Configuration Guide

Configuring the NetVanta Business Communication System

This configuration guide explains how to configure NetVanta Unified Communications (UC) Server software and the NetVanta 7000 Series private branch exchange (PBX) products for use as the NetVanta Business Communications System (BCS). This guide works through the necessary configuration steps to integrate these two products into a communication system, create an audio conference bridge, enable click-to-dial functionality, create FindMe-FollowMe services for users, create a single number reach, and configure multi-site BCS with NetVanta 6355 units.

This guide includes the following sections:

Overview

The NetVanta BCS is a PBX and unified communications solution for small- to medium-sized businesses. The BCS is comprised of a NetVanta 7000 Series product and NetVanta UC Server software running on a separate server computer. Multiple NetVanta 7000 Series products can be configured to use a single server computer with NetVanta UC Server.

The NetVanta BCS is created either by a new installation of both the NetVanta UC Server software on a server computer and the NetVanta 7000 Series product, or by adding UC server software or NetVanta 7000 Series product to an existing UC server software or NetVanta 7000 Series product installation. *Figure 1* illustrates a typical single-site BCS configuration, and the corresponding responsibilities of the NetVanta 7000 Series and the NetVanta UC Server.
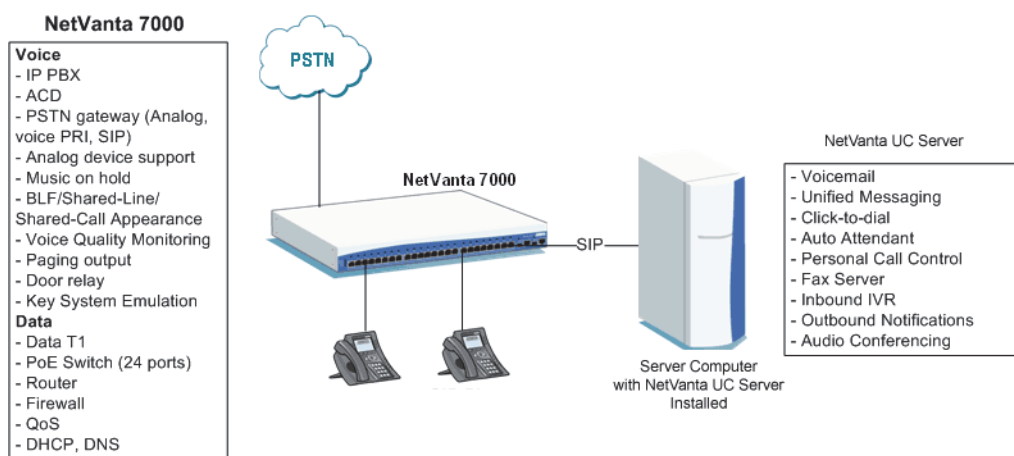
Figure 1. Typical Single-site BCS Configuration

Hardware and Software Requirements and Limitations

For the NetVanta BCS to function properly, all NetVanta 7000 Series products must be running ADTRAN Operating System (AOS) firmware release A5.02 or later. If you need to upgrade your firmware, the latest code version is available for download at http://www.adtran.com. If you need instructions on how to upgrade your firmware, refer to the *Upgrading AOS Firmware* configuration guide available from the ADTRAN Support Community (https://supportforums.adtran.com).

> **NOTE**
> *If you are configuring the BCS using local message store for voicemail, and plan to use the Direct Transfer to Voicemail feature, contact ADTRAN technical support for additional configuration information.*

In addition, the server computer must be running NetVanta UC Server software version 4.5.0 or later. For information about the minimum system requirements and limitations for the UC server software, refer to the following guides available from the ADTRAN Support Community (https://supportforums.adtran.com):

- *NetVanta Unified Communications Server Planning and Deployment Guide*
- *NetVanta Unified Communications Software Installation Guide*

- *NetVanta Unified Communications Server Configuration Guide*

T.38 fax channels are required for connecting calls from a primary rate interface (PRI) or foreign exchange station (FXS) port on the NetVanta 7000 Series product with the fax features of the UC server software. The NetVanta 7000 Series product supports a maximum of two simultaneous T.38 fax channels. T.38 fax is not supported by the FXO ports on the NetVanta 7000 Series product.

Multi-site BCS with NetVanta 6355 units requires the following software and firmware versions:

Equipment	Software/Firmware Version
NetVanta UC Server	5.1.0 or later
NetVanta 7100	R10.3.0 or later
NetVanta 6355	R10.3.0 or later

Before You Begin

Before you begin configuring the NetVanta UC Server software and the NetVanta 7000 Series product as an integrated communication system, there are a couple of tasks you should complete. If this is a new installation of both UC server and the NetVanta 7000 Series product, you should complete the initial installation and configuration of both products. Regardless of whether this is a new installation, you will need to make note of the user settings on the NetVanta 7000 Series product to correctly migrate and map users between UC server and the NetVanta 7000 Series product. Both tasks are addressed in the following section.

Installing the NetVanta UC Server

If this is a new installation of the NetVanta UC Server software, you should complete the installation using the following documents available from the ADTRAN Support Community (https://supportforums.adtran.com):

- *NetVanta Unified Communications Software Installation Guide*. This guide will walk you through the initial process of installing the NetVanta UC Server software on your server computer.

- *NetVanta Unified Communications Server Configuration Guide*. This guide will walk you through the initial configuration of the NetVanta UC Server software using the NetVanta UC Configuration Wizard. The NetVanta UC Configuration Wizard is a compilation of multiple wizards, including the Product Licensing, Windows Network Integration, Communication System, Phone Types, Gateways, Messaging Systems, Users, and Final Systems Configuration wizards. Two of these wizards, the Communication Systems and Users wizards, are specifically relevant to the configuration of the BCS. If you are configuring the UC server for the first time as a BCS, you can use the information included in the *Using the Communication System Wizard on page 5* of this guide to complete the communication system configuration of UC server while using the NetVanta UC Configuration Wizard. The Users wizard can also be used to migrate users from the NetVanta

7000 Series product for use in the BCS. Using this portion of the wizard is covered in *Importing NetVanta 7000 Series Users into NetVanta UC Server on page 22*.

Installing the NetVanta 7000 Series Product

If this is a new installation of the NetVanta 7000 Series product, you should complete the installation and configuration based on the instructions provided in the *NetVanta 7000 Series* quick start guide that accompanied the unit. This document is also available from the ADTRAN Support Community (https://supportforums.adtran.com). Additional configuration documents for your NetVanta 7000 Series product (for example, voicemail, dial plans, auto attendant, etc.) are also available from the ADTRAN Support Community (https://supportforums.adtran.com).

Collecting NetVanta 7000 Series Product User Information

For the BCS to function properly, the users present on the NetVanta 7000 Series unit must correspond to users configured in the NetVanta UC Server software. To properly map the users between the two products, you must gather information about each user on the NetVanta 7000 Series unit and import or enter that information onto UC server. This information is available in the NetVanta 7000 Series product Web-based graphical user interface (GUI) on the **User Accounts** page. There are two methods for importing users into UC server: you can input each user individually or you can create a tab separated value (TSV) file to import a batch of users. These options are covered in *Importing NetVanta 7000 Series Users into NetVanta UC Server on page 22*.

Depending upon your specific configuration needs (for example, if you are using Microsoft Active Directory), different user information must be collected. Refer to the following documents for the types of user information you will need to gather (available from the ADTRAN Support Community at (https://supportforums.adtran.com):

- *NetVanta Unified Communications Server Configuration Guide* for your version of NetVanta UC Server.

- Technical note *TN094 Importing Users to the UC Server*.

Retain this information for when you are ready to create users on UC server (refer to *Importing NetVanta 7000 Series Users into NetVanta UC Server on page 22*).

> **NOTE**
> *If you are migrating to the NetVanta BCS, all users on the system should be added as users linked to the NetVanta 7000 Series communication system (refer to Configuring the NetVanta 7000 Series Communication System on page 5).*

Integrating NetVanta UC Server with Microsoft Exchange 2010 and 2013 SP1 (or Later)

If you would like for users to use Microsoft Exchange 2010 or 2013 SP1 (or later) as their message store, you must integrate NetVanta UC Server with Microsoft Exchange. For more information on setting the proper permissions for integration, refer to *Configuring Microsoft Exchange 2007, 2010, and 2013 Permissions for Integration with NetVanta UC Server* available from the ADTRAN Support Community (https://supportforums.adtran.com). After the required permissions are configured, the Microsoft

Exchange Server can be added as a server in NetVanta UC Server, and users can be configured to use the Microsoft Exchange Server for message storage. For more information, refer to the *NetVanta Unified Communication Server Administrator Guide* for your version of NetVanta UC Server available from the ADTRAN Support Community (https://supportforums.adtran.com).

Configuring the NetVanta 7000 Series Communication System

The first step to properly configure the NetVanta UC Server software is to configure a NetVanta 7000 Series communication system on UC server. You will also need to determine an answering number and a communication port for each associated NetVanta 7000 Series product.

> **NOTE** *The following steps can be repeated for each NetVanta 7000 Series product that you are connecting to the same UC server.*

> **NOTE** *If you are configuring the BCS using local message store for voicemail, and plan to use the Direct Transfer to Voicemail feature, contact ADTRAN technical support for additional configuration information.*

Using the Communication System Wizard

The Communication System Wizard creates the connection from the NetVanta UC Server software to the NetVanta 7000 Series product by creating a communication system in UC server specifically for the NetVanta 7000 Series product. This association creates a Session Initiation Protocol (SIP) trunk on UC server for the specific NetVanta 7000 Series product. The NetVanta 7000 Series product will later be configured to connect to UC server (refer to *Configuring the NetVanta 7000 Series Unit for the NetVanta BCS on page 11* for more information).

The wizard can be accessed one of two ways: during the initial installation of the NetVanta UC Server software or from UC server's **Administration** navigation pane. The following steps outline how to use the Communication System wizard within UC server to configure the NetVanta 7000 Series communication system in UC server.

> **NOTE** *The information in this section can also be used to configure a communication system for the NetVanta 7000 Series product in an initial NetVanta UC Server software installation (using the NetVanta UC Configuration Wizard).*

To configure the communication system for each NetVanta 7000 Series product that you are connecting to UC server, follow these steps:

