This quick configuration guide explains how to configure and use system modes on the NetVanta 7000 Series products running ADTRAN Operating System (AOS) version A1.02 or above. The topics covered in this guide include:

Overview

System modes are associated with predefined configuration parameters. When the system changes modes, the predefined configurations associated with that mode are enabled. This provides a quick method for changing system settings on a daily basis without time-consuming configuration steps.

For example, an operator leaving the office for the day wants to change the call coverage for their phone line to go directly to the auto attendant. This type of call coverage is defined in the **Night** system mode. The operator enters a special PREfix (SPRE) code to activate the **Night** mode as they are leaving. Upon returning the next day, another SPRE code is entered to place the system into the **Default** mode. Calls are then routed to the operator according to the call coverage defined in the **Default** mode.

The system mode can be manually changed by the user or automatically changed at specific transition times based on a schedule. Manually changing the system mode can be done through the Web interface, busy lamp field (BLF) keys, SPRE codes, or auto attendant.

The system mode is defined based on seven modes with one override option:
- Default
- Night
- Lunch
- Weekend
- Custom1
- Custom2
- Custom3
- Override (enable/disable; stays in effect until disabled)

Manually Changing System Modes

There are four methods for manually changing the system mode. Manually changing the system mode can only be done if there is no schedule defined for the system modes. You can change the active system mode by selecting it in the Web interface, pressing a BLF key, dialing a SPRE code from any phone, or selecting a mode from the auto attendant. If a schedule exists for the system mode transitions, the only manual change available is to put the system in **Override**.

User accounts require permission to dial a SPRE code or use a BLF key to change the system mode. This permission must be enabled in the **Advanced Permitted Actions** for the class of service (CoS) applied to the user account. This also applies to enabling override in scheduled system modes.

1. Navigate to **Voice** > **System Setup** > **Classes of Service**. Select the CoS to modify.

2. Expand the **Advanced Permitted Actions** section to reveal more options.

3. Enable **Change System Mode**.

4. Select **Apply** to save the changes.

Expand **Advanced Permitted Actions** by selecting the **+** sign. This reveals more options for permitted actions.

Enable **Change System Mode** by checking the box.

Figure 1. Enable Change System Mode in Class of Service

Web Interface

Use the Web-based graphical user interface (GUI) menus to change the current system mode.

1. Open a GUI session. If you need assistance, follow the steps in the *NetVanta 7000 Series Web GUI Quick Configuration Guide* available on the *AOS Documentation* CD shipped with your unit or online at www.adtran.com.

> **CAUTION** *Updated configurations must be saved to nonvolatile memory (NVRAM) to retain new changes after a loss of power or a reboot. To quickly save your configuration at any time while in the GUI, select* **Save** *at the top right of your current menu.*

2. Navigate to the **Voice** > **System Setup** > **System Modes** menu.

3. Choose the current mode from the drop-down list in the **Current Mode** field.
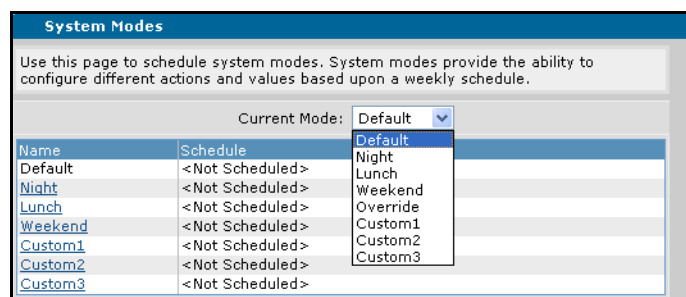

Figure 2. Manually Change the System Mode via Web Interface

BLF Key in Status Group

A BLF key can be configured for different system modes that allows the user to change the mode by pressing a key on the phone. For example, when the operator leaves the office for the day, they would press the **Night** key to enable **Night** mode. When they return to the office in the morning, they would press the **Default** key to return to **Default** mode. In manual operation, the **Override** mode functions as another custom system mode.

