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(I)SN07 Succession Network

Software Delivery

Planning and Provisioning

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(I)SN07 Succession Network

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Contents

About this document

Introduction

This document provides planning and provisioning information about the activities associated with software upgrades for the North American and International Succession Solutions (SS). It describes the major steps of the software delivery process from an operating company perspective, beginning with the request for new feature packages, through the main tasks necessary before, during, and after the installation of new software loads in the communication server and its associated network components. The document also describes the intervals, timing constraints, and guidelines for software orders, and includes a comprehensive list of references to more detailed technical information.

Selection of the software delivery method depends on the release level of the upgrade, and the size of the CS 2000 solution as determined by the quantity and type of its various components.

- SWUPGRADE methods: Automated software delivery toolset for core CS 2000, legacy and SPM peripherals in preparation for a Succession upgrade.
- Total solution-level upgrades cover multiple maintenance windows.

Audience

This document is intended for operating company managers and planners responsible for implementing Succession software upgrades. The document provides them with an overview of the requirements for a scheduled software upgrade, and enables them to prepare for it successfully.

Documentation

This document is part of a suite of documents that specifically address Nortel Networks software delivery. For a full list of documents containing details of the software delivery and upgrade processes, refer to Appendix A: Related documents.

The Helmsman CD-ROM for each of the North American and International Succession Solutions contains both this Software Delivery document and all the related documents.

Software delivery overview

Introduction

In order to plan adequately for a Succession software upgrade, the operating company must be aware of the total upgrade process, from the initial quote and order to the final delivery of the software. This section provides an overview of the software delivery processes. For more detailed information, contact your next level of support.

Status of current load

When considering an upgrade, and up to the time that the upgrade is implemented, customers must ensure that their current software load is up-to-date with respect to patches and maintenance releases. All components of the Succession network must be patch current, and at the latest maintenance release prior to starting the end-to-end upgrade of the network.

Patches and maintenance releases can be issued throughout the lifetime of the solution or component software load. Patches and maintenance releases are typically also included with a new software load. For details, refer to the sections Pre-production activities on page 5 and Patching and maintenance release activities on page 6.

Quoting and ordering

The operating company first requests a preliminary cost estimate, or a Request for Quote (RFQ). The NTNW regional sales group generates the quote using existing office data and information on feature packages and materials required.

After receiving the quote, the operating company may then order a new software load through a letter of intent with an accompanying purchase order.

For outside equipment manufacturer (OEM) components (for example, Cable MTA/CMTS, Mediatrix ISD) customers must order directly from original equipment manufacturers. This process is not covered in this document. However, Nortel Networks provides definitive lists of the required materials.

Note: Where ordering falls within the remit of the operating company, Nortel Networks must be made aware of lead times as these upgrades may impact other parts of the project.

Provisioning

Scheduling

NTNW develops and manages customer schedules based on both hardware and software parameters through the Nortel Networks ordering system. First, a Request for Schedule (RFS) is generated which identifies several critical dates for events that must be performed at specific times to achieve successful software delivery. The RFS packages the product for both hardware and software to provide the customer with the total scheduling picture.

Succession Solution Release gating hardware

Succession Solution Release required hardware includes any hardware required in the SS office prior to the software delivery date. Three types of Succession Solution Release required hardware include:

- Release Gating - Hardware that is required on the component in question to allow the software upgrade to take place.
- Solution Gating - Hardware that is required on a component in order to make that component compatible with other components after they or it are upgraded.
- Feature Gating - Hardware that is required to support feature functionality. The absence of feature gating hardware does not affect the Succession Solution Release load, but the specific software feature may not work as expected.

All Succession Solution Release gating hardware must be ordered (either on an S Suborder or customer provided), shipped, and installed prior to the application date for the new software to allow for sufficient hardware testing prior to the application and a sufficient interval to verify new hardware reliability.

Note: Refer to the relevant FCAPS documents and upgrade support personnel for soak periods and ensure that these are observed. Ensure that all hardware soak periods are observed before software upgrades.

Operating company schedule acceptance

Once the software delivery dates have been confirmed through Nortel Networks regional scheduling primes, the Regional Customer Service representative notifies the operating company of the schedule, usually by telephone. After a verbal acceptance of the scheduled dates, the regional representative sends to the operating company a confirmation letter identifying the dates and the scheduled sequence of events.