1. Connect to UC server as an administrator and select the **Administration** navigation bar. In the **Administration** navigation pane, select **Communication Systems**. If the NetVanta 7000 Series product communication system was created during initial installation (using the NetVanta UC Configuration Wizard), you can skip to Step 7 (on *page 8*) and enter the IP address of the unit. If no NetVanta 7000 Series product appears in UC server's list of communication systems, you must create one. In the navigation pane, right-click on **Communication Systems** and select **Create Communication System**.
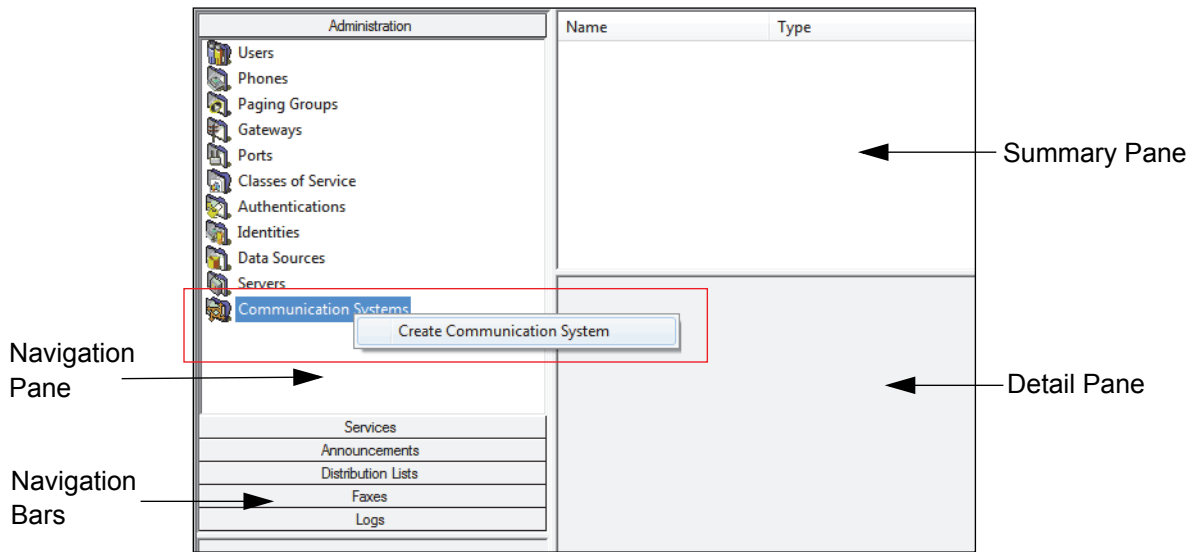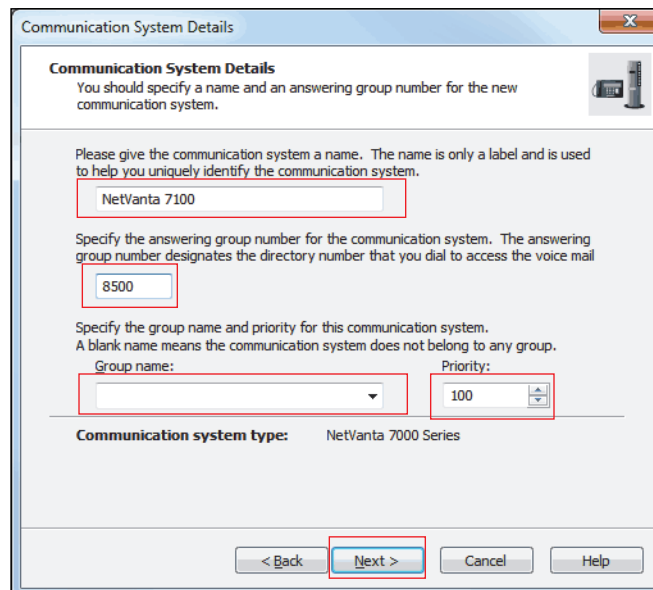
2. You will then be prompted to begin the **Communication System Wizard**. Select **Next**.
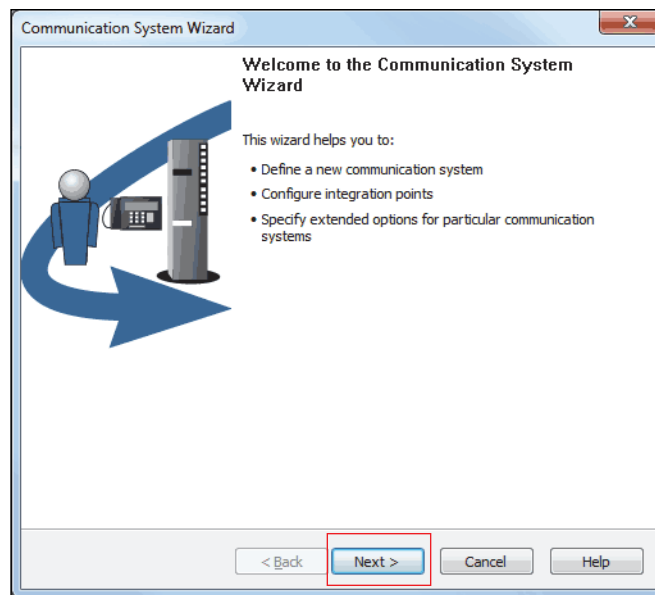
3. Select **NetVanta 7000 Series** from the drop-down menu and select **Next**.
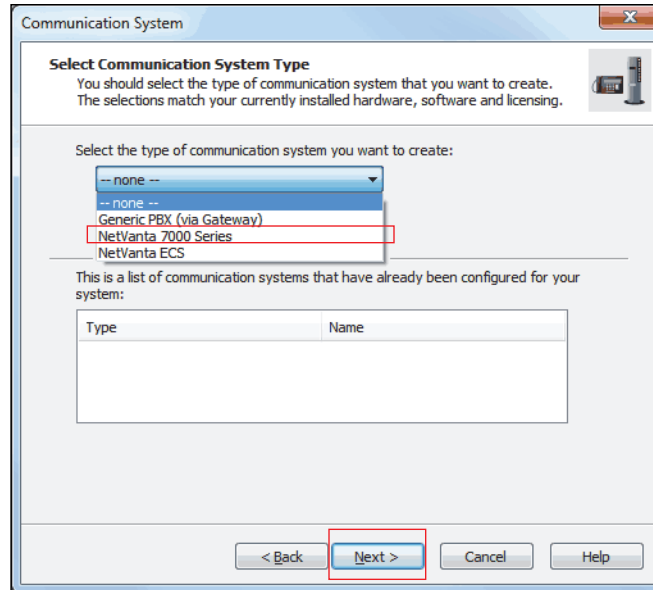
4. Enter the communication system's name, answering group number, group name, and priority in the appropriate fields and select **Next**.

The communication system's name is an identifying label for the specific communication system. For example, **NetVanta 7100**.

The answering group number is necessary for the NetVanta BCS to function properly. It refers to a number that users can dial to access their voice mailbox. It is recommended that this number be **8500**

to avoid changing the default extension for voicemail login on the NetVanta 7000 Series product.

> **NOTE**
>
> *The **8500** extension is the default voicemail extension for the NetVanta 7000 Series product. This number does not need to be changed for the first unit you add to NetVanta UC Server, but if you are adding multiple NetVanta 7000 Series products to the server computer, each will need a unique group number. For example, **8510**, **8520**, and so on. If the default voicemail extension for the NetVanta 7000 Series product has been changed (for example, if you are using 3-digit extensions rather than 4), you will need to configure the answering group accordingly.*

The group name indicates the group of NetVanta 7000 Series products to which this communication system belongs. If the field is left blank, the NetVanta 7000 Series product is distinctly separate from other NetVanta 7000 Series products. If all the NetVanta 7000 Series products are intended to operate as a homogenous network with a uniform dial plan, the group name should be set to the same value for all NetVanta 7000 Series products in the group.
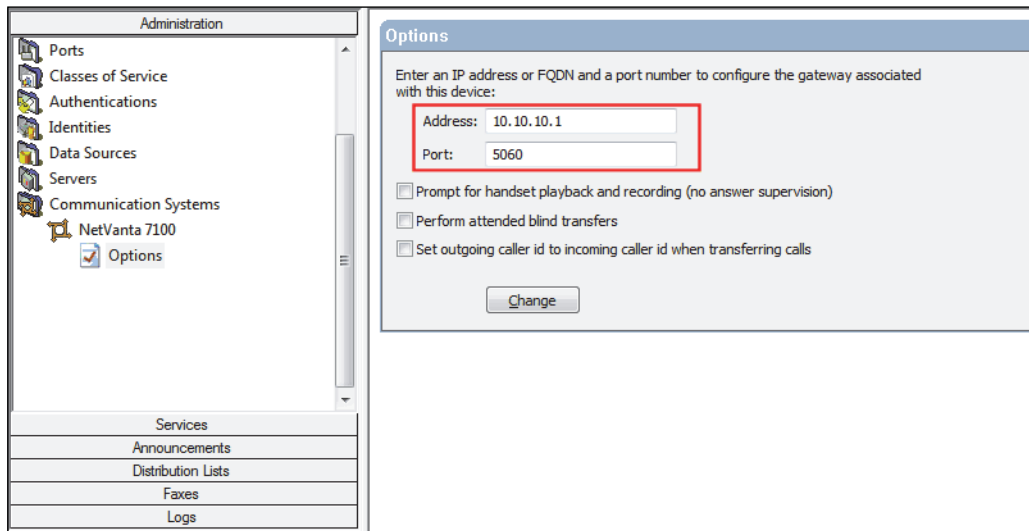
The priority value indicates the relative priority of this communication system when selecting ports for making outbound calls from the application server (Active Message Delivery calls, outbound notification calls, handset playback calls, etc.). Higher priorities are designated by lower numbers. By default, the priority value is set to **100**.

5.   Verify that the information is correct, and select **Submit** to add the new communication system.
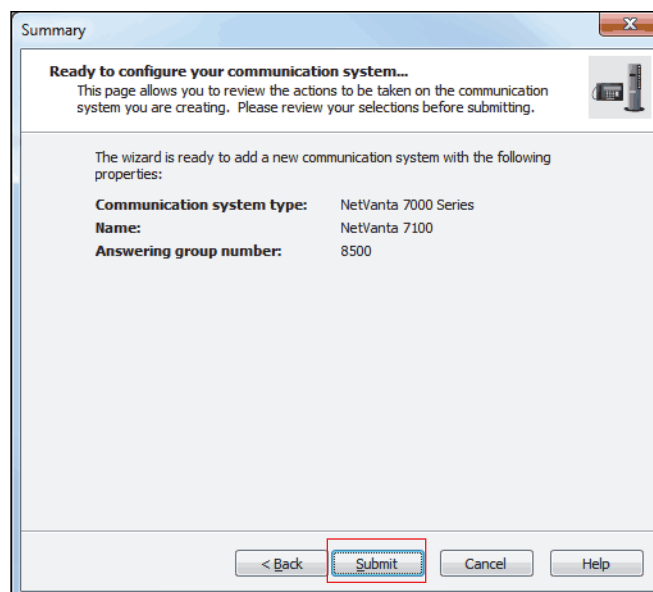
6. After the wizard processes the creation of a new communication system, select **Finish** and the new communication system appears in the list under **Communication Systems** in the **Administration** navigation pane.

7. Next, specify the IP address of the NetVanta 7000 Series unit that will be communicating with UC server. Navigate to **Administration** > **Communication Systems** > **NetVanta 7100** > **Options**. Enter the IP address and SIP port number of the NetVanta 7000 Series unit in the appropriate fields. The SIP port is where UC server directs SIP traffic intended for this unit. The port should be set to **5060**, the

default port that the NetVanta 7000 Series product monitors for SIP traffic. When you have entered the correct information, select **Change**.


The NetVanta 7000 Series communication system is created. The next step is to verify that the port for the NetVanta 7000 Series product connection to UC server has also been created and is correct.

Verifying the NetVanta 7000 Series Product Connection Port

After the NetVanta 7000 communication system has been created, you need to note on which IP port (UDP) UC server will be listening for calls from the NetVanta 7000 Series product. From this port, calls are directed from the NetVanta 7000 Series product for voicemail, IVR, etc. The default value for this port is **5080**, but it could be different if other communication systems were created on UC server first. Make note of this port as you will need it when you are configuring the NetVanta 7000 Series product to communicate with UC server (refer to *Configuring the NetVanta 7000 Series Unit for the NetVanta BCS on page 11*).

