

Personal Assistant for Load Balancing Configuration Example

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Introduction

A single Cisco Personal Assistant server can handle a number of simultaneous sessions. You define these sessions when you set the number of media ports. When all media ports are in use, new callers receive a busy signal from Cisco Personal Assistant unless you set up load balancing among the Cisco Personal Assistant servers in each Cisco Personal Assistant server cluster.

Prerequisites

Requirements

Before you attempt this configuration, make sure that you meet these requirements:

- Cisco Personal Assistant
- Cisco CallManager
- Computer Telephony Integration (CTI) Route Points

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Personal Assistant Release 1.4
- Cisco CallManager 3.3 and later

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

Configure Cisco Personal Assistant Load Balancing

This section provides you with the information on how to configure Cisco Personal Assistant load balancing.

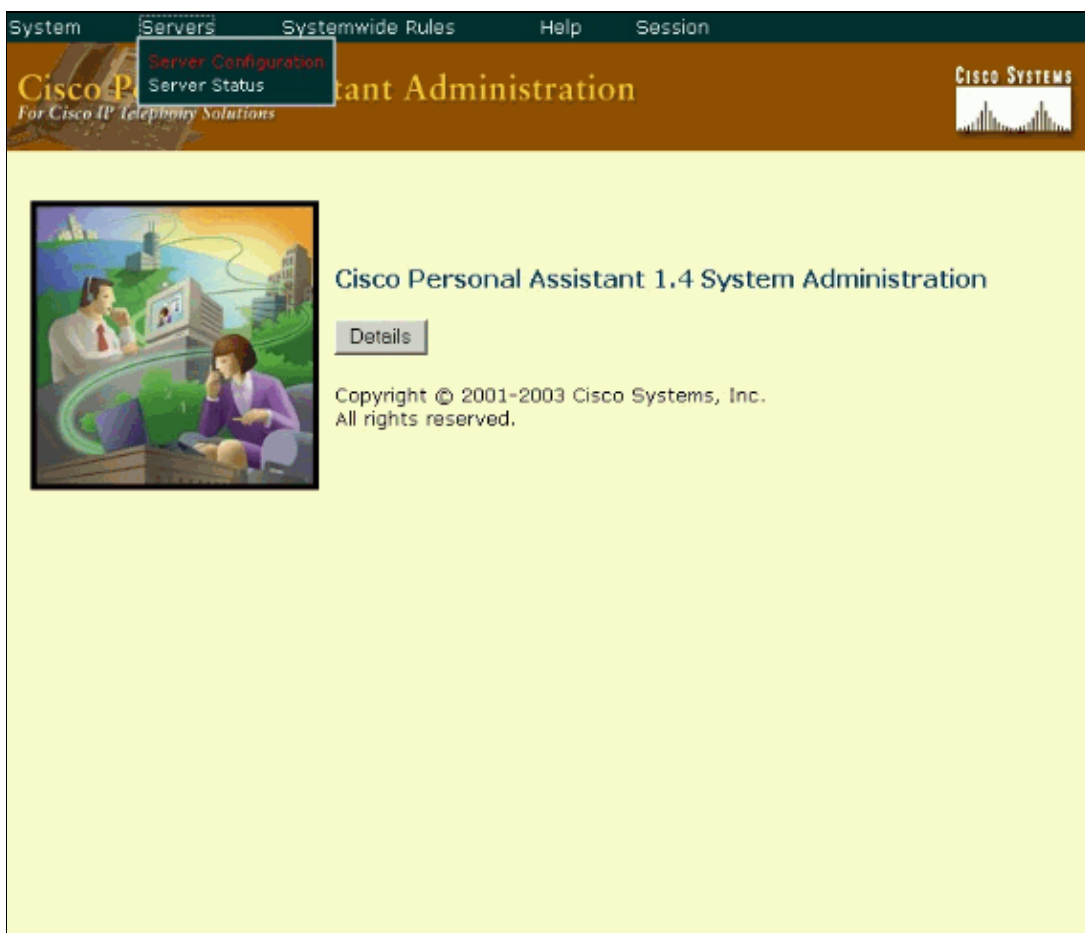
Cisco Personal Assistant load balancing is based on the "call forward busy" and "call forward no answer" numbers assigned to each Cisco Personal Assistant server phone number (CTI route point). If you configure these settings correctly in Cisco CallManager, the Cisco Personal Assistant servers in the cluster can answer calls for busy servers without the knowledge of your users. If you create a chain of servers, your users only need one phone number in order to reach Cisco Personal Assistant. This can make it easier for your users to use Cisco Personal Assistant.