A BLF key is created by including a system mode as a member of a status group. Users are also added as a member of the same status group. For more information on how to configure system modes in a status group, refer to the *Configuring Status Groups Quick Configuration Guide* available on the *AOS Documentation* CD shipped with your unit or online at www.adtran.com.

SPRE Code

The SPRE code for the desired system mode can be dialed from any phone. The SPRE codes used to enable the system modes are:

   *200 – Default
   *201 – Night
   *202 – Lunch
   *203 – Weekend
   *204 – Custom1
   *205 – Custom2
   *206 – Custom3
   *207 – Override

Auto Attendant

In the auto attendant, a digit action can be configured to change the system mode. Upon calling the auto attendant and pressing the specified digit, the user is prompted to enter a password (the default is **1234**). The user is then prompted to select the digit associated with the desired system mode (for example, "Press 1 for default mode, press 2 for night mode..."). For more information on how to configure system modes in auto attendant, refer to the *NetVanta 7100 Administrator's Guide* available on the *AOS Documentation* CD shipped with your unit or online at www.adtran.com.

> **NOTE**
> *In manual operation,* **Override** *is disabled from the auto attendant menu by selecting any other mode from the menu. However, in scheduled operation, the only change that can be made is to enable or disable* **Override** *by selecting it from the menu.*

Scheduling Automatic System Mode Transitions

The NetVanta 7000 Series products can be configured to automatically change system modes based on a defined schedule. When a schedule is defined for system modes transition, the only method to disable the schedule is to manually select the **Override** mode. **Override** is an enable/disable function. Once the system is in **Override** mode, it will remain there until **Override** is disabled (via Web interface, BLF, SPRE, or auto attendant).

Creating a Schedule

1. Navigate to **Voice** > **System Setup** > **System Modes**.

2. Select a system mode for which to define a schedule.

3. Enter the schedule start and end times.

4. Select **Apply** to save the changes.

> **NOTE** *A schedule cannot be defined for **Default** mode.(The **Default** mode schedule consists of all the times not defined in other modes.)*

Figure 3. Setting Automatic Transition Schedules

Deleting a Schedule

1. Navigate to **Voice** > **System Setup** > **System Modes**.

2. Select a system mode to modify.

3. Select the schedule to remove.

4. Select **Delete Ranges** to remove the transition settings from the system mode.

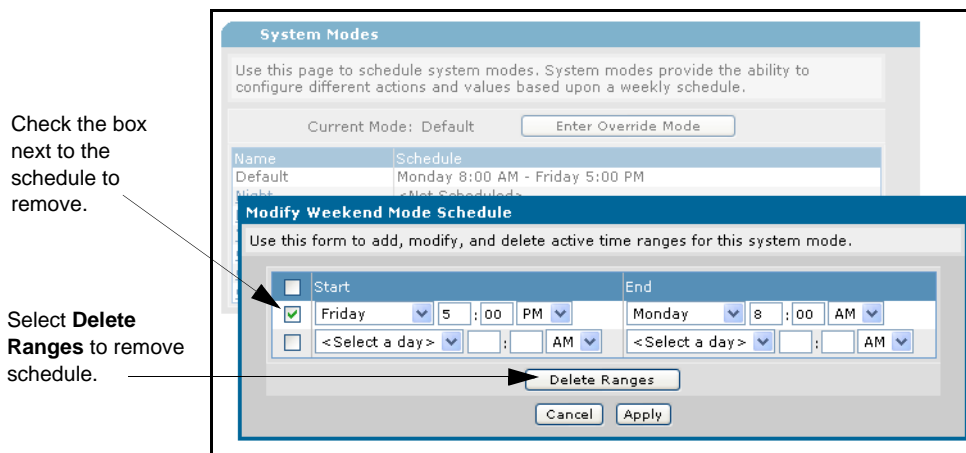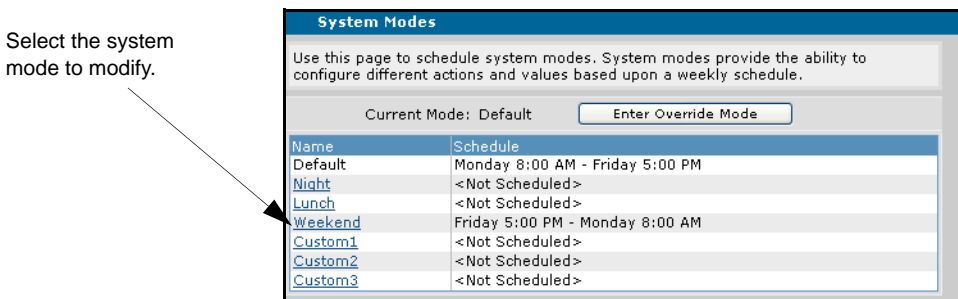5. Select **Apply** to save the changes.

