

Using Unified Communications Management (UCM) to Manage the Converged Voice and Data Network

Document Number: UCM-20091014
Document Version: 1.04
Date: 2009-10-14

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How to get help

This section explains how to get help for Nortel products and services.

Getting Help from the Nortel Web site

The best way to get technical support for Nortel products is from the Nortel Technical Support Web site:

http://www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. More specifically, the site enables you to:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

Getting Help over the phone from a Nortel Solutions Center

If you don't find the information you require on the Nortel Technical Support Web site, and have a Nortel support contract, you can also get help over the phone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside Nortel America, go to the following Web site to obtain the phone number for your region:

http://www.nortel.com/callus

Getting Help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To location the ERC for your product or service, go to:

http://www.nortel.com/erc

Getting Help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.

Introduction

Nortel's **Unified Communications Management** portfolio provides comprehensive management capabilities for key products in the Nortel Enterprise portfolio, and simplifies functionality associated with managing subscribers, faults, configuration, performance and security. Through features like single sign-on, common "look and feel", information sharing, heterogeneous network support, and consistent user interfaces, UCM provides decreased complexity, lowered capital and operational expenses, improved workflows, reduced error potential, and quicker time-to-resolution.

Some key management products that have already adopted the UCM solution model include:

***Data Products** Supported on UCM**

- Visualization, Performance and Fault Manager (VPFM) version 2.0
- Network Resource Manager (NRM) version 2.1
- Enterprise Policy Manager (EPM) version 5.1
- IP Flow Manager (IPFM) version 2.0

***Voice Products** Supported on UCM**

- CS1000 Release 6.0 system management applications (e.g. Element Manager, Deployment Manager, NRS Manager)
- Subscriber Manager Release 2.0

Upon initial release of the above mentioned products, full integration/co-residency of Voice management products with Data management products (i.e. within a single UCM security infrastructure), was not immediately supported, as full solution verification had not yet been complete. However, final solution-level verification of UCM-based voice management applications (CS1000 Release 6.0 applications and Subscriber Manager 2.0) and data management applications (EPM 5.1, VPFM 2.0, IPFM 2.0, and NRM 2.1) have now been completed. This guide provides key information required to unify these voice and data management applications within a single UCM deployment.

** The terms "Data product" and "Voice product" are used in this document as a way to identify a group of system/network management applications that have been most closely associated to Nortel's Enterprise Data and Enterprise Voice product portfolios respectively. In fact, applications such as VPFM and Subscriber Manager have been developed to provide more general functionality, and the usefulness of these products/applications spans more than just one Nortel portfolio area. However, we retain the "Voice" and "Data" distinction primarily because, until now, these applications could not co-exist in a single management domain -- and it remains a convenient nomenclature in a discussion about "UCM solution convergence". The distinction between Data and Voice management will become increasingly less meaningful as Nortel's system/network management products become increasingly integrated.*

Deploying a Converged Data and Voice UCM Infrastructure

Before Deploying a Converged Data and Voice UCM Solution

Before proceeding with deployment of a converged data and voice UCM Deployment, the network administrator should first be very familiar with UCM (including the concept of Primary, Backup, and Member UCM Servers), and the process of deploying individual UCM-based applications. The administrator should therefore be very familiar with the following documentation:

- UCM NTP for Voice Network Management
  Nortel Call Server 1000 Unified Communications Management Common Services Fundamentals
  Release: 6.0, Document Revision: 03.02
  Document #: NN43001-116

- CS1000 Linux Base NTP for Voice Network Management
  Nortel Communication Server 1000 Linux Platform Base and Applications Installation and Commissioning
  Release: 6.0, Document Revision: 03.08
  Document #: NN43001-315

- UCM NTP for Data Network Management
  Nortel Unified Communications Management Common Services Fundamentals
  Release: 2.0, Document Revision: 02.01
  Document Number: NN48014-100

The latest version of these docs can be obtained at the Nortel Technical Support portal:
http://support.nortel.com

Required Patches

The following patches are required to be installed for converged data and voice UCM solution to work properly.

For CS1000:

- Patch MPLR28774 (p28774_1.ntl), to fix caching issue. (visit http://www.nortel.com/espl *)
- Patch MPLR29069 (p29069_1.ntl), to fix JMS notification issue. (visit http://www.nortel.com/espl *)

*CS1000 patches are available through “Enterprise Solutions PEP Library” – for more information please visit “Online Self-Service” at the Nortel’s Technical Support website:
http://support.nortel.com/go/main.jsp?cscat=SELFSERVICE

For VPFM:

- Patch VPFM-2.0.0.1, to fix SSL certificate issue and correct VPFM release information on VPFM homepage. (http://support.nortel.com/go/main.jsp?cscat=SOFTWARE&poid=20543&viewOptSelect=2|null).

The patches can be downloaded from the Nortel Products site (http://products.nortel.com/).

Converged Data and Voice UCM Deployments – Supported Scenarios

In addition to the "voice only" and "data only" UCM deployment scenarios outlined in the NTPs mentioned above, Nortel now extends support to a number of UCM deployment scenarios that span both "voice" and "data" management products. Currently, all supported scenarios require the use of a CS 1000-based system as the UCM Primary security server.

The use of a UCM Backup security server is an optional piece of the security domain and is deployed to provide redundancy for the authentication and authorization service. The Back-up security server role can be held by either a CS 1000-based system (i.e. Voice system) or on a server hosting one or more of the Data management applications. Any combination of Member servers ("Voice" and/or "Data") can be joined to the security domain lead by a CS 1000 primary.

Please review the NTP "Nortel Call Server 1000 Unified Communications Management Common Services Fundamentals" for full definition of the security domain, and for information on the types of UCM servers that can participate in the domain (Primary, Backup, and Member), and for other important information such as engineering recommendations and limitations.

CS1000 is deployed as UCM Primary and Backup UCM servers

Figure 1 outlines a typical UCM security domain topology when a Primary and a Secondary server are both hosted on CS 1000 ("Voice") systems.

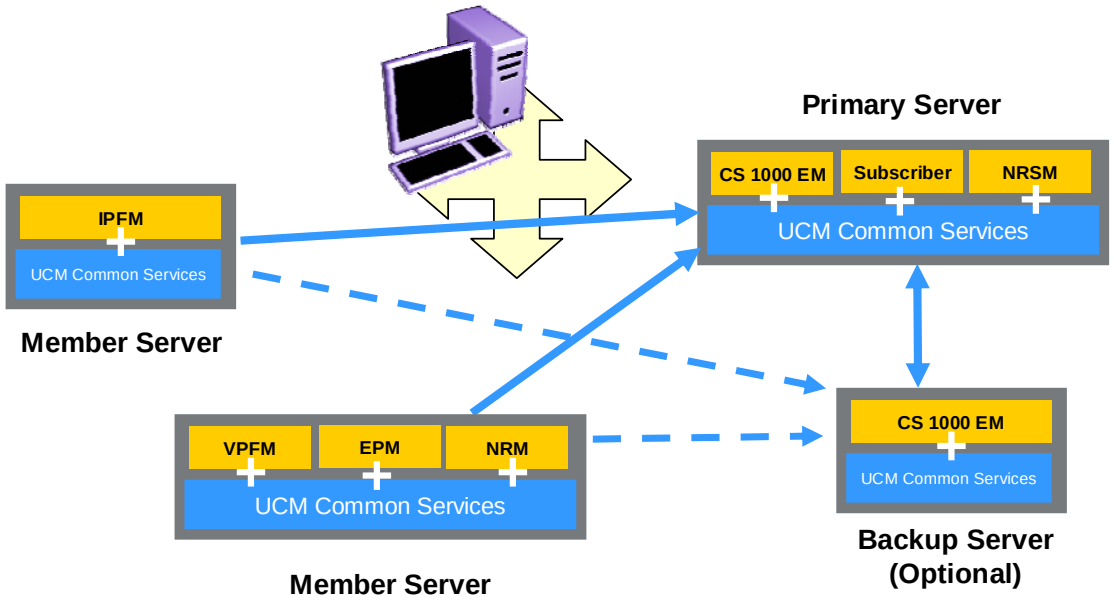


Figure 1 – Typical Deployment Scenario with CS1000 as Both Primary and Backup

	Primary	Backup	Each Member
1.	**CS1000**	**CS1000**	**(VPFM** and/or **EPM** and/or **NRM** and/or **IPFM) or CS1000**