In the example given in this document, two Cisco Personal Assistant servers are chained so that they share the call load. Users are told to call extension 6000 in order to reach Cisco Personal Assistant. If Cisco Personal Assistant Server 1 (PA1) has an available media port, it handles an incoming call. If it does not have an available media port, the call is forwarded to 4000 (Cisco Personal Assistant Server 2). If Cisco Personal Assistant Server 2 (PA2) has an available media port, it handles the call. Otherwise, the call is forwarded to 6000 (PA2). Users can also call PA2 directly in order to reach Cisco Personal Assistant.

In order to configure Cisco Personal Assistant load balancing, perform these steps:

1. Enter this URL in the browser in order to connect to the Cisco Personal Assistant Administration tool on your Cisco Personal Assistant Server:

◆ **http://<Your Cisco Personal Assistant's name or IP address>/PAsystemadmin/**
2. Select **Servers > Server Configuration**.



3. Use the Server Configuration page in order to add Cisco Personal Assistant servers to the Cisco Personal Assistant server cluster and to configure them.

Refer to Configure Personal Assistant Servers for information on how to add the servers to the cluster. In the example here, you can see that there are two Cisco Personal Assistant servers which are added into the Cisco Personal Assistant server cluster (shown in the left column).

4. Click on each Cisco Personal Assistant Server and enter the appropriate settings as described here.

These settings determine which user phone extensions are assigned to each server. The settings also determine how the server manages its resources. At the time of server configuration, you can configure the Cisco Personal Assistant servers either to balance the call load among themselves or to support failover.

- ◆ **Route Address Provider** is the CTI Manager that provides the Java Telephony Application Programming Interface (JTAPI) service required for the Cisco Personal Assistant and automated attendant CTI route points (phone number). You must select a provider that resides in the same Cisco CallManager cluster in which the CTI route points are configured. You must first configure a JTAPI provider for this. See the Configure Telephony section for more information.
- ◆ **Route Address** is the phone extension for the Cisco Personal Assistant server, which you must define as a CTI route point in Cisco CallManager. Users call this number in order to reach Cisco Personal Assistant. The Route Address is 6000 for PA1, and 4000 for PA2.
- ◆ **Media Port Provider** is the Cisco CallManager server that provides the Skinny (Signaling Connection Control Part (SCCP)) service required for the media ports. You must select a provider that resides in the same Cisco CallManager cluster in which the Cisco Personal Assistant CTI route point is configured. You must first configure an SCCP provider. See the Configure Telephony section for more information.
- ◆ **Interceptor Port Provider** is the CTI Manager that provides the JTAPI service required for the Cisco Personal Assistant interceptor ports. You must select a provider that resides in the same Cisco CallManager cluster in which the Cisco Personal Assistant CTI route points are configured. The provider you select here can be a different CTI Manager than the one selected for Route Address Provider. You must first configure a JTAPI provider. See the Configure Telephony section for more information.
- ◆ **Interceptor Ports** are the phone extensions of the users who use Cisco Personal Assistant. You must define the numbers you list here as CTI route points in Cisco CallManager. Any number you enter here must already be configured in the Cisco CallManager cluster controlled by the CTI Manager identified in the Interceptor Port Provider field. In order to add an extension or range of extensions, enter the applicable digits in the edit box and click **Add**.

Click **Save** after you enter the necessary parameters.

Server Configuration

PA1
PA2

New

Save

Delete

Entries marked with an asterisk (*) are mandatory.

Server Name * PA1
Hostname or IP Address * 10.77.208.24
Media Termination UDP Beginning Port 32000
Route Address Provider PA1jtapi
Route Address 6000
AA Route Address
Media Port Provider pa1skinny
Media Port Beginning Address 6001
Number of Media Ports 2
Interceptor Port Provider PA1jtapi

Interceptor Ports (E.g., 2007 or 2XXX or 3.2XXX)

Add

5XXX

Remove

Fail-over Server Names

Server Configuration

- PA1
- PA2

Entries marked with an asterisk (*) are mandatory.

