Lucent Technologies
Bell Labs Innovations

Metropolis® DMX*press* Access Multiplexer

Release 2.0

Alarm Messages and Trouble Clearing Guide

365-372-315 R2.0
Issue 3
July 2002

Notice

The information in this document is subject to change without notice. Although every effort has been made to make this document as accurate, complete, and clear as possible, Lucent Technologies and its predecessors assume no responsibility for any errors that may appear in this document.

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Federal Communications Commission (FCC) Notification and Repair Information

This equipment is designed to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions manual, may cause interference to radio communications. Operation of this equipment in a residence is likely to cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

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Support Telephone Numbers

Technical Support Telephone Numbers

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This number is monitored 24 hours a day.

Information Product Support Telephone Number

You can also call these telephone numbers to provide comments on the Metropolis® DMX*press* Access Multiplexer or to suggest enhancements.

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

Lucent Technologies values your comments!

Lucent Technologies
Bell Labs Innovations

Metropolis® DMX*press* Access Multiplexer, Release 2.0
Alarm Messages and Trouble Clearing Guide

365-372-315 R2.0 Issue 3 Date: July 2002

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1. Was the information product:

	Yes	*No*	*Not applicable*
In the language of your choice?	☐	☐	☐
In the desired media (paper, CD-ROM, etc.)?	☐	☐	☐
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Please provide any additional comments:

_____

_____

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Ease of use	☐	☐	☐	☐	☐	☐
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Readability and clarity	☐	☐	☐	☐	☐	☐
Organization	☐	☐	☐	☐	☐	☐
Completeness	☐	☐	☐	☐	☐	☐
Technical accuracy	☐	☐	☐	☐	☐	☐
Quality of translation	☐	☐	☐	☐	☐	☐
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_____

_____

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_____

_____

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_____

_____

Please complete the following if we may contact you for clarification or to address your concerns:

Name: _____ Date: _____

Company/organization: _____ Telephone number: _____

Address: _____

Email address: _____ Job function: _____

If you choose to complete this form online, go to http://www.lucent-info.com/comments
Otherwise fax to 407 767 2760 (U.S.) or +1 407 767 2760 (outside the U.S.) or email comments to ctiphotline@lucent.com

Contents

About this Information Product

Purpose

This Alarm Messages and Trouble Clearing Guide (AMTCG) provides the following information about the Metropolis® DMX*press* Access Multiplexer (Metropolis® DMX*press*), Release 2.0:

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

Reason for reissue

This is the third issue of the *Metropolis® DMXpress Access Multiplexer Alarm Messages and Trouble Clearing Guide, 365-372-315*. This document has been updated to include Release 2.0 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*press* 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*press.*

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*press*.

How to use this information product

The *Metropolis*® DMX*press 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*press Alarm Messages and Trouble Clearing Guide*.

Chapter	Contents
Chapter 1, "Alarm List"	This chapter provides the alarm list for Metropolis® DMX*press*.
Chapter 2, "Alarms, Conditions, and Error Messages"	This chapter provides a brief explanatory table for each alarm message generated by Metropolis® DMX*press*.
Chapter 3, "Maintenance Overview"	This chapter outlines the various features available to monitor and maintain Metropolis® DMX*press*.
Chapter 4, "Trouble Clearing Tasks"	This chapter provides the procedures required to clear conditions that cause alarms.
Chapter 537, "Supporting Tasks"	This chapter provides procedures for performing supporting tasks, including removing and inserting circuit packs.
Glossary	Defines terms used throughout the Metropolis® DMX*press* 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 503: Clear “CP firmware incompatibility” Alarm (4-19)

Related documentation

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

Table 1 Metropolis® DMX*press* Documentation Set

Comcode	Document Number	Title
NA	365-372-311 R2.0	*Metropolis® DMXpress Access Multiplexer Installation Manual*
109 164 134	365-372-312 R2.0	*Metropolis® DMXpress Access Multiplexer Applications and Planning Guide*
NA	365-372-313 R2.0	*Metropolis® DMXpress Access Multiplexer TL1 Command Manual*
109 210 344	365-372-314 R2.0	*Metropolis® DMXpress Access Multiplexer User Operations Guide*
109 210 351	365-372-315 R2.0	*Metropolis® DMXpress Access Multiplexer Alarm Messages and Trouble Clearing Guide*
109 204 073	NA	*Metropolis® DMXpress Access Multiplexer Release 2.0 Documents*

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 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 that 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 tekecommunications 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.

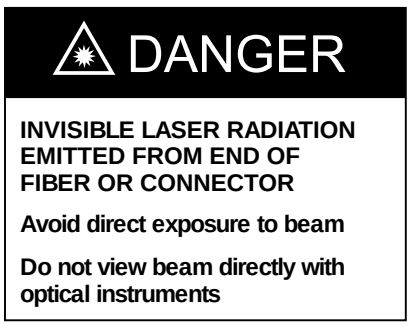
Laser safety precautions for enclosed systems

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



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.

Important safety instructions

READ AND UNDERSTAND ALL INSTRUCTIONS.

When using this telecommunication 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 the product.
2. Slots and openings in this product at the back or bottom are provided for ventilation. To protect it from overheating, these openings must not be blocked or covered.
3. Opening or removing rear covers or sheet-metal parts may present exposure to high current or electrical energy levels, or to other risks.
4. 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 liquid of any kind on the product.
5. Refer servicing to qualified service personnel.
6. Use caution when installing and modifying telecommunications lines.
7. Never install telecommunication wiring during a lightning storm.
8. Never install telecommunication jacks in wet locations unless the jack is specifically designed for wet locations.
9. Never touch uninsulated telecommunication wires or terminals unless the telecommunication line has been disconnected at the network interface.
10. Installation must include an independent frame ground conductor to building ground. Grounding/bonding circuit continuity is vital for safe operation of this equipment. Never operate with grounding/bonding conductor disconnected.
11. This product may be equipped with either a single -110 V AC input feeder or two -48 V DC input power feeders. Disconnecting one -48 V DC power feeder will not de-energize the product. To reduce the risk of injury, disconnect both power supply cables when removing power from the system.

12. Metallic telecommunication interfaces should not leave the building premises unless connected to telecommunication devices providing primary and secondary protection, as applicable.
13. For continued protection against risk of fire, replace only with same type and rating of fuse.
14. Use only Lucent Technologies manufactured, recognized circuit packs.
15. This equipment is intended for installation in Restricted Access Locations where access is controlled or where access can only be gained by service personnel with a key or tool. Access to this equipment is restricted to qualified service personnel only.
16. Power the unit only from -48 V DC sources providing Safety Extra Low Voltage (SELV) outputs.
17. This equipment must be provided with a readily accessible input power disconnect device as part of the building installation (such as a main power disconnect switch or external circuit breaker).

SAVE THESE INSTRUCTIONS.

User interface to system

Users interact with the Metropolis® DMX*press* 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® DMXpress Access Multiplexer User Operations Guide, 365-372-314* 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 2 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: intlnaorders@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 3 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*press*.

Refer to **https://www.lucent-product-training.com** for descriptions of the training courses available for Metropolis® DMX*press*.

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*press* Access Multiplexer.

Contents The following information is included in this chapter:

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 provisoning of the equipment. For example, for CP removed: the removal of an unprotected, active CP is always Critical (SA) and the removal of a a protected CP is always Minor (NSA).

Alarm list **Table 1-1 Metropolis® DMX*press*, Release 2.0 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		
AGNE communication failure	PRCDERR		X			Task 501: Clear "AGNE communication failure" Alarm (4-9)
controln	MISC				X	Task 502: Clear "controln" Condition (4-15)
copy program IP	EOC				X	No action necessary.
CP firmware incompatibility	T3TERM	X				Task 503: Clear "CP firmware incompatibility" Alarm (4-19)
CP not allowed - crs	TERM	X		X		Task 504: Clear "CP not allowed - crs" Alarm (4-29)

Alarm/Condition Name	Alarm/ Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC[1]	
CP removed	FETERM GETERM DS1DS3TERM T3TERM OC12TERM OC3TERM	X		X		Task 505: Clear “CP removed” Alarm (4-33)
CPY-MEM download IP	EOC				X	No action necessary.
CPY-MEM backup IP	EOC				X	
CPY-MEM restore IP	EOC				X	
dormant/exec code mismatch	EOC				X	Task 506: Clear “dormant/exec code mismatch” Condition (4-41)
DS1 CP failed	T1TERM		X	X		Task 603: Replace DS1/ DS3/16/1 (A1AA006) Circuit Pack (5-21)
DS1 loopback (to DSX)	LPBKNETWORK				X	Task 507: Clear “DS1 loopback (to DSX)” Condition (4-47)
DS1 loopback (to Fiber)	LPBKNETWORK				X	Task 508: Clear “DS1 loopback (to Fiber)” Condition (4-51)
DS1 trmsn test IP	LPBKNETWORK				X	Task 509: Clear “DS1 trmsn test IP” Condition (4-55)
DS3 loopback (to DSX)	LPBKNETWORK				X	Task 510: Clear “DS3 loopback (to DSX)” Condition (4-61)
DS3 loopback (to Fiber)	LPBKNETWORK				X	Task 511: Clear “DS3 loopback (to Fiber)” Condition (4-65)
DS3 trmsn test IP	LPBKNETWORK				X	Task 512: Clear “DS3 trmsn test IP” Condition (4-69)

Alarm/Condition Name	Alarm/ Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC[1]	
DS3EC1 CP failed	T3TERM	X		X		Task 603: Replace DS1/ DS3/16/1 (A1AA006) Circuit Pack (5-21) or Task 605: Replace DS3/ 12 (A1AA015) Circuit Pack (5-43)
duplicate TID	PRCDRERR		X			Task 513: Clear "duplicate TID" Alarm (4-73)
environmentn	MISC	X	X	**X**	X	Task 514: Clear "environmentn" Alarm (4-77)
excessive holdover	LHI		X			Task 515: Clear "excessive holdover" Alarm (4-81)
fan shelf failed	EXT			X		Task 516: Clear "fan shelf failed" Alarm (4-85)
FE-LAN CP failed	FETERM	X				Task 517: Clear "FE-LAN CP failed" Alarm (4-87)
GB-LAN CP failed	GETERM	X				Task 518: Clear "GB-LAN CP failed" Alarm (4-91)
holdover mode active	HLDOVRSYNC				X	Task 519: Clear "holdover mode active" Condition (4-95)
inc. DS3 Cbit Mismatch	CBITMM	X	X	X		Task 520: Clear "inc. DS3 Cbit Mismatch" Alarm (4-99)
inc. (from DSX) DS1 LOS	LOS		X	X	X	Task 521: Clear "inc. DS1" Alarms (4-103)
inc. (from DSX) DS1 sig fail	T-BERL		X	X	X	

Alarm/Condition Name	Alarm/ Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC[1]	
inc. (from DSX) DS3 LOS	LOS	**X**	X	X	X	Task 522: Clear “inc. DS3” Alarms (4-109)
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. FE-LAN ANM	ANM	X				Task 523: Clear “inc. FE-LAN ANM” Alarm (4-117)
inc. FE-LAN LOS	LOS	X				Task 524: Clear “inc. FE-LAN LOS” Alarm (4-125)
inc. GE-LAN ANM	ANM	X				Task 525: Clear “inc. GE-LAN ANM” Alarm (4-133)
inc. GE-LAN LOS	LOS	X				Task 526: Clear “inc. GE-LAN LOS” Alarm (4-139)
inc. OCN line AIS	AIS	**X**	X	X	X	Task 527: Clear “inc. OCN” Alarms (4-147)
inc. OCN LOF	LOF	X		X		
inc. OCN LOS	LOS	X		X		
inc. OCN RDI-L	FERF				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 528: Clear “inc. STS-1 LOM” Condition (4-155)
inc. STS-1 SQM	SQM				X	Task 529: Clear “inc. STS-1 SQM” Condition (4-161)

Alarm/Condition Name	Alarm/ Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC[1]	
inc. STSN[2] AIS	AIS	X		**X**	X	Task 530: Clear "inc. STSN" Conditions/ Alarms (4-167)
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 531: Clear "inc. VCG Fail" Alarm (4-173)
inc. VT AIS	AIS		X	**X**	X	Task 532: Clear "inc. VT" Conditions/Alarms (4-179)
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 DCC switches	EOC		X			Task 533: Clear "inconsistent DCC switches" Alarm (4-185)
install program IP	SWFTDWN				X	No action necessary.
manual sync. mode switch	HLDOVRSYNC				X	Task 534: Clear "manual sync. mode switch" Condition (4-189)
OLIU CP failed	OC48TERM OC12TERM OC3TERM	X		X		Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27) or Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93)

Alarm/Condition Name	Alarm/ Condition Type	Alarm/Condition Level				Go to
		CR	MJ	MN	SC[1]	
section DCC channel failed	EOC		X	X		Task 535: Clear “section DCC channel failed ” Alarm (4-191)
SYSCTL CP failed	CONTR		X			Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27)
unexpected CP type	TERM	X		X		Task 536: Clear “unexpected CP type” Alarm (4-197)

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. STSN represent STS-1, STS-3c, and STS-12c.

2 Alarms, Conditions, and Error Messages

Overview

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

Important! Throughout this chapter, Main circuit pack represents any of the following circuit packs that may be installed in the Main slot:

- OC48/1.3I2 (A1AA005)
- OC12/1.3I2 (A1AA016)
- OC48 CHx/y (A1AA121-159)

Contents The following information is included in this chapter:

-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 Main circuit pack 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 Main circuit pack faceplate.
Action	Proceed to “Task 500: Clear “-48V power/fuse FA or FB failed” Alarm” (4-5).

□

AGNE communication failure

AGNE communication failure

Metropolis® DMX*press* 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	PRCDERR
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 Main circuit pack faceplate.
Action	Proceed to "Task 501: Clear "AGNE communication failure" Alarm" (4-9).

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" (4-15).

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.

CP firmware incompatibility

CP firmware incompatibility

The firmware in the DS3/12 (A1AA015) or DS1/DS3/16/1 (A1AA006) 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)	Virtual 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 DS3/12 or DS1/DS3/16/1 circuit pack did not update automatically or a new DS3/12 or DS1/DS3/16/1 circuit pack was inserted into the shelf and the active software generic running on the shelf does not match the new circuit pack.
Visible indication	Lighted CR or MN LED on Main circuit pack faceplate.
Action	Proceed to “Task 503: Clear “CP firmware incompatibility” Alarm” (4-19).

CP not allowed - crs

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)	Virtual Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	TERM
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 Main circuit pack faceplate.
Action	Proceed to "Task 504: Clear "CP not allowed - crs" Alarm" (4-29).

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)	Physical Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	TERM
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).
Visible indication	Lighted CR or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 505: Clear "CP removed" Alarm" (4-33).

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...** .
Visible indication	None
Action	No action necessary. Condition clears automatically when remote backup completes.

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 download completes.

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 remote restore completes.

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 “Task 506: Clear “dormant/exec code mismatch” Condition” (4-41).

DS1 CP failed

DS1 CP failed

Internal equipment failure of the specified DS1/DS3/16/1 (A1AA006) circuit pack (DS1 components) or communications problem between the pack and the system controller (Main circuit pack) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN)
AID (type)	Virtual 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	DS1 CP failed
Likely Cause	The DS1 components on a DS1/DS3/16/1 (A1AA006) circuit pack carrying service or unprotected failed - MJ (SA). Because circuit packs are unprotected in Metropolis® DMX*press*, DS1 CP failures are reported as MJ (SA).
Visible indication	Lighted MJ or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 603: Replace DS1/DS3/16/1 (A1AA006) Circuit Pack" (5-21).

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	None.
Action	Proceed to "Task 507: Clear "DS1 loopback (to DSX)" Condition" (4-47).

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	None
Action	Proceed to "Task 508: Clear "DS1 loopback (to Fiber)" Condition" (4-51).

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	None
Action	Proceed to "Task 509: Clear "DS1 trmsn test IP" Condition" (4-55).

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	None
Action	Proceed to "Task 510: Clear "DS3 loopback (to DSX)" Condition" (4-61).

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	None
Action	Proceed to “Task 511: Clear “DS3 loopback (to Fiber)” Condition” (4-65).

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	None
Action	Proceed to "Task 512: Clear "DS3 trmsn test IP" Condition" (4-69).

DS3EC1 CP failed

DS3EC1 CP failed

Internal equipment failure of the specified DS3/12 or DS1/DS3/16/1 circuit pack (DS3 components) or communications problem between the pack and the system controller (Main circuit pack) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Virtual 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 DS3/12 (A1AA015) or DS1/DS3/16/1 (A1AA006) circuit pack carrying service or unprotected failed - CR (SA). Because circuit packs are unprotected in Metropolis® DMX*press*, CP failures are reported as CR (SA).
Visible indication	Lighted CR or MN LED on Main circuit pack faceplate.
Action	Proceed to either “Task 603: Replace DS1/DS3/16/1 (A1AA006) Circuit Pack” (5-21) or “Task 605: Replace DS3/12 (A1AA015) Circuit Pack” (5-43) as appropriate.

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)	Virtual Slot - SYSCTL
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 Main circuit pack faceplate.
Action	Proceed to “Task 513: Clear “duplicate TID” Alarm” (4-73).

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 (Not Alarmed)
Description	environment1 . . . environment14 Environment15 is used for fan failure; it cannot be provisioned.
Likely Cause	Some external equipment has operated a contact closure connected to that input.
Visible indication	Lighted CR, MJ, or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 514: Clear "environmentn" Alarm" (4-77).

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)	OC-12, OC-48 Line
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 system is provisioned for nonrevertive synchronization mode switching. • 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 Main circuit pack faceplate.
Action	Proceed to "Task 515: Clear "excessive holdover" Alarm" (4-81).

fan shelf failed

fan shelf failed The fan shelf failed.

Alarm Data	Value/Meaning
Alarm Level(s)	Minor (MN)
AID (type)	Virtual Slot - SYSCTL
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 Main circuit pack faceplate.
Action	Proceed to “Task 516: Clear “fan shelf failed” Alarm” (4-85).

FE-LAN CP failed

FE-LAN CP failed

Internal equipment failure of the specified FASTE/16 (A1AA007) circuit pack or communications problem between the Ethernet pack and the system controller (Main circuit pack) 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 FASTE/16 (A1AA007) circuit pack carrying service failed - CR (SA). Because circuit packs are unprotected in Metropolis® DMX*press*, CP failures are reported as CR (SA).
Visible indication	Lighted CR LED on Main circuit pack faceplate.
Action	Proceed to "Task 517: Clear "FE-LAN CP failed" Alarm" (4-87).

GB-LAN CP failed

GB-LAN CP failed

Internal equipment failure of the specified GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) circuit pack or communications problem between the Ethernet pack and the system controller (Main circuit pack) was detected.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR)
AID (type)	Virtual 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 GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) circuit pack carrying service failed - CR (SA). Because circuit packs are unprotected in Metropolis® DMX*press*, CP failures are reported as CR (SA).
Visible indication	Lighted CR LED on Main circuit pack faceplate.
Action	Proceed to "Task 518: Clear "GB-LAN CP failed" Alarm" (4-91).

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)	OC-12 line pair OC-48 line pair
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	COM
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 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 519: Clear "holdover mode active" Condition" (4-95).

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 Main circuit pack faceplate.
Action	Proceed to "Task 520: Clear "inc. DS3 Cbit Mismatch" Alarm" (4-99).

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 present threshold.

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ), Minor (MN), Not Alarmed (Standing Condition) **Important!** Not Alarmed 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 Main circuit pack faceplate.
Action	Proceed to "Task 521: Clear "inc. DS1" Alarms" (4-103).

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!** Not Alarmed 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 DS1 components on a DS1/DS3/16/1 circuit pack.
Visible indication	Lighted MJ or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 521: Clear "inc. DS1" Alarms" (4-103).

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	Failure of upstream equipment or facility (towards the DSX).
Visible indication	None
Action	Proceed to "Task 522: Clear "inc. DS3" Alarms" (4-109).

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 Main circuit pack faceplate.
Action	Proceed to "Task 522: Clear "inc. DS3" Alarms" (4-109).

inc. (from fiber) DS3 OOF

inc. (from fiber) DS3 OOF

The system has detected an DS3 out-of-frame (OOF) condition from the 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*press* backplane.
Visible indication	None
Action	Proceed to "Task 522: Clear "inc. DS3" Alarms" (4-109).

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 components on the DS3/12 or DS1/DS3/16/1 circuit pack.
Visible indication	Lighted CR, MJ, or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 522: Clear "inc. DS3" Alarms" (4-109).

inc. FE-LAN ANM

inc. FE-LAN ANM

Incoming Auto Negotiation Mismatch (ANM) is detected on a FASTE/16 LAN port (A1AA007). 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	CR = 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 Main circuit pack faceplate.
Action	Proceed to “Task 523: Clear “inc. FE-LAN ANM” Alarm” (4-117).

inc. FE-LAN LOS

inc. FE-LAN LOS

Indicates a loss of signal (LOS) at an input of the FASTE/16 Ethernet circuit pack (A1AA007). 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	CR = 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 Main circuit pack faceplate.
Action	Proceed to “Task 524: Clear “inc. FE-LAN LOS” Alarm” (4-125).

inc. GE-LAN ANM

inc. GE-LAN ANM

Incoming Auto Negotiation Mismatch (ANM) is detected on the GbE/2 (A1AA008) or the GbE/SX/2 (A1AA019) circuit pack. 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	CR = 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 Main circuit pack faceplate.
Action	Proceed to "Task 525: Clear "inc. GE-LAN ANM" Alarm" (4-133).

inc. GE-LAN LOS

inc. GE-LAN LOS

Loss of signal (LOS) indicates that a port on the GbE/2 (A1AA008) or the GbE/SX/2 (A1AA019) circuit pack 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	CR = 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 Main circuit pack faceplate.
Action	Proceed to "Task 526: Clear "inc. GE-LAN LOS" Alarm" (4-139).

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 line.

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Major (MJ), Minor (MN), Not Alarmed (Standing Condition) **Important!** Not Alarmed 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, or OC48
Description	inc. OC3 line AIS, inc. OC12 line AIS, or inc. OC48 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 Main circuit pack faceplate.
Action	Proceed to "Task 527: Clear "inc. OCN" Alarms" (4-147).

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, or OC48
Description	inc. OC3 LOF, inc. OC12 LOF, or inc. OC48 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 Main circuit pack faceplate.
Action	Proceed to "Task 527: Clear "inc. OCN" Alarms" (4-147).

inc. OCN LOS

inc. OCN LOS

The system has detected a loss-of-signal (LOS) condition on the OC-3/OC-12/OC-48 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, or OC48
Description	inc. OC3 LOS, inc. OC12 LOS, or inc. OC48 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 Main circuit pack faceplate.
Action	Proceed to "Task 527: Clear "inc. OCN" Alarms" (4-147).

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!** Not Alarmed 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, or OC48
Description	inc. OC3 RDI-L, inc. OC12 RDI-L, or inc. OC48 RDI-L
Likely Cause	Alarm condition detected at the far-end OC-N OLIU. An OLIU carrying service or unprotected failed - MJ (NSA). A protection (not active) or protected OLIU failed - MN (NSA).
Visible indication	Lighted MJ or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 527: Clear "inc. OCN" Alarms" (4-147).

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, or OC48
Description	inc. OC3 sig degrade (BER), inc. OC12 sig degrade (BER), or inc. OC48 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 Main circuit pack faceplate.
Action	Proceed to “Task 527: Clear “inc. OCN” Alarms” (4-147).

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, or OC48
Description	inc. OC3 sig. failed, inc. OC12 sig. failed, or inc. OC48 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 Main circuit pack faceplate.
Action	Proceed to "Task 527: Clear "inc. OCN" Alarms" (4-147).

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 528: Clear "inc. STS-1 LOM" Condition" (4-155).

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)
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 529: Clear “inc. STS-1 SQM” Condition” (4-161).

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 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, or STS-12c 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	CR = SA MN = NSA Not Alarmed = SC
Alarm Entity Type	STS1, STS3C, or STS12C
Description	inc. STS1 AIS, inc. STS3C AIS, or inc. STS12C AIS
Likely Cause	Incomplete or incorrect cross-connect provisioning in an end-to-end network; unprotected removal or failure of a low-speed circuit pack at the far-end; unprotected optical line failure.
Visible indication	Lighted CR or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 530: Clear "inc. STSN" Conditions/Alarms" (4-167).

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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, or STS-12c 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	CR = SA MN = NSA
Alarm Entity Type	STS1, STS3C, or STS12C
Description	inc. STS1 LOP, inc. STS3C LOP, or inc. STS12C 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. 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 Main circuit pack faceplate.
Action	Proceed to “Task 530: Clear “inc. STSN” Conditions/Alarms” (4-167).

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, or STS-12c 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	STS1, STS3C, or STS12C
Description	inc. STS1 RDI-P, inc. STS3C RDI-P, or inc. STS12C 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 530: Clear "inc. STSN" Conditions/Alarms" (4-167).

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, or STS-12c 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	CR = SA MN = NSA
Alarm Entity Type	STS1, STS3C, or STS12C
Description	inc. STS1 sig degrade (BER), inc. STS3C sig degrade (BER), or inc. STS12C 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 Main circuit pack faceplate.
Action	Proceed to "Task 530: Clear "inc. STSN" Conditions/Alarms" (4-167).

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, or STS-12c 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	CR = SA MN = NSA
Alarm Entity Type	STS1, STS3C, or STS12C
Description	inc. STS1 sig failed (BER), inc. STS3C sig failed (BER), or inc. STS12C 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 Main circuit pack faceplate.
Action	Proceed to "Task 530: Clear "inc. STSN" Conditions/Alarms" (4-167).

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, or STS-12c 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	CR = SA MN = NSA
Alarm Entity Type	STS1, STS3C, or STS12C
Description	inc. STS1 unequipped, inc. STS3C unequipped, inc. STS12C unequipped
Likely Cause	An upstream STS-N cross-connect error has been 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 Main circuit pack faceplate.
Action	Proceed to "Task 530: Clear "inc. STSN" Conditions/Alarms" (4-167).

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	CR = 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 Main circuit pack faceplate.
Action	Proceed to "Task 531: Clear "inc. VCG Fail" Alarm" (4-173).

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 Main circuit pack faceplate.
Action	Proceed to "Task 532: Clear "inc. VT" Conditions/Alarms" (4-179).

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 Main circuit pack faceplate.
Action	Proceed to "Task 532: Clear "inc. VT" Conditions/Alarms" (4-179).

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 LOP
Likely Cause	Alarm condition detected at the far-end OLIU.
Visible indication	None
Action	Proceed to “Task 532: Clear “inc. VT” Conditions/Alarms” (4-179).

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 Main circuit pack faceplate.
Action	Proceed to "Task 532: Clear "inc. VT" Conditions/Alarms" (4-179).

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 Main circuit pack faceplate.
Action	Proceed to "Task 532: Clear "inc. VT" Conditions/Alarms" (4-179).

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 Main circuit pack faceplate.
Action	Proceed to “Task 533: Clear “inconsistent DCC switches” Alarm” (4-185).

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 automatically when download completes.

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	COM
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**.
Visible indication	None.
Action	Proceed to "Task 534: Clear "manual sync. mode switch" Condition" (4-189).

OLIU CP failed

OLIU CP failed

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

Alarm Data	Value/Meaning
Alarm Level(s)	Critical (CR), Minor (MN)
AID (type)	Virtual Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	OC3TERM OC12TERM OC48TERM
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). Because circuit packs are unprotected in Metropolis® DMX*press*, CP failures are reported as CR (SA).
Visible indication	Lighted CR or MN LED on Main circuit pack faceplate.
Action	Proceed to "Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack" (5-27) or "Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack" (5-93).

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	Main 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 Main circuit pack
Action	Proceed to “Task 535: Clear “section DCC channel failed ” Alarm” (4-191).

SYSCTL CP failed

Main circuit pack CP failed

Internal equipment failure of the SYSCTL component of a Main circuit pack.

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

Alarm Data	Value/Meaning
Alarm Level(s)	Major (MJ)
AID (type)	Virtual Slot - SYSCTL
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 on the Main circuit pack.
Visible indication	None or lighted MJ LED on Main circuit pack faceplate.
Action	Proceed to "Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack" (5-27).

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), Minor (MN)
AID (type)	Slot
Date	month/day/year that condition was detected
Time	hour:minute:second that condition was detected
Probable Cause	TERM
Affect on Service	CR = SA MN = NSA
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).
Visible indication	Lighted CR or MN LED on Main circuit pack faceplate.
Action	Proceed to “Task 536: Clear “unexpected CP type” Alarm” (4-197).

3 Maintenance Overview

Overview

Purpose

This chapter provides an overview of maintenance issues in the Metropolis® DMX*press* Access Multiplexer.

Contents

The following topics are discussed in this chapter:

Introduction

Overview

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

Objectives

This chapter provides information to perform the following

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

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*press* 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*press* shelf, either locally using a serial line and the RS-232 serial port (**RS-232 CIT**) on the OC48/1.3I2 circuit pack, or remotely using the Metropolis® DMX*press* TCP/IP interface (**LAN CIT** port on the OC48/1.3I2 circuit pack or the **J1 IAO LAN** port on the backplane).

WaveStar® CIT introduction

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

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

Reference

Refer to "Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3) in Chapter 5, "Supporting Tasks" for additional information about the WaveStar® CIT.

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Maintenance Philosophy

Overview

Metropolis® DMX*press* allows operation and maintenance of network elements in a network from a centralized location. Metropolis® DMX*press* 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*press* 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*press* 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*press* can also be configured for TCP/IP interface conforming with standard IEEE 802.3.

Maintenance Signals

Overview

Metropolis® DMX*press* provides maintenance signaling compliant with the SONET standard (ANSI T1.105). When Metropolis® DMX*press* 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*press* 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*press* 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.
- STS-N AIS: A 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*press* generates the following remote defect indication signals:

- SONET line RDI signal: A SONET OC-N line RDI signal is generated upstream after a LOS, LOF, or line AIS 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*press* 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*press* 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*press* 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*press* 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
DS3[2]	inc. (from fiber) DS3 AIS inc. (from fiber) DS3 LOS inc. (from DSX) DS3 OOF inc. DS3 CBit Mismatch inc. (from DSX) DS3 sig. fail (BER)
10/100BASE-TX Ethernet or 1000BASE-SX/LX optical Ethernet	inc. VCG Fail inc. GELAN LOS inc. GELAN ANM inc. FELAN LOS inc. FELAN ANM
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)

Incoming Signals	Monitored/Detected Failures
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*press* employs automatic diagnostics to isolate the failed circuit pack or signal. Most failures are isolated to an incoming signal failure (inc. sig fail) 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*press* 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 **FLT** LED on that circuit pack is turned on. If an incoming electrical signal from the DSX fails, the red **FLT** 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*press* 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*press* 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*press* 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*press* 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*press* does NOT report (in other words, Metropolis® DMX*press* 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.

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Protection Switching

Overview

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

- Unidirectional Path Switched Ring (UPSR) Switching
- Spanning Tree

Application modes

There are two types of protection modes applicable to the OC-48 optical interfaces (line pairs) as shown below:

- UPSR: The “UPSR” application mode provides unidirectional STS-N/VT1.5 ring path protection switching on low-speed OC-3 and OC-12, interfaces and high-speed OC-12 and OC-48 interfaces. 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 the M1 OC-12 or OC-48 interface when application protection is not desired. This option is user-provisionable via the jumper on the Main circuit pack (OC48/1.3I2, OC12/1.3I2, OC48 CHx/y) and supports single-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*press* supports mixed protection modes (UPSR or 0x1) on different ports of the same OLIU. For example, the low-speed OC-3 interface could have two ports provisioned for 0x1 mode and one for UPSR 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*press* 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 (Normal [Automatic], or Manual).

Selecting a switching mode and clicking the Apply button at the bottom of the screen enables the switching mode in the selected device.

Protection switching priorities

Metropolis® DMX*press* uses standard protection switching priorities as follows:

- 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 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).
  - 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.

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Unidirectional Path-Switched Ring Switching

Introduction

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

Metropolis® DMX*press* performs UPSR switching in response to automatically detected faults in paths and external commands from a WaveStar® CIT or operations system (OS). Metropolis® DMX*press* supports UPSR switching for VT1.5 and STS-N signals on the OC-N interfaces.

Path Protection switch control functions are available using the Protection Switch option in the WaveStar® CIT Fault System View menu. (See manual mode).