Note:
- The Backup server is optional, and is deployed to provide authentication and authorization redundancy in event that Primary is failed / unreachable.
- "CS1000" is any valid combination of CS1000-based system management applications (including Subscriber Manager)
- "CS1000" is only supported in RHEL 5.2.
- VPFM/EPM/NRM/IPFM is supported in RHEL 5.2, Windows 2003 Server, and Windows 2008 Server.
- VPFM, EPM, and NRM can be co-resident within a single server acting as a member.
- Due to resources requirements, it's strongly recommended not to install IPFM co-resident with the other data products.

CS1000 is deployed as a Primary server and one of data network management products is deployed as a Backup server

Figure 2 outlines a typical UCM security domain topology when a Primary server is hosted on a "Voice" system and the Backup server is hosted on a "Data" system (i.e. a server hosting one or more data-focused management applications.

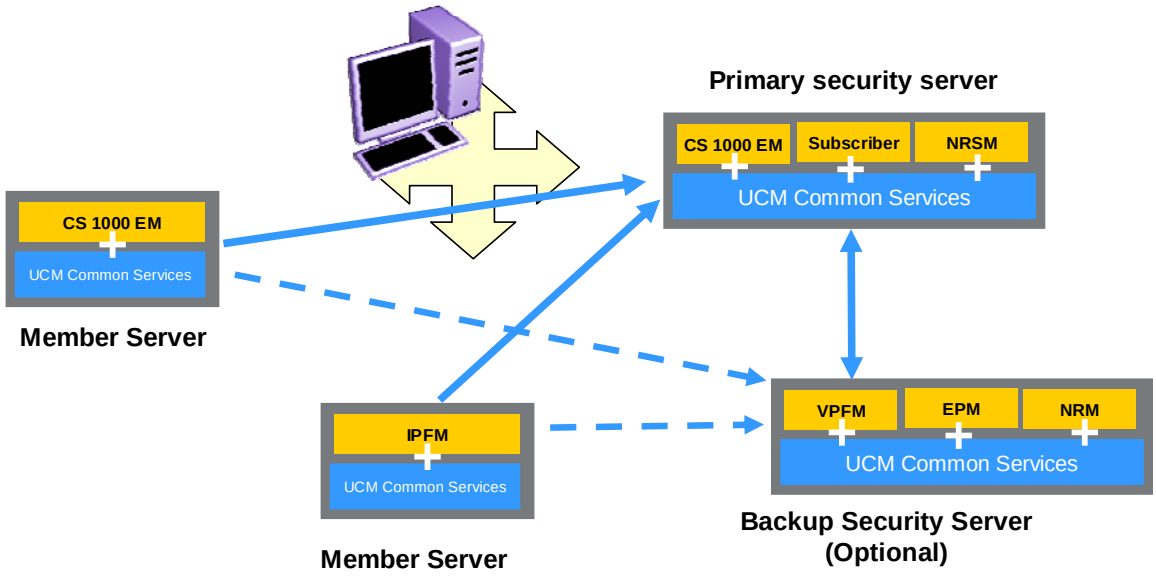


Figure 2 – Typical Deployment Scenario with CS1000 as Primary and "Data Server" in Backup role

	Primary	Backup	Each Member
2.	**CS1000**	**VPFM** and/or **EPM** and/or **NRM** and/or **IPFM**	**(VPFM** and/or **EPM** and/or **NRM** and/or **IPFM) or CS1000**

Note:
- The Backup server is optional, and is deployed to provide authentication and authorization redundancy in event that Primary is failed / unreachable.
- All data network management products need to have the same OS to work with each other in the same security domain.
- "CS1000" is any valid combination of CS1000-based system management applications (including Subscriber Manager)
- "CS1000" is only supported in RHEL 5.2.
- VPFM/EPM/NRM/IPFM is supported in RHEL 5.2, Windows 2003 Server, and Windows 2008 Server.
- VPFM, EPM, and NRM can be co-resident within a single server acting as a member or as a backup.
- Due to resources requirements, it's strongly recommended not to install IPFM co-resident with the other data products.

Browser Support

In a converged data and voice UCM deployment, only **Internet Explorer 7** is supported across all the products.

Integration Workflows

The following workflows are applicable only when there is already a CS1000-based Primary Server deployed in the network. Please refer to the "Nortel Call Server 1000 Unified Communications Management Common Services Fundamentals" document for more details on the installation and deployment of UCM security domain lead by a CS 1000-based Primary Server, and which may or may not include CS 1000-based Secondary and Member servers.

Joining a New Data Product (VPFM/EPM/NRM/IPFM) Member Server to a CS1000-based Primary Server

This workflow applies when CS1000 (combination of CS1000 EM, NRSM, Subscriber Manager, etc.) is the first product installed and it is configured as a primary server. *If a data product (VPFM/EPM/NRM/IPFM) is already installed as a primary server or a backup server in a separate security domain, it must be uninstalled first before joining the CS1000 security domain (if so see next section).*

Figure 3 shows the CS1000 already installed as a Primary Server.

