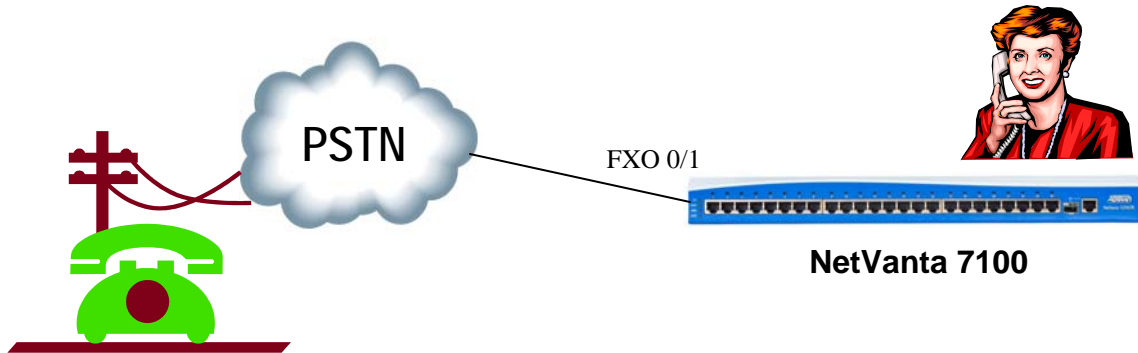

NetVanta 7100 Exercise

Basic Installation and Call Handling




This exercise begins with the “Out of the Box” configuration of the NetVanta 7100. You will create two SIP users, a door phone user account, modify the current voice configuration, and then place calls following a typical call flow where inbound calls go to the auto attendant. In the second call flow example, you will create a ring group and then have inbound calls ring all phones that are members of that ring group.

CONNECTIONS

- An ADTRAN IP 712 is connected to your NetVanta 7100 eth 0/1
- A Polycom SoundPoint IP601 is connected to NetVanta 7100 eth 0/2
- Analog trunk #1 is connected to NetVanta 7100 FXO 0/1
- Analog trunk #2 is connected to NetVanta 7100 FXO 0/2.
- IP/SIP trunk is connected to eth 0/0

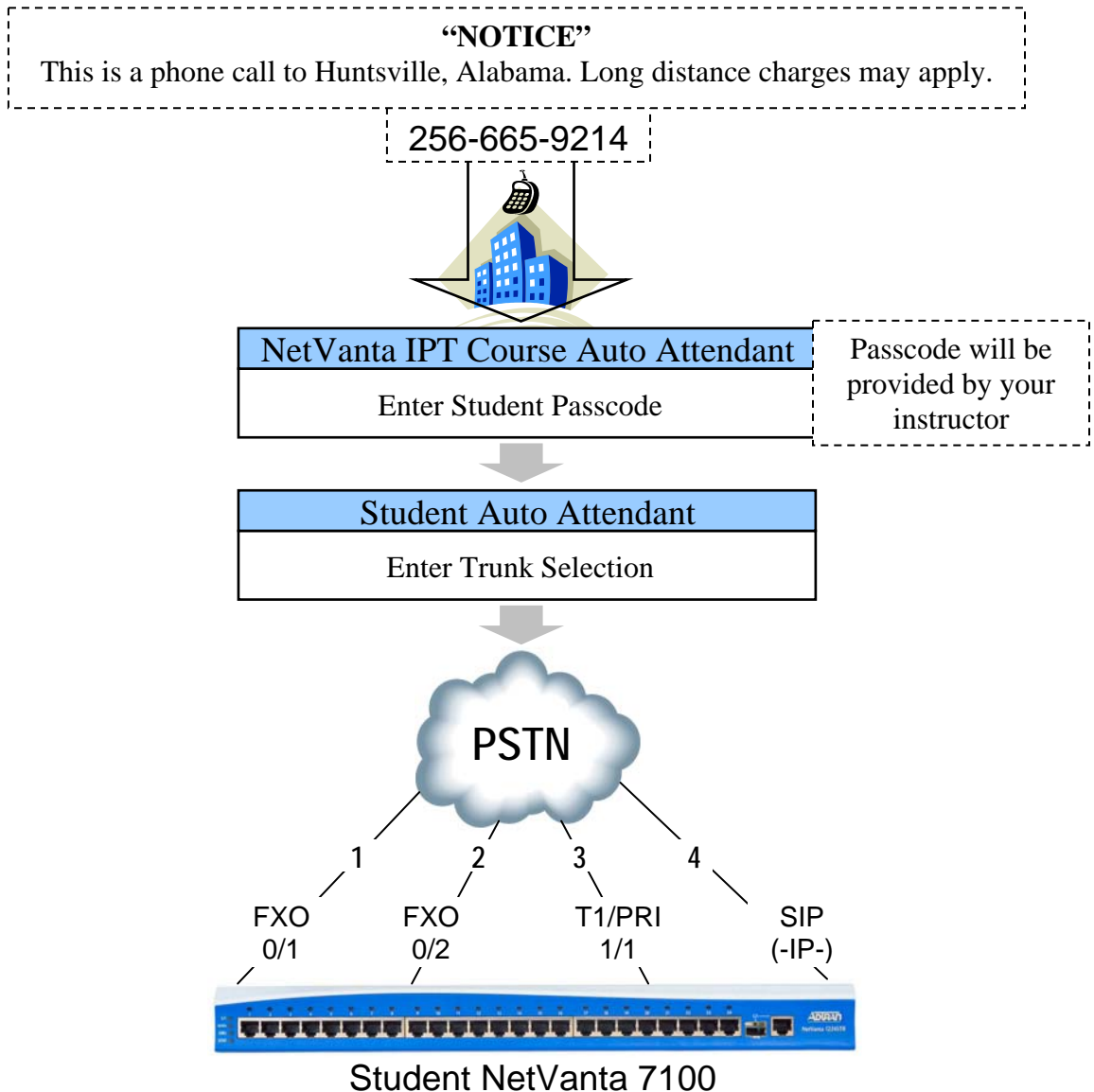
** Only Analog trunk #1 will be used in this lab*