Path protection switching can also be controlled using the command builder and the following commands: **opr-protnsw-sts1**, **opr-protnsw-sts3c**, and **opr-protnsw-sts12c**. 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*press*.

Table 3-2 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*press* 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 Path BER exceeding a signal fail or signal degrade threshold
- VT Path BER exceeding a signal degrade threshold
- Path-level signal with no impairments.

Metropolis® DMX*press* 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*press* selects the incoming path-level signal with the best quality (based on the automatic path selector criteria).

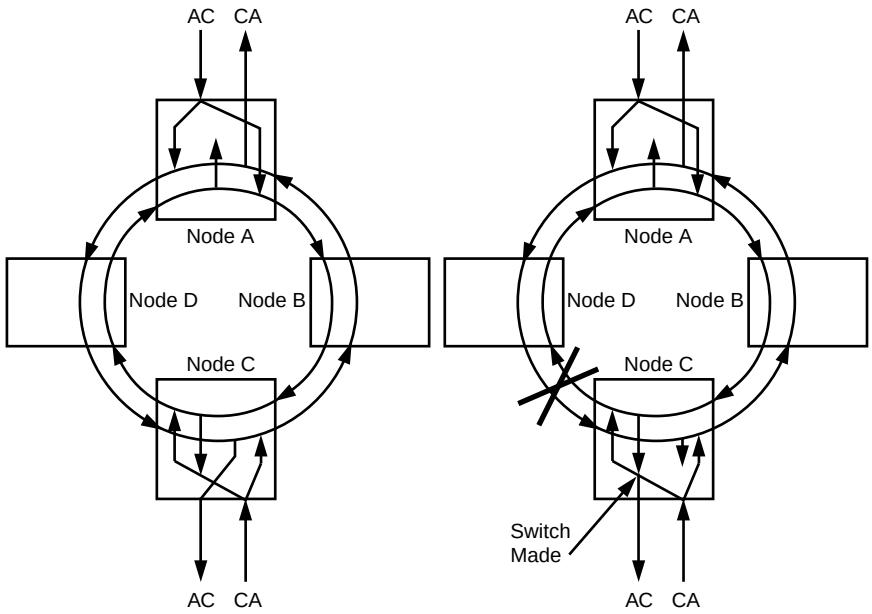
Nonrevertive switching

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 3-1 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 3-1 UPSR Switching Example



Path protection rings feed a SONET payload (STS 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/VT unequipped, and STS/VT path BER performance. This function at the ring exit point is called a "tail-end switch."

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 forward 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 but may 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® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Loopbacks

Introduction

Metropolis® DMX*press* provides low-speed port loopback.

Metropolis® DMX*press* provides loopbacks on all low-speed interfaces. Low-speed DS1 and DS3 electronic 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 and DS3 interfaces.

Active low-speed port loopbacks are noted in the reports generated when entering the **rtrv-lpbk-rr**, and **rtrv-cond** commands 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*press* 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.

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Tests

Overview

Metropolis® DMX*press* 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 circuit pack faceplate LEDs are operating properly on the all circuit packs. 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 the main circuit pack: OC48/1.3I2, OC12/1.3I2 or OC48 CHx/y) 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*press* 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 Main circuit pack (either a OC48/1.3I2, OC12/1.3I2 or OC48 CHx/y). 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*press* 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]).

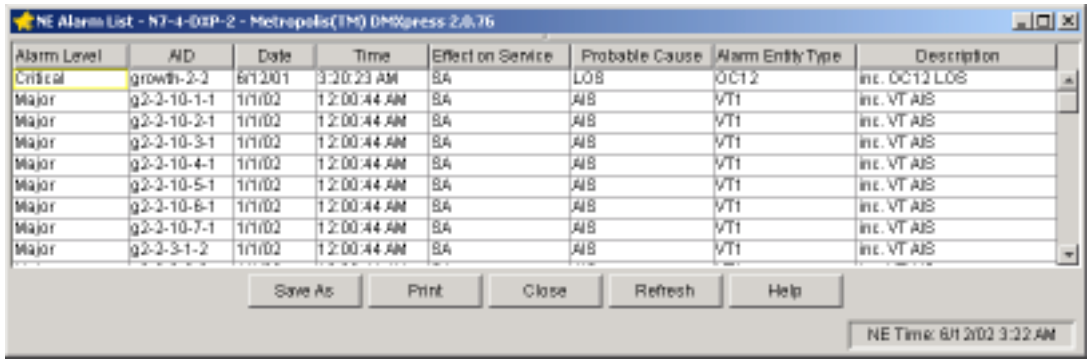
Cross-connection list

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*press* 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 3-2 Alarm List



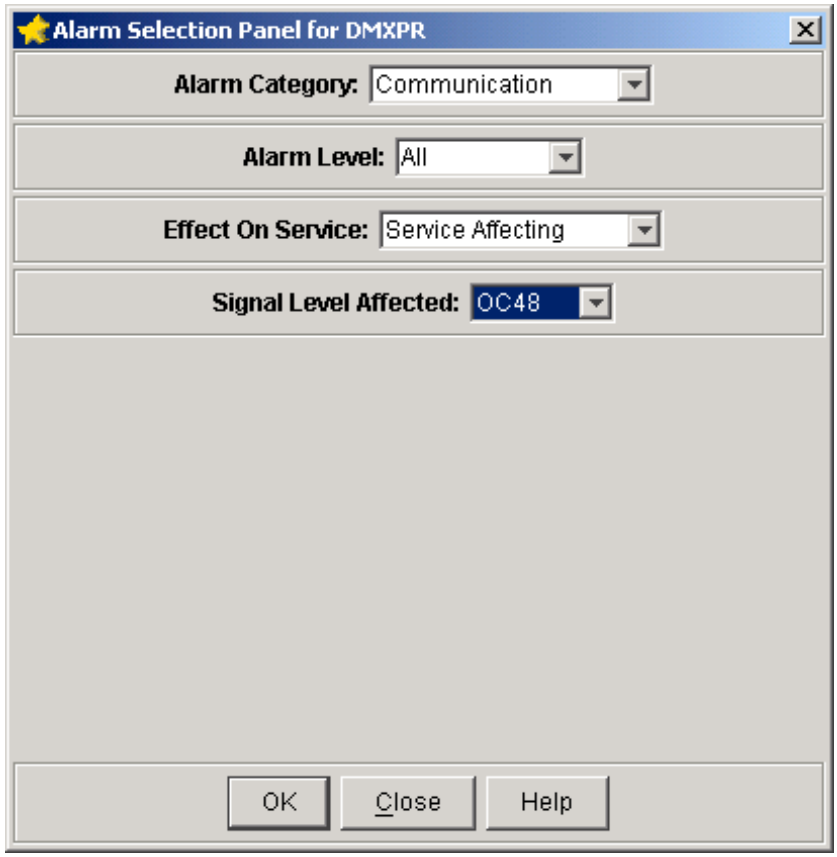
The identity of the condition (for example, OLIU CP failed, or inc. DS3 sig failed) is included in the report along with a time stamp indicating when the condition was detected.

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 for OC-48.

Figure 3-3 Alarm Selection Panel



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

Table 3-3 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
	OC3
	OC12
	OC48
	STS1
	STS3c
	STS12c
	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*press* 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*press* 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

Purpose

This chapter contains the trouble clearing tasks for the Metropolis® DMX*press* 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:

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 Main circuit pack 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

Safety precautions

To assure both personal safety and the proper functioning of Metropolis® DMX*press*, 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".

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 3, “Maintenance Overview”
- *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*
- *Metropolis® DMXpress Access Multiplexer TL1 Command Manual, 365-372-313*

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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 any LEDs lit on the circuit pack faceplates (visible from the front of the Metropolis® DMX*press* shelf)?

If...	Then...
Yes	Proceed to Step 4.
No	Continue with Step 2.

2 Perform a thorough visual inspection of the shelf backplane a visual inspection of the Metropolis® DMX*press* shelf’s DC power terminals. 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 invloving the power connections?

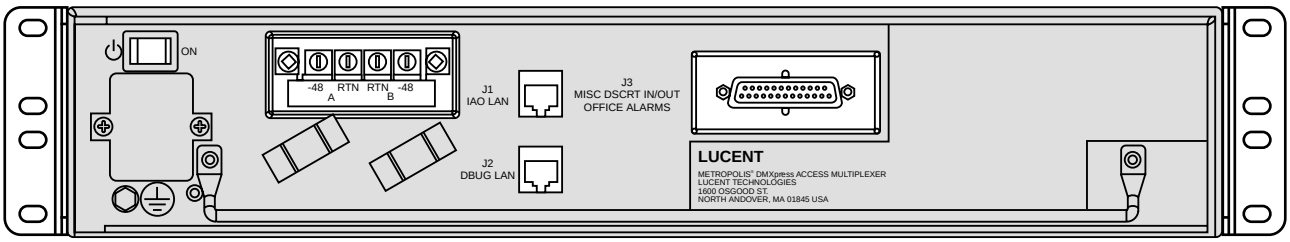
If...	Then...
Yes	Broken or shorted power line: repair the short or break, or replace the shelf, as appropriate. Loose power connection: reseat and secure the connector.
No	Continue with Step 4.

4 Monitor the DC power supplied to the shelf at the 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.

Figure 500-1 illustrates the backplane of the DC enclosure. The duplicated DC power connectors are directly to the right of the on/off switch.

Figure 500-1 DC Backplane



NC-Xpress-040

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. Continue with Step 6.

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

Result: The -48V power/fuse failed 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 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 Main circuit pack 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

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

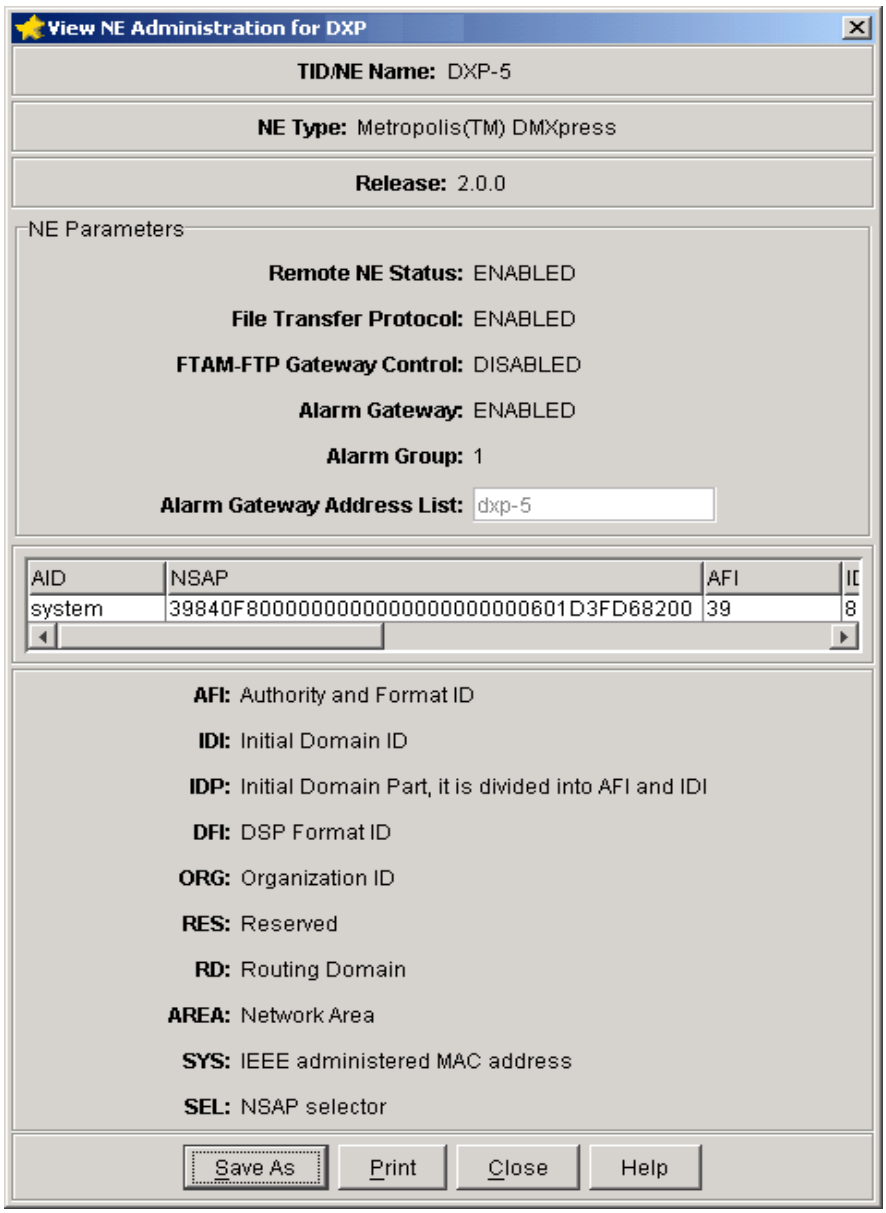
Task Complete the following steps to identify and clear a Major (**MJ**) AGNE communication failure alarm.

. . . . . .

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



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 or 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.

END OF STEPS

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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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**) LED on the Main circuit pack faceplate 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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**) CP firmware incompatibility alarm.

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

2 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.

3 Is the the alarmed circuit pack in either the Option 1 Slot or the Option 2 Slot?

If...	Then...
Yes	Continue with Step 4.
No	Proceed to Step 7.

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

Result: The Main circuit pack 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.

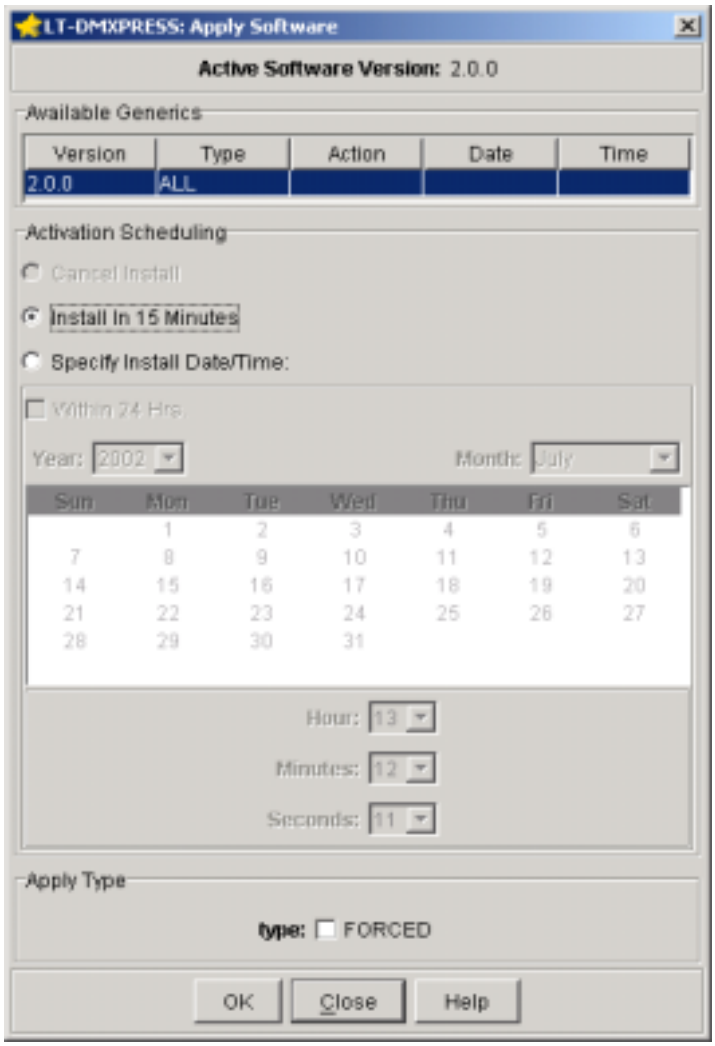
6 Is the CP firmware incompatibility alarm still present?

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):

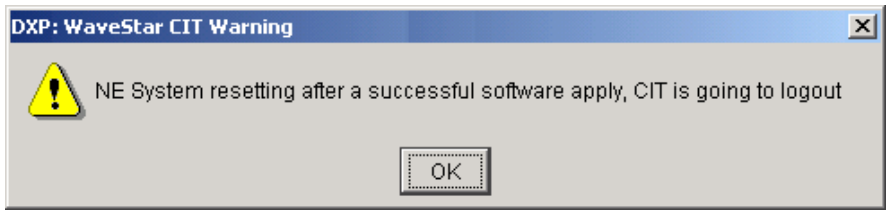
1. From the **Available Generics** panel, select the software generic to be activated.
2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
   - Select **Install In 15 Minutes**
     The software will install 15 minutes after you click **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**.

   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**.

9 After approximately 10 minutes the apply is complete.

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



Important! Following a Metropolis® DMX*press* 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 synchroniztion 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 612: Set Date and Time (5-99).

10 Log in to the shelf again.

Result: The title bars of the System View and the legal notice should both reflect the current NE software generic, R2.0.0.

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.

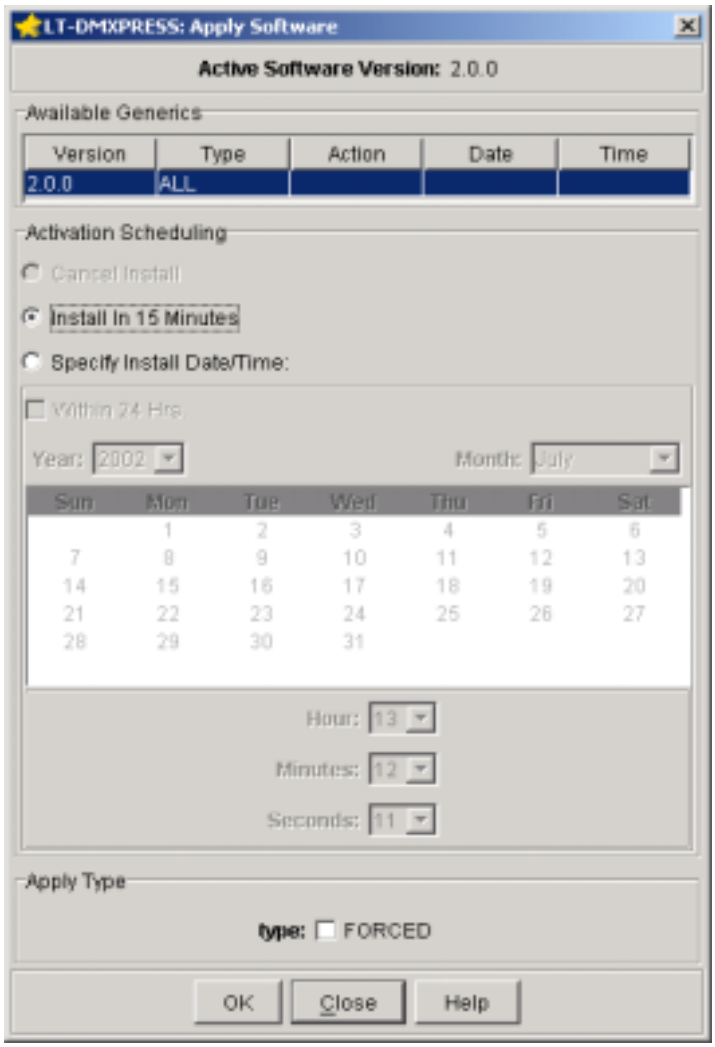
CAUTION

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)



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**.

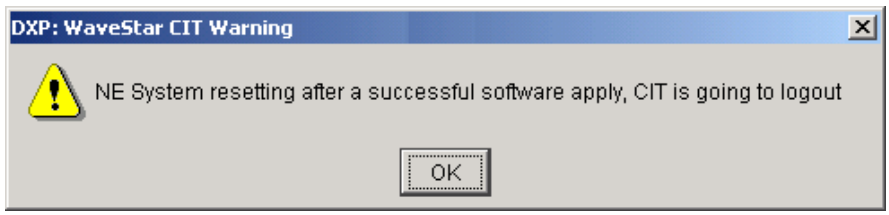
   Important! You may cancel the scheduled apply by returning to the **Apply Software** menu at any time before the software applies and selecting the generic and **Cancel Install** and then clicking **OK**.
3. From the **Apply Type** panel, you must select type: FORCED.
   This selection ensures that the 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*press* 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 synchroniztion 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 612: Set Date and Time (5-99).

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 Main circuit pack faceplate and reported as critical or minor in the WaveStar® CIT Alarm List.

Important! crs = cross-connect

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

Safety precautions

To assure both personal safety and the proper functioning of Metropolis® DMX*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 not allowed - crs alarm.

1 From the WaveStar® CIT System View, click on 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).

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 WaveStar® CIT 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 the 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** and 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** and 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.

END OF STEPS

Task 505: 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 Main circuit pack 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

Safety precautions

To assure both personal safety and the proper functioning of Metropolis® DMX*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 removed alarm.

1 From the WaveStar® CIT System View, click on 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 alarm is CR (SA) when the circuit pack is active or MN (NSA) when the circuit pack is when the removed pack is not active (not carrying service).

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	To remove the circuit pack(s) from the equipment list, continue with Step 5.
No	Proceed to Step 7.

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?

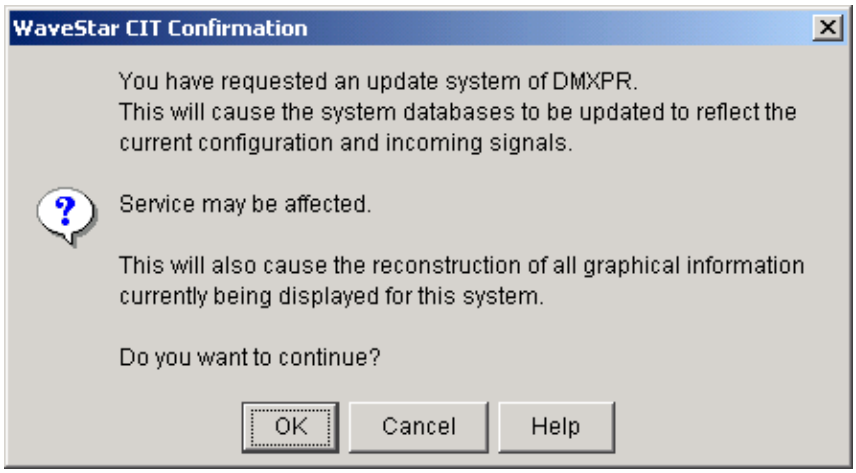
If...	Then...
Yes	Continue with Step 6.
No	Proceed to Step 7.

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

7 From the WaveStar® CIT System View, select **Configuration > Update System** to update the equipment list.

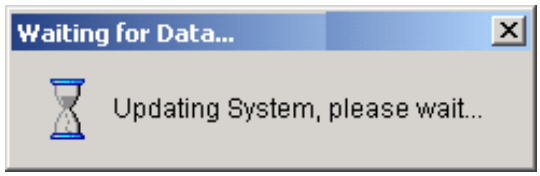
Important! This system update clears all current CP removed alarms.

Result: When the following screen appears, click **OK**.



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 16.

11 Does the Probable Cause column on the alarm list display either FETERM or GETERM?

If...	Then...
Yes	Continue with Step 12.
No	Proceed to Step 14.

12 Is the FASTE/16, GbE/2, or GbE/SX/2 Ethernet circuit pack visible in the shelf?

If...	Then...
Yes	Continue with Step 13.
No	Proceed to Step 14.

13 Examine the circuit pack latches. If either latch on the pack is open, you must disengage the circuit pack completely from the shelf to clear the alarm.

1. Release both latches.
2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.

   Result: The **ACT** and **FLT** LED on the pack extinguish.

3. Reseat the pack in the shelf.
4. Proceed to Step 15.

Important! Failure to fully reseat an Ethernet circuit pack to clear a CP removed alarm could result in a false GB-LAN CP failed or a FE-LAN CP failed alarm.

14 The indicated slot is vacant and you which to replace the missing pack with the same type of circuit pack, refer to the Probable Cause column in the alarm list for the type of circuit pack. Referring to the table below, proceed to the appropriate task to reinstall the removed circuit pack (with a replacement of the same type).

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...
DS1DS3TERM	A DS1/DS3/16/1 circuit pack was removed; replace the pack. Proceed to Task 603: Replace DS1/DS3/16/1 (A1AA006) Circuit Pack (5-21).
T3TERM	A DS3/12 circuit pack was removed; replace the pack. Proceed to Task 605: Replace DS3/12 (A1AA015) Circuit Pack (5-43).
OC3TERM	A low-speed OC-3 OLIU was removed; replace the pack. Proceed to Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93).
OC12TERM	A low-speed OC-12 OLIU was removed; replace the pack. Proceed to Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93).

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

Result: The CP removed 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 506: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

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

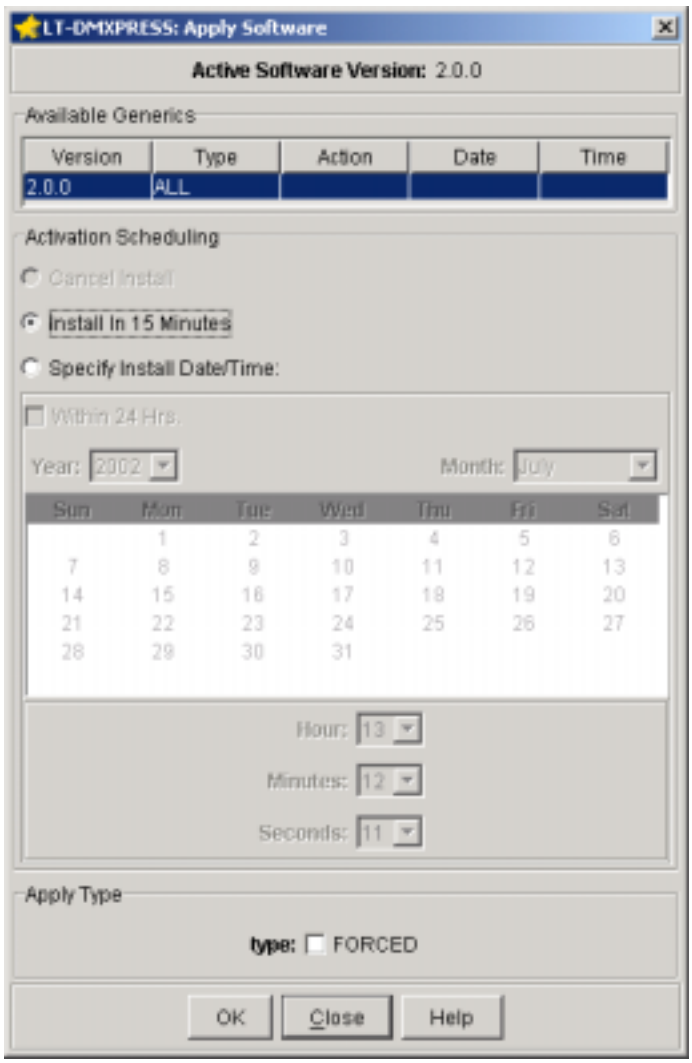
Task Complete the following steps to clear a dormant/exec code mismatch condition.

. . . . . .

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

Result: The Apply Software window appears.

Figure 506-1 Apply Software Window



2 Select and/or enter the following information in the Apply Software window (Figure 506-1):

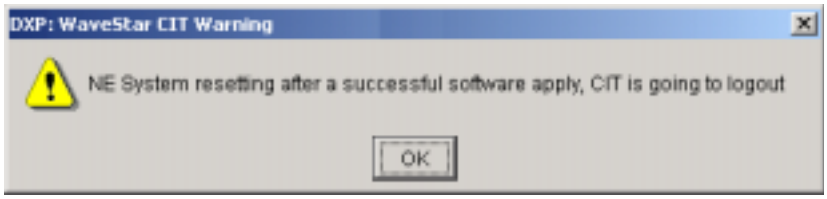
1. From the **Available Generics** panel, select the software generic to be activated.
2. From the **Activation Scheduling** panel, you may schedule the activation time and date in *one* of the following ways:
   - Select **Install In 15 Minutes**
     The software will install 15 minutes after you click **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**.

   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**.

3 After approximately 15 minutes the apply is complete.

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



Important! Following a Metropolis® DMX*press* 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 synchroniztion 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 612: Set Date and Time (5-99)

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 507: Clear “DS1 loopback (to DSX)” Condition

Purpose

This procedure is used to clear a DS1 loopback (to DSX) condition 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 DS1/DS3/16/1 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.

END OF STEPS

Task 508: Clear “DS1 loopback (to Fiber)” Condition

Purpose

This procedure is used to clear a DS1 loopback (to Fiber) condition 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 DS1/DS3/16/1 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.

END OF STEPS

Task 509: Clear “DS1 trmsn test IP” Condition

Purpose

This procedure is used to clear a DS1 trmsn test IP condition 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 *Terminal* direction (toward the fiber),	At the Main OLIUs, the fiber is loop backed. (Refer to Figure 509-1.) User performed a *terminal* 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 *Facility* 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 509-2.) User performed a *facility* transmission test on the DS1 using the **Fault > Test > Test Transmission** command.
in a Metropolis® DMX*press* 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 *terminal* 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*press* shelf and performed a *Terminal* loopback on the DS1 circuit being tested using the **Fault > Loopback** command. (Refer to Figure 509-3.)

Result: The following figures show the test arrangements.

Figure 509-1 Standalone Shelf with Main OLIU Loop Back

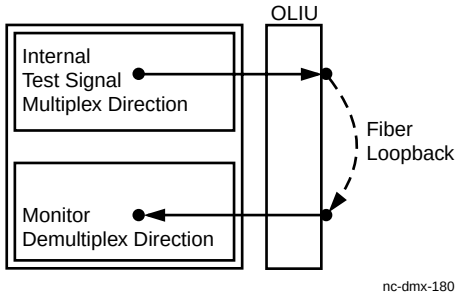


Figure 509-2 Standalone Shelf with DSX Loop Back

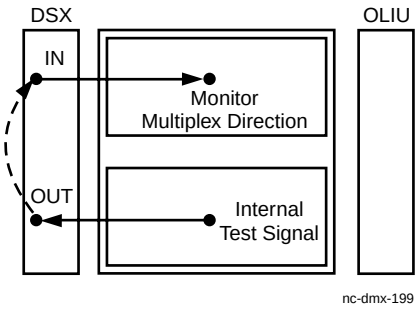
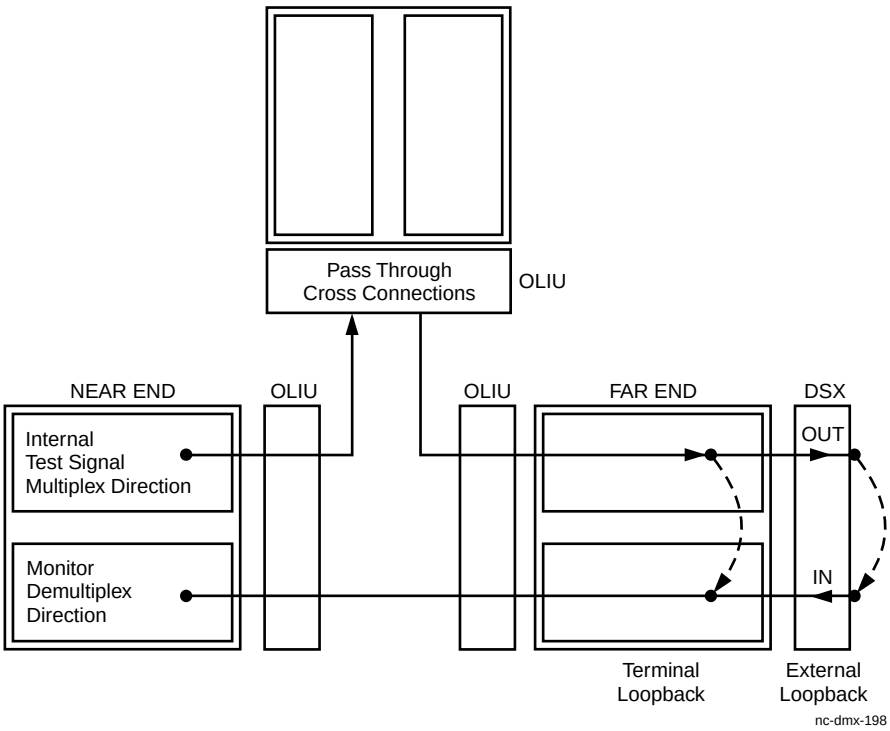


Figure 509-3 End-to-End DS1 Circuit with Far End Loop Back



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: A DS1 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® DMXpress Access Multiplexer User Operations Guide, 365-372-314*

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.