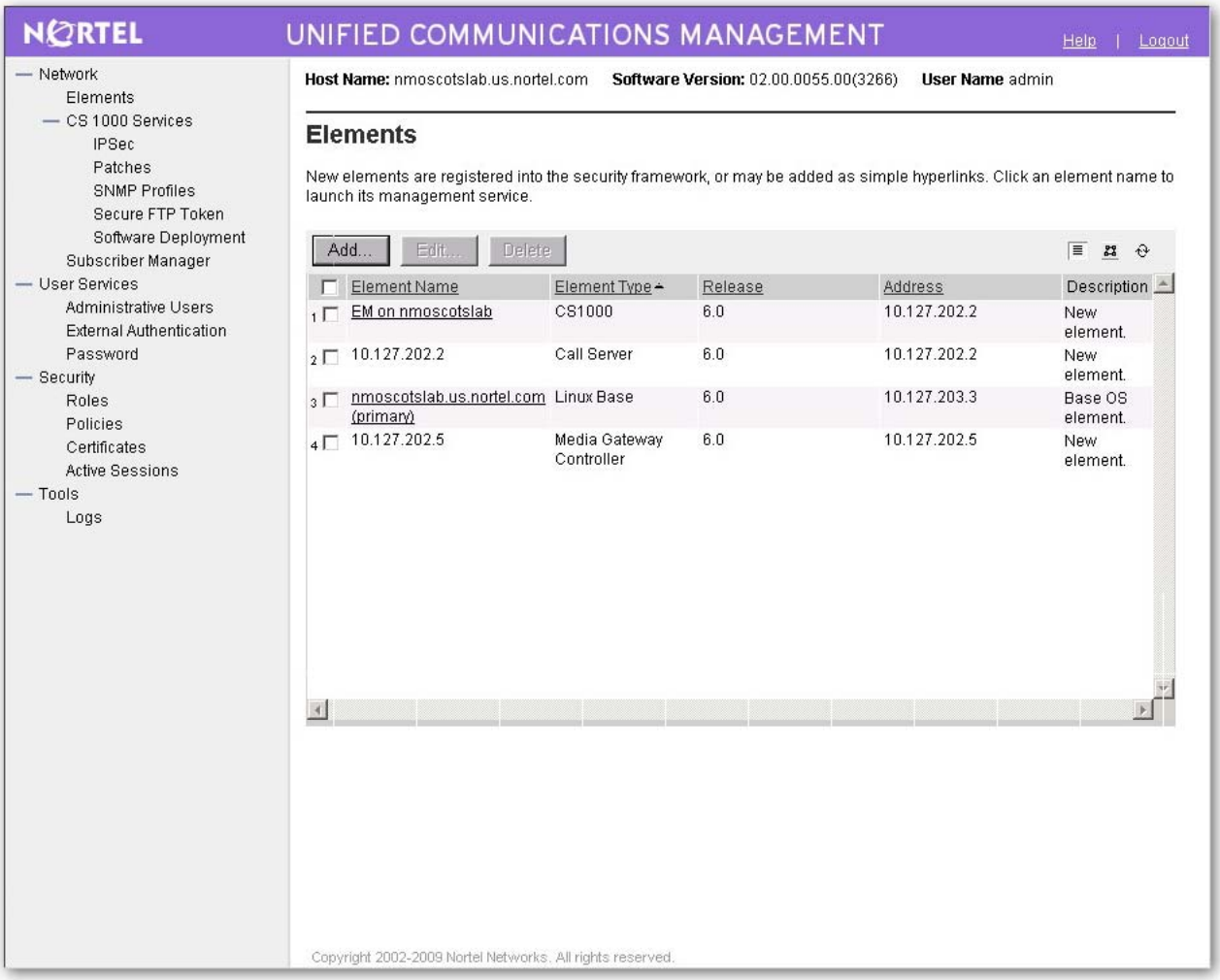


Figure 3 – CS1000 as a Primary Server

Data Network Management Product Installation Steps:

- **Configure Server Type**:
  - Data network management products can be installed as either member (see Figure 4) or backup (see Figure 5).
  - If another CS1000 product is already deployed as a backup server, the data network management products are only installed as members.