Select the system mode to modify.

Check the box next to the schedule to remove.

Select **Delete Ranges** to remove schedule.

Figure 4. Removing Automatic Transition Schedules

Using System Modes with Trunk Accounts

Trunk accounts can use system modes to change configurations. The trunk account settings change based on the selected or scheduled system mode. The explanations in this section assume the trunk accounts have been previously configured. Additional configuration steps are required to assign actions or trunk numbers to a system mode. These additional steps are explained in this section.

Preliminary steps for configuring trunk accounts are provided in the following documentation available on the *AOS Documentation* CD shipped with your unit or online at www.adtran.com:
- *Trunk Accounts Configuration Guide*
- *Shared Line Accounts over Analog Trunks Configuration Guide*

Analog Trunk Accounts in PBX Mode

A trunk number can be used to direct an incoming call to a particular user, auto attendant, ring group, or operator group. Each system mode can have a different extension assigned to it. In the example below, the trunk account is configured to ring the operator group during **Default** mode and to ring the auto attendant during **Night** and **Weekend** modes.
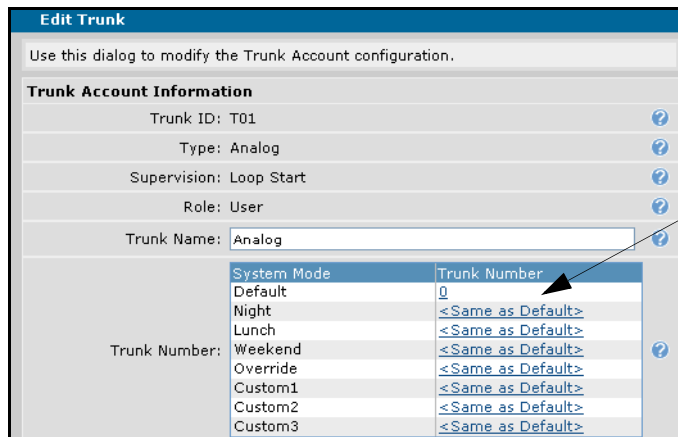
1. Navigate to **Voice** > **Trunks** > **Trunk Accounts**.

2. Select the trunk account from the list to make modifications.

Figure 5. Edit Analog Trunk Accounts

Copyright © 2008 ADTRAN, Inc. 61200796E1-42.2A

3. Select the **Trunk Number** entry next to the **System Mode** to open the **Trunk Number Settings** menu.

Select the **Trunk Number** entry next to the **System Mode** to be modified.

