



Network Operating Software

8920 Network Trouble Patterning | Release 13.4

Installation Guide

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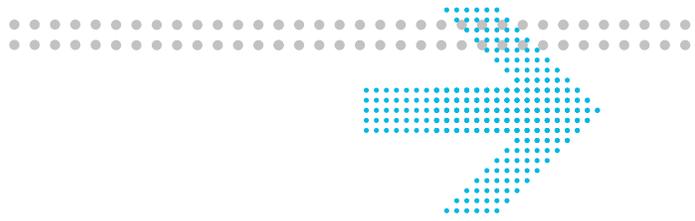
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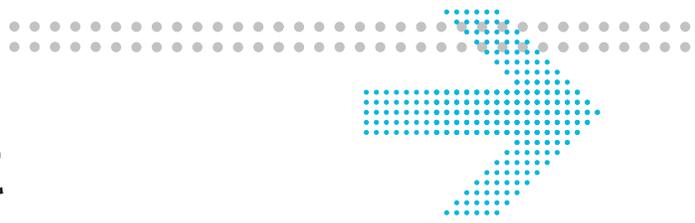
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About this document

Purpose

This document is a part of the Network Operating Software documentation set and provides the steps necessary to install an 8920 Network Trouble Patterning software (NTP) application and the required third party software (excluding the operating system and Oracle RDBMS software) on an appropriately prepared hardware platform.

Documents

List of documents

The documents are as follows:

Document	Audience	Explains how to...
<i>BB-GUI User's Guide</i> , 190-405-575R13.4	Network analysts	Use the browser-based graphical user interface (BB-GUI).
<i>System Administration Guide</i> , 190-405-573R13.4	System administrator and OA&M personnel	Administer users and databases; perform application backup and recovery; start and stop the application.
<i>Installation Guide</i> , 190-405-575R13.4	Installation personnel	Install NTP on a <i>Sun</i> SPARC machine.

About documents

- *Comments* . If you have comments or suggestions about the NTP documents, contact your NTP support organization.
- *Ordering* . Follow your company's procedures to order additional copies of documents.
- *Media* . Documents are available in PDF (Portable Document Format) on CD-ROM. Also, the BB-GUI offers all documents in PDF and HTML format. You can print from PDF.

To access PDF files, you need *Adobe* Acrobat Reader software. See the section "Install Acrobat Reader" in the chapter "Add or Delete Users" in the *System Administration Guide* .

- *Other* . See vendor documents for vendor-specific information, including *Sun* hardware, and TCP/IP.

How to comment

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1 Overview

Overview

Purpose

This document provides the steps necessary to install an 8920 Network Trouble Patterning software (NTP) application and the required third party software (excluding the operating system) on an appropriately prepared hardware platform. This procedure describes a scratch install of NTP R13.4 on a *Sun* SPARC machine. If this is an upgrade install, it is assumed the *Sun* SPARC machine is running NTP R12.2.3 or R13.3 and is being updated to NTP R13.4.

This document contains the full procedure necessary for upgrade (Generic X to Generic Y) installations. It is the second of two major divisions of effort that will be necessary to fully update the NTP application. This includes the *Sun* hosts only, not client machines.

Before you begin

Be sure to review this entire guide and the information included in the Release Notes (available in the Documentation CD that accompanies the product) before proceeding to install the NTP product.

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About This Document

Installation of NTP

This installation procedure covers pre-installation through post-installation activities to the point of completion and full user functionality. Those tasks are:

- Miscellaneous pre-installation tasks
- Installation of any needed third party software and the NTP host application
- Miscellaneous post-installation tasks.

You should review this document prior to doing an installation to be sure you have all the necessary information and related documents on hand.

Scratch Installation

For scratch installation, the first division of effort is the installation on this hardware of the appropriate *Unix* operating system, appropriate *Unix* patches, and any required applications from the hardware vendor(s) in a configuration acceptable to the NTP application, which will include creating the large file system on which the NTP application will be installed. This effort is typically performed by Alcatel-Lucent personnel.

Client Software

The installation of NTP client software is documented in the *System Administration Guide*. Preparation of any client hardware is assumed to be unnecessary, as it is expected that this hardware has already been installed with an appropriate operating system by the customer or customer's vendor.

Requirements and Assumptions

Preparation

This document makes use of many system administration commands and tools, which may be specific to the OS that the product is being loaded on. It is assumed that the person installing the NTP application will be familiar with these tools as this document does not provide explicit steps for some of the tasks that use these tools. In addition, there may be more than one procedure available to accomplish the same task. When applicable, one possible sequence of steps will be given.

If this is a scratch installation, it is assumed that the hardware has already been prepared.

If this is an upgrade, this procedure requires that the machine already be loaded in its entirety (i.e., the operating system and the host application). Procedures to save, migrate, and reinstall pertinent system information (i.e., reference data, user information and files, etc.) are provided as needed.

This procedure only describes the installation of the application software. No provision is made to preserve user modifications, although the installer and/or system administrator is/are encouraged to make a backup before proceeding.

Customer Support

Obtaining support for NTP

You can obtain customer support for the NTP product in several ways:

- Call 1-866-582-3688 and select prompt 1.
- If you have registered with the Customer or BusinessPartner Center (i.e., you have a CARES login), you can create a request for a priority 3 or 4 AR online via the Customer Assistance Request Entry System (CARES) web site at <https://cares.support.lucent.com>.
- Access the Alcatel - Lucent Customer Support web site at <http://www.lucent.com/support/> to register for online customer support.



2 Pre-Installation

Overview

Purpose

There are several tasks that should be completed before installation begins to assure that all necessary information is present and accessible and that the machine is appropriately prepared. If this is an upgrade, it will also serve as a form of a backup to assure that no information is lost in case there is an installation script failure.

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Miscellaneous Tasks

Verify licenses and media

Before the installation begins, verify that you have the necessary licenses for the *Solaris 10*, its components, and all applicable third party software. Version requirements are documented in detail in the NTP Release Notes.

Verify state of hardware and NTP application

Verify that the machine has all the necessary file systems, including */lucent/ntp*, mounted and mirrored (if desired).

If this is an upgrade:

- verify that the machine to be loaded with NTP R13.4 is currently running NTP 12.2.3. or 13.3.
- verify that the NTP software application is (or has been) running without significant errors or issues. If problems exist, they should be addressed before beginning the installation unless the upgrade is expected to resolve such problems.

Verify *Solaris* OS patches

Ensure that any *Solaris* patches are properly installed and configured.

- can be accomplished using the *showrev* or *pkginfo* tool.

Refer to the Release Notes (the Documentation CD that accompanies the product) for information about supported OS versions and required patches.

Refer to *Sun* installation documents for any further details regarding OS patches.

Verify that Oracle RDBMS 10.2.0.3 has been installed

Before an installation begins, verify that Oracle RDBMS 10.2.0.3 has been installed on Sun SPARC machine. The Oracle RDBMS software is not delivered within the product.