END OF STEPS

Task 510: Clear “DS3 loopback (to DSX)” Condition

Purpose

This procedure is used to clear a DS3 loopback (to DSX) condition 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 DS1/DS3/16/1 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.

END OF STEPS

Task 511: Clear “DS3 loopback (to Fiber)” Condition

Purpose

This procedure is used to clear a DS3 loopback (to Fiber) condition 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 DS1/DS3/16/1 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.

END OF STEPS

Task 512: Clear “DS3 trmsn test IP” Condition

Purpose

This procedure is used to clear a DS3 trmsn test IP condition 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 *Terminal* direction (toward the fiber),	At the Main OLIUs, the fiber is loop backed. (Refer to Figure 512-1.) User performed a *terminal* 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*press* 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 *terminal* 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*press* shelf and performed a *Terminal* loopback on the DS3 circuit being tested using the **Fault > Loopback** command. (Refer to Figure 512-2.)

Result: The following figures show the test arrangements.

Figure 512-1 Standalone Shelf with Main OLIU Loop Back

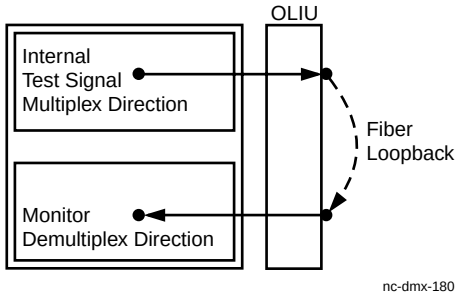
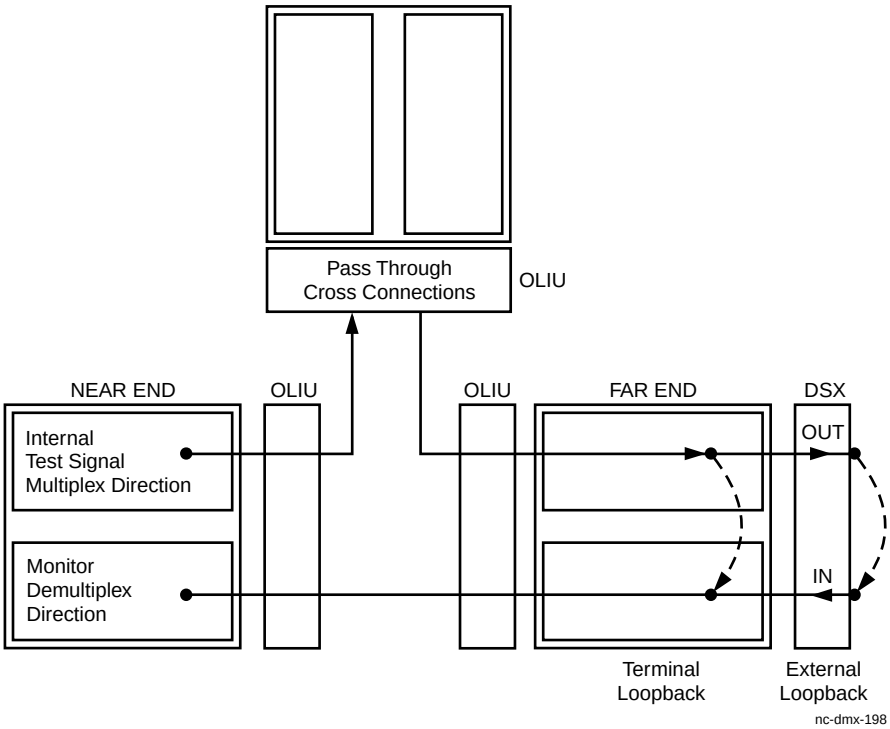


Figure 512-2 End-to-End DS3 Circuit with Far End Loop Back



. . . . . .

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® DMXpress Access Multiplexer User Operations Guide, 365-372-314*

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 513: Clear “duplicate TID” Alarm

Purpose

This procedure is used to clear a duplicate TID alarm indicated by a lighted Major (**MJ**) LED on the Main circuit pack 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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.

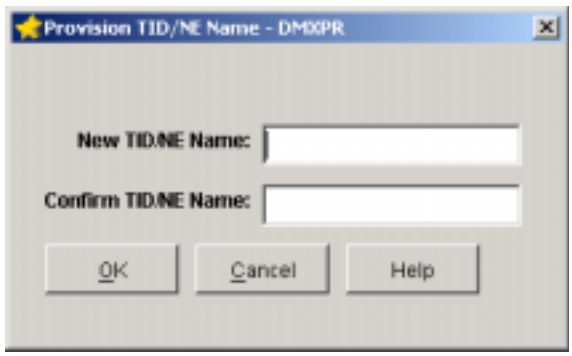
. . . . . .

1 Log in to the NE (local or remote) that you wish to rename.

. . . . . .

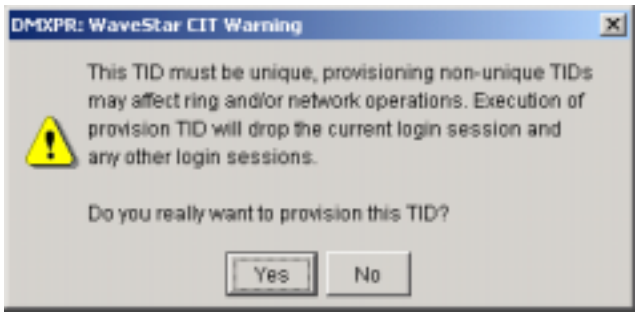
2 From the WaveStar® CIT System View, select **Administration > Set TID** to provision a different TID.

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 514: 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 15; 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 516: Clear “fan shelf failed” Alarm (4-85).
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 515: Clear “excessive holdover” Alarm

Purpose

This procedure is used to clear an excessive holdover alarm indicated by a lighted Major (**MJ**) LED on the Main circuit pack 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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.

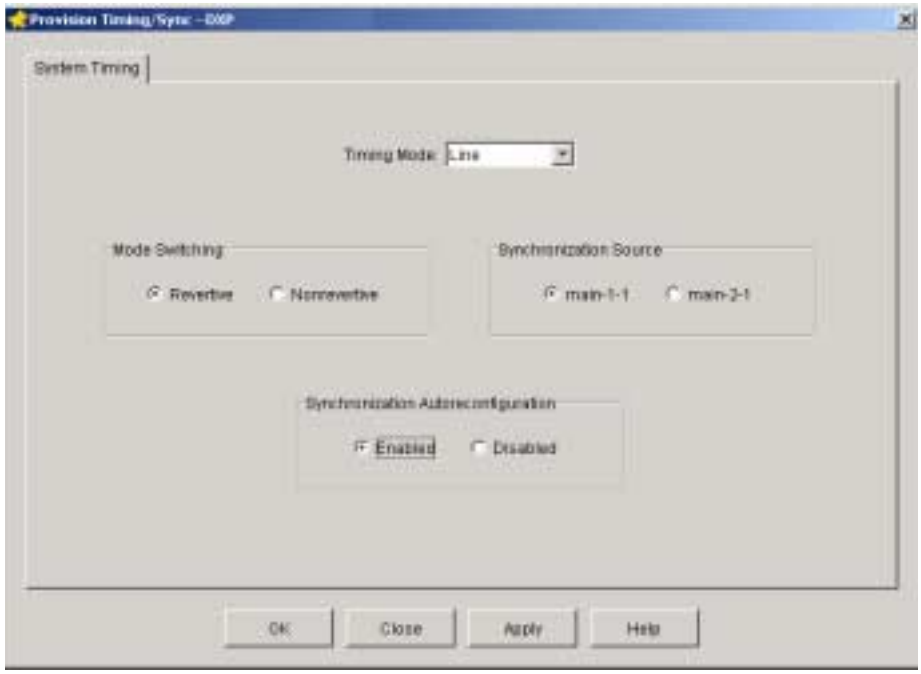
. . . . . .

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**.

Result: The following screen appears.



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 11.

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	Proceed to Step 11.

9 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**.

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

Result: The excessive holdover 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.

END OF STEPS

Task 516: 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 Main circuit pack 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*press*, 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® DMXpress Access Multiplexer User Operations Guide, 365-372-314*
- *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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 Check power and alarm cables. If cables are not connected, install power and alarm cables to fan and tighten screw locks.

2 Is Fan powered and running properly?

If...	Then...
Yes	Continue with Step 3.
No	Contact your next level of support. You may need to replace your shelf.

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

Result: The fan shelf failed alarm is no longer present.

4 Are any other alarms present?

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

END OF STEPS

Task 517: Clear “FE-LAN CP failed” Alarm

Purpose

This procedure is used to clear an FE-LAN CP failed alarm indicated by a lighted Critical (**CR**) LED on the Main circuit pack faceplate, 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
- Replacement circuit pack of the appropriate type

Safety precautions

To assure both personal safety and the proper functioning of Metropolis® DMX*press*, 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”.

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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 FE-LAN CP failed alarm.

1 From the WaveStar® CIT System View, click on the Alarm List button and locate the FE-LAN CP failed alarm in the resulting alarm list and note the corresponding AID.

Important! The FE-LAN CP failed alarm is always CR (SA) because the circuit pack is unprotected.

2 Disengage the circuit pack completely from the shelf. (The FE-LAN CP failed alarm may be the result of an improperly cleared CP removed alarm.)

1. Release both latches.
2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.

   Result: The **ACT** and **FLT** LED on the pack extinguish.

3. Reseat the pack in the shelf.

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

4 Is the FE-LAN CP failed alarm still present?

If...	Then...
Yes	Continue with Step 5.
No	Proceed to Step 6.

5 There is an internal failure on the pack. Replace the FASTE/16 circuit pack.

Reference: Task 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13)

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

Result: The FE-LAN CP failed 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 518: Clear “GB-LAN CP failed” Alarm

Purpose

This procedure is used to clear a GB-LAN CP failed alarm indicated by a lighted Critical (**CR**) LED on the Main circuit pack faceplate, 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
- Replacement circuit pack of the appropriate type

Safety precautions

To assure both personal safety and the proper functioning of Metropolis® DMX*press*, 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”.

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 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 GB-LAN CP failed alarm.

1 From the WaveStar® CIT System View, click on the Alarm List button and locate the GB-LAN CP failed alarm in the resulting alarm list nd note the corresponding AID.

Important! The GB-LAN CP failed alarm is always CR (SA) because the circuit pack is unprotected.

2 Disengage the circuit pack completely from the shelf. (The GB-LAN CP failed alarm may be the result of an improperly cleared CP removed alarm.)

1. Release both latches.
2. Extract the circuit pack from the shelf, fully disconnecting it from the backplane, and therefore removing power.

Result: The **ACT** and **FLT** LED on the pack extinguish.

3. Reseat the pack in the shelf.

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

4 Is the GB-LAN CP failed alarm still present?

If...	Then...
Yes	Continue with Step 5.
No	Proceed to Step 6.

5 There is an internal failure on the pack. Replace the Gigabit Ethernet circuit pack (GbE/2 or GbE/SX/2).

Reference: Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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

Result: The GB-LAN CP failed 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 519: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 15.

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	Proceed to Step 15.

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

Result: The holdover mode active 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 520: 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 Main circuit pack 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 *View Equipment Details* 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 *Provision Parameters for Equipment* 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.

END OF STEPS

Task 521: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 (**FLT**) LED on the near-end DS1/DS3/16/1 circuit pack continuously lit?

If...	Then...
Yes	Continue with Step 11.
No	Proceed to Step 12.

Important! A continuously lit **FLT** LED on a DS1/DS3/16/1 circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

11 Replace the near-end DS1/DS3/16/1 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 DS1/DS3/16/1 (A1AA006) Circuit Pack (5-21)

12 Is the Fault (**FLT**) LED on the near-end DS1/DS3/16/1 circuit pack flashing?

If...	Then...
Yes	Continue with Step 13.
No	Proceed to Step 17.

Important! A flashing FLT LED on a DS1/DS3/16/1 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 DS1/DS3/16/1 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 Main circuit pack to remove the circuit pack from the inventory.

15 Is the Fault (**FLT**) LED on the near-end DS1/DS3/16/1 circuit pack still flashing?

If...	Then...
Yes	Continue with Step 16.
No	Proceed to Step 17.

16 Replace the far-end DS1/DS3/16/1 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 DS1/DS3/16/1 (A1AA006) Circuit Pack (5-21)

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 522: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 DS1/DS3/16/1 or DS3/12 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 (**FLT**) LED on the near-end DS1/DS3/16/1 or DS3/12 circuit pack continuously lit?

If...	Then...
Yes	Continue with Step 14.
No	Proceed to Step 15.

Important! A continuously lit **FLT** LED on a DS1/DS3/16/1 or DS3/12 circuit pack indicates a circuit pack failure (either self-detected or detected by the system controller).

14 Replace the near-end DS1/DS3/16/1 or DS3/12 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 DS1/DS3/16/1 (A1AA006) Circuit Pack (5-21) or Task 605: Replace DS3/12 (A1AA015) Circuit Pack (5-43)

15 Is the Fault (**FLT**) LED on the near-end DS1/DS3/16/1 or DS3/12 circuit pack flashing?

If...	Then...
Yes	Continue with Step 16.
No	Proceed to Step 19.

Important! A flashing FLT LED on a DS1/DS3/16/1 or DS3/12 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 DS1/DS3/16/1 or DS3/12 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 Main circuit pack to remove the circuit pack from the inventory.

18 Is the Fault (**FLT**) LED on the near-end DS1/DS3/16/1 or DS3/12 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 DS1/DS3/16/1 or DS3/12 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 DS1/DS3/16/1 (A1AA006) Circuit Pack (5-21) or Task 605: Replace DS3/12 (A1AA015) Circuit Pack (5-43)

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 523: 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 Main circuit pack faceplate 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

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

Task

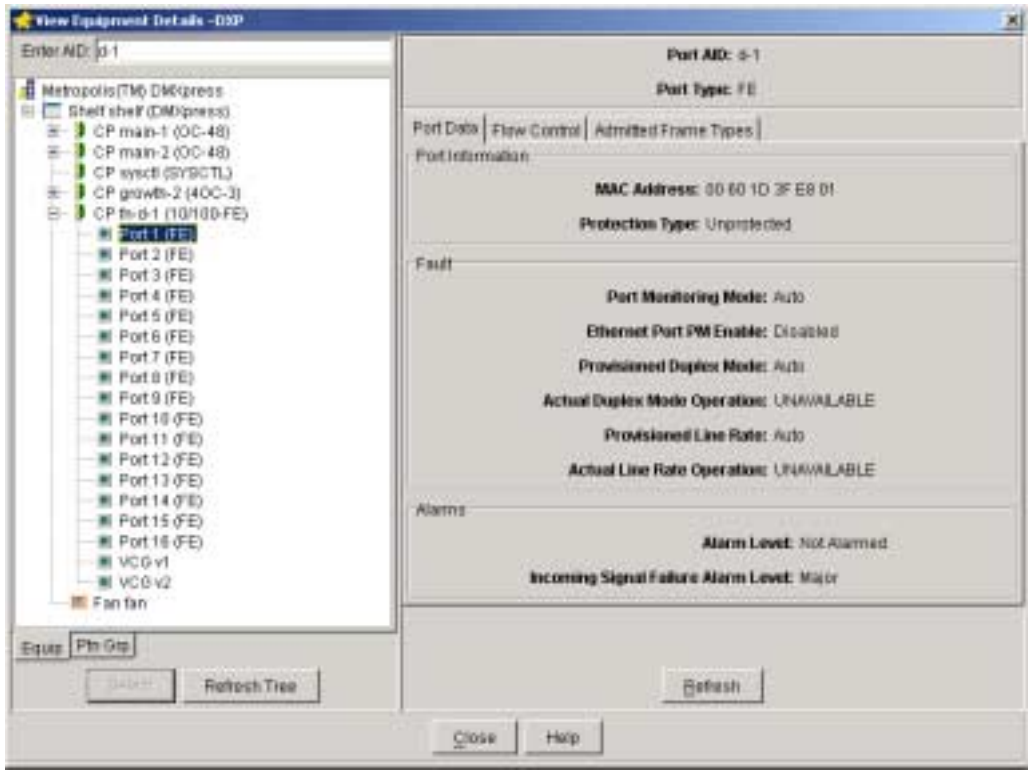
Complete the following steps to clear an inc. FE-LAN ANM alarm.

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.

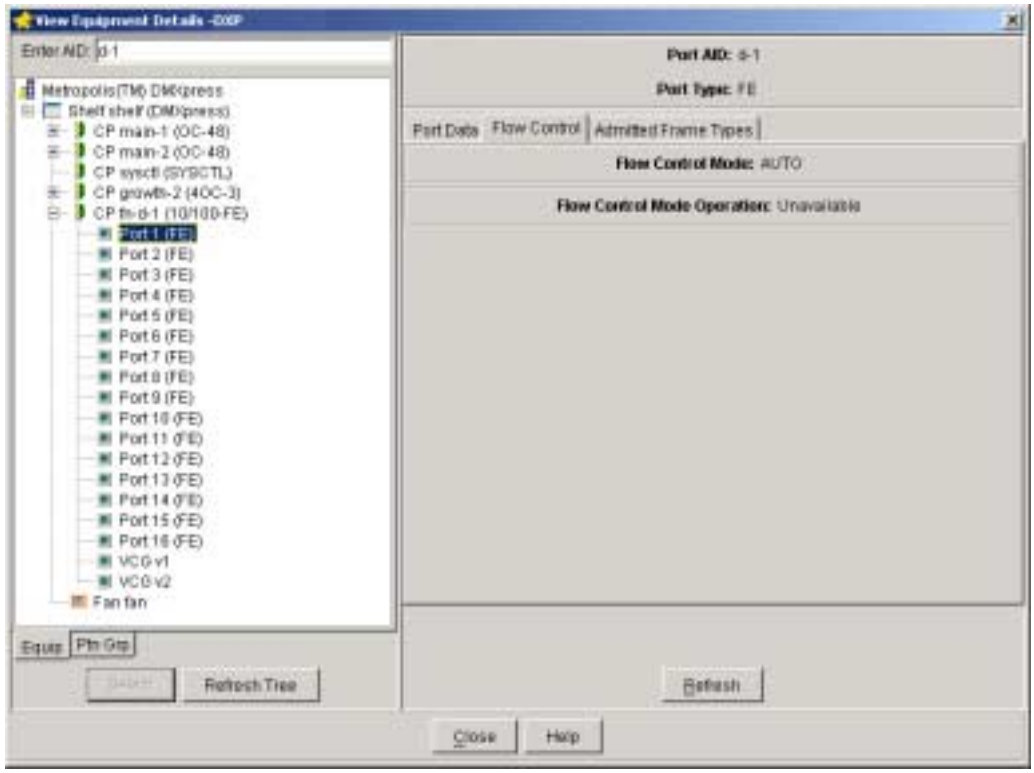


4 Record the following information:

- 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?

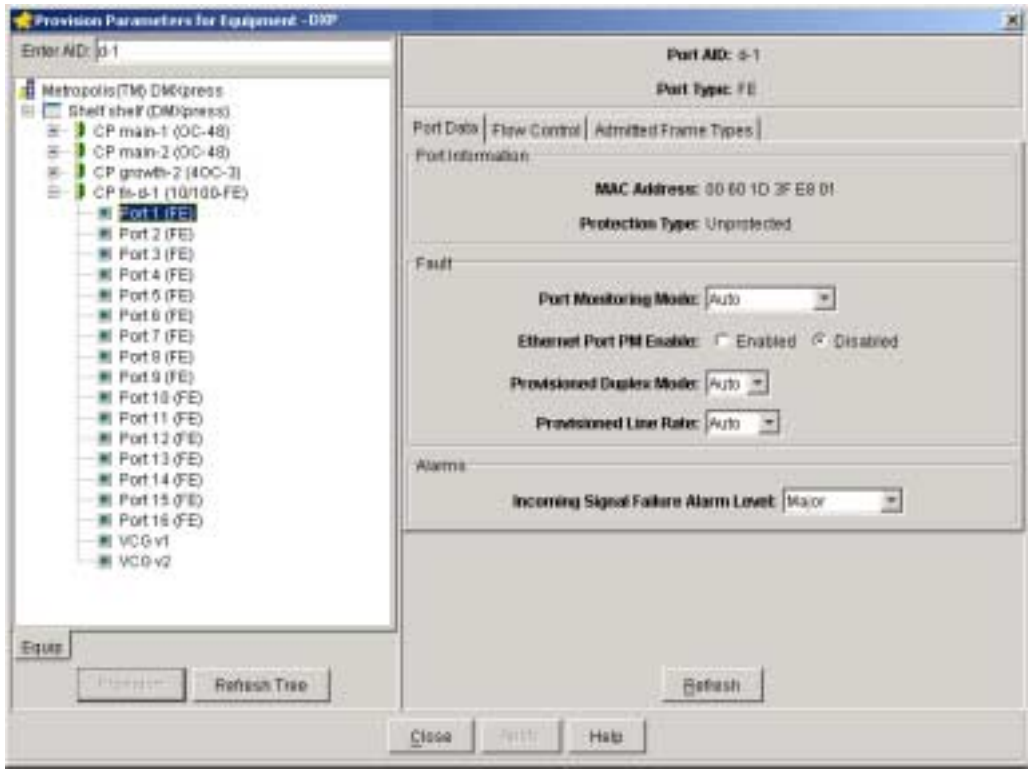
If...	Then...
Yes	Proceed to Step 16.
No	Continue with Step 9.

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 FASTE/16 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**.

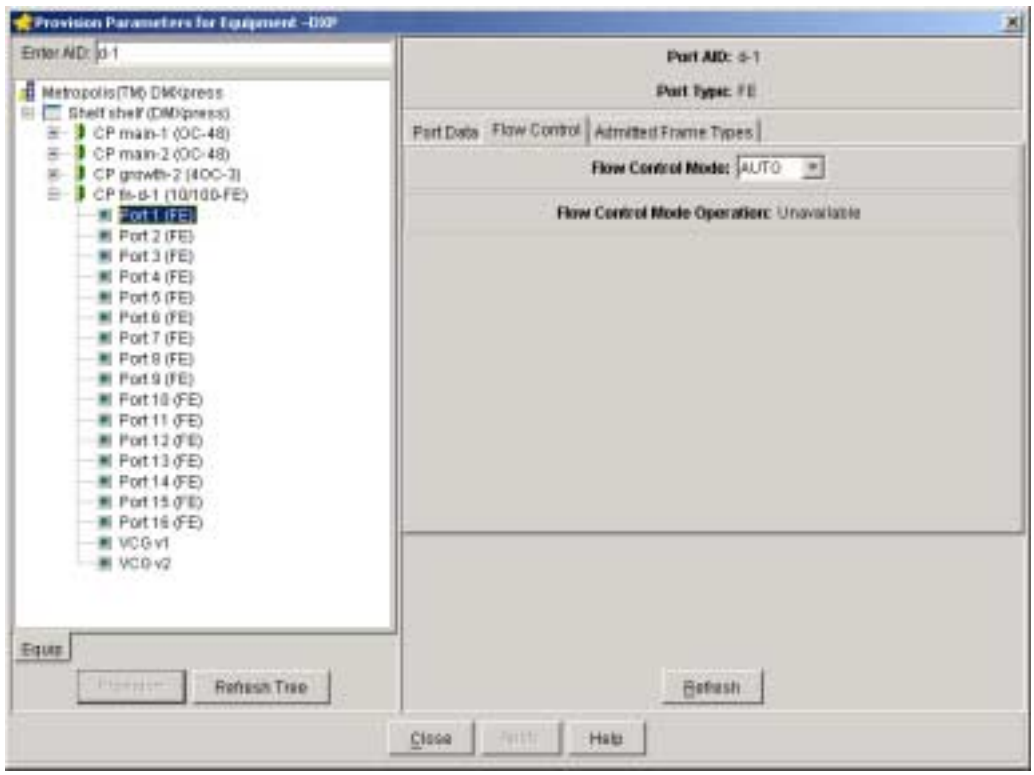
Result: The following warning message appears:
Execution of Provision may affect the NE service. Do you want to execute this command?
Click **Yes**.

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 FASTE/16 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.

END OF STEPS

Task 524: 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 Main circuit pack faceplate 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 **ACT** and **FLT** 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 (**FLT**) LED on the near-end Ethernet circuit pack (FASTE/16) continuously lit?

If...	Then...
Yes	Continue with Step 8.
No	Proceed to Step 9.

Important! A continuously lit **FLT** 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 (A1AA007) 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*press* 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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13)

9 Is the Fault (**FLT**) LED on the near-end Ethernet circuit pack (FASTE/16) flashing?

If...	Then...
Yes	Continue with Step 10.
No	Proceed to Step 20.

Important! A flashing FLT 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 FASTE/16 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 Main circuit pack to remove the circuit pack from the inventory.

12 Is the Fault (**FLT**) LED on the near-end Ethernet circuit pack (FASTE/16) still flashing?

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

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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13)

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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13)

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 525: 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 Main circuit pack faceplate 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

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

Task

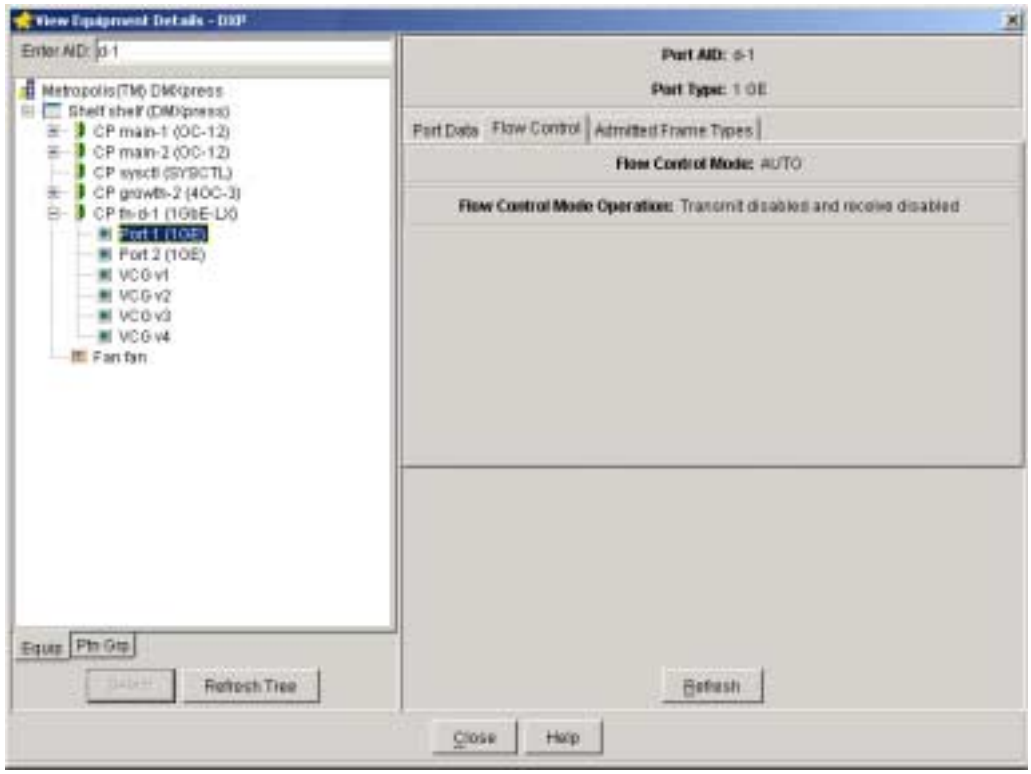
Complete the following steps to clear an inc. GE-LAN ANM alarm.

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.

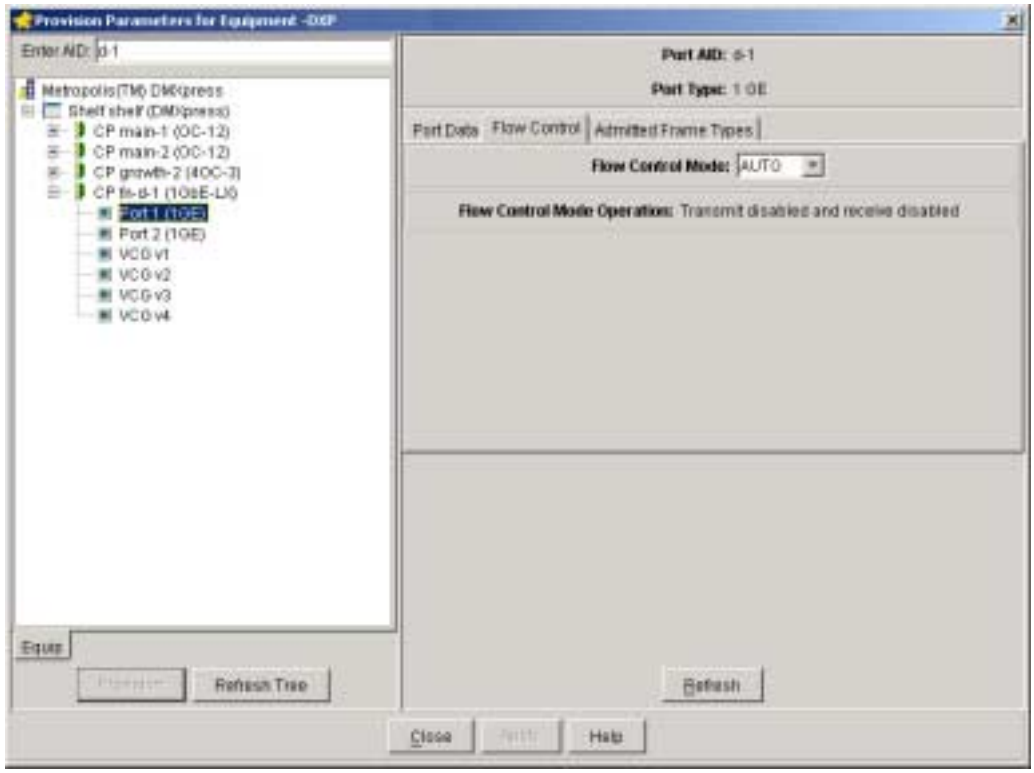
5 Log in to the far end NE and repeat Step 3 and Step 4.

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 526: 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 Main circuit pack faceplate 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 **ACT** and **FLT** 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 (**FLT**) LED on the near-end Ethernet circuit pack (GbE/2 or GbE/SX/2) continuously lit?

If...	Then...
Yes	Continue with Step 8.
No	Proceed to Step 9.

Important! A continuously lit **FLT** 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 (A1AA019) and 1000BASE-LX (A1AA008) 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*press* 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 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

9 Is the Fault (**FLT**) LED on the near-end Ethernet circuit pack (GbE/2 or GbE/SX/2) flashing?

If...	Then...
Yes	Continue with Step 10.
No	Proceed to Step 16.

Important! A flashing FLT 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 Main circuit pack faceplate to remove the circuit pack from the inventory.

12 Is the Fault (**FLT**) LED on the near-end Ethernet circuit pack (GbE/2 or GbE/SX/2) 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 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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 527: 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*press*, 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”.

CAUTION

Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 (**FLT**) 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 **FLT** 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.

CAUTION

Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Reference: Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27) or Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93)

6 Is the Fault (**FLT**) 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 FLT 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 Main circuit pack to remove the circuit pack from the inventory.

9 Is the Fault (**FLT**) 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).

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.

CAUTION
Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Reference: Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27) or Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93)

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.

CAUTION
Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Reference: Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27) or Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93)

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 528: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

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

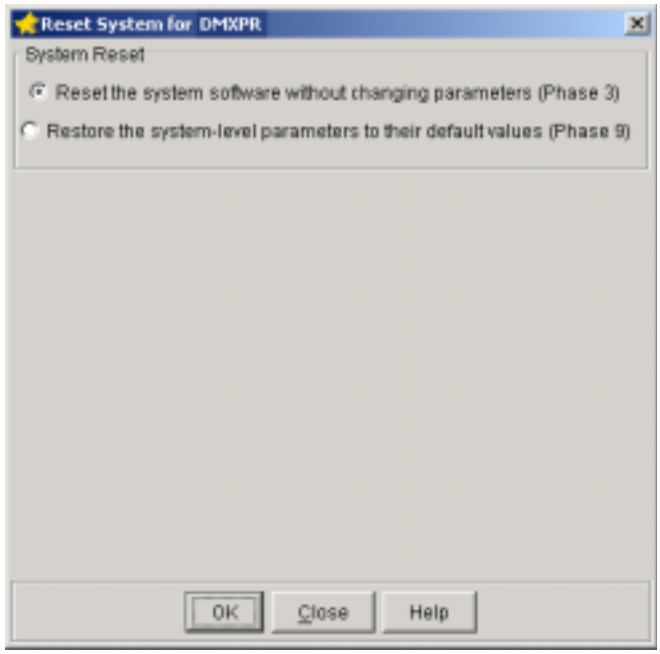
Task

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.