As a final acceptance, the authorized operating company representative signs the schedule and returns it to NTNW. This ensures that both NTNW and the operating company have an agreed schedule in writing.

Succession Solution Release Polling

Each office scheduled for a new Succession Solution Release load is polled at approximately seven weeks prior to the software delivery date, or sooner if the order is received earlier. The Succession Solution Release Polling group first contacts the customer to request permission to poll the office, the correct user information and passwords, and then dials into the appropriate Succession component to begin the session (note that IP addresses are required for all relevant components). Memory usage and correct Succession Solution Release levels are verified on the switch. The results of the seven week polling session are submitted to the Regional NTNW Databases. This information is used by various software production and delivery groups who build and deliver the new software loads.

Note: At this time, all pertinent information for the whole suite of Succession components is gathered, both in terms of hardware and software.

Order changes

Operating company changes to the software order must be included in an authorization letter to NTNW detailing the change. In general, the customer is allowed to make changes to the software order until the commencement of the upgrade process. However, as changes are made closer to the actual upgrades, the delivery schedule may be impacted to accommodate processing and ordering changes.

Pre-production activities

Pre-production activities are tasks performed immediately prior to cutting and despatching the new software load. The following activities are required:

- Confirm the purchase order.
- Verify the job feature database (JFDB).
- Review the Succession Solution Release Checklist (see Tasks and timings on page 23).
- Place software order in SOLID and set the production flag.

In addition to the activities listed above which relate to producing the load, the following software delivery activities occur during the same time frame:

- Ship preliminary software media and documents to site.
- Perform patching activities.

Preliminary tape and document shipment

Preliminary tapes and documents are shipped from NTNW at approximately 35 days before the scheduled insertion date. The following items are included:

- The full FCAPS suite on CD-ROM:
  - Peripheral Software Release Documents (regular peripheral module (PM) and extended multi-processor system based peripheral module (XPM))
  - Software Delivery ONP Procedures Guide for the CS 2000
  - Individual component upgrade FCAPS documents
- Full suite of SSR loads and associated maintenance releases including, solution component NCL tapes/CDs, solution component patch tapes/CDs, Non-res NCL tape.
- Software Transmittal Listings (hardcopy inventory listing of shipment, quantity of tapes and documents)
- Software Portfolio on Helmsman CD-ROM

Patching and maintenance release activities

Patches are software rewrites to existing software loads. Patches change only a small portion of a software package or piece of data in the switch as opposed to a software upgrade which changes all the system software. Two types of patches exist: CC patches are written for software in the central control; XPM patches are written for the software in the XPMs.

An XPM Patch tape is included in the preliminary tape and documentation shipment. Loading the new PM and XPM software loads and patching the new XPM software loads must be completed by the operating company before the pre-application procedure (typically five days before the software application).

Certain components have Maintenance Releases associated with them. These releases are included in the initial dispatch of software for the components in question. If further Maintenance Releases subsequently become available, these may be shipped separately.

Normally, an SS office site is scheduled for patch downloading every 28 or 14 days, depending on the Succession Solution Release level in the office and varying between the components of the office. If the office is scheduled to receive a new software load, it is taken off the Patching/Maintenance Release queue before the commencement of the software upgrades. All Patches and Maintenance Releases that are released after dispatch of the initial software shipment are handled by the regional software upgrade teams on an individual basis.

Patching activities

All released patches for the CS 2000 and applicable components load are bound into the software load before cutting and dispatch of the loadtape. An informlist is sent to the regional NTNW primes according to the patches present on the no-data load. Any additional patches required are handled on an individual basis over the upgrade.

Software delivery

The total solution-level upgrade covers multiple maintenance windows. Components are upgraded in a prescribed order with the core CS 2000 upgrade using the One Night Process (ONP). Various pre-application engineering and precheck activities are preformed as follows.

Pre-application engineering

At regular intervals, and also at various pre-defined points in the procedure, conference calls are held to ensure that an office is ready for a software upgrade. Through the pre-application procedure, various problems and issues which may prevent or impact the upgrade are identified and resolved. Unresolved problems are handed to the NTNW region for resolution.

The automated checks consist of programs run on the switch to perform the following activities:

- Verify software and hardware.
- Load program files and modules required for the software upgrade.
- Check office data and tables.
- Negotiate a start time for the upgrade.
- Review office site tasks and responsibilities.