1. Navigate to **Administration** > **Ports** and select **NetVanta 7100** from the port list. Details of the NetVanta 7100 communication system appear in the detail pane below the port list.
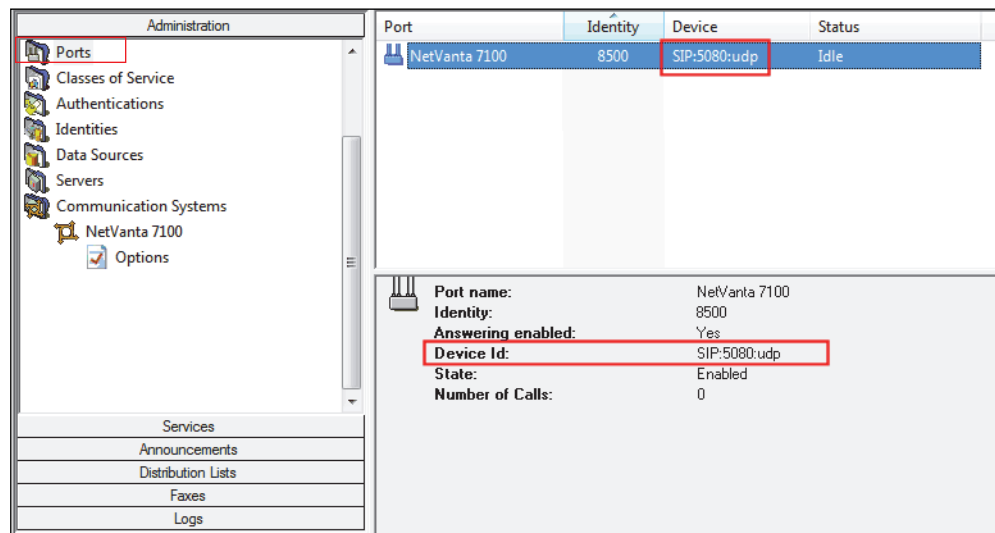
In the detail pane, the **Device Id** displays the IP port on which UC server is listening for calls from the NetVanta 7000 Series product. In this example, UC server is listening on port 5080 (UDP) for calls from the NetVanta 7000 Series unit.

> **NOTE** *Each NetVanta 7000 Series product must communicate with NetVanta UC Server on a separate port.*

> **NOTE** *You must make sure that the port to which you assign the NetVanta 7000 Series product is not being used by another application. NetVanta UC Server will not automatically verify port availability. To check port availability, follow the steps outlined in Checking Port Availability on page 39.*

2. After you have verified the port has been created and is available for use, you can repeat these steps for each NetVanta 7000 Series communication system you want to add to UC server.

Configuring the NetVanta 7000 Series Unit for the NetVanta BCS

There are a few configuration steps that are necessary for the NetVanta 7000 Series unit to function as part of the NetVanta BCS. The NetVanta 7000 Series unit must first be configured to ensure that audio flows through the correct media gateway, and then it must be configured with a coder-decoder (CODEC) list that contains only G.711 u-law. Each NetVanta 7000 Series unit that you add to NetVanta UC Server must be configured with a SIP trunk to communicate with UC server. The SIP trunk for each unit should match the communication system that was created on UC server.

> **NOTE** *This guide assumes that you are familiar with configuring SIP trunks on NetVanta 7000 Series products and it only details the process necessary to connect a unit to NetVanta UC Server. If you would like more information about SIP trunk configuration, refer to Configuring SIP Trunking and Networking for the NetVanta 7000 Series available from the ADTRAN Support Community (https://supportforums.adtran.com).*

The SIP trunk is then added to a trunk group, and extensions for voicemail login (8500), leaving a voicemail (8504), and externally checking voicemail (8501) are added to the trunk group call templates. Next, you must verify the voicemail settings of the NetVanta 7000 Series unit. The last step in configuring the NetVanta 7000 Series unit for use with the BCS is to enable prefer trunk routing. These steps are included in the following sections.

Media Gateway, CODEC List, and SIP Trunk Configuration on the NetVanta 7000 Series Units

To create a SIP trunk on the NetVanta 7000 Series unit, follow these steps:

1. Connect to the NetVanta 7000 Series unit's GUI by opening a new Web page in your Internet browser and entering the unit's IP address in the address field in the following form: **http://**<*ip address*>**/admin**. For example:

   http://192.168.8.103/admin

2. At the prompt, enter your **User name** and **Password** and select **Ok**.

> **NOTE** *The default user name is **admin**, and the default password is **password**.*

3. Once connected, navigate to **Data** > **Router/Bridge** > **IP Interfaces** from the menu on the left. Select the VLAN interface for administering the NetVanta 7000 Series unit (typically **Default**).

4. In the interface's configuration menu, scroll down to the **Media-Gateway** section and select the IP address type **Primary** from the drop-down menu. Then select **Apply**.

 *Repeat **Steps 3** and **4** for additional VLAN interfaces.*

5. Next, navigate to **Voice** > **System Setup** > **Codec Lists** and select **Add New Codec List** to create a CODEC list. This list will use the G.711 CODEC to facilitate communication between the NetVanta 7000 Series product and UC server and to avoid any transfer problems. Name the CODEC list (for example, **g.711 Only**) and select the CODEC type **G.711 uLaw** from the drop-down menu for **Codec #1**. If you are running NetVanta UC Server software 4.6.3 or higher, you can optionally select **G.711 aLaw** for **Codec #2**. Then select **Apply**.

6. Next, you will create the SIP trunk. Navigate to **Voice** > **Trunks** > **Trunk Accounts**. Specify the name for the trunk (for example, **UC Voicemail**), and select **SIP** from the trunk **Type** drop-down menu. Then select **Add**.

7. After selecting **Add**, you will automatically be prompted to configure the trunk. Verify that **Reject External** is disabled.

8. Scroll down the configuration menu and select the **SIP Settings** tab. Specify the IP address of the UC server computer as the **SIP Server Address**. In the **SIP Server Port** field, enter the port number that corresponds to the port specified in UC server for the NetVanta 7000 Series product (refer to *Verifying the NetVanta 7000 Series Product Connection Port on page 9*). In the example below, the port number is **5080**.

9. Next, select **Internal** as the **Default Ring Cadence**, and enable **Music on Hold**, **Diversion Support**, and **Diversion for External Voicemail**.

> **NOTE**
>
> *The **Music on Hold** parameter is optional, but if it is not enabled, inbound callers will hear silence if NetVanta UC Server puts the call on hold during a supervised transfer or FindMe-FollowMe operation.*

10. Finally, select the CODEC list created in Step 5 (on *page 12*) from the **CODEC Group** drop-down menu and select **Apply**.

Adding the SIP Trunk to a Trunk Group

1. After you have configured the SIP trunk, you must add it to a trunk group. Navigate to **Voice** > **Trunk** > **Trunk Groups** to create the trunk group. Enter the name of the new trunk group in the **Group Name** field (for example, **UC VM Trunk Group**) and select **Add**.

2. You will automatically be prompted to configure the new trunk group. Select **Add Members** in the trunk group's configuration, and then, using the check box, select the SIP trunk you just created. Then select **Add Selected Trunks**.
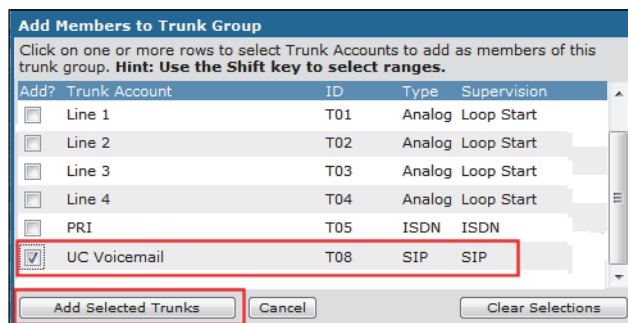
Adding Voicemail Extensions to Trunk Group Call Templates

After the SIP trunk has been added to the trunk group, three extensions must be added to the call templates for the trunk group. These extensions are **8500** (for voicemail login), **8504** (for leaving voicemail), and **8501** (for checking voicemail externally). As described later in the document, extensions 8504 and 8501 will be linked to identities in UC server.

> **NOTE** *If you are configuring the BCS using local message store for voicemail, and plan to use the Direct Transfer to Voicemail feature, contact ADTRAN technical support for additional configuration information.*

To add the voicemail extensions to the trunk group call templates, follow these steps:

1. Expand **Detailed View - Permit/Restriction Call Templates** on the trunk group's configuration menu and select **Configure Advanced Templates**.
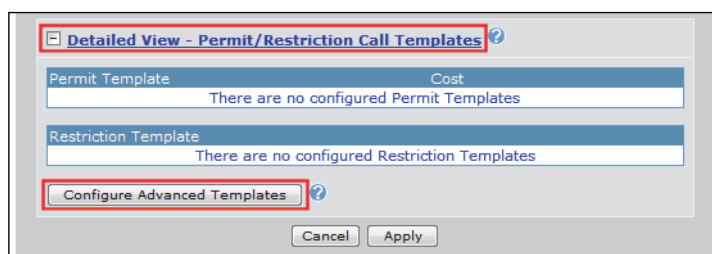
2. Specify the outbound permit template by adding three new templates. To create the new templates, enter the template identifier in the **Template** field and enter the cost in the appropriate field. You should create a template **850X** with a cost of **0**. This template is used for voicemail, checking voicemail externally, and transferring to voicemail. Select **Add** after entering the template information.

Add/Delete Permit Templates

Use this form to add and delete specific outbound permit call templates.

Add Outbound Permit Template

Template: 850X
Valid characters: 0-9 , () - M N X [] $

All calls matching the specified pattern will be permitted

Cost: 0

Enter cost value between 0-499 for this template (optional)

Add

View/Delete Permit Templates

These are all of the Permit templates currently defined for trunk group ' UC VM TRUNK GROUP '. You can delete an existing template by clicking on the 'Delete' button. You can use an existing template as the basis for a new template by clicking on a entry row. The form above will be initialized to that template's values.

Permit Template	Cost

> **NOTE** *Template 8504 and 8501 must have associated identities in NetVanta UC Server. For information about configuring these identities in NetVanta UC Server, refer to Creating Voicemail Services in NetVanta UC Server on page 17.*

Verifying the NetVanta 7000 Series Unit's Voicemail Settings

After you have created the trunk, applied the trunk to a trunk group, and created outbound call templates for the group, you will need to verify the voicemail settings for the NetVanta 7000 Series unit. This includes disabling the internal voicemail on the NetVanta 7000 Series unit so that voicemail is handled by UC server.

> **NOTE** *Although you can have both the internal voicemail in the NetVanta 7000 Series unit and the NetVanta UC Server voicemail enabled at the same time, it could adversely affect the operation of message waiting indicators. Therefore, ADTRAN recommends that in a BCS application, voicemail be handled by NetVanta UC Server.*

To verify the NetVanta 7000 Series product voicemail settings, navigate to **Voice** > **Applications** > **Voicemail System Settings**. Disable **Internal Voicemail** by removing the check mark beside **Internal Voicemail**, verify that the **Voicemail Login Extension** is set to **8500**, and the **Leave Voicemail Extension** is set to **8504**. Then select **Apply**.

Voicemail System Settings

General voicemail settings

Internal Voicemail: ☐	❓
Voicemail Login Extension: x 8500	❓
Leave Voicemail Extension: x 8504	❓
Maximum Login Attempts: 3	❓

Reset   Apply

Enabling Prefer Trunk Routing on the NetVanta 7000 Series Product

The last step in configuring the NetVanta 7000 Series unit for use in the BCS is to enable prefer trunk routing. To enable prefer trunk routing, follow these steps:

1. Navigate to **Voice** > **System Setup** > **VoIP Settings**. In the **SIP Settings** tab, enable **Prefer Trunk Routing** by checking the appropriate check box. Then select **Apply**.

2. The NetVanta 7000 Series unit now has a SIP trunk configured and is ready to communicate with the NetVanta UC Server. Save this configuration by selecting **Save** from the top right of the GUI, and prepare to return to UC server for the final BCS configuration steps.

Creating Voicemail Services in NetVanta UC Server

The NetVanta 7000 Series unit transfers calls to voicemail using extension 8504. Therefore, identities and voicemail services must be created for direct voicemail transfers (8504) and external voicemail login (8501). The voicemail services handle the inbound calls from the NetVanta 7000 Series product for extensions 8504 and 8501. NetVanta UC Server automatically processes calls for voicemail when it receives a call for 8500, so there is no need to create a special service for it. The service created for extension 8504 needs to handle direct voicemail transfers from users on the NetVanta 7000 Series unit, and the service created for extension 8501 needs to allow external users to check their voicemail in UC server. Once the services are created, identities for both services must be created and the appropriate services must be assigned to the proper identity to function correctly.