NETVANTA IP TELEPHONY COURSE AUTO ATTENDANT

This lab includes **OPTIONAL** trunk calls into **YOUR** configured student NetVanta 7000 lab equipment. When you see the  symbol, this represents a call made from **YOUR OWN PHONE** (cell phone, business phone, etc...) into the **NetVanta IP Telephony Course Auto Attendant**.

Based on the lab exercise, you will be asked to select one of four call choices from within the NetVanta IP Telephony Course Student Auto Attendant:

- **1** for inbound call to your **first analog trunk**
- **2** for inbound call to your **second analog trunk**
- **3** for inbound call to user **2003** on your configured **T1/PRI**
- **4** for inbound call on your configured **SIP trunk**

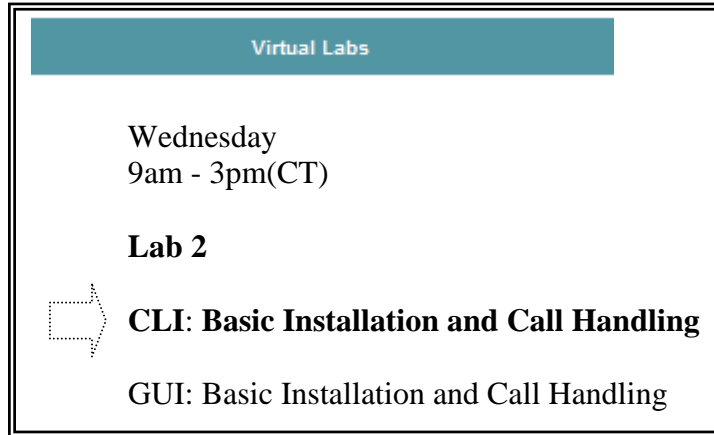


ACCESSING LAB NETVANTA 7100 - COMMAND LINE INTERFACE (CLI)

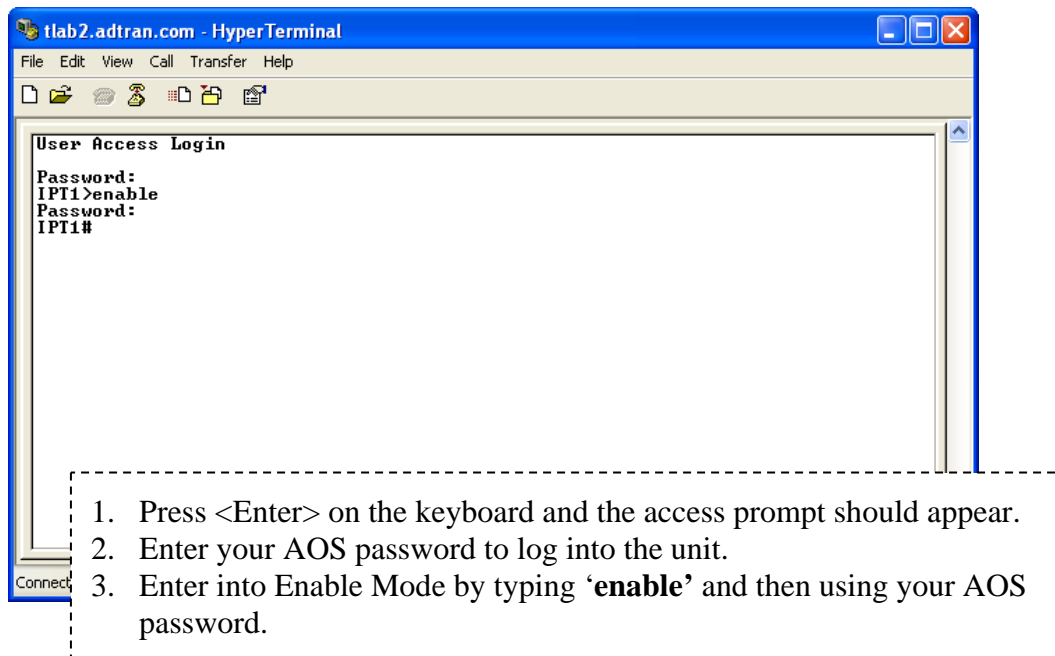
- ❑ Log in to www.adtran.com and then navigate to your student web page (www.adtran.com/training/vilt ipt).