The day before the upgrade the final component review is conducted by the pre-application engineer. All issues and problems identified during previous prechecks must be resolved by the final office review.

Prechecks

Prechecks are performed on each component at the time of initial polling (for example, as soon as an order has been scheduled). The purpose of these prechecks is to highlight any current problems with the software or hardware.

A subsequent precheck is performed on each component the day before it is due to be upgraded to ensure that any issues highlighted by the previous precheck have been resolved. Furthermore, the final precheck brings to light any new faults that may have appeared.

Responsibility for running prechecks lies with the group responsible for preforming the upgrade. Contact your software operations prime for a list of prechecks to run on each component.

Direct messaging

The USP to GWC messaging path is set to core bounce (CB) by default. From release SN07 onwards, direct messaging (DM) is the preferred configuration for IP solutions. ATM solutions (AAL1 and AAL2) continue to use core bounce.

Therefore for IP solutions, a CB to DM cutover should be carried out. The cutover should be performed in the following circumstances:

- in a new Succession network with USP
- in an old Succession network (04, 05, 06) upgraded to SN07
- in a network where FLPP is replaced by USP

The procedure for carrying out the CB to DM cutover is documented in *(i)SN07 IP Solution Upgrades*, NN10344-450.

Note: The USP upgrade may be direct (for example, SN06 to SN07) or indirect (for example, SN05 to SN06, then SN06 to SN07). For details, refer to the appropriate solution upgrade document.

Impact of a software upgrade

In order to plan successfully for a Succession software upgrade, the operating company must be aware of the impact of the upgrade on the existing condition of the office and its daily operations. This section describes the impact of various areas. These impacts include:

- hardware impact
- service impact
- operational impact
- network impact
- workforce impact

Hardware impact

Hardware impact refers to the existing hardware in the SS switch and any additional hardware that might be needed in order to upgrade the office to a new software load. It also includes any hardware tests that are part of the software delivery process.

Identifying gating hardware

Succession Solution Release required hardware includes any hardware required in the SS office prior to the software delivery date. Three types of Succession Solution Release required hardware include:

- Release Gating - Hardware that is required on the component in question to allow the software upgrade to take place.
- Solution Gating - Hardware that is required on a component in order to make that component compatible with other components after they or it are upgraded.
- Feature Gating - Hardware that is required to support feature functionality. The absence of feature gating hardware does not affect the Succession Solution Release load, but the specific software feature may not work as expected.

All Succession Solution Release gating hardware must be ordered (either through Nortel Networks on an S Suborder or through the customer's own supply chains), shipped, and installed prior to the application date for the new software to allow for sufficient hardware testing prior to the application and a sufficient interval to verify new hardware reliability.

Installing gating hardware

If gating hardware is required for the software order, the operating company must liaise with its account team to ensure that the required orders have been placed.

> ***Note:*** Even where the customer is ordering hardware from sources other than Nortel Networks, it is essential that Nortel Networks is made aware of expected delivery times.

Once the orders have been placed and delivery dates have been confirmed, the customer must schedule personnel to install the new hardware. Nortel Networks installation personnel may assume this task as a professional service if the customer requests it.

All gating hardware must be installed before the scheduled software upgrade date. The customer must refer to the relevant hardware documentation to ensure that any recommended soak periods are complied with. During the soak period the new hardware must be monitored to ensure that no faults are present.

These conditions decrease the likelihood that the software upgrade will be impacted due to faulty or unstable hardware in the office. Operating companies must direct any question or deviation from these considerations to their NTNW regional support.

Restrictions on hardware changes

All non-upgrade related memory, network and peripheral module (PM) extensions/re-grades must be complete prior to the ordering of the software upgrade: no commissioning activities are supported after this event because of the complexity of the planned software upgrades. Any hardware change activity must be planned to complete prior to commencing the software upgrades or after the SS switch has been upgraded in its entirety.

Switch maintenance

Normal switch maintenance is the operating company's responsibility. An office planning a software upgrade must have no system faults. Unresolved hardware faults can complicate and possibly prevent a successful Succession Solution Release application.

Further to the basic switch maintenance activities, a review of monthly/yearly maintenance tasks must also be initiated and any outstanding items actioned accordingly.