Figure 6. Edit Trunk Number

4. Enter a number in the **Value** field. For example, **0** to call the operator or **8200** to call that extension.

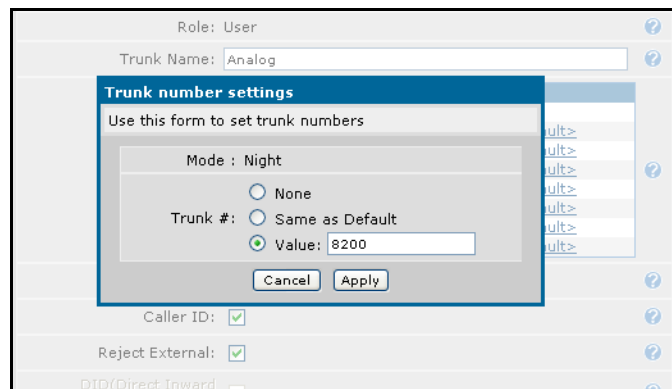5. Select **Apply** to save the changes and return to the **Edit Trunk** menu.

Figure 7. Trunk Number Settings Menu

6. Continue with steps 3 through 5 until all necessary system modes have been configured. Select **Apply** to save all the changes.

T1-RBS Trunk Accounts

A trunk number can also be configured for T1-RBS trunk accounts when used for Loop Start or Ground Start. The configuration is identical to the example in *Analog Trunk Accounts in PBX Mode* on page 8. The only difference is to select a T1-RBS trunk account to modify. Likewise, when using E&M Wink, E&M Immediate, or Feature Group D, refer to the configuration example in *PRI Trunk Accounts* on page 11.

Shared Line Accounts

Shared line accounts (SLA) require call coverage to be configured for each system mode. You can change the **Action** and the **# of Rings** for inbound calls.

> **NOTE**
> *With AOS A1.01, call coverage for shared line accounts should only be configured in the command line interface (CLI). An example configuration is listed at the end of this document. If AOS A1.02 or later is used, then call coverage for shared line accounts can be configured from the Web interface, as well as CLI.*

1. Navigate to **Voice** > **Trunks** > **Shared Line Accounts**.

2. Select the shared line account from the list to make modifications.

Select the shared line account to be modified.

Figure 8. Shared Line Accounts Selection Menu

3. Define the call coverage by selecting the **Call Coverage** tab. Choose the coverage options for each system mode to be used.

> *If the* **# of Rings** *is set to a value of* **0***, then the call coverage will only be processed if the station is busy. Otherwise, the station will ring indefinitely. It is suggested to set the #* **of Rings** *to* **1** *instead.*
>
> NOTE

4. Select **Apply** to save the changes.

Figure 9. Shared Line Accounts Configuration Menu

PRI Trunk Accounts

Primary Rate ISDN (PRI) trunks generally assign a direct inward dialing (DID) number to an auto attendant or ring group. In order to implement system mode operation with an auto attendant, a virtual user is required with appropriate call coverage defined for each system mode. Use the following steps as an example for this configuration:

1. Create a virtual user by navigating to **Voice** > **Stations** > **User Accounts**. Be sure to select **Virtual** as the phone type. In this example, we created a user named **AA Redirect** for extension **6003**. Select **Apply** to create the new user.

Figure 10. Create a Virtual User

2. Define the call coverage for the virtual user account by selecting the **Call Coverage** tab. Choose the coverage options for each system mode you intend to use.

Figure 11. Configure the Virtual User's Call Coverage

3. Select **Apply** to save the changes.

The call coverage for the virtual user will change based on the selected or scheduled system mode. If a call coverage list is selected instead of a custom list, that call coverage list will be active in all system modes.

Using System Modes with User Account Call Coverage

Call coverage for user accounts can be configured for each system mode. This allows the user's call coverage to change based on the system mode. A different **Action** and **# of Rings** is assigned for each system mode to be used. When a change in the system mode occurs, the user's call coverage changes accordingly. Global call coverage lists can also be defined and applied to the user accounts.

> 🖉 **NOTE**
> *Additional information for creating user accounts is provided in the* **User Accounts** *configuration guide available on the* **AOS Documentation** *CD shipped with your unit or online at* www.adtran.com.

1. Navigate to **Voice** > **Stations** > **User Accounts**. Select the appropriate user from the list.

2. Define the call coverage for the user account by selecting the **Call Coverage** tab. Choose the coverage options for each system mode to be used.