Creating the Voicemail Services

To create the direct voicemail transfer and external voicemail login services, follow these steps:

1. Navigate to the **Services** navigation pane by selecting the **Services** navigation bar. Right-click in the **Services** summary pane and select **New** > **Service** to create a new service.
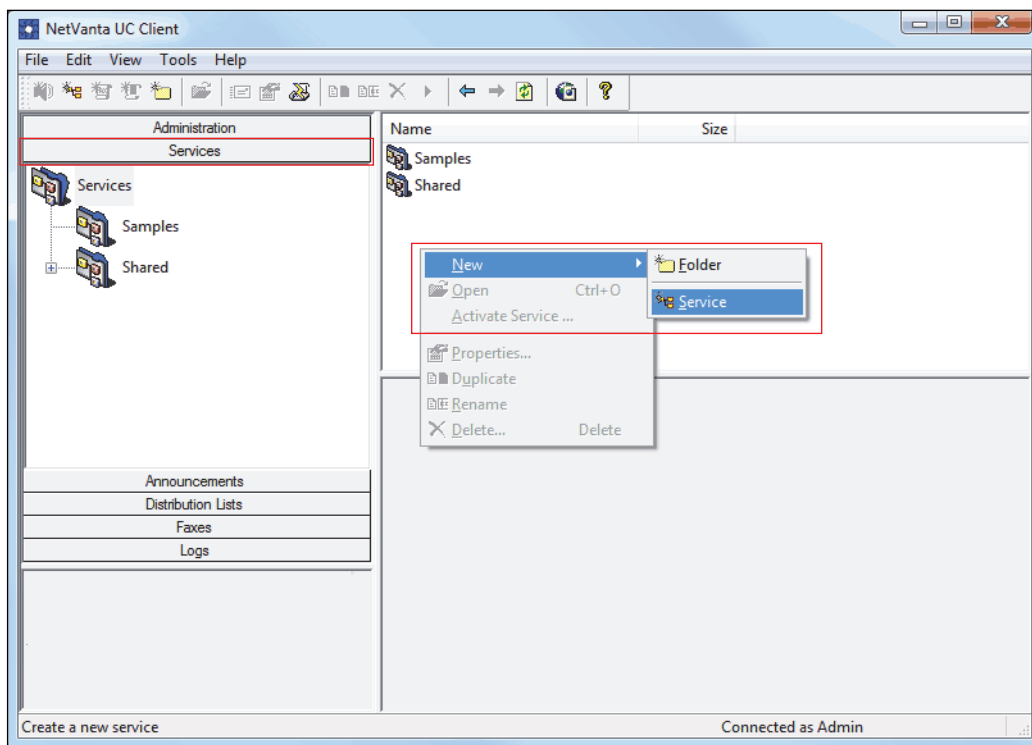
2. The first service you create will be for identity (extension) 8504. Name this service in the service name field so that it reflects the service's function, for example, **Direct Voicemail Transfer**. Refer to *Creating Identities for the Voicemail Services on page 19* for instructions on creating identities.

3. Double-click the service in the summary pane to open the service editor. Configure the service so that it properly routes calls and includes the necessary announcements and other information, then save and close the service. The **Direct Voicemail Transfer** service can look like the following when complete (although this example does not include the answering behavior; it only allows the caller to leave a voice message):

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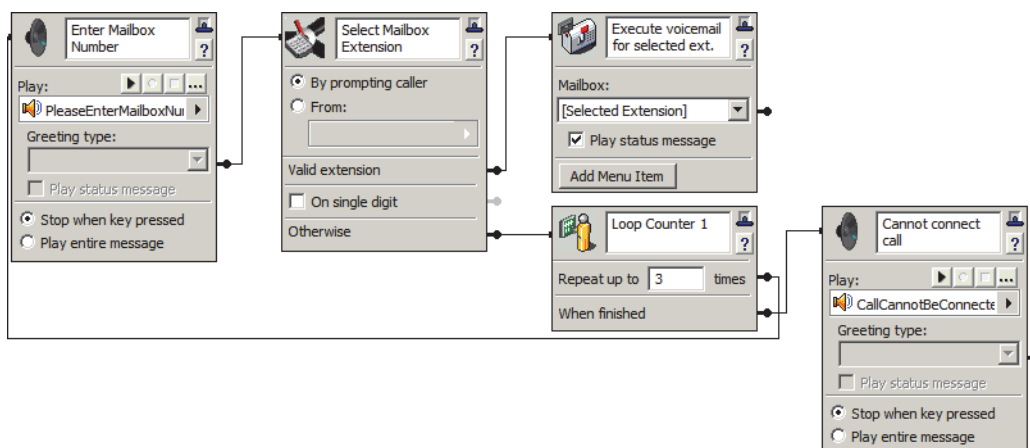
> **NOTE**
> *The only difference between the two services created here (**Direct Voicemail Transfer** and **External Check Voicemail**) is a single element. The first service uses the **Standard Element** for voicemail, and the second uses the **Advanced Element** for managing the mailbox. If you need more specific directions for creating services, refer to the* NetVanta Enterprise Communication Server and Business Application Server Administrator Guide *available from the ADTRAN Support Community (https://supportforums.adtran.com)*

4. Return to the **Services** navigation pane and create another new service for identity (extension) 8501 so that remote users can check voicemail. Give the service a unique name, for example, **External Check Voicemail**.

5. Double-click the service in the summary pane to open the service editor. Configure the service so that it properly routes calls and includes the necessary announcements and other information, then save and close the service. The **External Check Voicemail** service should look like the following when complete:
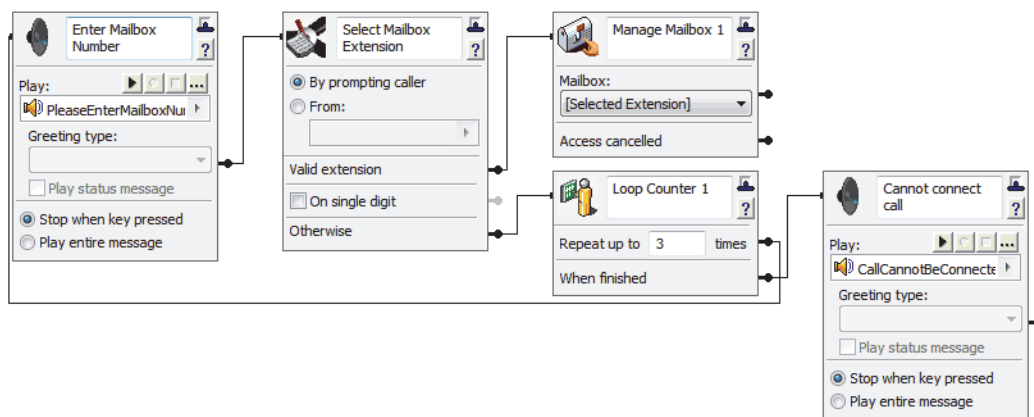
After both services are created, identities for each extension must be created and the services must be assigned to the proper identity.

Creating Identities for the Voicemail Services

The NetVanta 7000 Series unit transfers calls to voicemail using extension 8504. Therefore, an identity matching extension 8504 must be created in UC server. In addition, an identity matching 8501 must be created in UC server to allow remote users to check their voicemail remotely. An identity does not need to be created in UC server for the default voicemail extension of 8500 because that identity was created with the creation of the NetVanta 7000 Series communication system.

To create the identities for the 8504 and 8501 extensions, follow these steps:

1. Select the **Administration** navigation bar. In the **Administration** navigation pane, select **Identities** and right-click in the **Identities** summary pane to create a new identity.
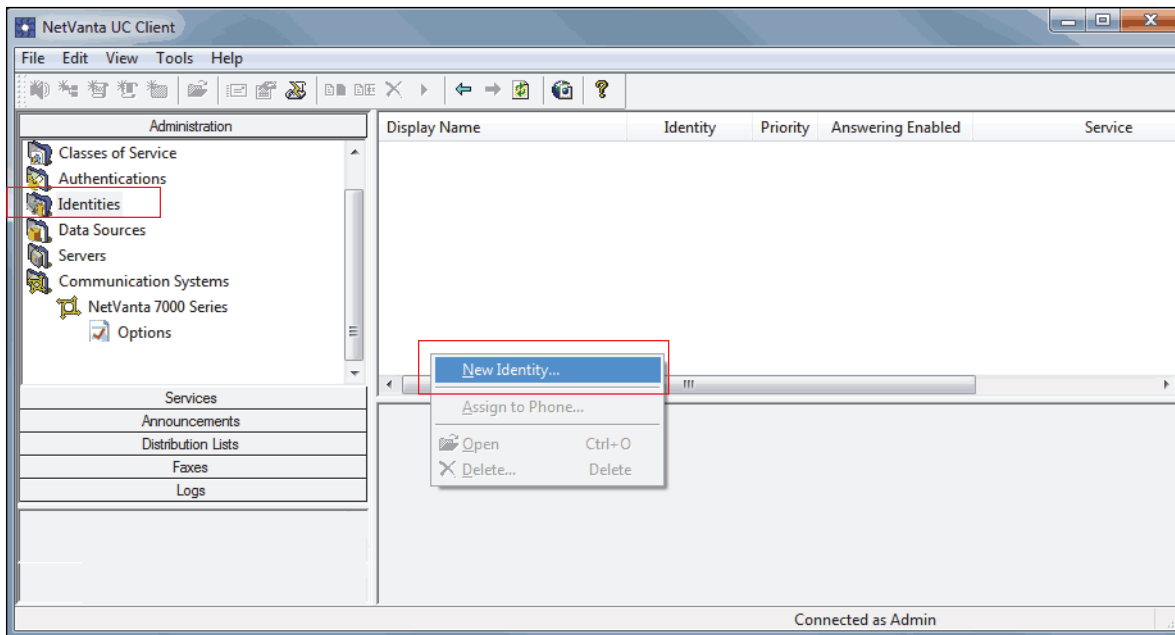
2. The **New Identity Wizard** opens. Select **Next** to move to the next menu. Select the communication system **NetVanta 7000 Series** and the profile type **Admin** from the drop-down menu. Select the identity class **Attendant service**, then select **Next**.