Additional requirements

Operational site connections

Two operational connections are required for the CS 2000 switch. The connections must be foreign exchange lines into IOC 0 and IOC 1. If the connections are noisy, a backup connection line may be needed. Operational connections allow access to the switch for the following purposes:

- polling to obtain memory "in use" and "total" counts, and inform lists
- Succession Solution Release pre-application office check
- Succession Solution Release software application

In addition, IP connectivity must be available for any other components that Nortel Networks have been requested to upgrade as a professional service.

Note: Without a suitable level of connectivity to these components, Nortel Networks is unable to carry out the upgrade of these components.

Foreign exchange voice lines

One voice foreign exchange line to the office must be equipped for communications between operating company personnel and the Succession Solution Release application engineer during all software upgrades.

Service impact

Service impact refers to the switch activities that impact customer service during the software delivery process.

Call processing

During the application phase of the software delivery process, call processing is briefly suspended during the SWitch of ACTivity (SWACT) from the old software load to the new software load. Since AMA recording also does not occur for 2 to 3 minutes after the SWACT, the switch of activity is performed in the early hours of the morning, typically a low traffic period.

All 2-port stable calls (those calls already connected through the switch) are kept up, but three-port calls are dropped. The number of calls kept up can be determined by observing the PSVD (preserved) field in the CPSYS maintenance administration position (MAP) level. Call processing for new call originations ceases at the start of the SWACT and begins again 2 to 3 minutes after SWACT.

The customer is directed to explore the call processing implications to other components in the suite by referring to the end-to-end upgrade FCAPS documents.

Hardware states

The new software load maintains the hardware status from the old load. Affected hardware includes peripheral modules (PM), signaling terminals (ST), inter-peripheral message link (IPML), carrier, network, link and junctor, input/output controller, console, magnetic tape drive, and disk drive units. Hardware units in the manual busy (MANB) state or system busy (SYSB) state are returned to service (RTS) or off-line (OFFL) by the applicator before SWACT to the new software load. Hardware status discrepancies are checked between the old and new software loads.

Trunk states

Trunk states on the old software load are carried over to the new software load. Installation busy (INB), make busy (MB), and restricted idle (RES) trunks are restored to the same states on the new software load. A trunk in the lock-out state on the old software load may be in an idle state until a trunk audit is run which puts the trunk in a lock-out state on the new load.

Operational impact

Operational impact refers to the operating modes necessary for a software upgrade that normally are not encountered during day-to-day switch operation. Primarily, this is the time interval when the SS switch is out of sync (simplex mode) to accommodate software delivery procedures and tests.

Administrative activities

The operating company must notify the following operational, administrative, and maintenance centers connected to the SS of an upcoming software upgrade:

- Network Operations Center (NOC)/Switching Control Center
- operator services
- engineering and administrative data acquisition system
- billing collection center
- any other support and special service centers
- emergency services (for example, police, ambulance)
- high profile customers

On scheduling of the software upgrades, offices with centralized automatic message accounting (CAMA) or local automatic message accounting (LAMA) must arrange with the site billing center for AMA validation tests.

Before SWACT (SWitch of ACTivity), during the upgrade of the CS 2000, the billing device independent recording package (DIRP) subsystem is rotated. Files are copied to disk volumes either on the IOP or on the SDM, which ever is the preferred backup device. After SWACT, the billing center polls the switch and verifies the format of the new billing. It is imperative that records of the tests made before the software upgrades are available to provide a comparison with the new records. For a more detailed review of billing activities, refer to the CS 2000 upgrade modules and the billing FCAPS documents.

Call testing

At the time when the software upgrades are ordered, the customer must compile a list of all call scenarios supported by the SS switch. Furthermore, a test call plan must be created on a per-component basis for all those components involved in call processing. This call plan must include all critical call scenarios for the component in question and forms the basis for acceptance testing after the upgrade of that component.

It is imperative that the test call plan is validated on the day of the upgrade in order to validate that all call scenarios are currently operational.

Site access

Where site access is controlled (for example, by security personnel), the customer must ensure that the necessary authorizations have been obtained and arrangements made to ensure that visiting engineers can access the site.

