



Cisco Unified Communications Manager Port Configuration for Cisco Unity Failover (All Versions of Cisco Unity)

Revised August 2, 2007

The settings of the voice mail ports or line groups in Cisco Unified Communications Manager Administration determine the following actions:

- How calls are forwarded between the voice mail ports so Cisco Unity can answer incoming calls on the next available port.
- How calls are forwarded from the primary server to the secondary server so Cisco Unity will continue to answer calls when the primary server or its voice mail ports are not responsive.

Depending on the specific circumstances when you want failover to occur, there are two setups for the Cisco Unified CM voice mail ports when Cisco Unity is configured for failover. Each setup has its advantages and disadvantages.

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- [Additional References, page 9](#)

Requirements

You must have the following versions to use the configurations described in this document:

- Cisco Unified CM 3.2 through 3.3, or Cisco Unified CM 4.0 or later
- Cisco Unity 4.0 or later



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Voice Mail Port Configuration #1 (Recommended)

Depending on your version of Cisco Unified CM, you configure the voice mail ports or line groups as described in the applicable section below. For detailed instructions, see the applicable Cisco Unified CM integration guide at

http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_installation_and_configuration_guides_list.html.

Cisco Unified CallManager 3.2 Through 3.3

Ports That Answer Calls on the Primary Server—For ports on the primary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following forwarding actions:

- All ports that answer calls on the primary server forward to port 1 on the secondary server when the call is not answered (by setting the Forward No Answer field).
- Ports that answer calls on the primary server forward calls to the next port when the port is busy (by setting the Forward Busy field), and the last port that answers calls on the primary server forwards calls to the first port on the primary.

Ports That Do Not Answer Calls on the Primary Server—For ports on the primary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs), this configuration uses the following forwarding actions:

- All non-answering ports on the primary server forward to port 1 on the primary server when the call is not answered (by setting the Forward No Answer field).
- All non-answering ports on the primary server have the Forward Busy field cleared.

Ports That Answer Calls on the Secondary Server—For ports on the secondary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following forwarding actions:

- Ports that answer calls on the secondary server forward to the next port when the call is not answered (by setting the Forward No Answer field) or is busy (by setting the Forward Busy field).
- The last port that answers calls on the secondary server forwards calls to port 1 on the secondary server when the call is not answered (by setting the Forward No Answer field) or is busy (by setting the Forward Busy field).

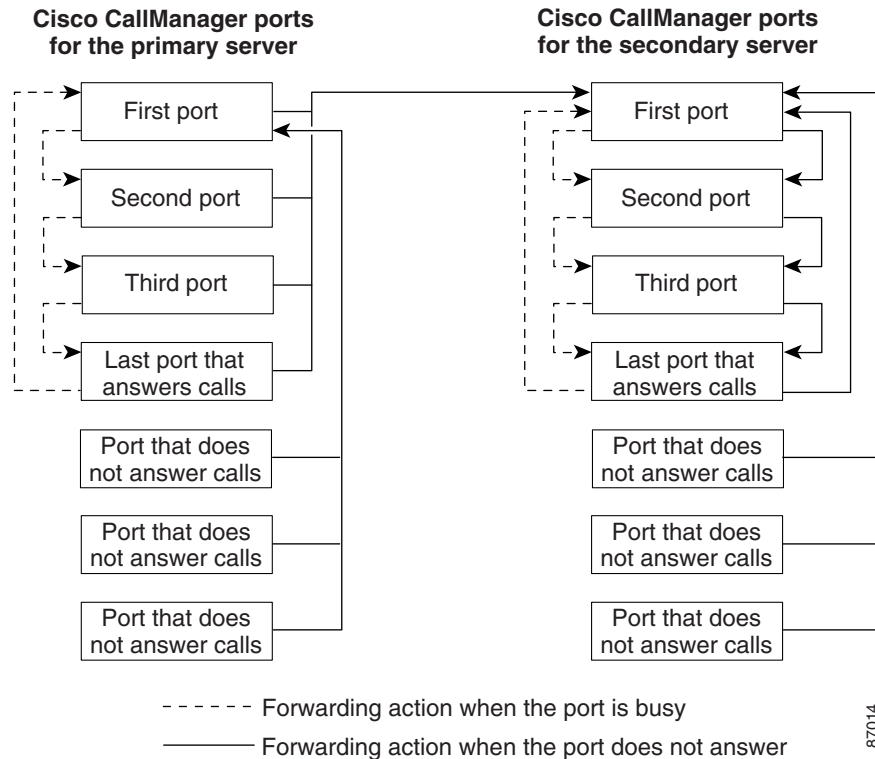
Optionally, the last port that answers calls on the secondary server forwards calls to the operator when the call is not answered (by setting the Forward No Answer field) or is busy (by setting the Forward Busy field).