This link is on your CD and in your course information

- ❑ From the student web page, navigate down to the Virtual Labs section



- ❑ Select **CLI** as shown above for Command Line Interface



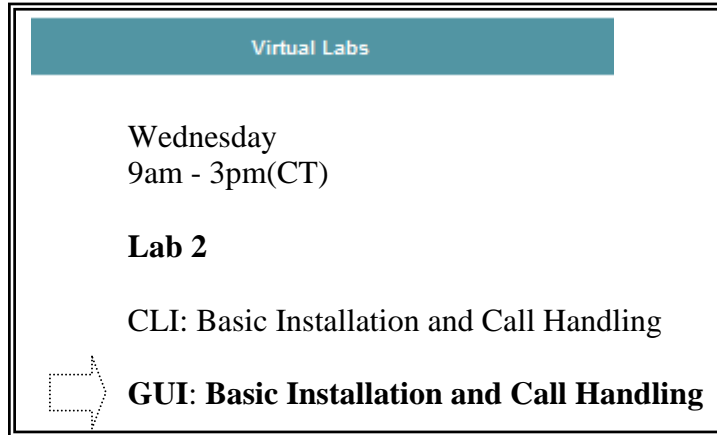
* *The Password will be provided by your instructor*

ACCESSING LAB NETVANTA 7100 – GRAPHICAL USER INTERFACE (GUI)

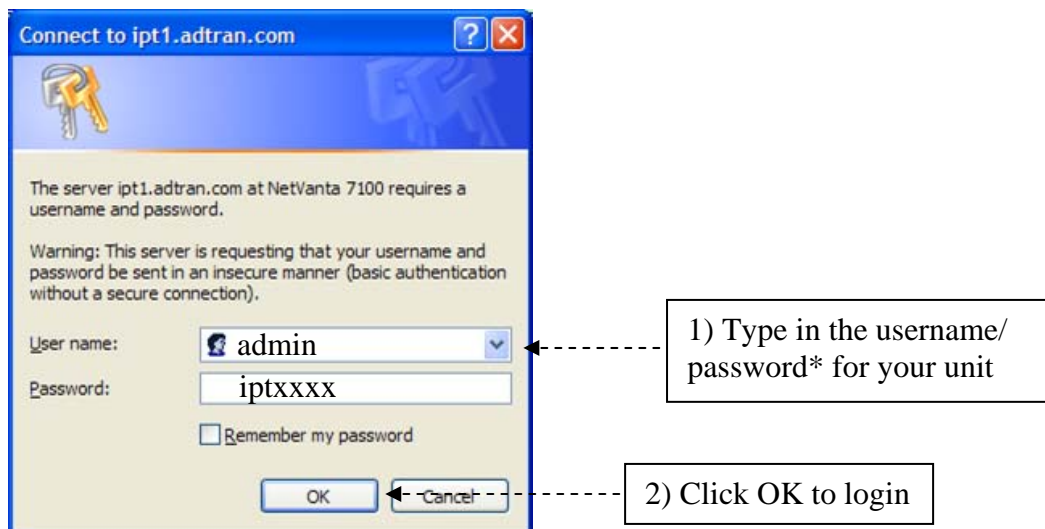
- ❑ Log in to www.adtran.com and then navigate to your student web page (www.adtran.com/training/vilt ipt).

This link is on your CD and in your course information

- ❑ From the student web page, navigate down to the Virtual Labs section



- ❑ Select **GUI** as shown above for the Graphical User Interface and login to the NetVanta 7100 management interface.



* The Password will be provided by your instructor

DEFAULT YOUR LAB NETVANTA 7100

Before you begin this lab, prepare your student NetVanta 7100.

- Access the CLI of your NetVanta 7100
- Enter into Enable Mode by typing '**enable**' and then using your AOS password
- Enter the following commands to return this unit to "LAB DEFAULTS"

NV7100# **erase cflash Polycom/*0004***

NV7100# **erase cflash ADTRAN/*00a0***

NV7100# **copy flash ipt-config startup-config**

NV7100# **erase dynvoice-config**

NV7100# **reload**

Enter <n> for 'no' when asked if wanting to save system configuration

Enter <y> for 'yes' when asked if wanting to reboot system

ACCESS YOUR LAB NETVANTA 7100

- GUI Management Interface

- Access and login to the GUI interface of your Netvanta 7100



If needed, see ACCESSING LAB UNIT (GUI) for instructions

- CLI Connection

- Re-establish the CLI connection and log back in to the Enable Mode

- If needed, see ACCESSING LAB UNIT (CLI) for instructions

OBTAIN MAC ADDRESS OF IP PHONES

☐ Navigate to the **Data / Switch / MAC Forwarding** screen.

From this screen, you can see the MAC addresses of connected devices and the physical ports that they are connected to.

Add Static MAC Forwarding Entry

Use this form to create static MAC Address Forwarding entries.

VLAN:

MAC Address: : : : : : *Media Access Control address for this interface*

Port:

MAC Forwarding Entries

The following table lists all MAC Address Forwarding entries for the Switch. A static entry, that is not internal, can be deleted by clicking on the entry's delete button. Please go to the [Port Security](#) page and click on the 'Secure MAC List' tab to delete a secure MAC address.

ID	VLAN	MAC Address	MAC Type	Port
1	Default	00:A0:C8:1C:9D:B6	Static	Internal
1	Default	00:A0:C8:25:54:90	Dynamic	eth 0/1
2	VoIP	00:04:F2:10:DF:2C	Dynamic	eth 0/2
2	VoIP	00:A0:C8:1C:9D:B6	Static	Internal

ADTRAN Phone – Eth 0/1

Polycom Phone – Eth 0/2

☐ Note the MAC addresses associated with Ethernet ports 0/1 and 0/2. *

Write MAC addresses below for use during voice user creation:

ADTRAN IP 712 eth 0/1 00:A0:C8:____:____:____

Polycom SoundPoint IP 601 eth 0/2 00:04:F2:____:____:____

* If you do not see eth 0/1 and eth 0/2 in the MAC Forwarding table, complete the following:

1. Navigate to the **Data / Switch / Power over Ethernet** screen.
2. Cycle the power of Eth 0/1 and Eth 0/2 from **AUTO** to **OFF**.
3. Cycle the power of Eth 0/1 and Eth 0/2 from **OFF** to **AUTO**.
4. Return to the **Data / Switch / MAC Forwarding** screen as shown above and obtain MAC addresses after phones have booted.