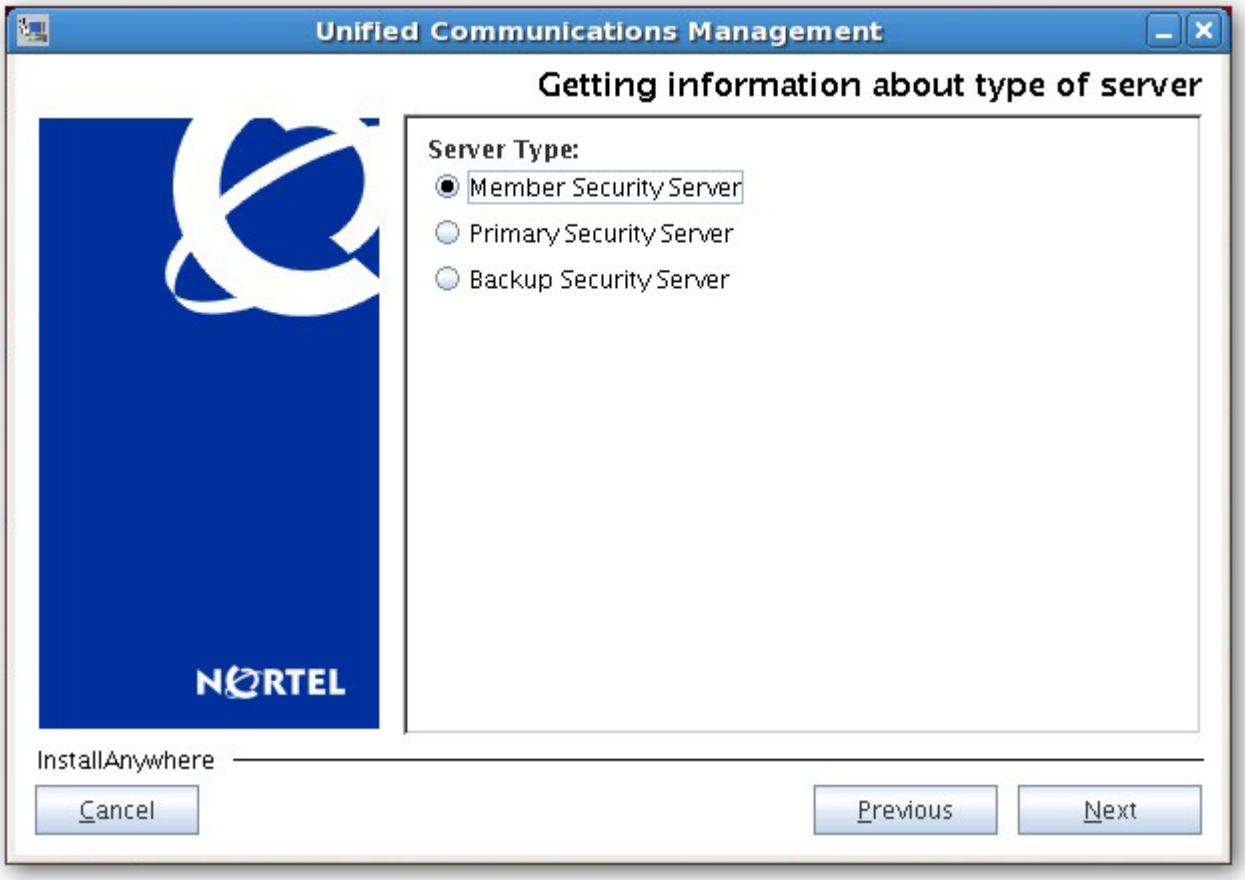


Figure 4 – Configure Server Type as Member

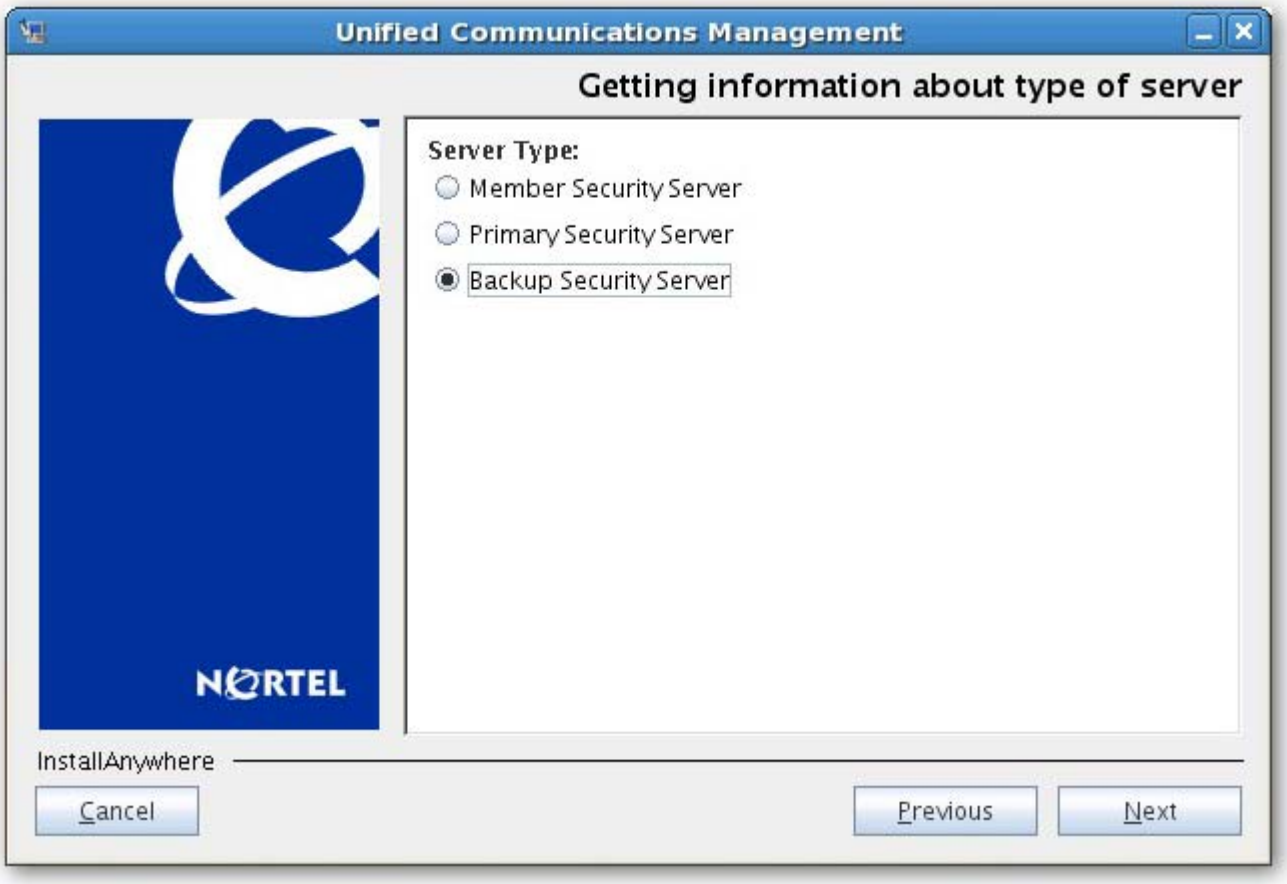


Figure 5 – Configure Server Type as Backup

- **Configure Primary Server Information**:
    - Enter the CS1000 Primary Server FQDN, HTTPS port number, admin user ID and password (see Figure 6).



Figure 6 – Configure Primary Server Information

- **Install Device Credentials and Licensing Modules**:
    - When the first data network management product is deployed in the CS1000 security domain, Device Credentials and Licensing modules will be installed along with it. Figure 7 shows that the Device Credentials and Licensing modules cannot be found and prompting user to install them.
    - If the Device Credentials and Licensing modules are detected, the installer will prompt user for the FQDN and HTTPS port number of the server where they reside (see Figure 8).

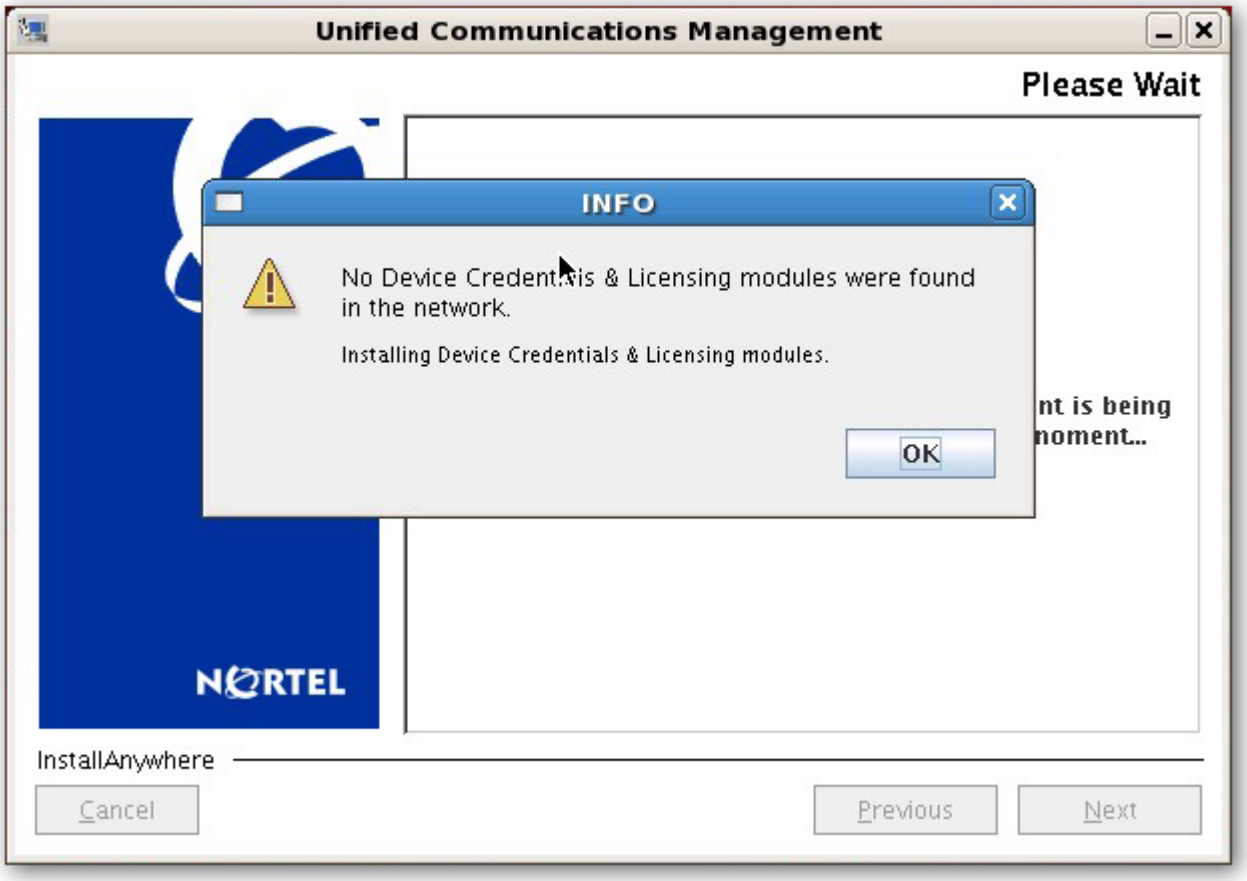


Figure 7 – Installing Device Credentials & Licensing Modules if not detected in the security domain



Figure 8 – Configure FQDN and HTTPS port number of Device Credentials & License Modules Server

- **Setting Administrative Password**:
    - Configure server database password and UCM ‘admin’ password (see Figure 9).



Figure 9 – Configure Database Password and UCM ‘admin’ password

Note: After installing each application, launch UCM and ensure the related launch points are added to UCM navigator before installing another one.

Demoting an Existing Data Product (VPFM/EPM/NRM/IPFM) Primary Server to a Member Server Status So That It Can Be Joined to CS1000-based Primary Server

This workflow applies when a data network management product is deployed in a separate security domain and needs to be reconfigured to join another CS1000-based security domain.

Currently we don't provide a 'single-click' mechanism to achieve this. To demote an existing data product primary server to a member server status, we need to uninstall the product entirely and re-install it with a member server type configuration. Additionally, the provided backup and restore utilities need to be invoked to preserve the applications data and configurations.