Server Name *	PA2
Hostname or IP Address *	10.77.241.165
Media Termination UDP Beginning Port	<input type="text" value="32000"/>
Route Address Provider	<input type="text" value="PA2Jtapi"/>
Route Address	<input type="text" value="4000"/>
AA Route Address	<input type="text"/>
Media Port Provider	<input type="text" value="pa2skinny"/>
Media Port Beginning Address	<input type="text" value="4001"/>
Number of Media Ports	<input type="text" value="2"/>
Interceptor Port Provider	<input type="text" value="PA2Jtapi"/>
Interceptor Ports (E.g., 2007 or 2XXX or 3.2XXX)	
<input type="text"/>	<input type="button" value="Add"/> <input type="text" value="7XXX"/>
	<input type="button" value="Remove"/>
Fail-over Server Names	

5. Cisco Personal Assistant servers and speech–recognition servers work together in server clusters.

This makes it possible to share the load among servers. It also allows you to set up failover relationships so that if a server becomes disabled, another server can take over with minimal interruption for your users. You must identify at least one license manager for the speech software. The speech software requires an active, valid license available at all times for it to work.

In order to do this, select **System > Speech Services**.



6. In the Speech Services Configuration page, enter the appropriate settings as given in these steps:

- a. Enter your speech recognition license key in the License Code field.
- b. In the Speech Recognition Server Hosts field, enter the server IP address or DNS name, and click **Add**.

Note that the speech servers are not activated until the next refresh.

- c. In the Speech Recognition License Manager Hosts field, enter the IP address or DNS name of the Cisco Personal Assistant server you want to use, and click **Add**.

Refer to Configuring Speech Recognition for further more information.

Speech Services Configuration

Refresh User Information from Directory

Refresh Now
Last Refresh Details

Daily Automatic Refresh

Refresh Schedule 02 : 00

Refresh Notification

Send Refresh Status

Administrator E-mail Address

Speech Licenses

License Key - - -

Number of Licenses 2 Speech Ports (Single Locale)

Speech Recognition Server Hosts

Add
Remove

10.77.208.24
10.77.241.165

Speech Recognition License Manager Hosts

Add
Remove

10.77.208.24
10.77.241.165

Locales

Available Locales

>>
<<

Supported Locales

American English

Default Locale American English

Configure Telephony

You must configure the Telephony interface between Cisco Personal Assistant and the Cisco CallManager clusters so that Cisco Personal Assistant can successfully receive and transfer telephone calls.

1. Make sure that you have configured the required providers for JTAPI and SCCP protocols. In order to do this, select **System > Telephony** from the Cisco Personal Assistant Administration tool.




The Telephony Configuration page displays and you can see the list of providers at the left-hand side. Refer to [Configuring Telephony Providers](#) for further information.

System Servers Systemwide Rules Help Session

Cisco Personal Assistant Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Telephony Configuration

-  PA1jtapi
-  pa1skinny
-  PA2jtapi
-  pa2skinny

Provider Group Name

Provider Type

Telephony Providers

User Name

Password

2. Cisco Personal Assistant load balancing is based on the call forward busy and call forward no answer numbers assigned to each Cisco Personal Assistant server phone number (CTI route point) in the Cisco CallManager.

This example uses CTI route point PA6000 with Directory Number 6000 in order to access the Cisco Personal Assistant PA1. In the Directory Number Configuration for PA6000, set the call forward busy and call forward no answer numbers to **4000** (which is PA2) and click **Update**.

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Directory Number Configuration

[Configure Device \(PA6000\)](#)
[Dependency Records](#)

Devices using this Directory Number

PA6000 (Line 1)

Update Delete Reset Devices

Directory Number

Directory Number* 6000

Partition Employee

Directory Number Settings

Voice Mail Profile <None> (Choose <None> to use default)

Calling Search Space pacss

AAR Group <None>

Call Waiting Not available on this device.

Auto Answer Not available on this device.

Call Forward and Pickup Settings

	Voice Mail	Destination	Calling Search Space
Forward All	<input type="checkbox"/>		<None>
Forward Busy	<input type="checkbox"/>	4000	pacss
Forward No Answer	<input type="checkbox"/>	4000	pacss
Forward On Failure	<input type="checkbox"/>		<None>
Call Pickup Group	<None>		

Line Settings for this Device

	Value
Display (Internal Caller ID)	

3. Similarly, CTI route point PA4000 with Directory Number 4000 is used in order to access the Cisco Personal Assistant PA2. In the Directory Number Configuration for PA4000, set the call forward busy and call forward no answer numbers to **6000** (which is PA1) and click **Update**.