3. Select **Apply** to save the changes.

Figure 12. Individual User Account Example

Using System Modes with Global Call Coverage Lists

Global call coverage lists define a standard set of actions based on the system mode. For example, during the day, you could have calls to extensions roll to an operator so calls are always handled live. Then at night, the calls can go to voicemail.

> **NOTE** *The default global call coverage list* **go_to_voicemail** *only has actions defined for the* **Default** *mode.*

1. Navigate to **Voice** > **System Setup** > **Call Coverage Lists** and select the list to configure.

2. Choose the coverage options for each system mode you intend to use globally.

Figure 13. Global Call Coverage Lists Example

3. Select **Apply** to save the changes.

Copyright © 2008 ADTRAN, Inc.

Using System Modes with Ring Groups

Ring groups can be configured to change their call coverage as the system mode changes. The **Action** and **# of Rings** settings are configured through the **Call Coverage** tab in the ring groups information menu. For example, during the default mode, calls to the ring group forward to an auto attendant after four rings with no answer. Once the system mode changes to **Night**, the incoming calls to the specified ring group would go directly to voicemail.

1. Navigate to **Voice** > **Stations** > **Ring Groups**. Select the ring group from the list.

2. Define the call coverage for the ring group by selecting the **Call Coverage** tab. Choose the coverage options for each system mode to be used.

3. Select **Apply** to save the changes.

Figure 14. Ring Group Example

Using System Modes with the Operator Group

The operator group can use the system modes to change the call coverage for incoming calls during specific times of the day. This configuration is performed through the **Operator Group** menu under the **Call Coverage** tab. The **Action** and **# of Rings** are configured for the default mode, as well as any of the system modes that will be used. For example, calls to the operator group during the default mode will go to the **Default** auto attendant after **4** rings with no answer. During the weekend mode, the calls will forward to the **Night** auto attendant after **2** rings.

1. Navigate to **Voice** > **Stations** > **Operator Group**. Select the ring group from the list.

2. Define the call coverage for the operator group by selecting the **Call Coverage** tab. Choose the coverage options for each system mode to be used.

3. Select **Apply** to save the changes.

Figure 15. Operator Group Example

Using System Modes with Class of Service

Classes of service are implemented to determine to which call type or action a user has access during normal operation. This access level can be modified during different times of the day or week based on the system mode. For example, during default mode, users can have normal access to call out and perform system actions (page, intercom, etc.). Then, during **Night** mode, the phones can be set to act as public or lobby phones, allowing only extension-to-extension calling. The CoS can also be set to **No Access** during the time the system mode is active, further restricting the user's access to services by blocking calls.

1. Navigate to **Voice** > **Stations** > **User Accounts**. Select the user from the list to modify.

2. Select the entry under the **Class of Service** column, next to the **System Mode** to be changed. In most cases, the CoS entry will be **<Same as Default>** unless previously changed.

Figure 16. Assign a Class of Service for the System Mode

3. From the menu that appears, select the drop-down list and choose a CoS to apply to this system mode for this user. The **Class of Service settings** menu also allows setting the user account to **No Access**. If this option is selected, the user will not have any access to services during the time the system mode is active.
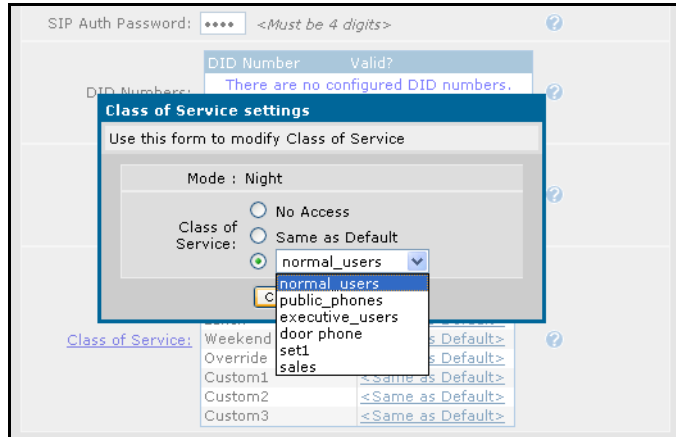

Figure 17. Modify Class of Service Settings

4. Select **Apply** to save the changes and return to the **Edit User** menu.The

5. **Class of Service** modification is displayed. Select **Apply** again to save all changes.