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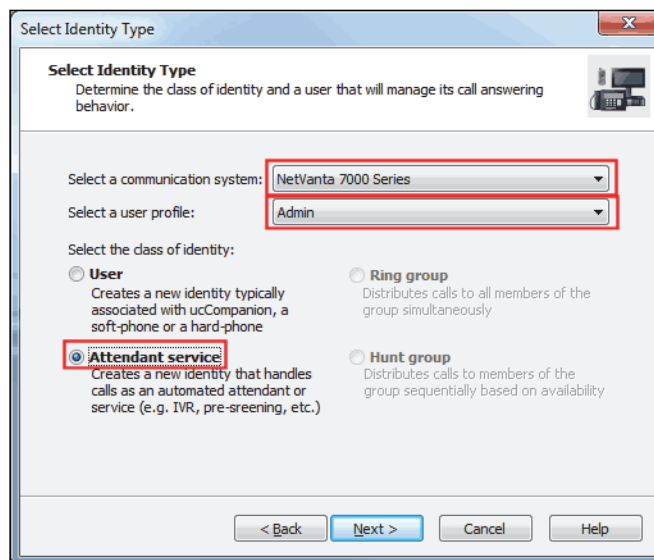
3. On the next wizard menu, specify the name of the identity. This should be a unique name that will help you remember the purpose of the identity, for example, **NV7100 - Direct Voicemail Transfer**. Specify the address as **8504** (the address is the extension). Select **Direct Transfer Voicemail** from the **Run Service** drop-down menu. Leave the remainder of the options at the default, and select **Next**.
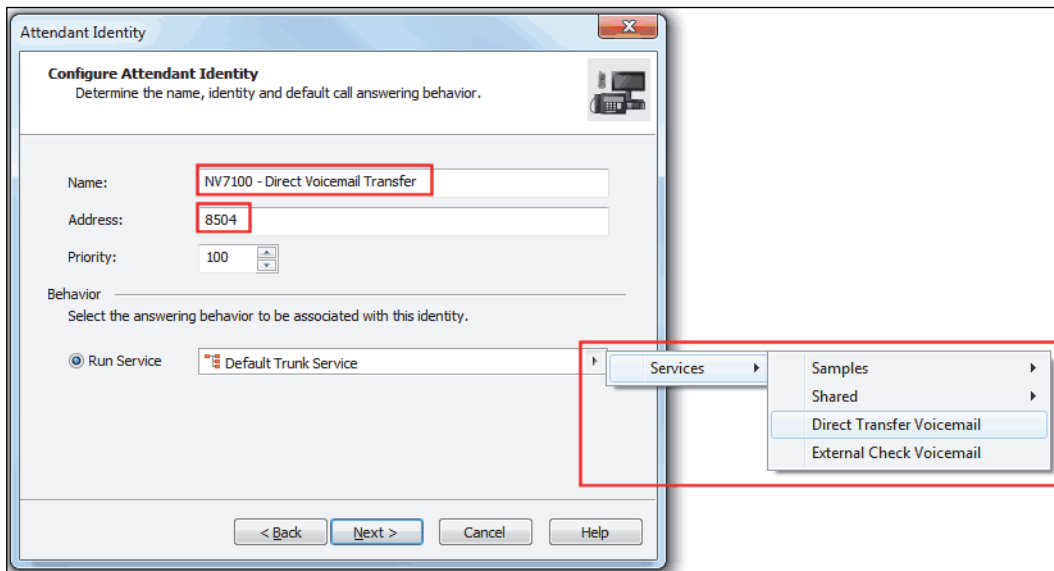
4. Select **Finish** to complete the wizard and create the identity.

5. Repeat these steps to create the identity for extension 8501, making sure to name each identity uniquely (for example, **External Check Voicemail**), to specify the address as the 8501 extension, and to select the **External Check Voicemail** service for the **Run Service** option. When both identities are created, they appear in the identities summary pane.

The identity and service configuration is now complete.

Importing NetVanta 7000 Series Users into NetVanta UC Server

Once the communication system is created, the NetVanta 7000 Series product is configured, and the proper identities and services have been created in NetVanta UC Server, you can import users from the NetVanta 7000 Series product into UC server. There are a few ways to do this, and the method you choose depends upon the number and the types of users you are migrating. It is important to remember that for BCS applications, all users will be moved to UC server. You should use the user information gathered in *Collecting NetVanta 7000 Series Product User Information on page 4* to complete the user migration.

Users can be migrated into UC server in two main ways: Microsoft® Windows users can be added individually by creating a new Windows user from UC server's **Administration** navigation pane, or multiple users can be added at once by using the Users wizard in the NetVanta UC Configuration Wizard. Both methods are described in this section. The steps to gather user information and to create the necessary text or TSV files, however, are not included in this guide.

You must, at a minimum, know the user's display name, first name, last name, extension, communication system type (in this case, **NetVanta 7000 Series**), the user's mailbox ID, whether the user is a Windows-enabled user, the user's email address, and the user's role (whether personal assistant (PA) or personal business assistant (PBA)). For more details about the specific information needed and the creation of text or TSV files for multiple user migration, refer to the *NetVanta Unified Communications Server Configuration Guide* or the technical note *TN094 Importing Users to the UC Server* available from the ADTRAN Support Community (https://supportforums.adtran.com).

Migrating Users Using the Users Wizard

The most effective way to migrate multiple users is by using the Users wizard, which is part of the NetVanta UC Configuration Wizard. You have the opportunity to use this wizard during the initial installation of NetVanta UC Server software, but you cannot migrate users from the NetVanta 7000 Series product until the NetVanta 7000 Series communication system is created. You can return to the Users wizard at any time after the communication system is created to import NetVanta 7000 Series product users.

You can use the Users wizard to migrate multiple users, whether from Active Directory, a Microsoft Exchange Server, a text-based file, or by manual entry. Refer to the technical note *TN094 Importing Users to the UC Server* available from the ADTRAN Support Community (https://supportforums.adtran.com) for more information on creating text-based, Active Directory, or Microsoft Exchange Server imports. Once you have the necessary user information and are ready to migrate users into UC server, follow these steps:

1. Return to the NetVanta UC Configuration Wizard by navigating to **Start** > **Programs** > **ADTRAN** > **NetVanta UC Server** > **NetVanta UC Server Configuration Wizard**.
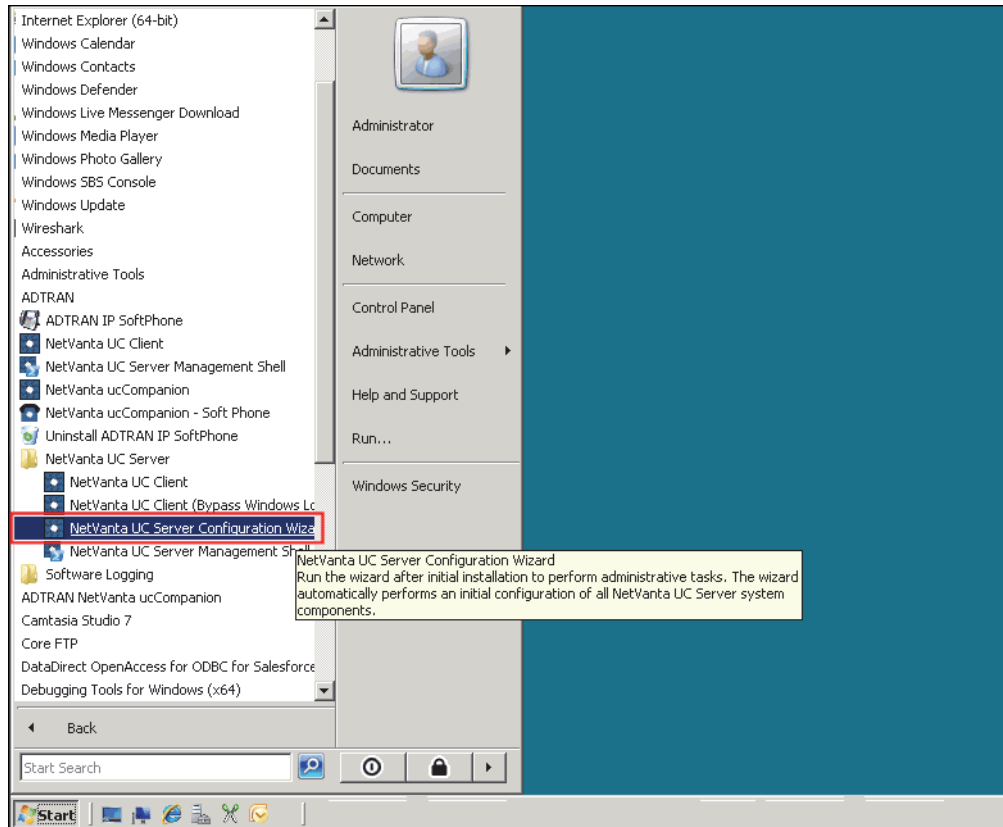
2. After logging in to the server, select **Users** from the NetVanta UC Server Configuration Wizard.
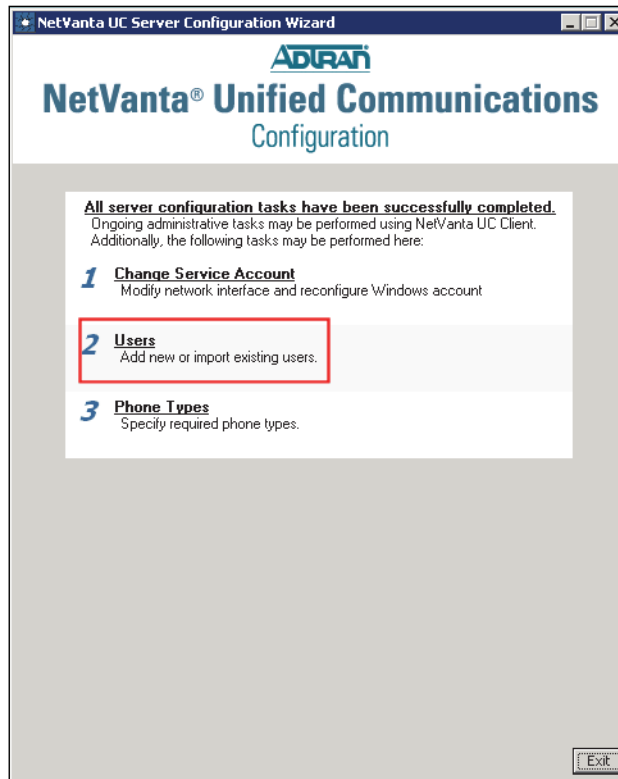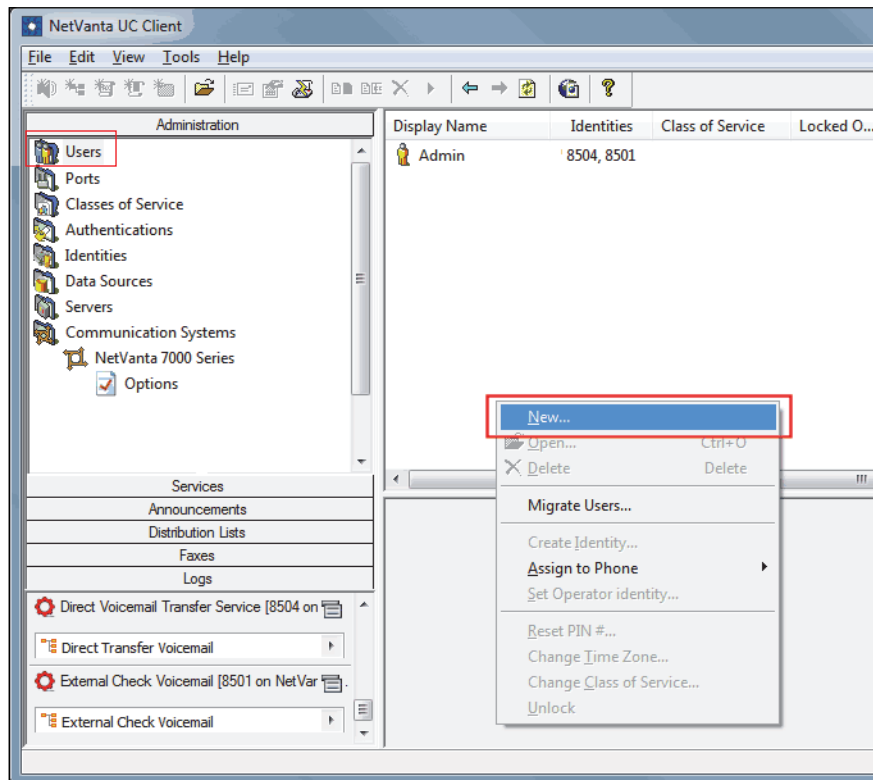

3. Follow the steps in the Users wizard. When you have completed the wizard, the users are automatically given identities and extensions in UC server. If you are using an import method (rather than manual entry), each user is automatically matched with a phone.

Adding Individual Users

You can also add users individually to NetVanta UC Server by using the New User wizard. To use this wizard, follow these steps:

1. In the **Administration** navigation pane, select **Users**. Right-click in the Users summary pane and select **New** to open the New User wizard.

2. Follow the steps in the New User wizard, specifying the following user information:

    *   Whether this is a Windows user (Active Directory) or a Local User.

    *   The user's name, UC server identity, fax number, and communication system (**NetVanta 7000 Series**).

    *   The user's password, PIN, and phone assignment.