Ports That Do Not Answer Calls on the Secondary Server—For ports on the secondary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs), this configuration uses the following forwarding actions:

- All non-answering ports on the secondary server forward to port 1 on the secondary server when the call is not answered (by setting the Forward No Answer field).
- All non-answering ports on the secondary server have the Forward Busy field cleared.

Figure 1 shows the forwarding action for ports on the primary and secondary server for this configuration.

Figure 1 Voice Mail Port Configuration #1 for Cisco Unified CallManager 3.2 Through 3.3 (Recommended)



Cisco Unified Communications Manager 4.0 and Later

Ports That Answer Calls on the Primary Server—For ports on the primary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following line group actions:

- No Answer—Set the line group to Skip Remaining Members, and Go Directly to Next Group in Hunt List.
- Busy—Set the line group to Try Next Member, but Do Not Go to Next Group.
- Not Available—Set the line group to Skip Remaining Members, and Go Directly to Next Group in Hunt List.

Ports That Do Not Answer Calls on the Primary Server—The ports on the primary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs) are set to Stop Hunting.

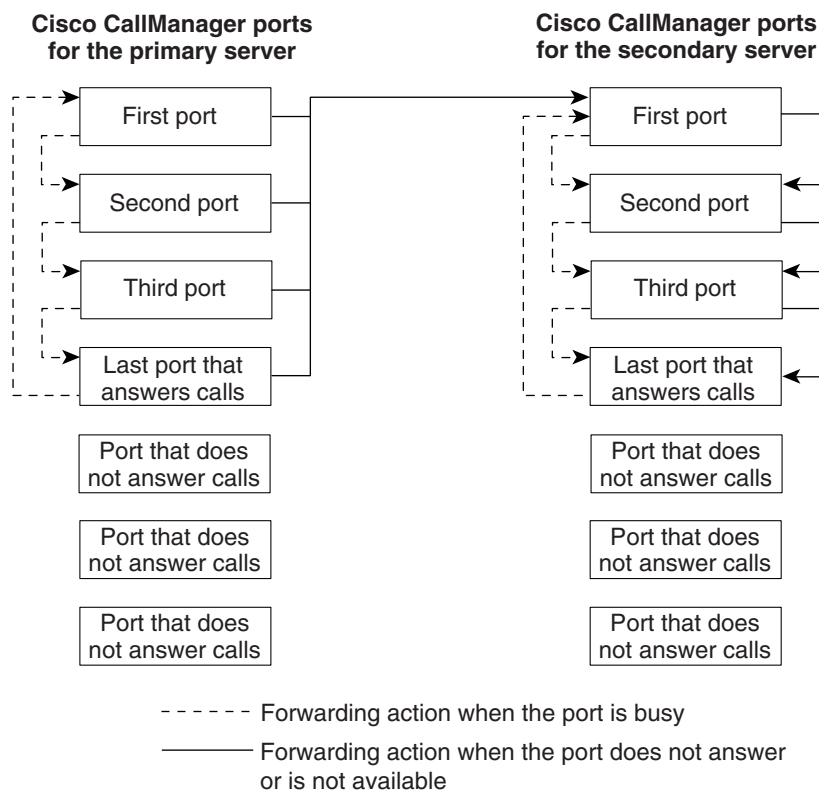
Ports That Answer Calls on the Secondary Server—For ports on the secondary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following forwarding actions:

- No Answer—Set the line group to Try Next Member, but Do Not Go to Next Group.
- Busy—Set the line group to Try Next Member, but Do Not Go to Next Group.
- Not Available—Set the line group to Try Next Member, but Do Not Go to Next Group.