CREATE SIP VOICE USERS 2003 and 2004

1. Select **Voice / Stations / User Accounts** from the NetVanta 7100 menus.

Phone config files can only be created for recognized phone models.

SIP User 1
 Extension: 2003
 First Name: Your
 Last Name: Choice
 Phone Type: SIP
 Phone Model: ADTRAN IP 712

Select New Address and then enter Phone MAC Address of your ADTRAN phone

Last Name	First Name	Extension	Port	Station CoS	
IP Phone	Default	2000	SIP	public_phones	Delete
Port 0/1	Analog FXS	2001	fxs 0/1	normal_users	Delete
Port 0/2	Analog FXS	2002	fxs 0/2	normal_users	Delete

2. Enter SIP User #1's **extension, name, and Phone Type**.
3. Select the **New Address** option and then enter the MAC address of the ADTRAN IP 712 phone.
4. Change the Phone Model to **ADTRAN IP 712**
5. Click **Apply and Add Another User**.

Clicking "Apply and Add Another User" creates the configured voice user but leaves you on the Voice / Stations / User Accounts screen instead of the New Voice User Edit screen.

6. From the **Voice / Stations / User Accounts** screen, complete the steps below:

SIP User 2
 Extension: **2004**
 First Name: **Your**
 Last Name: **Choice**
 Phone Type: **SIP**
 Phone Model: **SoundPoint IP 6xx**

Select New Address and then enter Phone MAC Address of your Polycom phone

7. Enter SIP User #2's **extension, name, and Phone Type**.
8. Select the **New Address** option and then enter the MAC address of the ADTRAN/Polycom SoundPoint **IP 601**.
9. Change the Phone Model to ADTRAN/Polycom SoundPoint **IP 6xx** and then click **Apply**.

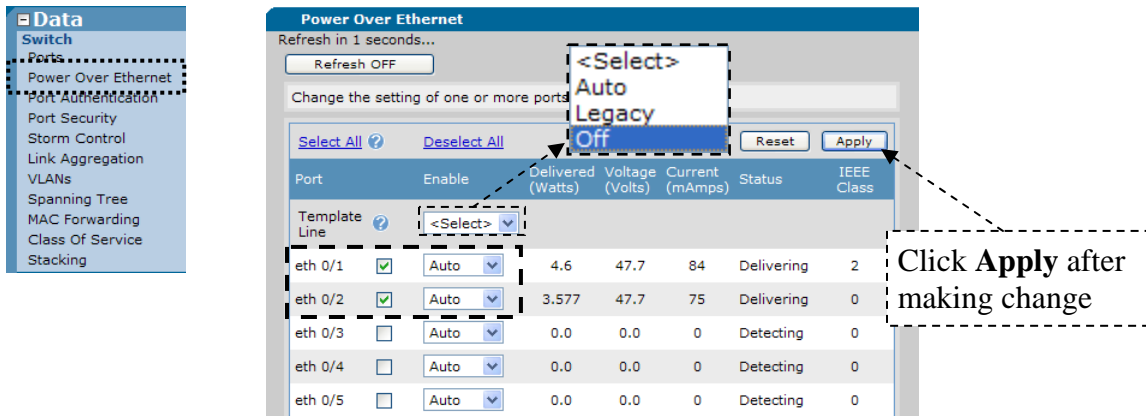
Q: What information must be entered to create a new SIP user for a known phone model?

Q: Where are phone configuration files created by the NetVanta 7100 stored?

CYCLE POWER OF PoE PORTS

The ADTRAN and Polycom SIP based phones load configuration files at boot. If the voice user was created after the phone had already been plugged in, removing power to the port that the phone is connected to is one way to force the IP phone to reboot.

10. Navigate to the **Data / Switch / Power over Ethernet** screen.



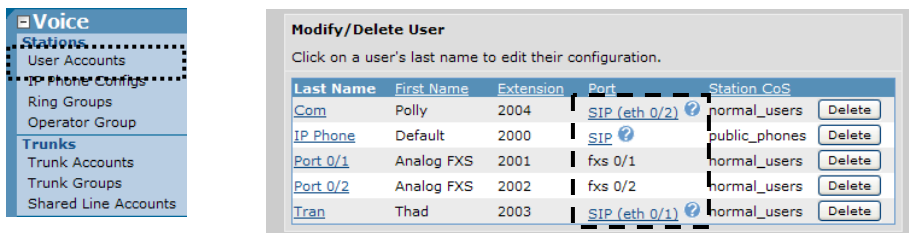
11. Cycle the power of Eth 0/1 and Eth 0/2 from **AUTO** to **OFF**.

12. Cycle the power of Eth 0/1 and Eth 0/2 from **OFF** to **AUTO**.

CHECK REGISTRATION STATUS OF SIP USERS

After phones have had enough time to boot (allow about 2 ½ minutes), one location where the status of SIP phones can be displayed is on the following screen:

13. Navigate to the **Voice / Stations / User Accounts** screen.



If SIP user has **registered** with the NetVanta 7100, a line displays below the word SIP.