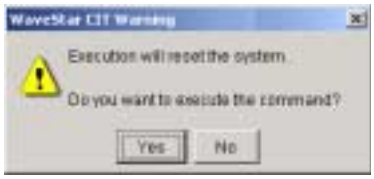


3 Select the Phase 3 option, “Reset the system software without changing parameters” and click **OK**.

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 **ACT** and **FLT** 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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13) or Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13) or Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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.

END OF STEPS

Task 529: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

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

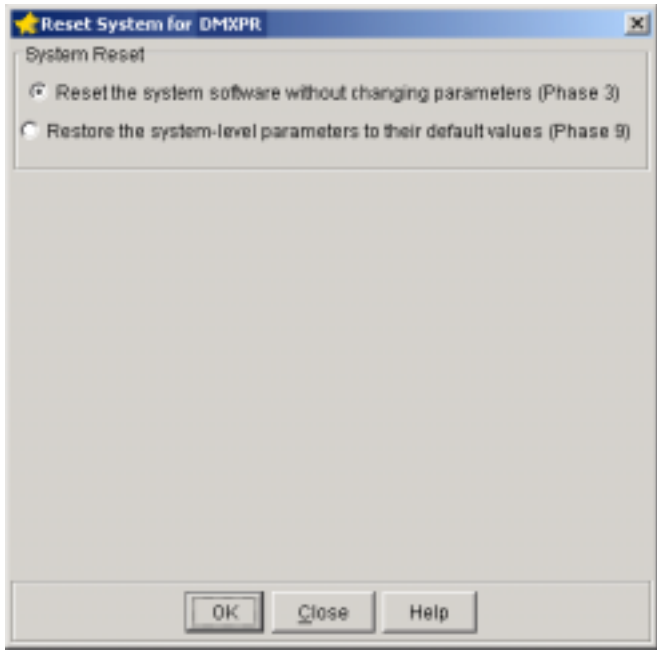
Task

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.

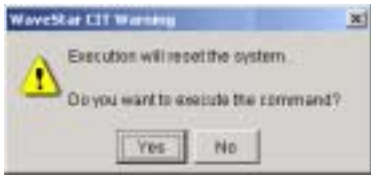


3 Select the Phase 3 option, “Reset the system software without changing parameters” and click **OK**.

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 **ACT** and **FLT** 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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13) or Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13) or Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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 530: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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).

17 If the LBO receptacle is acceptable, replace the terminating 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.

CAUTION

Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Reference: Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27) or Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93)

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.

END OF STEPS

Task 531: 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 Main circuit pack faceplate 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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 **ACT** and **FLT** 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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13) or Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13) or Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17)

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 532: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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).

17 If the LBO receptacle is acceptable, replace the terminating 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.

CAUTION
Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Reference: Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27) or Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93)

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 533: 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 Main circuit pack 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

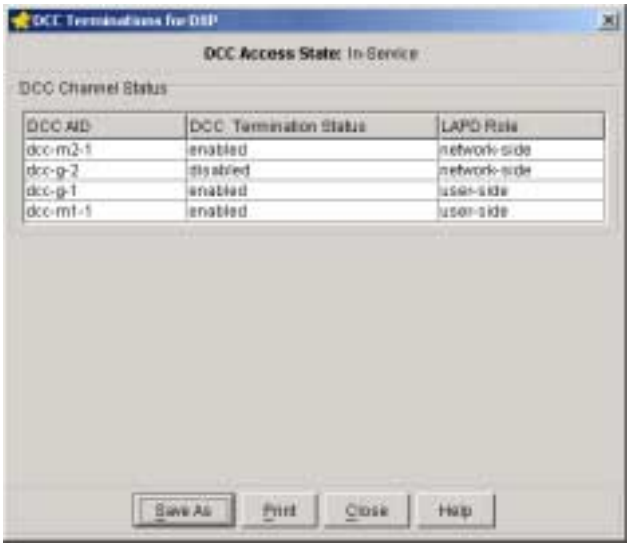
   Reference: Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session (5-3)

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**.

Result: The inconsistent DCC switches alarm is no longer present.

6 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 534: 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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.

END OF STEPS

Task 535: 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 Main circuit pack 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*press*, 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 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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

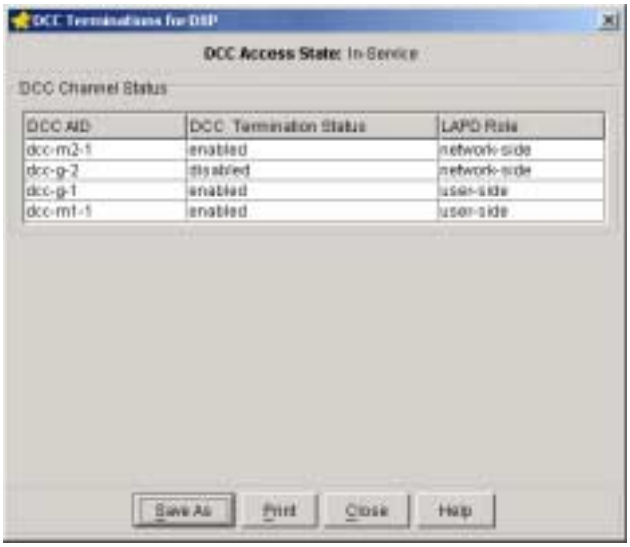
   Reference: Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session (5-3)

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 11.

. . . . . .

7 Check optical connections for the presence of an incoming signal.

. . . . . .

8 Check the optical signal level and clean the cable ends if needed. If no problem is found, check the line build-outs (LBOs).

. . . . . .

9 If the LBO receptacle is acceptable, 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.

CAUTION

Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Reference: Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack (5-27) or Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93)

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

Result: The section DCC channel failed alarm is no longer present.

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 536: Clear “unexpected CP type” Alarm

Purpose

This procedure is used to clear an unexpected CP type alarm indicated by a lighted Critical (**CR**) or Minor (**MN**) LED on the Main circuit pack 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*press*, 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:

Prior to beginning this task, you must:

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

   Reference: Task 610: Install Generic and WaveStar® CIT Software on the PC (5-81)

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**), Major (**MJ**), or Minor (**MN**) unexpected CP type alarm.

. . . . . .

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

. . . . . .

2 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.

. . . . . .

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 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?

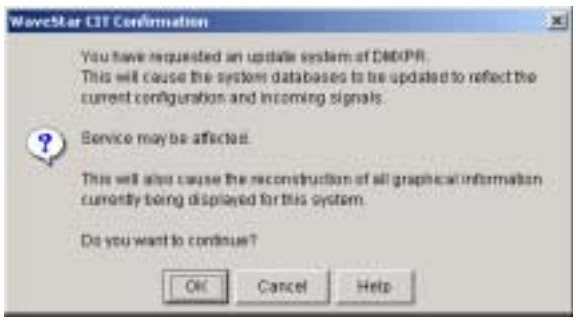
If...	Then...
Yes	Continue with Step 6.
No	Proceed to Step 7.

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**.

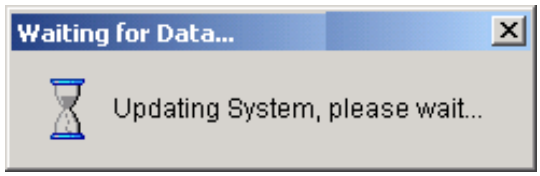
Important! This system update clears all current unexpected CP type alarms.

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...
DS1DS3TERM	A DS1/DS3/16/1 circuit pack was removed; replace the pack. Proceed to Task 603: Replace DS1/DS3/16/1 (A1AA006) Circuit Pack (5-21).
T3TERM	A DS3/12 circuit pack was removed; replace the pack. Proceed to Task 605: Replace DS3/12 (A1AA015) Circuit Pack (5-43).
OC3TERM	A low-speed OC-3 OLIU was removed; replace the pack. Proceed to Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93).
OC12TERM	A low-speed OC-12 OLIU was removed; replace the pack. Proceed to Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack (5-93).
FETERM	A FASTE/16 circuit pack was removed; replace the pack. Proceed to Task 601: Replace FASTE/16 (A1AA007) Circuit Pack (5-13).
GETERM	A GbE/2 or GbE/SX/2 circuit pack was removed; replace the pack. Proceed to Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack (5-17).

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

5 Supporting Tasks

Overview

Purpose This chapter contains supporting tasks for the Metropolis® DMX*press* Access Multiplexer.

Contents The following information is included in this chapter:

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 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 system, 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, refer to Chapter 3, "Maintenance Overview" in this document.

Before you begin

Ensure that the descriptions and syntax of the various features and parameters of the Metropolis® DMX*press* 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 more of the following ports:

- **RS-232 CIT** port on the faceplate of the Main (OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2) circuit pack to the serial port on the PC
- **LAN CIT** port on the faceplate of the Main circuit pack to the Network Interface Card (NIC) on the PC.
- **J1 IAO LAN** port on the rear of the Metropolis® DMX*press* shelf to the NIC on the PC.

Important! If you are uncertain that the LAN ports have already been provisioned, connecting via the serial port is recommended.

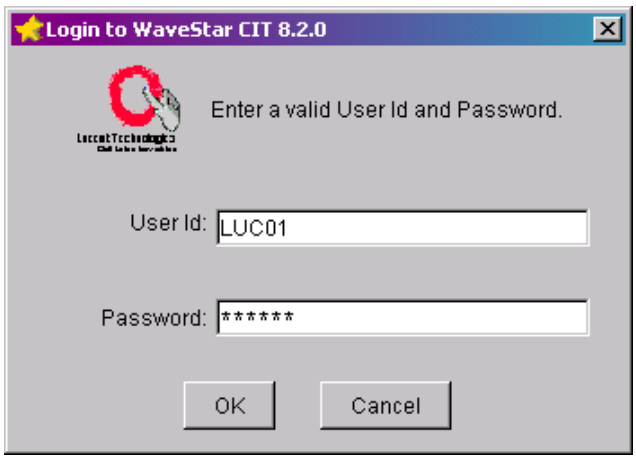
2 Start the WaveStar® CIT software on the PC by double-clicking on the WaveStar® CIT icon on your desktop (created by the installation procedure).

Figure 600-1 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 600-2 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:

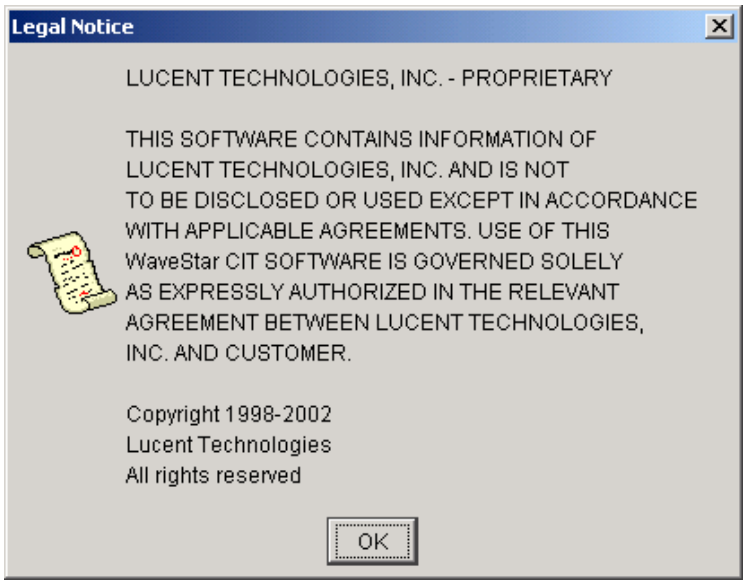
- Passwords must be six to ten characters in length.
- Passwords must begin with a letter.
- Passwords must contain at least three non-alphabetic characters (numbers or symbols).
  At least one of the non-alphabetic characters must be a symbol

  Symbols may *not* include space ( ),, ampersand (**&**), “at” (**@**), comma (**,**), colon (**:**), semicolon (**;**), horizontal bar [underscore] (**_**), equals (**=**), question (**?**), or quotation (**“**).
- Passwords are case sensitive.

. . . . . .

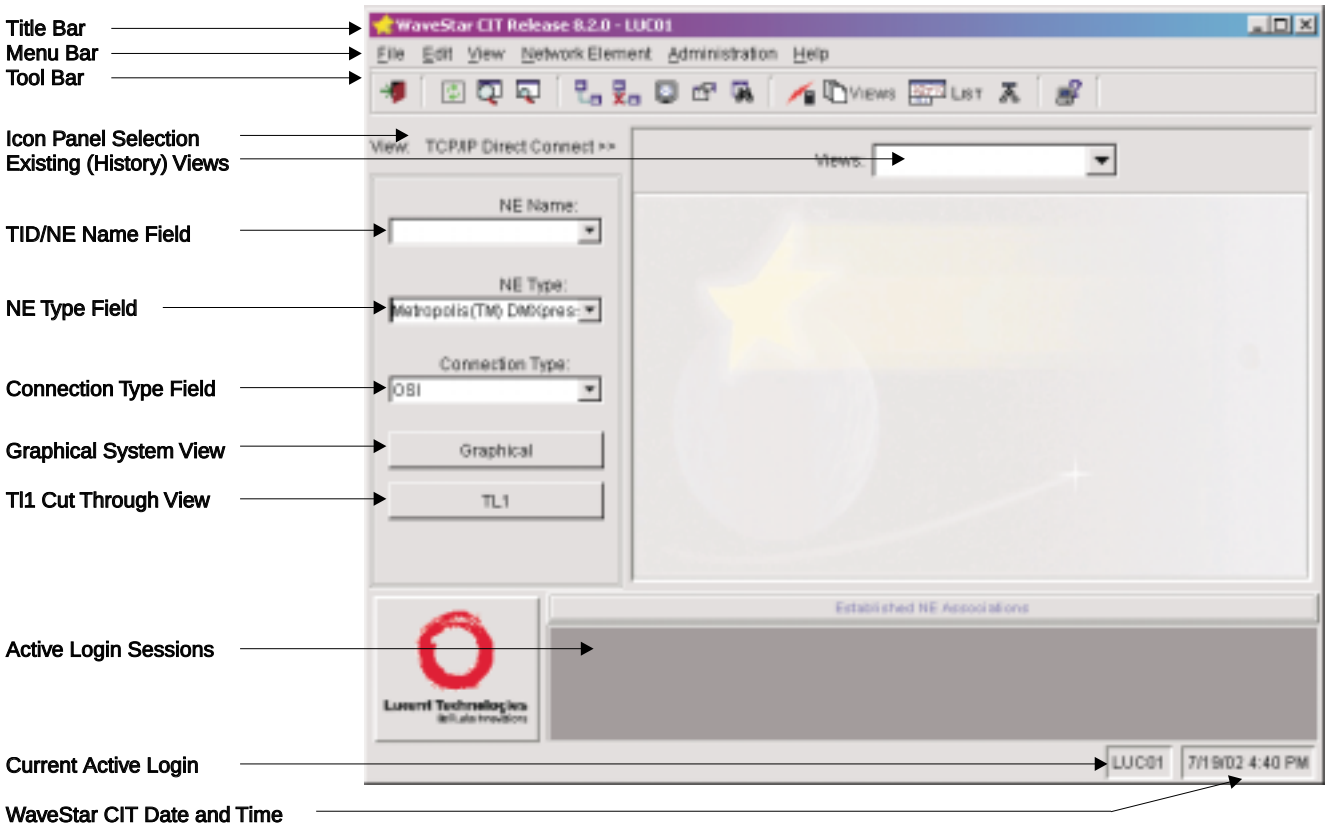
4 Click **OK** to bring up the Legal Notice.

Figure 600-3 Legal Notice



5 Read the Legal Notice and click **OK** to bring up the Network View.

Figure 600-4 Network View



6 Enter the name (TID) of the Metropolis® DMX*press* shelf that you wish to communicate with in the **NE Name:** window.

Important! The default TID is LT-DMXPRESS.

7 In the **NE Type:** field, click on the drop-down arrow and select **Metropolis(TM) DMXpress**.

8 In the **Connection Type**: field, click on the drop-down arrow and select the appropriate connection type.

- OSI - if connected to the rear **J1 IAO LAN** or front **LAN CIT** port
- Serial - if connected to the front **RS-232 CIT** port
- TCP/IP - if connected to the rear **J1 IAO LAN** or front **LAN CIT** port

Important! The TCP/IP option requires the NE to be provisioned to accept TCP/IP connections. The behavior of the NE depends on the ACID assigned to the connection. TL1test is the ACID of choice for the WaveStar® CIT application.

9 After completing the three fields, click on the **Graphical** button.

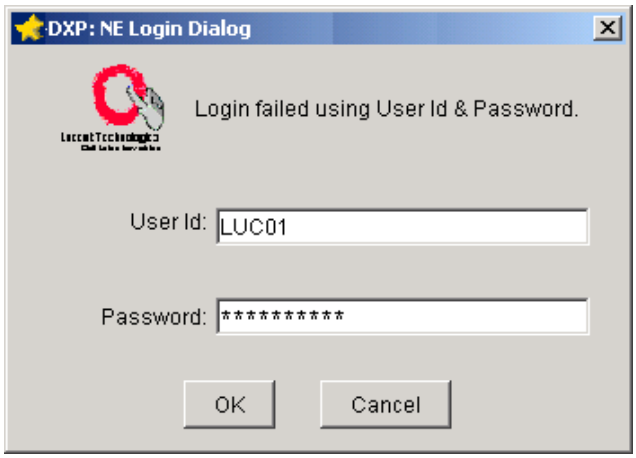
If you select the TCP/IP option, you must also enter the IP address of your NE and then click **OK**.

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 A Login Dialog screen (Figure 600-5) will appear.

Figure 600-5 NE Login Dialog



Enter the following in the Login window (login information is case sensitive) to login to the NE:

User ID: **LUC01**
Password: **DMXPRS2.5G**

If the **Enable these as the default values checkbox** is checked, you will not be asked for login and password the next time you connect to this NE during this CIT session. When the CIT is restarted, you must check the box again.

> **Important!** LUC01, LUC02, LUC03 and DMXPRS2.5G are the default privileged logins/password for Metropolis® DMX*press*. 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 600-6.

Figure 600-6 NE Level Legal Notice

12 Read and observe the software Release (for example, **2.0.0**), and the User Privilege Level (for example, **Privileged**). Click on **OK** to continue.

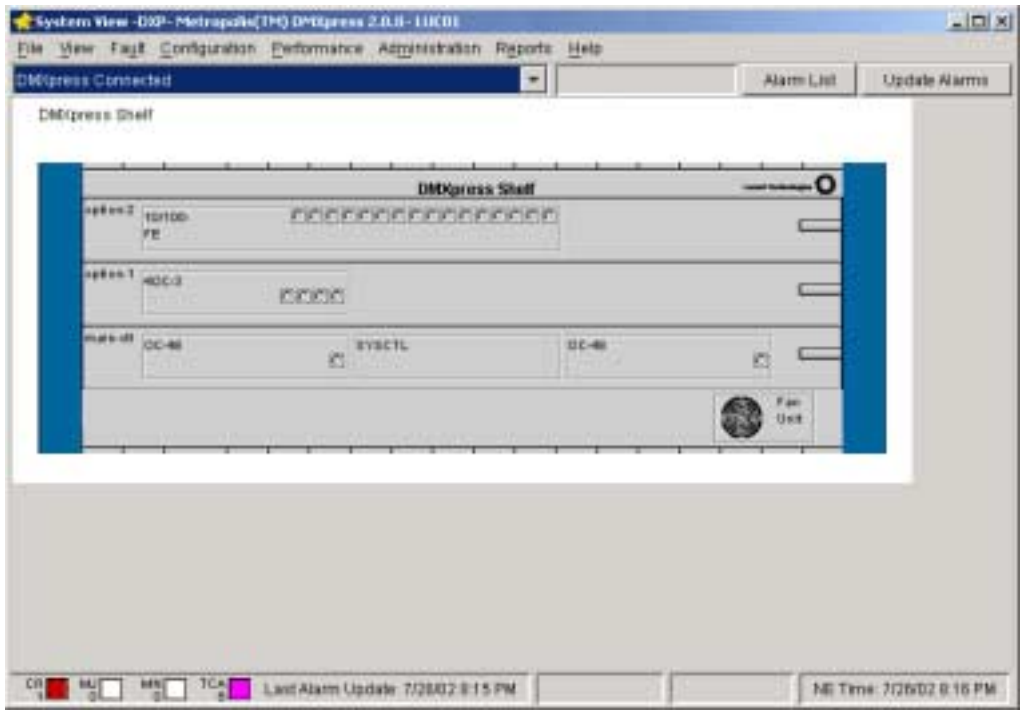
Result: The **System View** window appears.

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 600-7 System View (Graphical)



Note: Release numbers and time/date stamps on your WaveStar® CIT will not match those displayed in the figure.

END OF STEPS

Task 601: Replace FASTE/16 (A1AA007) Circuit Pack

Purpose

Use this task to replace a FASTE/16 circuit pack (A1AA007).

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*press*, 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".

CAUTION

Ethernet 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 *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Prior to beginning this task, you must:

1. Ensure that the correct Ethernet circuit pack (FASTE/16) is available for replacement.
2. If not previously completed, install generic and WaveStar® CIT software on the PC.

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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 remove and replace a FASTE/16 circuit pack.

1 Disconnect all of the Ethernet connections (up to 16) currently connected to the FASTE/16 circuit pack.

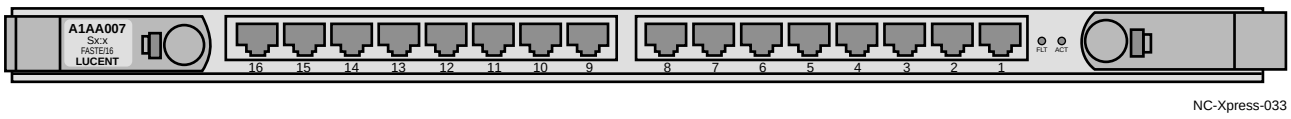
CAUTION

Ethernet 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.

Figure 601-1 illustrates the FASTE/16 circuit pack.

Figure 601-1 FASTE/16 Circuit Pack



2 Grasp the inner edge of the locking-levers securing the each end of the circuit pack and apply a constant pressure to pull the levers outward.

3 Pull the levers forward to disengage the circuit pack from the backplane connector and draw the circuit pack out of Option 2 Slot.

4 To install the replacement FASTE/16 circuit pack in the Metropolis® DMX*press* shelf, orient the circuit pack into a horizontal position (components up) and align the circuit pack with the slides at the edges of Option 2 Slot.

5 Apply a steady pressure to the faceplate and latch assembly until the circuit pack is seated.

6 Secure the circuit pack in the Metropolis® DMX*press* shelf using the latch levers.

Result: The Fault (**FLT**) LED and Active (**ACT**) LED illuminate. Because there is no signal present, the **FLT** LED begins flashing after about 60 seconds.

7 Using ports 1 through 16 (visible on the front of the FASTE/16 circuit pack), reconnect the 10/100 Ethernet signals.

Reference: Figure 601-1 in Step 1

8 On the main circuit pack faceplate (depending on your system, either an OC12/1.3I2, OC48/1.3I2, or OC48 CHx/y) press the **UPD/INIT** button to reinitialize the system.

Result: The main circuit pack initializes the new FASTE/16 circuit pack.

9 Using the WaveStar® CIT, verfiy that the Ethernet connections are re-established by selecting **View > Cross Connections**.

Result: The **FLT** LED on the FASTE/16 circuit pack goes out after the first Ethernet network connection is complete.

END OF STEPS

Task 602: Replace GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) Circuit Pack

Purpose

Use this task to replace a GbE/2 (A1AA008) or GbE/SX/2 (A1AA019) circuit pack .

> **Important!** The GbE/2 (A1AA008) circuit pack support long-reach gigabit Ethernet signals and the GbE/SX/2 circuit pack (A1AA019) supports short-reach gigabit Ethernet signals.

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*press*, 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".

CAUTION

Ethernet 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 *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Prior to beginning this task, you must:

1. Ensure that the correct Ethernet circuit pack (GbE/2 or GbE/SX/2) is available for replacement.
2. If not previously completed, install generic and WaveStar® CIT software on the PC.

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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 remove and replace a GbE/2 or GbE/SX/2 circuit pack.

1 Disconnect the Ethernet optical lines from Port **1** and **2** (**IN** and **OUT**) and set aside.

CAUTION

Ethernet 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.

Figure 602-1 illustrates the GbE/2 circuit pack. (The GbE/SX/2 circuit pack is physical identical to the GbE/2 circuit pack except for the faceplate label.)

Figure 602-1 GbE/2 Circuit Pack

2 Grasp the inner edge of the locking-levers securing the each end of the circuit pack and apply a constant pressure to pull the levers outward.

3 Pull the levers forward to disengage the circuit pack from the backplane connector and draw the circuit pack out of Option 2 Slot.

4 To install the replacement GbE/2 or GbE/SX/2 circuit pack in the Metropolis® DMX*press* shelf, orient the circuit pack into a horizontal position (components up) and align the circuit pack with the slides at the edges of Option 2 Slot.

5 Apply a steady pressure to the faceplate and latch assembly until the circuit pack is seated.

6 Secure the circuit pack in the Metropolis® DMX*press* shelf using the latch levers.

Result: The Fault (**FLT**) LED and Active (**ACT**) LED illuminate. Because there is no signal present, the **FLT** LED begins flashing after about 60 seconds.

7 Reconnect the Ethernet optical lines to Port **1** and **2** (**IN** and **OUT**) on the GbE/2 or GbE/SX/2 circuit pack.

Important! Follow locally developed plans and records to make the local Ethernet connections between the Metropolis® DMX*press* shelf and the local network(s).

Reference: Figure 602-1 in Step 1

8 On the main circuit pack faceplate (depending on your system, either an OC12/1.3I2, OC48/1.3I2, or OC48 CHx/y) press the **UPD/INIT** button to reinitialize the system.

Result: The Main circuit pack initializes the new GbE/2 or GbE/SX/2 circuit pack.

9 Using the WaveStar® CIT, verfiy that the Ethernet connections are re-established by selecting **View > Cross Connections**.

Result: The **FLT** LED on the GbE/2 or GbE/SX/2 circuit pack goes out after the first Ethernet network connection is complete.

END OF STEPS

Task 603: Replace DS1/DS3/16/1 (A1AA006) Circuit Pack

Purpose

Use this task to replace a DS1/DS3/16/1 circuit pack (A1AA006).

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*press*, 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".

CAUTION

DS1/DS3 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 *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Prior to beginning this task, you must:

1. Ensure that the correct circuit pack (DS1/DS3/16/1) is available for replacement.
2. If not previously completed, install generic and WaveStar® CIT software on the PC.

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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 remove and replace a DS1/DS3/16/1 circuit pack.

1 Disconnect the DS1 lines (Ports **1-8** and **9-16**) and the DS3 lines from **IN** and **OUT** and set aside.

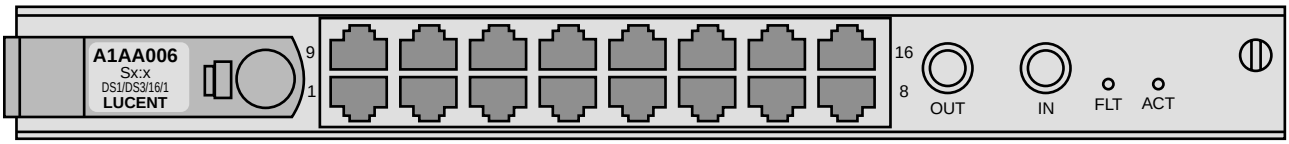
CAUTION

DS1/DS3 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.

Figure 603-1 illustrates the DS1/DS3/16/1 circuit pack.

Figure 603-1 DS1/DS3/16/1 Circuit Pack



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2 To prepare to remove the circuit pack,

1. Loosen and disengage the thumbscrew that the secures the right end of the circuit pack.
2. Grasp the inner edge of the locking lever that secures the left end of the circuit pack.
3. Apply a constant pressure to pull the lever outward.

3 Pull the lever and thumbscrew forward to disengage the circuit pack from the backplane connector and draw the circuit pack out of the Option 1 Slot.

4 To install the DS1/DS3/16/1 circuit pack in the Metropolis® DMX*press* shelf, orient the circuit pack into a horizontal position (components up) and align the circuit pack with the slides at the edges of Option 1 Slot.

5 Apply a steady pressure to the faceplate and latch assembly until the circuit pack is seated.

6 Secure the circuit pack in the Metropolis® DMX*press* shelf using the latch lever and thumbscrew.

Result: The Fault (**FLT**) LED and Active (**ACT**) LED illuminate. Because there is no signal present, the **FLT** LED begins flashing after ~ ten seconds.

7 Reconnect the DS1 lines (Ports **1-8** and **9-16**) and the DS3 lines from **IN** and **OUT**.

Important! Follow locally developed plans and records to make the local connections between the Metropolis® DMX*press* shelf and the local network(s).

Reference: Figure 603-1 in Step 1.

8 On the main circuit pack faceplate (depending on your system, either an OC12/1.3I2, OC48/1.3I2, or OC48 CHx/y) press the **UPD/INIT** button to reinitialize the system.

Result: The Main circuit pack initializes the new DS1/DS3/16/1 circuit pack.

9 Using the WaveStar® CIT, verfiy that the DS1 and the DS3 connections are re-established by selecting **View > Cross Connections**.

Result: The **FLT** LED on the DS1/DS3/16/1 circuit pack goes out after the DS1 and DS3 connections are complete.

END OF STEPS

Task 604: Replace OC48/1.3I2 (A1AA005), OC48 CHx/y (A1AA121-159), or OC12/1.3I2 (A1AA016) Main OLIU Circuit Pack

Purpose

Use this task to replace the Main circuit pack in a new Metropolis® DMX*press* Access Multiplexer.

The Main circuit pack may be:

- OC48/1.3I2 (A1AA005)
- OC12/1.3I2 (A1AA016)
- OC48 CHx/y (A1AA121-159)

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*press*, 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".

CAUTION

OC-12/OC-48 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.

CAUTION

Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Related information

For related information, refer to the *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Prior to beginning this task, you must:

1. Ensure that the correct circuit pack (OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2) is available for replacement.
2. If not previously completed, install generic and WaveStar® CIT software on the PC.

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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

   Reference: "Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3)

4. Backup the provisioned system parameters.

   Reference: "Task 607: Backup System Parameters" (5-69)

Task Complete the following steps to remove and replace a Main high-speed circuit pack.

. . . . . .

1 Retrieve provisioned parameters prior to turning off shelf power and replacing the OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2 circuit pack.

Reference: "Task 607: Backup System Parameters" (5-69)

. . . . . .

2 Remove power from the shelf by setting the shelf power switch on the rear of the unit to the OFF (**O**) position.

Important! Shelf power must be turned off when replacing or inserting an OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2 main circuit pack. After a new OC48/1.3I2, OC48 CHx/y, OC12/1.3I2 circuit pack is installed and power is reapplied to the shelf, the shelf circuitry is automatically initialized. (TID returns to default, time and date reset to default, and cross-connections are lost.) Default parameters are used in the shelf initialization and may require changing after the initialization process is complete. Refer to "Task 608: Restore System Parameters" (5-73).

Important! When Metropolis® DMX*press* is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

. . . . . .

3 Disconnect the OC-12/OC-48 lines (**OUT IN**), and the **LAN CIT** or the **RS-232 CIT** interface and set aside.

CAUTION

OC-12/OC-48 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.

Figure 604-1 illustrates the OC48/1.3I2 circuit pack.