Steps:

- **Invoke backup process**: Use the provided backup script to backup the product data and configurations.
    - In Linux: $UCM_HOME/bin/backupAllData.sh
    - In Windows: %UCM_HOME%\bin\backupAllData.bat
    - The backed-up data will be stored as a .jar file inside folder UCM_HOME/backups
- **Uninstall the existing data product**: Use the provided uninstaller executable to uninstall the product.
- **Install the same product with member server type configuration**: See previous workflow above for the installation steps.
- **Invoke restore process**: Use the provided restore script to restore the product data and configurations.
    - In Linux: $UCM_HOME/bin/restoreAllData.sh
    - In Windows: %UCM_HOME%\bin\restoreAllData.bat
    - The restore script will prompt for the name of the backup .jar file.

Demoting an Existing Data Product (VPFM/EPM/NRM/IPFM) Backup Server to a Member Server Status or Promoting an Existing Data Product Member Server to a Backup Server Status

This workflow applies when a data network management product is deployed in the same security domain as the CS1000 and needs to be reconfigured from backup server to member server or vice versa.

Currently we don't provide a 'single-click' mechanism to achieve this. Similar to the previous workflow, we need to uninstall the product entirely and re-install it with a different server type configuration. Additionally, the provided backup and restore utilities need to be invoked to preserve the applications data and configurations.

Steps:

- **Invoke backup process**: Use the provided backup script to backup the product data and configurations.
    - In Linux: $UCM_HOME/bin/backupAllData.sh
    - In Windows: %UCM_HOME%\bin\backupAllData.bat
    - The backed-up data will be stored as a .jar file inside folder UCM_HOME/backups
- **Uninstall the existing data product**: Use the provided uninstaller executable to uninstall the product.
- **Clean-Up Elements Table from GUI**: Current uninstaller doesn't remove the added elements from the GUI, so this has to be done manually. Figure 10, 11, and 12 show the before, during, and after states of the manual clean-up.