    *   The user's email storage location, mailbox, contact information server, and mailbox monitoring status.

    *   The user's role (PA or PBA) and the user's operator type.

3. When all the correct user information is entered, select **Submit** to complete the wizard. The new user is created in UC server. Repeat these steps for each additional user that must be created in UC server.

Verifying the NetVanta BCS Configuration

Once you have configured a communication system on the NetVanta UC Server, configured the NetVanta 7000 Series product for communication with the UC server, created the necessary identities and services on the UC server, and migrated the appropriate users to the UC server, you can verify the BCS configuration. There are two simple ways to verify that the NetVanta BCS has been properly configured. To verify the configuration, follow these steps:

1. Call extension **8500** from a phone connected to the NetVanta 7000 Series product you just configured. Verify that you hear a voicemail prompt from the UC server. The prompt should request a password for accessing the phone's voicemail.
2. Call from one phone connected to the NetVanta 7000 Series unit to another phone connected to the unit. Let the second phone ring and verify that the unanswered call is redirected to the UC server voicemail.

Configuring the Audio Conference Bridge

The audio conference bridge is a NetVanta BCS feature that enables multiple users to converse simultaneously over the Voice over Internet Protocol (VoIP) network through an audio conference server. To configure the audio conference bridge, you will need to complete the following objectives:
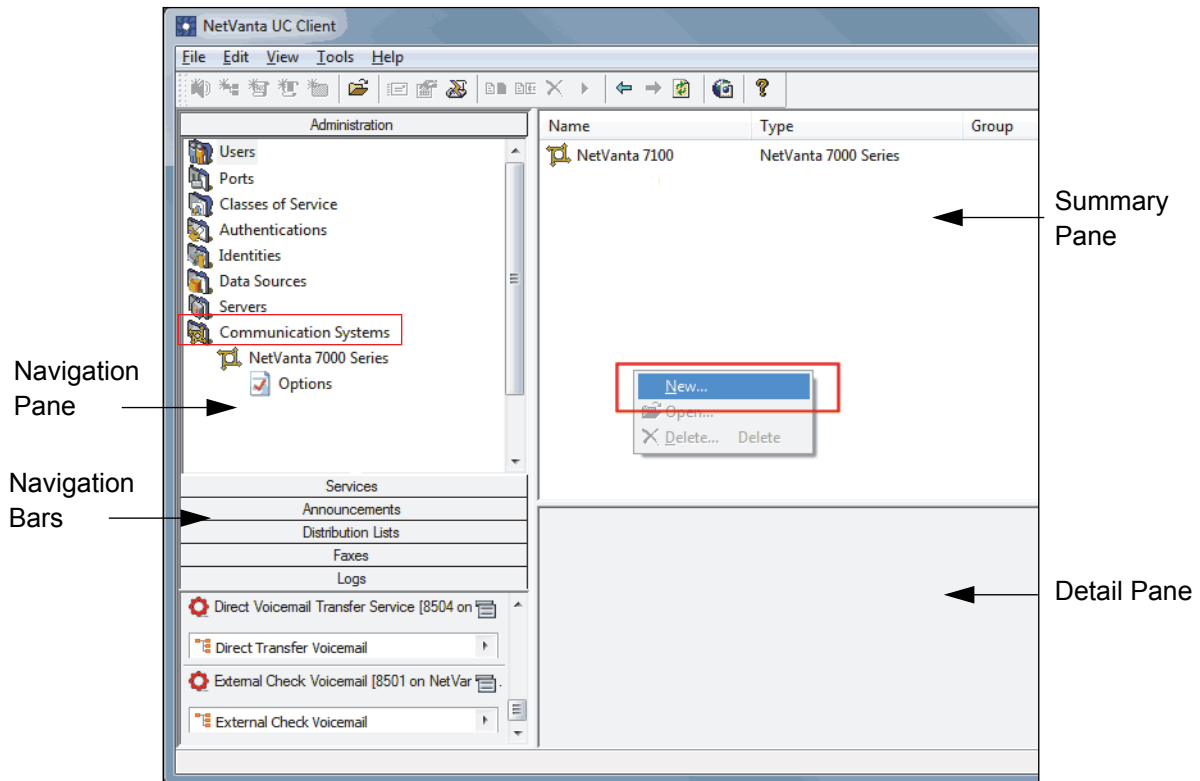
- Create a new communication system.
- Create a SIP trunk for the NetVanta 7000 Series unit to properly route calls destined for the audio conferencing system.
- Create a dial plan entry in the NetVanta 7000 Series unit to route calls through the new SIP trunk.

These objectives are outlined in the following sections.

Configuring the Communication System

For the audio conference bridge to function, you must enable the SIP-related services provided by the embedded PBX. To create this communication system using the Communication System wizard in NetVanta UC Server, follow these steps:

1. Connect to UC server as an administrator and select the **Administration** navigation bar. In the **Administration** navigation pane, right-click on **Communication Systems** and select **Create Communication System**.

2. You will then be prompted to begin the **Communication System Wizard**. Select **Next**.
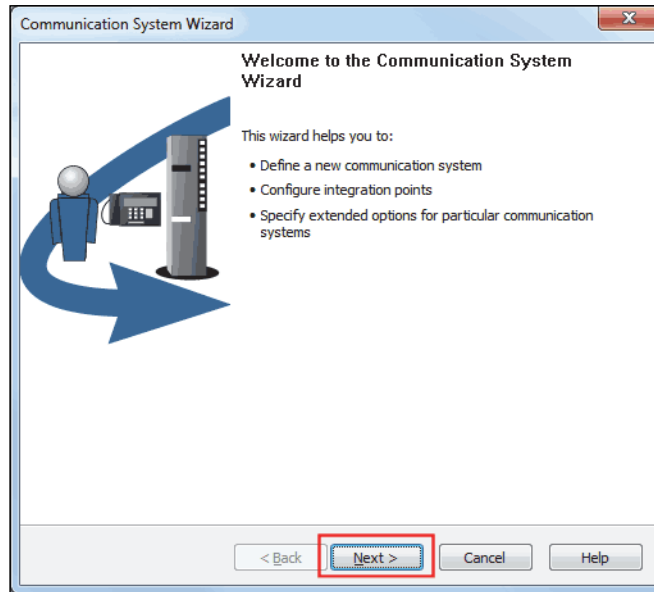
3. Select **NetVanta ECS** from the drop-down menu and select **Next**.

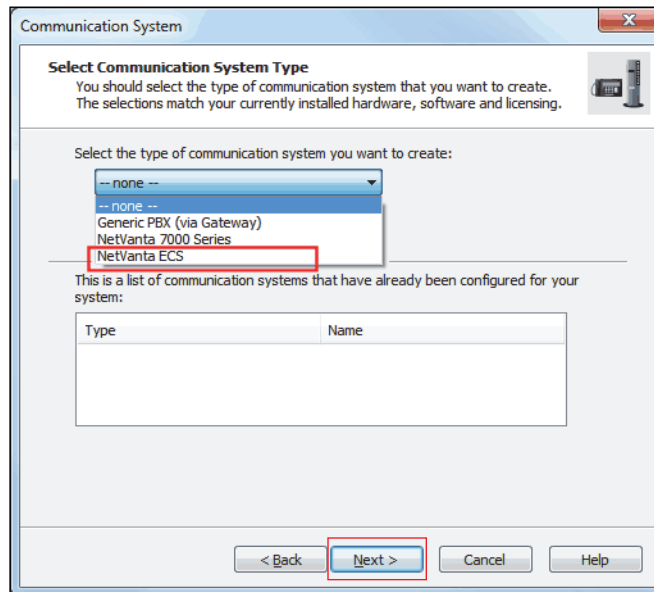4. Enter the communication system's name, answering group number, and priority in the appropriate fields and select **Next**.

For the NetVanta ECS communication system, enter **Audio Conferencing System** as the label. Unlike the answering group number for the NetVanta 7000 Series communication system, the answering group number is not required. Therefore, the answering group number can be any number that is not the same as an existing group number. In this example, the answering group number is specified as **8505**. Leave the **Group Name** field blank, and leave the **Priority** value at **100**, then select **Next**.

5. Select the physical network interface that is being used to connect NetVanta UC Server to the local network from the drop-down menu. Select **Next**.

6. Specify that the Windows Firewall is automatically configured to allow SIP traffic through to UC server by selecting the check box and then select **Next**.
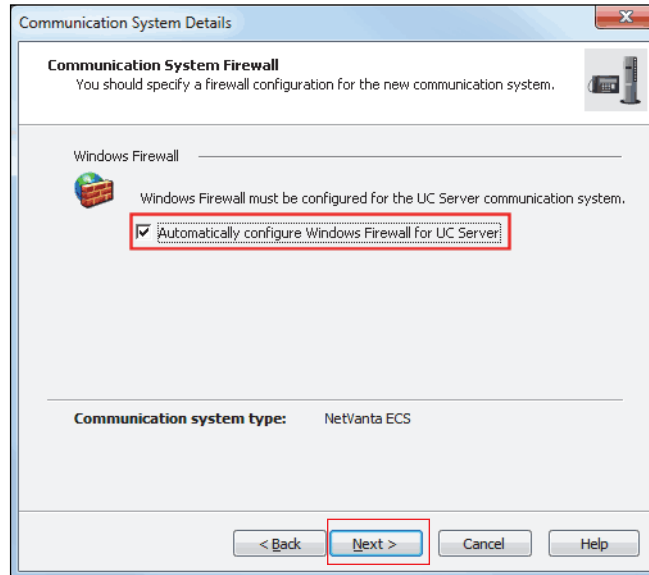
7. Verify that the information is correct, and select **Submit**. This can take several minutes to complete, depending on the speed of UC server computer.
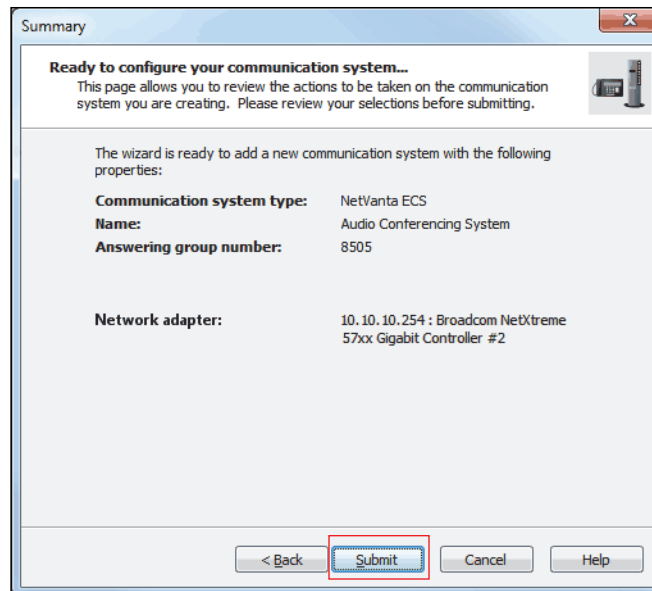
8. Select **Finish**.

Creating a SIP Trunk on the NetVanta 7000 Series Product for Audio Conferencing

You must now create a SIP trunk on the NetVanta 7000 Series product specifically for routing traffic to the audio conference server. The audio conference server listens for SIP requests on UDP port 5060, so this is where the NetVanta 7000 Series product must route audio conferencing traffic. The audio conferencing trunk must be configured, assigned to a trunk group, and associated with the audio conferencing number in NetVanta UC Server. To complete this configuration, follow these steps:

1. To configure the SIP trunk on the NetVanta 7000 Series product for the audio conferencing feature, follow the steps outlined in *Media Gateway, CODEC List, and SIP Trunk Configuration on the NetVanta 7000 Series Units on page 11*. You will need to specify the following characteristics:

   • Trunk Name: **Audio Conference Server**

   • Trunk Type: **SIP**

   • SIP Server Address: IP address of the NetVanta UC Server computer

   • SIP Server Port: **5060**

   • CODEC Group: The CODEC list created in *Media Gateway, CODEC List, and SIP Trunk Configuration on the NetVanta 7000 Series Units on page 11*

2. Once the SIP trunk is created, you must add the trunk to a trunk group. Follow the steps outlined in *Adding the SIP Trunk to a Trunk Group on page 14* using the following parameters:

   • Group Name: **NV Audio Conf** (the trunk group name should be something uniquely identifiable in your network as the trunk group used for the audio conferencing feature).