If SIP user has **not registered** with the NetVanta 7100, a line displays though the word ~~SIP~~.

The MAC address entered for this phone can also be seen by hovering cursor of ? bubble.


ACCESS VOICEMAIL

Newly created voice users are given access to Voicemail by default. When a voice user accesses voicemail for the first time, the Voicemail Setup Wizard runs. The user will be prompted to record a name, greeting, and to change their voicemail password.

In the following steps, you will set up voicemail for user 2003. Next you will call and leave a message for 2003. Finally, you will listen and delete the message.

The  symbol represents a call made from **your own phone** into the **NetVanta IP Telephony Course Auto Attendant**.


14. Set up Voicemail for voice user 2003.

1. Dial  1-256-665-9214
2. Enter Pass Code for Student Auto Attendant (*your 4 digit passcode*)
3. Press 1 to place call into your first Analog Trunk

Call is initiated inbound on the first Analog trunk to the Auto Attendant (8200)

4. Enter 8500, for Voicemail, when asked to enter extension
Mailbox? Enter 2003 followed by #
Password? Enter 1234 followed by #
5. Follow the prompts to record your name, greeting, and a new voicemail password of “**1111**”. Hang up when complete.

15. Call your IPT lab site and leave message for voice user 2003.

1. Dial  1-256-665-9214
2. Enter Pass Code for Student Auto Attendant (*your 4 digit passcode*)
3. Press 1 to place call into your first Analog Trunk

Call is initiated inbound on the first Analog trunk to the Auto Attendant (8200)

4. Enter 2003 when asked for extension.

Call is sent to voice user 2003. Call coverage is configured to “Go to Voicemail” after 4 rings.

5. Leave message and then hang up when complete.

16. Call your IPT lab site and check Voicemail for user 2003.

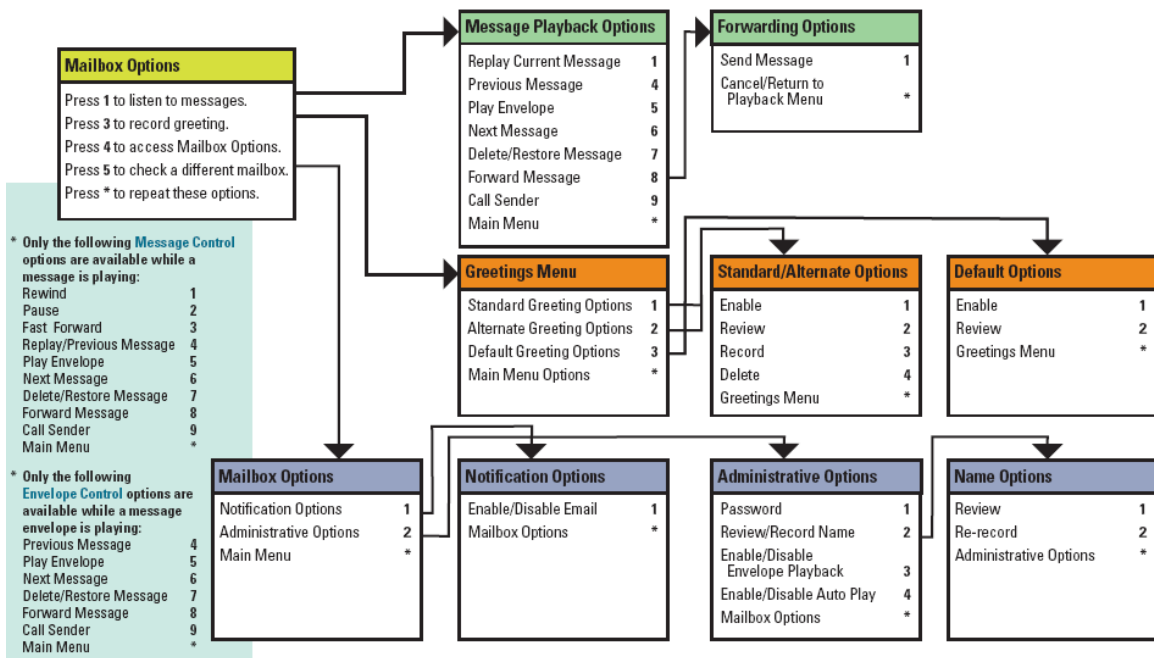
1. Dial ☎ 1-256-665-9214
2. Enter Pass Code for Student Auto Attendant (*your 4 digit passcode*)
3. Press 1 to place call into your first Analog Trunk

Call is initiated inbound on the first Analog trunk to the Auto Attendant (8200)

4. Enter 8500, for Voicemail, when asked to enter extension
 Mailbox? Enter 2003 followed by #
 Password? Enter 1111 followed by #
5. Follow the prompts to listen to message. Delete message after listening.

Voicemail Menus

Time permitting; navigate through Voicemail to familiarize yourself with the different Voicemail options.



Q: How many voicemail ports are available with the NetVanta 7000 Series?

Ring Group and Door Phone



In the following steps, you will create a ring group and a door phone user account. You will then link the two so that when a user presses a button on the door phone, it will dial the users added to the ring group. The **door phone** has been connected to port **FXS 2/1**.