Figure 604-1 OC48/1.3I2 (A1AA005) Circuit Pack

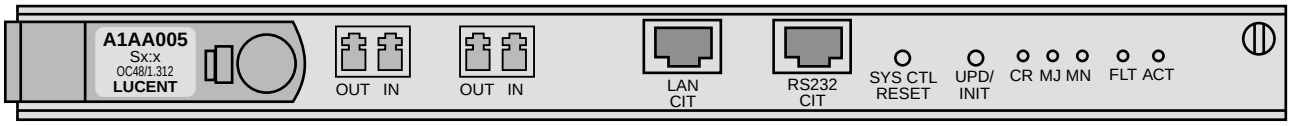


Figure 604-2 illustrates the OC48 CHx/y circuit pack. In this example, A1AA121 is illustrated.

Figure 604-2 OC48 CH21/22 (A1AA121) Circuit Pack

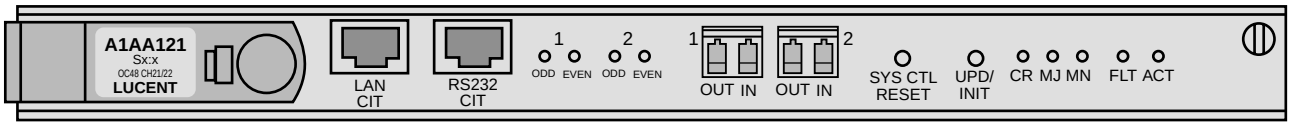
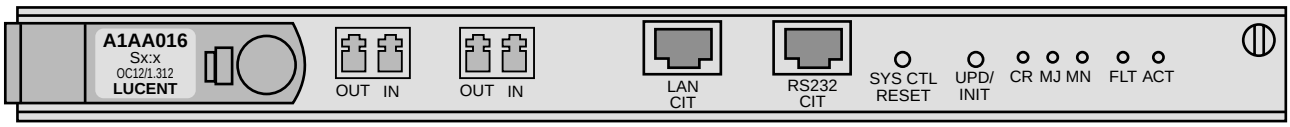


Figure 604-3 illustrates the OC12/1.3I2 circuit pack.

Figure 604-3 OC12/1.3I2 (A1AA016) Circuit Pack



. . . . . .

4 To prepare to remove the circuit pack,

1. Loosen and disengage the thumbscrew that secures the right end of the circuit pack.
2. Grasp the inner edge of the locking lever that secures the left end of the circuit pack.
3. Apply a constant pressure to pull the lever outward.

. . . . . .

5 Pull the lever and thumbscrew forward to disengage the circuit pack from the backplane connector and draw the circuit pack out of the Main Slot.

6 Verify that power is still removed from the shelf. If the power is on, remove power, by setting the shelf power switch on the rear of the unit to the OFF (**O**) position.

Important! Shelf power must be turned off when replacing or inserting the main circuit pack (OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2).

Important! When Metropolis® DMX*press* is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

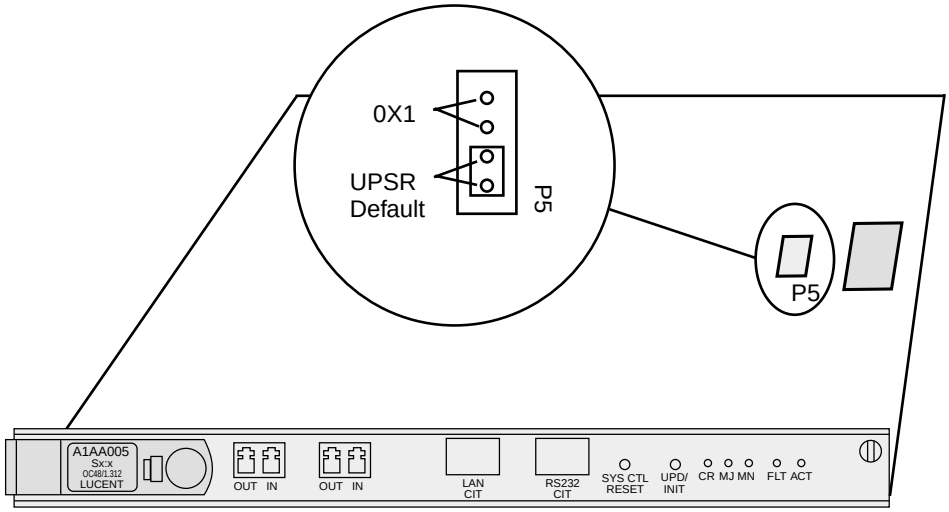
7 Which type of Main circuit pack are you replacing?

If...	Then...
OC48/1.3I2	Continue with Step 8.
OC12/1.3I2	
OC48 CHx/y	Proceed to Step 9.

8 Verify/set the application option plug (P5) to the application (UPSR [default] or 0x1) used for this shelf and then proceed to Step 14.

Figure 604-4 illustrates the location and settings for P5 on the OC48/1.3I2 or OC12/1.3I2 Main circuit pack.

Figure 604-4 Main Circuit Pack Application Option Plug (OC48/1.3I2 shown)



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. . . . . .

9 Verify/set the application option plug (P5) to the application (UPSR or 0x1) used for this shelf.

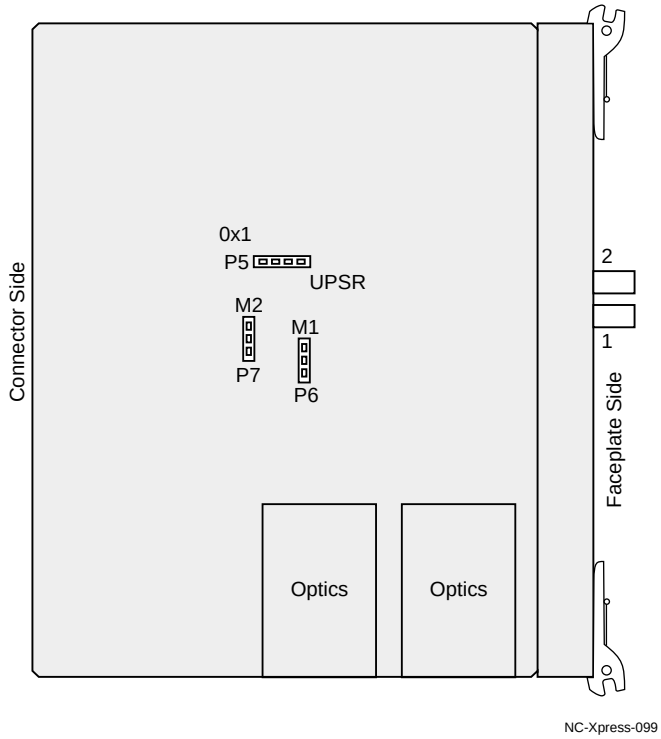
Reference: Figure 604-5

. . . . . .

10 If installing the OC48 CHx/y (A1AA121-A1AA159), the technician must set jumpers to determine the wavelength (odd or even channel) for both M1 and M2. Locate the jumpers at P6 and P7 as shown in Figure 604-5.

Important! The factory default setting for the M1 and M2 ports is the odd channel.

Figure 604-5 OC48 CHx/y channel selection jumpers



11 Determine which of the OC48 CHx/y (A1AA121-A1AA159) circuit packs you are installing?

If...	Then...
A1AA121-137	Continue with Step 12.
A1AA143-159	Proceed to Step 13.

12 Set the jumpers for M1 and M2 on **A1AA121-137** according to the following table and then proceed to Step 14.

Important! If held upright, with the faceplate to the right, (Figure 604-5) the jumper connector pins are numbered from the bottom.

If...	Then...
Odd Channel	Top position (connector pins 2 and 3)
Even Channel	Bottom position (connector pins 1 and 2)

13 Set the jumpers for M1 and M2 on **A1AA143-159** according to the following table.

Important! If held upright, with the faceplate to the right, (Figure 604-5) the jumper connector pins are numbered from the bottom.

If...	Then...
Odd Channel	Bottom position (connector pins 1 and 2)
Even Channel	Top position (connector pins 2 and 3)

14 To install the OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2 circuit pack in the Metropolis® DMX*press* shelf, orient the circuit pack into a horizontal position (components up) and align the circuit pack with the slides at the edges of the Main Slot.

15 Apply a steady pressure to the faceplate and latch assembly until the circuit pack is seated.

16 Secure the circuit pack in the Metropolis® DMX*press* shelf using the latch lever and thumbscrew.

17 Restore power to the shelf by by setting the shelf power switch on the rear of the unit to the ON (**1**) position.

Important! When Metropolis® DMX*press* is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Result: The following LED sequence occurs:

1. All LEDs except ACT (active) LED lights
2. The CR (critical) LED then extinguishes
3. The FLT (fault) LED lights
4. The CR LED flashes
5. After approximately 10 seconds, the FLT LED extinguishes
6. The CR and ACT LEDs remain lit
7. On the OC48 CHx/y card, the odd or even LED for each port (1 or 2) will remain lit.

Important! The shelf circuitry is automatically initialized. (TID returns to default, time and date reset to default, and cross-connections are lost.) Default parameters are used in the shelf initialization and may require changing after the initialization process is complete.

18 Reconnect the OC-12/OC-48 lines (**OUT IN**), and the **LAN CIT** or the **RS-232 CIT** interface cables.

Important! Follow locally developed plans and records to make the local connections between the Metropolis® DMX*press* shelf and the local network(s).

Reference: Figure 604-1, Figure 604-2, or Figure 604-3 in Step 3

19 Using the appropriate cable, connect the **COM1** port of your PC to the **RS232 CIT** serial port on the faceplate of the Main circuit pack.

Important! DO NOT establish a WaveStar® CIT session.

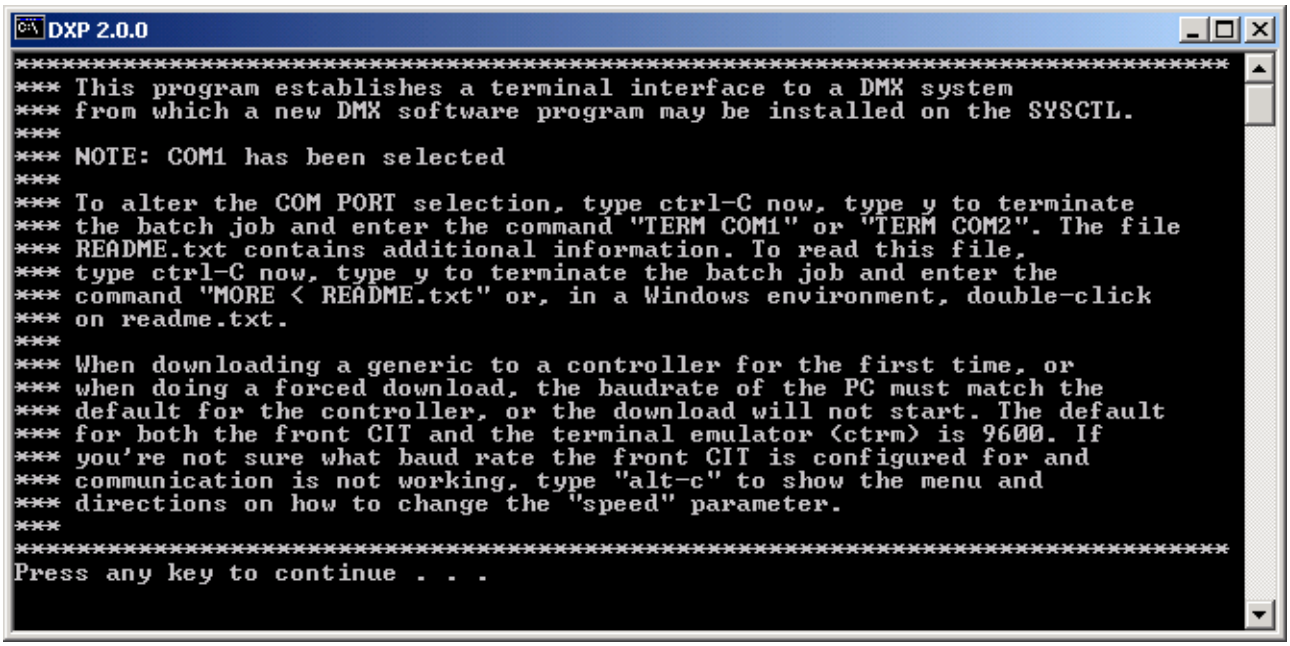
20 Double-click on **DXP 2.0.0 Downloads** folder on you PC desktop.

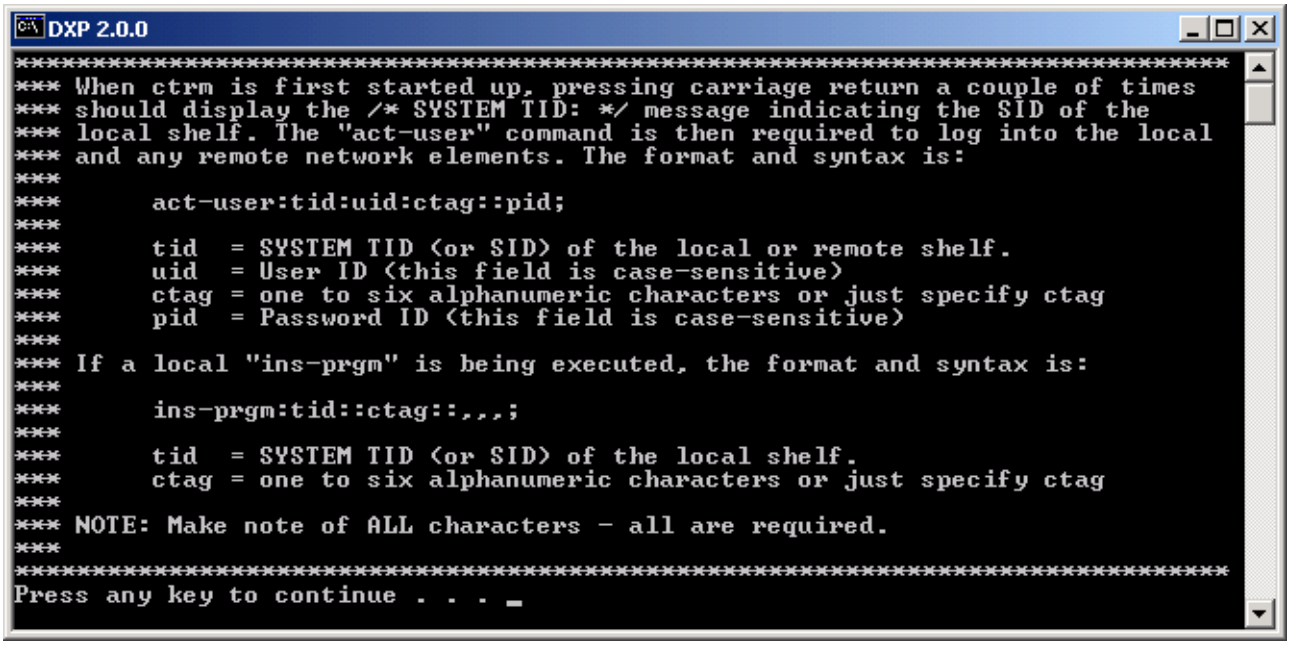
Result: The *DXP 2.0.0 Downloads* folder contains the following icon.

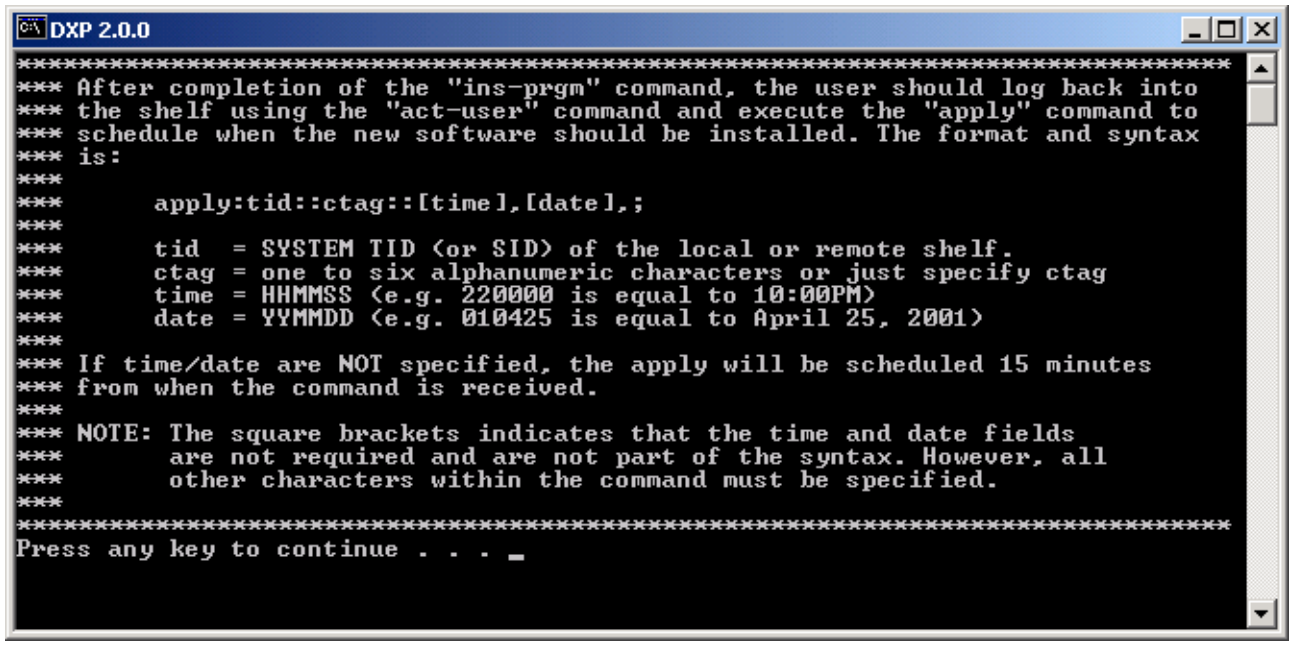
Figure 604-6 Contents of DXP 2.0.0 Downloads Folder

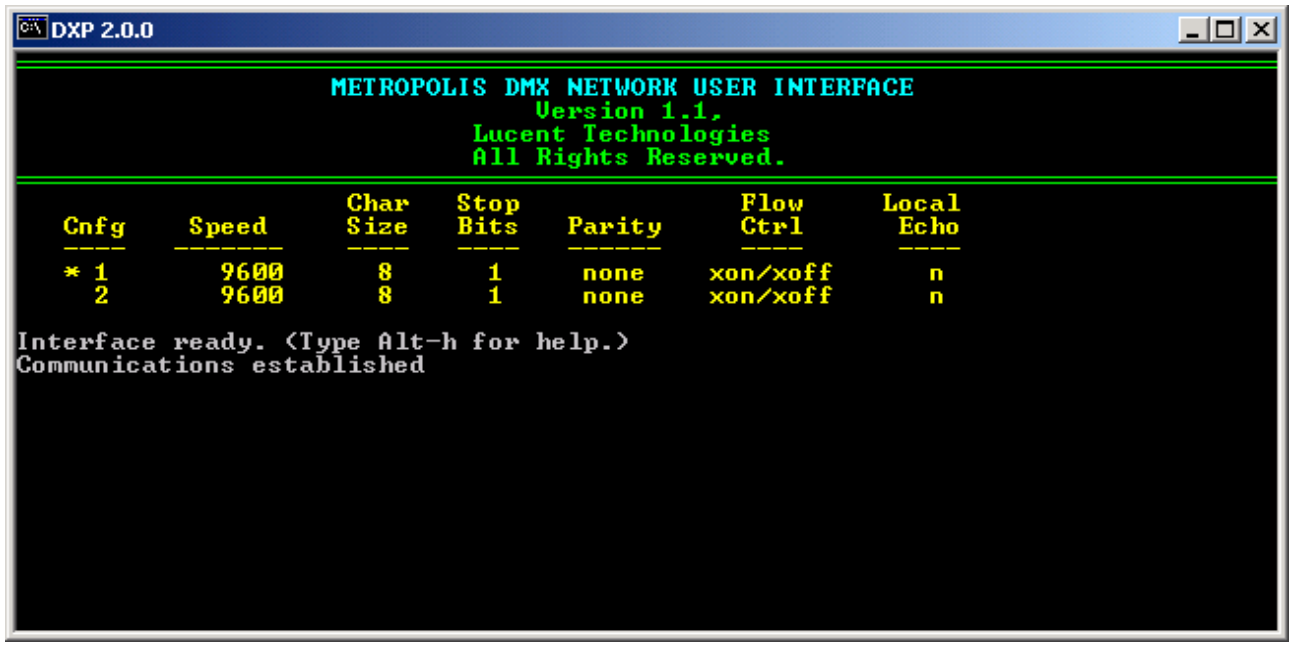
21 Double click the **DXP 2.0.0** icon in the *DXP 2.0.0 Downloads* folder to launch the term.bat file.

22 Follow the instructions on the subsequent screens.





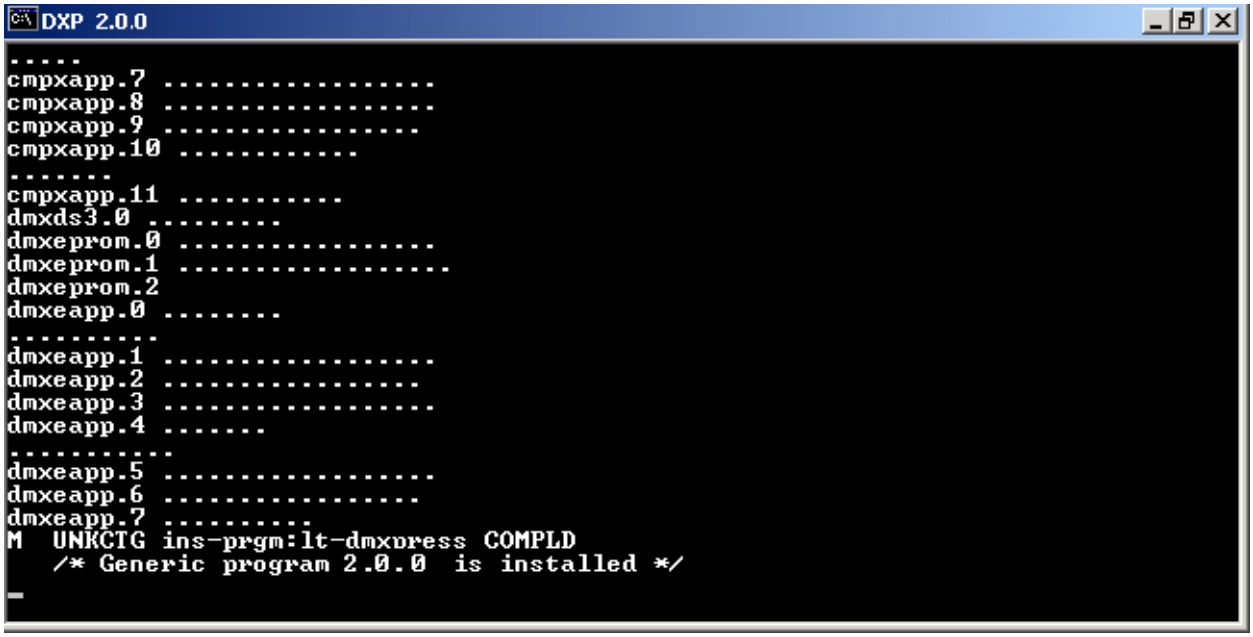

DXP 2.0.0
*** After completion of the "ins-prgm" command, the user should log back into
*** the shelf using the "act-user" command and execute the "apply" command to
*** schedule when the new software should be installed. The format and syntax
*** is:
***
***   apply:tid::ctag::[time],[date],;
***
***   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 . . .


DXP 2.0.0
METROPOLIS DMX NETWORK USER INTERFACE
Version 1.1,
Lucent Technologies
All Rights Reserved.
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

23 On the front of the OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2 circuit pack, press the **SYSCTL RESET** button, then immediately depress and hold the **UPD/INIT** button until there is activity in the TERM window.

Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

Result: When the download is completed, the following screen should appear:



24 Observe the LEDs on the OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2 faceplate and verify that the shelf is operational.

Result: The **FLT** LED on the OC48/1.3I2, OC48 CHx/y, or OC12/1.3I2 circuit pack will go out after the first network connection is complete.

25 Since the Metropolis® DMX*press* shelf has been reinitialized, you must log back into the NE using the default login/user ID and password

User ID: **LUC01**
Password: **DMXPRS2.5G**

Important! LUC01, LUC02, LUC03 and DMXPRS2.5G are the default privileged logins/password for Metropolis® DMX*press*. It is highly recommended that you change all three logins and passwords during your first session to preserve the security of your equipment.

Result: The graphical System View appears.

Reference: "Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3)

26 Restore the provisioning parameters retrieved while performing "Task 607: Backup System Parameters" (5-69).

Reference: "Task 608: Restore System Parameters" (5-73)

27 Since the Metropolis® DMX*press* shelf has been reinitialized, the time and date revert back to the original time 00:00:00 and date 70-01-01. Metropolis® DMX*press* waits 5 minutes, in case other NEs are also resetting (for example, as part of a software upgrade of the network), before checking with other NEs for the current time and date. Metropolis® DMX*press* allows up to 2 minutes for each remote NE to respond before checking with the next remote NE for the current time and date, and continues checking until a valid current time and date is found. Metropolis® DMX*press* accepts a provisioned time and date value or any remote NE date later than 00-01-01 as a valid current time and date. You may provision the time and date manually.

Reference: "Task 612: Set Date and Time" (5-99)

28 Using the WaveStar® CIT, verify that service and all prior connections are restored.

END OF STEPS

Task 605: Replace DS3/12 (A1AA015) Circuit Pack

Purpose

Use this task to replace a DS3/12 circuit pack (A1AA015).

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*press*, 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".

CAUTION

DS3 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 *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Prior to beginning this task, you must:

1. Ensure that the correct circuit pack (DS3/12) is available for replacement.
2. If not previously completed, install generic and WaveStar® CIT software on the PC.

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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 remove and replace a DS3/12 circuit pack.

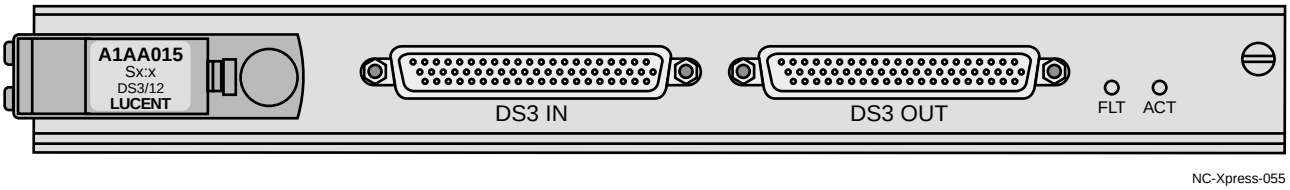
1 Disconnect the DS3 cables from **DS3 IN** and **DS3 OUT** and set aside.

CAUTION
DS3 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.

Figure 605-1 illustrates the DS3/12 circuit pack.

Figure 605-1 DS3/12 Circuit Pack



2 To prepare to remove the circuit pack,

1. Loosen and disengage the thumbscrew that the secures the right end of the circuit pack.
2. Grasp the inner edge of the locking lever that secures the left end of the circuit pack.
3. Apply a constant pressure to pull the lever outward.

3 Pull the lever and thumbscrew forward to disengage the circuit pack from the backplane connector and draw the circuit pack out of the Option 1 Slot.

4 To install the new DS3/12 circuit pack in the Metropolis® DMX*press* shelf, orient the circuit pack into a horizontal position (components up) and align the circuit pack with the slides at the edges of Option 1 Slot.

5 Apply a steady pressure to the faceplate and latch assembly until the circuit pack is seated.

6 Secure the circuit pack in the Metropolis® DMX*press* shelf using the latch lever and thumbscrew.

Result: The Fault (**FLT**) LED and Active (**ACT**) LED illuminate. Because there is no signal present, the **FLT** LED begins flashing after ~ ten seconds.

7 Reconnect the DS3 cables to **DS3 IN** and **DS3 OUT** .

Important! Follow locally developed plans and records to make the local connections between the Metropolis® DMX*press* shelf and the local network(s).

Reference: Figure 605-1 in Step 1

8 On the main circuit pack faceplate (depending on your system, either an OC12/1.3I2, OC48/1.3I2, or OC48 CHx/y) press the **UPD/INIT** button to reinitialize the system.

Result: The main circuit pack initializes the new DS3/12 circuit pack.

9 Using the WaveStar® CIT, verfiy that the DS3 connections are re-established by selecting **View > Cross Connections**.

Result: The **FLT** LED on the DS3/12 circuit pack goes out after the DS3 connectios are complete.

END OF STEPS

Task 606: Install Software Generic Program in New Shelf Installation

Purpose

Use this task to install software generic in a factory-fresh OC48/1.3I2, OC48 CHx/y, OC12/1.3I2 Main circuit pack (A1AA005, A1AA121-159, A1AA016).

Required equipment

The following equipment is required:

- Personal Computer (PC) with WaveStar® CIT software installed
- Wrist Strap
- Working copy of the new system generic software program on CD-ROM
- Current *Metropolis® DMXpress Access Multiplexer Software Release Description* for the software generic being installed.

Safety precautions

To assure both personal safety and the proper functioning of the system, 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".

CAUTION

Equipment damage

The OC-48 and OC-12 Main circuit packs must not be reseated, removed, or installed while power is applied to the system. The system must be powered down before the circuit pack is reseated, removed, or replaced.
When Metropolis® DMXpress is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

Related information

For related information, see the *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Before you begin this task:

1. Verify that new software generic program is available.
2. Refer to the *Metropolis® DMXpress 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 Main to which you are downloading the new software generic.
4. If using FTP, 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 the Main circuit pack installed.

Important! The power MUST be off while the Main circuit pack is being installed. When Metropolis® DMX*press* is powered down, you must wait at least 10 seconds before switching the power on again. Rapid power-cycling may result in OLIU CP failed alarms.

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

Reference: "Task 610: Install Generic and WaveStar® CIT Software on the PC" (5-81)

2 Using the appropriate cable, connect the **COM1** port of your PC to the **RS232 CIT** serial port on the faceplate of the Main circuit pack.

Important! DO NOT establish a WaveStar® CIT session.

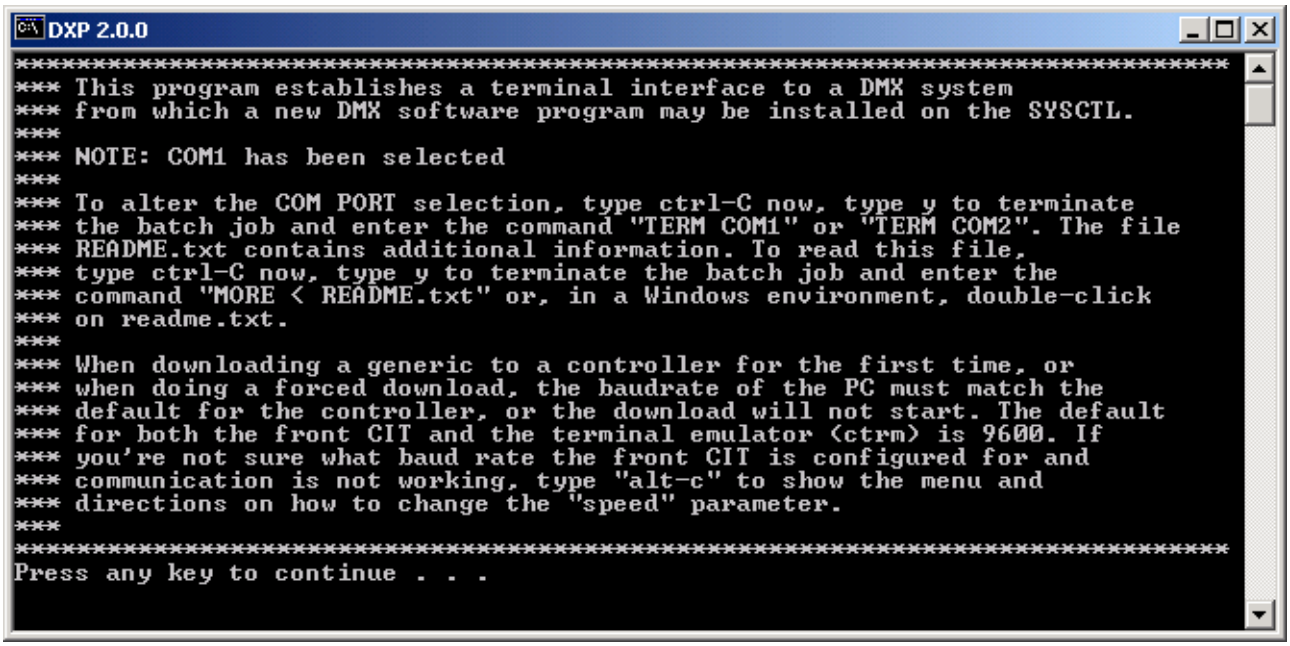
3 Double-click on **DXP 2.0.0 Downloads** folder on you PC desktop.

