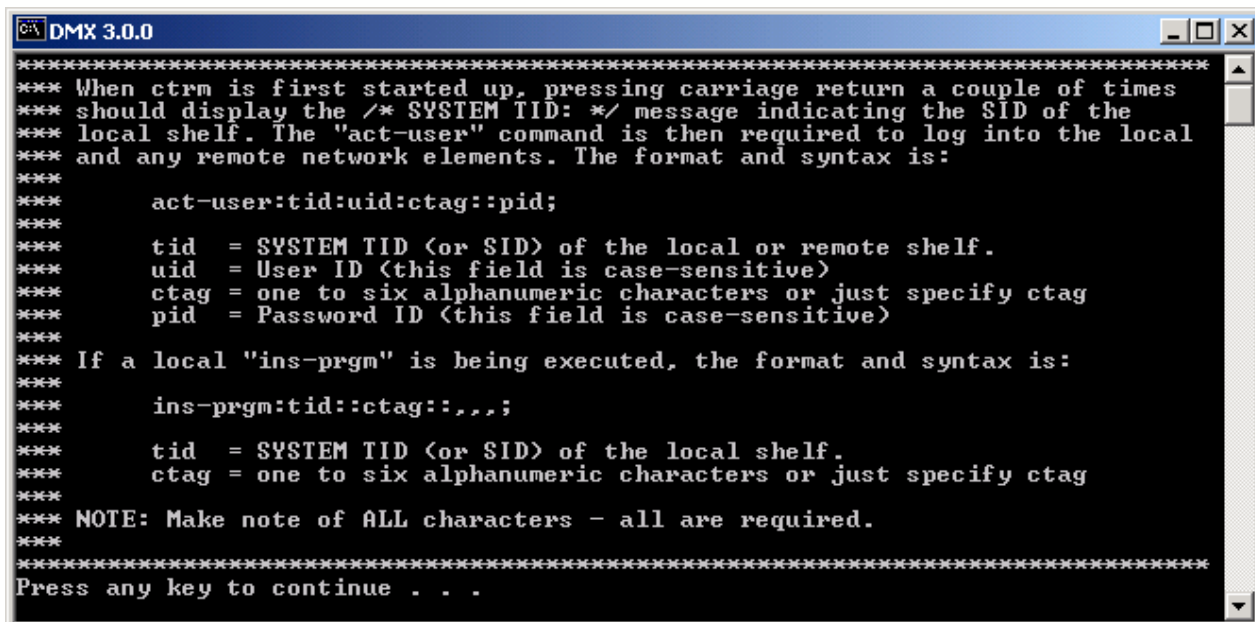
- 14** Using the appropriate cable, connect the **COM1** port of your PC to the **CIT RS-232** serial port on the faceplate of the SYSCTL circuit pack.

Important! DO NOT establish a WaveStar[®] CIT session.

-
- 15 Follow the instructions on the subsequent screens.



```
*****
*** This program establishes a terminal interface to a DMX system
*** from which a new DMX software program may be installed on the SYSCTL.
***
*** NOTE: COM1 has been selected
***
*** To alter the COM PORT selection, type ctrl-C now, type y to terminate
*** the batch job and enter the command "TERM COM1" or "TERM COM2". The file
*** README.txt contains additional information. To read this file,
*** type ctrl-C now, type y to terminate the batch job and enter the
*** command "MORE < README.txt" or, in a Windows environment, double-click
*** on readme.txt.
***
*** When downloading a generic to a controller for the first time, or
*** when doing a forced download, the baudrate of the PC must match the
*** default for the controller, or the download will not start. The default
*** for both the front CIT and the terminal emulator (ctrm) is 9600. If
*** you're not sure what baud rate the front CIT is configured for and
*** communication is not working, type "alt-c" to show the menu and
*** directions on how to change the "speed" parameter.
***
*****
Press any key to continue . . .
```



```
*****
*** When ctrm is first started up, pressing carriage return a couple of times
*** should display the /* SYSTEM TID: */ message indicating the SID of the
*** local shelf. The "act-user" command is then required to log into the local
*** and any remote network elements. The format and syntax is:
***
***   act-user:tid:uid:ctag::pid;
***
***   tid  = SYSTEM TID (or SID) of the local or remote shelf.
***   uid  = User ID (this field is case-sensitive)
***   ctag = one to six alphanumeric characters or just specify ctag
***   pid  = Password ID (this field is case-sensitive)
***
*** If a local "ins-prgm" is being executed, the format and syntax is:
***
***   ins-prgm:tid::ctag::...;
***
***   tid  = SYSTEM TID (or SID) of the local shelf.
***   ctag = one to six alphanumeric characters or just specify ctag
***
*** NOTE: Make note of ALL characters - all are required.
***
*****
Press any key to continue . . .
```

```

DMX 3.0.0
*****
*** After completion of the "ins-prgm" command, the user should log back into
*** the shelf using the "act-user" command and execute the "apply" command to
*** schedule when the new software should be installed. The format and syntax
*** is:
***
***      apply:tid::ctag::[time],[date],;
***
***      tid  = SYSTEM TID (or SID) of the local or remote shelf.
***      ctag = one to six alphanumeric characters or just specify ctag
***      time = HHMMSS (e.g. 220000 is equal to 10:00PM)
***      date = YYMMDD (e.g. 010425 is equal to April 25, 2001)
***
*** If time/date are NOT specified, the apply will be scheduled 15 minutes
*** from when the command is received.
***
*** NOTE: The square brackets indicates that the time and date fields
***       are not required and are not part of the syntax. However, all
***       other characters within the command must be specified.
***
*****
Press any key to continue . . . _

```

```

DMX 3.0.0

METROPOLIS DMX NETWORK USER INTERFACE
Version 1.1,
Lucent Technologies
All Rights Reserved.

  Cnfg   Speed   Char   Stop   Parity   Flow   Local
  ----   ----   ----   ----   ----   ----   ----
* 1      9600     8      1     none    xon/xoff  n
  2      9600     8      1     none    xon/xoff  n

Interface ready. (Type Alt-h for help.)
Communications established

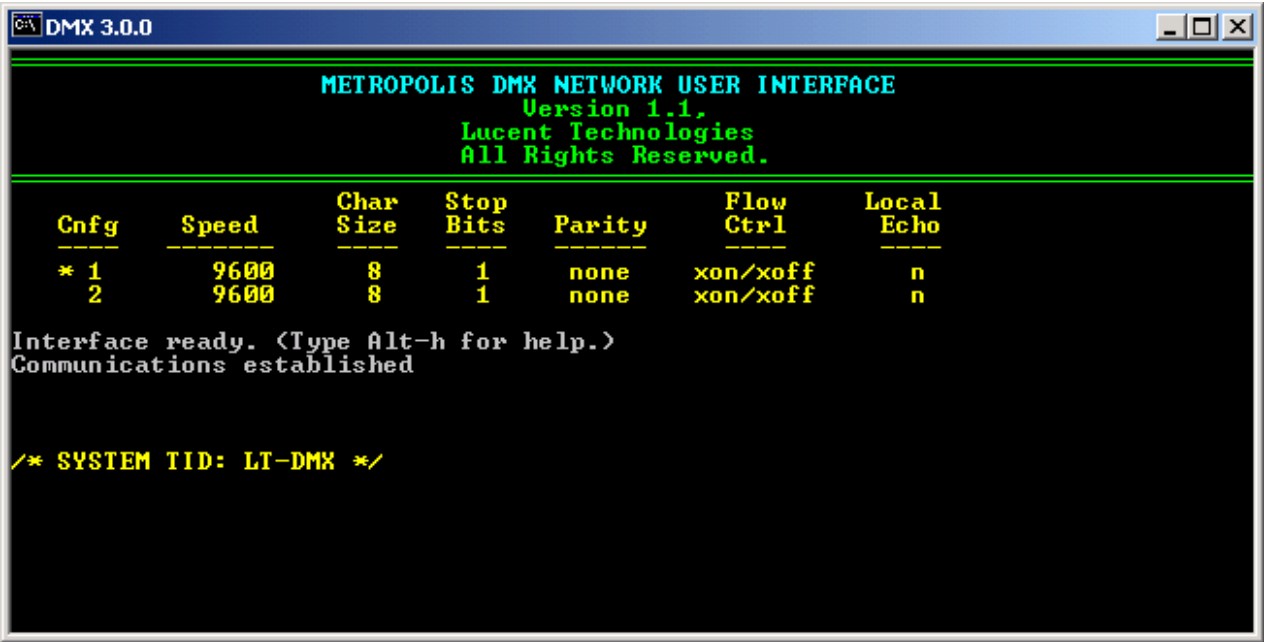
```

.....

16 Press Enter.

Result: The following screen appears with the following response
/* SYSTEM TID: LT-DMX */

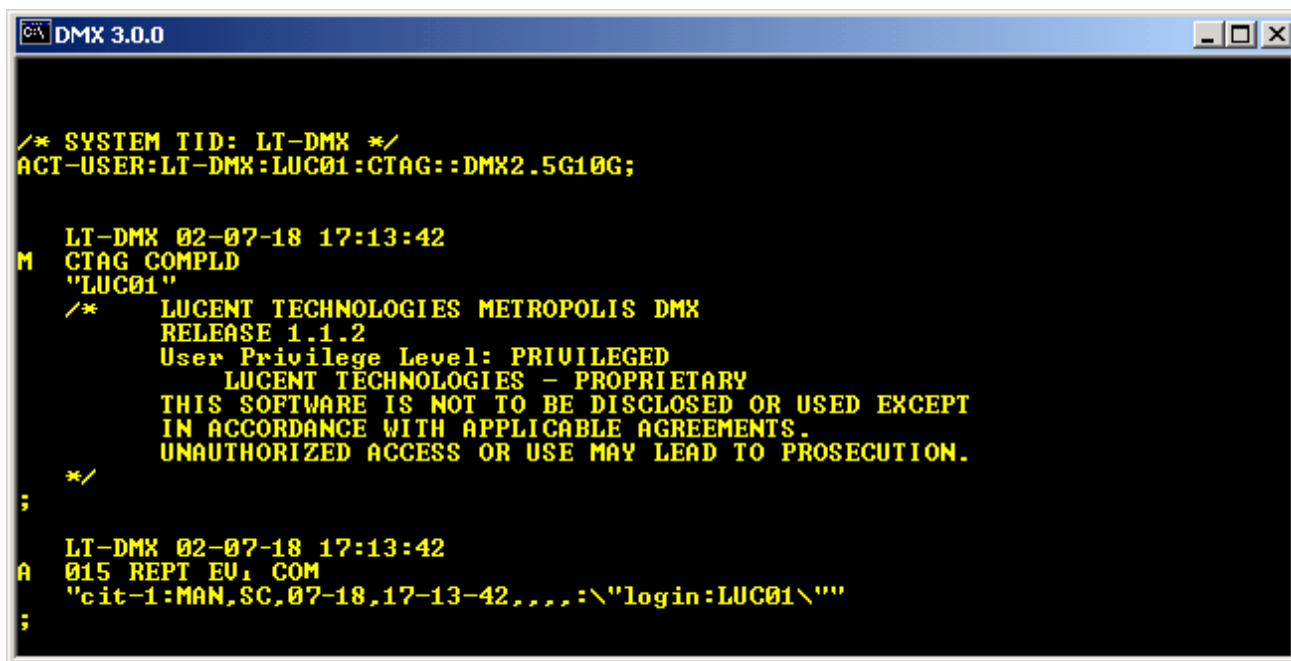
Important! LT-DMX is the default TID. Your TID may be different.



-
- 17 Press Enter and type ACT-USER:LT-DMX:LUC01:CTAG::DMX2.5G10G;

Important! Replace LT-DMX with your TID.
Your current running release could be 1.1.x or 2.0.x.

Result: The following screen appears.



```
DMX 3.0.0

/* SYSTEM TID: LT-DMX */
ACT-USER:LT-DMX:LUC01:CTAG::DMX2.5G10G;

LT-DMX 02-07-18 17:13:42
M CTAG COMPLD
  "LUC01"
  /*    LUCENT TECHNOLOGIES METROPOLIS DMX
        RELEASE 1.1.2
        User Privilege Level: PRIVILEGED
        LUCENT TECHNOLOGIES - PROPRIETARY
        THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
        IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
        UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
  */
;

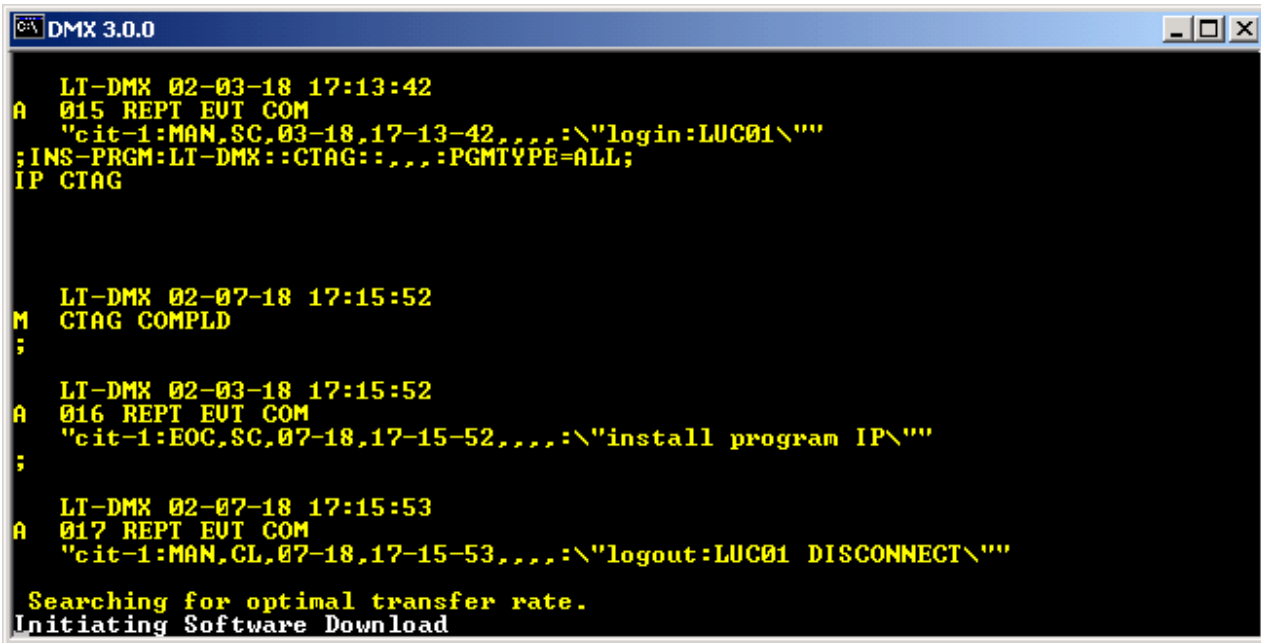
LT-DMX 02-07-18 17:13:42
A 015 REPT EU, COM
  "cit-1:MAN,SC,07-18,17-13-42,,,,:\login:LUC01\""
```

-
- 18 Enter INS-PRGM:LT-DMX::CTAG::,,,PGMTYPE=ALL;

Result: System returns CTAG COMPLD and initiates the software download.

Important! Replace LT-DMX with your TID.

The software download takes approximately 45 minutes.



```
DMX 3.0.0

LT-DMX 02-03-18 17:13:42
A 015 REPT EUT COM
"cit-1:MAN,SC,03-18,17-13-42,,,,:\login:LUC01\"
;INS-PRGM:LT-DMX::CTAG::,,,PGMTYPE=ALL;
IP CTAG

LT-DMX 02-07-18 17:15:52
M CTAG COMPLD
;

LT-DMX 02-03-18 17:15:52
A 016 REPT EUT COM
"cit-1:EOC,SC,07-18,17-15-52,,,,:\install program IP\"
;

LT-DMX 02-07-18 17:15:53
A 017 REPT EUT COM
"cit-1:MAN,CL,07-18,17-15-53,,,,:\logout:LUC01 DISCONNECT\"

Searching for optimal transfer rate.
Initiating Software Download
```

-
- 19 When the software download is complete, the following screen appears.

Important! The downloaded software has been installed as a dormant file.

```

DMX 3.0.0
.....
cmpsapp.11 .....
cmpsapp.12 .....
dmxds1.0 ..
dmxds3.0 .....
dmxeprom.0 .....
dmxeprom.1 ..
.....
dmxeprom.2
dmxeapp.0 .....
dmxeapp.1 .....
dmxeapp.2 .....
dmxeapp.3 .
.....
dmxeapp.4 .....
dmxeapp.5 .....
dmxeapp.6 .....
-
dmxeapp.7 .....
M UNKCTG ins-prgm:LT-DMX COMPLD
/* Generic program 3.0.0 is installed */
  
```

-
- 20 Exit the Term program using **ALT+F2**. Continue with [Step 21](#).

-
- 21 Do you wish to apply (activate) the software generic that you recently downloaded to the dormant area of the Metropolis® DMX shelf?

If...	Then...
Yes	Continue with Step 22 .
No	Proceed to Step 28 .

-
- 22 Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and log in to your Metropolis® DMX shelf.

Reference: “[Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session](#)” (5-3)

-
- 23** From the System View menu, select **Configuration > Software > Apply Software....**

Result: The Apply Software window appears.

Figure 5-10 Apply Software Window

DMX: Apply Software

Active Software Version: 3.0.0

Available Generics

Version	Type	Action	Date	Time
3.0.0	ALL			

Activation Scheduling

☐ Cancel Install

☒ **Install In 15 Minutes**

☐ Specify Install Date/Time:

☐ Within 24 Hrs.

Year: 2002 Month: July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Hour: 16 Minutes: 6 Seconds: 5

Apply Type

type: ☐ FORCED

OK Close Help

.....

24 Select and/or enter the following information in the Apply Software window (Figure 5-10):

1. From the **Available Generics** panel, select the software generic to be activated.
2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
 - Select **Install In 15 Minutes**
The software will install 15 minutes after you click **Okay**.
 - Select **Specify Install Date/Time** and select the **Year, Month, Date** and **Time**.
In this case, the **Hour, Minute, and Second** fields are used to enter a 24-hour clock time (13 hours and 15 minutes means that the software will apply at 1:15 PM on the date specified).
 - Select **Specify Install Date/Time and Within 24 Hours**.
In this case, the **Hour, Minute, and Second** fields are used to enter the time within 24 hours of the current date and time after you click **OK**.

Important! You may cancel the scheduled apply by returning to the **Apply Software** menu at any time before the software applies and selecting the generic and **Cancel Install** and then clicking **OK**.

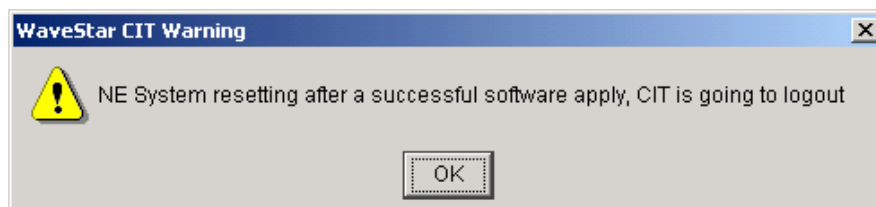
3. Click **OK**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 25 After approximately 15 minutes the apply is complete.

Result: The following warning screen appears, click **OK**. The System View closes.

Important! If the WaveStar® CIT Network View is unresponsive, perform a shut-down using Windows Task Manager to End the WaveStar® CIT.



Important! Following a Metropolis® DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

-
- 26 Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and re-log in to your Metropolis® DMX shelf.

Result: The title bars of the System View and the legal notice should both reflect the current NE software generic, R3.0.0.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

.....

27 Is the Generic Software Version correct?

If...	Then...
Yes	Continue with Step 28 .
No	Contact your support center.

.....

28 Is this software generic to be installed on other nodes in this network?

If...	Then...
Yes	Proceed to “ Task 610: Release 3.0.0 Software Generic Copy to Remote Shelf (In-Service System) ” (5-87).
No	STOP! END OF TASK.

.....

END OF STEPS

.....



Task 610: Release 3.0.0 Software Generic Copy to Remote Shelf (In-Service System)

Purpose Use this task to copy and apply the new R3.0.0 software generic to a remote NE from a local Metropolis® DMX shelf.

Important! This task requires that the software generic to be copied is installed in the dormant area of the local Metropolis® DMX shelf.

Required equipment The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Wrist strap
- Cable to connect the PC to Metropolis® DMX
- Working copy of the new system generic software program on CD-ROM
- Current *Metropolis® DMX Access Multiplexer Software Release Description* for the software generic being installed.

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301 and [“Task 609: Release 3.0.0 Software Generic Upgrade for Local Shelf \(In-Service System\)” \(5-67\)](#).

Before you begin Before beginning the software installation, refer to the *Metropolis® DMX Access Multiplexer Software Release Description* for the software being installed for a description of any special considerations required when installing this version of the software.

Important! A privileged login is required to perform this task.

This task uses the *cpy-prgm* command to copy a software generic from a local in-service Metropolis® DMX shelf to the following types of remote NEs:

- Metropolis® DMX
- Metropolis® DMXpress
- DDM-2000 OC-3
- DDM-2000 OC-12
- DDM-2000 FiberReach

Important! For remote copy, it is assumed that the local shelf has already been upgraded and the software has been installed as a dormant copy.

Task Complete the following steps to copy system software from a local Metropolis® DMX shelf to another NE.

-
- 1 If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13)

-
- 2 Do you want to use remote copy (**cpy-prgm**) or FTP (**cpy-mem**)?

Important! Remote copy requires that the desired generic be present on the local shelf to which you are logged in.
FTP requires that the remote shelf be running release 2.0.x or later.

If...	Then...
Remote copy (cpy-prgm)	Continue with Step 3 .
FTP (cpy-mem)	Proceed to “ Task 618: Release 3.0.0 Software Generic Download and Upgrade via FTP (In-Service System) ” (5-159).

-
- 3 Connect the PC to the front LAN or serial port, establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and log in to the local shelf.

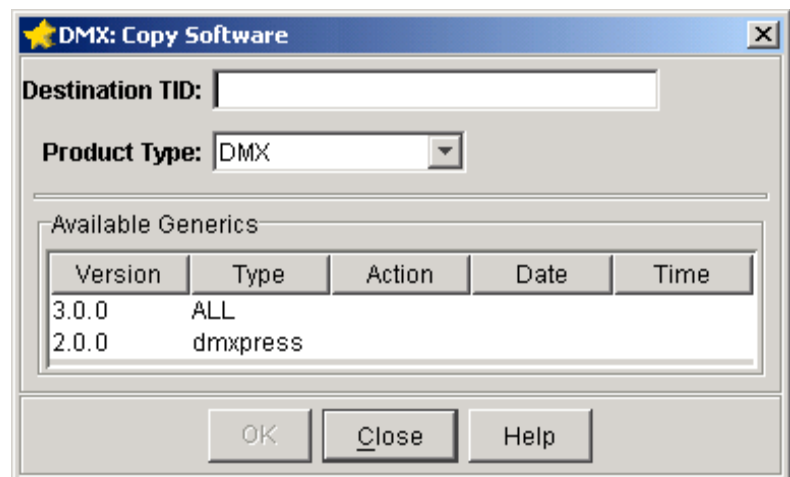
Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

.....

- 4 From the System View menu, select **Configuration > Software > Copy Software....**

Result: The Copy Software window appears.

Figure 5-11 Example of Copy Software Window



.....

5 From the Copy Software Window ([Figure 5-11](#)), provision the following fields accordingly:

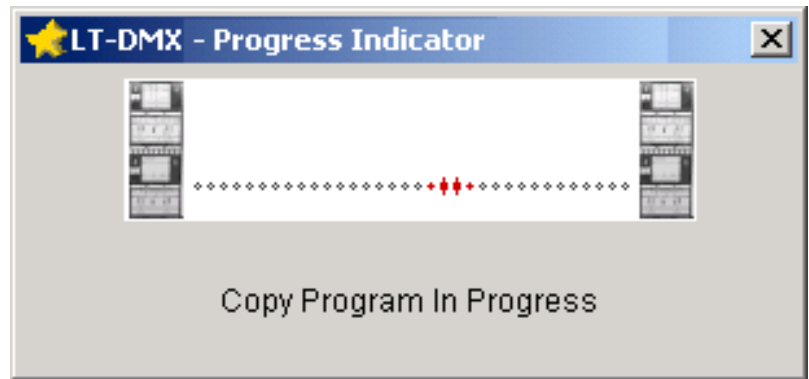
1. In the **Destination TID:** field, type the TID of the remote NE to which you wish to copy the NE Generic Software.

Important! Currently, Metropolis® DMX is the only product that can store a software generic for Metropolis® DMXpress, DDM-2000 OC-3, DDM-2000 OC-12, or FiberReach. For example, if your remote NE is a Metropolis® DMXpress shelf, then your software generic type must also be Metropolis® DMXpress.