Network impact

When a switch in a switching network is scheduled for a software upgrade, its arrangement and compatibility with other nodes in the network must be examined. Compatibility of the new Succession Solution Release load with existing software levels in the other nodes is essential. If an incompatibility exists, each node must be upgraded in the proper order to avoid impacting the total network. For examples of this, refer to *IP Solutions Upgrades*, NN10344-450 and *ATM Solutions Upgrades*, NN10261-450.

For example, in an Operator Centralization (OC) arrangement including both host and remote OCs, the host OC must be upgraded before the

remote OC. If a remote OC is being scheduled for a software upgrade, the scheduling analyst must ensure that the host OC receives the upgrade first.

Workforce impact

Workforce impact refers to any changes to the customer workforce's normal duties caused by the upgrade-related tasks, for example, familiarizing with the relevant documentation, understanding when and where they are required on site.

Site preparation

On scheduling the software upgrades, Nortel Networks sends a full suite of software loads and FCAPS documents.

Nortel Networks requests that the customer perform the following tasks prior to the software application date:

- Review the appropriate upgrade documents
- Review any Product Notification Bulletins raised against the new software loads.
- Review the precheck document.
- Perform the prechecks for each component.
- Highlight resources required to perform the upgrade of each component.
- Understand where and when personnel are required on site.
- Draw up a schedule for the upgrade of each component.

Planning for a software upgrade

Introduction

This section provides advance planning information for operating companies with Succession networks scheduled for conventional software upgrades. Information is intended to assist operating company managers, engineers, and planners in preparing for a Succession software upgrades. Switch activities before, during, and after the upgrade are described.

Planning information is provided for the following areas:

- patching
- dump and restore
- pre-application procedures for all components
- software application (performed by NTNW or operating company)
- post-application activities for all components

Software delivery methods

For conventional software upgrades, the operating company is responsible for installing the new software load with the exception of the core, which remains a Nortel Networks responsibility. As an additional service Nortel Networks may assume responsibility for upgrading certain components, providing that the relevant prechecks have been carried out satisfactorily. Both software delivery options use the same processes to install the software load.

The main difference between the two options is the performance of the pre-application and software application procedures. In an operating company-administered upgrade, the company performs both the pre-application procedure and the software application. In an NTNW-administered upgrade, a Succession Solution Release Pre-Application Engineer performs the pre-application procedure in conjunction with a customer representative. A Succession Solution Release Application Engineer performs the software application.

Operating company-administered software upgrades

For operating company-administered applications, the scheduling, provisioning, and production phases of software delivery remain primarily the same as the NTNW-administered software applications.

Technical support is provided by NTNW during the precheck and application phases of the job. A hotline number available to the operating company is answered by the same NTNW personnel who

perform software applications. For a list of technical support contacts and telephone numbers, refer to your NTNW account team.

Note: For any emergency issues, the same process of contacting the Emergency Recovery team applies.

Scheduling requirements

When the operating company places an order for new software, it must decide who is to apply the software. No matter who performs the upgrade, NTNW schedules the application of the new software load. If the upgrade is NTNW-administered, application time slots are reserved on the schedule; however, for an operating company-administered upgrade, an application time slot is not reserved.

Note: Because of the various interdependencies of the different components and the diverse ownership, planning an overall upgrade requires both Nortel Networks and the operating company to hold an initial review to ensure a plan within the boundaries of support that both parties can resource.

Documentation requirements

Operating companies must use the relevant FCAPS documents to perform the Succession Solution Release pre-application and application procedures. For a full list of documents, refer to Appendix A: Related documents.

The NTNW Software Delivery Bulletin System provides information to various user groups (both NTNW and operating company) concerning changes, alerts, additional information related to software delivery that may not yet be released or published in an NTP or other documentation. The operating company must review any bulletins that impact the pre-application or application processes

Training and certification requirements

Before the operating company begins application of software loads, company personnel must be certified by NTNW. This process involves training on the software pre-application and application procedures for

the SS switch. The certification process involves the following activities for operating company personnel:

- observing the software application process as NTNW software application engineers apply software loads to in-service SS switches
- participating in a software application training seminar conducted by NTNW
- performing software applications while an NTNW application engineer observes

In addition to certification by NTNW, personnel must have SS switch training and hands-on switch experience.

Patching requirements

Any patches/maintenance releases are delivered with the software loads for each component.