17. Select **Voice / Stations / Ring Groups** from the NetVanta 7100 menus.

18. Create ring group **8001** with the settings shown below:

Navigation Menu:

- Voice
 - Stations
 - User Accounts
 - IP Phone Configs
 - Ring Groups
 - Operator Group
 - Trunks
 - Trunk Accounts
 - Trunk Groups
 - Shared Line Accounts

Edit Ring Group "Hunt"

Use this page to configure the members and settings for this ring group

Basic Ring Group Information

- Extension: x8001 (4 digits, must be unique)
- Description: Hunt (Optional description for this ring group)
- Primary Email: (Used for system)
- DID Numbers: There are no DID numbers. (Add DID Number)
- Aliases: There are no aliases. (Add Alias)
- Max Inbound Calls: 1
- Ring Group Type: Linear Hunt Group
- Caller ID Prefix:

Call Coverage Settings:

Action	# of Rings
Ring this ring group's extension (x8001)	2
Then Ring Operator	2 times
Then Busy Signal	

Member List:

Move	Last Name	First Name	Ext	Logged In	
▼	Com	Polly	2004	✓	Log Out Delete
▲	Tran	Thad	2003	✓	Log Out Delete

New Ring Group Settings

Ring Group Ext: **8001**
 Description: **Hunt**
 Ring Group Type: **Linear Hunt Group**
 Members: **2003 & 2004**
 Call Coverage: **Ring 2 times, and then go to Operator**

19. Using the settings shown below, create a **new** Analog Station User Account with an extension of **2800** for use with the door phone.

Class of Service

System Mode	Class of Service
Default	door phone
Night	<Same as Default>
Lunch	<Same as Default>
Weekend	<Same as Default>
Override	<Same as Default>
Custom1	<Same as Default>
Custom2	<Same as Default>
Custom3	<Same as Default>

Hotline Phone
Dial **8001**

Door Phone User Account

- Extension: **2800**
- First Name: **Door**
- Last Name: **Phone**
- Phone Type: **Analog Station**
- Phone Port: **Analog FXS 2/1**
- Class of Service: **door phone**
- Hotline Phone: **Enabled – Dial 8001 (ring group #)**
- Current Settings tab: **Disable all settings except Hotline**

Modify the Operator Group

For this lab, Ext 2003 will be assigned to retrieve calls when a caller dials “0”.

The screenshot shows the NetVanta 7100 web interface. The left sidebar is expanded to show the 'Voice' section, with 'Operator Group' selected. The main content area is titled 'Configure Operator Group' and contains the following configuration options:

- Operator Group Information**
 - DID Numbers: A table with columns 'DID Number' and 'Valid?'. It shows 'There are no configured DID numbers.' and an 'Add DID Number' button.
 - Aliases: A text input field showing 'There are no aliases for this account.' and an 'Add Alias' button.
 - Primary Email: An empty text input field with the note 'Used for system correspondence'.
 - Max Inbound Calls: A text input field with the value '1'.
 - Group Type: A dropdown menu set to 'All Ring'.
 - Caller ID Prefix: A checked checkbox.
 - Originator ID: An unchecked checkbox.
- Member List** (selected tab)
 - An 'Add Members..' button.
 - A table with columns: Move, Last Name, First Name, Ext, Logged In.

Move	Last Name	First Name	Ext	Logged In	
	Tran	Thad	2003	✓	Log Out Delete
 - 'Cancel' and 'Apply' buttons.

20. Delete Ext 2001 & Ext 2002 from the Operator Group. This is part of the “Default” configuration.

21. Add Ext 2003 as the only member in the Operator Group.

22. Save your configuration.

Q: How does a voice user log out of a ring group or operator group?


AUTO ATTENDANT CALL HANDLING

Inbound calls go to the Auto Attendant and then the calling party enters the extension of the inside user. In the following steps, you will enable “debug voice summary” and view the output while placing the calls.


You may want to read through the following steps before placing calls.

- 23.** From the “Enable Mode” of the Command Line Interface, enter the debug voice summary command. View output while placing call below.

IPT# debug voice summary

The  symbol represents a call made from **your own phone** into the **NetVanta IP Telephony Course Auto Attendant**.

- 24.** Call your IPT lab site and enter 2004 when asked for extension.

1. Dial  1-256-665-9214
2. Enter Pass Code for Student Auto Attendant (*your 4 digit passcode*)
3. Press 1 to place call into your first Analog Trunk

Call is initiated inbound on the first Analog trunk to the Auto Attendant (8200)

4. Enter **2004** when asked for extension.

Call is sent to voice user 2004. Call coverage is configured to “Go to Voicemail” after 4 rings.

5. Press ‘**0**’ for operator as soon as call enters Voicemail. “DO NOT” leave message.

Call is sent to the Operator Group. Since user 2003 is the only member of this group, call goes to user 2003.

The Operator Group Call coverage is configured to “Go to Auto Attendant” after 4 rings.

6. Hang-up phone after watching debug output of the call flow above.

Debug Voice Summary Sample Output

The output shown below is from the steps just completed.