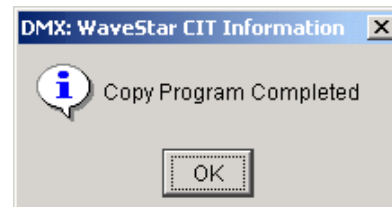
2. In the pull-down menu entitled **Program Type:** select the type of software that you are copying. Your choices are
 - DMX
 - DMXpress
 - DDM-2000 OC-3
 - DDM-2000 OC-12
 - FIBER REACH
3. In the **Available Generics** panel, select one of the generics (currently installed on the local Metropolis® DMX) that you wish to copy to the remote NE. The type of software can be identified by the following entry in the TYPE column
 - ALL = Metropolis® DMX
 - dmexpress = Metropolis® DMXpress
 - ddmoc3 = DDM OC-3
 - ddmoc12 = DDM-2000 OC-12
 - fbrrch = FIBER REACH
4. Click **OK**.

Result: The following confirmation message appears: *Execution of Provision may affect the NE service. Do you wish to execute this command?*
Click **Yes**.

Important! While the copy is in progress, the following window is present.



- 6 When the copy is complete, the following window appears. Click **OK**.



Result: The software is now in the dormant area of the remote NE and you are ready to continue.

- 7 Do you wish to apply (activate) the software generic that you recently downloaded to the dormant area of the remote NE?

If...	Then...
Yes	Disconnect from your local NE. Continue with Step 8 .
No	Proceed to Step 15 .

.....

8 Is the remote NE either a Metropolis[®] DMX or Metropolis[®] DMXpress shelf?

If...	Then...
Yes	Continue with Step 9 .
No	Refer to the appropriate DDM-2000 product documentation.

.....

9 Log in to the remote Metropolis[®] DMX or Metropolis[®] DMXpress to which you copied the software.
Specify the following when establishing the WaveStar[®] CIT session:

- **NE Name:** field: TID of the remote NE
- **NE Type:** field: Metropolis DMX Access Multiplexer or Metropolis DMXpress Access Multiplexer
- **Connection Type:** field: OSI or Serial

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar[®] CIT Session” \(5-3\)](#)

Result: After a few moments, the NE with the TID you specified appears in the System View.

- 10 From the **System View** menu, select **Configuration > Software > Apply Software....**

Important! The TID of the remote shelf will not be the same as your local shelf. [Figure 5-12](#) is only an example of the window. In this example, your remote NE is a Metropolis® DMXpress shelf.

Result: The Apply Software window appears.

Figure 5-12 Example of Apply Software Window

LT-DMXPRESS: Apply Software

Active Software Version: 2.0.0

Available Generics

Version	Type	Action	Date	Time
2.0.0	ALL			

Activation Scheduling

☐ Cancel Install

☒ Install In 15 Minutes

☐ Specify Install Date/Time:

☐ Within 24 Hrs.

Year: 2002 Month: July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Hour: 13 Minutes: 12 Seconds: 11

Apply Type

type: ☐ FORCED

OK Close Help

.....

11 Select and/or enter the following information in the Apply Software window (Figure 5-12):

1. From the **Available Generics** panel, select the software generic to be activated.
2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
 - Select **Install In 15 Minutes**
The software will install 15 minutes after you click **Okay**.
 - Select **Specify Install Date/Time** and select the **Year, Month, Date** and **Time**.
In this case, the **Hour, Minute, and Second** fields are used to enter a 24-hour clock time (13 hours and 15 minutes means that the software will apply at 1:15 PM on the date specified).
 - Select **Specify Install Date/Time and Within 24 Hours**.
In this case, the **Hour, Minute, and Second** fields are used to enter the time within 24 hours of the current date and time after you click **OK**.

Important! You may cancel the scheduled apply by returning to the **Apply Software** menu at any time before the software applies and selecting the generic and **Cancel Install** and then clicking **OK**.

3. Click **OK**.

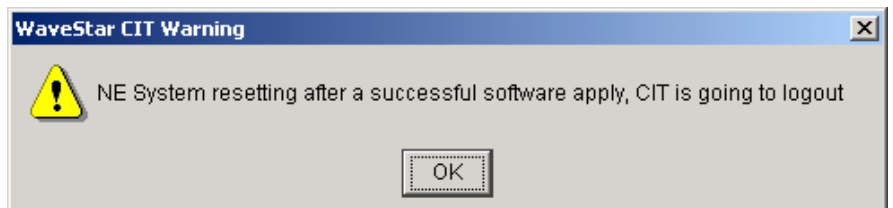
Result: The following confirmation message appears: *Execution of Provision may affect the NE service. Do you wish to execute this command?*

Click **Yes**.

-
- 12** After approximately 15 minutes the apply is complete.

Result: The following warning screen appears, click **OK**. The System View closes.

Important! If the WaveStar® CIT Network View is unresponsive, perform a shut-down using Windows Task Manager to End the WaveStar® CIT.



Important! Following a system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

-
- 13** Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and re-log in to your Metropolis® DMX or Metropolis® DMXpress shelf.

Result: The title bars of the System View and the legal notice should both reflect the current NE software generic.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

.....
14 Is the Generic Software Version correct?

If...	Then...
Yes	Continue with Step 15 .
No	Contact your support center.

.....
15 Repeat this task from [Step 2](#) for each remote shelf in the network that you wish to upgrade.

.....
E N D O F S T E P S
.....
☐

Task 611: Install Software Generic Program in New Metropolis® DMX Shelf Installation

Purpose Use this task to install software generic in a new factory-fresh SYSCTL (LNW1).

Important! This task uses the *cpy-mem* command via FTP to install a new software program in a new Metropolis® DMX shelf.

Required equipment The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Wrist Strap
- Cables to connect the PC to Metropolis® DMX
- Working copy of the new system generic software program on CD-ROM
- Current *Metropolis® DMX Access Multiplexer Software Release Description* for the software generic being installed.

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

Before you begin Before you begin this task:

1. Verify that new software generic program is available.
2. Refer to the *Metropolis® DMX Access Multiplexer Software Release Description* for a description of any special considerations required when installing this version of software
3. Unseat all circuit packs in the shelf, except the SYSCTL to which you are downloading the new software generic.
4. Determine the IP address assigned to LAN card (in the WaveStar® CIT) that will be used to connect to the shelf.

Important! A privileged login is required to perform this task.

Task Complete the following steps to install software generic program in a new shelf installation with only a factory-fresh SYSCTL installed.

-
- 1 If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [“Task 601: Install Generic and WaveStar® CIT Software on the PC” \(5-13\)](#)

.....

- 2 Double-click on **DMX 3.0.0 Downloads** folder on you PC desktop.

Result: The *DMX 3.0.0 Downloads* folder contains the following two icons.

Figure 5-13 Contents of DMX 3.0.0 Downloads Folder



-
- 3** Verify that only a factory-fresh SYSCTL is installed in your Metropolis® DMX shelf; no other circuit packs should be seated in the shelf.

Important! A factory-fresh SYSCTL circuit pack does not contain a software generic; it only contains the information loaded at the factory (boot code).

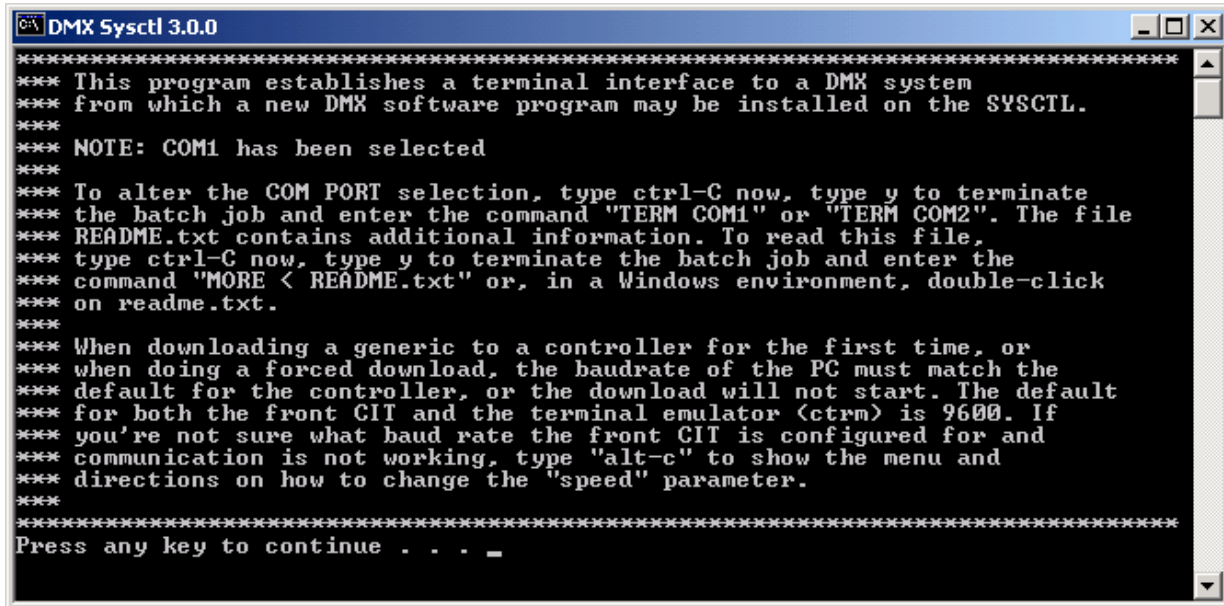
.....

- 4** Observe the **IND** display on the SYSCTL; the display indicates which boot code is installed in the SYSCTL.

Important! Installing the R3.0.0 generic in a SYSCTL with a 1.x boot code requires two downloads. The first download ([Step 5](#) through [Step 9](#)), installs the R3.0.0 unbundled generic, which installs the 3.x bootcode on the SYSCTL. The second download (beginning in [Step 10](#)) installs the R3.0.0 bundled generic which includes the DS1, DS3, and Ethernet circuit pack software.

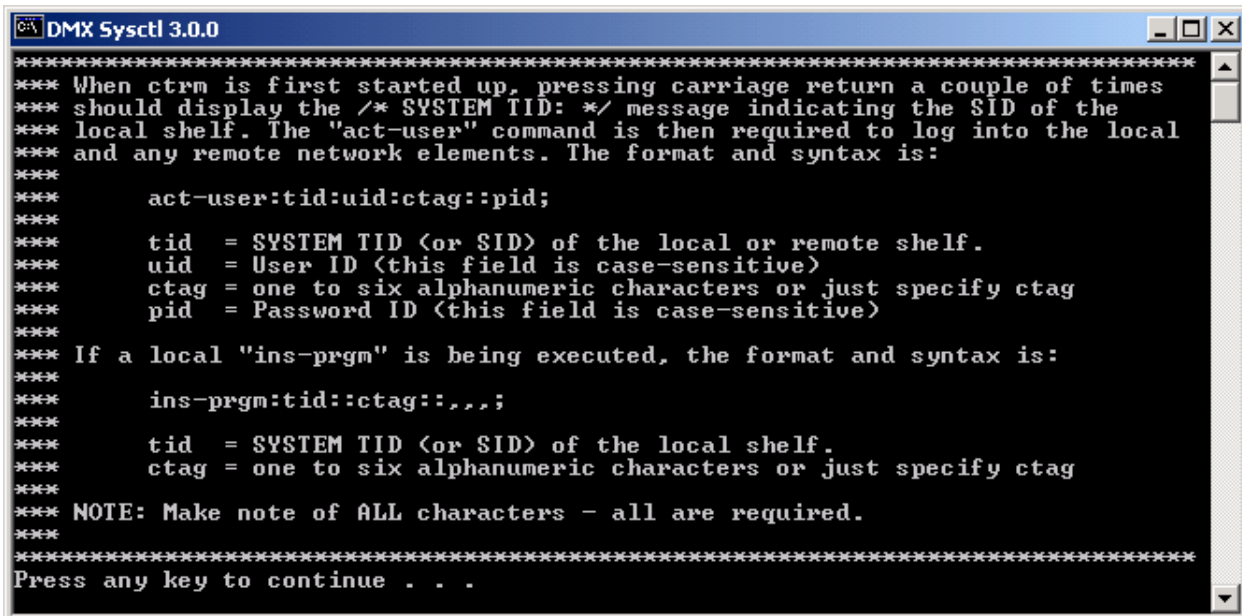
If...	Then...
P (boot code is 1.1)	Double-click on the <i>DMX Sysctl 3.0.0</i> icon. Continue with Step 5 .
alternating P and 2 (boot code is 2.0)	Proceed to Step 25 .
alternating P and 2 , and 1 (boot code is 2.1)	
alternating P and 3 (boot code is 3.0)	

5 Follow the instructions on the subsequent screens.



DMX Sysctl 3.0.0

```
*****
*** This program establishes a terminal interface to a DMX system
*** from which a new DMX software program may be installed on the SYSCIL.
***
*** NOTE: COM1 has been selected
***
*** To alter the COM PORT selection, type ctrl-C now, type y to terminate
*** the batch job and enter the command "TERM COM1" or "TERM COM2". The file
*** README.txt contains additional information. To read this file,
*** type ctrl-C now, type y to terminate the batch job and enter the
*** command "MORE < README.txt" or, in a Windows environment, double-click
*** on readme.txt.
***
*** When downloading a generic to a controller for the first time, or
*** when doing a forced download, the baudrate of the PC must match the
*** default for the controller, or the download will not start. The default
*** for both the front CIT and the terminal emulator (ctrm) is 9600. If
*** you're not sure what baud rate the front CIT is configured for and
*** communication is not working, type "alt-c" to show the menu and
*** directions on how to change the "speed" parameter.
***
*****
Press any key to continue . . . _
```



DMX Sysctl 3.0.0

```
*****
*** When ctrm is first started up, pressing carriage return a couple of times
*** should display the /* SYSTEM TID: */ message indicating the SID of the
*** local shelf. The "act-user" command is then required to log into the local
*** and any remote network elements. The format and syntax is:
***
***   act-user:tid:uid:ctag::pid;
***
***   tid  = SYSTEM TID (or SID) of the local or remote shelf.
***   uid  = User ID (this field is case-sensitive)
***   ctag = one to six alphanumeric characters or just specify ctag
***   pid  = Password ID (this field is case-sensitive)
***
*** If a local "ins-prgm" is being executed, the format and syntax is:
***
***   ins-prgm:tid::ctag::,,,;
***
***   tid  = SYSTEM TID (or SID) of the local shelf.
***   ctag = one to six alphanumeric characters or just specify ctag
***
*** NOTE: Make note of ALL characters - all are required.
***
*****
Press any key to continue . . .
```

```

DMX Sysctl 3.0.0
*****
*** After completion of the "ins-prgm" command, the user should log back into
*** the shelf using the "act-user" command and execute the "apply" command to
*** schedule when the new software should be installed. The format and syntax
*** is:
***
***      apply:tid::ctag::[time],[date],;
***
***      tid = SYSTEM TID (or SID) of the local or remote shelf.
***      ctag = one to six alphanumeric characters or just specify ctag
***      time = HHMMSS (e.g. 220000 is equal to 10:00PM)
***      date = YYMMDD (e.g. 010425 is equal to April 25, 2001)
***
*** If time/date are NOT specified, the apply will be scheduled 15 minutes
*** from when the command is received.
***
*** NOTE: The square brackets indicates that the time and date fields
***       are not required and are not part of the syntax. However, all
***       other characters within the command must be specified.
***
*****
Press any key to continue . . . _

```

```

DMX Sysctl 3.0.0

METROPOLIS DMX NETWORK USER INTERFACE
      Version 1.1,
      Lucent Technologies
      All Rights Reserved.

  Cnfg   Speed   Char   Stop   Parity   Flow   Local
  ----   ----   ----   ----   ----   ----   ----
   * 1    9600    8      1     none    xon/xoff  n
   2    9600    8      1     none    xon/xoff  n

Interface ready. <Type Alt-h for help.>
Communications established

```

-
- 6 Unseat the SYSCTL circuit pack and using the appropriate cable, connect the **COM1** port of the PC to the **CIT RS-232** serial port on the faceplate of the SYSCTL circuit pack.
-

- 7 Reseat the SYSCTL circuit pack.

Result: All the LEDs on the SYSCTL light and the the **IND** display shows **8.** briefly and the **P** returns.

The software begins to download automatically from the WaveStar® CIT to the SYSCTL.

Important! The download takes approximately 45 minutes to complete. After the download completes, the software is automatically applied (installed).

You may view the progress of the download in following the term screen.

```

DMX Sysctl 3.0.0

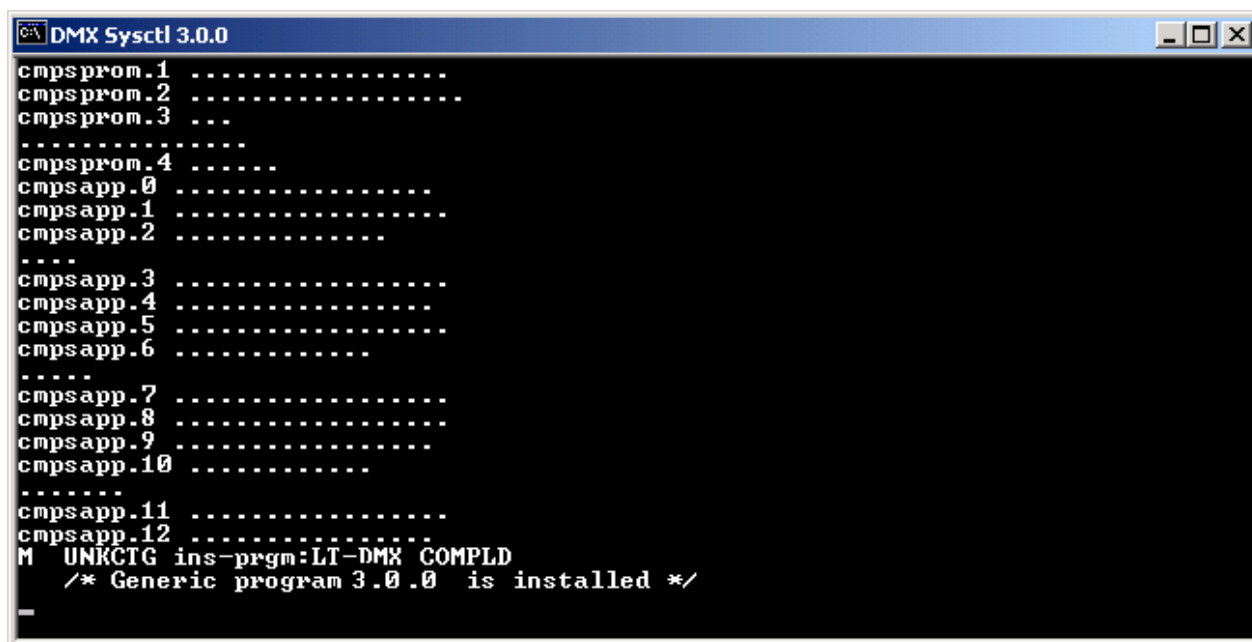
  Cnfg   Speed   Char   Stop   Parity   Flow   Local
  ----   ----   ----   ----   ----   ----   ----
  * 1     9600     8      1    none    xon/xoff  n
    2     9600     8      1    none    xon/xoff  n

Interface ready. <Type Alt-h for help.>
Communications established

  Searching for optimal transfer rate.
Handshake established at 38400 baud
shelf boot version = 3

In progress ...
cmpsprom.0 .....
cmpsprom.1 .....
  
```

-
- 8 After the download and installation are complete, verify that your term screen returned the following confirmation.



```
DMX Sysctl 3.0.0
cmpsprom.1 .....
cmpsprom.2 .....
cmpsprom.3 ...
.....
cmpsprom.4 .....
cmpsapp.0 .....
cmpsapp.1 .....
cmpsapp.2 .....
....
cmpsapp.3 .....
cmpsapp.4 .....
cmpsapp.5 .....
cmpsapp.6 .....
.....
cmpsapp.7 .....
cmpsapp.8 .....
cmpsapp.9 .....
cmpsapp.10 .....
.....
cmpsapp.11 .....
cmpsapp.12 .....
M UNKCTG ins-prgm:LT-DMX COMPLD
/* Generic program 3.0.0 is installed */
```

.....

9 To confirm that the downloaded software has been successfully applied, retrieve the generic software version ID:

1. Depress and hold the **ACO TEST** push-button on the SYSCTL for about 4 seconds.

Result: All LEDs on the SYSCTL light. **8.** appears in the **IND** display on the SYSCTL.

2. Release the **ACO TEST** push-button on the SYSCTL when the **8.** disappears in the **IND** display.

Result: The current software generic (3.0.0) appears in the **IND** display on the SYSCTL and the SYSCTL LEDs return to their previous status.

.....

10 Do you have the capability for TCP/IP connectivity?

If...	Then...
Yes	Proceed to Step 25 .
No	Continue with Step 11 .

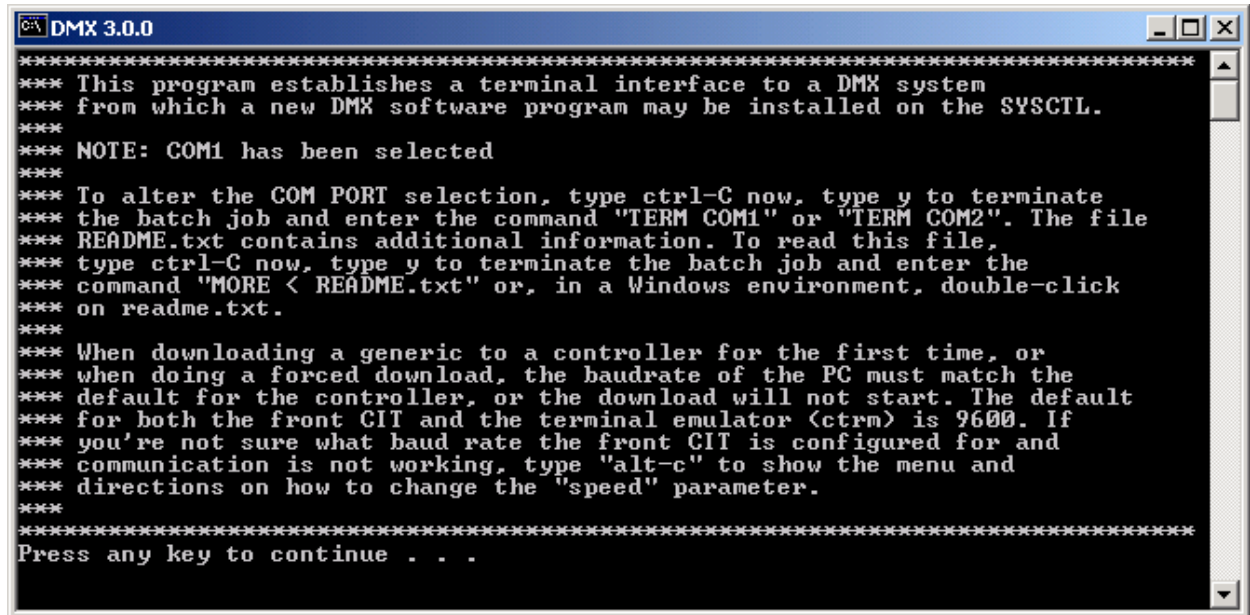
Important! TCP/IP connectivity is preferred. Downloading software via FTP download (which requires TCP/IP connectivity) takes approximately 10 minutes. Downloading software using INS-PRGM takes approximately 45 minutes.

.....

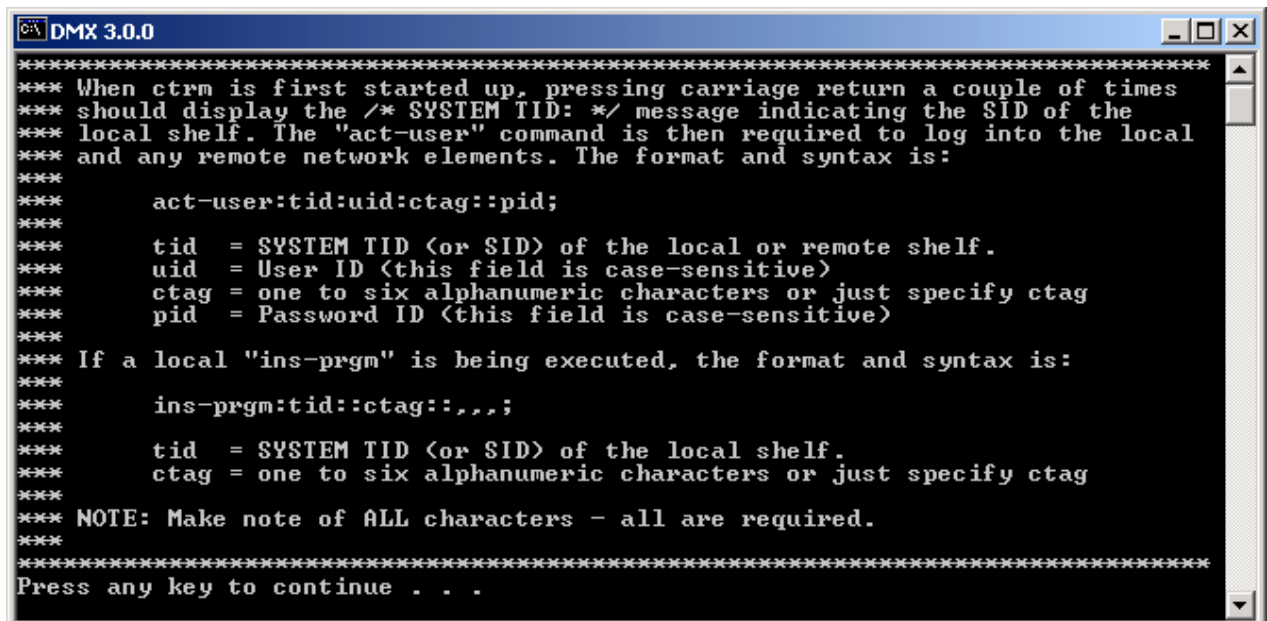
11 Verify that the **COM1** port of your PC is still connected to the **CIT RS-232** serial port on the faceplate of the SYSCTL circuit pack.