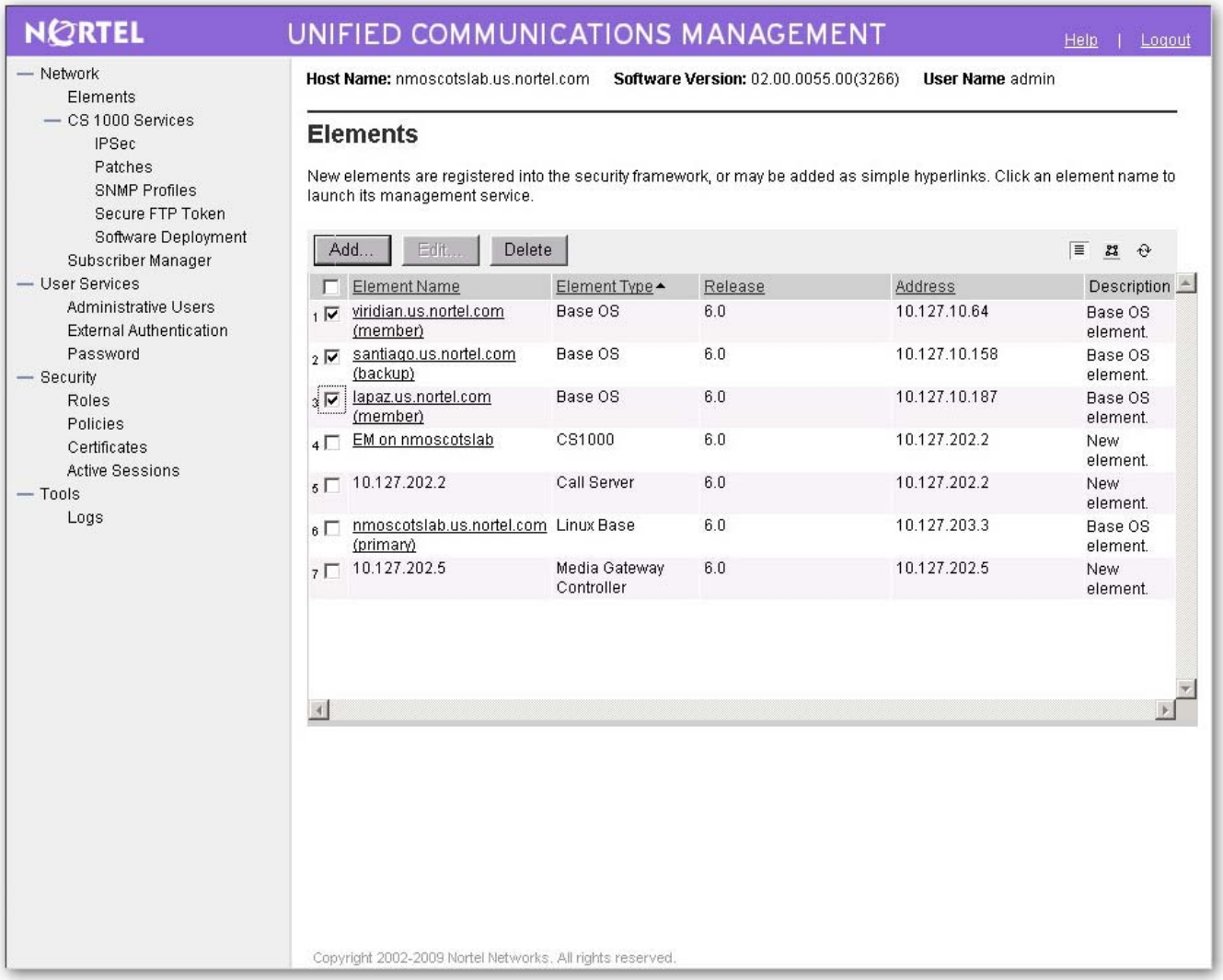


Figure 10 – Before the Manual Removal of the Elements

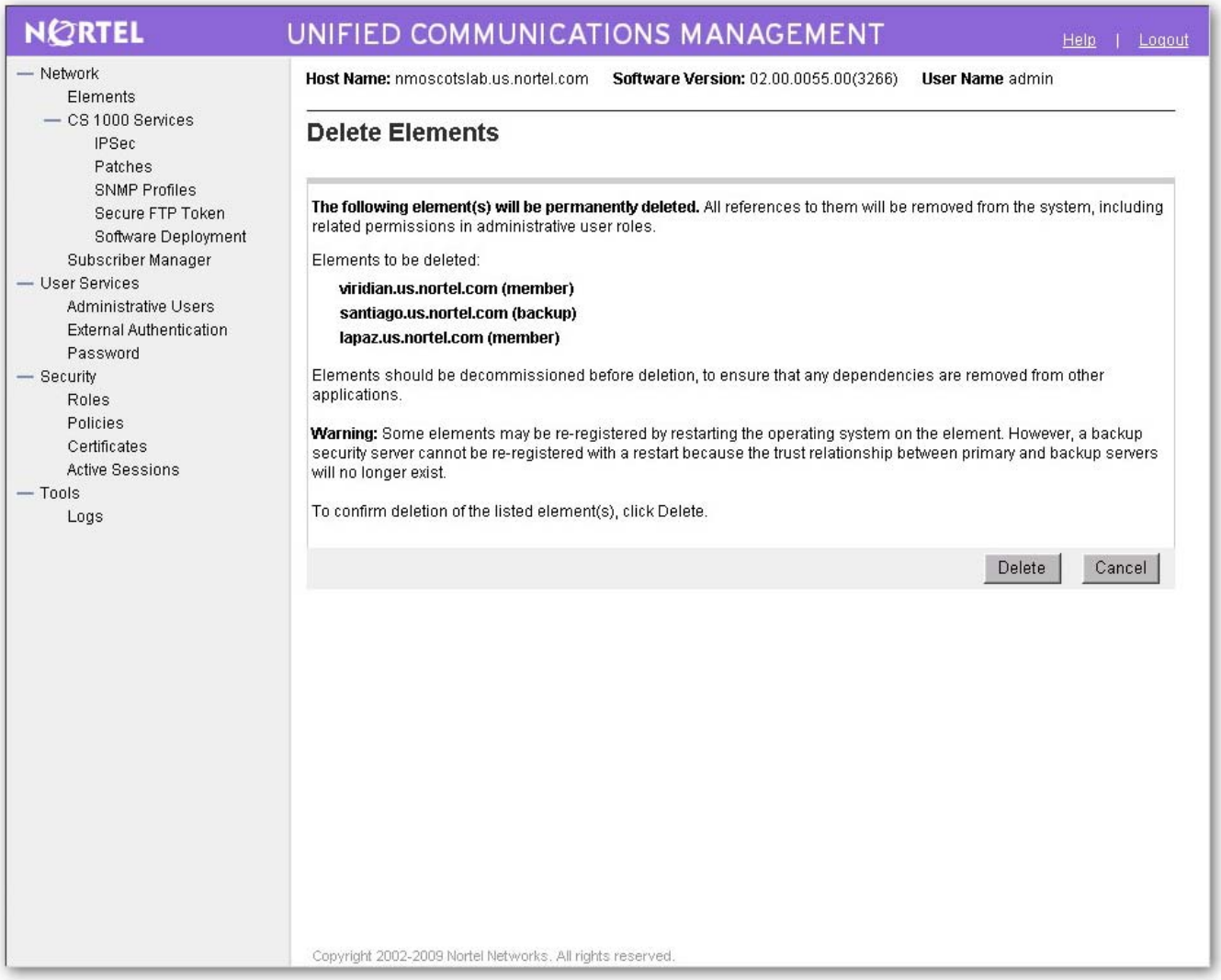


Figure 11 – During the Manual Removal of the Elements

Note: Deleting elements from UCM in this workflow is the expected behavior. This should not be a concern if product data and configurations have been properly backed-up in previous step.

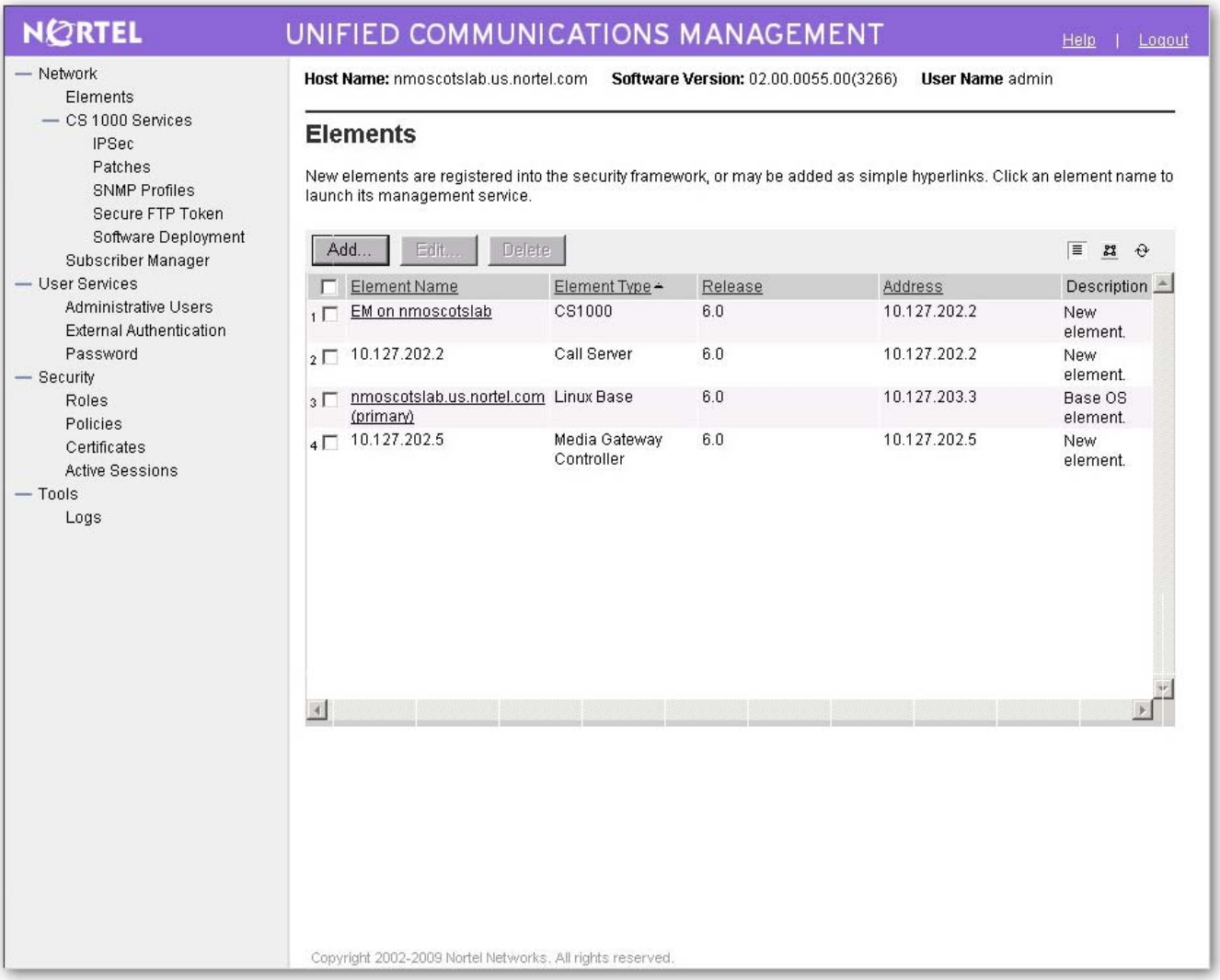


Figure 12 – After the Manual Removal of the Elements

- **Roles and Permissions Remain**: Current uninstaller doesn't remove the added data products roles and permissions, nor can they be removed manually. So, they would have to remain in the system; this should not cause any issue.
- **Install the same product with different server type configuration**: See a previous workflow above for the installation steps.
- **Invoke restore process**: Use the provided restore script to restore the product data and configurations.
    - In Linux: $UCM_HOME/bin/restoreAllData.sh
    - In Windows: %UCM_HOME%\bin\restoreAllData.bat
    - The restore script will prompt for the name of the backup .jar file.

Assigning Both Voice and Data Products Related Roles/Permissions to a Single User

This workflow applies when we want to assign a single user to manage both data and voice network by assigning him both voice management roles/permissions as well as data management roles/permissions.

Steps:

- **Assign elements permissions to roles**:
    - Data products are using three pre-defined roles: UCMOperator, UCMSystemAdministrator, and NetworkAdministrator. For description and more details on these roles, please refer to the 'UCM NTP for Data Network Management' as described earlier. Only the data elements permissions are assigned to UCMOperator and UCMSystemAdministrator (see Figure 13), but both data and voice elements permissions are assigned to the NetworkAdministrator (see Figure 14).
    - Voice products are using pre-defined and administrator configurable roles. Management of Voice-centric roles and permissions is fully explained in the "Nortel Call Server 1000 Unified Communications Management Common Services Fundamentals" NTP.
- **Assign roles to users**:
    - Figure 15 shows how the data-related roles (such as UCMSystemAdministrator) and voice-related roles (such as CS1000 Admin) are assigned to the same user (nmos).