1. Inbound call to Auto Attendant (8200)
2. User enter 2004
3. Call Coverage for user 2004 goes to Voicemail
4. “0” for the Operator is pressed while in Voicemail
5. Call Coverage for the Operator Group goes to the Auto Attendant

```

Password:
IPT1#debug voice summary
IPT1#
17:01:15:362 VOICE.START T01 is calling AutoAttendantAcct (8200).
17:01:15:664 VOICE.SUMMARY RTP for Call from 2569631000 to 8200: Codec G729
17:01:15:665 VOICE.START T01 is connected to AutoAttendantAcct (8200)
17:01:20:982 VOICE.START T01 is calling 2004 (2004).
17:01:21:206 VOICE.SUMMARY Call from T01 to AutoAttendantAcct (8200) ended by Au
toAttendantAcct: normal clearing
17:01:44:996 VOICE.START T01 is calling voicemail (8500).
17:01:44:998 VOICE.START T01 is calling voicemail (8500).
17:01:45:003 VOICE.SUMMARY RTP for Call from 2569631000 to 8500: Codec G729
17:01:45:004 VOICE.SUMMARY T01 is connected to 8500 (8500)
17:01:45:008 VOICE.START T01 is calling voicemail (8500).
17:01:45:008 VOICE.START RTP for Call from 2569631000 to 8500: Codec G729
17:01:52:541 VOICE.START T01 is calling 0 (0).
17:01:52:543 VOICE.SUMMARY 0 is calling 2003 (2003).
17:01:52:788 VOICE.SUMMARY Call from T01 to 8500 (8500) ended by 8500: normal cl
earing
17:02:16:558 VOICE.SUMMARY Call from 0 to 2003 (2003) ended by 2003: forwarded
17:02:16:558 VOICE.START T01 is calling voicemail (8500).
17:02:16:563 VOICE.START T01 is calling voicemail (8500).
17:02:16:566 VOICE.SUMMARY RTP for Call from 2569631000 to 8200: Codec G729
17:02:16:566 VOICE.SUMMARY T01 is connected to AutoAttendantAcct (8200)
17:02:16:571 VOICE.SUMMARY RTP for Call from 2569631000 to 8200: Codec G729
    
```

25. Turn off debug.

IPT# undebug all

Q: What is the default Auto Attendant extension?

Q: With a factory default NetVanta 7000, what happens with an inbound call on an Analog trunk?

RING GROUP CALL HANDLING

In this scenario, the customer would like incoming calls to ring several phones and then go to the auto attendant if no one picks up.

26. From the **Voice / Stations / Ring Groups** menu, create the second ring group **8002** with the settings shown below:

The screenshot shows the 'Edit Ring Group "ALL"' configuration page. The 'Basic Ring Group Information' section includes:

- Extension: x8002 (4 digits, must be unique)
- Description: ALL (Optional description for this ring group)
- Primary Email: (Used for system)

 The 'DID Numbers' section shows 'There are no DID numbers' and an 'Add DID Number' button. The 'Aliases' section shows 'There are no aliases' and an 'Add Alias' button. The 'Ring Group Type' is set to 'All Ring' and 'Caller ID Prefix' is checked.

 The 'Call Coverage' tab is active, showing a table for configuring call actions for the ring group extension (x8002):

Action	# of Rings
Then: Go to Auto Attendant (DefaultAA)	2
Then: Busy Signal	

 The 'Member List' tab is also visible, showing a table with two members:

Move	Last Name	First Name	Ext	Logged In	Log Out	Delete
▼	Com	Polly	2004	✓	Log Out	Delete
▲	Tran	Thad	2003	✓	Log Out	Delete

New Ring Group Settings

Ring Group Ext: **8002**
 Description: **ALL**
 Ring Group Type: **All Ring**
 Members: **2003 & 2004**
 Call Coverage: **Ring 2 times, and then go to Auto-Attendant**

27. Select **Voice / Trunks / Trunk Accounts** from the NetVanta 7100 menu.


28. Edit Trunk Account **T01**. Change the ‘Trunk Number’ option to the new Ring Group extension **8002**. (*Inbound calls will now go to Ring Group 8002*)

The screenshot displays the NetVanta 7100 web interface. On the left is a sidebar menu with categories: System, Voice, Trunks, Applications, System Setup, Reports, Data, Monitoring, and Utilities. The 'Trunks' section is expanded, and 'Trunk Accounts' is selected. The main content area shows the 'Edit Trunk' configuration for Trunk ID T01. The 'Trunk Account Information' section includes fields for Trunk ID, Type, Supervision, Role, and Trunk Name. Below this is a table for 'Trunk Number' with columns for System Mode and Trunk Number. The 'Default' row has '8002' entered in the Trunk Number field. A callout box with a dashed arrow points to this field with the text 'Change to 8002'. Other settings include Blind Dialing, Caller ID, Reject External, DID, and Resource Selection. At the bottom, there are sections for 'Assign Ports' and 'Connected Port'.


Q: What is the purpose of the Trunk Number option found on this screen?

29. From the “Enable Mode” of the Command Line Interface, enter the debug voice summary command. View output while placing call below.

IPT# debug voice summary

The  symbol represents a call made from **your own phone** into the **NetVanta IP Telephony Course Auto Attendant**.