- 12 Double click on on the *DMX 3.0.0* icon within the **DMX 3.0.0 Downloads** folder on you PC desktop. (Refer to [Step 2.](#))

Follow the instructions on the subsequent screens.



```
DMX 3.0.0
*****
*** This program establishes a terminal interface to a DMX system
*** from which a new DMX software program may be installed on the SYSCTL.
***
*** NOTE: COM1 has been selected
***
*** To alter the COM PORT selection, type ctrl-C now, type y to terminate
*** the batch job and enter the command "TERM COM1" or "TERM COM2". The file
*** README.txt contains additional information. To read this file,
*** type ctrl-C now, type y to terminate the batch job and enter the
*** command "MORE < README.txt" or, in a Windows environment, double-click
*** on readme.txt.
***
*** When downloading a generic to a controller for the first time, or
*** when doing a forced download, the baudrate of the PC must match the
*** default for the controller, or the download will not start. The default
*** for both the front CIT and the terminal emulator (ctrm) is 9600. If
*** you're not sure what baud rate the front CIT is configured for and
*** communication is not working, type "alt-c" to show the menu and
*** directions on how to change the "speed" parameter.
***
*****
Press any key to continue . . .
```



```
DMX 3.0.0
*****
*** When ctrm is first started up, pressing carriage return a couple of times
*** should display the /* SYSTEM TID: */ message indicating the SID of the
*** local shelf. The "act-user" command is then required to log into the local
*** and any remote network elements. The format and syntax is:
***
***   act-user:tid:uid:ctag::pid;
***
***   tid  = SYSTEM TID (or SID) of the local or remote shelf.
***   uid  = User ID (this field is case-sensitive)
***   ctag = one to six alphanumeric characters or just specify ctag
***   pid  = Password ID (this field is case-sensitive)
***
*** If a local "ins-prgm" is being executed, the format and syntax is:
***
***   ins-prgm:tid::ctag::;
***
***   tid  = SYSTEM TID (or SID) of the local shelf.
***   ctag = one to six alphanumeric characters or just specify ctag
***
*** NOTE: Make note of ALL characters - all are required.
***
*****
Press any key to continue . . .
```

```

DMX 3.0.0
*****
*** After completion of the "ins-prgm" command, the user should log back into
*** the shelf using the "act-user" command and execute the "apply" command to
*** schedule when the new software should be installed. The format and syntax
*** is:
***
***      apply:tid::ctag::[time],[date],;
***
***      tid  = SYSTEM TID <or SID> of the local or remote shelf.
***      ctag = one to six alphanumeric characters or just specify ctag
***      time = HHMMSS <e.g. 220000 is equal to 10:00PM>
***      date = YYMMDD <e.g. 010425 is equal to April 25, 2001>
***
*** If time/date are NOT specified, the apply will be scheduled 15 minutes
*** from when the command is received.
***
*** NOTE: The square brackets indicates that the time and date fields
***       are not required and are not part of the syntax. However, all
***       other characters within the command must be specified.
***
*****
Press any key to continue . . . _

```

```

DMX 3.0.0

METROPOLIS DMX NETWORK USER INTERFACE
Version 1.1,
Lucent Technologies
All Rights Reserved.

  Cnfg   Speed   Char   Stop   Parity   Flow   Local
  ----   ----   ----   ----   ----   ----   ----
* 1      9600     8       1     none    xon/xoff  n
  2      9600     8       1     none    xon/xoff  n

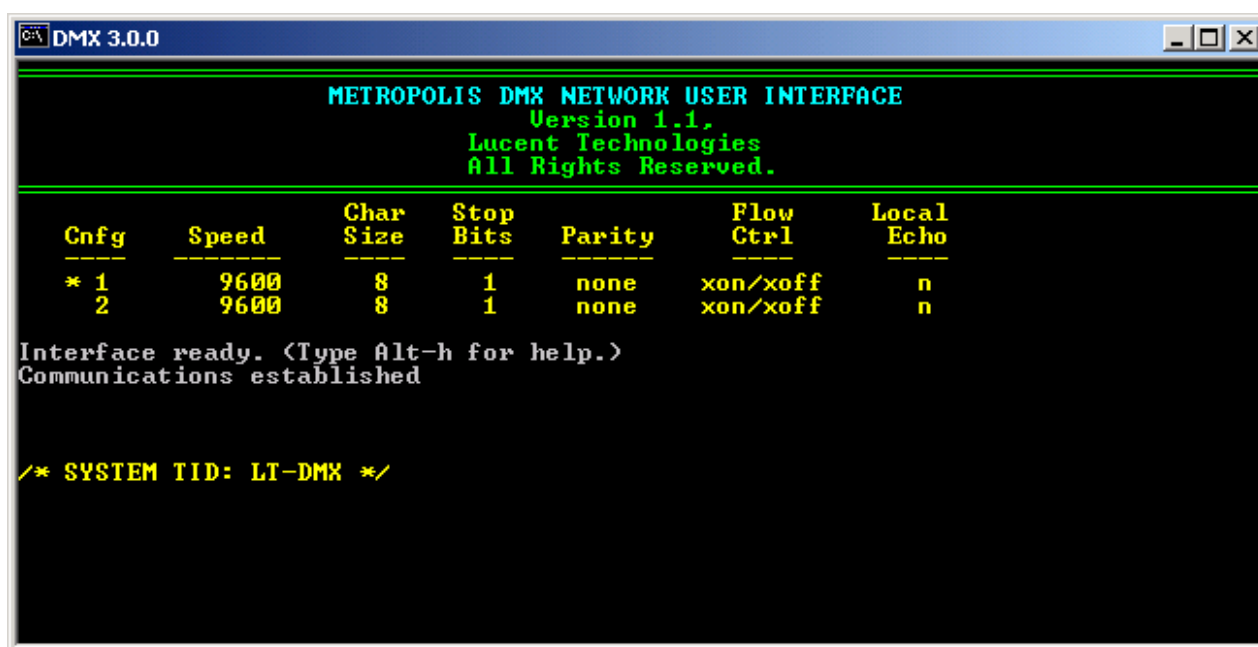
Interface ready. <Type Alt-h for help.>
Communications established

```


13 Press Enter.

Result: The following screen appears with the following response
/* SYSTEM TID: LT-DMX */

Important! LT-DMX is the default TID. Your TID may be different.



The screenshot shows a window titled "DMX 3.0.0" with a black background and green text. The text displays the "METROPOLIS DMX NETWORK USER INTERFACE" version 1.1 by Lucent Technologies. It includes a table of configuration settings and a status message.

Cnfg	Speed	Char Size	Stop Bits	Parity	Flow Ctrl	Local Echo
* 1	9600	8	1	none	xon/xoff	n
2	9600	8	1	none	xon/xoff	n

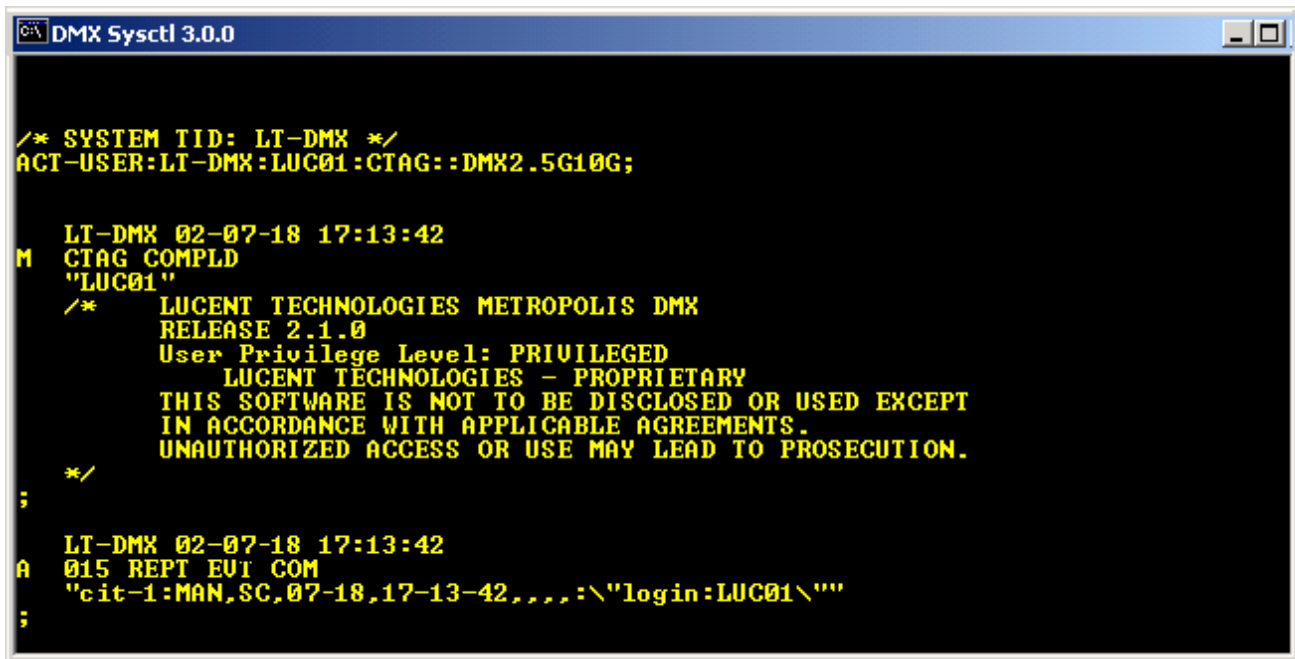
Interface ready. (Type Alt-h for help.)
Communications established

/* SYSTEM TID: LT-DMX */

-
- 14 Press Enter and type ACT-USER:LT-DMX:LUC01:CTAG::DMX2.5G10G;

Important! Replace LT-DMX with your TID.

Result: The following screen appears. Note the release is 3.0.0 because the unbundled software generic was applied.



```
DMX Sysctl 3.0.0

/* SYSTEM TID: LT-DMX */
ACT-USER:LT-DMX:LUC01:CTAG::DMX2.5G10G;

LT-DMX 02-07-18 17:13:42
M CTAG COMPLD
"LUC01"
/* LUCENT TECHNOLOGIES METROPOLIS DMX
   RELEASE 2.1.0
   User Privilege Level: PRIVILEGED
   LUCENT TECHNOLOGIES - PROPRIETARY
   THIS SOFTWARE IS NOT TO BE DISCLOSED OR USED EXCEPT
   IN ACCORDANCE WITH APPLICABLE AGREEMENTS.
   UNAUTHORIZED ACCESS OR USE MAY LEAD TO PROSECUTION.
  */
;

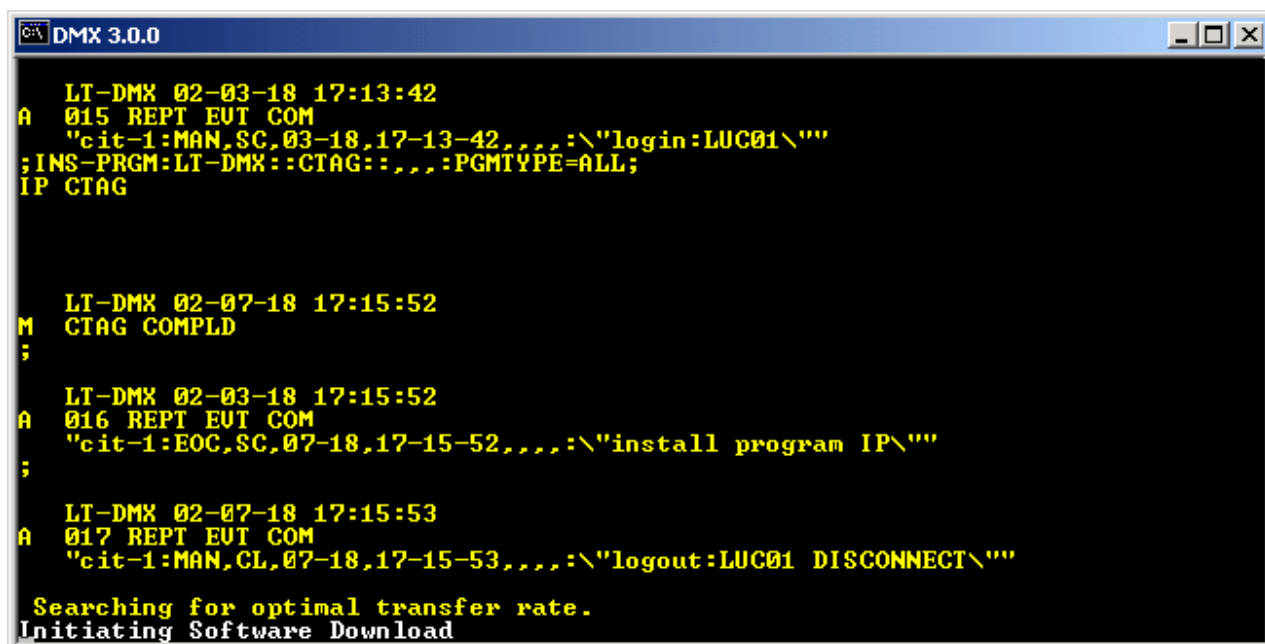
LT-DMX 02-07-18 17:13:42
A 015 REPT EVI COM
"cit-1:MAN,SC,07-18,17-13-42,,,,:\login:LUC01\""
```

15 Enter `INS-PRGM:LT-DMX::CTAG::,,,PGMTYPE=ALL;`

Result: System returns CTAG COMPLD and initiates the software download.

Important! Replace LT-DMX with your TID.

The software download takes approximately 45 minutes.



```
DMX 3.0.0

LT-DMX 02-03-18 17:13:42
A 015 REPT EUT COM
"cit-1:MAN,SC,03-18,17-13-42,,,,:\login:LUC01\"
;INS-PRGM:LT-DMX::CTAG::,,,PGMTYPE=ALL;
IP CTAG

LT-DMX 02-07-18 17:15:52
M CTAG COMPLD
;

LT-DMX 02-03-18 17:15:52
A 016 REPT EUT COM
"cit-1:EOC,SC,07-18,17-15-52,,,,:\install program IP\"
;

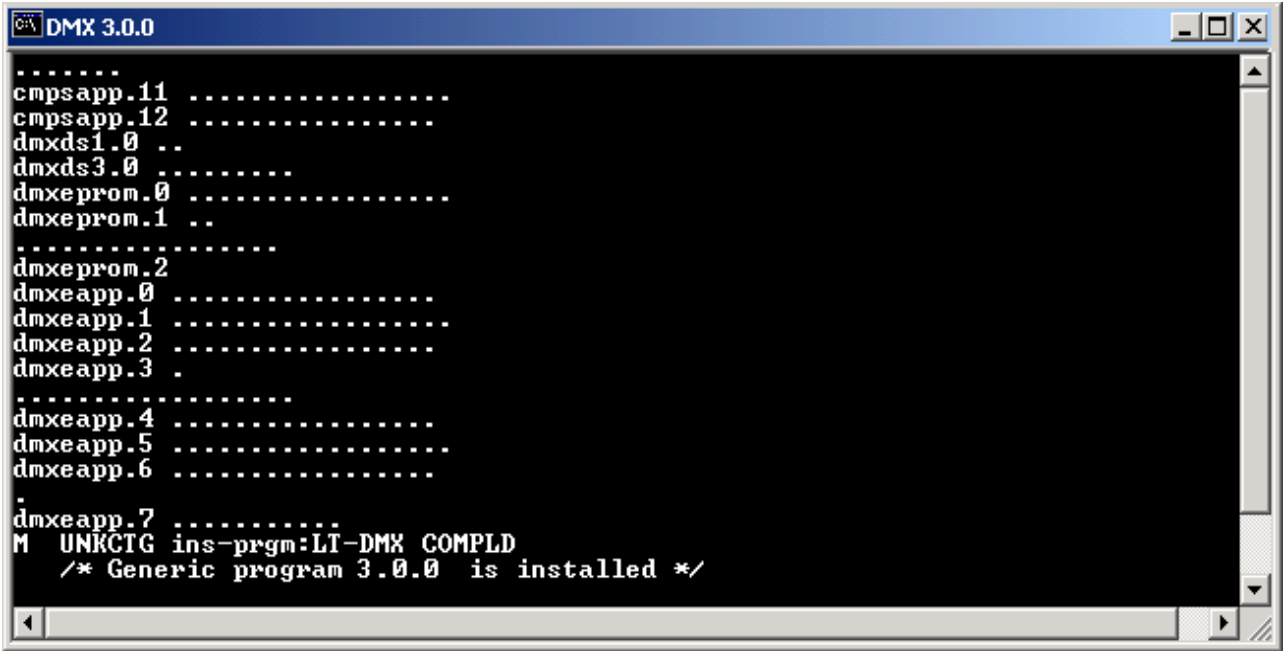
LT-DMX 02-07-18 17:15:53
A 017 REPT EUT COM
"cit-1:MAN,CL,07-18,17-15-53,,,,:\logout:LUC01 DISCONNECT\"

Searching for optimal transfer rate.
Initiating Software Download
```

.....

16 When the software download is complete, the following screen appears.

Important! The downloaded software has been installed as a dormant file.



.....

17 Exit the Term program using **ALT+F2**. Continue with [Step 18](#).

.....

18 Do you wish to apply (activate) the software generic that you recently downloaded to the dormant area of the Metropolis® DMX shelf?

If...	Then...
Yes	Continue with Step 19 .
No	STOP! END OF TASK.

.....

19 Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and log in to your Metropolis® DMX shelf.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

- 20 From the System View menu, select **Configuration > Software > Apply Software....**

Result: The Apply Software window appears.

Figure 5-14 Apply Software Window

DMX: Apply Software

Active Software Version: 3.0.0

Available Generics

Version	Type	Action	Date	Time
3.0.0	ALL			

Activation Scheduling

☐ Cancel Install

☒ **Install In 15 Minutes**

☐ Specify Install Date/Time:

☐ Within 24 Hrs.

Year: 2002 Month: July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Hour: 16 Minutes: 6 Seconds: 5

Apply Type

type: ☐ FORCED

OK Close Help

.....

21 Select and/or enter the following information in the Apply Software window (Figure 5-14):

1. From the **Available Generics** panel, select the software generic to be activated.
2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
 - Select **Install In 15 Minutes**
The software will install 15 minutes after you click **Okay**.
 - Select **Specify Install Date/Time** and select the **Year, Month, Date** and **Time**.
In this case, the **Hour, Minute**, and **Second** fields are used to enter a 24-hour clock time (13 hours and 15 minutes means that the software will apply at 1:15 PM on the date specified).
 - Select **Specify Install Date/Time and Within 24 Hours**.
In this case, the **Hour, Minute**, and **Second** fields are used to enter the time within 24 hours of the current date and time after you click **OK**.

Important! You may cancel the scheduled apply by returning to the **Apply Software** menu at any time before the software applies and selecting the generic and **Cancel Install** and then clicking **OK**.

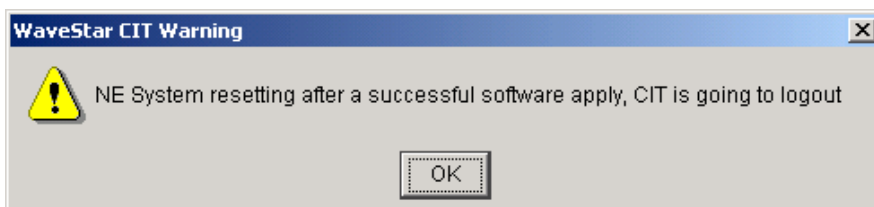
3. Click **OK**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 22** After approximately 15 minutes the apply is complete.

Result: The following warning screen appears, click **OK**. The System View closes.

Important! If the WaveStar® CIT Network View is unresponsive, perform a shut-down using Windows Task Manager to End the WaveStar® CIT.



Important! Following a Metropolis® DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

-
- 23** Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and re-log in to your Metropolis® DMX shelf.

Result: The title bars of the System View and the legal notice should both reflect the current NE software generic, R3.0.0.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

.....

24 Is the Generic Software Version correct?

If...	Then...
Yes	STOP! END OF TASK
No	Contact your support center.

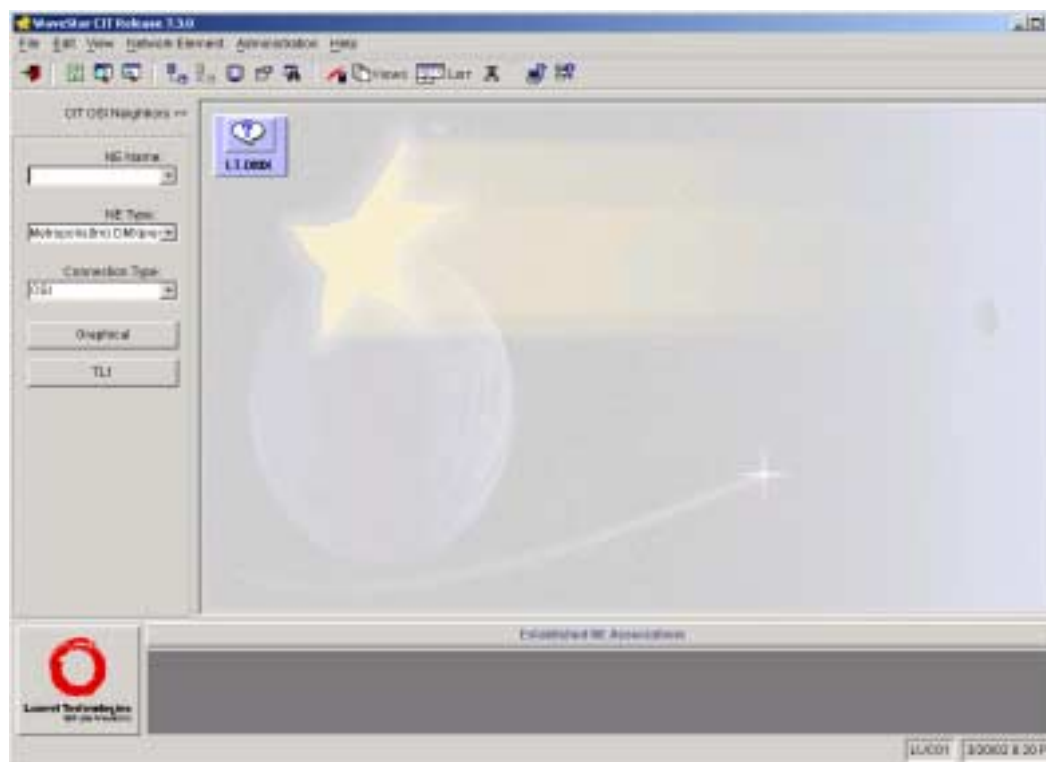
-
- 25** Connect the OSI cable from the PC's Network Interface Card (NIC) to the rear **J16 IAO LAN** port on the Metropolis® DMX shelf backplane and establish a WaveStar® CIT session.

Reference: “[Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session](#)” (5-3)

Important! Do NOT log into the shelf; only log in to the WaveStar® CIT.

Result: The following Network View appears. Click on **OSI Network Neighbors** and the CIT OSI Neighbor(s) are automatically detected.

Figure 5-15 CIT OSI Neighbor

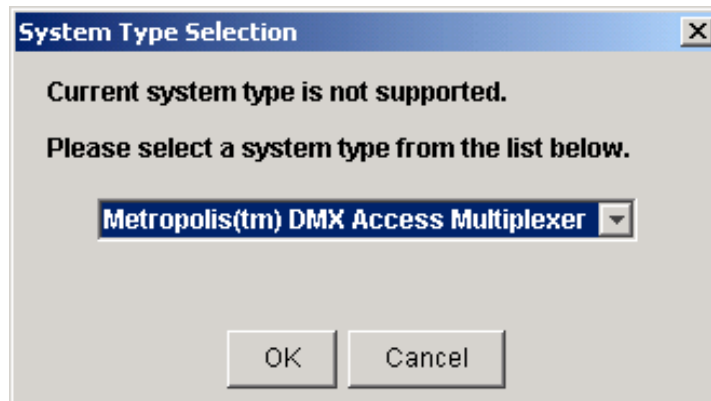


-
- 26** In the Network View ([Figure 5-15](#)), right-click on the LT-DMX NE icon and select **Graphical Using > OSI** from the resulting menu.

Result: The System Type Selection window appears.

.....

- 27** In the System Type Selection window, select Metropolis DMX Access Multiplexer and click **OK**.



Result: The NE Login Dialog window appears.