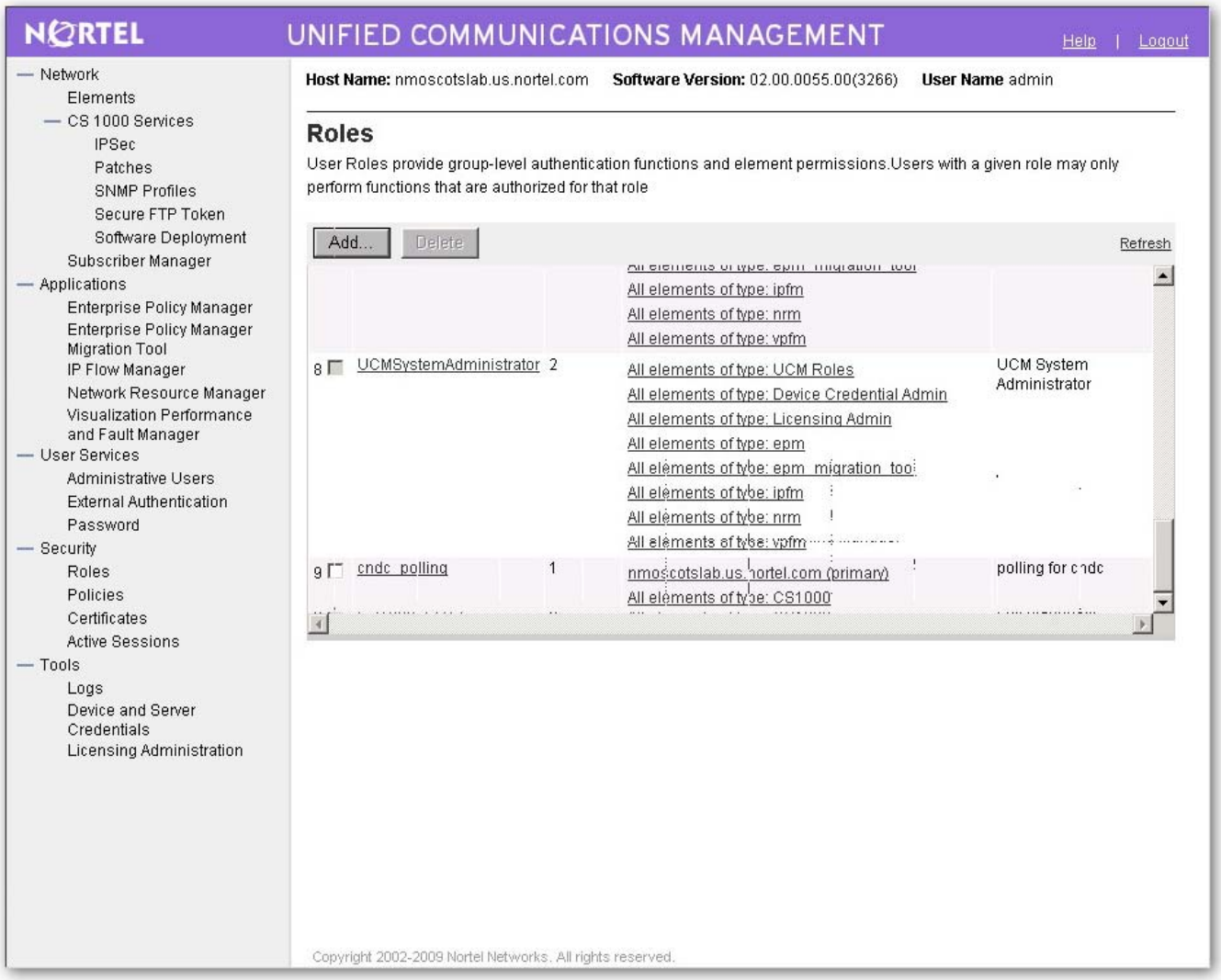


Figure 13 – Assign Data Elements Permissions to UCMSystemAdministrator

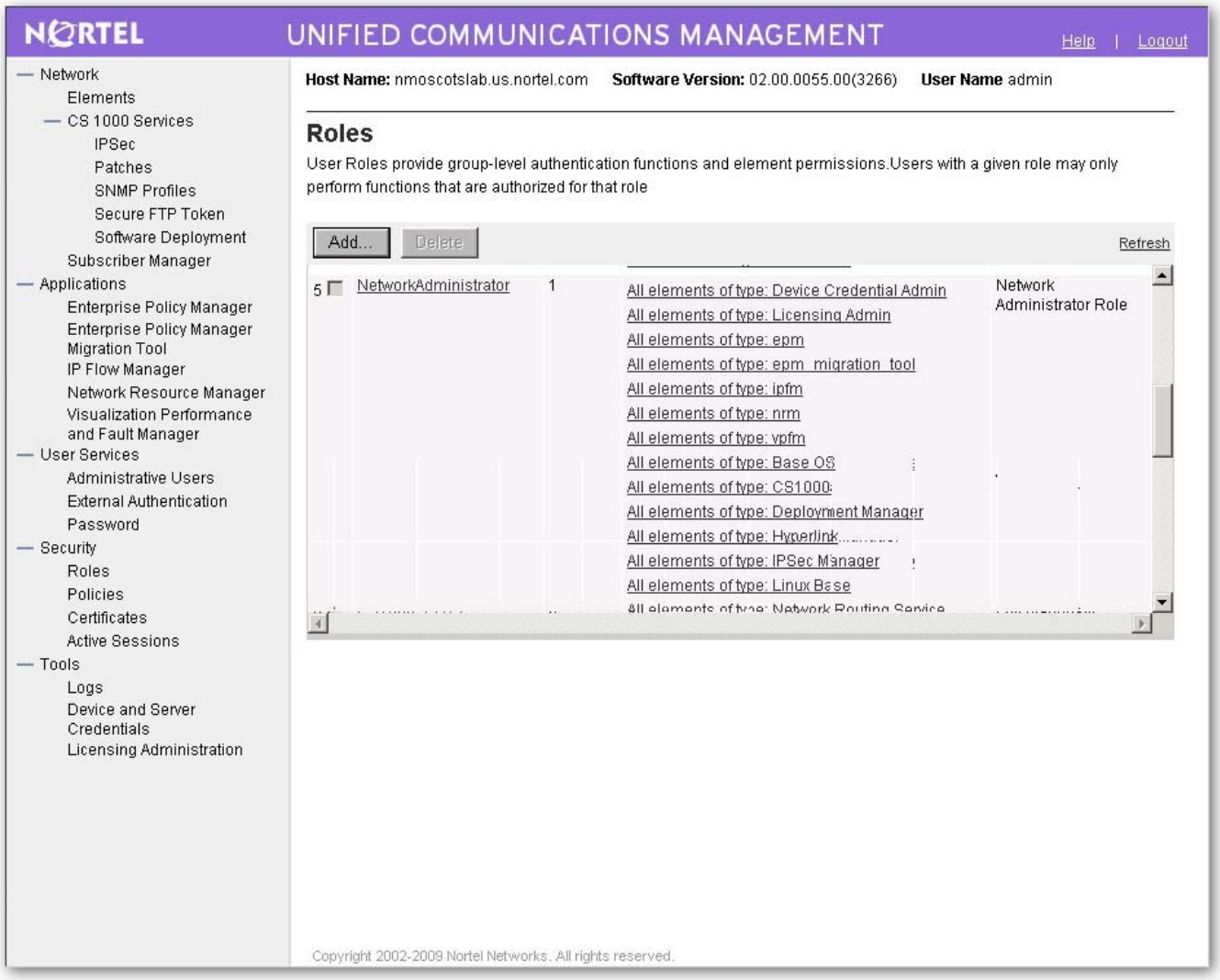


Figure 14 – Assign Voice and Data Elements Permissions to NetworkAdministrator

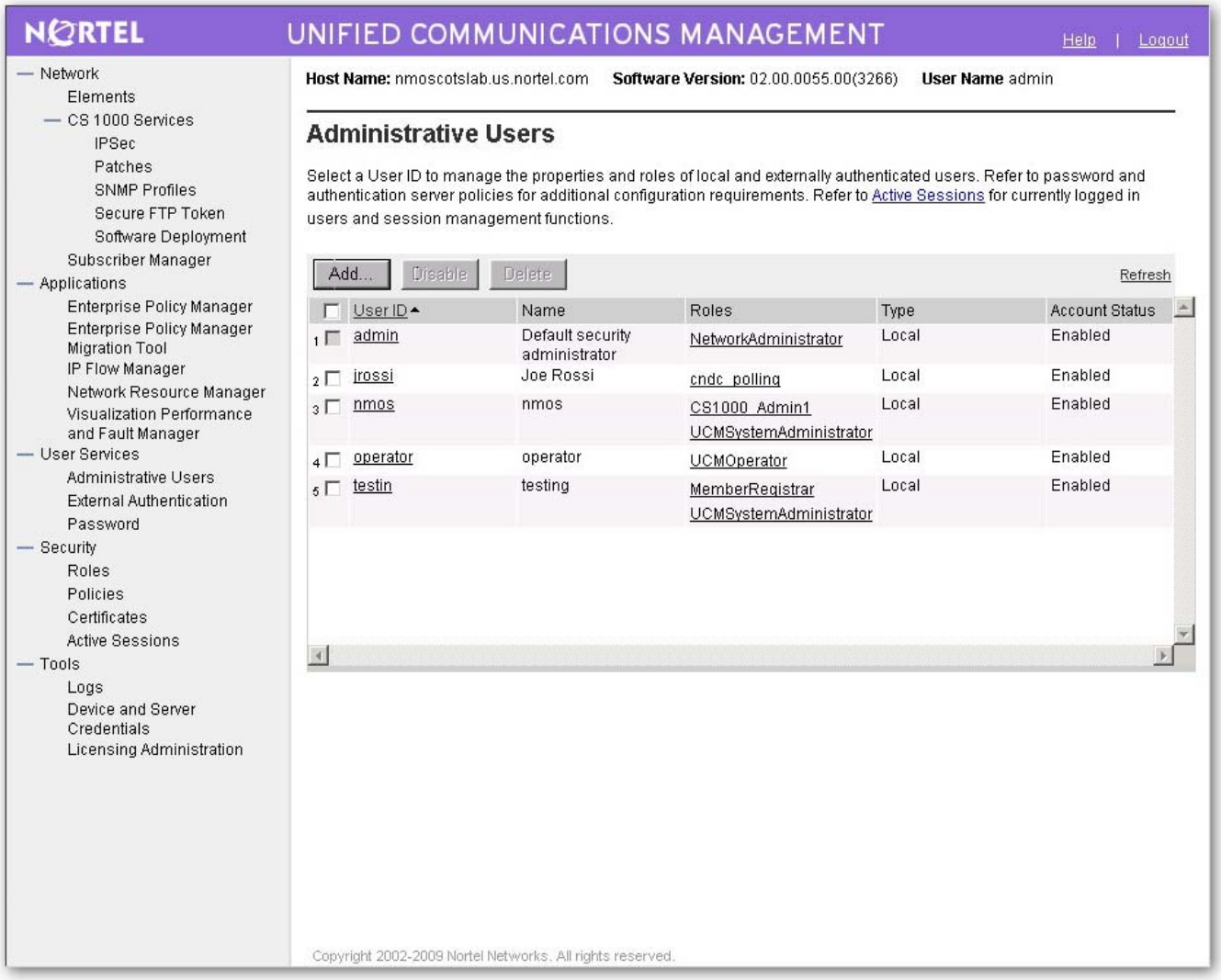


Figure 15 – Assign Roles to Users

Application Server Co-residency

This document outlines the extension of support to various scenarios in which a UCM Security domains contains both “Voice” applications on one or more servers, and “Data” applications on one or more servers. However, while “domain co-residency” support is being introduced, support is not currently being extended to the installation of “Voice” and “Data” functionality onto the same server (i.e. “server co-residency”).

Existing support for co-residency of “voice” management applications on single server remains unchanged – please consult full information at following NTPs:

- Nortel Call Server 1000 Unified Communications Management Common Services Fundamentals
- Nortel Communication Server 1000 Linux Platform Base and Applications Installation and Commissioning

Existing support for co-residency of “data” management applications on single server also remains unchanged – please consult full information at following NTP:

- Nortel Unified Communications Management Common Services Fundamentals

Converged UCM Deployments – Known Issues and Resolutions

1. **Issue**:
   Adding a new entry to device/server credentials does not refresh the screen automatically when data network management applications are deployed in distributed environment (CR Q02052388).

   Resolution:
   This appears to be caused by a JMS notification issue when multiple UCM applications are installed. UCM Patch# 29069 (p29069_1.ntl) needs to be downloaded from the Nortel Products site (http://products.nortel.com/) and installed.

2. **Issue**:
   When a data application (VPFM, EPM, NRM, or IPFM) is installed as the first member server and points to a CS1000 primary server, it's noticed that sometimes the UCM roles (UCMOperator and UCMSystemAdministrator) are not shown on the Roles page. But while creating a new role, and adding permissions mapping, the UCM permissions appear in the list. (CR Q02060973).