Copyright © 2008 ADTRAN, Inc.   61200796E1-42.2A

Command Line Output Examples

In addition to the Web interface, system modes can be configured through the CLI. The following are example configurations for:

- *Creating a System Mode Schedule* on page 19
- *Using System Modes with a Trunk Number on a PBX Mode Analog Trunk* on page 19
- *Using System Modes with a Virtual User's Call Coverage* on page 20
- *Using System Modes with an Operator Group's Call Coverage* on page 20
- *Using System Modes with a Global Call Coverage List* on page 21
- *Using System Modes with a User Class of Service* on page 21

Creating a System Mode Schedule

```
NV7100#show run voice

Building configuration...
!
<output truncated>
!
voice system-mode default monday 08:00
voice system-mode night monday 17:00
voice system-mode default tuesday 08:00
voice system-mode night tuesday 17:00
voice system-mode default wednesday 08:00
voice system-mode night wednesday 17:00
voice system-mode default thursday 08:00
voice system-mode night thursday 17:00
voice system-mode default friday 08:00
voice system-mode weekend friday 17:00
<output truncated>
```

Using System Modes with a Trunk Number on a PBX Mode Analog Trunk

```
NV7100#show run voice trunk T06
Building configuration...
!
voice trunk T06 type analog supervision loop-start
description "POTS 1"
connect fxo 1/1
trunk-number 0
trunk-number night "8200"
trunk-number weekend "8200"
rtp delay-mode adaptive
!
```

Using System Modes with a Trunk Account with SLA

```
NV7100#show run voice line Main1
Building configuration...
!
voice line Main1
description "Main SLA 1"
trunk "T04"
num-rings night 1
num-rings weekend 1
coverage operator num-rings 4
coverage night aa 8301
coverage weekend aa 8303
!
```

Using System Modes with a Virtual User's Call Coverage

```
NV7100#show run voice user 3010
Building configuration...
!
!
!
voice user 3010
cos "normal_users"
first-name "AA"
last-name "Redirect"
password "1234"
num-rings 2
num-rings night 2
num-rings weekend 2
coverage aa 8200
coverage night aa 8301
coverage weekend aa 8303
codec-group g711_first
voicemail password "1234"
voicemail notify schedule Sunday 12:00 am
!
```

Using System Modes with an Operator Group's Call Coverage

```
NV7100#show run voice operator-group
Building configuration...
!
!
voice operator-group
type all
num-rings 4
max-inbound 8
member 2004
login-member 2004
member 2003
```

```
login-member 2003
coverage aa 8200
coverage night aa 8301
coverage weekend aa 8303
originator-id user
<output truncated>
```

Using System Modes with a Global Call Coverage List

```
NV7100#show run voice
Building configuration...
!
voice coverage go_to_voicemail
default
coverage vm
coverage night aa 8301
coverage weekend aa 8303
!
```

Using System Modes with a User Class of Service

```
NV7100#show run voice user 2004
Building configuration...
!
voice user 2004
connect sip
cos "normal_users"
cos night "public_phones"
cos weekend "public_phones"
first-name "Jane"
last-name "Smith"
password "1234"
codec-group g711_first
voicemail password "1234"
voicemail notify schedule Sunday 12:00 am
!
```

> **NOTE**
>
> *For further information, refer to the* **AOS Command Reference Guide** *available on the* **AOS Documentation** *CD shipped with your unit or online at* www.adtran.com.