-
- 28** Enter the following in the NE Login Dialog window (login information is case sensitive) to log in to the NE:

User ID: LUC01

Password: DMX2.5G10G

Important! LUC01, LUC02, LUC03 and DMX2.5G10G are the default privileged logins/password for Metropolis® DMX. It is highly recommended that you change all three logins and passwords during your first session to preserve the security of your equipment.

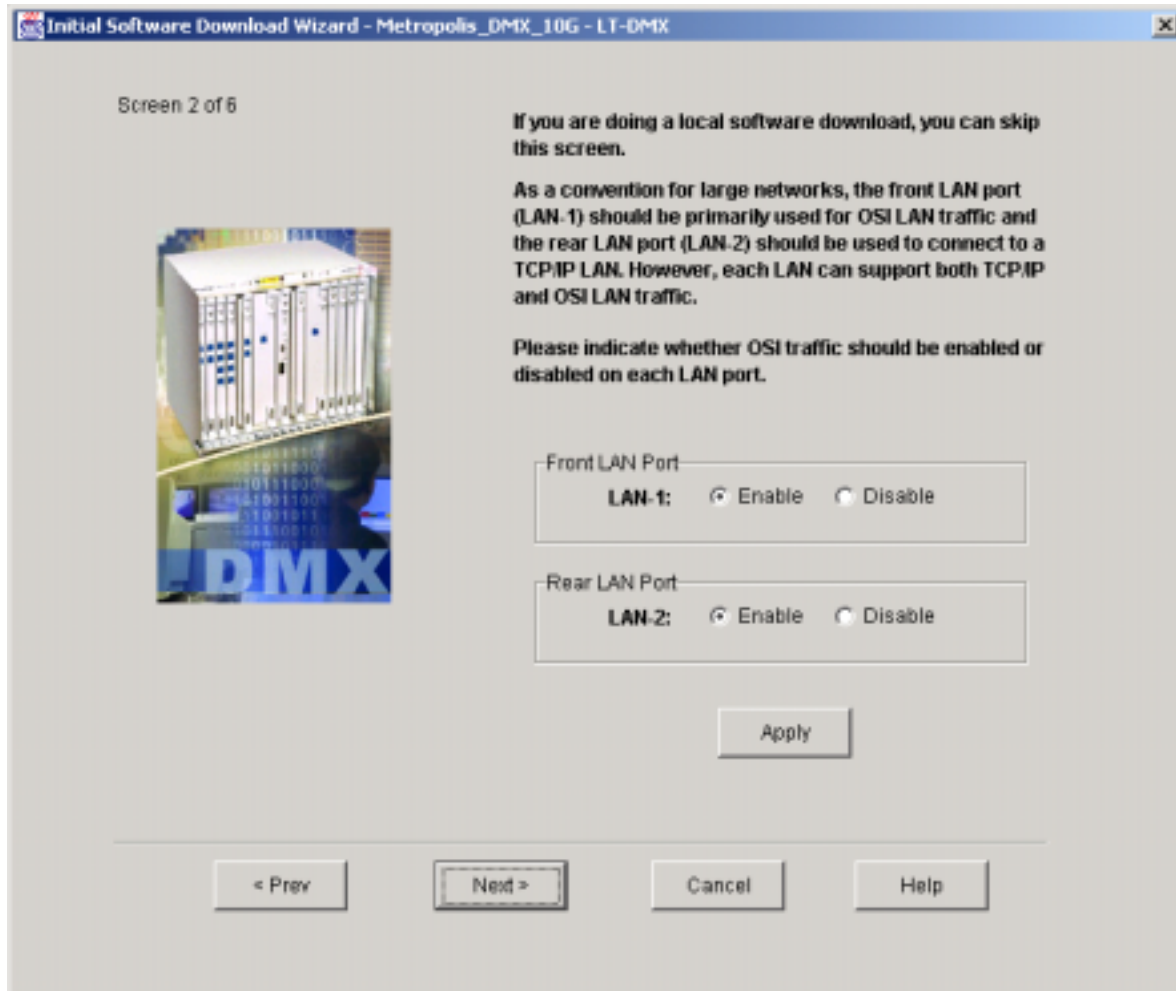
Result: After a successful login, the following welcome screen (Screen 1) appears.



.....

29 On Screen 1, read the material and click **Next**.

Result: Screen 2 appears.



- 30 Because this is a local download, skip Screen 2.
Click **Next**.

Result: Screen 3 appears.

Initial Software Download Wizard - Metropolis_DMX_10G - LT-DMX

Screen 3 of 6

Specify the IP Address, IP Subnet Mask, and IP Default Router Address for the selected LAN port. The IP Default Router Address is needed only for remote download.

Note, for the FTP Software Download transfer to be initiated, one of the lan ports must be provisioned with IP parameters and enabled. It is recommended that the rear lan port (LAN-2) be used for TCP/IP LAN traffic but either lan port will work.

LAN Port One IP Addresses

TCP/IP function: ☐ Enable ☒ Disable

IP Address:

IP Subnet Mask:

LAN Port Two IP Addresses

TCP/IP function: ☐ Enable ☒ Disable

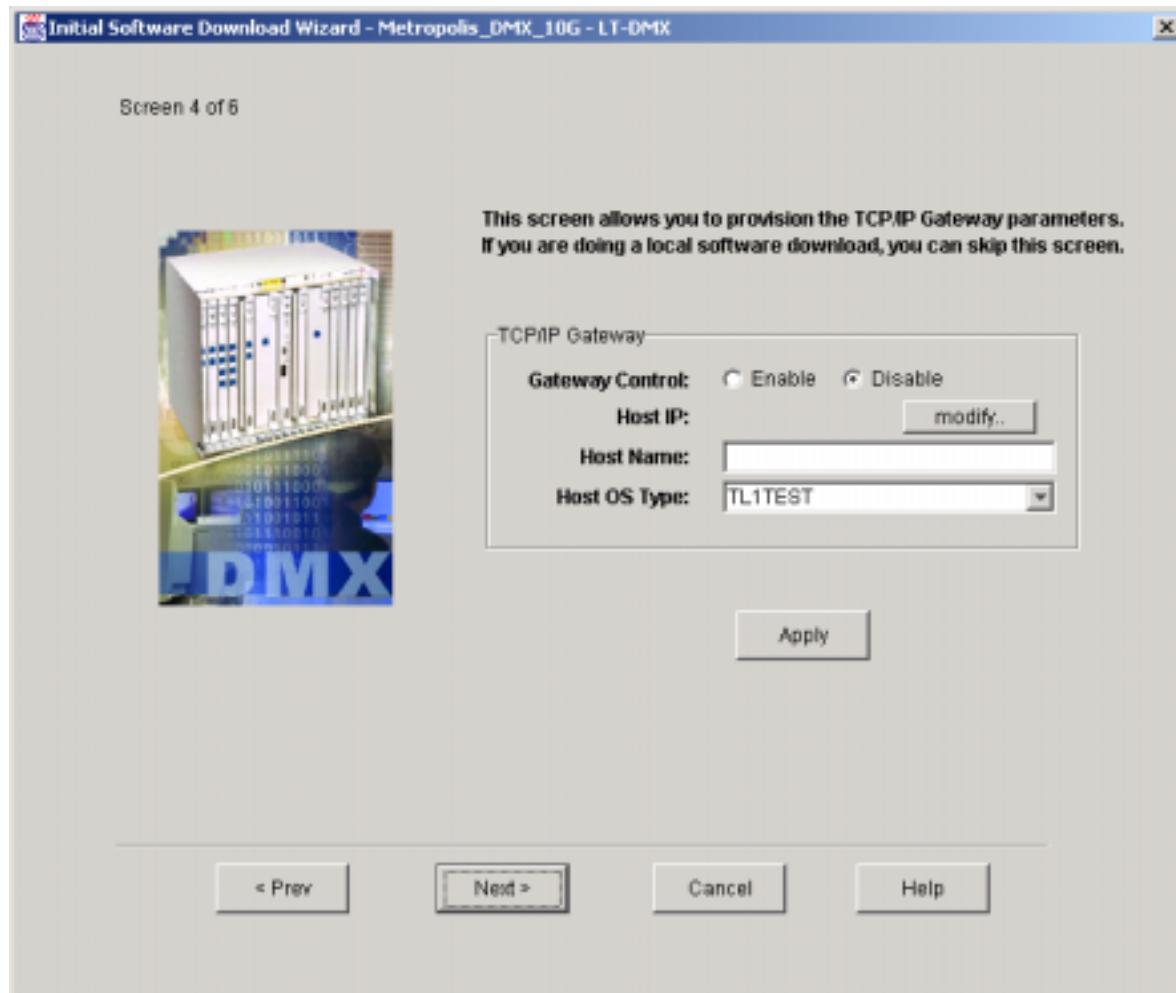
IP Address:

IP Subnet Mask:

IP Default Router Address:

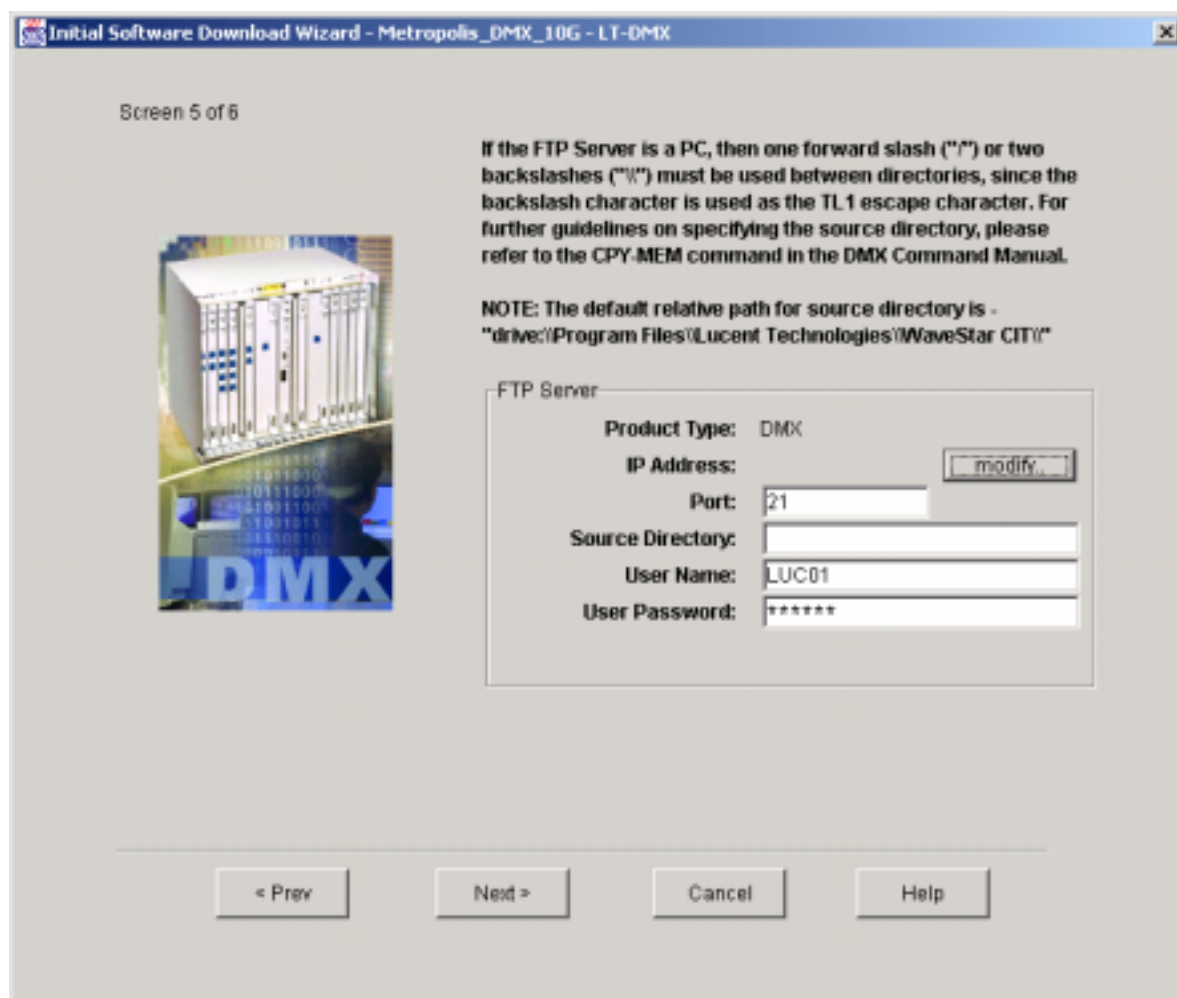
-
- 31** From Screen 3, follow the instructions to enable TCP/IP function on the LAN port(s). Click **Modify** to enter the IP Address, IP Subnet Mask, and/or IP Default Router Address. Click **Next**.

Result: Screen 4 appears.



-
- 32** This step is not required for the initial download.
Click **Next**.

Result: Screen 5 appears.



-
- 33** Follow the directions on Screen 5 to provision the information for you FTP server. Click **Next**.

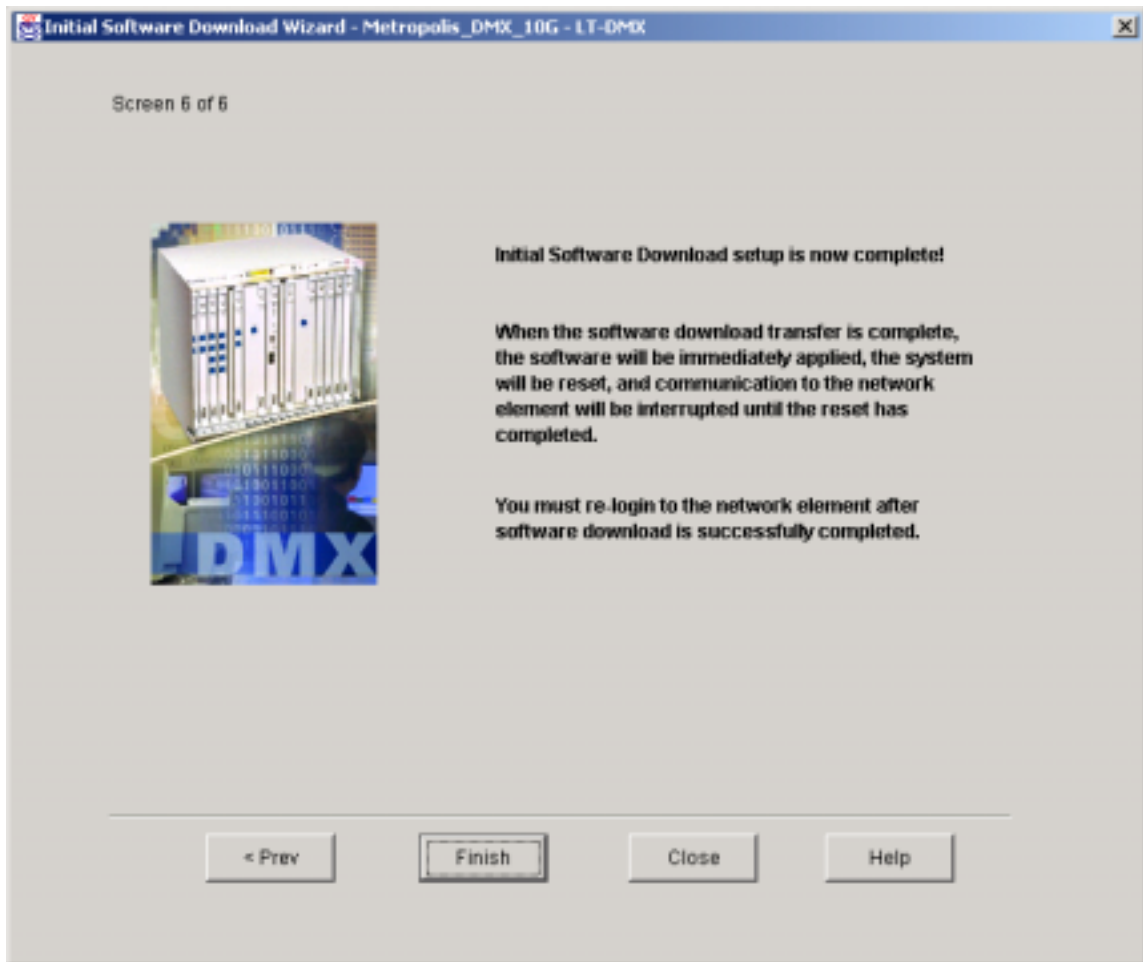
Important! If the WaveStar® CIT is the FTP server, the path of the software generic must be in the following form:

generics/dmx/3.0.0/p/

Important! If you are using the WaveStar® CIT as your FTP server, you must separate your directory structure using either “/” (as illustrated in the example above) or “\\” because TL1 interprets “\” as a character. The WaveStar® CIT fills in the beginning of the default path (C:/Program Files/Lucent Technologies/WaveStar CIT/).

If you are not using the WaveStar® CIT as your FTP server, enter the path starting from the home directory on your FTP server.

Result: Screen 6 appears.



.....

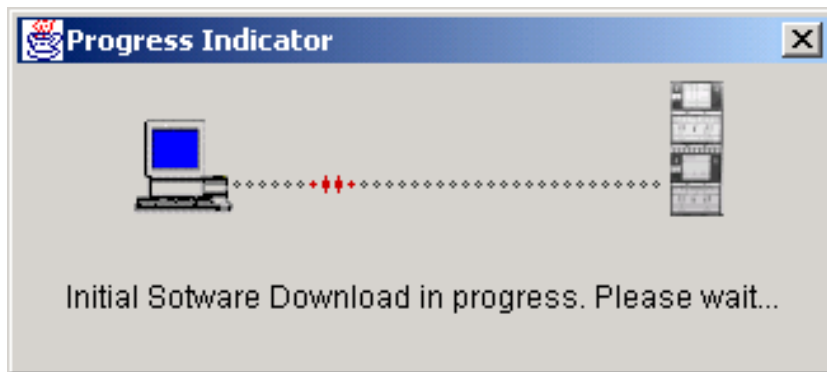
34 On Screen 6, click **Finish**.

Result: A warning message appears that lists the information you provisioned in the six screens. Verify that the information is correct and click **Yes**.

Note: The FTP download source directory is `generics/dmx/3.0.0/P` .

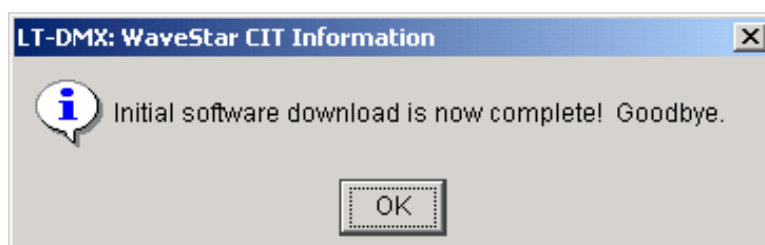
The FTP download of the software (**cpy-mem**), takes approximately 15 minutes.

While the transfer is in progress, the following Progress Indicator appears.



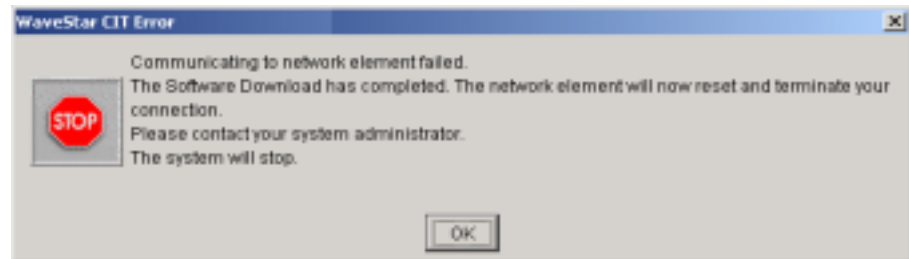
-
- 35** The initial software download is a two-part process, totalling approximately 25 minutes. The first part, FTP download of the software (**cpy-mem**), takes approximately 15 minutes. The second part, the reset of the shelf and the apply/activation of the downloaded software (**apply**), takes approximately 10 minutes.

After the FTP download is complete, the following completion message appears. Click **OK**.



Result: The second part of the initial software download begins, the reset of the shelf and the apply/activation of the downloaded software (**apply**). All LEDs on the SYSCTL light and **8.** appears in the **IND** display.

-
- 36** When following window appears, indicating that the system is resetting and you are being disconnected, click **OK**.



Result: During the reset and the apply, the SYSCTL circuit pack cycles through a series of changes in the LEDs' state and the **IND** display.

For example, all LEDs on the shelf light and **8**. appears in the **IND** display on the SYSCTL and then the LEDs go off and **P** appears in the **IND** display.

Important! When all LEDs are off and nothing appears in the **IND** display, the initial software download (FTP download, apply and shelf reset) is complete.

.....

37 If the WaveStar® CIT Network View is unresponsive, perform a shut-down using Windows Task Manager to End the WaveStar® CIT.

.....

38 To verify that the download and apply were successful, depress and hold the **ACO TEST** push-button on the SYSCTL for about 4 seconds.

Result: All LEDs on the shelf light. **8.** appears in the **IND** display on the SYSCTL.

.....

39 Release the **ACO TEST** push-button on the SYSCTL when the **8.** disappears in the **IND** display.

Result: The current software generic appears in the **IND** display on the SYSCTL and the shelf LEDs return to their previous status.

.....

40 Specifying OSI in the **Connection Type:** field, log in to the shelf again.

Result: The title bar of the **System View** reflects the current NE software generic, R3.0.0.

.....

41 Is the Generic Software Version correct?

If...	Then...
Yes	STOP! END OF TASK.
No	Contact your next level of support.

.....

END OF STEPS



Task 612: Retrieve Generic Software Version ID

.....

Purpose	Use this task to retrieve the generic software version that is loaded into the system.
Required equipment	The following equipment is required: • Personal Computer (PC) with WaveStar® CIT software installed • Wrist Strap
Safety precautions	To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.
CAUTION Electrostatic discharge <i>Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.</i>	
Related information	For related information, see the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.
Before you begin	Ensure that the descriptions and syntax of the commands and parameters of the Metropolis® DMX that may be set using the PC are understood prior to starting this task.

Task Complete the following steps to retrieve the generic software version ID.

- 1 Are you physically in front of the Metropolis[®] DMX for which you want to determine the generic software version?

If...	Then...
Yes	Continue with Step 2 .
No	Proceed to Step 5 .

- 2 Depress and hold the **ACO TEST** push-button on the SYSCTL for about 4 seconds.

Result: All LEDs on the shelf light. **8.** appears in the **IND** display on the SYSCTL.

- 3 Release the **ACO TEST** push-button on the SYSCTL when the **8.** disappears in the **IND** display.

Result: The current software generic appears in the **IND** display on the SYSCTL and the shelf LEDs return to their previous status.

- 4 STOP! END OF TASK.

- 5 Connect the PC and establish a WaveStar[®] CIT session.

Reference: “[Task 600: Connect Personal Computer \(PC\) and Establish WaveStar[®] CIT Session](#)” (5-3)

-
- 6** The active generic can be accessed from the title bar in the WaveStar[®] CIT **System View** window.

OR

From the **System View**,
right click on the SYSCTL circuit pack,
then click on **View Circuit Pack sysctl Details**.

In the **Equipment Details** section, **Program Version** indicates the current generic software of the system.

Click **Close**.

.....
E N D O F S T E P S
.....



Task 613: Replace Fan Filter

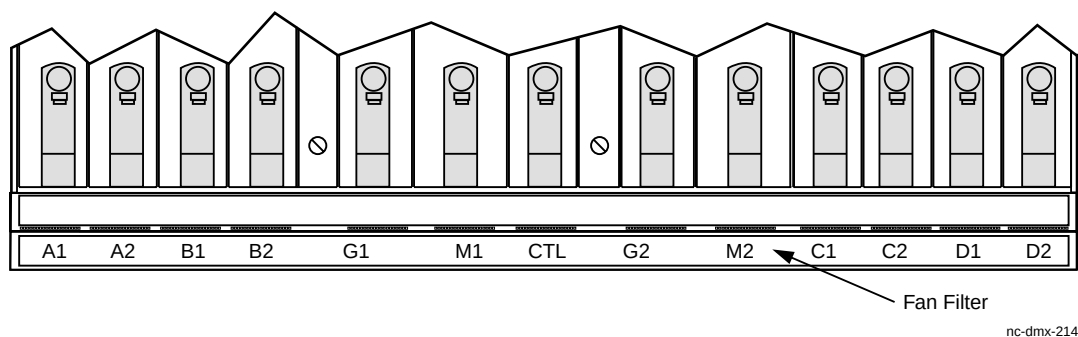
Purpose	Use this task to replace a fan filter.
Required equipment	The following equipment is required: • Wrist Strap • A replacement filter – For Metropolis® DMX comcode: 408 456 770 – For Metropolis® DMX high capacity shelf comcode: 408 682 615
Safety precautions	To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.
CAUTION Electrostatic discharge <i>Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.</i>	
Related information	For related information, see <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.
Before you begin	Ensure that the replacement fan filter is the same type as the original fan filter.

Task Complete the following steps to replace the fan filter.

-
- 1** Remove the fan filter by pulling it towards you.