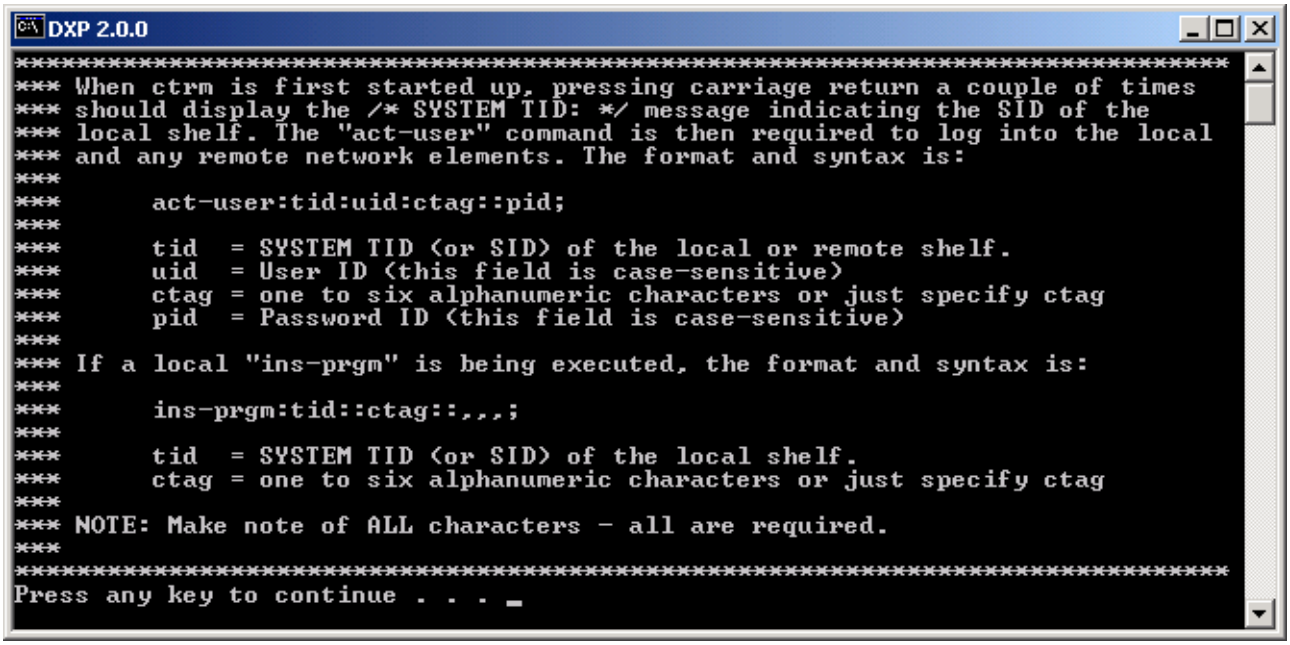
Result: The *DXP 2.0.0 Downloads* folder contains the following icon.

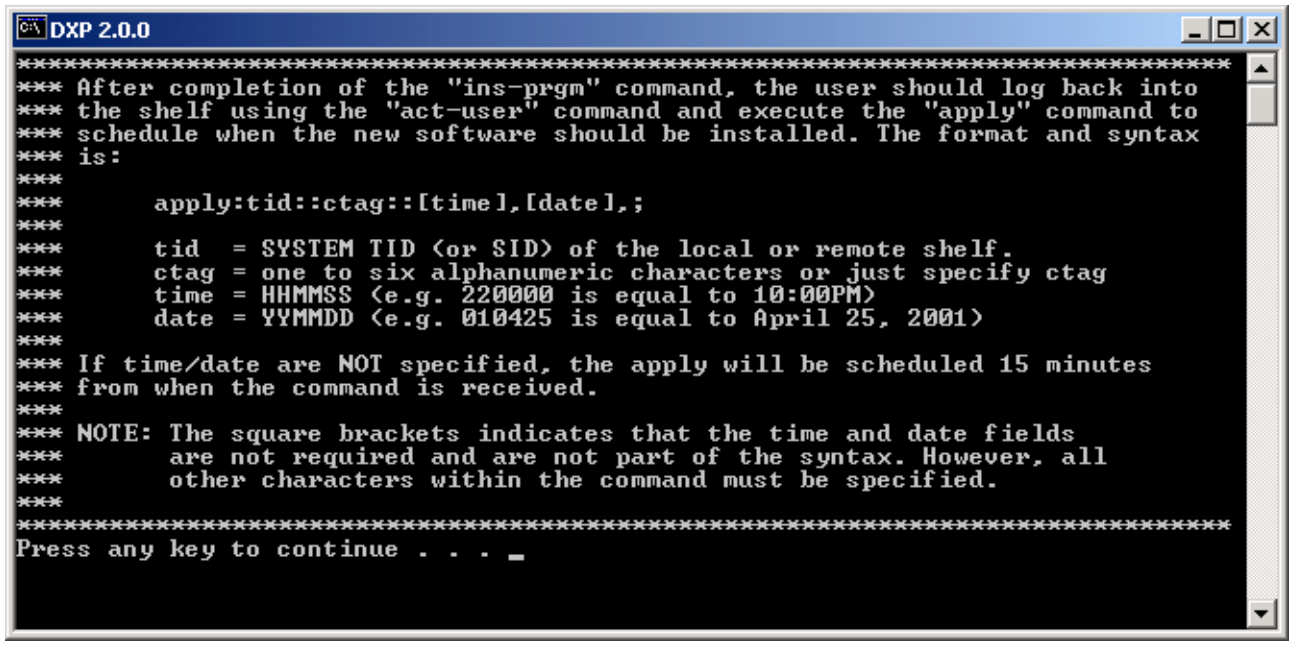
Figure 606-1 Contents of DXP 2.0.0 Downloads Folder

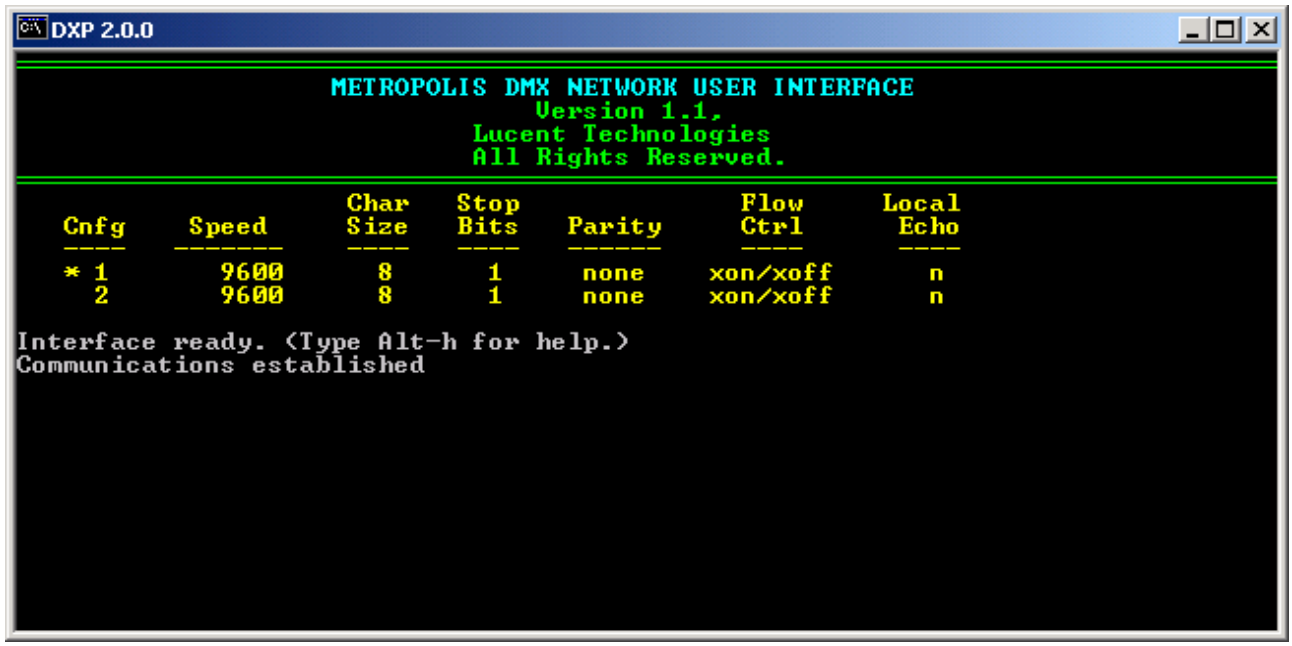
4 Double click the **DXP 2.0.0** icon in the *DXP 2.0.0 Downloads* folder to launch the term.bat file.

5 Follow the instructions on the subsequent screens.






DXP 2.0.0
*** 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 . . .


DXP 2.0.0
METROPOLIS DMX NETWORK USER INTERFACE
Version 1.1,
Lucent Technologies
All Rights Reserved.
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

6 Press Enter.

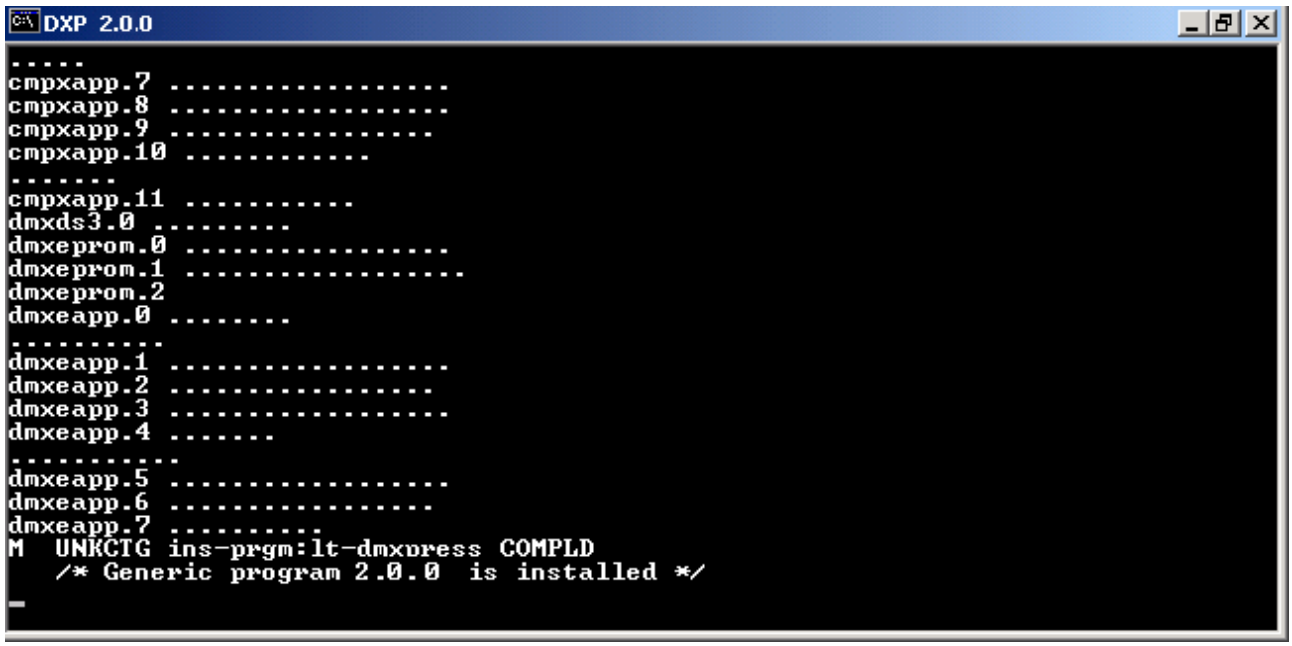
Determine the boot code of your factory-fresh Main circuit pack.

If...	Then...
the R2.0.0 software generic began to download automatically	your boot code is 1.0. The download will complete in approximately 45 minutes. Continue with Step 7. *OR* you may use the serial download.
the term.bat screen returned /* SYSTEM TID: LT-DMXPRESS */	your boot code is either 1.1 or 2.0. Proceed to Step 12 to download the R2.0.0 software using FTP (completes in 10 minutes).

Important! Although TCP/IP connectivity is preferred when your boot code is 1.1 or 2.0, you may still install the software generic following the instructions in Step 7.
Downloading software via FTP download (which requires TCP/IP connectivity) takes approximately 10 minutes. Downloading software using INS-PRGM takes approximately 45 minutes.

7 When the software download is complete (approximately 45 minutes), the following screen appears.

Important! The downloaded software has been installed in the dormant area.



8 Exit the Term program using **ALT**+**F2**.

9 Wait 15 minutes for the software to automatically apply.

10 Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and log in to your Metropolis® DMX*press* shelf.

Result: The title bars of the System View and the legal notice should both reflect the current NE software generic, R2.0.0.

Reference: "Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3)

. . . . . .

11 Is your Generic Software Version correct?

If...	Then...
Yes	STOP! END OF TASK
No	Contact your support center.

12 Exit the Term program using **ALT**+**F2**.

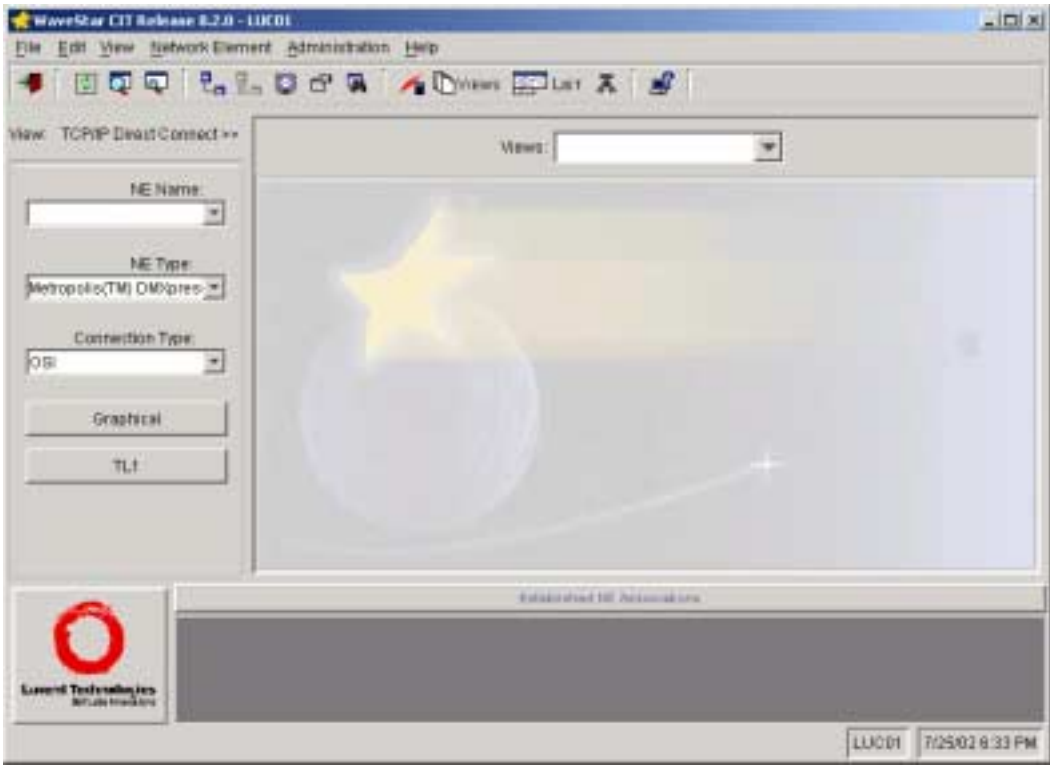
13 Connect the OSI cable from the PC's Network Interface Card (NIC) to the front **LAN CIT** port on the faceplate of the Main circuit pack and establish a WaveStar® CIT session.

Reference: "Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3)

Important! Do NOT log into the shelf (WaveStar® CIT System View); only log in to the WaveStar® CIT Network View.

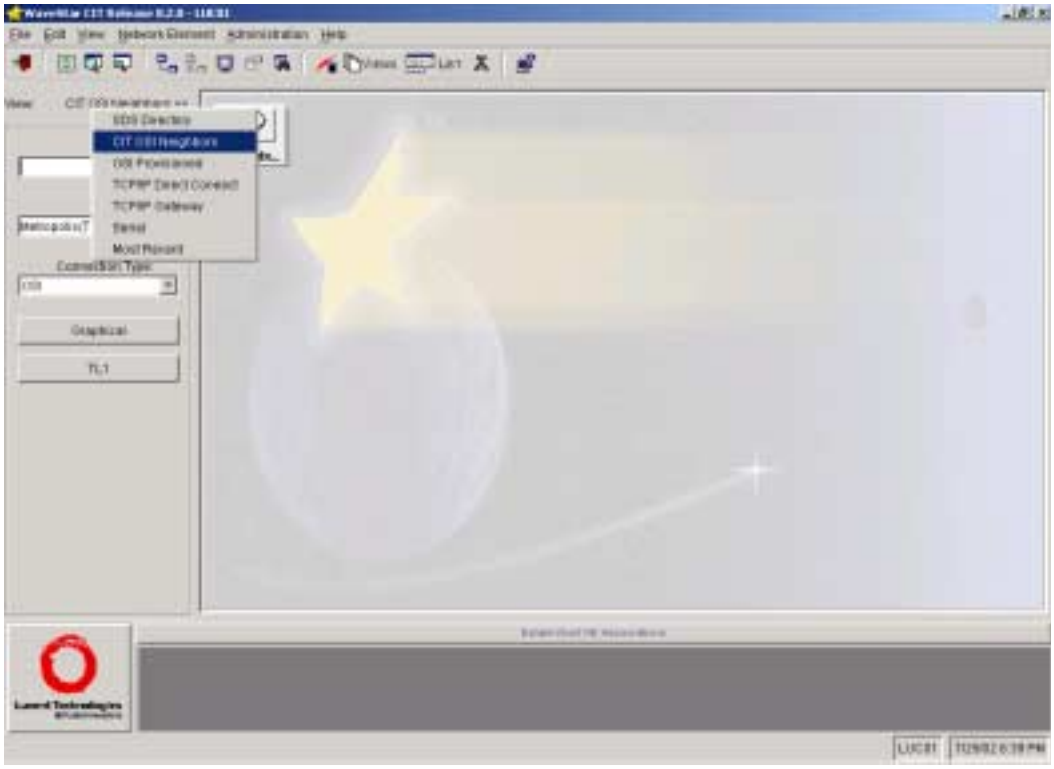
Result: After reading the Legal Notice and clicking OK, the following Network View appears.

Figure 606-2 WaveStar® CIT Network View



14 From the Network View, click on View: **CIT OSI Neighbors** and the OSI neighbor(s) are automatically detected.

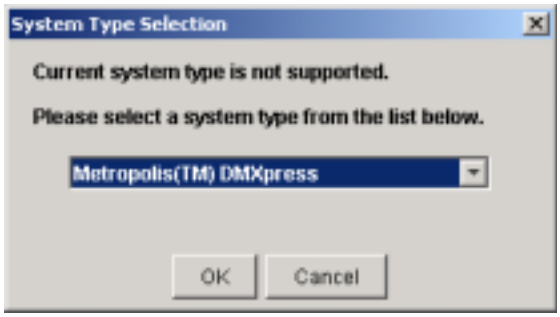
Figure 606-3 CIT OSI Neighbors



15 In the Network View (Figure 606-3), right-click on the LT-DMXPRESS NE icon and select Graphical (OSI) from the resulting menu.

Result: The System Type Selection window appears.

16 In the System Type Selection window, select Metropolis(TM) DMXpress and click **OK**.



Result: The NE Login Dialog window appears.

17 Enter the following in the NE Login Dialog window (login information is case sensitive) to log in to the NE:

User ID: **LUC01**
Password: **DMXPRS2.5G**

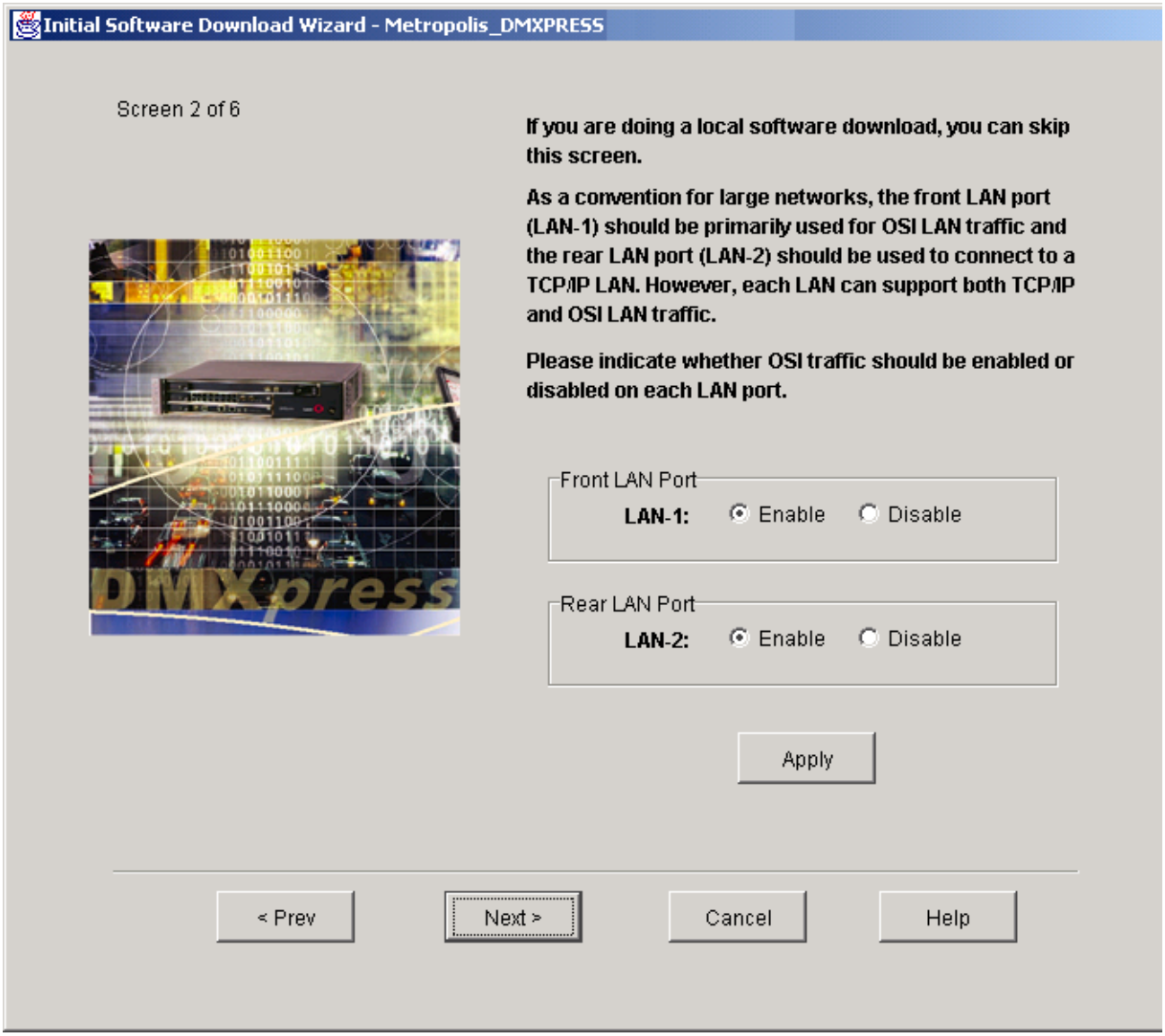
Click **OK**.

Important! LUC01, LUC02, LUC03 and DMXPRS2.5G are the default privileged logins/password for Metropolis® DMX*press*. 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.

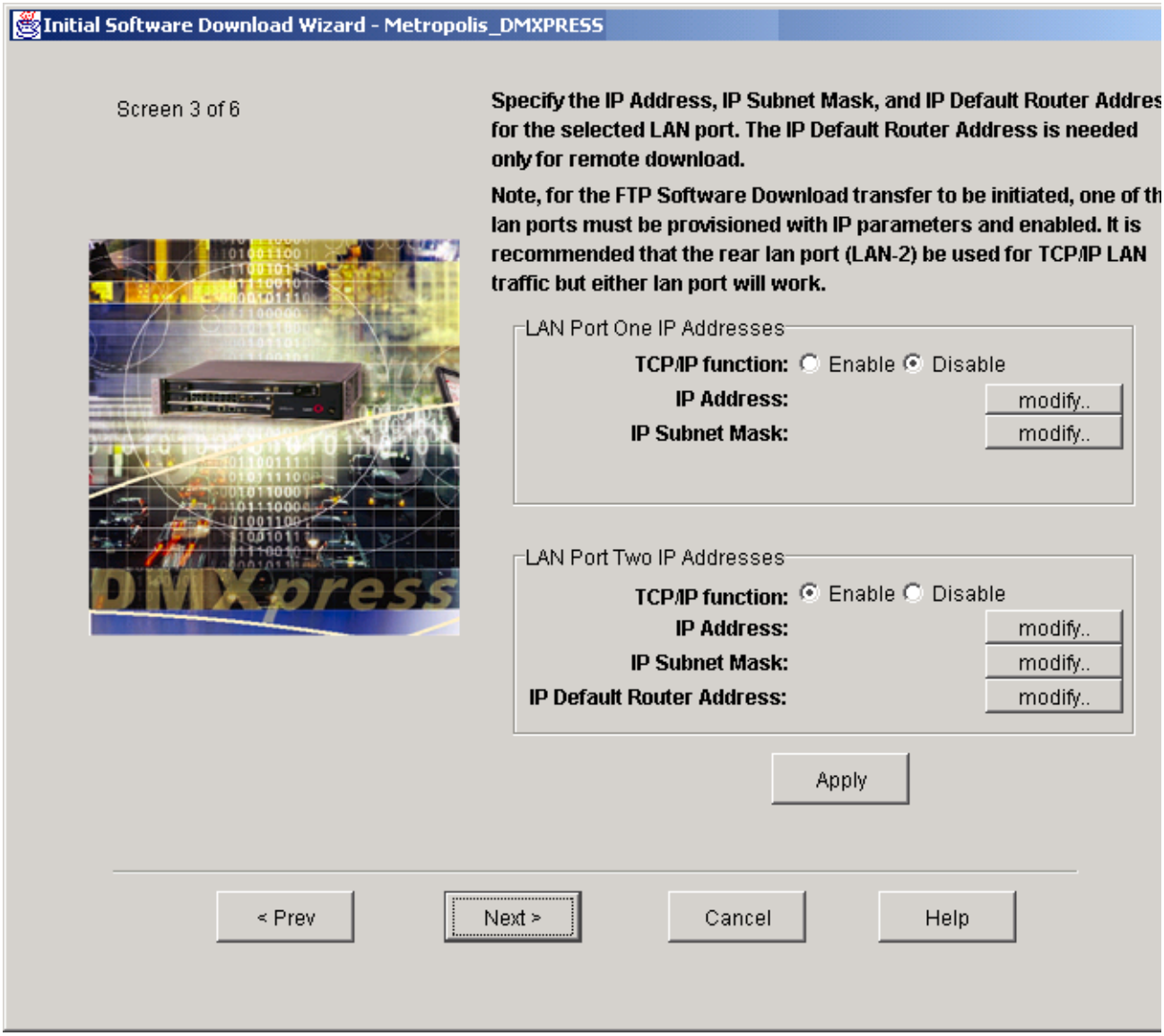
18 On Screen 1, read the material and click **Next**.

Result: Screen 2 appears.



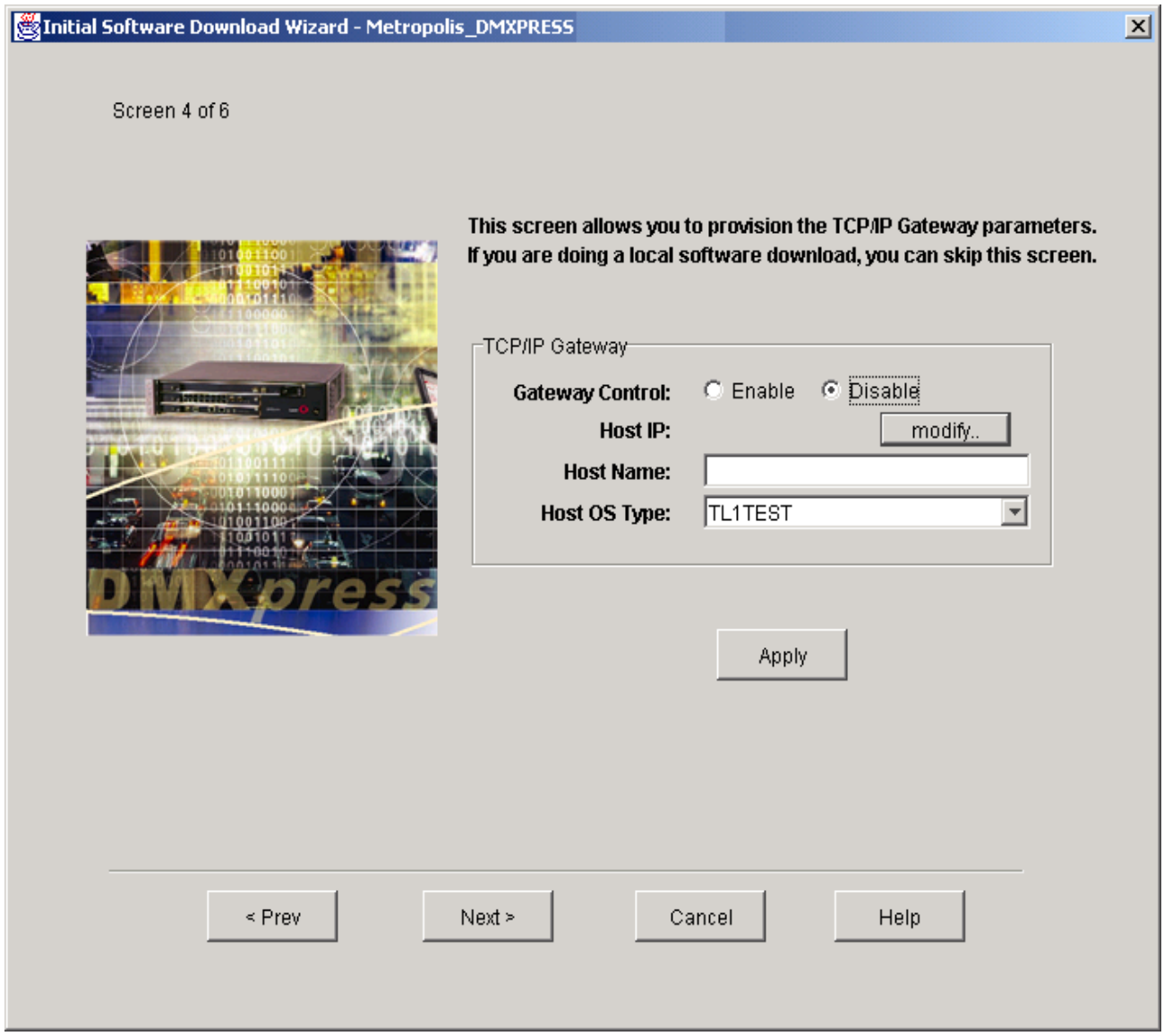
19 Because this is a local download, you may skip Screen 2. Click **Next**.

Result: Screen 3 appears.