NTNW-administered software upgrades

For an NTNW-administered software application, an NTNW application engineer dials into the switch on the application night. The applicator uses two dial-up data links: one for each side of the central control. In addition, a voice link with on-site operating company personnel is maintained to discuss progress of the application and to coordinate specific tasks necessary for the application.

The pre-application procedure and software delivery phases of the process are performed by Nortel Networks.

Preliminary processes

Succession Solution Release polling

As soon as the upgrades are scheduled, the Succession Solution Release Polling group requests permission from the operating company to dial into the switch. In the polling session, Succession

Solution Release polling groups obtain the following information on the customer's switch:

- For the core:
  - inform list
  - office tables
  - DS and PS areas
  - DS and PS tables
  - Hardware Baseline
- For all components:
  - memory information (on various components - SDM, SAM21, PTM, UAS, APS, CS 2000)
  - hardware baseline information
  - software levels
  - initial checks also include log checks where appropriate and an overview of current faults raised with Nortel Networks (for example, Clarify Cases)

After the upgrade, the Succession Solution Release Polling group requests permission from the operating company to perform a post-insertion polling session in order to obtain switch information on the new Succession Solution Release. The post-polling session follows the same process, and records the same type of switch information as that used in previous polling sessions. Because of the addition of new feature packages, the new Succession Solution Release information may differ greatly from that of the old Succession Solution Release. Changes from the old Succession Solution Release load to the new Succession Solution Release load impact memory usage and the inform list.

Note: This happens several times as different components are completed and may coincide with pre-application sanity checks on other components.

The results of both polling sessions are recorded in the Regional NTNW database for use by other NTNW groups in the Succession Solution Release process.

Pre-application procedure

The pre-application procedure is performed by the NTNW Pre-application engineering group with an operating company contact. It consists of a series of verbal and automated verifications with site

personnel and the operating company switch to ensure readiness for the software application.

Pre-application procedure starts with a kickoff call and weekly meetings are held to chart progress. Any additional calls deemed necessary over intensive periods of activity, (such as the CS 2000 Upgrade), must be agreed according to the accepted upgrade schedule.

Prior to the pre-application procedure, the operating company loads into the switch any program files and modules not resident in the old Succession Solution Release load that are needed for the pre-application and application procedures. These are loaded from the Succession Solution Release tools tape included in the preliminary tape and documentation shipment.

During the kick off meeting, the following details are finalized:

- methods of access to each individual component
- access protocol (for example, notifications to customer and security)
- schedule of works
- matters arising from hardware audit and prechecks

Final component reviews

The final phase of the pre-application procedure for any given component is the final component review. At one day prior to the software application this review is conducted by the pre-application engineer in conjunction with the customer to determine if the component is ready to proceed with a Succession Solution Release software application.

All issues and problems identified in the pre-application check must be resolved at the final component review. For example, any hardware highlighted by the initial prechecks as being required is reviewed. If the hardware has not been installed or has a fault, this would gate the component upgrade.

The conditions checked in the final component review may vary from one component to another. A typical review may include the following activities:

- Datafill sanity checks.
- Review of logs.
- Verify that journal files have been handled according to procedures.
- Confirm the application start time.

- Ensure all problems are corrected and issues resolved.
- Hardware review.

After the final component review, the pre-application engineer completes parts of an pre-application report, supplying important information necessary for the Succession Solution Release application. The pre-application report is forwarded to the assigned application engineer for the software application.

Post-software application activities

Monitor

Monitor refers to the phase of the software delivery during which the operating company observes logs and switch performance. This phase begins when the software insertion is complete. If technical assistance is needed, the customer must contact the next level of support.

Clarify Cases

Clarify Cases identify problems detected in the SS switch. The operating company must retest Clarify Cases opened on the previous software load. If the problem documented by the Clarify Case still exists in the new software load, the Clarify Case must be reopened on the new load within two weeks of the software application date. If the problem no longer exists on the new software load, the Clarify Case may be closed.

Contingency plans

Contingency plans are used when an unexpected event occurs that prevents or has a potential negative impact on a successful software application. Contingency plans are used in only a small number of software jobs. The following definitions are used by Nortel Networks to describe unsuccessful software upgrade procedures:

- Abort: Condition in which a software application is terminated after sync was dropped due to an unrecoverable error or malfunction, or when directed by the operating company. In a service-affecting abort, normal telephone operations are interrupted.
- Fail: Condition of a software application in which the customer or any of its subscribers experience any type of service degradation as a result of the software application.
- Re-schedule: Condition in which a scheduled software application is cancelled due to an unexpected problem or issue that would have an impact on the success of the software application. This condition occurs after the production flag is set for the loadbuild process but before sync is dropped. The software application is then re-scheduled.