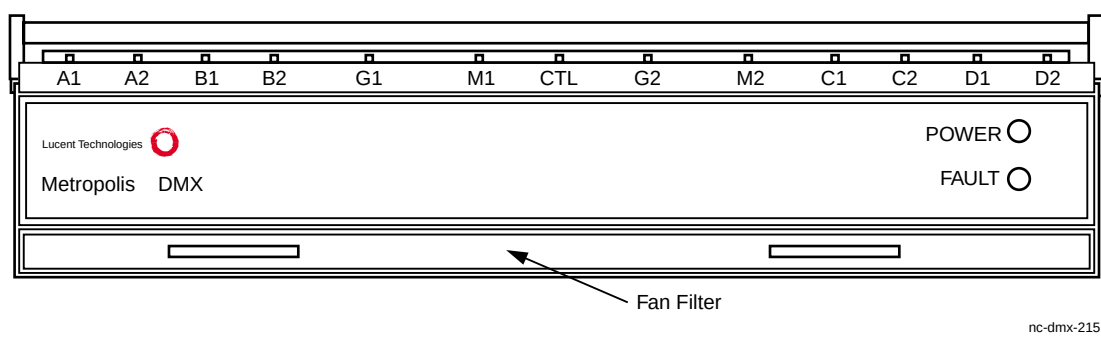
The Metropolis® DMX fan shelf is installed above the Metropolis® DMX shelf. The fan filter is located just below the Metropolis® DMX fiber tray (see [Figure 5-16](#)).

Figure 5-16 Metropolis® DMX Fan Filter



The Metropolis® DMX high capacity fan shelf is installed below the Metropolis® DMX high capacity shelf. The fan filter is located just below the Metropolis® DMX high capacity fan shelf (see [Figure 5-17](#)).

Figure 5-17 Metropolis® DMX Fiber Tray



-
- 2** Install new filter into the fan filter slot.

.....

END OF STEPS

.....



Task 614: Perform LED Test

.....

Purpose	Use this task to test circuit pack LEDs.
Required equipment	The following equipment is required: • Personal Computer (PC) with WaveStar® CIT software installed • Wrist Strap
Safety precautions	To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information	For related information, see the following: • <i>Metropolis® DMX Access Multiplexer User Operations Guide, 365-372-301</i> • <i>Metropolis® DMX Access Multiplexer TL1 Command Manual, 365-372-306</i>
Before you begin	Ensure that Metropolis® DMX is equipped with required circuit packs at the node being tested.
Task	Complete the following steps to perform the LED test.

-
- 1** Connect PC and establish a WaveStar® CIT session.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

-
- 2 From the **System View** menu, select **Fault> Test> LED...**
Select **Shelf** to perform the test on all LEDs.
Select **CP xxx** to perform the test on individual packs.
.....
 - 3 The following screen appears
(in this example, **Shelf** was selected in [Step 2](#)):



In the **Number of Iterations** field, enter a number from 1 to 10 from the pull-down menu to indicate the number of cycles during which the LED test should be repeated.

Result: For each iteration:

1. All LEDs for the specified address light.
2. After 10 seconds, all LEDs go off.
3. After another 10 seconds, all LEDs are updated to show the current status of the system.

.....

4 Did the LED test pass?

If...	Then...
Yes	STOP! END OF TASK.
No	Continue with Step 5 .

.....

5 Were you sent here by another task to perform an LED test?

If...	Then...
Yes	Continue with Step 6 .
No	STOP! END OF TASK.

.....

6 Record the circuit pack(s) (LEDs) that failed the LED test and return to the task that sent you here.

.....

END OF STEPS



Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts (LBOs)

Purpose This task describes the Lucent recommended method for the cleaning and inspection of optical connectors using specific tools and materials that have been proven to be effective in the assembly and testing of optical transmission equipment.

Important! It is critical that connector faces are clean and free from particular contamination to assure proper performance and reliability of lightwave systems. With the modern high speed, high power, and wider bandwidth optical transmission systems, clean connectors along the optical path are essential for successful operation.

Required equipment The following table lists required and recommended equipment for proper cleaning:

Product	Model/ Description	Comcode	ITE #	Installation Order #
Optical Fiber Scope	Noyes OFS 300-200X	408197028	ITE-7129	33712900
2.5mm Universal adapter cap	For use with the Noyes OFS 300-200X	408197044	ITE-7129D1	33712901
1.25mm Universal adapter cap	For use with the Noyes OFS 300-200X	408197069	ITE-7129D2	33712902
Video Fiber Scope1	Noyes VFS-1	TBD	TBD	TBD
Individual presaturated alcohol wipes	99% pure isopropyl alcohol	901375147	ITE-7136	33713600
CLETOP Cleaning Cassette	Type A Reel	901375154	ITE-7137	33713700

Product	Model/ Description	Comcode	ITE #	Installation Order #
CLETOP Cleaning Cassette Replacement Reel	Type A Reel	901375014	ITE-7137 D1	33713701
Luminex Stick port cleaners	1.25 mm	901375030	ITE-7134	33713400
Luminex Stick port cleaners	2.5 mm	901375022	ITE-7135	33713500
Luminex Cloth	5.5" x 5.5"	408201226	R6033	23603300
<i>Note 1:</i> This equipment may not be necessary at all locations. It is to be used when the ports need to be verified for cleanliness. If care is exercised when cleaning fibers, the video scope may not be needed. <i>Note 2:</i> The equipment and material listed above has been tested and is proven effective when used in conjunction with this procedure. Substitution of equipment or materials is at the discretion of the user and is not recommended				

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



WARNING
Eye damage

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



WARNING

Alcohol is flammable and is harmful if swallowed, inhaled or absorbed through the skin. Keep alcohol away from heat, sparks, or flame. Avoid contact with eyes, skin and clothing.



CAUTION

Equipment damage

When handling optical pigtails of jumpers, keep bending radius as large as possible.

Related information

A course on connector cleaning and the connector inspection process is now offered through Lucent Technologies Learning and Performance Center, Course Code: LMC200H “*Understanding Fiber Optic Cleaning, Inspection and Testing.*” To learn more about this course, consult your local Lucent Account Representative.

The procedure that follows utilizes the “Wet/Dry” method for connector cleaning. This method first applies a “wet” solvent such as high purity alcohol to the connector endface to dissolve/remove any organic particulate or oily films, followed by a “dry” double clean wipe using the CLETOP cleaning cassette.

This procedure is recommended for connector ferrules 2.5 mm and 1.25 mm in diameter associated with ST, SC, FC, and LC connectors. The ferrule of a fiber optic connector consists of a ceramic or stainless steel cylinder with a hole located longitudinally down the center of its axis, allowing enough tolerance for a fiber to pass through.

All optical connectors should be cleaned prior to being connected. Keep the protective ferrule dust cap on the connector until initiating the cleaning process.

Task The following cleaning procedure is acceptable for field service/
installation activities.

-
- 1** Remove the dust cap from the connector ferrule, thus exposing the
connector endface

-
- 2** Open an individual foil packet of pre-saturated isopropyl alcohol (99%
pure) wipe.

Grasp the connector housing and place the connector ferrule endface
perpendicular to the alcohol wipe

Drag it against the wipe three (3) times in a figure eight pattern. This
action applies the alcohol solvent to the endface and initially loosens
and scrubs away organic/solid contaminants.



-
- 3** If a CLETOP cassette cleaner is not available, proceed to [Step 7](#).
Otherwise, hold the CLETOP cassette cleaner in the palm of your hand
with the cassette shutter door facing up.

Rotate the cassette lever all the way down with your thumb. Do not
release the lever. The lever advances the “dry” Luminex cleaning cloth
inside the case and simultaneously opens the shutter. The CLETOP
cassette shutter door is now open and ready for cleaning the connector.



-
- 4** Insert and press the connector ferrule endface perpendicular against the cleaning cloth in the first of two slots of the cleaner.

Refer to the figure in [“Connector inspection” \(5-144\)](#)

Drag it down (in the direction indicated by the arrows on the cleaner).
Make certain not to release the lever of the cassette.

-
- 5** Lift the connector from the first slot and rotate it 90 degrees and repeat the downward motion using the second slot. Be sure the ferrule is pressed snug against the cleaning cloth while dragging the ferrule to assure the proper cleaning action.

-
- 6** Release the cassette lever allowing the shutter door to close to its initial position. Proceed to [Step 8](#).

-
- 7

Wrap a Luminex cleaning cloth around the ferrule and rotate the connector housing, cleaning the outside periphery of ferrule.

Follow this by folding an unused portion of the cloth over the end of the ferrule endface and then with light pressure from the thumb, slightly drag the cloth from the center of the ferrule to the edge while rotating the connector 360 degrees. If the Luminex cleaning cloth is not available, a lint free cleanroom optic wipe can be used. The Luminex cleaning cloth is washable and can be used multiple times, optic wipes are single use and disposable.

.....
- 8

Inspect the connector for cleanliness. If necessary, repeat the cleaning process.

Proceed to [“Connector inspection” \(5-144\)](#)

.....
- END OF STEPS

.....

Connector inspection



WARNING

Eye damage

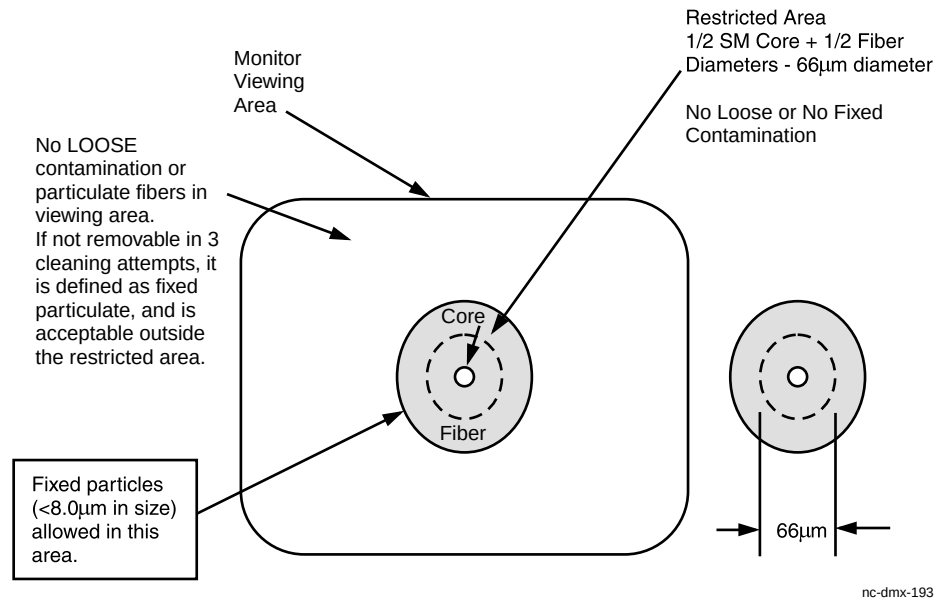
When using an optical power meter to verify the connector and fiber to be clean, take special precaution to make sure the no power is being emitted from the fiber before viewing.

After cleaning the connector, inspect the ferrule endface to ensure that it is free from any particulate contamination using an optical fiber inspection scope of at least 200X magnification. When using an optical fiber scope (for example, the Noyes OFS 300-200X) exercise extreme caution to assure fiber being examined is de-energized.

-
- 1

Follow the instructions in the manual provided with the Optical Fiber Scope to view the ferrule endface of the fiber under inspection.

-
- 2** The visual area of the ferrule endface (ferrule and fiber) as observed by the inspection system/scope should be free of any contaminants.



Repeat the Cleaning Procedure if the fiber endface does not meet the following requirements:

- No fixed type of contamination (contaminates that remain at the same location after 3 wet-dry cleaning cycles), regardless of size, is allowed in the restricted area of the glass fiber endface.
Important: The restricted area is defined as ~66 microns (µm) diameter for both singlemode and multimode fibers.
- No chips, cracks or scratches are allowed near the core of the glass fiber endface.
- No large floating (loose) contaminants are allowed on the glass fiber and ceramic ferrule endface.

-
- 3** After the connector has been verified to be cleaned, it should be immediately inserted into the adapter buildout of the optical component. This will assure maximum cleanliness and effectiveness of the connector.

-
- 4

If the cleaned connector can not be immediately connected to a corresponding adapter, the connector ferrule must be protected with a connector dust cap. Before placing the cap on the ferrule, make sure the cap is clean. This can be accomplished by inserting a CLETOP stick cleaner (swab) of the same inside diameter as the cap (either 2.5 or 1.25 mm) and rotate the stick 360 degrees three (3) times. Following this procedure, carefully place the cap over the ferrule. When the cleaned connector is ready for assembly, it should be re-inspected for cleanliness prior to connection.

.....
E N D O F S T E P S
.....

Fiber adapters/circuit pack
connectors



CAUTION
Equipment damage

Do not attempt to clean ports equipped with yellow lightguide buildout (LBO) attenuators. Attenuators contain a thin glass lens that is extremely fragile. The LBO will be damaged if cleaned using this method.

During testing and/or trouble shooting activities it may be necessary to clean the optical buildout adapter or the circuit pack connector. The following procedure is recommended

-
- 1

Using the appropriate CLETOP stick cleaner (2.5 mm for SC, ST, and FC connectors, 1.25 mm for LC connectors) dampen the stick cleaner with Ethyl alcohol using the alcohol wipe. Insert the stick cleaner into the adapter rotating the stick 360 degrees while inserting. Push/rotate stick until the stick cleaner makes contact with the connector. Apply slight pressure upon contact and rotate stick 360 degrees at least three (3) times.
-
- 2

Remove the stick cleaner rotating it upon removal.

-
- 3** Using a dry CLETOP stick cleaner of appropriate diameter, repeat the above cleaning procedure. This procedure will clean the side walls of the adapter and the endface of the circuit pack connector.
-

- 4** Gently insert the Video Fiber Scope probe into the port until the fiber ferrule comes into view.
-

- 5** Verify that the fiber ferrule is clean. Repeat [Step 1](#) through [Step 3](#) if the fiber does not meet the requirements specified in “[Connector inspection](#)” (5-144).

.....
E N D O F S T E P S
.....



Task 616: Connect OLIU Optical Loopbacks

Purpose Use this task to loop back an **out-of-service** optical line at the OLIU faceplate connectors.

Required equipment The following equipment is required:

- Wrist strap
- One lightguide jumper (MS1A40LC-A40LC-2, Comcode 108918269) for each optical line to be looped back (LC-type connections)
- Lightguide buildout (LBO)
 - 5-dB loss LBO (code ABLCS-05.0: comcode 108279381) or
 - 10-dB loss LBO (code ABLCS-10.0: comcode 108279431) or
 - 15-dB loss LBO (code ABLCS-15.0: comcode 108279480)

Safety precautions To assure both personal safety and the proper functioning of the Metropolis[®] DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION **Equipment damage**

Avoid excessive bending of the optical jumper used to loop the OLIU on itself.

**CAUTION****Equipment damage**

Ensure all optical fiber connectors, adapters, and LBOs are properly cleaned “[Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\)” \(5-139\)](#). Signal performance may be degraded if the connectors, adapters, and LBOs are not cleaned.

**CAUTION****Equipment damage**

Use a static ground wrist strap whenever handling circuit packs or working on the Metropolis[®] DMX system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic Discharge (ESD) Considerations” in the “About This Information Product” Section.

Related information

For related information, see the *Metropolis[®] DMX Access Multiplexer User Operations Guide*, 365-372-301.

Task Complete the following steps to loop back an **out-of-service** optical line at the OLIU faceplate connectors.

1 Obtain the correct LBO and lightguide jumper:

IF the OLIU is ...		THEN obtain a ...
Long Reach (LR) Optics	LNW26/26B OC-48 LNW27 OC-48 LNW28 OC-48 LNW29 OC-48 LNW121B-159B OC-48 LNW221-259 OC-48 LNW421-459 OC-48	lightguide jumper (MS1A40LC-A40LC-2, Comcode 108918269) and a 15-dB LBO (code ABLCS-15.0, comcode 108279480 for LC connectors)
	LNW36 OC-3	No LBO required (attenuation not needed)
	LNW46 OC-12	lightguide jumper (MS1A40LC-A40LC-2, Comcode 108918269) and a 10-dB LBO (code ABLCS-10.0, comcode 108279431 for LC connectors)
Intermediate Reach (IR) Optics	LNW31 OC-48 LNW77 OC-48	No LBO required (attenuation not needed)
	LNW56 OC-192	lightguide jumper (MS1A40LC-A40LC-2, Comcode 108918269) and a 5-dB LBO (code ABLCS-05.0, comcode 108279381 for LC connectors)
Short Reach (SR) Optics	LNW76 OC-48 LNW58 OC-192	No LBO required (attenuation not needed)

2 If required, remove the optical line connections from the OLIU faceplate. Make a record of these disconnections so they can be replaced.

3 Remove the LBO (if equipped) from the **IN** connector of the OLIU faceplate. Make a note of the value.

Reference: [“Task 617: Install/Remove LC Lightguide Buildouts \(LBOs\)” \(5-155\)](#)

-
- 4 Remove the protector caps from the ends of the lightguide jumper (loopback cable).
-

**CAUTION**

Ensure all optical fiber connectors/adapters, fiber, and LBOs are properly cleaned. Signal performance may be degraded if the connectors/ adapters, fiber, and LBOs are not cleaned.

- 5 Clean the LBOs, fiber, and connectors.

Reference: [“Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\)” \(5-139\)](#)

.....

- 6 Install the appropriate LBO, if required. The list of circuit packs and their corresponding LBOs may be found in [Step 1](#).

Reference: [“Task 617: Install/Remove LC Lightguide Buildouts \(LBOs\)” \(5-155\)](#)

.....

- 7 Using the lightguide angled boot jumper (MS1A40LC-A40LC-2, Comcode 108918269), connect the **IN** connector and the corresponding **OUT** connector on the same OLIU.

Important! The LC LBOs and lightguide jumpers connect to the LC-shielded, angled adapter on the OLIU faceplate.

Result: After a short time, the **FAULT** LED on the OLIU stops flashing. The **ACTIVE** LED remains on. The MJ and NE LEDs on the SYSCTL circuit pack extinguish.

The following alarms are also present:

- Inconsistent DCC Switches
- Section DCC Channel Failed

-
- 8** If responses are not as indicated, check connections and the lightguide jumper. Clean connections and repeat [Step 7](#).

If responses are still not correct, replace the OLIU.

Reference: “[Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\)](#)” (5-139)

-
- 9** Repeat [Step 1](#) through [Step 8](#) for additional ports.

-
- 10** When you have completed all ports, return the connectors with LBOs to their original positions.

.....
E N D O F S T E P S
.....



Task 617: Install/Remove LC Lightguide Buildouts (LBOs)

Purpose Use this task to install or remove LC LBOs.

Important! All LC LBOs should be cleaned before making initial connections or reconnections per [“Task 615: Clean Optical Fibers, Dual LC Adapters and LC Lightguide Buildouts \(LBOs\)” \(5-139\)](#). Only the components being assembled at this time should be cleaned.

Required equipment A wrist strap is required to perform this task.

Safety precautions To assure both personal safety and the proper functioning of the Metropolis[®] DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



WARNING **Eye damage**

Unterminated optical connectors may emit invisible laser radiation. Eye damage may occur if beam is viewed directly or with optical instruments. Avoid direct exposure to the beam.



CAUTION **Electrostatic discharge**

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

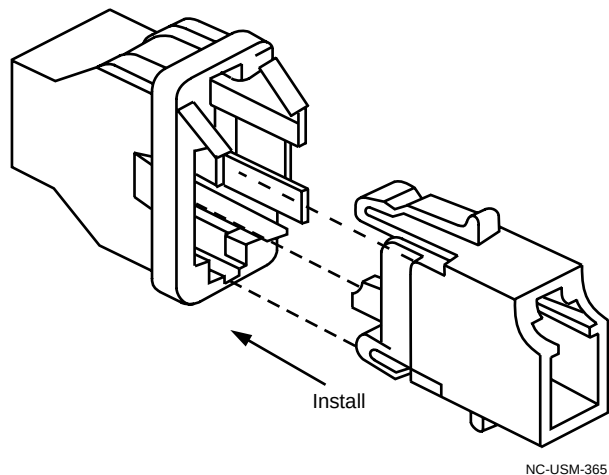
Related information For related information, see the *Metropolis[®] DMX Access Multiplexer Applications and Planning Guide*, 365-372-300.

Task Complete the following steps to install or remove an LC lightguide buildout (LBO).

-
- 1

Remove the protector caps and plugs (if equipped) from the LC LBO and the dual adapter, and store them in a clean container.

Figure 5-18 LC LBO



-
- 2

Is LC LBO being installed or removed?

IF the LC LBO is being...	THEN...
Installed,	Continue with Step 3 .
Removed,	Proceed to Step 5 .

-
- 3

Align the LBO with the slot in the adapter, depress locking tab, and push the LBO into the dual adapter until a click is heard. The LBO is now locked into position.
-

- 4

STOP! END OF TASK

-
- 5 Depress the locking tab on the LBO and pull the LBO out of the dual adapter.



CAUTION

Equipment damage

The locking tab must only be pushed along a line perpendicular to the LBO body in the direction towards the LBO in order to avoid damage to the locking tab.

.....
E N D O F S T E P S



Task 618: Release 3.0.0 Software Generic Download and Upgrade via FTP (In-Service System)

Purpose Use this task to download the R3.0.0 software generic via FTP over TCP/IP to the dormant area of any Metropolis® DMX shelf (local or remote) that is currently running an R2.0.x or later software generic. This task uses the *cpy-mem* command to download software via FTP over TCP/IP in an in-service Metropolis® DMX shelf.

Important!

- A privileged login is required to perform this task.
- FTP cannot be used to download software unless the destination NE is running Release 2.0 or later.

Required equipment The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Cable to connect the PC to Metropolis® DMX
- Working copy of the new system generic software program on CD-ROM
- Current *Metropolis® DMX Access Multiplexer Software Release Description* for the software generic being installed.

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

Before you begin Before beginning the software download, refer to the *Metropolis® DMX Access Multiplexer Software Release Description* for the software being downloaded for a description of any special considerations involving this version of software.

Important! If the FTP server fails to start, it could mean that another program using an FTP server is already running. Depending on what operating system you are using, you must go to the device file and disable the FTP server.

- For Windows 2000 operating systems, select **Start > Settings > Control Panel**. Select **Administrative Tools**, then **Computer Management**, then **Services and Applications**, and then **Services**.
- For Windows NT operating systems, select **Start > Settings > Control Panel**. Select **Devices**.

Task Complete the following steps to download system software via FTP.

-
- 1** If not previously completed, install generic and WaveStar® CIT software on the PC.

Reference: [“Task 601: Install Generic and WaveStar® CIT Software on the PC” \(5-13\)](#)

.....

- 2** Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and log in to the destination shelf (the shelf to which you want to download the software) in your network.

Important! FTP cannot be used to download software unless the destination NE is running Release 2.0 or later.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

-
- 3 Provision the destination shelf for TCP/IP communications. From the System View menu, select **Administration > Data Communications...** .

Result: The Data Communications for *TID* (your TID) window appears.

Figure 5-19 Example of the Data Communications Window



-
- 4 Which port are you provisioning for TCP/IP?

If...	Then...
lan-1 for the front LAN port on the SYSCTL	Continue with Step 5 and then proceed to Step 7 .
lan-2 for the rear J16 IAO LAN port on the backplane	Proceed to Step 6 and then continue with Step 7 .

Important! lan-1 is intended to be used for local (direct) software downloads.

-
- 5 From the Data Communications for *TID* window (Figure 5-20), click on the **TCP/IP** tab and provision the following fields accordingly for lan-1:
- **Port AID:** select the port that you are using for FTP: lan-1
 - **TCP/IP function:** select enable
 - Click **Modify** to either enter or change the following:
 - IP Address
 - IP Subnet Mask
 - IP Default Router Address (if necessary)

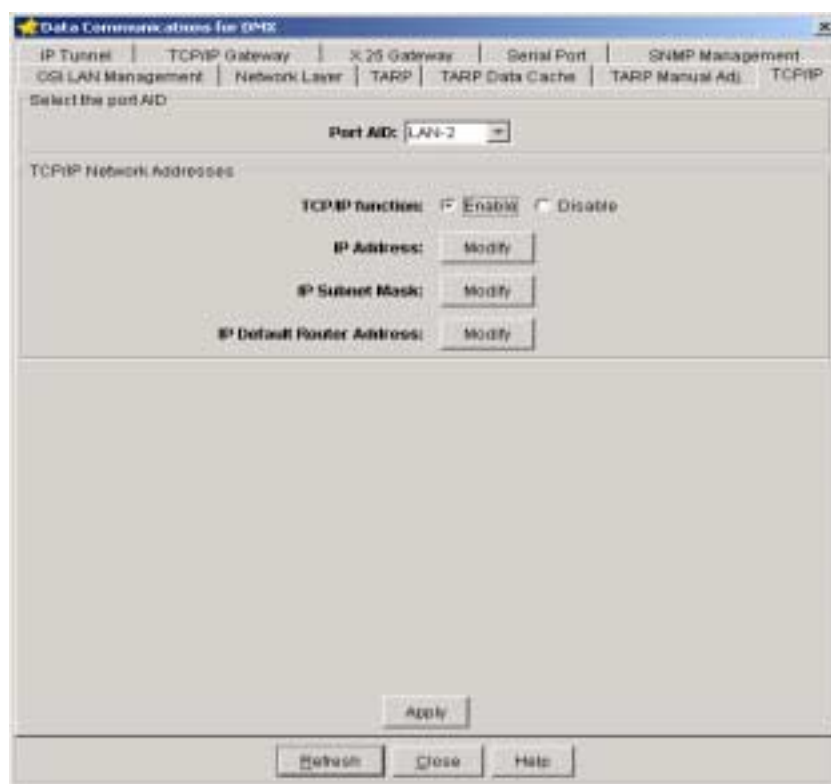
Figure 5-20 lan-1 Data Communications Window



Important! Because lan-1 is intended to be used for local (direct) software downloads, the IP Default Router Address is not required when using lan-1.