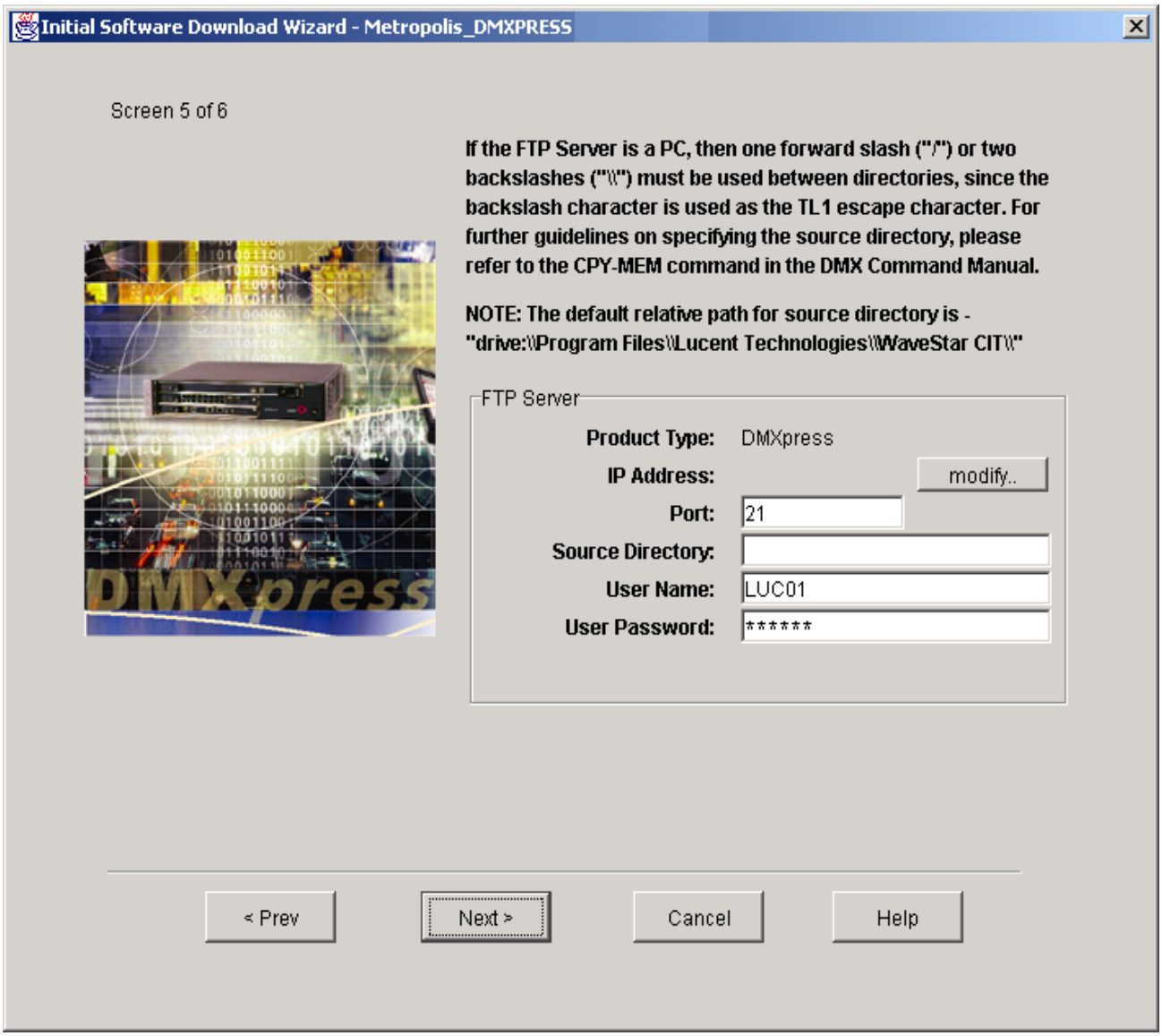
20 From Screen 3, follow the instructions to enable TCP/IP function on the LAN port (lan-1). Click **Modify** to enter the IP Address, IP Subnet Mask, and/or IP Default Router Address. Click **Next**.

Result: Screen 4 appears.



21 This step is not required for the initial download.
Click **Next**.

Result: Screen 5 appears.