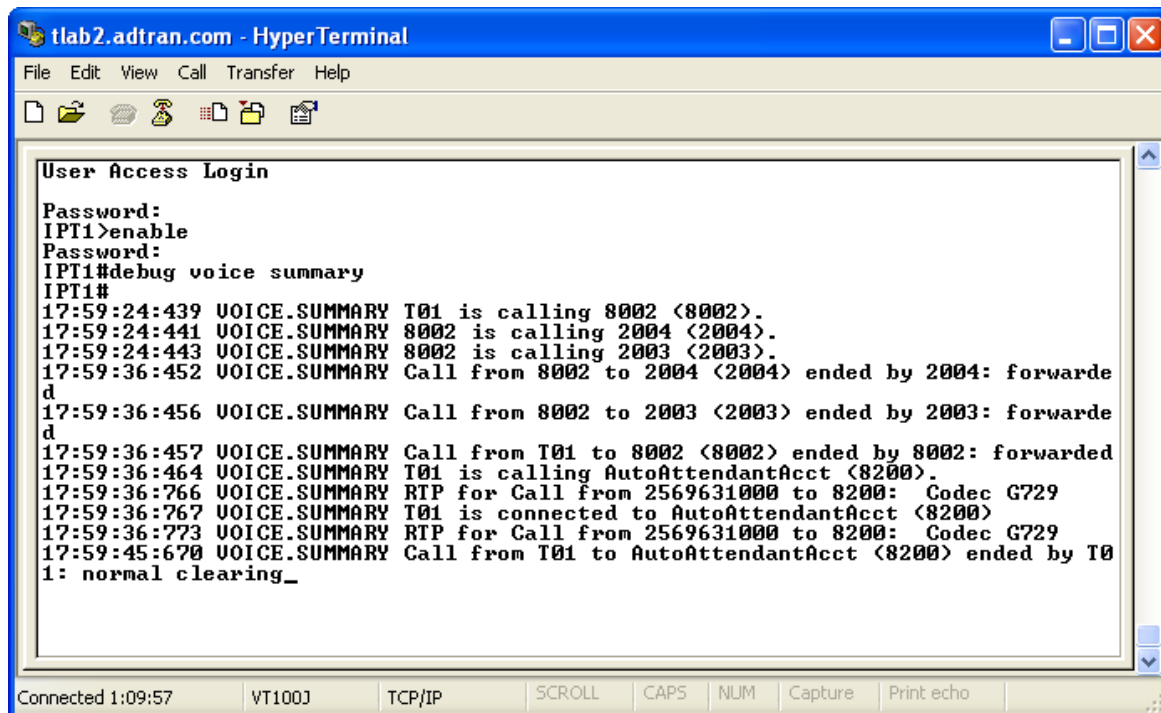
30. Call your IPT lab site and confirm proper routing on inbound calls.

1. Dial  1-256-665-9214
2. Enter Pass Code for Student Auto Attendant (*your 4 digit passcode*)
3. Press 1 to place call into your first Analog Trunk

Call is initiated inbound on the first Analog trunk.

4. Hang-up phone after watching debug output.

Debug Voice Summary Sample Output



```

User Access Login
Password:
IPT1>enable
Password:
IPT1#debug voice summary
IPT1#
17:59:24:439 VOICE.SUMMARY T01 is calling 8002 (8002).
17:59:24:441 VOICE.SUMMARY 8002 is calling 2004 (2004).
17:59:24:443 VOICE.SUMMARY 8002 is calling 2003 (2003).
17:59:36:452 VOICE.SUMMARY Call from 8002 to 2004 (2004) ended by 2004: forwarded
17:59:36:456 VOICE.SUMMARY Call from 8002 to 2003 (2003) ended by 2003: forwarded
17:59:36:457 VOICE.SUMMARY Call from T01 to 8002 (8002) ended by 8002: forwarded
17:59:36:464 VOICE.SUMMARY T01 is calling AutoAttendantAcct (8200).
17:59:36:766 VOICE.SUMMARY RTP for Call from 2569631000 to 8200: Codec G729
17:59:36:767 VOICE.SUMMARY T01 is connected to AutoAttendantAcct (8200)
17:59:36:773 VOICE.SUMMARY RTP for Call from 2569631000 to 8200: Codec G729
17:59:45:670 VOICE.SUMMARY Call from T01 to AutoAttendantAcct (8200) ended by T0
1: normal clearing_

```

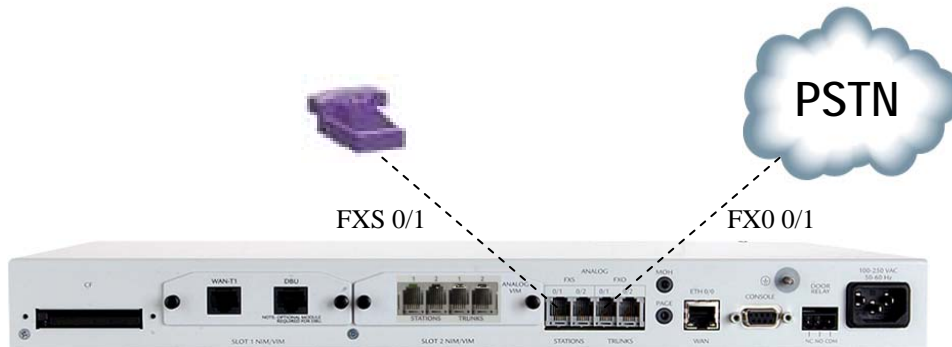
Q: What was the expected call flow in this example?

Q: What command is used to turn off all debug commands?

31. Turn off all debug commands

Power Failover

The NetVanta 7000 provides survivability and power failover protection which maintains a PSTN link in the event that power is lost. The two integral analog station ports will failover to the two integral analog trunk ports.



Q: If power is lost, does the customer need to dial a '9' when placing calls?

32. Save your configuration.

33. From the enable mode of the **CLI**, type the following to create a backup copy of the running configuration to a file called **lab2** stored in FLASH.

```
IPT# copy running-config lab2
```

Optional: Save a copy of the lab configuration to your PC. From the **Utilities / System / Configuration** menu of the NetVanta 7100, select **Download**. Click the **Include Voice Settings** checkbox to include both startup-config and dynvoice-config in your backup configuration.

LAB COMPLETE!