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Directory Number Configuration

[Configure Device \(PA4000\)](#)
[Dependency Records](#)

Devices using this Directory Number

PA4000 (Line 1)

Directory Number: 4000 (Employee)
Status: Ready

Update Delete Reset Devices

Directory Number

Directory Number* 4000

Partition Employee

Directory Number Settings

Voice Mail Profile <None> (Choose <None> to use default)

Calling Search Space pacss

AAR Group <None>

Call Waiting Not available on this device.

Auto Answer Not available on this device.

Call Forward and Pickup Settings

	Voice Mail	Destination	Calling Search Space
Forward All	<input type="checkbox"/>		<None>
Forward Busy	<input type="checkbox"/>	6000	pacss
Forward No Answer	<input type="checkbox"/>	6000	pacss
Forward On Failure	<input type="checkbox"/>		<None>
Call Pickup Group	<None>		

Line Settings for this Device

	Value
Display (Internal Caller ID)	

Verify

Use the Control Center in order to verify that a particular server is up and running. In order to do this, select **System > Control Center**. If you find that the required servers are not started, click the **Start** button in order to start them. A server is started if there is an arrow icon beside it. It is stopped if there is a square icon beside it.

System Servers Systemwide Rules Help Session

Cisco Personal Assistant Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Control Center

Personal Assistant Server		Start All	Stop All
PA1	▶	Start	Stop
PA2	▶	Start	Stop
Speech License Manager		Start All	Stop All
10.77.208.24	▶	Start	Stop
10.77.241.165	▶	Start	Stop
Personal Assistant Speech Server		Start All	Stop All
10.77.208.24		Start All	Stop All
American English	▶	Start	Stop
10.77.241.165		Start All	Stop All
American English	▶	Start	Stop

Select **Servers** > **Server Status** in order to verify the current status of a Cisco Personal Assistant server and its subsystems. The status can help you identify the problems that you need to address. An up arrow indicates that the server, port, or other item runs correctly. A down arrow indicates that it is not.

- The **Server List** in the left column gives a list of the Cisco Personal Assistant servers that you have inserted into the Cisco Personal Assistant server cluster. Click a server name in order to view its status.
- The **Server** indicates whether the Cisco Personal Assistant server is available (up) or unavailable (down). If the server is unavailable, use the Control Center in order to restart it. If the Control Center restart does not solve the problem, check the server itself in order to determine the problem. The problem can be related to the network connection to the server or the subnet where the server resides.
- The **Route Point** shows the status of the Cisco Personal Assistant route point. If the route point is unavailable, check it in Cisco CallManager in order to determine the problem.
- **Media Ports** and **Interceptor Ports** display the status of each media port and interceptor port you define.
- **Media Ports in Use** displays the number of media ports currently being used.

Click on the server **PA1** in order to see its status. You can see that the server and all the associated subsystems are up.

System Servers Systemwide Rules Help Session

Cisco Personal Assistant Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Server Status

PA1	Server	
PA2	PA1	▲
	Route Point	
	6000	▲
	Media Ports	
	6001	▲
	6002	▲
	Interceptor Ports	
	5XXX	▲
	Media Ports in Use	0

Click on the server **PA2** in order to see its status. You can see that PA1 and all the associated subsystems are up.

System Servers Systemwide Rules Help Session

Cisco Personal Assistant Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Server Status

PA1	Server	
PA2	PA2	▲
	Route Point	
	4000	▲
	Media Ports	
	4001	▲
	4002	▲
	Interceptor Ports	
	7XXX	▲
	Media Ports in Use	0

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

Related Information

- [Planning for Personal Assistant](#)
- [Configuring Personal Assistant](#)
- [Configuring Cisco CallManager for Personal Assistant](#)
- [Cisco Personal Assistant Software Support](#)
- [Voice Technology Support](#)
- [Voice and IP Communications Product Support](#)
- [Troubleshooting Cisco IP Telephony](#)
- [Technical Support – Cisco Systems](#)

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