22 Follow the directions on Screen 5 to provision the information for you FTP server. Click **Next**.

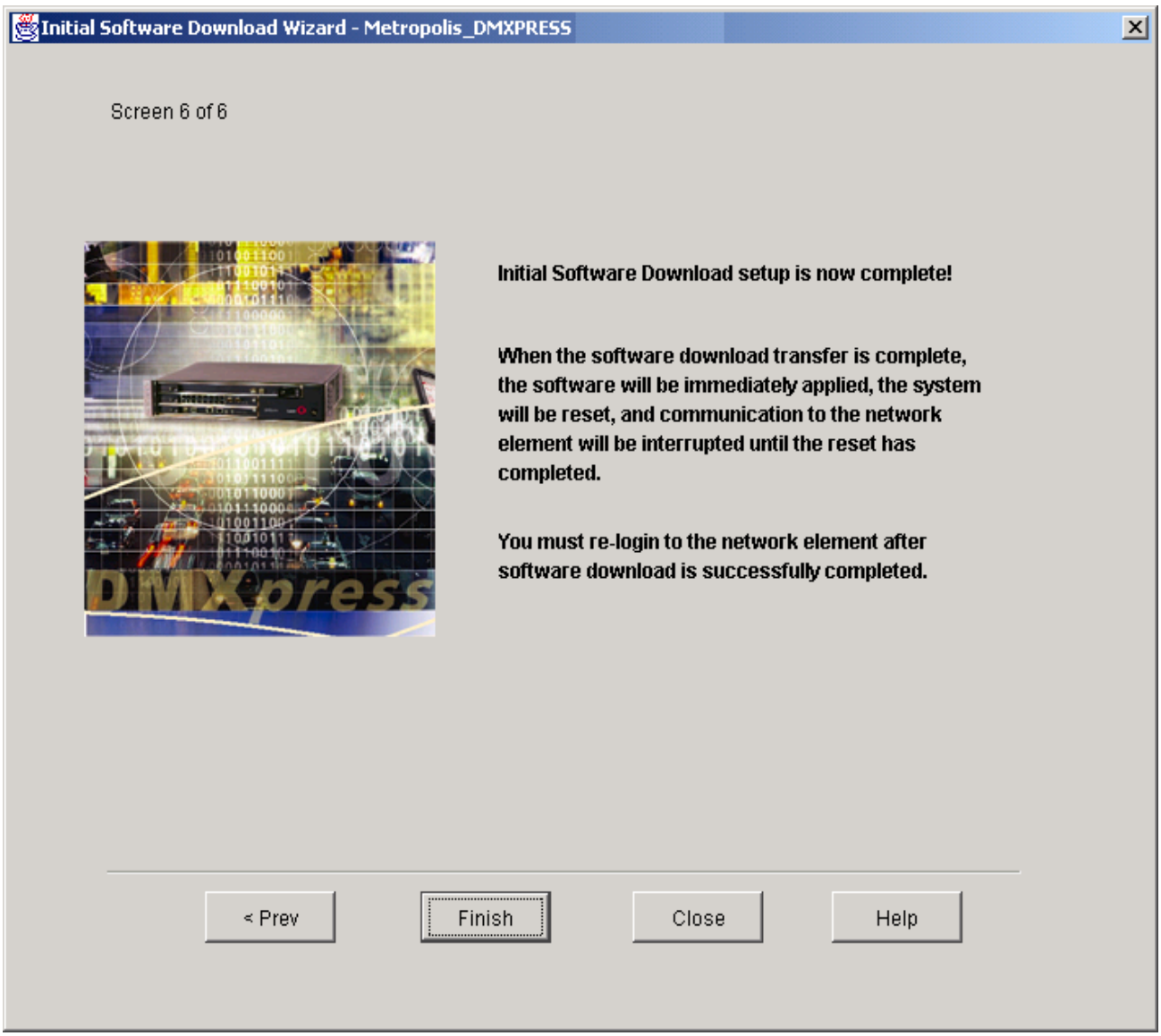
Important! If the WaveStar® CIT is the FTP server, the path of the software generic must be in the following form:

```
generics/dxp/2.0.0/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.

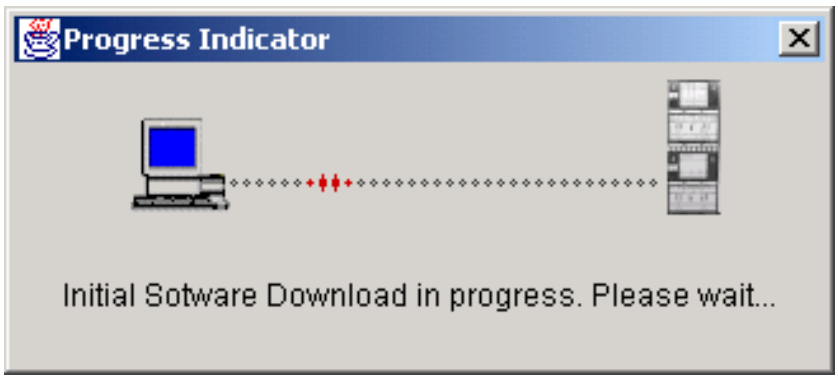


23 On Screen 6, click **Finish**.

Result: A warning message appears that lists the information you provisioned in the six screens. Verify that the information is correct and click **Yes**.

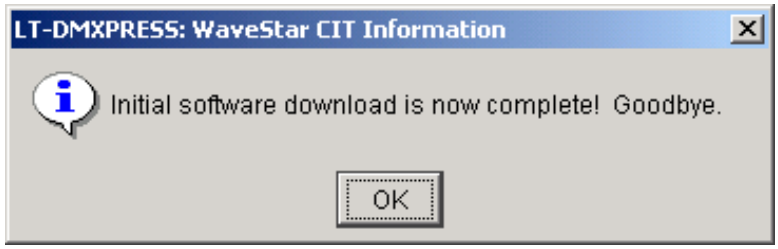
The FTP download of the software (**cpy-mem**), takes approximately 12 minutes.

While the transfer is in progress, the following Progress Indicator appears.



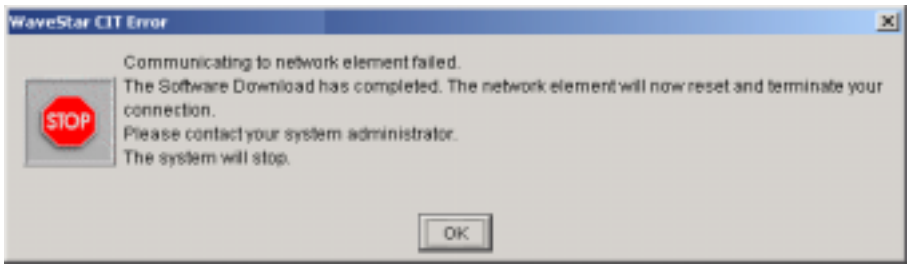
24 The initial software download is a two-part process, totalling approximately 20 minutes. The first part, FTP download of the software (**cpy-mem**), takes approximately 12 minutes. The second part, the apply/activation of the downloaded software (**apply**) and the reset of the shelf, takes approximately 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 apply/activation of the downloaded software (**apply**) and the reset of the shelf.

25 When the following window appears, indicating that the system is resetting and you are being disconnected, click **OK**.



Result: During the reset and the apply, the Main circuit pack cycles through a series of changes in the LEDs' state.

26 If the WaveStar® CIT Network View is unresponsive, perform a shut-down using Windows Task Manager to End the WaveStar® CIT.

27 Establish a WaveStar® CIT session (specifying either OSI or Serial in the **Connection Type:** field) and log in to your Metropolis® DMX*press* shelf.

Result: The title bars of the System View and the legal notice should both reflect the current NE software generic, R2.0.0.

Reference: "Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3)

28 Is your Generic Software Version correct?

If...	Then...
Yes	STOP! END OF TASK
No	Contact your support center.

END OF STEPS

Task 607: Backup System Parameters

Purpose

Use this task to backup the provisioned system parameters before replacing the Main 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 the Metropolis® DMX*press*, 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 "Task 609: Add IP Tunnel(s) Through Network" (5-77).

Before you begin

This task uses FTP to backup and restore all Metropolis® DMX*press* 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.

Prior to beginning this task, you must:

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

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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

   Reference: "Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3)

3. Established IP tunneling.

   Reference: "Task 609: Add IP Tunnel(s) Through Network" (5-77)

Task Complete the following steps to backup the provisionable system parameters.

. . . . . .

1 From the System View menu, select **Configuration > Software > Remote Backup...** .

. . . . . .

2 In the pulldown **Download From/Via:** menu, select **FTP**.
NOTE: No other options are available at this time.

. . . . . .

3 Select the connection from the **Profile** pull-down 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**).

4 If you entered connection information in Step 3 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** pull-down menu may be changed using the **Modify** and **Apply** buttons
or
removed using the **Delete** button.

5 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**.

Important! If the filesystem 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.)

6 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 **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.

END OF STEPS

Task 608: Restore System Parameters

Purpose

Use this task to restore the system parameters using the backup and restore feature after a Main circuit pack replacement.

> **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.

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*press*, 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 "Task 609: Add IP Tunnel(s) Through Network" (5-77).

Before you begin

This task uses FTP to backup and restore all Metropolis® DMX*press* 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.

Prior to beginning this task, you must:

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

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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

   Reference: "Task 600: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (5-3)

3. Established IP tunneling.

   Reference: "Task 609: Add IP Tunnel(s) Through Network" (5-77)

4. Backup system parameters before replacing the OC48/1.3I2 circuit pack.

   Reference: "Task 607: Backup System Parameters" (5-69)

Task Complete the following steps to restore system parameters after a

. . . . . .

1 From the System View menu, select **Configuration > Software > Remote Restore....**

. . . . . .

2 In the pulldown **Download From/Via:** menu, select **FTP**.
NOTE: No other options are available at this time.

. . . . . .

3 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**).

4 If you entered connection information in Step 3 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.

5 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 "Task 607: Backup System Parameters" (5-69). 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.)

6 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 **DMXPR 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**. Click **Okay**.

END OF STEPS

Task 609: Add IP Tunnel(s) Through Network

Purpose

Use this task to add an IP tunnel(s) through the data communications channel (DCC) OSI-based network.

Required equipment

A personal computer (PC) with WaveStar® CIT software installed is required to perform this task.

> **Important!** Release 1.1 or later software is required to perform this task.

Before you begin

Before you begin this task:

- Obtain the work instructions for this task.
- Verify that the work instructions identify the OS/FTP server, gateway network element, and remote network element.
- Verify that the work instructions specify the required provisioning at each network element (for example, IP addresses and subnet masks).

Task

Complete the following steps to add an IP tunnel(s) through the data communications channel (DCC) OSI-based network:

1

If the FTP server is a...	Then verify that the...
Local personal computer used with the WaveStar® CIT,	Personal computer *IP address* and *Subnet Mask* parameters are provisioned. Verify that a static route on the PC connects it to the remote NEs.
Remote operations system	remote operations system *IP address*, and *Subnet Mask* parameters are provisioned. If the remote operations system and gateway network element are in different subnetworks, verify that the *Default Router IP address* parameter is provisioned.

2 If the FTP server is a local PC, a static route on the PC must provide a path to the remote NEs. If packets are intended for the remote NE, then you must route to the gateway NE.

If the FTP server is a remote operations system, the static route must be entered on the router.

Example: If the FTP server is a local PC, from the MS-DOS prompt, enter **route add 120.20.20.0 120.20.30.1 .**
In this example 120.20.20.0 is the subnetwork address of the remote NE and 120.20.30.1 is the IP address of the gateway NE.

3 If the remote operations system and gateway network element are in different subnetworks, verify that the router in each subnetwork has IP addresses provisioned for all interfaces.

4 Establish a login session to the gateway network element.

Reference: " Task 200: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (8-3)

5 At the gateway network element:

1. At the WaveStar® CIT System View, select **Administration > Data Communications...** The *Data Communications* screen appears.
2. Click on the **TCP/IP** tab.
3. Click on the **Port AID:** drop-down menu and select *LAN-1* or *LAN-2* according to the work instructions.
4. *Enable* the **TCP/IP function**, and provision the **IP Address** and **IP Subnet Mask** parameters according to the work instructions.
5. If the remote operations system and gateway network element are in different subnetworks, provision the **IP Default Router Address** parameter according to the work instructions.
6. Click on **Apply**. A dialog box appears stating that executing this command resets the network element. Click on **Yes** and the WaveStar® CIT disconnects from the network element.

6 Re-establish the log in session to the gateway network element.

Reference: " Task 200: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (8-3)

7 At the gateway network element:

1. At the WaveStar® CIT System View, select **Administration** > **Data Communications...** The *Data Communications* screen appears.
2. Click on the **IP Tunnel** tab.
3. Enable the **TAP Advertise** and **TAP Learn** parameters. Then provision the **TAP Group** parameter according to the work instructions and click on **Apply**. A dialog box appears asking you to confirm executing this command. Click on **Yes**. Then click on **Close**.

8 Log out of the gateway network element and log in to the remote network element.

Reference: " Task 200: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (8-3)

9 At the remote network element:

1. At the WaveStar® CIT System View, select **Administration** > **Data Communications...** The *Data Communications* screen appears.
2. Click on the **TCP/IP** tab.
3. Click on the **Port AID:** drop-down menu and select the *DCC-all*.
4. Enable **IP Tunneling** parameter.
5. Provision the **IP Address** and **IP Subnet Mask** parameters according to the work instructions and click on **Apply**. A dialog box appears stating that executing this command resets the network element. Click on **Yes** and the WaveStar® CIT disconnects from the network element.

10 Re-establish the log in session to the remote network element.

Reference: " Task 200: Connect Personal Computer (PC) and Establish WaveStar® CIT Session" (8-3)

11 At the remote network element:

1. At the WaveStar® CIT System View, select **Administration > Data Communications...** The *Data Communications* screen appears.
2. Click on the **IP Tunnel** tab.
3. Enable the **TAP Advertise** and **TAP Learn** parameters. Then provision the **TAP Group** parameter according to the work instructions and click on **Apply**. A dialog box appears asking you to confirm executing this command. Click on **Yes**. Then click on **Close**.

12 If required, repeat Step 8 through Step 11 at other remote network elements.

END OF STEPS

Task 610: 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 *Metropolis® DMXpress Access Multiplexer Software Release Description* for the software generic being installed.

Safety precautions

There are no safety precautions required for this task.

Related information

For related information, see the *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Before beginning the software installation procedure, complete the following steps:

Preinstallation Steps

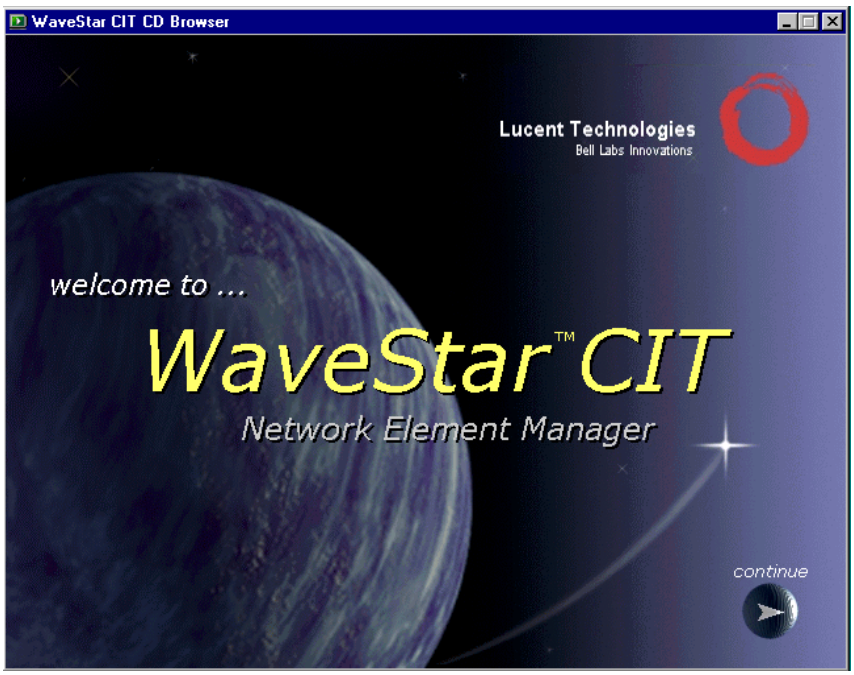
1. Become familiar with the characteristics and operating procedures of your PC and the operating system installed. If you are using multiple NICs, know the IP address of the NIC you will be using for this interface.
   If you are using DCHP with multiple NICs, you may need to temporarily remove all NICs except the one you plan to use for this interface.
2. Operate laptop PCs on AC power during download procedures.
3. Follow proper procedures in handling the CD-ROM.
4. Read the *Metropolis® DMXpress Access Multiplexer Software Release Description* 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*press* shelf, insert the CD-ROM into the PC.

Result: The CD autoruns and the following screen appears:

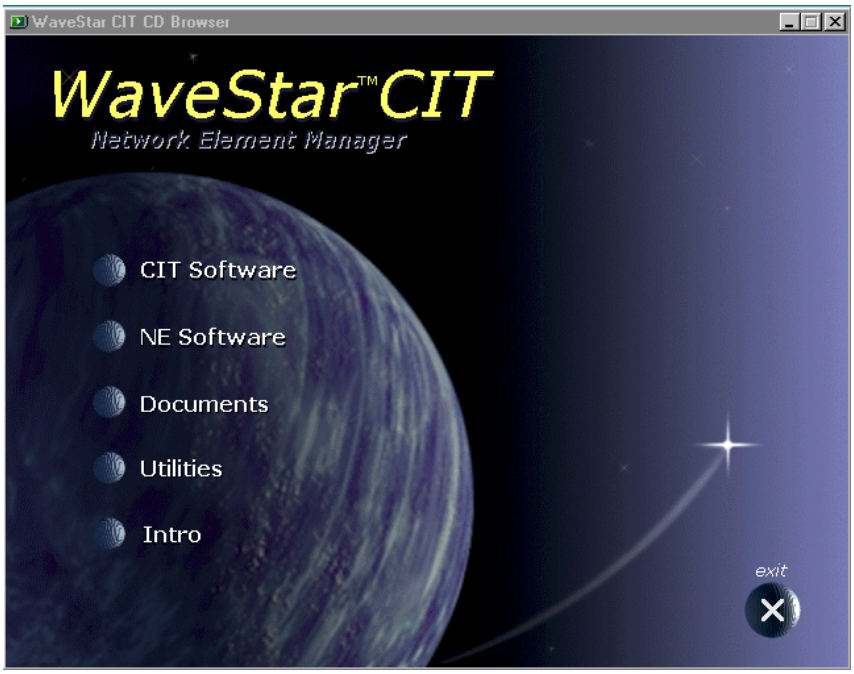


Important! If the CD-ROM does not autorun, verify that the CD is inserted properly in your CD-ROM drive.

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*.

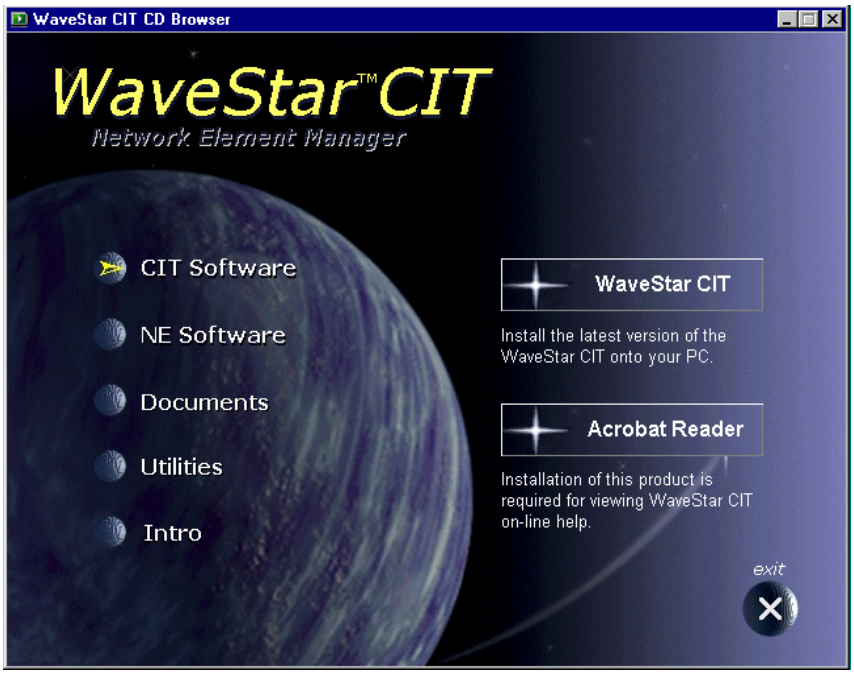
Result: The following screen appears:



. . . . . .

3 Click **CIT Software** to install the WaveStar® CIT software.

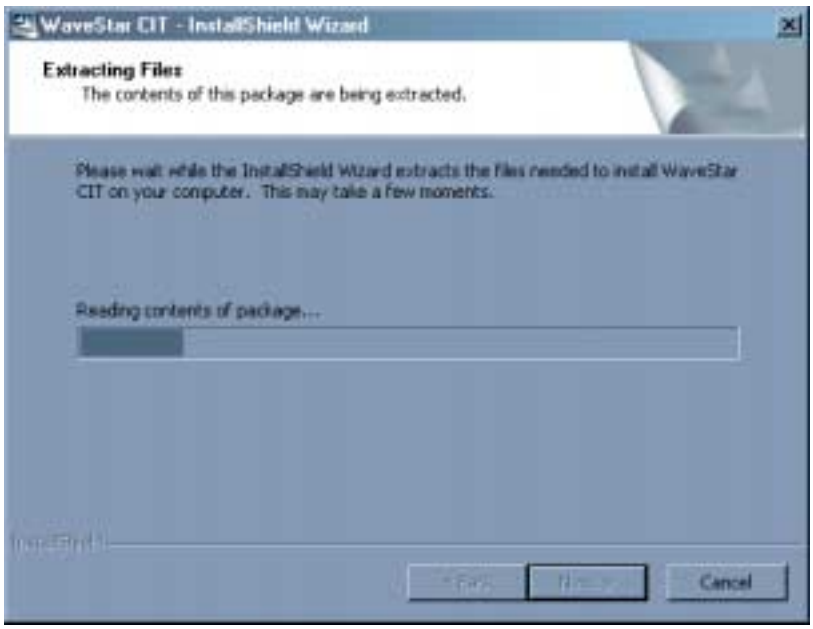
Result: The following screen appears:



4 Click **WaveStar CIT** on the right.

Result: The InstallShield® Wizard appears.

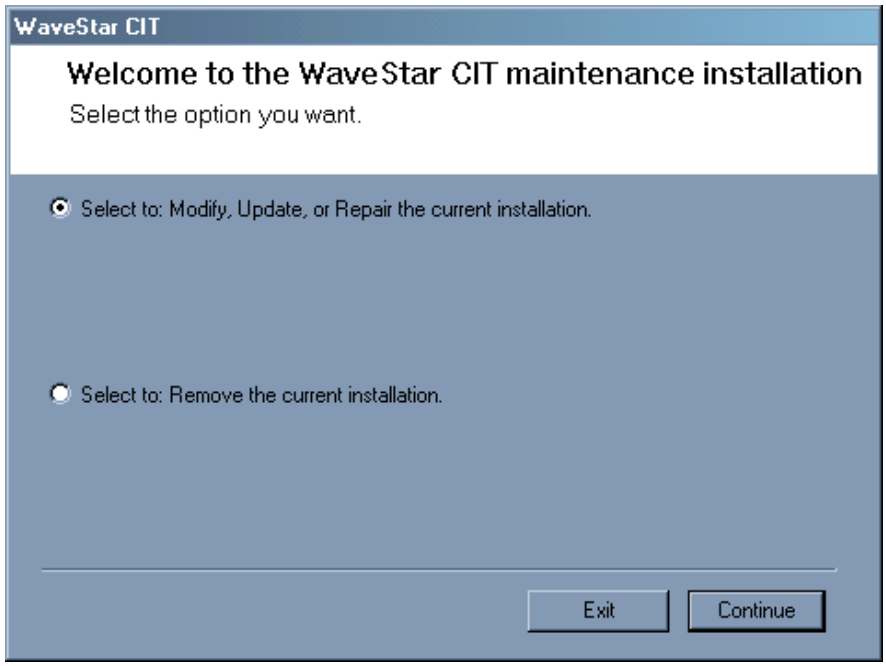
Click **Next** and the InstallShield Wizard begins extracting files.



5 Do you have a previous version of the WaveStar® CIT installed on your computer?

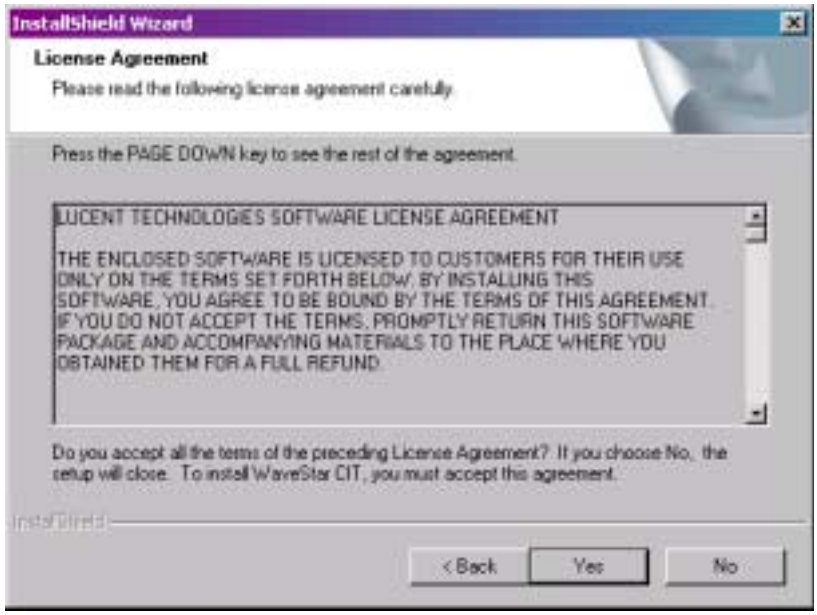
If...	Then...
Yes	Continue with Step 6.
No	Proceed to Step 7.

6 When the following screen appears, select *Select to: Modify, Update, or Repair the current installation* and click **Continue**.

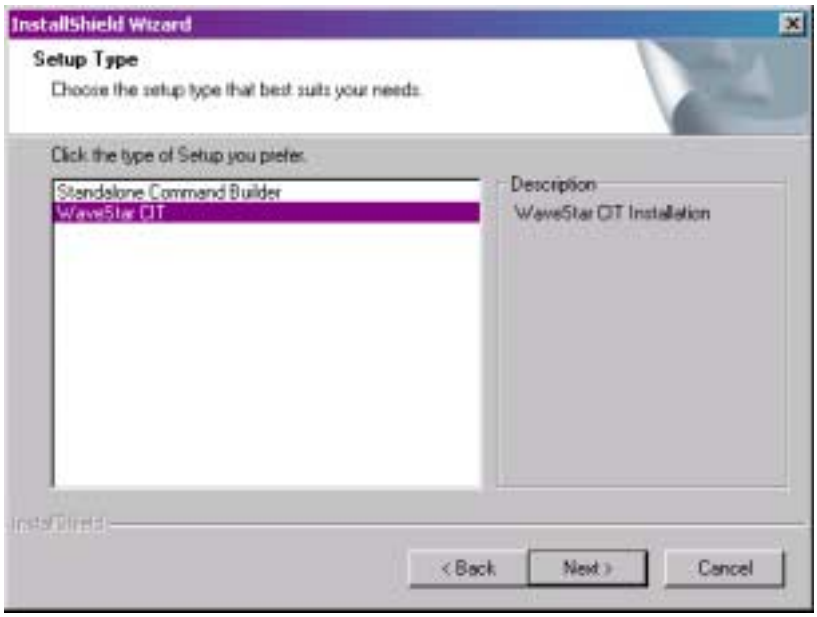


Proceed to Step 9.

7 Follow the instructions on the different InstallShield® Wizard screens, including reading and agreeing to the License Agreements.



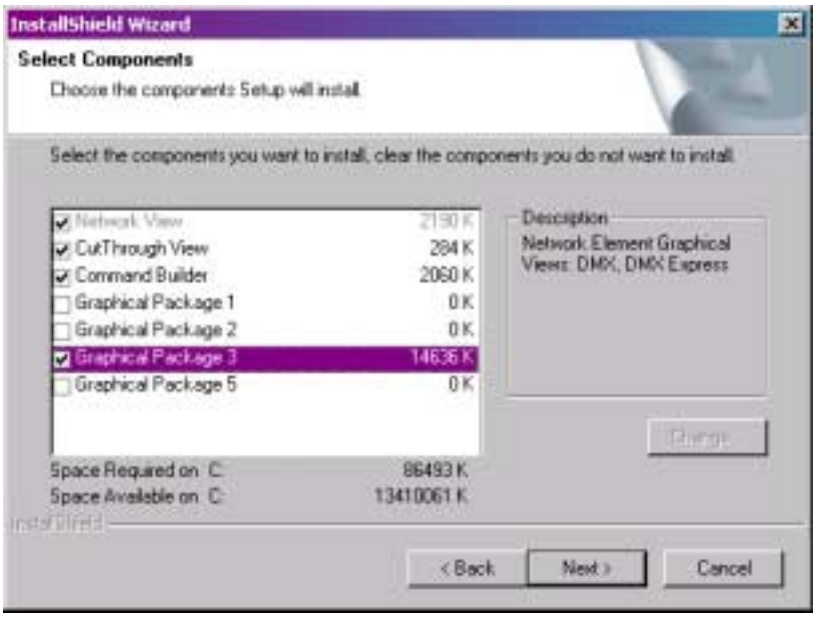
8 When the following screen appears, enter the type of installation you want. Select WaveStar CIT.



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).

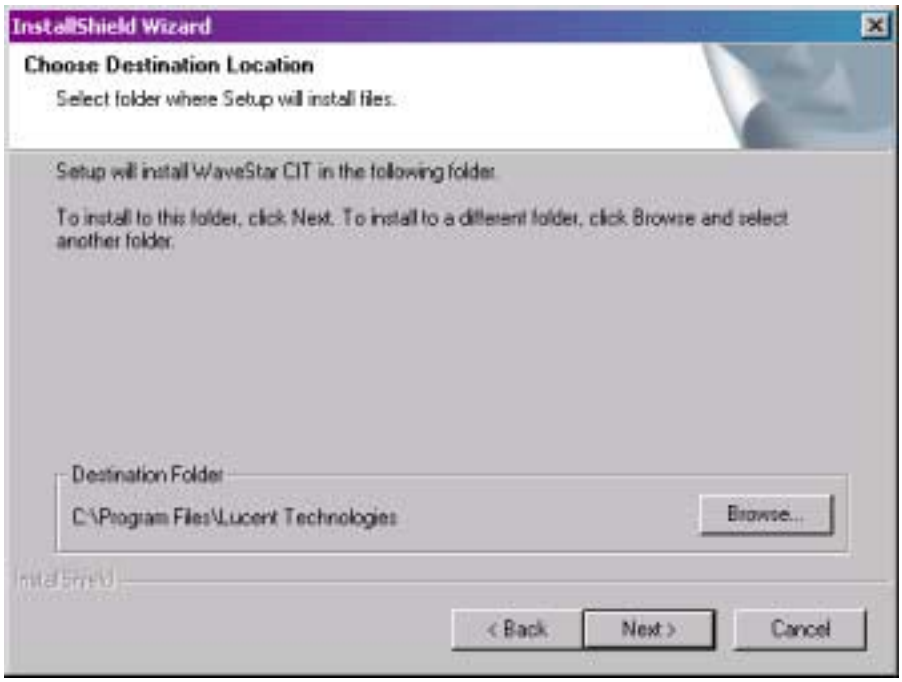


Important! If you have multiple NICs installed, you will be asked to select one in Step 11.

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.

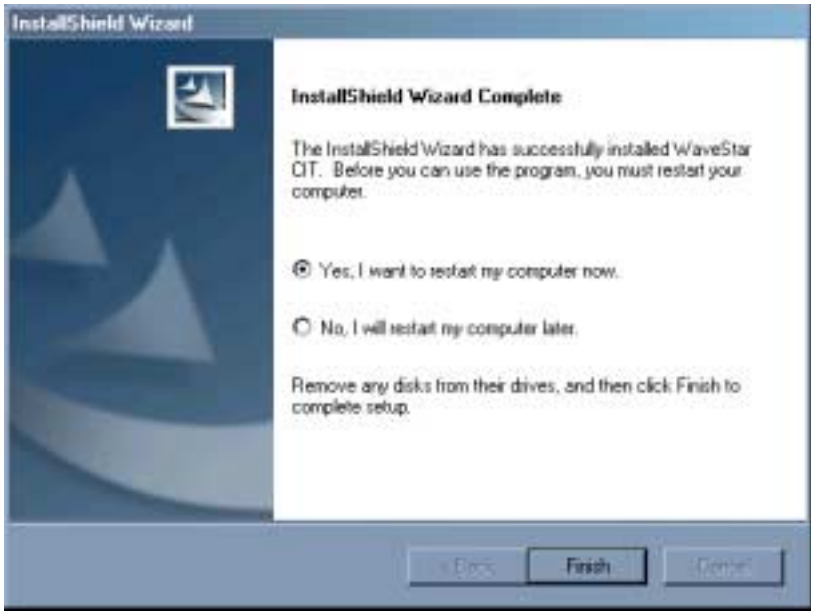


Click **Next**.

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.

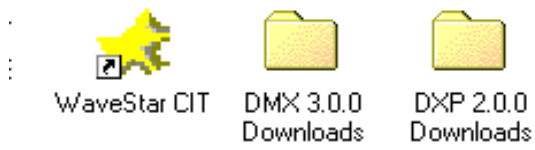
Result: The InstallShield® Wizard continues to install the required files. The following screen appears when the installation is completed.



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.



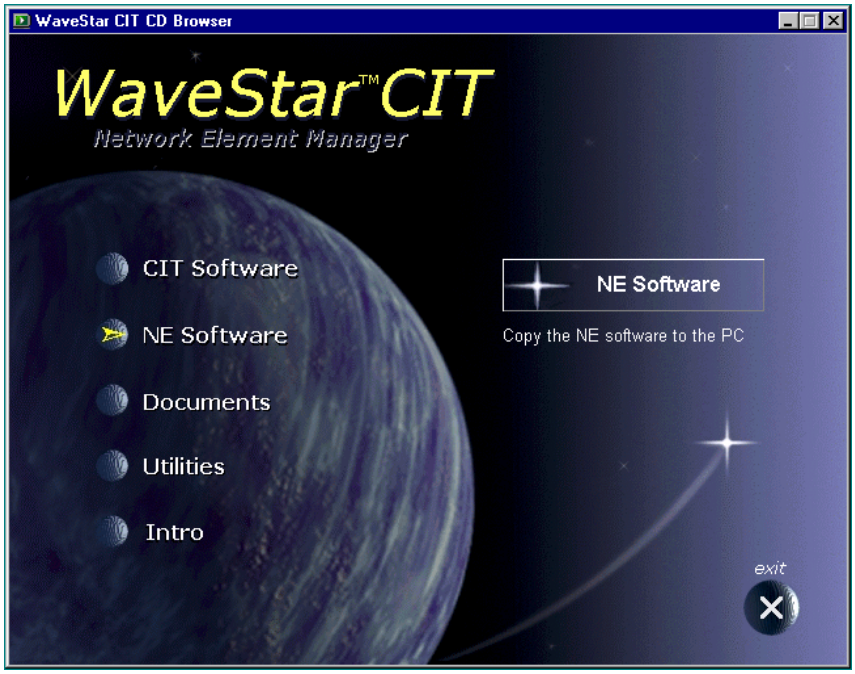
Important! If you had a previous version of Metropolis® DMX*press* software on your PC, you may also have icons for those download releases.

13 Double click on the **DXP 2.0.0 Downloads** icon.

Result: The DXP 2.0.0 Downloads folder contains the following 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\dxp\2.0.0\p

This directory contains bundled software and is accessible by double-clicking on the DXP 2.0.0 icon that is found within the *DXP 2.0.0 Downloads* folder. (Refer to Step 13 for an illustration of the icon.) This directory is used for initial R2.0.0 installations and upgrades from R1.0.x or R1.1.0.

16 On the WaveStar CIT CD Browser window, click **Exit**.

17 Restart your PC before using the new WaveStar® CIT.

END OF STEPS

Task 611: Replace OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) Low-Speed OLIU Circuit Pack

Purpose

Use this task to replace an OC3LS/4 (A1AA017) or OC12LS/2 (A1AA018) low-speed OLIU.

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*press*, 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".

CAUTION

OC-3/OC-12 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 *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314*.

Before you begin

Prior to beginning this task, you must:

1. Ensure that the correct circuit pack (OC3LS/4 or OC12LS/2) is available for replacement.
2. If not previously completed, install generic and WaveStar® CIT software on the PC.

   Reference: "Task 606: Install Software Generic Program in New Shelf Installation" (5-47)

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 remove and replace an OC3LS/4 or OC12LS/2 low-speed circuit pack.

. . . . . .

18 Disconnect the OC-3 or OC-12 optical lines (**OUT IN**) and set aside.

CAUTION

OC-3/OC-12 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.

Figure 611-1 OC3LS/4 Circuit Pack

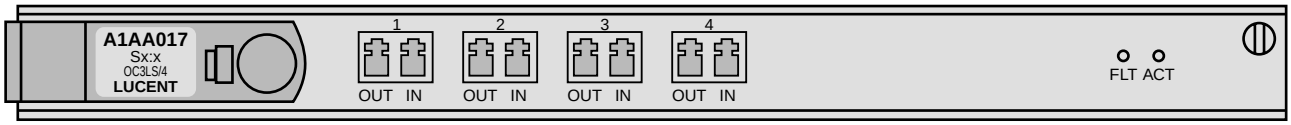
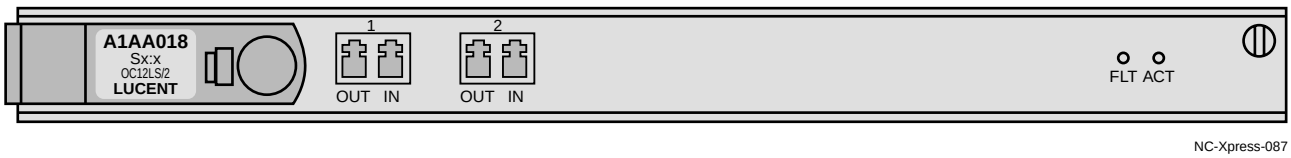


Figure 611-2 OC12LS/2 Circuit Pack



. . . . . .

19 To prepare to remove the circuit pack,

1. Loosen and disengage the thumbscrew that secures the right end of the circuit pack.
2. Grasp the inner edge of the locking lever that secures the left end of the circuit pack.
3. Apply a constant pressure to pull the lever outward.

20 Pull the lever and thumbscrew forward to disengage the circuit pack from the backplane connector and draw the circuit pack out of the Option 1 Slot.

21 To install the replacement OC3LS/4 or OC12LS/2 circuit pack in the Metropolis® DMX*press* shelf, orient the circuit pack into a horizontal position (components up) and align the circuit pack with the slides at the edges of the Option 1 Slot.

22 Apply a steady pressure to the faceplate and latch assembly until the circuit pack is seated.

23 Secure the circuit pack in the Metropolis® DMX*press* shelf using the latch lever and thumbscrew.

Result: The Fault (**FLT**) LED and Active (**ACT**) LED illuminate. Because there is no signal present, the **FLT** LED begins flashing after ~ ten seconds.

24 Reconnect the OC-3/OC-12 lines (**OUT IN**).

Important! Follow locally developed plans and records to make the local connections between the Metropolis® DMX*press* shelf and the local network(s).

Reference: Figure 611-1 or Figure 611-2 in Step 1.

Result: The main circuit pack initializes the new OC3LS/4 or OC12LS/2 circuit pack.

25 Using the WaveStar® CIT, verfiy that the cross-connections are re-established by selecting **View > Cross Connections**.

Result: The **FLT** LED on the OC3LS/4 or OC12LS/2 circuit pack goes out after the OC-3 or OC-12 connections are complete.

END OF STEPS

Task 612: Set Date and Time

Purpose

Use this task to set the system 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*press*, 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, refer to the *Metropolis® DMXpress Access Multiplexer User Operations Guide, 365-372-314.*

Before you begin

Decide upon a source for your time setting.

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 From the **System View** menu, select **Administration > Set Date and Time** to bring up the **Set system's date and time for DMX*press*** screen.

3 From the **Date** panel, select the **Year** and **Month** from the pulldown menus.

Result: A calendar is displayed for the month and year selected.

4 Click on the date from the calendar.

5 From the **Time** panel, select the **Hour**, **Minute, and Seconds** from the pulldown menus (based upon a twelve hour clock).

6 Select **am** or **pm**.

7 Click **OK**.

8 Verify that Date and Time are correct in the bottom right hand corner of the System View window.

END OF STEPS

Glossary

Abbreviations and Acronyms

A

ABN
Abnormal (status condition)

ACO
Alarm Cutoff

ACO/SW
Alarm Cutoff and Test

ADM
Add/Drop Multiplexer

AGNE
Alarm Gateway Network Element

AIS
Alarm Indication Signal

AMI
Alternate Mark Inversion

ANSI
American National Standards Institute

APS
Automatic Protection Switch

ARM
Access Resource Manager

AS&C
Alarm, Status, and Control

ASCII
American Standard Code for Information Interchange

ASN.1
Abstract Syntax Notation 1

ASNE
Alarm Server Network Element

ATM
Asynchronous Transfer Mode

Auto
Automatic

AUXCTL
Auxiliary Control

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

BRI
Basic Rate Interface

C

CC
Clear Channel

CCITT
International Telephone and Telegraph Consultative Committee

CEV
Controlled Environment Vault

CD-ROM
Compact Disk, Read-Only Memory

CDTU
Channel and Drop Test Unit

CIT
Craft Interface Terminal

CLF
Carrier Line Failure Status

CLK
Clock

CMISE
Common Management Information Service Element

CMOS
Complementary Metal Oxide Semiconductor

CMTS
Cable Modem Termination System

CO
Central Office

CP
Circuit Pack

CPE
Customer Premises Equipment

CR
Critical (alarm status)

CSA
Carrier Serving Area

CSU
Channel Service Unit

CS&O
Customer Support and Operations

CV
Coding Violation

CVFE
Coding Violation Far End

D

DCC
Data Communications Channel

DCE
Data Communications Equipment

DEMUX
Demultiplexer

DLC
Digital Loop Carrier

DPLL
Digital Phase-Locked Loop

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

DT
Distant Terminal

DTE
Data Terminating Equipment

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

EPROM
Erasable Programmable Read-Only Memory

EQ
Equipped (memory administrative state)

ES
Errored Seconds

ESD
Electrostatic Discharge

ESF
Extended Super Frame

EST
Environmental Stress Testing

F

FCC
Federal Communications Commission

FDDI
Fiber Distribution Data Interface

FE
Far End

FE ACTY
Far End Activity

FEBE
Far End Block Error

FE ID
Far End Identification

FEPROM
Flash EPROM

FERF
Far End Receive Failure

FE SEL
Far End Select

FIT
Failures in 10^{-9} hours of operation.

G

GbE
Gigabit Ethernet

GNE
Gateway Network Element

GR
Telcordia Technologies General Requirement

GTP
General Telemetry Processor

GTSIP
Global Technical Support Information Platform

GUI
Graphical User Interface

H

HECI
Humans Equipment Catalog Item

I

IC
Internal Clock

ID
Identifier

IEC
International Electrotechnology Commission

IMF
Infant Mortality Factor

INC
Incoming Status

I/O
Input/Output

IP
Internet Protocol

IR
Intermediate Reach

IS
In Service

ISCI
Intershelf control Interface

ISI
Intershelf Interface

ISDN
Integrated Services Digital Network

ISO
International Standards Organization

ISP
Internet Service Provider

IVHS
Intelligent Vehicle Highway System

L

LAN
Local Area Network

LAPD
Link Access Procedure "D"

LBO
Line Build Out

LCN
Local Communications Network

LEC
Local Exchange Carrier

LED
Light-Emitting Diode

LOF
Loss of Frame

LOP
Loss of Pointer

LOS
Loss of Signal

LR
Long Reach

LS
Low Speed

M

MD
Mediation Device

MJ
Major Alarm

MM
Multimode

MML
huMan-Machine Language

MN
Minor Alarm

MPEG
Moving Picture Experts Group

MSDT
Multi-Services Distant Terminal

MTBF
Mean Time Between Failures

MTBMA
Mean Time Between Maintenance Activities

Mult
Multipling

MUX
Multiplex

MXBIU
Multiplexer and Backplane Interface Unit

N

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

NNI
Network-Network Interface

NSA
Not Service Affecting

NSAP
Network Services Access Point

NTF
No Trouble Found

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 Mb/s)

OC-12
Optical Carrier Level 12 Signal (622 Mb/s)

OC-48
Optical Carrier Level 48 Signal

OLIU
Optical Line Interface Unit

OOF
Out of Frame

OOL
Out of Lock

OPS/INE
Operations System/Intelligent Network Element

OS
Operations System

OSGNE
Operations System Gateway Network Element

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

PCU
Power Conversion Unit

PID
Program Identification

PINFET
Positive Intrinsic Negative Field Effect Transistor

PJC
Pointer Justification Count

PLL
Phase-Locked Loop

PM
Performance Monitoring

PMN
Power Minor Alarm

POH
Path Overhead

POP
Points of Presence

POTS
Plain Old Telephone Service

PRM
Performance Report Message

PROTN
Protection

PRS
Primary Reference Source

PSU
Power Supply Unit

PVC
Permanent Virtual Circuit

PWR
Power

R **RAM**
Random Access Memory

RPP
Reliability Prediction Procedure (described in Telcordia Technologies TR-NWT-00032)

RT
Remote Terminal

RTAC
Lucent Regional Technical Assistance Center (1-800-225-RTAC)

RZ
Return to Zero

S **SA**
Service Affecting

SCADA
Supervisory Control and Data Acquisition

SD
Signal Degrade

SDH
Synchronous Digital Hierarchy

SEFS
Severely Errored Frame Seconds

SEO
Single-Ended Operations

SES
Severely Errored Seconds

SF
Super Frame (format for DS1 signal)

SID
System Identification

SLA
Service Level Agreements

SLIM
Subscriber Loop Interface Module

SM
Single Mode

SONET
Synchronous Optical NETwork

SPE
Synchronous Payload Envelope

SQU
Sync Quality Unknown

SRD
Software Release Description

STS, STS-n
Synchronous Transport Signal

STM
Synchronous Transfer Mode

STS-1 SPE
STS-1 Synchronous Payload Envelope

STS-3c
Synchronous Transport Level 3 Concatenated Signal

STS-12c
Synchronous Transport Level 12 Concatenated Signal

SYSCTL
System Controller (circuit pack)

T T1X1 and T1M1
The ANSI committees responsible for telecommunications standards

TA
Telcordia Technologies Technical Advisory

TABS
Telemetry Asynchronous Byte Serial (Protocol)

TARP
Target ID Address Resolution Protocol

TCA
Threshold-Crossing Alert

TCP/IP
Transmission Control Protocol/Internet Protocol

TCVCXO
Termperature-Compensated Voltage-Controlled Crystal Oscillator

TDM
Time Division Multiplexing

TID
Target Identifier

TL1
Transaction Language 1

TLB
Timing Looped Back

TOP
Task Oriented Practice

TR
Telcordia Technologies Technical Requirement

TSA
Time Slot Assignment

TSI
Time Slot Interchange

TSO
Technical Support Organization

U

UAS
Unavailable Seconds

UNI
User Network Interface

UOC
Universal Optical Connector

UPD/INIT
Update/Intialize

UPSR
Unidirectional Path Switched Rings

V

VF
Voice Frequency

VLAN
Virtual Local Area Network

VLSI
Very Large Scale Integration

VM
Violation Monitor

VMR
Violation Monitor and Removal

VoIP
Voice over Internet Protocol

VONU
Virtual Optical Network Unit

VPN
Virtual Private Network

VT
Virtual Tributary

VT1.5
Virtual Tributary 1.5 (1.728 Mb/s)

VT-G
Virtual Tributary Group

W **WAN**
Wide Area Network

0x1
See Ring (0x1) Low-Speed Interface.

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; se "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).

AGNE - Alarm Gateway Network Element

A defined NE in an alarm group through which members of the alarm group exchange information.

AIS - Alarm Indication Signal

A code transmitted downstream in a digital network that shows that an upstream failure has been detected and alarmed.

AMI - Alternate Mark Inversion

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.

ASCII - American Standard Code for Information Interchange

A standard 8-bit code used for exchanging information among data processing systems and associated equipment.

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.

Available Time
In performance monitoring, the 1-second intervals.

B

B3ZS - Bipolar 3-Zero Substitution
A line coding method that replaces a string of three zeros with a sequence of symbols having some special characteristic.

B8ZS - Bipolar 8-Zero Substitution
A line coding method that replaces a string of eight zeros with a sequence of symbols having some special characteristic.

Backbone Ring
A host ring.

BER - Bit Error Rate
The ratio of bits received in error to the total bits sent.

BIP - Bit Interleaved Parity
A method of error monitoring over a specified number of bits, that is BIP-3 or BIP-8.

BITS - Building Integrated Timing Supply
A single clock that provides all the DS1 and DS0 synchronization references required by clocks in a building.

Broadband
Any communications channel with greater bandwidth than a voice channel; sometimes used synonomously with wideband.

C

CC - Clear Channel
A provisionable mode for the DS3 output that causes parity violations not to be monitored or corrected before the DS3 signal is encoded.

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.

CV - Coding Violation
A performance monitoring parameter.

CVFE - Coding Violation Far-End
An indication returned to the transmitting terminal that an errored block has been detected at the receiving terminal.

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.

DCC - Data Communications Channel
The embedded overhead communications channel in the SONET line. It is used for end-to-end communications and maintenance. It carries alarm, control, and status information between network elements in a SONET network.

DCE - Data Communications Equipment
In a data station, the equipment that provides the signal conversion and coding between the data terminal 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.

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.

Digital Multiplexer
Equipment that combines time-division multiplexing several digital signals into a single composite digital signal.

DRI - Dual Ring Interworking
Two ring networks interconnected at two common nodes.

Drop and Continue
A technique that allows redundant signal appearances at two central offices in a DRI network, allowing protection against central office failures.

DS1
Digital Signal Level 1 (1.544 Mb/s

DS1(28) Circuit Pack
The DS1(28) circuit pack interfaces to the DSX-1 panel.

DS3
Digital Signal Level 3 (44.736 Mb/s).

DS3/EC-1 Circuit Pack
The DS3/EC-1 circuit pack interfaces to the DSX-3 panel.

DSn - Digital Signal Rate n
One of the possible digital signal rates at DMX 2.5G Multiplexer interfaces: DS1 (1.544 Mb/s) or DS3 (44.736 Mb/s).

DSNE - Directory Services Network Element
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.

DSX - Digital Cross-Connect Panel
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.

DTE - Data Terminating Equipment
That part of a data station that serves as a data source (originates data for transmission), a data sink (accepts transmitted data), or both.

Dual Homing
A network topology in which two OC-3 or OC-12 shelves serve as DMX 2.5G Multiplexer hosts supporting up to 16 OC-3 rings or 4 OC-12 rings. Each DMX 2.5G Multiplexer ring is interconnected between the two separate hosts.

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).

ECI - Equipment Catalog Item
The bar code number on the faceplate of each circuit pack used by some inventory systems.

ES - Errored Seconds
A performance monitoring parameter.

ESF - Extended Super Frame
The format for a DS1 signal.

F

FE - Far End
Any other network element in a maintenance subnetwork other than the one the user is at or working on. Also called remote.

FE ACTY - Far End Activity
An LED on the SYSCTL circuit pack faceplate.

FEBE - Far End Block Error
An indication returned to the near-end transmitting node that an errored block has been detected at the far end.

FE ID - Far End Identification
The 7-segment display on the faceplate of the SYSCTL circuit pack.

FEPROM - Flash EPROM
A new technology that combines the nonvolatility of EPROM with the in-circuit reprogrammability of EEPROM (electrically-erasable PROM).

FERF - Far End Receive Failure
An indication returned to the transmitting terminal that the receiving terminal has detected an incoming section failure.

FE SEL - Far End Select
An LED on the faceplate of the SYSCTL circuit pack.

FIT
Failures in 10^{-9} hours of operation.

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

GNE - Gateway Network Element
A network element that has an active X.25 link. Can also be a DSNE.

H

Hairpin Routing
A cross-connection between function units (inter-function unit). For example, function unit C to function untis 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

IC - Internal Clock
Used in synchronization messaging.

ID
See shelf ID and site ID.

IR - Intermediate Reach
A term used to describe distances of 15 to 40 km between optical transmitter and receiver without regeneration. See long reach.

IS - In Service
One possible state of a DS1, DS3, or EC-1 port. Other possible states are "auto" (automatic) and "nmon" (not monitored).

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 LBO - Line Build Out

An equalizer network between the DMX 2.5G Multiplexer and the DSX panel. It guarantees the proper signal level and shape at the DSX panel.

LED - Light Emitting Diode
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 Timing
The capability to directly derive clock timing from an incoming OC-N signal while providing theuser 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.

Locked Cross-Connection
This is a variation of the ring cross-connection that allows the user to lock the path selector to a specified rotation of the ring. Any signal received from the other rotation of the ring is ignored.

LOF - Loss of Frame
A failure to synchronize to an incoming signal.

Loop Timing
Loop timing is a special case of line timing. It applies to NEs that have only one OC-N interface. For example, terminating nodes in a linear network are loop timed. See Line Timing.

LOP - Loss of Pointer
A failure to extract good data from an STS-1 payload.

LOS - Loss of Signal
The complete absence of an incoming signal.

LR - Long Reach
A term used to describe distances of 40 km or more between optical transmitter and reciever without regeneration. See Intermediate Reach.

M

Main
The two slots (M-1 and M-2) on the DMX 2.5G Multiplexer shelf in which the OC-48 OLIU circuit packs are installed.

Midspan Meet
The capability to interface between two lightwave terminals of different vendors. This applies to high-speed optical interfaces.

Multiplexing
The process of combining several distinct digital signals into a single composite digital signal.

Mult - Multipling
The cascading of signals in a bay. In the MULT mode, the DS1 external reference can be cascaded to other shelves in a bay using Mult cables. Normally starting with the bottom shelf (Number 1) and working towards the top of the bay.

N

NE - Near End
The network element the user is at or working on. Also called local.

NE - Network Element
The basic building block of a telecommunications equipment within a telecommunication network that meets SONET standards. Typical internal attributes of a network element include: onr 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.

NE ACTY - Near End Activity
An LED on the faceplate of the SYSCTL circuit pack.

NMA - Network Monitoring and Analysis
An operations system designed by Telcordia Technologies which is used to monitor network facilities.

NMON - Not Monitored
A provisioning state for equipment that is not monitored or alarmed.

Node
In SONET, a node is a line terminating element.

Non-Revertive
A protection switching mode in which, after a protection switch occurs, the equipment remains in its current configuration after any failure conditions that caused a protection switch to occur clear or after any external switch commands are reset. See Revertive.

NSAP - Network Services Access Point
An address that identifies a network element. Used for maintenance subnetwork communication using the OSI protocol.

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-3c (STS-3c)
Optical Carrier Level 3 Concatenated Signal. Low-speed broadband equivalent to three STS-1s linked together with a single path overhead.

OC-12
Optical Carrier Level 12 Signal (622 Mb/s).

OC-12c (STS-12c)
Optical Carrier Level 12 Concatenated Signal. High-speed broadband equivalent to twelve STS-1s linked together with a single path overhead.

OC-48
Optical Carrier Level 48 Signal.

Operations Interface
Any interface that provides information on the system performance or control. These include the equipment LEDs, SYSCTL faceplate, and office alarms.

OS - Operations System
A central computer-based system used to provide operations, administration, and maintenance functions.

OSI - Open Systems Interconnection
Referring to the OSI reference model, a logical structure for network operations standardized by the Internation Standards Organization (ISO).

OSGNE - Operations System Gateway Network Element
An OSGNE serves as a single interface to the OS for NEs in the same subnetwork using X.25 interfaces.

P

Pass Through
Paths that are cross-connected directly across an intermediate node in a ring network.

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.

PM - Performance Monitoring
Measures the quality of service and identifies degrading or marginally operating systems (before an alarm would be generated).

Port
The physical, electrical, or optical interface on a system. For example, DS1, DS3, EC-1, OC-3, OC-12, and OC-48. *See Channel*.

Port State Provisioning
A feature that allows a user to supress 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 Line
As defined by the SONET standard, the protection line is the pair of fibers (one transmit and one receive) that carry the SONET APS channel (K1 and K2 bytes in the SONET line overhead). On a DMX 2.5G Multiplexer, a protection line is a pair of fibers that terminate an OLIU circuit pack in the Main-2, A-2, B-2, C-2, or D-2 slots. *See Service Line*.

Product Family 2000
Lucent's line of SONET standard network products providing total network solutions.

Product Family 3000
Lucent's next generation line of network products. Also called the WaveStar*TM* Product Family.

R Reactive Maintenance
Refers to decting defects/failures and clearing them.

Remote
See Far-End (FE).

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*.

RPP - Reliability Prediction Procedure
Described in Telcordia Technologies TR-NWT-00032.

RT - Remote Terminal
An unstaffed equipment enclosure that may have a controlled or uncontrolled environment.

S S3-TG - Stratum 3 Timing Generator
The timing generator circuit pack, located in the OC-48 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.

SEO - Single-Ended Operations
The maintenance capability that provides remote access to all DMX 2.5G Multiplexer systems from a single location over the DCC.

Service Line
On a DMX 2.5G Multiplexer system, a service (or "working") line is a pair of fibers (one transmit and one receive) that terminate on an OLIU circuit pack in the Main-1, A-1, B-1, C-1, or D-1 slots. As defined by the SONET standard, the SONET APS channel is not defined on a service line. *See Protection Line*.

SES - Severely Errored Seconds
This performance monitoring parameter is a second in which a signal fail occurs, or more than a preset amount of coding violations (dependent on the type of signal) occurs.

SF - Super Frame
The format for DS1 signals.

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.

Single 0x1 Cross-Connection
In a dual-homed application, the DMX 2.5G Multiplexer uses a single 0x1 cross-connection to map the VT1.5 channels between the DDM-2000 FiberReach, OC-3 Multiplexer, or OC-12 Multiplexer and the DMX 2.5G Multiplexer rings. This single 0x1 architecture maps low speed to high speed on a specified ring rotation. The high speed to low speed drop is made on the same specified ring with no path switching. Protection is provided at the VT1.5 end points.

Single Homing
A network topoly 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.

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
Group of SONET network elements that share a SONET data communications channel.

Synchronization Messaging
SONET synchronization messaging is used to communicate the quality of network timing, internal timing status, and timing states throughout a subnetwork.

SYSCTL - System Controller
The system controller circuit pack that provides overall administrative control of the terminal.

T

T1X1 and T1M1
The ANSI committees responsible for telecommunications standards.

TCA - Threshold Crossing Alert
A condition set when a performance monitoring counter exceeds a user-selected threshold. A TCA does not generate an alarm but is available on demand through the CIT and causes a message to be sent to NMA via the X.25/TL1 interface.

TL1 - Transaction Language 1
A Telcordia Technologies machine-to-machine communications language that is a subset of ITU-TSS, formerly CCITT's, human-machine language.

U

UAS - Unavailable Seconds
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
A protection switching mode in which the system at each end of an optical span monitors both service and protection lines and independently chooses the best signal (unless overridden by an equipment failure or by an external request, such as a forced switch or lockout). In a system that uses unidirectional line switching, both the service and protection lines may be active simultaneously, with one line carrying traffic in one direction and other line carrying traffic in the other direction. For a 1+1 protection scheme the K1 and K2

bytes in the SONET line overhead are used to convey to the far end which line the near-end receiver has chosen, so that an "active" indication may be made at the far end.

UOC - Univeral Optical Connector
Receptacles on the faceplate of some OLIUs that accept *ST*, SC, or FC connectors.

UPD/INIT
A push-button on the SYSCTL faceplate.

V

VM - Violation Monitor
A mode of the DS3 circuit pack in which it will monitor but not remove P-bit parity violations on the DS3 signal from the received fiber.

VMR - Violation Monitor and Removal
A mode of the DS3 circuit pack in which it will monitor and remove P-bit parity violations on the DS3 signal received from the fiber.

VT - Virtual Tributary
A structure designed for transport and switching of a sub-DS3 payload.

VT1.5
A 1.728 Mb/s virtual tributary.

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 STS-1 synchronous payload envelope

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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