-
- 6 From the Data Communications for *TID* window (Figure 5-21), click on the **TCP/IP** tab and provision the following fields accordingly for lan-2:
- **Port AID:** select the port that you are using for FTP: lan-2
 - **TCP/IP function:** select Enable
 - Click **Modify** to either enter or change the following:
 - IP Address
 - IP Subnet Mask
 - IP Default Router Address

Figure 5-21 lan-2 Data Communications Window



.....

7 Click **Apply**.

Result: The following warning message appears:
This operation will cause the System View to close and may cause the system to reset. Do you want to execute this command?

.....

8 Click **Yes**.

Important! Following a Metropolis[®] DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

Reference: [“Task 621: Set Date and Time” \(5-191\)](#).

.....

9 Specifying either OSI or Serial in the **Connection Type:** field, log in to the destination shelf again.

-
- 10** From the **System View** menu, select **Configuration > Software > Download Software....**

Result: The Download Generic window appears.

Figure 5-22 Download Generic Window

DMX: Download Generic

Download From / Via: FTP

FTP

Profile: [dropdown]

Server

IP: [text] [text] [text] [text]

name: [text]

port: [text]

User

name: [text]

password: [text]

Save

Clear

Add

Delete

Modify

Apply

Import...

Source directory path

Path: [text]

Product Type

Type: DMX

From[Src] "<ftp>"

☐ Check Digital Signature

Download Close Help

-
- 11** You must enter a valid download profile (If the profile already exists, you may select it from a pull-down menu. If you are creating a new profile, you may assign it a name and save it for future use).

Enter the following information in the Download Generic window (Figure 5-22):

1. In the pull-down menu entitled **Download From/Via:** select **FTP**.
NOTE: No other options are available at this time.
2. In the **Profile:** field enter the desired name of this profile.
(If the profile already exists, you may select it from the pulldown menu. NOTE: If you are selecting an existing profile, you may verify/change the name of the profile.)
3. In the **Server** panel, select **IP** and enter the address of the FTP server (often the WaveStar® CIT).
Enter the **port:** (usually 21).
4. In the **User** panel, enter your user name and password for the FTP server (often the WaveStar® CIT).
5. If you are creating a new profile, click **Add**. The profile is now accessible from the **Profile:** pull-down menu.
If you are modifying an existing profile, click **Save**.
6. In the **Source Directory Path** panel, enter the current location of the generic to be downloaded.

Important! If the WaveStar® CIT is the FTP server, this entry must be in the following form:

generics/dmx/3.0.0/p/

Important! If you are using the WaveStar® CIT as your FTP server, you must separate your directory structure using either “/” (as illustrated in the example above) or “\\” because TL1 interprets “\” as a character. The WaveStar® CIT fills in the beginning of the default path (C:/Program Files/Lucent Technologies/WaveStar CIT/).

If the FTP server is not the WaveStar® CIT, then enter the path starting at the FTP home directory on the server.

7. In the **Product Type** panel, select **DMX**.

.....

12 Click **Download**.

Result: A warning message appears indicating the transfer you are about to execute. *Do you wish to continue?*

Verify the information and click **Yes**.

While the transfer is in progress, the following in-progress indicator window appears. (The FTP download takes approximately 10 minutes.)



When the transfer is complete, the in-progress indicator window closes and the software download complete window appears. Click **OK**.

.....

13 Do you wish to watch the FTP download progress?

If...	Then...
Yes	Continue with Step 14 .
No	Proceed to Step 15 .

14 From the **Network View**, either

- select **Administration > FTP Administration....**
or
- click on the rotating FTP icon in the lower left-hand corner of the the Network View Window (not illustrated in [Figure 5-23](#))

Result: The FTP Server window appears. Click **Close** when finished.

Important! [Figure 5-23](#) illustrates the Network View; most WaveStar® CIT activities are executed from the System View menu.

Figure 5-23 Network View



-
- 15** Do you wish to apply (activate) the software generic that you recently downloaded to the dormant area of the Metropolis® DMX shelf?

If...	Then...
Yes	Continue with Step 16 .
No	Proceed to Step 22 .

-
- 16** Log in to the remote Metropolis® DMX to which you copied the software.
Specify the following when establishing the WaveStar® CIT session:

- **NE Name:** field: TID of the remote NE
- **NE Type:** field: Metropolis DMX Access Multiplexer
- **Connection Type:** field: OSI or Serial

Reference: “[Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session](#)” (5-3)

Result: After a few moments, the NE with the TID you previously specified appears in the System View.

-
- 17 From the **System View** menu, select **Configuration > Software > Apply Software....**

Important! The TID of the remote shelf will not be the same as your local shelf. [Figure 5-24](#) is only an example of the window.

Result: The Apply Software window appears.

Figure 5-24 Apply Software Window

DMX: Apply Software

Active Software Version: 3.0.0

Available Generics

Version	Type	Action	Date	Time
3.0.0	ALL			

Activation Scheduling

☐ Cancel Install

☒ Install In 15 Minutes

☐ Specify Install Date/Time:

☐ Within 24 Hrs.

Year: 2002 Month: July

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Hour: 16

Minutes: 6

Seconds: 5

Apply Type

type: ☐ FORCED

OK Close Help

.....

18 Select and/or enter the following information in the **Apply Software** window (Figure 5-24):

1. From the **Available Generics** panel, select the software generic to be activated.
2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
 - Select **Install In 15 Minutes**
The software will install 15 minutes after you click **Okay**.
 - Select **Specify Install Date/Time** and select the **Year, Month, Date** and **Time**.
In this case, the **Hour, Minute, and Second** fields are used to enter a 24-hour clock time (13 hours and 15 minutes means that the software will apply at 1:15 PM on the date specified).
 - Select **Specify Install Date/Time and Within 24 Hours**.
In this case, the **Hour, Minute, and Second** fields are used to enter the time within 24 hours of the current date and time after you click **OK**.

Important! You may cancel the scheduled apply by returning to the **Apply Software** menu at any time before the software applies and selecting the generic and **Cancel Install** and then clicking **OK**.

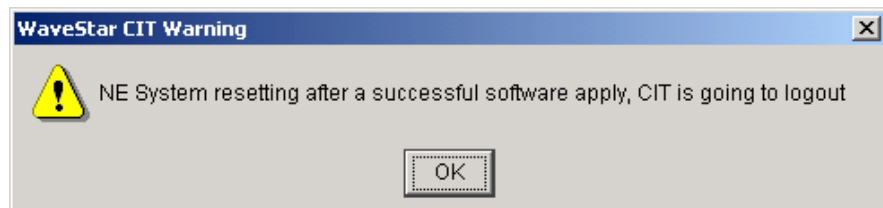
3. Click **OK**.

Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

-
- 19** After approximately 15 minutes the apply is complete.

Result: The following warning screen appears, click **OK**. The System View closes.

Important! If the WaveStar® CIT Network View is unresponsive, perform a shut-down using Windows Task Manager to End the WaveStar® CIT.



Important! Following a Metropolis® DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

-
- 20** Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and re-log in to your Metropolis® DMX shelf.

Result: The title bars of the System View and the legal notice should both reflect the current NE software generic, R3.0.0.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

.....

21 Is the Generic Software Version correct?

If...	Then...
Yes	Continue with Step 22 .
No	Contact your support center.

.....

22 Repeat this task from [Step 2](#) for each shelf that you wish to upgrade via FTP.

.....

END OF STEPS

.....



Task 619: Backup and Restore

Purpose Use this task to backup and restore the NE database or to setup an automatic backup schedule.

Required equipment The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Wrist Strap

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

Related information For related information, see the *Metropolis® DMX Access Multiplexer User Operations Guide*, 365-372-301.

Before you begin

This task uses FTP to backup and restore all Metropolis® DMX provisionable data on a shelf.

The WaveStar® CIT is not a fully implemented FTP server, but it can handle backup and restore capabilities. For automatic backups, a Navis™ Optical Element Management System (Navis™ Optical EMS) or another large capacity FTP server should be used when the WaveStar® CIT is not guaranteed to always be connected and available at the scheduled backup times.

The backup feature can be forced or scheduled to complete automatically at specified intervals. The restore feature utilizes the TL1 **CPY-MEM** command with the restore option.

Important! If the FTP server fails to start, it could mean that another program using an FTP server is already running. Depending on what operating system you are using, you must go to the device file and disable the FTP server.

- For Windows 2000 operating systems, select **Start > Settings > Control Panel**. Select **Administrative Tools**, then **Computer Management**, then **Services and Applications**, and then **Services**.
- For Windows NT operating systems, select **Start > Settings > Control Panel**. Select **Devices**.

Task Complete the following steps to backup and restore the system.

-
- 1** Connect the PC and establish a WaveStar® CIT session.

Reference: [“Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session” \(5-3\)](#)

.....

2 Do you wish to...

If	Then
perform an immediate system backup?	Continue with Step 3 .
schedule or discontinue an automatic system backup?	Proceed to Step 10 .
perform a system restore?	Proceed to Step 23 .

.....

3 From the **System View** menu, select
Configuration>Software>Remote Backup...

.....

4 In the pulldown **Backup To/Via:** menu, select **FTP**.
NOTE: No other options are available at this time.

.....

5 Select the connection from the **Profile** pulldown menu
OR

1. In the **Server** panel, select **IP** and enter the address of the FTP server.
 2. Enter the **port** (default is 21).
 3. In the **User** panel, enter the user name and password for the FTP server (default for the WaveStar® CIT is **LUC01/LUC+01**).
-

6 If you entered connection information in [Step 5](#) and wish to keep the information for future backups:

1. Type a new name in the **Profile** menu.
2. Click **Add** to add the profile to the list.
3. Click **Save** to save the list.

Entries to the **FTP Profile** pulldown menu may be changed using the **Modify** and **Apply** buttons
or
removed using the **Delete** button.

-
- 7** In the **Destination Directory Path** field, enter the location where the database information is to be stored (a maximum of 80 characters is suggested for this field).

A relative path is assigned to the WaveStar® CIT directory, therefore the user need only enter **FILENAME**. However, it is recommended that the information be stored in the backups directory. To do this, enter **backups/FILENAME**. Subdirectories may be assigned by entering **backups/DIRECTORY/FILENAME** if the **DIRECTORY** exists before the command is sent. Directories will not be created by this command, and therefore the command will be denied if any directory in the path does not already exist.

Important! If the file system uses the “\” symbol to separate directories and files (**DIRECTORY\FILENAME**), then the user must use “\\” in this field.

(For example: backups\\DIRECTORY\FILENAME will be translated to backups\\DIRECTORYFILENAME by the NE.)

.....

- 8** Click **Backup**.

You will be asked to verify that you wish to backup to the directory that you entered above. Click **Yes** if you typed the path correctly.

Result: The **DMX Progress Indicator** screen appears to indicate that the backup is in progress. When the backup completes, a WaveStar® CIT information screen labeled **Remote Backup Screen** appears. Click the **Okay** button.

.....

- 9** STOP! END OF TASK.
-

- 10** From the **System View** menu, select
Configuration>Software>Configure Auto Backup Interval... .

Important! The WaveStar® CIT is not intended to serve as an FTP server, although it may be used for this application if the WaveStar® CIT is guaranteed to be available (connected and running) at all scheduled backup times. Otherwise a Navis™ Optical Element Management System (Navis™ Optical EMS) or another large capacity FTP server should be used.

-
- 11** From the **Configure Auto Backup** screen, select the **Files** tab at the top of the screen.
-

- 12** Select the connection from the **Profile** pulldown menu
OR

1. In the **Server** panel, select **IP** and enter the address of the FTP server.
 2. Enter the **port** (default is **21**).
 3. In the **User** panel, enter the user name and password for the FTP server (default for the WaveStar® CIT is **LUC01/LUC+01**).
-

- 13** If you entered connection information in [Step 12](#) (rather than selected an established profile), you should assign a new profile name to this information to allow Automatic Backup to store the FTP login password. To do this:

1. Type a new name in the **Profile** menu.
2. Click **Add** to add the profile to the list.
3. Click **Save** to save the list.

Entries to the **FTP Profile** pulldown menu may be changed using the **Modify** and **Apply** buttons
or
removed using the **Delete** button.

.....

- 14** In the **File Path** field, enter the location where the database information is to be stored (a maximum of 80 characters is suggested for this field).

A relative path is assigned to the WaveStar CIT directory, therefore the user need only enter **FILENAME**. However, it is recommended that the information be stored in the backups directory. To do this, enter **backups/FILENAME**. Subdirectories may be assigned by entering **backups/DIRECTORY/FILENAME** if the **DIRECTORY** exists before the command is sent. Directories will not be created by this command, and therefore the command will be denied if any directory in the path does not already exist.

Important! If the file system uses the “\” symbol to separate directories and files (DIRECTORY\FILENAME), then the user must use “\\” in this field.

(For example: backups\\DIRECTORYFILENAME will be translated to backups\\DIRECTORYFILENAME by the NE.)

-
- 15** From the **Type:** menu in the **Backup Type** panel, select **FORCED** from the pulldown menu.

NOTE: No other options are available at this time.

.....

- 16** From the **Files:** menu in the **Number of Files** panel, select a number from 1 to 9 (default is 2) from the pulldown menu, which indicates the number of backup files to be stored automatically before the files begin to overwrite.

Once established, the filename that you supplied in [Step 14](#) will initially be appended with “1” (FILENAME1). In subsequent backups, the “1” will increase by one until the number selected in this step is reached; then the files will begin overwriting beginning with FILENAME1.

.....

- 17** Select the **Schedule** tab at the top of the screen.
-

- 18** From the **Days** menu in the **Update Interval** panel, select a number from 1 to 99 (default is 30), which indicates the number of days between automatic backups. The number may be selected by sliding the arrow over the scale until the desired number appears in the field, or by typing the number directly into the field.

Important! Setting this field to “0” cancels automatic backup.

.....

19 If you wish to specify a start date for the automatic backup:

1. Select **Specify Date** in the **Backup Start Date/Time** panel,
2. Select the **Year:** and **Month:** from the pulldown menus,
3. Select a day from the calendar.

If you do not wish to specify a start date, the first backup will begin immediately upon completion of this task and the next backup will begin after the requested number of days.

.....

20 To specify a start time for the automatic backup:

1. Select **Specify Time** in the **Backup Start Date/Time** panel,
 2. Select the **Hour:** (0-23), **Minutes:** (0-59), and **Seconds:** (0-59) from the pulldown menus,
(NOTE: It is recommended that only one backup occur at a time for the PC-CIT. However, larger servers may be able to handle multiple backups at the same time. It is suggested that the backups for the networks be performed a few minutes apart.)
-

21 Click **Okay**.

A warning screen will appear, indicating that execution of provision may temporarily affect service. If this is acceptable, select **Yes**.

.....

22 STOP! END OF TASK.

.....

Important! The restore feature only works if the software release and the equipment populating the NE slots has not changed. If the software release has changed or different pack types have been installed since the backup was performed, then the restore will not work.

23 From the **System View** menu, select
Configuration>Software>Remote Restore... .

-
- 24** In the pulldown **Restore From/Via:** menu, select **FTP**.

NOTE: No other options are available at this time.

.....

- 25** Select the connection from the **Profile** pulldown menu
OR

1. In the **Server** panel, select **IP** and enter the address of the FTP server.
 2. Enter the **port** (default is **21**).
 3. In the **User** panel, enter the user name and password for the FTP server (default for the WaveStar® CIT is **LUC01/LUC+01**).
-

- 26** If you entered connection information in [Step 25](#) and wish to keep the information for future restores:

1. Type a new name in the **Profile** menu.
2. Click **Add** to add the profile to the list.
3. Click **Save** to save the list.

Entries to the **FTP Profile** pulldown menu may be changed using the **Modify** and **Apply** buttons
or
removed using the **Delete** button.

.....

- 27** In the **Source Directory Path** panel, enter the location where the database information is stored.

A relative path is assigned to the WaveStar CIT directory, therefore the user must enter the path and filename exactly as it was entered in [Step 7](#) or [Step 14](#) (For example: **backups/DIRECTORY/FILENAME**).

Important! If the file system uses the “\” symbol to separate directories and files (DIRECTORY\FILENAME), then the user must use “\\” in this field.

(For example: backups\\DIRECTORY\FILENAME will be translated to backups\\DIRECTORYFILENAME by the NE.)

.....

- 28** Click **Restore**.

You will be asked to verify that you wish to restore the data from the backup file that you entered above. Click **Yes** if you typed the path correctly.

A second warning screen will appear that states that Execution of RESTORE will cause a System Reset. If this is acceptable, click **Yes**.

Result: The **DMX Progress Indicator** screen appears to indicate that the restore is in progress. A WaveStar® CIT warning screen states **NE reset after successful restore, CIT is going to log out**.

.....

29 Click **Okay**.

Important! Following a Metropolis® DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). If automatic synchronization is unsuccessful, the date and time must be reset manually.

Reference: [“Task 621: Set Date and Time” \(5-191\)](#).

.....

END OF STEPS



Task 620: Replace TMUX (LNW18) Circuit Pack

Purpose	Use this task to replace a TMUX (LNW18) circuit pack.
Required equipment	The following equipment is required: • Personal computer (PC) with WaveStar® CIT software installed • Wrist strap
Safety precautions	To assure both personal safety and the proper functioning of Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product.”

Related information	For related information, see the <i>Metropolis® DMX Access Multiplexer User Operations Guide</i> , 365-372-301.
Before you begin	Prior to beginning this task: 1. Ensure that TMUX circuit pack is available for replacement. 2. If not previously completed, install generic and WaveStar® CIT software on the PC. Reference: “Task 601: Install Generic and WaveStar® CIT Software on the PC” (5-13) 3. Connect PC and establish a WaveStar® CIT session. Reference: “Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session” (5-3) 4. Obtain work instructions for this task.

Task Complete the following steps to replace TMUX circuit pack(s).

.....

1 From the System View menu, select **View > Protection** to view the current protection on the circuit pack you are replacing.

.....

2 Does 1+1 Equip appear next to the the TMUX circuit pack that you wish to replace?

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 10 .

.....

3 Highlight the Function Unit (for example: **1+1 Equip Fn-b** represents Function Unit B) containing the circuit pack you wish to replace and click **Select**.

Result: The “Status” window appears.

.....

4 Does the **Circuit Pack State** for the circuit pack that you wish to replace read **In Service**?

If...	Then...
Yes	Continue with Step 3 .
No	Proceed to Step 10 .

.....

5 From the System View menu, select **Fault > Protection Switch**.

.....

6 Highlight the Pack x (1 or 2) for the TMUX circuit pack that you are replacing and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

-
- 7** From the Switch Type: pull-down menu, select **Forced** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

- 8** On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.
-

- 9** To verify that the switch has occurred:

1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you are replacing and click **Select**.
 3. Verify that Protection Switch State: reads Standby and the Circuit Pack State: reads Out of Service.
 4. Verify that Protection Switch Priority: reads Forced Switch.
-

- 10** Remove the TMUX circuit pack by grasping the inner edge of the locking-levers, and applying a constant pressure, pull the levers forward and remove the circuit pack.
-

- 11** Seat the TMUX circuit pack in the vacated Function Unit slot by applying steady pressure to both faceplate latches

Result: FAULT LED on the TMUX circuit pack lights for approximately 20 seconds then goes off and then ACTIVE LED lights, indicating successful installation.

.....

- 12** From the System View menu, select **Fault > Protection Switch**.
-

- 13** Highlight the TMUX circuit pack that you force-switched and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

.....

14 From the Switch Type: pull-down menu, select **Reset** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

15 On the confirmation window, click **Yes** to ensure that the protection switch is reset.

.....

- 16** To verify that the forced switch is removed:
1. From the System View menu, select **View > Protection**.
 2. Highlight the circuit pack that you replaced and click **Select**.
 3. Verify that Switch Request State: reads nr (no request).
 4. Verify that Protection Switch Priority: reads -.
-

17 Do you wish to restore the original Active/Standby states?

If...	Then...
Yes	Continue with Step 18 .
No	Proceed to Step 23 .

.....

18 From the System View menu, select **Fault > Protection Switch**.

.....

19 Highlight Pack x (1 or 2) that Protection Switch State: reads Standby and the Equipment Status: reads Out of Service and click **Select**.

Result: On the right side of the Switch Protection window, the Switch Type: pull-down menu appears.

.....

20 From the Switch Type: pull-down menu, select **Normal** and click **Apply**.

Result: A confirmation window appears: “Execution of provision may affect the NE service. Do you want to execute this command?”

.....

21 On the confirmation window, click **Yes** to ensure that service switches to the other circuit pack in the Function Group.

.....

22 To verify that the switch has occurred:

1. From the System View menu, select **View > Protection**.
2. Highlight the circuit pack that you replaced and click **Select**.
3. Verify that Protection Switch State: reads Active and the Circuit Pack State: reads In Service.
4. Verify that Protection Switch Priority: reads -.

.....

23 From the System View menu, select **View > Equipment Details** and verify that the new circuit pack is recognized by the SYSCTL and all the parameters previously applied to the circuit pack are visible.

.....

24 Do you wish to change any circuit pack and/or port parameters at this time?

If...	Then...
Yes	Refer to the <i>Metropolis® DMX Access Multiplexer User Operations Guide, 365-372-301</i>
No	STOP! END OF TASK.

.....

END OF STEPS



Task 621: Set Date and Time

Purpose Use this task to set the system date and time. The default method allows the NE, upon turnup or reset, to query neighboring NEs for date and time. Network Time Protocol (NTP) allows the NE to query an NTP server for date and time.

Required equipment The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Wrist Strap

Safety precautions To assure both personal safety and the proper functioning of the Metropolis® DMX, it is imperative to review and understand these warnings and precautions prior to performing this task.



CAUTION

Electrostatic discharge

Use a static ground wrist strap whenever handling circuit packs or working on a system to prevent electrostatic discharge damage to sensitive components. See “Electrostatic discharge” in “About this Information Product”.

**Default (Non-NTP) Method
for Time and Date
Synchronization**

Upon turnup or following a Metropolis[®] DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). After 5 minutes (to allow for additional NE resets, as in the case of a network software upgrade), the shelf attempts an automatic synchronization of the time and date with another NE in the network. If the remote NE has not responded to the synchronization request within 2 minutes, the request is forwarded to another NE in the network. Each remote NE is allowed 2 minutes to respond. If a valid time and date is not found within the network, it must be entered manually.

**NTP Method for Time and
Date Synchronization**

Upon turnup or following a Metropolis[®] DMX system reset, the date and time revert to January 1, 1970 (70-01-01) at midnight (00:00:00). The NE (NTP client) queries for Day and Time from an NTP server (a list of NTP servers is maintained on NE). NTP uses the Universal Time Coordinated (UTC) for synchronization.

For subsequent synchronization, the NTP client keeps monitoring all the NTP servers to determine the most reliable clock and compares the time reported with its current time (reliability is determined by clock selection procedures which include accessibility). If the time differs by more than the allowable amount of drift, it resets the time. The Metropolis[®] DMX NTP client adjusts its clock in small steps (gradually) or in a single step depending upon the significance of the offset from the system clock.

Related information

For related information, see the *Metropolis[®] DMX Access Multiplexer User Operations Guide*, 365-372-301.

Before you begin

Select a source for your time setting. If you are manually setting the date and time, determine the correct time from an established source. If you are using NTP, identify the NTP server(s) to be used as source.

If you are using NTP, it is assumed that IP tunneling has already been established or else each node has its own IP address.

Also, if you are using NTP, you will need to know the Universal Time Coordinated Offset (UTC_{Co}) for the time zone in which the NTP client is located.

Task Complete the following steps to set the system time and date:

-
- 1 Connect PC and establish a WaveStar® CIT session.

Reference: “[Task 600: Connect Personal Computer \(PC\) and Establish WaveStar® CIT Session](#)” (5-3)

.....

- 2 Do you plan to use the Network Time Protocol?

If...	Then...
Yes	Proceed to Step 9 .
No	Continue with Step 3 .

-
- 3 From the **System View** menu, select **Administration > Set Date and Time** to bring up the **Set system’s date and time for DMX** screen.
-

- 4 From the **Date** panel, select the **Year** and **Month** from the pulldown menus.

Result: A calendar is displayed for the month and year selected.

.....