   • Add the newly created **Audio Conference Server** trunk to the trunk group.

3. Once the SIP trunk has been added to the appropriate trunk group, you will need to add the audio conferencing number to the trunk group call templates. The audio conferencing number for the NetVanta BCS is **7050**. To add this number to the call templates, follow the steps outlined in *Adding Voicemail Extensions to Trunk Group Call Templates on page 15* except specify the template value as **7050** with a cost of **0** in the **Add/Delete Permit Templates** menu. Select **Add** to add the entry to the template.

4. The NetVanta 7000 Series unit now has a SIP trunk configured and is ready to support the audio conference bridge with UC server. Save this configuration by selecting **Save** from the top right of the NetVanta 7000 Series GUI.

5. Test that the audio conference feature is configured correctly in the NetVanta BCS by dialing **7050** from an IP phone connected to the NetVanta 7000 Series unit. If the call connects properly, your configuration is complete.

Enabling Click-to-Dial in the NetVanta BCS

Click-to-dial is a feature that allows users to place calls from the desktop. There are two ways a user can click-to-dial a phone number or contact:

1. By using the Microsoft Outlook plug-in installed with the NetVanta UC Client software. This plug-in provides custom buttons in email messages and contact records that allow users to click-to-dial contacts in their personal address book.

2. By highlighting and copying a text-based phone number from any application on the desktop.

> **NOTE** *The NetVanta 7000 Series personal phone manager also provides the ability for users to click-to-dial a phone number, and this requires no additional configuration.*

When a user initiates a click-to-dial request from their desktop, NetVanta UC Server passes the request to the NetVanta 7000 Series unit, which then performs the necessary call connections on the user's behalf. In order for NetVanta UC Server to initiate the request, it must log into the NetVanta 7000 Series unit with a preconfigured user name and password. By default, the user account used by UC server for click-to-dial operations is **2003** and the password is **1234**. For click-to-dial operations to function, you must create a virtual user on the NetVanta 7000 Series unit with this user name and password. To create this virtual user, follow these steps:

1. Log into the NetVanta 7000 Series product GUI and navigate to **Voice** > **Stations** > **User Accounts**.

2. Select **New** to create the new user account.

3. In the **User Accounts** menu, specify the **User Data Source** as **Create New**, the **Extension** as **2003**, the **First Name** as **Click**, the **Last Name** as **ToDial**, and the **Phone Type** as **Virtual**. Select **Apply** once this information is entered to create the click-to-dial virtual user.

4. Once the user account is created, additional configuration options for the new user are displayed. The only additional configuration necessary is to specify the **PIN** as **1234** and select **Apply**. Click-to-dial is now configured for the NetVanta BCS.

Enabling 10-Digit Dialing and Removing Dialing Restrictions

By default the NetVanta UC Server uses 7-digit dialing and prohibits the NetVanta UC Server from dialing a 1 prefix. Removing the 1 prefix dialing restriction enables NetVanta UC Server services such as FindMe-FollowMe to dial remote area codes. This allows a remote branch office user (located in a separate area code from the NetVanta UC Server) to configure the NetVanta UC Server's FindMe-FollowMe service to call their mobile phone number after first trying their desk IP phone extension. To enable 10-digit dialing and remove dialing restrictions, follow these steps:

1. Log in to NetVanta UC Server as an administrator.
2. Select the **Admin** tab, select **Tools** from the menu bar, then select **Options**. The **Options** menu will appear.
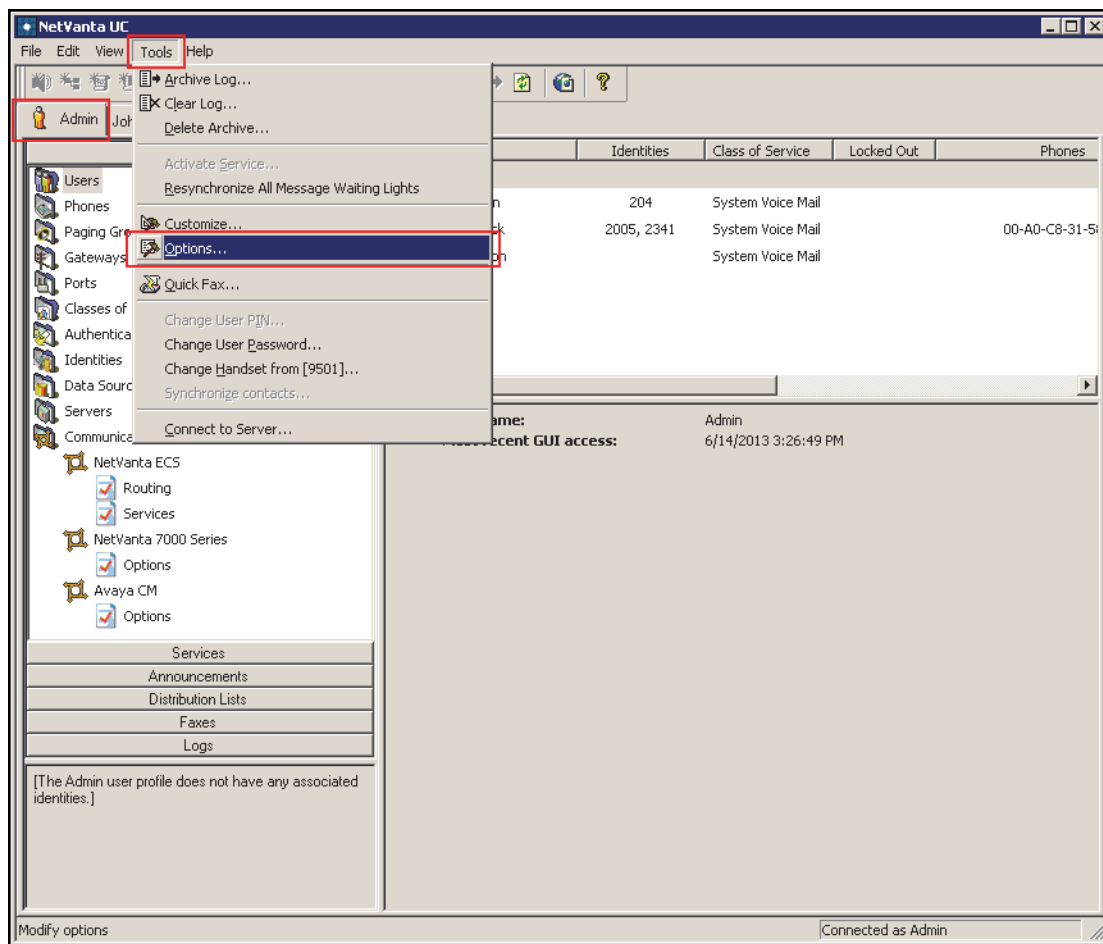
3. In the **Options** menu, select the **Dialing** tab.

4. In the **Dialing** tab, delete the **1** that appears in the **Exclude prefixes** field, and select the **Enable 10-digit dialing for my area code** check box. Then, select **OK**.

Creating a FindMe-FollowMe Service in NetVanta UC Server

An advanced FindMe-FollowMe service can be created for NetVanta UC Server users to automatically direct incoming calls to the user. During normal call operation when a user receives a call, the NetVanta 7000 Series first rings the user's IP phone extension. After a specified number of rings, the NetVanta 7000 Series transfers the call to the NetVanta UC Server. The NetVanta UC Server FindMe-FollowMe service plays an announcement and then transfers the call to the user's external telephone number. If the call is not answered, then the FindMe-FollowMe service sends the call to voicemail.

> **NOTE**   *Because the external telephone number differs for each user, a FindMe-FollowMe service must be created for and assigned to each user.*

                   6UCSCG0005-29C

The layout for the NetVanta UC Server FindMe-FollowMe service is shown below. For more information on creating services using the NetVanta UC Client Service Editor, refer to the *NetVanta Unified Communication Server Administrator Guide* for your version of NetVanta UC Server available from the ADTRAN Support Community (https://supportforums.adtran.com).
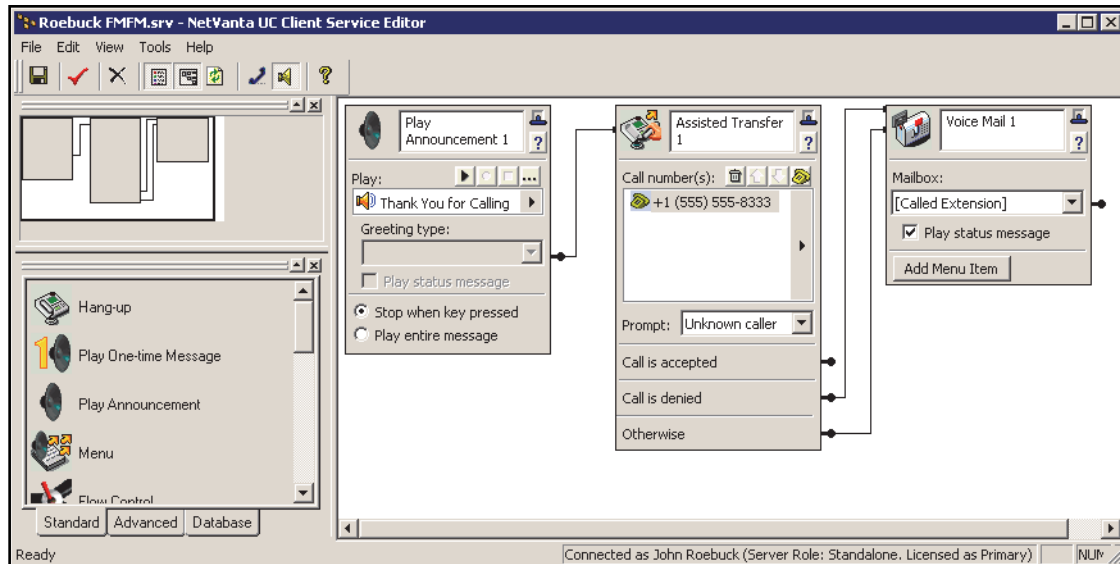
When creating the service, keep in mind the following:

- In order to activate the service on the appropriate user's identity, the service must either be created in the **Shared** service folder or be created from the user's profile.

- The default **Thank You for Calling** announcement should be used in the **Play Announcement** service element. To select this announcement, use the **Play** drop-down menu to navigate to **Announcements** > **Shared** > **Thank You for Calling**.

- The user's desired external telephone number should be added to the **Call number(s)** list in the **Assisted Transfer** service element. To add a number to the list, select the [icon] button. In the **Enter Phone Number** menu that appears, enter the **Area Code** and **Telephone number** in the provided fields, and select the appropriate **Country code** for the number using the drop-down menu.