Verify that current backup exists for the host

Before an upgrade installation begins, verify that a current set of backups exist for the NTP application host.

Obtain list of features to be enabled

Obtain a list of the features to be enabled for the NTP 13.4 release. For an upgrade, you need to know the new set of options in NTP R13.4. Only Alcatel-Lucent personnel may enable optional features. If you want to enable new optional features, contact Alcatel-Lucent support.

The new options in NTP R13.4. are shown in the Release Notes (found on the Documentation CD that accompanies the product).

Verify synchronization of reference data

If the Reference Data Synchronization (RDS) feature is configured and active on this machine, ensure this database and the remote database are synchronized through the previous day. RDS host-to-host communication should be blocked during the period of time that the two machines will have different database schemas (i.e., different software releases) because RDS cannot work when the schemas don't match.

Save customer-specific information

The following steps are not necessary if a recent backup exists for the */lucent/ntp* and */opt* directories. However, if you feel the need, save customer-modified scripts, information, profiles, and etc.

- Save copies of any customer specific scripts, commands, or information that has been placed under */lucent/ntp*.
- Save copies of any ntp login specific commands or scripts under */lucent/ntp/snas*.

Preserve customized FDC help texts before NTP installation

If this is an upgrade of the machine running NTP R12.2.3 all customized FDC help texts must be preserved. **Reference:** The upgrade will overwrite all customized FDC help texts. Use `sui find` command to backup all customized FDC help texts, *see System Administration Guide, Appendix B: SUI Commands, sui find Command*. After an upgrade all customized help texts must be inserted to database again, *see System Administration Guide, Customizes, Customize Help Texts*.

Preserve changes in alarmnotify

There is a script in `$APPLETC` called `alarmnotify` that works as a daemon process checking the status of the `notify` and `alert_notify` tables once every five minutes and generates any alert notifications since the previous run. The script contains user-modifiable variables.

Important! If you have modified the `alarmnotify` script, you should save a copy in `$USERDIR` to preserve your changes.

After the upgrade is done, you must manually modify the `$APPLETC/alarmnotify` script which has been overwritten during the upgrade. See miscellaneous tasks in the Post-Installation Tasks chapter for more details.

Make a backup

Purpose

Prior to an upgrade, make a backup using the information provided in the *System Administration Guide*, Appendix C: Application Backup and Recovery.

Required changes in the operating system

Before you begin

NTP requires some Operating System customizations. The following actions should be completed before installation of a product by a system administrator.

Procedure

1 Create groups and users.

Note: This step is for a scratch install only, and has to be skipped if you are upgrading the system.

The following steps should be done before installation of NTP:

1. Create a file system for the application (**recommended** `‘/lucent/ntp’`).
 2. Create an application owner (**recommended user:** `‘ntp’`, **group:** `‘ntp’`) with the login shell set to ksh, whose home directory is inside of the previously created file system (**recommended** `‘/lucent/ntp/snas/snas’`).
 3. Change the ownership of the previously created file system to the application owner.
 4. Create an Oracle user (**recommended user:** `‘oracle’`, **group:** `‘dba’`).
 5. Assign the application owner to the Oracle group.
-

2 Any previous changes made by NTP installation to `‘/etc/system’` file should be removed before upgrade. All changes made by NTP are marked with a line:

*** Added by NTP installation 08/10/06**

Just after removing entries from `/etc/system` the system should be rebooted.

3 Setting Operating systems parameters:

1. **project.max-msg-ids** – maximum number of message queues that can be created (former `msgsys:msginfo_msgmni`).
If the NTP will have more than 60 sources configured this parameter should be set to at least 200 (not less than 2x number of sources).
2. **project.max-shm-ids** – number of shared memory segments that can be created (former `shmsys:shminfo_shmmni`).
Default setting for this parameter, which is 128, in most cases is correct, but in case of large number of sources and/or users it is advised to change it up to 400.
3. **project.max-shm-memory** – Maximum size of system V shared system memory segment that can be created (former `shmsys:shminfo_shmmax`).

Default value is 1/4 of system physical memory. NTP needs at least 4GB of V shared system memory segment, therefore this value has to be changed if the machine has less than 16GB of memory.

In Solaris 10 ipcs settings are per-project (in previous releases there were only system-wide settings). In order to change limits for NTP a new project needs to be created, which will be a default project for all NTP processes.

Below is an example of setting project.max-msg-ids to 200, project.max-shm-ids to 400 and project.max-shm-memory to 4GB.

```
# projadd -U ntp -G dba -c "8920 NTP" \
-K "project.max-msg-ids=(priv,200,deny)" \
-K "project.max-shm-ids=(priv,400,deny)" \
-K "project.max-shm-memory=(priv,4GB,deny)" \
user.ntp
```

For more information see Solaris 10 documentation.

- 4 The Oracle Database software must be installed on the machine before the installation of the NTP software.

Important! The default file and directory permissions set by the standard Oracle installer only allow access to the DBA owner and to members of the DBA group. If access is needed by other UNIX users of the NTP system, the user must be allowed permission to the DBA group. Consult with your Alcatel-Lucent customer support personnel for more details. Note that this applies to UNIX users only -- users who access NTP only through the gui are not affected.

- 5 Installation of NTP is run as an unprivileged user, but needs to be able to change the ownership of a directory to oracle user. For this reason restchown should be set to 0 before installation (by default in Solaris 10 it is set to 1).

The following command will set this parameter, in current environment, to 0:

```
# echo "rstchown/W 0" | mdb -kw
```

Important! DO NOT reboot the system before installation of NTP. After the installation rstchown value can be set again to 1 or will be restored to the default value after the system reboot.

END OF STEPS

Preserve Customized Converter Files Before an Upgrade

Purpose

When the release is installed, all converter files supplied with the product are placed in **\$MODELDIR**. The product can change these files in every release, and an upgrade is not expected to save or preserve those changes.

If you are planning to upgrade your NTP system and would like to use your customized filter, fetcher, and configuration files in the future, make sure that your customized files are stored in **\$USERDIR**. Anything in **\$USERDIR** is preserved during the upgrade.

After the upgrade, if NTP does not find the customized converter files in **\$USERDIR**, it will use the files supplied with the product from **\$MODELDIR**.

Location of customized converter files

The customized files should be located:

- file-based interface converter files in the **\$USERDIR/fetchers** directory (**/lucent/ntp/snas/user/fetchers**),
- socket-based interface converter files (unfci filters) in the **\$USERDIR/filters** directory (**/lucent/ntp/snas/user/filters**).

Verify Oracle "system" login password

Purpose

Before beginning, you must obtain the *Oracle* "system" user password, because you will be prompted for this password during installation.

-
- 1 The default password for *Oracle* "system" user is **manager**. Consult with your DBA to determine the actual password.

END OF STEPS

Unbundling database before an upgrade

Purpose

NTP provides possibility of unbundling database to separate server machine. This possibility is available only for a NTP machine which will be upgraded from R13.0.