- 5 Click on the date from the calendar.
-

- 6 From the **Time** panel, select the **Hour**, **Minute**, and **Second** from the pulldown menus (based upon a twelve hour clock).

.....

7 Select **am** or **pm**.

.....

8 Click **OK**.

Result: The new date and time appear in the lower right hand corner of the GUI **System View**.

STOP! END OF TASK.

- 9 From the **System View** menu, select **Administration > Set Network Time Protocol...** to bring up the **Provision Network Time Protocol Server for DMX** screen.

Provision Network Time Protocol Server for DMX

Network Time Protocol

☐ Enabled ☒ Disabled

Note: NTP must be set to "Disabled" in order to change any provisionable settings.

Coordinated Universal Time Offset

☒ Plus (+) ☐ Minus (-)

Hour:

Minute:

Time Change Threshold

(in Milliseconds):

Maximum Adjustment Threshold Milliseconds

(in Milliseconds):

Poll Interval

Minimum Poll Interval (seconds):

Maximum Poll Interval (seconds):

Network Element's NTP Server(s)

NTP Server(s) IP Address(es)
122.2.2.2
122.2.2.3
122.2.2.4

Add NTP Server Delete NTP Server Apply Close Help

-
- 10** From the **Network Time Protocol** panel, select **Disabled**.
You will not be able to enter provisionable data while Enabled is selected. Disabling NTP prevents the NE from receiving NTP information from the designated NTP server.
-

- 11** From the **Coordinated Universal Time Offset** panel, enter the number of **hours** and **minutes** from the pulldown menus to indicate the time difference from the UTC to the NTP client. Then select **plus (+)** or **minus (-)** to indicate the direction of change.

Example:

In most cases, the **minutes** will be set to **00**. Very few time zones use an additional 30 minute offset.

.....

- 12** From the **Time Change Threshold Milliseconds** panel, select a number between 1 and 499. The number may be selected by sliding the pointer until the desired number appears in the box to the left, or by simply typing the desired number into the box.

The number entered represents the number of milliseconds of clock adjustment that will generate an autonomous message to the WaveStar® CIT and OS.

This message indicates that NE clocks should be synchronized.

Important! Do not press Enter/Return on the keyboard if you opt to type in the number.

-
- 13** From the **Maximum Adjustment Threshold Milliseconds** panel, select a number between 500 and 10,000 (default is 1000). The number may be selected by sliding the pointer until the desired number appears in the box to the left, or by simply typing the desired number into the box.

The number entered represents the number of milliseconds of clock adjustment that will generate an autonomous message.

This message indicates that certain scheduled operations may be effected (e.g., performance monitoring), and usually only occurs at startup or system reset.

Important! Do not press Enter/Return on the keyboard if you opt to type in the number.

.....

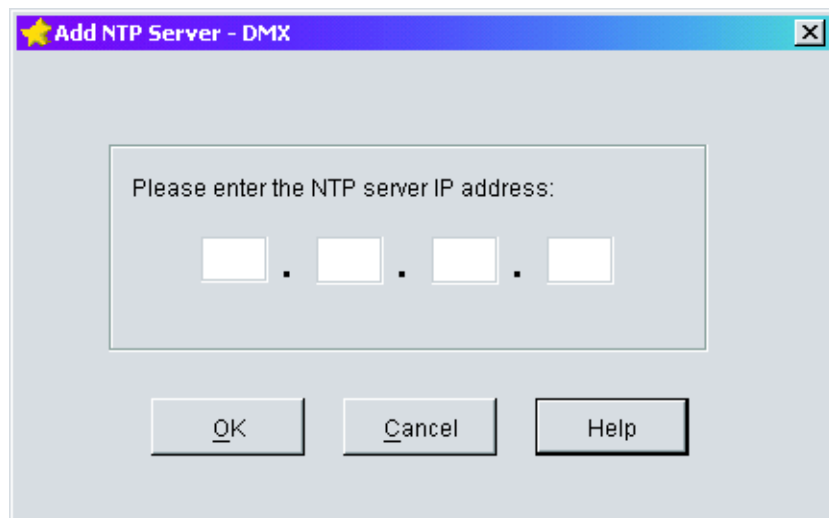
- 14** From the **Poll Interval** panel, select a **Minimum Poll Interval (seconds)** and a **Maximum Poll Interval (seconds)** from the pulldown menus. These numbers represent the least and most amount of time between the NTP client's queries to the server. Allowable values are between 2 and 4096 (seconds) and increment by powers of two (2, 4, 8, 16, ... 4096). The default minimum is 64 seconds and the default maximum is 1024 seconds.

Selecting a higher minimum interval will reduce the traffic generated by the poll. The poll interval gradually increases towards the maximum interval so long as the changes to the NE clock remain small and infrequent. If the changes to the clock become large and/or frequent, the poll interval shifts towards the minimum interval. NTP determines the interval that best maintains synchronization between the client and the server.

-
- 15** From the **Network Element's NTP Server(s)** panel, enter the IP address(es) of up to three known NTP Servers. NTP ranks these servers based upon availability and dependability. When a query is issued, NTP first attempts to synchronize with the most recently accessed server, and if it is unavailable, the query is issued to the highest ranked available server.

Note: There is no auto-discovery for NTP servers. This list must be entered and changed, manually.

Click the **Add NTP Server** button at the bottom of the screen. Enter the IP address of the server in the following screen (each segment of the address should be entered in a separate box, sequentially across the screen).

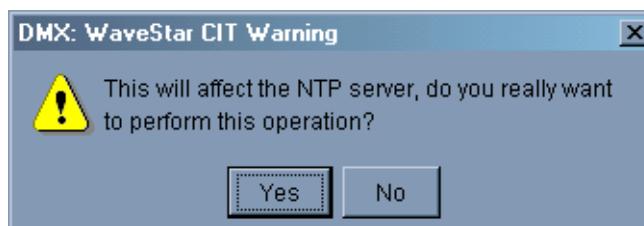


Click **OK**.

*Note: To remove an NTP server from the list, click to highlight one of the IP addresses in the **NTP Server(s) IP Address(es)** list. Click on **Delete NTP Server** button at the bottom of the screen.*

-
- 16** Once you have completed the NTP form, click **Apply**.

The following message will appear:



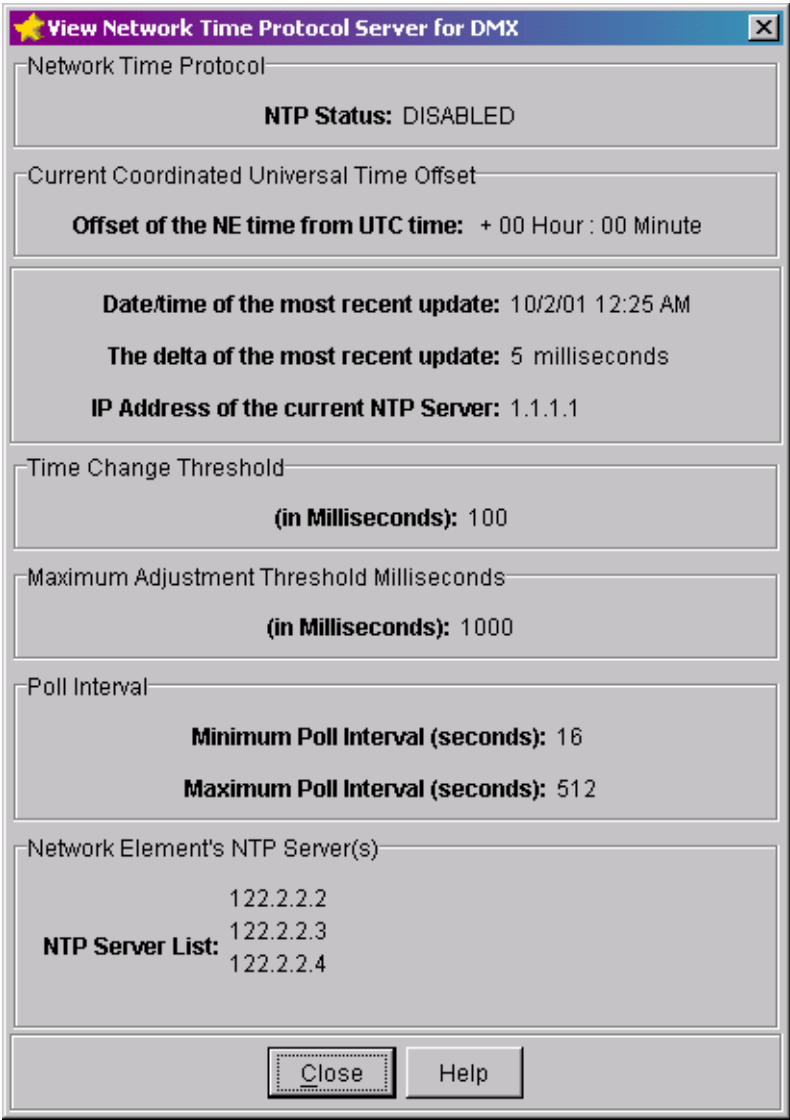
Click **Yes**.

-
- 17** From the **Network Time Protocol** panel, select **Enabled**.
You will not be able to enter provisionable data while Enabled is selected.

Important! In order for NTP parameter changes to take effect, the NTP has to be disabled and then re-enabled.

-
- 18** Click **Apply** and then **Close**.

- 19 Once you have completed the provisioning, you may verify NTP status at any time by selecting **Administration > View Network Time Protocol...** from the **System View**.



END OF STEPS





Glossary

Abbreviations and Acronyms

A	ABN Abnormal (status condition)
	AC Alternating Current
	ADM Add/Drop Multiplexer
	ADR Add/Drop Ring
	AGNE Alarm Gateway Network Element
	AIS Alarm Indication Signal
	AMI Alternate Mark Inversion
	ANSI American National Standards Institute
	APD Avalanche PhotoDiode
	APS Automatic Protection Switch
	ASAP Alarm Severity Assignment Profile
	ASCII American Standard Code for Information Interchange

ASN.1

Abstract Syntax Notation 1

ATM

Asynchronous Transfer Mode

Auto

Automatic

B B3ZS

Bipolar 3-Zero Substitution

B8ZS

Bipolar 8-Zero Substitution

BDFB

Battery Distribution and Fuse Bay

BER

Bit Error Rate

BIP

Bit Interleaved Parity

BITS

Building Integrated Timing Supply

BLSR

Bidirectional line-switched ring

C CC

Clear Channel

CCITT

Comité Consultatif International Télégraphique & Téléphonique

(International Telephone and Telegraph Consultative Committee)

CD-ROM

Compact Disk, Read-Only Memory

CIT

Craft Interface Terminal

CLEI

Common Language Equipment Identifier

CLK

Clock

CMISE

Common Management Information Service Element

CO

Central Office

CP

Circuit Pack

CPE

Customer Premises Equipment

CR

Critical (alarm status)

CTS

Customer Technical Support; now known as Technical Support Services (TSS)

CV

Coding Violation

CVFE

Coding Violation Far End

D DACS

Digital Access Cross-Connect System

dB

Decibels

DC

Direct Current

DCC

Data Communications Channel

DCE

Data Communications Equipment

DEMUX

Demultiplexer

DLC

Digital Loop Carrier

DRI

Dual Ring Interworking

DS1

Digital Signal Level 1

DS3

Digital Signal Level 3

DSLAM

Digital Subscriber Line Access Multiplexer

DSNE

Directory Services Network Element

DSX

Digital Cross-Connect Panel

DTE

Data Terminating Equipment

DWDM

Dense Wavelength Division Multiplexing

E EC-1

Electrical Carrier Level 1

ECI

Equipment Catalog Item

EEPROM

Electrically-Erasable Programmable Read-Only Memory

EIA

Electronic Industries Association

EMC

Electromagnetic Compatibility

EMI

Electromagnetic Interference

EOOF

Excessive Out of Frame

EPORT

Ethernet Port

EPROM

Erasable Programmable Read-Only Memory

EQ

Equipped (memory administrative state)

EQPT

Equipment

ES

Errored Seconds

ESD

Electrostatic Discharge

ESF

Extended Super Frame

EST

Environmental Stress Testing

F FCC

Federal Communications Commission

FE

Far End

FE ACTY

Far End Activity

FEBE

Far End Block Error

FEC

Forward Error Correction

FEPROM

Flash EPROM

FIT

Failures in 10^{-9} hours of operation.

FTAM

File Transfer and Access Management

G GB

Gigabytes

GbE

Gigabit Ethernet

Gb/s

Gigabits per second

GHz

Gigahertz

GNE

Gateway Network Element

GR-XXX

Telcordia Technologies (Bellcore) General Requirement-XXX

GUI

Graphical User Interface

H HS

High Speed

Hz
Hertz

I **IAO LAN**
Intraoffice Local Area Network

ID
Identifier

IEC
International Electrotechnical Commission

IEEE
Institute of Electrical and Electronics Engineers

IMF
Infant Mortality Factor

INC
Incoming Status

I/O
Input/Output

IP
Internet Protocol

IR
Intermediate Reach

IS
In Service

ISDN
Integrated Services Digital Network

ISO
International Standards Organization

ISP
Internet Service Provider

K Kb/s
Kilobits per second

L LAN
Local Area Network

LAPD
Link Access Procedure "D"

LBC
Laser Bias Current

LBO
Line Build Out

LCN
Local Communications Network

LEC
Local Exchange Carrier

LED
Light-Emitting Diode

LGX
Lightguide Cross-Connect

LOF
Loss of Frame

LOP
Loss of Pointer

LOS
Loss of Signal

LPBK
Loopback

LR
Long Reach

LS
Low Speed

M MB
Megabytes

Mb/s
Megabits per second

MJ
Major Alarm

MM
Multimode

MML
huMan-Machine Language

MN
Minor Alarm

MPEG
Moving Picture Experts Group

MTBF
Mean Time Between Failures

MTBMA
Mean Time Between Maintenance Activities

Mult
Multipling

MUX
Multiplex

N NA
Not Applicable

NARTAC
North American Regional Technical Assistance Center

NE

Near End

NE

Network Element

NE ACTY

Near-End Activity

NEBS

Network Equipment-Building System

nm

Nanometer (10^{-9} meters)

NMA

Network Monitoring and Analysis

NMON

Not Monitored (provisioning state)

NRZ

Nonreturn to Zero

NSA

Not Service Affecting

NSAP Address

Network Service Access Point Address (used in the OSI network layer 3)

NTF

No Trouble Found

NVM

Non-Volatile Memory

O OAM&P

Operations, Administration, Maintenance, and Provisioning

OC-1

Optical Carrier, Level 1 Signal (51.84 Mb/s)

OC-3

Optical Carrier, Level 3 Signal (155.52 Mb/s)

OC-12

Optical Carrier, Level 12 Signal (622.08 Mb/s)

OC-48

Optical Carrier, Level 48 Signal (2488.32 Mb/s) (2.5 Gb/s)

OC-192

Optical Carrier, Level 192 Signal (9953.28 Mb/s) (10 Gb/s)

OLIU

Optical Line Interface Unit

OI

Operations Interworking

OOF

Out of Frame

OOL

Out of Lock

OOS

Out-of-Service

OPS/INE

Operations System/Intelligent Network Element

OS

Operations System

OSI

Open Systems Interconnection

OSMINE

Operations Systems Modifications for the Integration of Network Elements

OSP

Outside Plant

P **P-bit**
Performance Bit

PC
Personal Computer

PCMCIA
Personal Computer Memory Card International Association

PID
Program Identification

PJC
Pointer Justification Count

PLL
Phase-Locked Loop

PM
Performance Monitoring

POP
Points of Presence

POTS
Plain Old Telephone Service

PROTN
Protection

PWR
Power

R **RAM**
Random Access Memory

RDI
Remote Defect Indication

RTAC
Lucent Regional Technical Assistance Center (1-800-225-RTAC)

RTRV

Retrieve

RU

Rack Unit

RZ

Return to Zero

S**SA**

Service Affecting

SD

Signal Degrade

SEFS

Severely Errored Frame Seconds

SES

Severely Errored Seconds

SF

Super Frame (format for DS1 signal)

SID

System Identification

SM

Single Mode

SMC

SONET Minimum Clock

SNMP

Simple Network Management Protocol

SONET

Synchronous Optical NETwork

SPE

Synchronous Payload Envelope

SRD

Software Release Description

STS, STS-n

Synchronous Transport Signal

STS-1 SPE

STS-1 Synchronous Payload Envelope

STS-3c

Synchronous Transport Level 3 Concatenated Signal

STS-12c

Synchronous Transport Level 12 Concatenated Signal

STS-48c

Synchronous Transport Level 48 Concatenated Signal

STU

Synchronized - Traceability Unknown

SYSCTL

System Controller (circuit pack)

T T1X1 and T1M1

The ANSI committees responsible for telecommunications standards

TA

Telcordia Technologies Technical Advisory

TARP

Target Identifiers Address Resolution Protocol

TBD

To Be Determined

TCA

Threshold-Crossing Alert

TCP/IP

Transmission Control Protocol/Internet Protocol

TDM

Time Division Multiplexing

THz

Terrahertz (10¹² Hz)

TID

Target Identifier

TIRKS

Trunks Integrated Records Keeping System

TL1

Transaction Language 1

TR

Telcordia Technologies Technical Requirement

TSA

Time Slot Assignment

TSI

Time Slot Interchange

TSO

Technical Support Organization

U**UAS**

Unavailable Seconds

UPD/INIT

Update/Intialize

UPSR

Unidirectional Path Switched Rings

V**VAC**

Volts Alternating Current

VCG

Virtual Container Group

VDC

Volts Direct Current

VLAN

Virtual Local Area Network

VM

Violation Monitor

VMR

Violation Monitor and Removal

VoIP

Voice over Internet Protocol

VPN

Virtual Private Network

vslot

Virtual Slot

VT

Virtual Tributary

VT1.5

Virtual Tributary 1.5 (1.728 Mb/s)

W WAN

Wide Area Network

WDCS

Wideband Digital Cross-Connect System

WDM

Wavelength Division Multiplexing

WRT

Wait to Restore Time

X X.25

An ITU standard defining the connection between a terminal and a public packet-switched network

Terms and Definitions

Numerics 1+1

The 1+1 protection switching architecture protects against failures of the optical transmit/receive equipment and their connecting fiber facility. One bidirectional interface (two fibers plus associated OLIUs on each end) is designated "service," and the other is designated "protection." In each direction, identical signals are transmitted on the service and protection lines ("dual-fed"). The receiving equipment monitors the incoming service and protection lines independently, and selects traffic from one line (the "active" line) based on performance criteria and technician/OS control. In 1+1 both service and protection lines could be active at the same time (service in one direction, protection in the other).

1xN, 1x1

1xN protection switching pertains to circuit pack protection that provides a redundant signal path through the DMX 2.5G Multiplexer (it does not cover protection switching of an optical facility; see "1+1"). In 1xN switching, a group of N service circuit packs share a single spare protection circuit pack. 1x1 is a special case of 1xN, with N=1. In 1x1 only one is active at a time.

A Active

Active identifies a 1+1 protected OC-N line which is currently selected by the receiver at either end as the payload carrying signal or a 1x1 or 1xN protected circuit pack that is currently carrying service. (See Standby).

Add/Drop Multiplexer (ADM)

The term for a synchronous network element capable of combining signals of different rates and having those signals added to or dropped from the stream.

Alarm

Visible or audible signal indicating that an equipment failure or significant event/condition has occurred.

Alarm Cut-Off (ACO)

A button on the SYSCTL used to silence audible alarms.

Alarm Gateway Network Element (AGNE)

A defined NE in an alarm group through which members of the alarm group exchange information.

Alarm Indication Signal (AIS)

A code transmitted downstream in a digital network that shows that an upstream failure has been detected and alarmed.

Alarm Severity Assignment Profile (ASAP)

A user provisioned mechanism to control an alarm level.

Alternate Mark Inversion (AMI)

A line code that employs a ternary signal to convey binary digits, in which successive binary ones are represented by signal elements that are normally of alternating, positive and negative polarity but equal in amplitude, and in which binary zeros are represented by signal elements that have zero amplitude.

APS Channel

The signalling channel carried in the K1 and K2 bytes of the SONET overhead on the protection line. It is used to exchange requests and acknowledgments for protection switch actions.

American Standard Code for Information Interchange (ASCII)

A standard 7-bit code that represents letters, numbers, punctuation marks, and special characters in the interchange of data among computing and communications equipment.

Asynchronous Transfer Mode (ATM)

A high-speed transmission technology characterized by high bandwidth and low delay. It utilizes a packet switching and multiplexing technique which allocates bandwidth on demand.

Auto

One possible state of a DS1 or DS3 port. In this state, the port will automatically be put "in service" if a good signal is detected coming from the DSX panel.

Automatic Protection Switch

A feature that allows another synchronization source to be automatically selected and the synchronization source provisioning to be automatically reconfigured in the event of a synchronization source failure or network synchronization change, for example, a fiber cut.

Autonomous Message

A message transmitted from the controlled Network Element to the ITM-SC which was not a response to an ITM-SC originated command.

Avalanche Photodiode (APD)

A diode that increases its electrical conductivity by a multiplication effect when hit by light. APDs are used in lightwave receivers because the APDs have a greater sensitivity to weakened light signals (for example, those which have traveled long distances over fiber).

B Backbone Ring

A host ring.

Backup

The backup and restoration features provide the capability to recover from loss of NE data because of such

factors as human error, power failure, NE design flaws, and software bugs.

Bandwidth

The difference in Hz between the highest and lowest frequencies in a transmission channel. The data rate that can be carried by a given communications circuit.

Baud Rate

Transmission rate of data (bits per second) on a network link.

Bidirectional Line

A transmission path consisting of two fibers that handle traffic in both the transmit and receive directions.

Bidirectional Line-Switched Ring (BLSR)

A bidirectional ring in which protection switching is accomplished by switching working traffic into protection time slots in the line going in the opposite direction around the ring.

Bidirectional Ring

A ring in which both directions of traffic between any two nodes travel through the same network elements (although in opposite directions).

Bidirectional Switch

Protection switching performed in both the transmit and receive directions.

Bipolar 8-Zero Substitution (B8ZS)

A line coding technique that replaces eight consecutive zeros with a bit sequence having special characteristics accomplishing two objectives: First, this bit sequence accommodates the density requirements of the ones for digital T1 carrier; Second, the sequence is recognizable at the destination (due to deliberate bipolar violations) and is removed to produce the original signal.

Bit

The smallest unit of information in a computer, with a value of either 0 or 1.

Bit Error Rate (BER)

The ratio of error bits received to the total number of bits transmitted.

Bit Error Rate Threshold

The point at which an alarm is issued for bit errors.

Bit Interleaved Parity-N(BIP-N)

A method of error monitoring over a specified number of bits (BIP-3 or BIP-8).

BITS clock

A BITS (Building Integrated Timing Source) clock is simply a clock within a central office that distributes timing to all the equipment in that central office. The BITS clock is tied to an external, stable timing source,

such as a GPS (global positioning satellite).

Bridge Cross-Connection

The setting up of a cross-connection leg with the same input tributary as that of an existing cross-connection leg. Thus, forming a 1:2 bridge from an input tributary to two output tributaries.

Broadband

Any communications channel with greater bandwidth than a voice channel; sometimes used synonymously with wideband.

Byte

Refers to a group of eight consecutive binary digits.

C C-Bit

A framing format used for DS3 signals produced by multiplexing 28 DS1s into a DS3. This format provides for enhanced performance monitoring of both near-end and far-end entities.

CCITT - International Telephone and Telegraph Consultative Committee

An international advisory committee under United Nations' sponsorship that has composed and recommended for adoption worldwide standards for international communications. Recently changed to the International Telecommunications Union Telecommunications Standards Sector (ITU-TSS).

Channel

A logical signal within a port. For example, for an EC-1 port, there is one STS-1 channel and sometimes 28 VT1.5 channels. See Port.

Channel State Provisioning

A feature that allows a user to suppress reporting of alarms and events during provisioning by supporting multiple states (automatic, in-service and not monitored) for VT1.5 and STS-1 channels. See Port State Provisioning.

Circuit

A set of transmission channels through one or more network elements that provides transmission of signals between two points, to support a single communications path.

Clear Channel (CC)

A provisionable mode for the DS3 output that causes parity violations not to be monitored or corrected before the DS3 signal is encoded.

Coding Violation (CV)

A performance monitoring parameter indicating that bipolar violations of the signal have occurred.

Collocated

System elements that are located in the same location.

Concatenation

A procedure whereby multiple virtual containers are associated one with each other resulting in a combined capacity that can be used as a single container across which bit sequence integrity is maintained.

Craft Interface Terminal (CIT)

The user interface terminal used by craft personnel to communicate with a network element.

Critical (CR)

Alarm that indicates a severe, service-affecting condition.

Cross-Connect Capacity

The total bandwidth of cross-connections as measured by the bandwidth of input and output tributaries. A system with N STS-1 equivalent input tributaries and N STS-1 equivalent output tributaries (referred to as "NxN") provides a cross-connection capacity of N STS-1 equivalents. This system could provide N one-way point-to-point cross-connections or N^2 two-way point-to-point cross-connections at the equivalent rate of STS-1.