Ports That Do Not Answer Calls on the Secondary Server—The ports on the secondary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs) are set to Stop Hunting.

Figure 2 shows the forwarding action for ports on the primary and secondary server for this configuration.

Figure 2 Voice Mail Port Configuration #1 for Cisco Unified Communications Manager 4.0 and Later (Recommended)



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Advantages of Voice Mail Port Configuration #1

This configuration has the following advantages:

- (Cisco Unified CM 3.2 through 3.3) The AdvancedCallForwardHopFlag service parameter in Cisco Unified CM Administration is always set to True. The following benefits result from enabling this service parameter:
 - The ForwardMaximumHopCount service parameter can be set to a small value, reducing the chance that a misconfigured call-forwarding scenario could bring down the Cisco Unified CM server.
 - The VoiceMailMaximumHopCount service parameter can be set independently of other service parameters.
 - Cisco Unified CM can hunt for available ports with greater efficiency.

- (Cisco Unified CM, all versions) Calls that are unanswered on the primary server—due to port lockup on the primary server or high CPU utilization—will be forwarded to the secondary server and, if the Force Failover If Call Arrives on Inactive Secondary check box is checked in the Failover Monitor, the call will cause failover to occur.

If the Force Failover If Call Arrives on Inactive Secondary check box is not checked in the Failover Monitor, the call will not be answered but an Event log error will alert the system administrator to the potential problem on the primary server.

Disadvantages of Voice Mail Port Configuration #1

This configuration has the following disadvantage:

- (Cisco Unified CM, all versions) Calls that are unanswered on the primary server—due to port lockup on the primary server or high CPU utilization—will be forwarded to the secondary server and can cause failover to occur. This behavior may be considered a disadvantage for some customers. Customers who install Cisco Unity servers with a large number of ports may be annoyed that failover occurs when just one port is locked.

An alternative configuration to avoid this disadvantage is to uncheck the Force Failover If Call Arrives on Inactive Secondary check box in the Failover Monitor. Then calls that arrive at an inactive secondary server will trigger an Event log error message but will not cause failover to occur.

Voice Mail Port Configuration #2 (Not Recommended)

Depending on your version of Cisco Unified CM, you configure the voice mail ports or line groups as described in the applicable section below. For detailed instructions, see the applicable Cisco Unified CM integration guide at

http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_installation_and_configuration_guides_list.html.

Cisco Unified CallManager 3.2 Through 3.3

Ports That Answer Calls on the Primary Server—For ports on the primary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following forwarding actions:

- Ports that answer calls on the primary server forward to the next port on the primary server when the call is not answered (by setting the Forward No Answer field) or is busy (by setting the Forward Busy field).
- The last port that answers calls on the primary server forwards calls to port 1 on the secondary server when the call is not answered (by setting the Forward No Answer field).
- The last port that answers calls on the primary server forwards calls to port 1 on the primary server when the call is busy (by setting the Forward Busy field).

Ports That Do Not Answer Calls on the Primary Server—For ports on the primary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs), this configuration uses the following forwarding actions:

- All non-answering ports on the primary server forward to port 1 on the primary server when the call is not answered (by setting the Forward No Answer field).

- All non-answering ports on the primary server have the Forward Busy field cleared.

Ports That Answer Calls on the Secondary Server—For ports on the secondary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following forwarding actions:

- Ports that answer calls on the secondary server forward to the next port when the call is not answered (by setting the Forward No Answer field) or is busy (by setting the Forward Busy field).
- The last port that answers calls on the secondary server forwards calls to port 1 on the secondary server when the call is not answered (by setting the Forward No Answer field) or is busy (by setting the Forward Busy field).