   Resolution:
   A workaround to this problem is by following these steps:
   a. Go to the following folder on the member server:
      `/opt/nortel/jboss-4.2.1.GA/server/default/conf/elementRegistry/elementType/deployed`
   b. Modify version number from 1.0 to 1.1 (i.e.: <version>1.1</version>) in the following xml files:
      i. UCMRolesElementType.xml
      ii. deviceCredentialAdminElementType.xml
      iii. licensingAdminElementType.xml
      iv. VPFMmoduleElementType.xml (only for VPFM)
      v. EPMmoduleEleemntType.xml (only for EPM)
      vi. EPM_MIGRATION_TOOLmoduleElementType.xml (only for EPM)
      vii. NRMmoduleElementType.xml (only for NRM)
      viii. IPFMmoduleElementType.xml (only for IPFM)
   c. Go to https://[member-server-fqdn]/local-login, where [member-server-fqdn] is the fully-qualified domain name of the member server.
   d. Enter User ID as 'root' (Linux) or 'Administrator' (Windows) and the corresponding Password of the system user. You should have administrative rights to the server, otherwise please contact your system administrator.
   e. Choose the 'Full security configuration' option and click on 'Security Configuration' button. This will re-register the member server to the primary server and re-publish the roles element types.
   f. You only need to restart the primary server if you have noticed incorrect localization words for the above element types' permission name.

3. **Issue**:
   In a security domain where CS1000 is installed as primary and the data applications (VPFM, EPM, NRM, or IPFM) are installed as backup or member servers, it has been observed occasionally that the user can't access the UCM login page after the CS1000 primary server is restarted (CR Q02082801).

   Resolution:
   A workaround to this problem is by following these steps:
   a. Stop the primary server.
   b. Stop the backup server (if deployed).
   c. Stop all member servers.
   d. Start the primary server.
   e. Start the backup server (if deployed).
   f. Start all member servers.