The following list includes some of the situations that may cause a software order to be re-scheduled:

- gating hardware not installed prior to making image tape
- insufficient memory installed or provisioned
- Distributed Processing Peripheral (DPP) firmware and software not updated
- journal file mishandled
- hardware extensions added after making image tape
- data changes during frozen image interval through unsupported means
- unexpected technical and maintenance problems in the office
- shipping problems with tapes and documents

The abort recovery procedure varies, depending on how far the software application has progressed (e.g., if the decision to abort occurs before or after the SWACT-SWitch of ACTivity). For detailed abort procedures, refer to the relevant FCAPS documents.

Succession Solution Release technical support (problem escalation and resolution)

Nortel Networks has established a problem escalation procedure involving Succession Solution Release technical support, to resolve any problems that may occur during a software application. NTNW senior engineers, specially trained in software delivery and experienced in dealing with software application problems, are present to support the NTNW application engineers during all software applications. The Succession Solution Release technical support is provided in addition to the NTNW TAS and Emergency Recovery groups.

The problem escalation procedure ensures problem resolution in a timely manner, while maintaining the highest level of service that is possible under a problem condition.

If a problem occurs during an application, follow this procedure to resolve the problem:

1 Identify the problem. Is it an E1 or E2 problem? (E1 problems result in system degradation and/or outage; E2 problems have the potential for system degradation and/or outage.)

If YES, go to step 8.

2 Contact Succession Solution Release technical support for assistance.

3 Is a recovery strategy available to resolve the problem within 10 minutes?

If NO, go to step 5.

4 Is the problem resolved within 10 minutes?

If YES, go to step 9.

5 Contact the next level of support for assistance.

6 Is the problem resolved within 10 more minutes?

If YES, go to step 9.

7 Escalate the problem to the Nortel Networks duty manager and Succession Solution Release Manager for further escalation. For all E1 conditions lasting more than 10 minutes, the Succession Solution Release manager notifies the Succession Solution Release production manager, Succession Solution Release operations manager, Succession Solution Release support manager, NTNW regional contact, and Director of Software Operations, for resolution and assistance from additional resources.

Go to step 10.

8 Escalate the E1/E2 problem immediately to Succession Solution Release technical support, and in addition, contact the Nortel Networks Emergency Recovery group.

Emergency Recovery directs the problem resolution strategy, with the assistance of Succession Solution Release technical support personnel. The Emergency Recovery personnel and operating company site personnel generate a customer service report (CSR) on the problem. The Succession Solution Release operations manager is also notified of the problem.

Emergency Recovery personnel, Succession Solution Release technical support, and operating company site personnel work together to resolve the problem.

Go to step 10.

Note: For E1 and E2 problems, recovery action by NTNW is immediate and continuous until the service level is restored to the pre-incident operation.

9 The problem is resolved. The steps taken to correct the problem are documented and all involved parties, operating company and NTNW personnel are notified that problem is resolved.

10 End of procedure.

Tasks and timings

Planning and scheduling

The following list provides a task breakdown and estimated times for planning and scheduling an upgrade:

- Obtain network configuration and agree timings with software fulfilment
  - 5 days
- Resource assigned (SCS)
  - 3 days
- Perform site readiness checks
  - 2 days
- Identify gating hardware
  - 5 days
- Order / install gating hardware
  - time variable depending on availability
- Order / install third-party gating hardware
  - time variable depending on availability
- Request software (CVoIP, Data, Enterprise Solution)
  - 5 days

Upgrade tasks and timings

For details of the upgrade tasks and timings for individual network components, refer to *IP Solutions Upgrades*, NN10344-450 and *ATM Solutions Upgrades*, NN10261-450. These documents contain upgrade order tables with task summaries and estimated upgrade times for all the network components.

Customer acceptance tests

The following list provides a task breakdown and estimated time for running the customer acceptance tests:

- Run customer acceptance test suite
  - 8 days

Appendix A: Related documents

This document is part of a suite of documents that specifically address Nortel Networks software delivery. The following table lists additional documents that provide reference information about the software delivery process. The first two documents, *IP Solutions Upgrades* and *ATM Solutions Upgrades*, contain upgrade order tables with estimated upgrade times for all the network components.