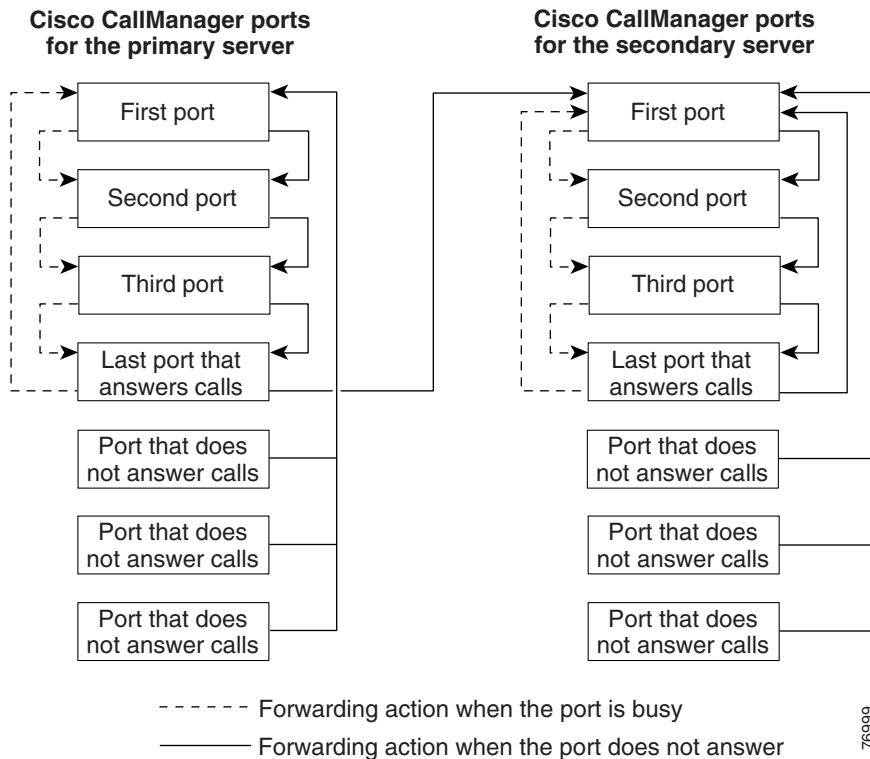
Optionally, the last port that answers calls on the secondary server forwards calls to the operator when the call is not answered (by setting the Forward No Answer field) or is busy (by setting the Forward Busy field).

Ports That Do Not Answer Calls on the Secondary Server—For ports on the secondary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs), this configuration uses the following forwarding actions:

- All non-answering ports on the secondary server forward to port 1 on the secondary server when the call is not answered (by setting the Forward No Answer field).
- All non-answering ports on the secondary server have the Forward Busy field cleared.

Figure 3 shows the forwarding action for ports on the primary and secondary server for this configuration.

Figure 3 Voice Mail Port Configuration #2 for Cisco Unified CallManager 3.2 Through 3.3 (Not Recommended)



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Cisco Unified Communications Manager 4.0 and Later

Ports That Answer Calls on the Primary Server—For ports on the primary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following line group actions:

- No Answer—Set the line group to Try Next Member, Then Try Next Group in Hunt List.
- Busy—Set the line group to Try Next Member, but Do Not Go to Next Group.
- Not Available—Set the line group to Try Next Member, Then Try Next Group in Hunt List.

Ports That Do Not Answer Calls on the Primary Server—The ports on the primary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs) are set to Stop Hunting.