Procedure

Follow these steps to prepare server and application machines before an upgrade

- 1 Prepare two machines:
 1. HOST_A - this machine will be converted to database server. This machine has installed separated Oracle RDBMS 10.2.0 and NTP 13.0.
 2. HOST_B - application machine. This machine has only Oracle RDBMS 10.2.0 (or Oracle Client) installed.

- 2 Make sure that both machines (HOST_A and HOST_B) have set the same time zone and that the system time is synchronized on them.

- 3 Stop all **ntp** and **oracle** processes on HOST_A by executing:

```
ntpstop -B -y 0
```

- 4 Check if there are no running **ntp** and **oracle** processes.
Example:

```
ps -ef|grep ntp  
ps -ef|grep oracle
```

- 5 As a **root** user create an **ntp** user on HOST_B. The **ntp** home directory must be set to **/lucent/ntp/snas/snas** and default shell to **ksh**.
Example:

```
mkdir -p /lucent/ntp/snas  
useradd -m -d /lucent/ntp/snas/snas -s /bin/ksh ntp
```

- 6 On HOST_B machine, set recursively permissions of the NTP home directory to **ntp** user.
Example:

```
chown -R ntp:ntp /lucent/ntp/
```

- 7 Backup and remove all **crontab** entries for the **ntp** user from HOST_A (as ntp user).

Example:

```
crontab -l > crontab.ntp
crontab -r
```

- 8 Copy **/lucent/ntp/** from HOST_A to HOST_B (except **/lucent/ntp/dbf**) preserving files permissions.

Example: You can use open source rsync utility. Execute as **root** on HOST_A machine:

```
rsync -avz --delete --exclude dbf /lucent/ntp/ root@HOST_B:/lucent/ntp/
```

- 9 While file system is moved, on HOST_B edit two gatekeeper files:

```
/lucent/ntp/wgui/conf/gatekeeper.properties.NOSSL
/lucent/ntp/wgui/conf/gatekeeper.properties.SSL
```

and assign proper application host machine name to **vbroker.se.exterior.host** parameter.

- 10 Create following symlinks on HOST_B machine (in /opt, as root user):

```
ln -s /lucent/ntp/perl5 /opt/
ln -s /lucent/ntp/gcclibs /opt/
ln -s /lucent/ntp/apache /opt/
ln -s /lucent/ntp/openssl /opt/
ln -s /lucent/ntp/inprise /opt/
ln -s /lucent/ntp/openldap /opt/
```

- 11 Restore **crontab** entries, saved from HOST_A machine, on HOST_B machine.

Example:

```
crontab crontab.ntp
```

- 12 As **ntp** user start Oracle on HOST_A machine and check if Oracle is working correctly.

Start Oracle:

```
orastart
```

Example of test if Oracle is working correctly:

```
export ORACLE_HOME=/opt/oracle/10.2.0
export CONNID=system/manager
export TWO_TASK=//HOST_A/ntp
/opt/oracle/10.2.0/bin/sqlplus
select * from dual;
```

-
- 13 If you want to preserve your current sui users, on HOST_B, create the identical unix accounts that were previously created on HOST_A.
-

- 14 Mount application_dvd on HOST_B machine and start installation with *-V RESET_ORA=TRUE* parameter (as ntp). For information about upgrading the NTP software see [“Upgrading the NTP host software” \(p. 3-3\)](#).

Example:

```
/cdrom/install -v RESET_ORA=TRUE
```

END OF STEPS



3 Installation

Overview

Purpose

This chapter details the steps needed to install or update the NTP software.

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Before you begin

Gather needed materials

Gather the following before you begin:

- the NTP Host Software DVD
- a valid, mountable DVD-ROM drive
- if this is a new install, the owner id (usually company name, must be 6 or fewer characters)

Upgrading the NTP host software

Purpose

The following procedure upgrades NTP host software to release 13.4, for information about installing the NTP on a new machine see [“Scratch Install of the NTP host software” \(p. 3-7\)](#).

After the upgrade of the NTP host software is complete, you may modify any customer-specific parameters back to the values noted prior to the beginning of the installation, such as Oracle shared pool size, etc.

Procedure

Follow these steps to upgrade the NTP host software:

- 1 Make sure that the NTP 12.2.3 or 13.3 is installed on the machine.
- 2 Log in as ntp
- 3 Mount NTP R13.4 install DVD on any directory on the machine
- 4 Execute install script from mounted NTP R13.4 install DVD
If this is an upgrade of machine running NTP 12.2.3
`<mounted_directory>/install -v RESET_ORA=TRUE`
If this is an upgrade of machine running NTP R13.3
`<mounted_directory>/install`
- 5 Enter the ORACLE_HOME (default /opt/oracle/10.2.0)
- 6 Enter the ORACLE_SID (default ntp)
- 7 Enter the DBA_OWNER (default oracle)
- 8 Enter the DBA_GROUP (default dba)
- 9 Enter the ORACLE_HOST (default host machine)

-
- 10 If in the last step you provided the Oracle host machine different than the default one, enter the ORACLE_PORT (default 1521). For more information see [“Unbundling database before an upgrade”](#) (p. 2-9)
-
- 11 Enter the TNS_ADMIN (default /opt/oracient/network/admin)
-
- 12 Enter the passwd for the oracle system user, to obtain passwd see [“Verify Oracle "system" login password”](#) (p. 2-8)
-
- 13 If you provided the Oracle host machine different than the default one, and got on the screen:
Please start the Oracle RDBMS and hit <return> when ready:
 start the Oracle RDBMS on Oracle host machine using:
orastart
 and hit <enter>
-
- 14 When update will finish log in again to reset your environment before running ntpstart
- END OF STEPS**
-

Prompts and Output

For an upgrade you will see prompts and output similar to the following:

```
shark8.ntp% /mnt/r13.4_integ/install -V RESET_ORA=TRUE
Enter the ORACLE_HOME (/opt/oracle/10.2.0):
Enter the ORACLE_SID (ntp):
Enter the DBA_OWNER (oracle):
Enter the DBA_GROUP (dba):
Enter the ORACLE_HOST (shark8):
Enter the TNS_ADMIN (/opt/oracle/10.2.0/network/admin):
Shutting down application

Removing old software
Installing new NTPPROD software
Starting oracle RDBMS database
Enter the passwd for the oracle system user: manager
Oracle RDBMS successfully started 12/27/11 11:32:48

Beginning schema update
```

```
Database update completed
Checking prerequisites for bbgui
Removing openldap 2.3.19
Installing openldap 2.4.23
openldap 2.4.23 successfully installed
Removing perl5 5.8.8
Installing perl5 5.12.2
perl5 5.12.2 successfully installed
Removing apache 2.0.58.1
Installing apache 2.2.17
apache 2.2.17 successfully installed
Removing openssl 0.9.7i
Installing openssl 1.0.0a
openssl 1.0.0a successfully installed
inprise 7.0 successfully installed
Removing gcclibs 1.0
Installing gcclibs 3.4.6
gcclibs 3.4.6 successfully installed
Installing ntp_python 2.7
ntp_python 2.7 successfully installed
Please execute /lucent/ntp/snas/install/bin/root_actions as the root
user
and press enter when completed:
Configuring bbgui software
Executing feature initialization scripts
Migrating chronological model tables
Creating chronological tables
Table analysis completed successfully
1 row updated.
Synchronizing LDAP user entries
1 row created.
1 row created.
Waiting for background processes to complete
Installation of 13.4.139 successfully completed at 12/27/11 14:32:09

Log in again to reset your environment before running ntpstart
```