Title	Number
IP Solutions Upgrades	NN10344-450 (2 volumes)
ATM Solutions Upgrades	NN10261-450 (2 volumes)
Upgrading the Call Agent	NN10065-461
Upgrading CICM	NN10230-461
Upgrading the CS 2000 Core Manager	NN10060-461
Upgrading the Communication Server 2000	NN10061-461
Upgrading the DPT SPM ATM	NN10058-461
Upgrading the Gateway Controller	NN10196-461
Upgrading the IW SPM-IP	NN10056-461
Upgrading the Media Server 2010	NN10335-461
Upgrading the MG 4000	NN10054-461
Upgrading the MG 9000	NN10048-461
Upgrading Passport 8000	NN10235-461
Passport 15000 in Succession Networks Upgrade Guide (PT-AAL1/UA-AAL1)	NN10070-461
Upgrading Passport 15000 in Succession Networks (UA-IP)	NN10419-461
Global Software Delivery One Night Process Procedures Guide	297-8991-303

Title	Number
ISN07 Peripheral Module Software Release Document	297-9051-599
SN07 DMS Peripheral Module Software Release Document	297-2663-599
Preside MDM in Succession Networks Upgrade Guide (PVG)	NN10366-461
Preside MDM in Succession Networks Upgrade Guide (PT-AAL1/UA-AAL1)	NN10185-461
Upgrading the RTP Media Portal	NN10367-111
Upgrading the Shelf Controller	NN10067-461
Upgrading the STORM	NN10066-461
Upgrading the Universal Audio Server	NN10047-461
Upgrading the USP	NN10045-461
USP-Compact Upgrades	NN10046-461

Appendix B: Terms

AMA
Automatic Message Accounting

APS
Audio Provisioning Server

ATM
asynchronous transfer mode

CAMA
Centralized Automatic Message Accounting

CC
central control

CMTS
cable modem termination system

CS 2000
Communication Server 2000

CSR
Customer Service Report

CVoIP
carrier voice over IP

DCE
distributed computing environment

DIRP
device-independent recording package

DMS
Digital Multiplex Switch

DPP
distributed processing peripheral

DPT
dynamic packet trunk

DS
data schema

ENET
enhanced network

ETAS
Emergency Technical Assistance Service

FCAPS
fault, configuration, accounting, performance, and security

GWC
gateway controller

INB
installation busy

IOP
input/output processoer

IP
internet protocol

IPML
inter-peripheral message link

ISD
integrated solution device

IW SPM
interworking SPM

JFDB
job feature database

LAMA
Local Automatic Message Accounting

LPP
link peripheral processor

MANB
manual busy

MAP
maintenance and administration position

MS
message switch

MTA
multimedia terminal adapter

NCL
non-CM load

NOC
Network Operations Center

NTNW
Nortel Networks

NTP
Nortel Networks Publication

OAM&P
Operations, Administration, Maintenance, and Provisioning

OC
operator centralization

OEM
outside equipment manufacturer

OFFL
off-line

ONP
one-night process

PCL
product computing-module load

PM
peripheral module

Preside MDM
Preside Multiservice Data Manager

PS
[?]

PTM
Packet Telephony Manager
(now known as CS2000 GWC Manager)

PVG
packet voice gateway

RFQ
Request for Quote

RFS
Request for Schedule

RTS
return to service

SAM21
Services Application Module 21

SC
shelf controller

SCS
small computer system [?]

SDM
SuperNode Data Manager

SOLID
software load information database

SPM
Spectrum peripheral module

SS
Succession Solutions

SSR
[?]

ST
signaling terminal

STORM
STORage Manager

SWACT
SWitch ACTivity

SYSB
system busy

TAS
Technical Assistance Service

UAS
Universal Audio Server

USP
Universal Signaling Point

XA-Core
extended architecture core

XPM
extended peripheral module

(I)SN07 Succession Network

Software Delivery

Planning and Provisioning

Publication number: NN10500-190
Product release: (I)SN07
Document release: Standard 07.05
Security: Proprietary
Date: December 2004
Originated in Canada, the United States of America, and the United Kingdom

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