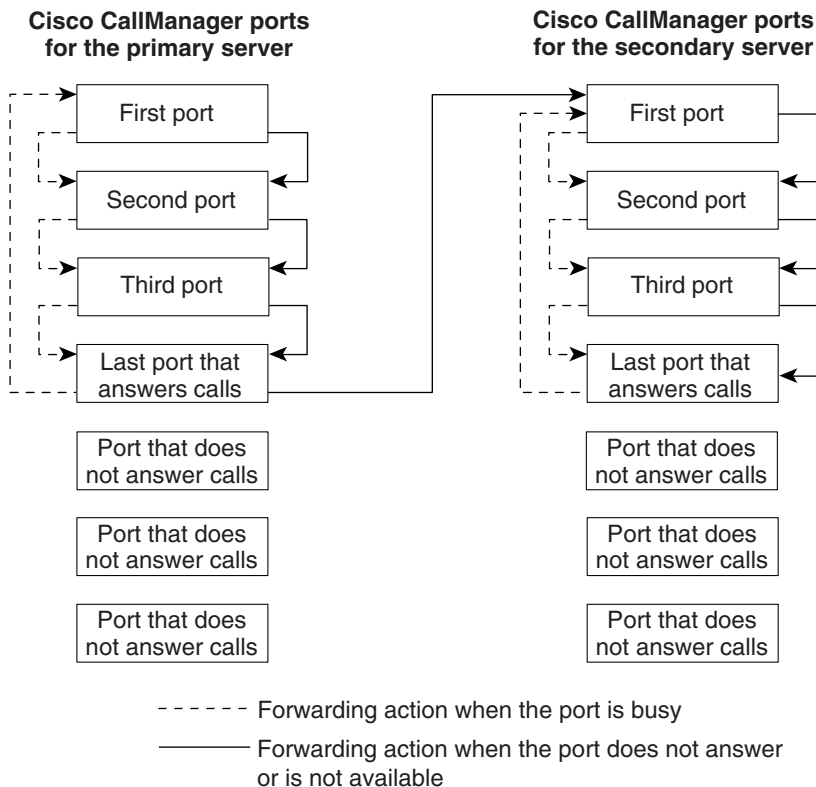
Ports That Answer Calls on the Secondary Server—For ports on the secondary server that are set in the Cisco Unity System > Ports page with the Answer Calls check box checked, this configuration uses the following forwarding actions:

- No Answer—Set the line group to Try Next Member, but Do Not Go to Next Group.
- Busy—Set the line group to Try Next Member, but Do Not Go to Next Group.
- Not Available—Skip Remaining Members, and Go Directly to Next Group in Hunt List.

Ports That Do Not Answer Calls on the Secondary Server—The ports on the secondary server that are not set in the Cisco Unity System > Ports page with the Answer Calls check box checked (for example, the port only dials out for MWIs) are set to Stop Hunting.

Figure 4 shows the forwarding action for ports on the primary and secondary server for this configuration.

Figure 4 Voice Mail Port Configuration #2 for Cisco Unified Communications Manager 4.0 and Later (Not Recommended)



Advantages of Voice Mail Port Configuration #2

This configuration has the following advantage:

- (Cisco Unified CM 3.2 through 3.3) The AdvancedCallForwardHopFlag service parameter in Cisco Unified CM Administration can be set to True. The following benefits result from enabling this service parameter:
 - The ForwardMaximumHopCount service parameter can be set to a small value, reducing the chance that a misconfigured call-forwarding scenario could bring down the Cisco Unified CM server.
 - The VoiceMailMaximumHopCount service parameter can be set independently of other service parameters.
 - Cisco Unified CM can hunt for available ports with greater efficiency.
- (Cisco Unified CM, all versions) If the ports on the primary server are unregistered with the Cisco Unified CM server and the Force Failover If Call Arrives on Inactive Secondary check box is checked in the Failover Monitor, the call will reach the secondary server and cause failover to occur.

Disadvantages of Voice Mail Port Configuration #2

This configuration has the following disadvantage:

- (Cisco Unified CM, all versions) Calls that are unanswered on the primary server—due to port lockup on the primary server or high CPU utilization—will be forwarded to the next available port on the primary server. Because the call is not forwarded to the secondary server, failover does not occur. As a result, voice mail service stops until the system administrator intervenes and manually initiates failover.

If the ports on the primary server are unregistered with the Cisco Unified CM server and the Force Failover If Call Arrives on Inactive Secondary check box is checked in the Failover Monitor, the call will reach the secondary server and cause failover to occur.

Additional References

- The applicable Cisco Unified CM integration guide for Cisco Unity at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_installation_and_configuration_guides_list.html.
- The applicable *Failover Configuration and Administration Guide for Cisco Unity* at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_feature_guides_list.html.

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