Installation Action Logging

The installation process will log all steps and actions into log files that are visible to the user. All log files will reside in the install directory under the log subdirectory. Every log file will have a stamp appended to the file name of the form `_XX.YY.ZZ_MM-DD-YYYY` where `XX.YY.ZZ` is the version of the application being installed and `MM-DD-YYYY` is the date installation begins. There will be one log file for each of the main installation process:

- install
- start_db

-
- ntp_preinstall
 - db_update
 - set_options
 - install_bbgui
 - enable_features
 - migrate_tables
 - analyze
 - ntp_init

Scratch Install of the NTP host software

Purpose

The following procedure installs NTP R13.4 host software on a new machine, for information about upgrading the NTP software see [“Upgrading the NTP host software” \(p. 3-3\)](#).

After the installation of the NTP host software is complete, you may modify any customer-specific parameters back to the values noted prior to the beginning of the installation, such as *Oracle* shared pool size, etc.

Procedure

-
- 1 Log in as ntp.

 - 2 Execute “install” script from mounted, by administrator, NTP R13.4 application DVD.

 - 3 Enter the application home directory (default is ‘/lucent/ntp/snas/’).

 - 4 Enter the application owner name (default is ‘ntp’).

 - 5 Enter the application group name (default is ‘ntp’).

 - 6 Enter the Oracle home directory (default is ‘/opt/oracle/10.2.0’).

 - 7 Enter the Oracle system ID (default is ‘ntp’).

 - 8 Enter the oracle owner name (default is ‘oracle’).

 - 9 Enter the oracle group name (default is ‘dba’).

 - 10 Enter the Oracle host machine (default <host_machine>).

 - 11 Enter TNS_ADMIN (default is ‘/opt/oracle/10.2.0/network/admin’).

-
-
- 12 Answer the question:
Should the ntp application manage oracle: (TRUE) :
 using TRUE if yes and FALSE if no.
-
- 13 Enter the company name. It must be 6 or fewer characters.
-
- 14 Enter the passwd for the oracle system user, to obtain passwd see [“Verify Oracle "system" login password”](#) (p. 2-8).
-
- 15 Answer the question:
Do you want to create a new ntp database (y/n) :
Attention: This procedure will destroy any existing ntp Oracle database and create a new one. Any backups needed to recover existing data must already be completed.
-
- 16 You will be prompted to execute script. Log in on different console window as the oracle user and execute:
`/lucent/ntp/snas/user/db_config/mk_dbms`
-
- 17 Press enter in the original (ntp) window when the script above will be completed.
-
- 18 You will be prompted to execute script. Log in on different console window as the root user and execute:
`/lucent/ntp/snas/install/bin/root_actions`
 and press enter in the original (ntp) window when completed.
-
- 19 When installation is finished log in again to reset your environment before running ntpstart.
- `END OF STEPS`
-

Prompts and Output

ntp user console

```
$ /mnt/r13.4_integ/install
```

```
Enter the application home (/lucent/ntp/snas):
Enter the APPLOWNER (ntp):
Enter the APPLGROUP (ntp):
Enter the ORACLE_HOME (/opt/oracle/10.2.0):
Enter the ORACLE_SID (ntp):
Enter the DBA_OWNER (oracle):
Enter the DBA_GROUP (dba):
Enter the ORACLE_HOST (sft2001):
Enter the TNS_ADMIN (/opt/oracle/10.2.0/network/admin):
Should the ntp application manage oracle: (TRUE):
Enter the company name. It must be 6 or fewer characters: svstst
Installing new NTPPROD software
Starting oracle RDBMS database
Enter the passwd for the oracle system user: manager
Initializing Oracle RDBMS (ntp instance)
WARNING: this procedure will destroy any existing ntp
         Oracle database and create a new one. Any backups
         needed to recover existing data must already be
         completed

Do you want to create a new ntp database (y/n): y
Please execute /lucent/ntp/snas/user/db_config/mk_dbms as the oracle
user
and press enter when completed:
Adding new tablespaces
Adding ntp user
Adding db$ user
Adding netadmin user
Adding archive$ user
Oracle RDBMS successfully started 12/14/11 07:33:08

Beginning schema update
Database update completed
Checking prerequisites for bbgui
Installing openldap 2.4.23
openldap 2.4.23 successfully installed
Installing perl5 5.12.2
perl5 5.12.2 successfully installed
Installing apache 2.2.17
apache 2.2.17 successfully installed
Installing openssl 1.0.0a
openssl 1.0.0a successfully installed
Installing inprise 7.0
inprise 7.0 successfully installed
Installing gcclibs 3.4.6
gcclibs 3.4.6 successfully installed
Installing ntp_python 2.7
ntp_python 2.7 successfully installed
```

```

Please execute /lucent/ntp/snas/install/bin/root_actions as the root
user
and press enter when completed:
Configuring bbgui software
Executing feature initialization scripts
Migrating chronological model tables
Creating chronological tables
Waiting for background processes to complete
Table analysis completed successfully
Installation of 13.4.141 successfully completed at 12/14/11 09:12:27

```

Log in again to reset your environment before running ntpstart

oracle user console:

```

$ /lucent/ntp/snas/user/db_config/mk_dbms
Initializing Oracle RDBMS (ntp instance)

SQL*Plus: Release 10.2.0.3.0 - Production on Wen Dec 14 07:11:12
2011

Copyright (c) 1982, 2006, Oracle. All Rights Reserved.

Connected to an idle instance.

SQL> ORACLE instance shut down.
SQL> ORACLE instance started.

Total System Global Area 1006632960 bytes
Fixed Size 2127344 bytes
Variable Size 215910928 bytes
Database Buffers 786432000 bytes
Redo Buffers 2162688 bytes
SQL> 2 3 4 5 6 7 8 9 10 11 12 13 14
Database created.

SQL> SQL> % Database created

SQL> % Installing Oracle data dictionary views

SQL> SQL> SQL> SQL> executing /opt/oracle/10.2.0/rdbms/admin/
catalog.sql

SQL> SQL> executing /opt/oracle/10.2.0/rdbms/admin/catproc.sql

SQL> SQL> executing /opt/oracle/10.2.0/rdbms/admin/utlxplan.sql

SQL> SQL> executing /lucent/ntp/oracle/rdbms/admin/utltkprf.sql

SQL> SQL>