Cross-Connect Loopback

A cross-connection from an input tributary to the output of that same tributary via the cross-connect fabric.

Cross-Connect Rate

The attribute of a cross-connection that defines the constituent signal rate(s) it can carry. For a cross-connection with an STS-3 "pipe" cross-connection rate, the constituent signals carried by the cross-connection can be either an STS-3c signal or three STS-31 signals. Similarly, for a cross-connection with an STS-12 "pipe" cross-connection rate, the constituent signals carried by the cross-connection can be either an STS-12c signal or an allowed mix of STS-12c signals and STS-3 signals.

Cut-Through

Refers to a simple ASCII interface to an NE. It enables the user to send TL1 messages directly to the NE with no interpretation or assistance provided by the WaveStar CIT.

D DACS III-2000

Digital Access and Cross-Connect System that provides clear channel switching at either the DS3 or the STS-1 rates, eliminating the need for manual DSXs.

DACS IV-2000

Digital Access and Cross-Connect System that provides electronic DS3/STS-1 or DS1/VT1.5 cross-connect capability, eliminating the need for manual DSXs.

Data Communications Channel (DCC)

The embedded overhead communications channel in the synchronous line, used for end-to-end communications and maintenance. The DCC carries alarm, control, and status information between network elements in a synchronous network.

Data Communications Equipment (DCE)

The equipment that provides signal conversion and coding between the data terminating equipment (DTE) and the line. The DCE may be separate equipment or an integral part of the DTE or of intermediate equipment. A DCE may perform other functions usually performed at the network end of the line.

Data Terminating Equipment (DTE)

The equipment that originates data for transmission and accepts transmitted data.

DDM-2000

Lucent's current SONET multiplexers that multiplex DS1, DS3, or EC-1 inputs into EC-1, OC-1, OC-3, or OC-12 outputs.

Default Provisioning

The parameter values that are preprogrammed as shipped from the factory.

Demultiplexing

A process applied to a multiplexed signal for recovering signals combined within it and for restoring the distinct individual channels of these signals.

DEMUX - Demultiplexer

The DEMUX direction is from the fiber toward the DSX.

Dense Wavelength Division Multiplexing (DWDM)

Transmitting two or more signals of different wavelengths simultaneously over a single fiber.

Digital Multiplexer

Equipment that combines time-division multiplexing several digital signals into a single composite digital signal.

Digital Signal Levels 0, 1, 3 (DS0, DS1, DS3)

An ANSI-defined signal or service level corresponding to the following: DS0 is 64 Kb/s, DS1 is 1.544 Mb/s (equivalent to T1), and DS3 is 44.736 Mb/s (equivalent to 28 T1 channels or T3).

DS3 Format

Specifies the line format of a DS3 interface port, such as M23 or C-bit parity.

Directory Services Network Element (DSNE)

A designated network element that is responsible for administering a database that maps network element names (TIDs) to addresses (NSAPs - network service access points) in an OSI subnetwork. There can be

one DSNE per ring. Can also be a GNE.

Digital Cross-Connect Panel (DSX)

A panel designed to interconnect to equipment that operates at a designated rate. For example, a DSX-3 interconnects equipment operating at the DS3 rate.

Dual Homing

A network topology in which two OC-3 or OC-12 shelves serve as hosts supporting up to 16 OC-3 rings or 4 OC-12 rings.

E EC-1, EC-n - Electrical Carrier

The basic logical building block signal with a rate of 51.840 Mb/s for an EC-1 signal and a rate of n times 51.840 Mb/s for an EC-n signal. An EC-1 signal can be built in two ways: A DS1 can be mapped into a VT1.5 signal and 28 VT1.5 signals multiplexed into an EC-1 (VT1.5 based EC-1), or a DS3 can be mapped directly into an EC-1 (DS3 based EC-1).

Electromagnetic Compatibility (EMC)

A measure of equipment tolerance to external electromagnetic fields.

Electromagnetic Interference (EMI)

High-energy, electrically induced magnetic fields that cause data corruption in cables passing through the fields.

Electronic Industries Association (EIA)

A trade association of the electronic industry that establishes electrical and functional standards.

Electrostatic Discharge (ESD)

Static electrical energy potentially harmful to circuit packs and humans.

ECI - Equipment Catalog Item

The bar code number on the faceplate of each circuit pack used by some inventory systems.

Errored Seconds (ES)

A performance monitoring parameter. ES “type A” is a second with exactly one error; ES “type B” is a second with more than one and less than the number of errors in a severely errored second for the given signal. ES by itself means the sum of the type A and type B ESs.

Establish

A user initiated command, at the WaveStar CIT, to create an entity and its associated attributes in the absence of certain hardware.

Event

A significant change. Events in controlled Network Elements include signal failures, equipment failures,

signals exceeding thresholds, and protection switch activity. When an event occurs in a controlled Network Element, the controlled Network Element will generate an alarm or status message and send it to the management system.

Extended Superframe Format (ESF)

A T1 format that uses the framing bit for non-intrusive signaling and control. A T1 frame is sent 8,000 times a second, with each frame consisting of a payload of 192 bits, and with each frame preceded by a framing bit. Because ESF only requires 2,000 framing bits for synchronization, the remaining 6,000 framing bits can be used for error detection.

Externally Timed

An operating condition of a clock in which it is locked to an external reference and is using time constants that are altered to quickly bring the local oscillator's frequency into approximate agreement with the synchronization reference frequency.

F Facility

A one- or two-way circuit that carries a transmission signal.

Facility Loopback

A facility loopback is where an entire line is looped back.

Facility Roll

The disconnection of the circuit cross-connecting input tributary to an output tributary followed, within the required completion time (≤ 2.5 ms), by a cross-connection of an input tributary to an output tributary.

Failures in Time (FIT)

Circuit pack failure rates per 109 hours as calculated using the method described in Reliability Prediction Procedure for Electronic Equipment, Telcordia Method I, Issue 5, September 1995.

Far End (FE)

Any other network element in a maintenance subnetwork other than the one the user is at or working on. Also called remote.

Far-End Receive Failure (FERF)

An indication returned to a transmitting Network Element that the receiving Network Element has detected an incoming section failure. Also known as RDI (Remote Detect Indication).

Fault

Term used when a circuit pack has a hard (not temporary) fault and cannot perform its normal function.

Fault Management

Collecting, processing, and forwarding of autonomous messages from network elements.

File Transfer and Access Management (FTAM)

FTAM is the Open Systems Interconnection (OSI) standard for file transfer, file access, and file management.

Flash EPROM

A technology that combines the nonvolatility of EPROM with the in-circuit reprogrammability of EEPROM (electrically-erasable PROM).

Forced

Term used when a circuit pack (either working or protection) has been locked into a service-providing state by user command.

Forced Switch to Protection

The WaveStar CIT command that forces the protection group to be the “Active Unit.” The clear command is required to remove the Forced Switch state. While in the Forced Switch state the system may not switch the active unit either automatically, by means of the WaveStar CIT Forced Switch, or Manual Switch command.

Free Running

An operating condition of a clock in which its local oscillator is not locked to an internal synchronization reference and is using no storage techniques to sustain its accuracy.

FT-2000

Lucent’s SONET OC-48 Lightwave System.

Function Unit

Refers to any one of a number of different circuit packs that can reside in the A, B, C, or D function unit slots on the DMX 2.5G Multiplexer.

G Gateway Network Element (GNE)

A network element that passes information between other network elements and management systems through a data communication network.

H Hairpin Routing

A cross-connection between function units (inter-function unit). For example, function unit C to function units A, B, or D. Also, a cross-connection within the same function unit (intra-function unit). Cross-connections go through Main, but no bandwidth or time slots are taken from the backbone ring. Eliminates need for another shelf.

Holdover

An operating condition of a network element in which its local oscillator is not locked to any synchronization reference but is using storage techniques to maintain its accuracy with respect to the last known frequency comparison with a synchronization reference.

I Insert

To physically insert a circuit pack into a slot, thus causing a system-initiated restoral of an entity into service and/or creation of an entity and associated attributes.

In-Service (IS)

A memory administrative state for ports. IS refers to a port that is fully monitored and alarmed.

Intermediate Reach (IR)

A term used to describe distances of 15 to 40 km between optical transmitter and receiver without regeneration. See long reach.

J Jitter

Timing jitter is defined as short-term variations of the significant instants of a digital signal from their ideal positions in time.

L Lightguide Build-Out (LBO)

An attenuating (signal-reducing) element used to keep an optical output signal strength within desired limits.

Lightguide Cross-Connect (LGX)

A SONET device that contains ports for optical fiber connections to an optical network element (NE). An LGX is used to make and change connections to an NE without changing the cabling on the NE itself.

Light Emitting Diode (LED)

Used on a circuit pack faceplate to show failure (red) or service state. It is also used to show the alarm and status condition of the system.

Line

A transmission medium, together with the associated equipment, required to provide the means of transporting information between two consecutive network elements. One network element originates the line signal; the other terminates it.

Line Timing

The capability to directly derive clock timing from an incoming OC-N signal while providing the user the capability to provision whether switching to an alternate OC-N from a different source (as opposed to entering holdover) will occur if the OC-N currently used as the timing reference for that NE becomes

unsuitable as a reference. For example, intermediate nodes in a linear network are line timed. See Loop Timing.

Local

See Near-End.

Local Area Network (LAN)

A communications network that covers a limited geographic area, is privately owned and user administered, is mostly used for internal transfer of information within a business, is normally contained within a single building or adjacent group of buildings, and transmits data at a very rapid speed.

Long Reach (LR)

A term used to describe distances of 40 km or more between optical transmitter and receiver without regeneration. See Intermediate Reach.

Loopback

Type of diagnostic test used to compare an original transmitted signal with the resulting received signal. A loopback is established when the received optical or electrical external transmission signal is sent from a port or tributary input directly back toward the output.

Loss of Frame (LOF)

A failure to synchronize to an incoming signal.

Loss of Pointer (LOP)

A failure to extract good data from an STS-1 payload.

Loss of Signal (LOS)

The complete absence of an incoming signal.

M M23-Format

A standard framing format used for DS3 signals produced by multiplexing 28 DS1s into a DS3 (sometimes referred to as M13-format, without C-bit parity).

Main

The two slots (M-1 and M-2) on a Metropolis[®] DMX shelf in which the OC-48 or OC-192 high speed OLIU circuit packs are installed.

Major

Indicates a service-affecting failure, main or unit controller failure, or power supply failure.

Maintenance Condition

An equipment state in which some normal service functions are suspended, either because of a problem or to perform special functions (copy memory) that can not be performed while normal service is being provided.

Minor (MN)

Indicates a non-service-affecting failure of equipment or facility.

Miscellaneous Discrete Interface

Allows an operations system to control and monitor equipment collocated within a set of input and output contact closures.

Multiplexer

A device (circuit pack) that combines two or more transmission signals into a combined signal on a shared medium.

Multiplexing

The process of combining multiple signals into a larger signal at the transmitter by a multiplexer. The large signal is then split into the original smaller signals at the receiver by a demultiplexer.

N Network Element (NE)

A node in a telecommunication network that supports network transport services and is directly manageable by a management system.

Network Service Access Point (NSAP) Address

Network Service Access Point Address (used in the OSI network layer 3). An automatically assigned number that uniquely identifies a Network Element for the purposes of routing DCC messages.

Node

A network element in a ring or, more generally, in any type of network. In a network element supporting interfaces to more than one ring, node refers to an interface that is in a particular ring. Node is also defined as all equipment that is controlled by one system controller. A node is not always directly manageable by a management system.

Near End

The network element the user is at or working on. Also called local.

Network Element (NE)

The basic building block of a telecommunications equipment within a telecommunication network that meets SONET standards. Typical internal attributes of a network element include: one or more high- and low-speed transmission ports, built-in intelligence, synchronization and timing capability, and access interfaces for use by technicians and/or operation systems. In addition, a network element may also include a time slot interchanger.

Non-Revertive Switching

In non-revertive switching, an active and standby line exist on the network. When a protection switch occurs, the standby line is selected to support traffic, thereby becoming the active line. The original active line then becomes the standby line. This status remains in effect even when the fault clears. That is, there is no automatic switch back to the original status.

Non-Volatile Memory (NVM)

Memory that retains its stored data after power has been removed. An example of NVM would be a hard disk.

No Request State

This is the routine-operation quiet state in which no external command activities are occurring.

Not Monitored (NMON)

A provisioning state for equipment that is not monitored or alarmed.

O OC, OC-n - Optical Carrier

The optical signal that results from an optical inversion of an STS signal; that is, OC-1 from STS-1 and OC-n from STS-n.

OC-1

Optical Carrier Level 1 Signal (51.844 Mb/s).

OC-3

Optical Carrier Level 3 Signal (155 Mb/s).

OC-12

Optical Carrier Level 12 Signal (622 Mb/s).

OC-48

Optical Carrier Level 48 Signal.

Open Systems Interconnection (OSI)

Referring to the OSI reference model, a logical structure for network operations standardized by the International Standards Organization (ISO).

Operations Interface

Any interface providing you with information on the system behavior or control. These include the equipment LEDs, SYSCTL faceplate, WaveStar CIT, office alarms, and all telemetry interfaces.

Operations Interworking (OI)

The capability to access, operate, provision, and administer remote systems through craft interface access from any site in a SONET/SDH network or from a centralized operations system.

Operations System (OS)

A central computer-based system used to provide operations, administration, and maintenance functions.

P Pass Through

Paths that are cross-connected directly across an intermediate node in a ring network.

Path

A logical connection between the point at which a standard frame format for the signal at the given rate is assembled, and the point at which the standard frame format for the signal is disassembled.

Path Protection Group

The part of a cross-connection topology that is provisioned to provide path-level protection switching for all the constituent signals carried by the cross-connection. A path protection group can be identified as an entity by its logical output tributary and its cross-connection rate. A path protection group consists of one or more constituent path selectors.

Performance Monitoring (PM)

Measures the quality of service and identifies degrading or marginally operating systems (before an alarm would be generated).

Plesiochronous Network

A network that contains multiple maintenance subnetworks, each internally synchronous and all operating at the same nominal frequency, but whose timing may be slightly different at any particular instant. For example, in SONET networks, each timing traceable to their own Stratum 1 clock are considered plesiochronous with respect to each other

Port (also called Line)

The physical interface, consisting of both an input and output, where an electrical or optical transmission interface is connected to the system and may be used to carry traffic between network elements. The words “port” and “line” may often be used synonymously. “Port” emphasizes the physical interface, and “line” emphasizes the interconnection. Either may be used to identify the signal being carried.

Port Protection Group

A user provisioned association of protected optical interface ports. This association is used for line protection. The group of ports represent both a protection switching entity and also a set of lines that carry services to/from another network element. The port protection groups also determine the set of logical tributaries from and to which cross-connections can be provisioned.

Port State Provisioning

A feature that allows a user to suppress alarm reporting and performance monitoring during provisioning by supporting multiple states (automatic, in-service, and not monitored) for low-speed ports. *See Channel State Provisioning.*

Proactive Maintenance

Refers to the process of detecting degrading conditions not severe enough to initiate protection switching or alarming, but indicative of an impending signal fail or signal degrade defect (for example, performance monitoring).

Protection

Extra capacity (channels, circuit packs) in transmission equipment that is not intended to be used for service, but rather to serve as backup against equipment failures.

Provisioning

The modification of certain programmable parameters that define how the node functions with various installed entities. These modifications are initiated locally or remotely by either a CIT or an OS. They may arrive at the node via the IAO LAN, CIT port, or any DCC channel. The provisioned data is maintained in NVM and/or hardware registers.

R Reactive Maintenance

Refers to detecting defects/failures and clearing them.

Remote

See Far-End (FE).

Remote Defect Indication (RDI)

An indication returned to a transmitting terminal that the receiving terminal has detected an incoming section failure. [Previously called far-end-receive failure (FERF).]

Remote Network Element

Any Network Element that is connected to the referenced Network Element through either an electrical or optical link. It may be the adjacent node on a ring, or N nodes away from the reference. It also may be at the same physical location but is usually at another (remote) site.

Revertive

A protection switching mode in which, after a protection switch occurs, the equipment returns to the nominal configuration (that is, the service equipment is active, and the protection equipment is standby) after the clearing of any failure conditions that caused a protection switch to occur or after any external switch commands are reset. *See Non-Revertive.*

Ring

A configuration of nodes comprised of network elements connected in a circular fashion. Under normal conditions, each node is interconnected with its neighbor and includes capacity for transmission in either direction between adjacent nodes. Path switched rings use a head-end bridge and tail-end switch. Line switched rings actively reroute traffic over a protection line.

Ring (0x1) Low-Speed Interface

Formerly referred to as dual 0x1 or single 0x1. In ring applications, the DMX 2.5G Multiplexer may use a 0x1 interface, meaning both fibers carry service, as opposed to a linear (1+1) low-speed interface where one fiber is used for service and other for protection. *See 1+1.*

S Stratum 3 Timing Generator

The timing generator circuit pack, located in the OC-48 r OC-192 high-speed OLIU circuit pack, generates clock signals for distribution to the transmit circuits. It operates in the free-running, loop-timing, phase-lock, and holdover modes.

Self-Healing

Ring architecture in which two or more fibers are used to provide route diversity. Node failures only affect traffic dropped at the failed node.

Service

The operational mode of a physical entity that indicates that the entity is providing service. This designation will change with each switch action.

Severely Errored Seconds (SES)

This performance monitoring parameter is a second in which a signal failure occurs, or more than a preset amount of coding violations (dependent on the type of signal) occur.

Shelf ID

A switch-settable parameter with values from 1 to 8. Used to log into a selected shelf in a by using the CIT.

Shelf View

A graphical depiction of one shelf. Selectable objects in this view are the shelf, the slots/circuit packs, and the ports.

Single Homing

A network topology in which a single DDM-2000 FiberReach, OC-3 Multiplexer, or OC-12 Multiplexer serves as a DMX 2.5G Multiplexer host supporting up to six OC-3 or OC-12 rings.

Site ID

A switch-settable parameter with values from 1 to 8. Displayed on the SYSCTL circuit pack to indicate to which site the faceplate alarms and LEDs apply.

Slot

A physical position in a shelf for holding a circuit pack and connecting it to the backplane. This term is also used loosely to refer to the collection of ports or tributaries connected to a physical circuit pack placed in a slot.

Software Backup

The process of saving an image of the current network element's databases, which are contained in its NVM, to a remote location. The remote location could be the WaveStar CIT or an OS.

Software Download

The process of transferring a generic (full or partial) or provisioned database from a remote entity to the target network element's memory. The remote entity may be the WaveStar CIT or an OS. The download procedure uses bulk transfer to move an uninterpreted binary file into the network element.

Squelch Map

This map contains information for each cross-connection in a ring and indicates the source and destination nodes for the low-speed circuit that is part of the cross-connection. This information is used to prevent traffic misconnection in rings with isolated nodes or segments.

Standby

Standby identifies a 1+1 protected OC-N line which is not currently selected by the receiver at either end as the payload carrying signal, or 1x1 or 1xN protected circuit pack that is not currently carrying service. *See Active.*

Status

The indication of a short-term change in the system.

STS, STS-n - Synchronous Transport Signal

The basic building block signal with a rate of 51.840 Mb/s for an STS-1 signal and a rate of n times 51.840 Mb/s for an STS-n signal.

STS-1 SPE - STS-1 Synchronous Payload Envelope

A 125-microsecond frame structure composed of STS path overhead and the STS-1 payload.

STS-3c

Synchronous Transport Level 3 Concatenated Signal. *See OC-3c.*

Subnetwork

A group of interconnected/interrelated Network Elements. The most common connotation is a synchronous network in which the Network Elements have data communications channel (DCC) connectivity.

Superframe Format (SF)

A DS1 framing format in which 24 DS0 timeslots plus a coded framing bit are organized into a frame which is repeated 12 times to form the superframe.

Synchronization Messaging

SONET synchronization messaging is used to communicate the quality of network timing, internal timing status, and timing states throughout a subnetwork.

Synchronous Network

The synchronization of transmission systems with synchronous payloads to a master (network) clock that can be traced to a reference clock.

Synchronous Optical Network (SONET)

The North American standard for the rates and formats that defines optical signals and their constituents.

Synchronous Payload

Payloads that can be derived from a network transmission signal by removing integral numbers of bits from every frame. Therefore, no variable bit-stuffing rate adjustments are required to fit the payload in the transmission signal.

Synchronous Payload Envelope (SPE)

The combined payload and path overhead of an STS-1, STS-3c, STS-12c or STS-48c signal.

SYSCTL - System Controller

The system controller circuit pack that provides overall administrative control of the terminal.

System View

A graphical depiction of the entire Network Element. Selectable objects in this view are the bays and shelves.

T T1

A carrier system that transmits at the rate of 1.544 Mb/s (a DS1 signal).

T2

A carrier system that transmits at the rate of 6.312 Mbps (a DS2 signal).

T3

A carrier system that transmits at the rate of 44.736 Mbps (a DS3 signal).

Target Identifier (TID)

A provisionable parameter that is used to identify a particular Network Element within a network. It is a character string of up to 20 characters where the characters are letters, digits, or hyphens (-).

Telcordia Technologies

Telcordia Technologies (formerly Bellcore) is a well-recognized telecommunications' standards organization.

Test Access

A set of cross-connection topologies used in conjunction with a testing system to monitor and "split" signal paths for purposes of fault isolation.

Through (or Continue) Cross-Connection

A cross-connection within a ring, where the input and output tributaries have the same tributary number but are in lines opposite each other.

Threshold-Crossing Alert (TCA)

A message type sent from a Network Element that indicates that a certain performance monitoring parameter has exceeded a specified threshold.

Through Timing

Refers to a network element that derives its transmit timing in the east direction from a received line signal in the east direction and its transmit timing in the west direction from a received line signal in the west direction.

Time Division Multiplexing (TDM)

A technique for transmitting a number of separate data, voice, and/or video signals simultaneously over one communications medium by interleaving a portion of each signal one after another.

Time Slot Assignment (TSA)

A capability that allows any tributary in a ring to be cross-connected to any tributary in any lower-rate, non-ring interface or to the same-numbered tributary in the opposite side of the ring.

Time Slot Interchange (TSI)

The ability of the user to assign cross-connections between any tributaries of any lines within a Network Element. Three types of TSI can be defined: Hairpin TSI, Interring TSI (between rings), and Intraring TSI (within rings).

Transaction Language One (TL1)

A machine-to-machine communications language that is a subset of ITU's human-machine language.

Tributary

A path-level unit of bandwidth within a port, or the constituent signal(s) being carried in this unit of bandwidth, for example, an STS-1 tributary within an OC-N port.

U Unavailable Seconds (UAS)

In performance monitoring, the count of seconds in which a signal is declared failed or in which 10 consecutively severely errored seconds (SES) occurred, until the time when 10 consecutive non-SES occur.

Unidirectional Path-Switched Ring (UPSR)

Path-Switched rings employ redundant fiber optic transmission facilities in a pair configuration, with one fiber transmitting in one direction (for example, East) and the backup fiber transmitting in the other direction (for example, West). If the primary ring fails, then the protection ring takes over.

UPD/INIT

A push-button on the SYSCTL faceplate.

User Privilege

Permits a user must perform on the computer system on which the system software runs.

V Virtual Tributary (VT)

A structure designed for transport and switching of sub-STC-1 payloads. There are currently four sizes: VT1.5 (1.728 Mb/s), VT2 (2.304 Mb/s), VT3 (3.456 Mb/s), and VT6 (6.912 Mb/s).

VT1.5 Tributary

A SONET logical signal with a data rate of 1.728 Mbps. In the 9-row structure of the STC-1 SPE, a VT1.5 occupies three columns. VT-structured STC-1 SPEs are divided into seven VT groups. Each VT group occupies twelve columns of the 9-row structure and, for VT1.5s, contains four VTs per group.

VT-G - Virtual Tributary Group

A 9-row by 12-column SONET structure (108 bytes) that carries one or more VTs of the same size. Seven VT groups (756 bytes) are byte-interleaved within the VT-organized STC-1 synchronous payload envelope

W Wait-to-Restore (WTR)

Applies to revertive switching operation. The protection group enters the WTR state when all Equipment Fail (EF) conditions are cleared, but the system has not yet reverted back to its working line. The protection group remains in the WTR state until the Wait-to-Restore timer completes the WTR time interval.

Wait to Restore Time (WRT)

Corresponds to the time to wait before switching back after a failure has cleared (in a revertive protection scheme). The WRT can be between 0 and 15 minutes, in increments of one minute.

Wavelength Division Multiplexing (WDM)

A means of increasing the information-carrying capacity of an optical fiber by simultaneously transmitting signals at different wavelengths.

Wide Area Network (WAN)

A communication network that uses common-carrier provided lines and covers an extended geographical area.

Wizard

A form of user assistance that automates a task through a dialog with the user.

X X.25 Interface/Protocol

The ITU packet-switched interface standard for terminal access that specifies three protocol layers: physical, link, and packet for connection to a packet-switched data network.

Z Zero Code Suppression

A technique used to reduce the number of consecutive zeros in a line-codes signal (B3ZS for DS3 signals and B8ZS for DS1 signals).



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