After creating a FindMe-FollowMe service for a user, the service must be activated for the user's identity. To activate a service on the user's identity, follow these steps:

1. Select the **Services** navigation bar, then navigate to the folder of the FindMe-FollowMe service.

2. Right-click the FindMe-FollowMe service, and select **Activate Service**. The **Activate service** menu appears.

3. In the **Activate on** section of the **Activate service** menu, enable the check box next to the identity on which you wish to activate the FindMe-FollowMe service. Then, select **OK**.
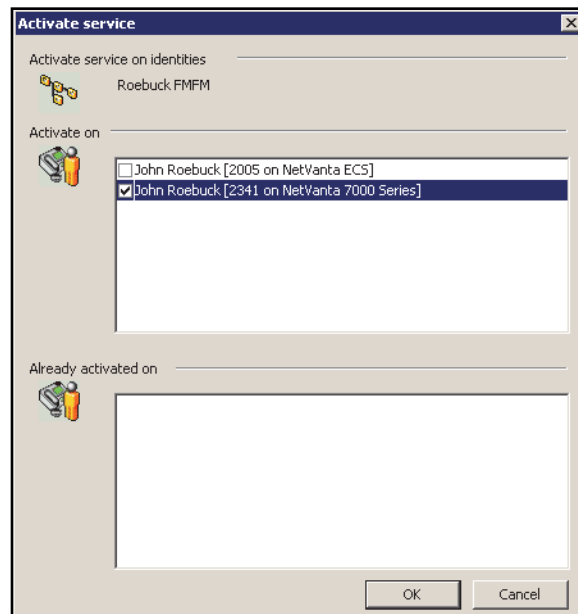
Creating a Single Number Reach for Voice and Fax

The NetVanta UC Server Single Number Reach (SNR) service enables the sharing of a single telephone number for both voice and fax calls. When configured, all user inbound calls are routed to the service for pre-answer processing. The NetVanta UC Server SNR service plays a ringing (2 ring) wave file while detecting fax calling (CNG) tones. If a fax is detected, then the service saves the fax in the user's mailbox as a TIF or PDF attachment. Otherwise, the service transfers the call to the specified user's extension. For more information on configuring an SNR service on NetVanta UC Server, refer to the *Configuring Single Number Reach for the NetVanta Business Communications System* technical note available from the ADTRAN Support Community (https://supportforums.adtran.com).

Configuration Example: Multi-Site BCS with NetVanta 6355 Units

Figure 2 on page 37 illustrates an example multi-site business application. The NetVanta UC Server and NetVanta 7100 are located at the main office. SIP trunks connect remote branch offices to the main office over a private IP or Multiprotocol Label Switching (MPLS) network. The NetVanta 6355 IP Business Gateways connect remote users to the main office and provide local public switched telephone network (PSTN) trunk connections. The NetVanta 7100 also provides a SIP trunk connection to an Internet telephone service provider (ITSP). The ITSP provides converged service for data, voice, and Internet access.

The remote site NetVanta 6355 units are configured to operate in transparent proxy mode, providing a less complicated installation. All remote user IP phones register and receive their configurations from the NetVanta 7100 located at the main office. This enables the NetVanta 7100 to check all calls for PBX processing before routing the call to its destination. The NetVanta 7100 provides least cost call routing (LCR) and toll bypass for long distance service. Local PSTN connections on the NetVanta 7100 and NetVanta 6355 provide survivability and emergency 911 service in the case of network connectivity issues.

Employees use the NetVanta UC Client on their desktop computer to manage their NetVanta UC Server voice messaging and personal business attendant (PBA) services. The NetVanta UC Click-to-Dial application integrates with the user's desktop IP phone to simplify dialing. The NetVanta ucCompanion application provides the user with text messaging and presence status.
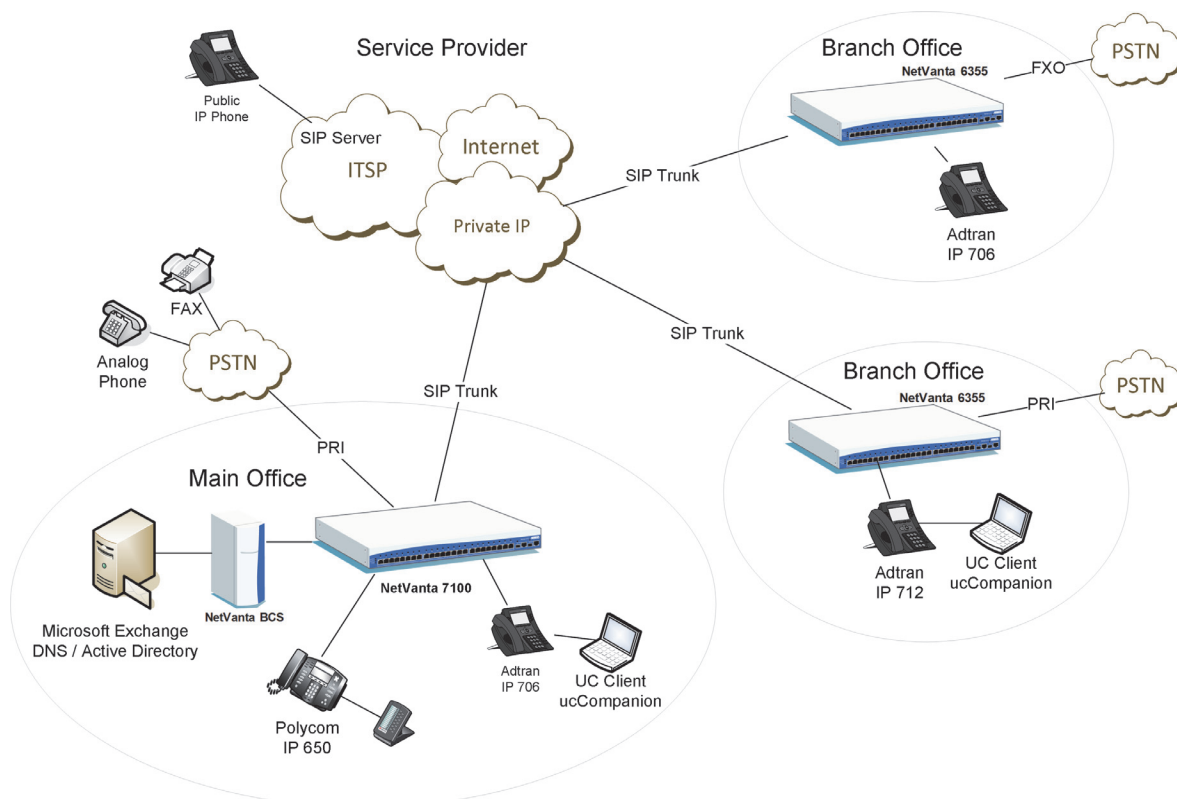

Figure 2. Main Office NetVanta BCS with Remote Branch Office NetVanta 6355

Additional Configurations for Multi-Site BCS with NetVanta 6355 units

In addition to configuring the NetVanta 7100 and NetVanta UC Server system for BCS using the instructions provided in this document, the remote NetVanta 6355 units must be configured for SIP networking with the NetVanta 7100. Additionally, the NetVanta 6355 users must be added as users in the NetVanta UC Server system using the steps provided in *Importing NetVanta 7000 Series Users into NetVanta UC Server on page 22*.

> **NOTE**
>
> *Plan the extensions used at each site. These extensions should use wildcards for easy matching, and each location should have their own extensions. For example, the main site (the NetVanta 7100) can use extensions 2xxx, Remote Site B can use extensions 3xxx, and Remote Site C can use extensions 4xxx.*

The steps below outline the steps required to configure SIP networking between the NetVanta 7100 and a NetVanta 6355. A thorough procedure for each step is provided in the **Configuring SIP Networking with an IP Business Gateway using the GUI** and **Configuring SIP Networking with an IP Business Gateway using the CLI** sections of the *Configuring SIP Trunking and Networking for the NetVanta 7000 Series Configuration Guide* available from the ADTRAN Support Community (https://supportforums.adtran.com).

1. Configure the media gateway for all units (remote and main).

2. Configure the IP phones and remote voice users for the remote unit(s) on the NetVanta 7100 unit at the main site.

3. Configure the Dynamic Host Control Protocol (DHCP) pool for the remote unit(s).

4. Configure QoS. The QoS configuration is done on both the NetVanta 7100 unit at the main site, and any AOS units at the remote sites.

5. Configure the SIP trunk and trunk groups for the remote unit(s).

6. Configure the PSTN trunks and trunk groups for the remote unit(s). These trunks are used for LCR and survivability.

7. Configure the NetVanta 6355 units to allow the network to handle voice features and forwarding. From the Global Configuration mode of the unit's command line interface (CLI), enter the following commands:

   voice feature-mode network
   voice forward-mode network

8. Enable SIP transparent proxy on the NetVanta 6355 unit(s) in the SIP network.

9. Configure the analog users on the units.

10. Configure the SIP trunk(s) on the NetVanta 7000 Series unit at the main site.

11. Configure the SIP trunk group(s) on the NetVanta 7000 Series unit at the main site. There are different variations for trunk group configuration, depending on the type of LCR you want to implement.

Appendix A: Additional NetVanta BCS Information

This appendix includes additional configuration information for the NetVanta BCS. The first is the ability to check the availability of the NetVanta UC Server port that listens for calls from the NetVanta 7000 Series product (as described in *Verifying the NetVanta 7000 Series Product Connection Port on page 9*). The second is the ability to configure the NetVanta 7000 Series portion of the NetVanta BCS using a single GUI page. Configuration steps for both tasks are described in the following sections.

Checking Port Availability

Follow the steps below to check that the IP port used by NetVanta UC Server to listen for calls from the NetVanta 7000 Series unit is not in use. These instructions do not guarantee that an application will not claim the port at some other time, but they are used to check the port availability at a particular instant.

1. Open a command prompt in UC server.

2. Select **Run** and enter the following command at the prompt (note that **5081** should be replaced with the port you want to check):

    netstat -a -p udp | find ":5081"

3. If a row is listed in the output, then an application is already using that port.

4. Close command prompt.

GUI Configuration of the NetVanta BCS on the NetVanta 7000 Series Product

Beginning in AOS firmware release A5.01, a GUI configuration page is available for configuring the NetVanta 7000 Series product for use with NetVanta UC Server as the NetVanta BCS. This GUI page streamlines the configuration process of the NetVanta 7000 Series unit, but it should only be employed by advanced users. The GUI page allows administrative users to configure all of the requisite information for connecting the NetVanta 7000 Series product to the UC server computer. Administrators can log into the NetVanta 7000 Series GUI, and are prompted for the IP address and UDP port for the NetVanta BCS, the trunk number to create for the NetVanta BCS, the voicemail and the conference extensions to be used by the NetVanta BCS. Using the GUI page for NetVanta BCS configuration allows the configuration of a SIP trunk between the NetVanta 7000 Series product and the associated trunk group with the NetVanta UC Server computer's IP address and UDP port setting to take place in the background without additional user input.

To use the GUI page to configure the NetVanta 7000 Series product for use with NetVanta UC Server as the NetVanta BCS, follow these steps:

1. Connect to the NetVanta 7000 Series unit GUI and log in as administrator.

2. Navigate to **Voice** > **System Setup** > **UC Server**.

3. In the **UC Server Configuration** menu, enter the IP address of the NetVanta UC Server computer in the appropriate field. If UC server has already been configured, then the IP address of the first configured SIP trunk dedicated to UC server is displayed.

4. Next, in the appropriate field, enter the UDP port on which UC server listens for SIP messaging from the NetVanta 7000 Series product.

5. Specify the trunk number to be dedicated for communication to NetVanta UC Server in the **Trunk Number** field. By default, if UC server has not already been configured, the next available trunk is listed as a suggestion. If UC server has already been configured, then the number of the first configured SIP trunk that is dedicated to UC server is displayed.

6. Enter the number for the NetVanta 7000 Series conference extension in the appropriate field. By default, this extension is set to **7050**.

7. Enter the extension used to connect to voicemail in the **Voicemail Extension** field. By default, this extension is set to **8500**.

8. Once you have entered the correct information, select **Apply** to disable internal voicemail on the NetVanta 7000 Series unit, to create a SIP trunk for use with the NetVanta BCS, and to configure a grouped trunk using the NetVanta UC Server computer's IP address and UDP port setting.

Additional NetVanta BCS Documentation

You can find documentation for all additional NetVanta BCS features in the ADTRAN Support Community (https://supportforums.adtran.com).