```

```
Grant succeeded.

SQL>
Grant succeeded.

SQL> executing /opt/oracle/10.2.0/rdbms/admin/catdbsyn.sql

SQL> SQL> SQL> SQL> SQL> % Adding a spare rollback segment....

SQL> 2
Rollback segment created.

SQL> Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> ORACLE instance started.

Total System Global Area 1006632960 bytes
Fixed Size                2127344 bytes
Variable Size             215910928 bytes
Database Buffers         786432000 bytes
Redo Buffers              2162688 bytes
Database mounted.
Database opened.
SQL> 2
Tablespace created.

SQL> Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> Disconnected from Oracle Database 10g Enterprise Edition
       Release 10.2.0.3.0 - 64bit Production
       With the Partitioning, OLAP and Data Mining options
       Restarting database with new rollbacks...

SQL*Plus: Release 10.2.0.3.0 - Production on Wen Dec 14 07:21:12
       2011

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Connected to an idle instance.

SQL> ORACLE instance started.

Total System Global Area 1010827264 bytes
Fixed Size                2127344 bytes
Variable Size             217942544 bytes
Database Buffers         786432000 bytes
Redo Buffers              4325376 bytes
```

```
Database mounted.
Database opened.
SQL> Disconnected from Oracle Database 10g Enterprise Edition
      Release 10.2.0.3.0 - 64bit Production
      With the Partitioning, OLAP and Data Mining options

SQL*Plus: Release 10.2.0.3.0 - Production on Wen Dec 14 07:24:12
      2011

Copyright (c) 1982, 2006, Oracle. All Rights Reserved.

Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.3.0 - 64bit
      Production
      With the Partitioning, OLAP and Data Mining options

SQL> executing /opt/oracle/10.2.0/sqlplus/admin/pupbld.sql

SQL> DROP SYNONYM PRODUCT_USER_PROFILE
      *
ERROR at line 1:
ORA-01434: private synonym to be dropped does not exist

      DATE_VALUE FROM PRODUCT_USER_PROFILE
      *
ERROR at line 3:
ORA-00942: table or view does not exist

DROP TABLE PRODUCT_USER_PROFILE
      *
ERROR at line 1:
ORA-00942: table or view does not exist

ALTER TABLE SQLPLUS_PRODUCT_PROFILE ADD (LONG_VALUE LONG)
      *
ERROR at line 1:
ORA-00942: table or view does not exist

Table created.

DROP TABLE PRODUCT_PROFILE
      *
ERROR at line 1:
ORA-00942: table or view does not exist

DROP VIEW PRODUCT_PRIVS
      *
ERROR at line 1:
```

```
ORA-00942: table or view does not exist

View created.

Grant succeeded.

DROP PUBLIC SYNONYM PRODUCT_PROFILE
      *
ERROR at line 1:
ORA-01432: public synonym to be dropped does not exist

Synonym created.

DROP SYNONYM PRODUCT_USER_PROFILE
      *
ERROR at line 1:
ORA-01434: private synonym to be dropped does not exist

Synonym created.

DROP PUBLIC SYNONYM PRODUCT_USER_PROFILE
      *
ERROR at line 1:
ORA-01432: public synonym to be dropped does not exist

Synonym created.

SQL> Disconnected from Oracle Database 10g Enterprise Edition
      Release 10.2.0.3.0 - 64bit Production
      With the Partitioning, OLAP and Data Mining options
```

root user console

```
root@shark8:/# /lucent/ntp/snas/install/bin/root_actions
root@shark8:/#
```

Installation Action Logging

The installation process will log all steps and actions into log files that are visible to the user. All log files will reside in the install directory under the log subdirectory. Every log file will have a stamp appended to the file name of the form `_XX.YY.ZZ_MM-DD-YYYY` where `XX.YY.ZZ` is the version of the application being installed and `MM-DD-YYYY` is the date installation begins. There will be one log file for each of the main installation process:

- install
- start_db
- ntp_preinstall
- db_update

- set_options
- install_bbgui
- enable_features
- migrate_tables
- analyze
- ntp_init

Examine log files

Purpose

After the NTP host/server application components have been loaded, look for any errors that may have occurred during installation.

Important! Note that after a scratch installation is completed until the time that CFIM data is being stored in the database, it is possible that the users will see error messages in the master log from various objmgr processes indicating "Bad row: length=1 null columns: T". Although these messages might look significant, they can be ignored.

Procedure

Follow these steps to examine log files:

- 1 Log out.
.....
- 2 Log in. (This will reset the environment correctly).
.....
- 3 Check the log files in *\$LOGDATA*, *\$WORKDIR/run*, and *\$ORALOGS* files thoroughly to see whether any unexpected errors have occurred.

END OF STEPS
.....

Feature Optioning

Purpose

The NTP host installation automatically enables all base features for the given application type. Optional features must now be enabled. This is done manually by Alcatel-Lucent personnel. Some of these features must be purchased as a features (e.g., Sonus Softswitch Support). Other optional features do not need to be purchased individually, but may be elected or rejected based on each customer's particular needs (e.g., TN Grouping features).

Only Alcatel-Lucent personnel may enable and disable features.

The steps below describe how to enable any optional features:

- Determine which features need to be enabled at this stage, based on the currently disabled features shown in `listopt` output (command syntax is simply `listopt`) and the features the customer has elected, either by purchasing or otherwise electing to enable them.
- Report any discrepancies to Alcatel-Lucent personnel so that they may update the features as necessary.
- Repeat the `listopt` command and verify that features are enabled/disabled correctly.



4 Post-Installation Tasks

Overview

Purpose

This section defines any manual configurations, work-arounds, etc., that must be installed after the application installation is complete. This section will refer only to work-arounds that are related to functionality of the NTP software on the host machine.

Contents

Installing software patches	4-2
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NTP Hosts Using Three or More-Port NIC cards (QFE LAN Cards)	4-5
Persistent FIN_WAIT_2 state work-around	4-6
Miscellaneous tasks	4-7

Installing software patches

Software Patches

If you were given a NTP CD labelled "Software Patches" along with the other application CDs, there may be patch files to install.

Details on how to install patch files may be found in the Patch Notes.

Consult with Alcatel-Lucent personnel to determine which patch bundles, if any, are applicable to the user's application.

Oracle redo log size work-around

Purpose

On a system with data rates over 100 CIMs/CDRs per second, the current *Oracle* redo log size may be too small. If you anticipate normal CIM/CDR rates over 100 per second on the system being installed, you should consider dropping and recreating larger redo logs.

The log size should be 100 MB for every 100 CIMs/CDRs per second.

Example: for 200 CIMs/CDRs per second each redo log should be 200 MB, for 400 CIMs/CDRs per second use 400 MB, and so on. Replace *<size>* in Step 5 of the procedure below with this value.

Procedure

The following steps describe how to make this change if it is needed. It may be possible to do this while *Oracle* and the application are running, but you may have to shut both down at some point. However, *Oracle* must be running to execute the steps below, so begin with at least *Oracle* running.

1 Log in as **\$APPLOWNER**

2 Enter
sqlplus "db\$/db as sysdba"

3 Enter
alter database drop logfile group 1;

4 Enter
**alter database add logfile group 1 ('/lucent/ntp/dbf/rredolog.1') size
 <size>M reuse;**

5 Repeat Steps 4 and 5 for log file groups 2-4, replacing the "1" in the group number and in the file name with "2", "3", and "4". For each file, do the drop and add commands in a pair.

At some point, you will attempt to drop the active log file. When this happens, you can force *Oracle* to switch log files by doing the following:

alter system switch logfile;

Then you can drop and recreate that log file. If you are still prevented from dropping that logfile:

- Enter **exit sqlplus**
- Stop the application and *Oracle* with **ntpstop -B**
- Restart them with **ntpstart**
- Execute Steps 2 through 5 for the now previously-active logfile.

6 Once you have dropped and recreated all 4 log files, exit sqlplus:

exit

7 No restart of *Oracle* or the application is required for these changes to take effect. You can verify the changes by noting the size of the log files in the output of the following command:

```
ls -l /lucent/ntp/dbf/rredolog*
```

END OF STEPS

NTP Hosts Using Three or More-Port NIC cards (QFE LAN Cards)

Purpose

Important! Users must specify this card/IP address when connecting to the NTP server.

If the NTP host machine uses a QFE Network Interface where three or more ports are defined, two modifications must be made to the VISIBROKER CORBA software configuration on the NTP host to allow the BB-GUI to function properly.

The following changes force all traffic to use one of the defined ports (e.g., `port qfe0`).

1 In the file:

`/lucent/ntp/snas/appl/etc/run_osagent`

Add the following option to the two lines containing calls to

`$vbcbin/osagent: -a <IP address of desired port>`

The original lines (which appear twice in the script) are as follows:

```
/bin/nohup $vbcbin/osagent > $VBC_HOME/startlog 2>&1 &
```

The modified lines should appear as follows:

```
/bin/nohup $vbcbin/osagent -a <IP address of desired port> $VBC_HOME/  
startlog 2>&1 &
```

2 In the files:

- `/lucent/ntp/wgui/conf/gatekeeper.properties.SSL`

- `/lucent/ntp/wgui/conf/gatekeeper.properties.NOSSL`

add the following line after the other `vbroker.se.exterior` entries:

`vbroker.se.exterior.host=<IP address of desired port>`

END OF STEPS

Persistent FIN_WAIT_2 state work-around

Purpose

If the FIN_WAIT_2 state does not have the timeout parameter set to a number other than the default of 0 (i.e., do not time out), the system will report a high number of connections in the FIN_WAIT_2 state.

Using the *UNIX* command **ndd**, the timeout value should be set to 30,000 milliseconds (equal to 30 seconds). This allows the port to close if it is not active.

Procedure

Use the following procedure to define a timeout value in the system for the FIN_WAIT_2 state.

-
- 1 Log in to the NTP host as **root**

 - 2 Check the existing timeout value:
 - **ndd -get /dev/tcp tcp_fin_wait_2_flush_interval**

 - 3 Enter the following to reset the timeout value:
 - **ndd -set /dev/tcp tcp_fin_wait_2_flush_interval 30000**

 - 4 If desired, repeat Step 1 to verify that the timeout value has been changed.

END OF STEPS

Miscellaneous tasks

Note Customer-Specific Parameters

If this is an upgrade, before starting the installation, take note of any customer-specific parameters that may have been modified from default values, such as *Oracle* shared-pool size, etc. They may need to be restored after installation completes.

Modify NTP user profiles

If this is an upgrade, after the installation, every NTP user should log in and execute following script:

```
<application home directory>/appl/bin/mod_userprof
```

When the script above is finished user must log in again to reset the environment.

Verify \$APPLOWNER login and create user logins

If this was a scratch installation, use `add_ntpuser` and/or the BBGUI to create logins for all required users.

Provide root and ntp login information to system administrators upon installation completion.

Important! Be very careful to not overwrite the root, ntp and oracle logins created during the installation.

Chronological Table Parameters

The `chronadmin` table contains a set of tunable parameters for each chronological table. The retention values define the maximum number of days of data to retain for each of the chronological table types. After the installation is complete, the chronological table parameters will contain default values for any new chronological tables in this release. These values may need to be adjusted.

The `chroni` tool may be used to view the contents of the table. Given appropriate parameters, this command is also used to modify entries in the table. This tool should only be used by Alcatel-Lucent personnel. The actual values you use depend on a number of factors, such as the expected CIM/CDR rate, available disk space, and customer preference for chronological data retention.

If the installation terminates abnormally at some point (whether by your deleting out or by some installation script failure), the chronological table parameters may contain default values.

Important! Significant data loss may occur unless the values are corrected prior to restarting the application.

If you suspect this may have occurred, check the values in the `chronadmin` table at this point, using another window or terminal. If the values are not as expected, you can change the values now, prior to continuing with the schema updates.

Reference Data

If this was a scratch installation, you will need to load reference tables specific to this site.

If this was an upgrade, verify that the reference tables have been preserved or reinstalled upon installation completion. Manually reinsert any entries that were erroneously lost during installation using the copies saved prior to installation.

Unblock Pop-up windows for *Firefox* browser

In order for certain BB-GUI pop-up windows to display correctly using the *Firefox* browser, pop-up windows must be unblocked for the NTP host. In the *Firefox* browser window:

1. Select Tools > Options > Web Features.
2. For the Block Pop-up Windows entry, click the Allowed Sites button.
3. Add the URL for the NTP host(s), (e.g., `http://hpn42.lucent.com:4618`).

Disabling pop-up blocker warnings for *Internet Explorer* browser

If pop-up blocker warning, in the Internet Explorer browser, will be enabled Pattern Painter window may appear along with “blocked content” message. To avoid such a situation, you need to disable a pop-up blocker warning.

To disable pop-up blocker warnings, do the following steps:

1. Open Internet Explorer
2. On the **Tools** menu, click Internet Options
3. On the **Advanced** tab, under **Security**, check the following option: **"Allow active content to run in files on My Computer"**

Site-Specific Customizations

If Alcatel-Lucent Customer Support and the customer have agreed upon any site-specific customizations, proceed with them now. This could include database entries, cron jobs, or other things agreed upon by Alcatel-Lucent and the customer.

Manual re-installation of the following items may be necessary after an upgrade or retrofit:

- Any non-standard changes or additions to the `/usr/spool/cron/crontabs` files
- Customer specific scripts, commands, or information that previously been placed under `$$NASDIR`, `$$WORKDIR`, `$$APPLDIR`, `$$USERDIR`, or `$$ORACLE_HOME`
- Administrative login specific scripts or commands that existed under `$$NASDIR/snas`

Configure Reference Data Synchronization (if newly purchased)

If the customer has purchased the Reference Data Synchronization feature for this release, you may configure it now (or at some later point, if desired). As mentioned earlier in this document, we do not recommend that the REFSYNCH feature be enabled until the Alcatel-Lucent installer is ready to complete the feature configuration. Enabling the feature before the configuration is complete will result in a variety of errors and warning messages being sent to the console, the master log and the bdr log.

Important! Do not allow full host-to-host communication while one host in a REFSYNCH setup is on a different generic than the other host. The schema is modified from one general release to another. Allowing full transfer of reference data will result in a state where each host tries to use reference tables where there are unrecognized fields.

For complete installation instructions for the Reference Data Synchronization feature, refer to Installation Procedure For Reference Data Synchronization.

Clear Java Cache in Java Control Panel

After installation, clear your Java cache to make sure that your browser uses the most up-to-date version of the NTP JAR files. Go to:

1. Start -> Control Panel -> Java Control Panel
2. In the Temporary Internet Files section click the View button (Java Cache Viewer appears)
3. Select the files and click the remove button.

Recover custom FDC help text after NTP update

Reference: If the NTP software is reinstalled on your system and you want to preserve any customized FDC help text you previously created, see *System Administration Guide, Customize, Manage FDC Help Text*.

Recover changes in alarmnotify script

There is a script in `$APPLETC` called `alarmnotify` that works as a daemon process checking the status of the `notify` and `alert_notify` tables once every five minutes and generates any alert notifications since the previous run. The script contains user-modifiable variables.

Important! If you copied the most recent \$APPLETC/alarmnotify file to \$USERDIR before the upgrade, you need to:

- after the upgrade is done and before the system is started, manually check the file provided in \$APPLETC and the one you previously saved in \$USERDIR and make appropriate changes,
- save a new copy in \$USERDIR.



5 Completing Installation

Overview

Purpose

This section details steps to complete the installation of the NTP software on the host machine.

Contents

Stop And Restart The Application	5-2
Restore reference data synchronization	5-3
Verifying major components	5-4
How to read and interpret installation logs	5-5
Make a full file system backup	5-7

Stop And Restart The Application

Purpose

At this point, *Oracle* and the application software may be stopped and restarted.

Procedure

Use this procedure to stop and start *Oracle* and the application software.

1 Log in as **ntp**

2 Enter
ntpstop -B -y 0

3 Enter
ntpstart

4 Enter
tail -f \$WORKDIR/run/INITLOG

Many messages will print as the associated processes are brought up, ending with the following:

```
+ Autonomous processes started
EXECUTION ENVIRONMENT RUNNING
11/03 17:46:26 Going to run level 5
```

5 View the most current master log in the \$LOGDATA directory to assure that no abnormal errors are encountered and that the source connections are brought online.

6 Once connections to external data sources have taken place, the BBGUI and SUI may be used to verify that:

- CIMs are being processed,
- CFIMs are being generated and stored
- alerts are being generated as expected.

E N D O F S T E P S

Restore reference data synchronization

Purpose

The process of restoring data synchronization is done automatically.

If Reference Data Synchronization (RDS) host-to-host communication was blocked prior to the upgrade or retrofit and both hosts in a REFSYNCH configuration have been loaded with the same software release, full host-to-host communication may be restored.

Important! It may be necessary to perform portions of the REFSYNCH feature installation again after the installation is complete in sites where these features had previously been enabled. At a minimum, verify that each result of the REFSYNCH configuration is still in place and functional.

Procedure

-
- 1 The **create_link** command may be executed to recreate the bdr remote database link. See *System Administration Guide, Reference Database Synchronization*.

END OF STEPS

Verifying major components

Verify components

It is now time to verify that each of the following components operates as expected.

- Host communication with each external data source successfully operates without abnormal errors.
- CPs (if applicable) are collecting data from all 4ESS switches and reporting appropriate data to NTP
- CFIMs and CIMs (if CIM_STORAGE is enabled) are stored for each switch type and are accessible.
- Alerts and alert cases are generated normally.
- BBGUI and SUI on host are functional correctly.
- Cron scripts execute without errors and ntp, oracle, scp, root, and adm email contains no repeating errors (except those that occurred during the time the software was not available).
- \$LOGDATA and \$ORALOGS files contain no abnormal errors.
- Pre-existing features operate as expected.
- New features operate as documented.

If any of these areas do not operate as expected, a configuration problem may exist.

Contact Alcatel-Lucent Customer Support to track down the cause of the deficiencies.

How to read and interpret installation logs

Purpose

Use this information to interpret various installation logs.

Important! If necessary, consult your Alcatel-Lucent support engineer for assistance in interpreting any logs.

Installation logs locations

Installation logs primarily exist in two different locations:

- `$SNASDIR/install/log`
- `$LOGDATA`

Note: For the most part, the files in `$LOGDATA` can be ignored - they are primarily only useful for debugging issues require Alcatel-Lucent support to interpret. For that reason, log files under `$LOGDATA` are not discussed in any detail.

Installation logs under `$SNASDIR/install/log`

Under `$SNASDIR/install/log`, the log files have names of the form `<function>_<version>_<timestamp>`.

All log files from the installation of a particular version of a particular release (for example, 12.x.745) share the same timestamp which is of the form: `MMMDD_HH:mm` and is based on when the installation was first started

where:

- `MMM` is the three letter abbreviation of the month,
- `DD` is the day, `HH` is the hour (in 24 hour time),
- `mm` is the minute.

Note: The timestamp will be reused if the installation is restarted for some reason.

Interpreting contents of log files

The contents of each of the log files will vary based on the type of installation, scratch or upgrade, and, if it is an upgrade, what has changed between the two versions.

There are some general rules that can be applied:

- The string "ERROR:" always indicates an error that should be addressed.
- The string "WARNING:" always indicates a warning that should be addressed.

-
- Generally, the string "ORA-" indicates an error that should be addressed although there are some exceptions.
 - Finally, the installation is mostly written in Korn shell. Any shell syntax errors will be preceded by the string 'ksh: ' and these errors should be addressed.

If the installation is restarted for any reason, any existing log files will be appended to, rather than replaced. The appended output will follow a line like:

```
'+++++ Thu Aug 14 18:29:08 EDT 2008 +++++'
```

Only output after the last such a line needs be analyzed. Some errors are expected and are documented in the release notes. You should familiarize yourself with these errors before beginning the installation.

Make a full file system backup

Preserve changes

Once the installation is complete and the major functions have been verified, make backups of the system to preserve the work you've done.



Appendix A: Core and Optional Features

Overview

Purpose

This section provides information about all features in NTP software.

Contents

List of Core and Optional Features	A-2
--	-----

List of Core and Optional Features

NTP features

The following table contains a list of all NTP core and optional features.

This is the key:

- C - core feature
- O - optional feature

Option	Description	Core / Optional
4ESSCONV	4e Message Support	O
5EASSERTS	6075 - 5e Asserts Message Support	O
5ESSCONV	5e Message Support	O
ALCATELSS	6427 - Alcatel Softswitch Support	O
ALERTNOTIFICATION	6396 - Alert Notification	O
ANYPATHCONV	6432 - AnyPath CDRs	O
ASCREEN	6006 - Awareness screen	C
AUTOPLEXCONV	6234 - AutoPlex CIM to CFIM Conversion	O
AUTOPLEX_HEH_CONV	6383 - Autoplex Cell HEH2 Converter	O
AXECDR_TDMA_CONV	6003 - Ericsson AXE CDR Converter	O
AXETRADOCONV	6313 - AXE10 Converter Support of TRAD	O
BROADWORKS_CONV	6424 - Broadworks FS3000 CDR Support	O
CDR	6306 - Enhanced CDR Collection Analyti	O
CIM_ON_DEMAND	6419 - CIM On Demand	O
CIM_STORAGE	6306 - CIM Collection and Storage	C
CONFIGCONV	6186 - Consulting Configurable Convert	C
CUSTIMPACTRPT	6031 - Customer/Service Impact Report	O
CUSTRPT	6031 - Customer/Service Report	O
CUSTSUM	6412 - Configurable Summarizer	O
DIG_STD	6404 - Digit Standardization	O
DISABLE	6027 - Digit Based Alert Disable	O
DMS6109	6109 - DMS TCAP Message Converter	O

Option	Description	Core / Optional
DMSATMCONV	6380 - DMS Succession Converter	O
DMSCDMALOG	6465 - DMS CDMA Log Converter	O
DMSCONV	101 - DMS Converter	O
DMSDFILCONV	6377 - DMS DFIL Converter	O
DMSE911CONV	6433 - DMS E911 Log Support	O
DMSMSCCONV	6384 - DMS MSC GSM Converter	O
DMSMTXCONV	6276 - DMS MTX Converter	O
DMSNPCONV	6392a - Nortel NP Log Converter	O
DMS_AUDIT	6394 - DMS Audit Log Support	O
ENHANCED_MCALL	6440 - Enhanced Mass Call Alerting	O
ERICSSON_SGSN	6448 - Ericsson SGSN Support	O
ERCGSM_CDR	6407 - Ericsson GSM CDR Converter	O
ESS1ACONV	6002 - 1A ESS TN08 to CFIM Converter	O
EVDOCONV	6410 - EvDO RNC CP Fail Converter	O
EVDOGEOLOC	EvDO GeoLocation	O
EVDO_GAP	6420 - EVDO GAP Summary Report	O
EVDO_PCMD	6420 - EvDO PCMD Converter	O
EVDO_RUM	6420 - EvDO RUM Converter	O
EWSD	6171 - EWSD CIM to CFIM Conversion	O
EXTERNAL_LDAP	External LDAP	O
FDCAUDIT	6451 - FDC Audit	O
FDCCOUNT	6064 - FDC Counts Summary Table	O
FDCSEV	6423 - Alerting based on FDC and Lent	O
GEOLOC	6417 - CDMA GeoLocation Analysis	O
GEOPROBE	6272 - Geoprobe CDR Interface	O
GPRS_CDR	6405 - 3GPP GPRS CDR Converter	O
GTD5CONV	6304 - GTD5 CIM to CFIM Converter	O
IDENCONV	6342 - Motorola iDEN Support	O
INT_5E_CIT	6194 - 5ESS International CIT Converter	O
ISA	6364 - NTP to ISA interface	O
LINKSTATUS_SUM	6363 - Enhanced Link Status	O

Option	Description	Core / Optional
LNP1AESS	6131 - 1A ESS LNP Support	O
LNP4ESS	6142 - ATT Local Number Portability	O
LNP5ESS	6128 - 5E11 LNP Converter	O
LNPDMS	6130 - DMS LNP Support	O
MDIISS7	6370 - MDII Operator Services over SS7	O
MESSAGE_BROADCAST	6374 - BBGUI Message Broadcast	C
MINT	6224 - 5ESS MINT Support	O
MT20_CONV	6288 - Alcatel MT20 Converter	O
MULTISIG	6059 - Multiple Signaling Network Supp	C
NAVISID	6385 - Navis ID Integration Support	O
NETSEG	6001 - Network Segments	O
NORTEL_GSM_CDR	6452 - Nortel GSM CDR Support	O
NTP	NTP Solution	C
OSPSCONV	6011 - 5ESS OSPS OTR Support	O
OTRSUMM	6178 - OTR Summary Table	O
PCMD_CONV	6379 - PCMD Converter	O
PCMD_GAP	PCMD Gap Summary	O
PCMDGEOLOC	PCMD GeoLocation	O
PERFRPT	6031 - Customer/Service Performance Re	O
PSMM_CONV	6401 - Autoplex PSMM Support	O
PWA	6235b - BBGUI Password Aging	C
REFREC	None - Referral Record	O
REFSYNCH	6214 - Reference Data Synchronization	O
RPTDIST	6445 - Scheduled Data Distribution	C
S1240	6274 - Alcatel S1240 CIM to CFIM Conve	O
SCCSIFACE	103 - TNM Interface	C
SDALERT	6118 - System Day Alerting	O
SEP_EVDO	Separate EvDO Chronological Tab	O
SEP_PCMD	Separate PCMD Chronological Tab	O
SDHLRCONV	6431 - SDHLR Converter	O

Option	Description	Core / Optional
SIP_LOG	6403 - Lucent IMS SIP Log Support	O
SONUS_ATTEMPT	6354 - Sonus Softswitch Attempt Record	O
SONUS_STOP	6354 - Sonus Softswitch Stop Records	O
SOURCE_GROUPS	6363 - Source Groups	O
SSL	6235b - BBGUI SSL Support	O
TG_SFX	6390 - Trunk Group Suffix	O
THRESHOLDING	6268 - Flexible Alerting and Threshold	C
TOPSCONV	6011 - DMS TOPS OTR Support	O
TOPSLNPCONV	6223 - TOPS LNP Support	O
TRAGATE_CDR_CONV	6393 - Codetel Tragate CDR Converter	O
TRAPALERT	6080 - Real Time Alerting	C
TRAPCFIM	xxxx - TrapCFIM	C
TSM_FAILOVER	6177 - TSM Failover	C
UNIVCONV	6012 - Universal CIM to CFIM Converter	O
USER_VIEW_ADM	6375 - User View Administration	C
VISGEOLOC	6441 - Visual Geolocation	O
WEIGHT_ALERT	xxxx - Alerting based on CFIM weight f	O



Appendix B: License Information for Open Source Software

Overview

Purpose

NTP software incorporates a number of third-party open source software packages. This section provides the license and other legal information required by those software packages.

Contents

License Information	B-2
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Request for Comments: 2104

Category: Informational

H. Krawczyk

IBM

M. Bellare

UCSD

R. Canetti

IBM

February 1997

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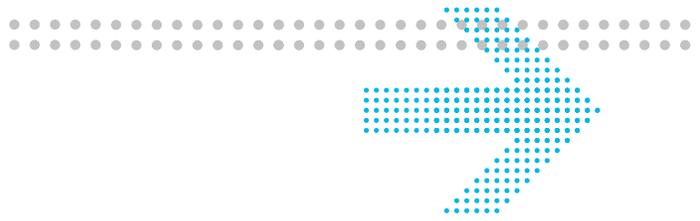
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