



# Universal Port Resource Pooling for Voice and Data Services

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## Feature History

Release	Description
12.2(2)XA	This feature was introduced on the Cisco AS5350 and Cisco AS5400.
12.2(2)XB	The Universal Port Resource Pooling for Voice And Data Services feature no longer needs to be enabled separately in resource pool management.
12.2(2)XB1	This feature was implemented on the Cisco AS5850 platform.

This document describes the Universal Port Resource Pooling for Voice and Data Services feature in Cisco IOS Release 12.2(2)XB and includes the following sections:

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## Feature Overview

With Cisco Resource Pool Manager (RPM), telephone companies and Internet service providers (ISPs) can share dial resources for wholesale and retail dial network services in a single network access server (NAS) or across multiple NAS stacks. Call management and call discrimination can be configured to occur before the call is answered, and customers are differentiated by using configurable customer profiles that are based on the Dialed Number Identification Service (DNIS) and call type determined at the time of an incoming call. As a result, Cisco RPM enables service providers to count, control, and manage resources and provide accounting for shared resources when implementing different service-level agreements. The Universal Port Resource Pooling for Voice and Data Services feature now enables service providers to mix voice and data services by designating speech as the supported call-type in the resource pool management customer profile.

Cisco RPM can be configured in one or more standalone Cisco NASs or, optionally, across multiple NAS stacks by using one or more external Cisco Resource Pool Manager servers (RPMSs). This document presents the single, standalone NAS version of Cisco RPM. For more information about Cisco RPMS, see the [Cisco Resource Pool Manager Server Solution Guide](#).

## Benefits

The Universal Port Resource Pooling for Voice and Data Services feature provides the following benefits:

- Mix voice and data services in a single access server or stack of servers using resource pool management.
- Manage customer use of shared resources.
- Offer advanced wholesale dial-up services directly to customers. Because the PPP and AAA feature sets are selected by the incoming DNIS, the service provider no longer needs tunneling technology to provide unique service-level agreements to wholesale dial customers.
- Efficiently use resource groups to offer differing oversubscription rates and dial service-level agreements.
- Accept or reject a call based on the incoming DNIS number before answering the call.
- Include local retail dial services in the same NAS with the wholesale dial customers.

## Restrictions

- For voice calls, resource pool management is done only for incoming calls, calls from PSTN legs. For outgoing voice calls, resources are allocated only from the default system resource group.
- Mixing of voice DNIS numbers and data DNIS numbers within the same DNIS group in resource pool management is not allowed.
- The same DNIS cannot be used for both voice and data calls in resource pool management.
- Modem pooling and resource pool management are not compatible.

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## Related Features and Technologies

- Authentication, authorization, and accounting (AAA)
- Point-to-Point Protocol (PPP)
- Virtual Private Dialup Network (VPDN)

## Related Documents

- [Cisco AS5350 and Cisco AS5400 Universal Gateway Software Configuration Guide](#)
- [Cisco Resource Pool Manager Server Configuration Guide](#)
- [Cisco Resource Pool Manager Server Installation Guide](#)
- [Cisco Resource Pool Manager Server Solutions Guide](#)
- [Configuring Resource Pool Management](#)
- [Release Notes for Cisco Resource Pool Manager Server Release 1.04](#)
- [Resource Pool Management](#)
- [Resource Pool Management with Direct Remote Services](#)
- [Universal Port Resource Pooling for Voice and Data Service, Cisco IOS Release 12.2\(2\)XA feature module](#)

## Supported Platforms

- Cisco AS5350
- Cisco AS5400
- Cisco AS5850

## Supported Standards, MIBs, and RFCs

### Standards

No new or modified standards are supported by this feature.

### MIBs

No new or modified MIBs are supported by this feature.

To obtain lists of MIBs supported by platform and Cisco IOS release and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

### RFCs

No new or modified RFCs are supported by this feature.

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## Prerequisites

- Cisco IOS Release 12.2XB or later release

Because Cisco RPM differentiates customers through configured customer profiles, the following components of resource pool management must be configured:

- Customer profile types
- Call types



**Note** For this feature, speech must be designated as the supported call-type using the **resource** command in customer profile configuration mode.

- DNIS groups
- Resource groups
- Resource services

For more information about resource pool management, see *Configuring Resource Pool Management* at the following URL:

[http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122cgcr/fdial\\_c/fnsprt11/dafrpm.htm](http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122cgcr/fdial_c/fnsprt11/dafrpm.htm)

## Configuration Tasks

See the following sections for configuration tasks for this feature. Each task in the list is identified as either required or optional.

- Enabling RPM (required)
- Verifying RPM (optional)

## Enabling RPM

To enable resource pooling for voice and data services, use the following commands, beginning in global configuration mode:

	Command	Purpose
Step 1	Router(config)# <b>resource-pool enable</b>	Enables RPM.

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## Verifying RPM

- Step 1** Enter the **show running-config** command in privileged EXEC mode. If the “resource-pool enable” string is displayed, RPM is enabled.

```
Router# show running-config
...
resource-pool enable
!
resource-pool group resource voip-rg
  range port 3/1 3/15
!
resource-pool profile customer cp-voice
  limit base-size all
  limit overflow-size 0
  resource voip-rg speech service voip
  dnis group dnis-voip
...
```

## Configuration Examples

This section provides the following configuration examples:

- [Creating Resource Groups, Customer Profiles, and DNIS Groups Example](#)
- [Configuring DNIS Groups and Enabling RPM Example](#)

### Creating Resource Groups, Customer Profiles, and DNIS Groups Example

In the following example, resource group “voip-rg,” customer profile “cp-voice,” and DNIS group “dnis-voip” are created, and “speech” is designated as the supported call type:

```
Router(config)# resource-pool group resource voip-rg
Router(config-resource-group)# range port 3/1 3/15
Router(config-resource-group)# exit

Router(config)# resource-pool profile customer cp-voice
Router(config-customer-profile)# limit base-size all
Router(config-customer-profile)# limit overflow-size 0
Router(config-customer-profile)# resource voip-rg speech
Router(config-customer-profile)# dnis group dnis-voip
Router(config-customer-profile)# exit
```

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## Configuring DNIS Groups and Enabling RPM Example

In the following example, DNIS is assigned with leading digits of 522, 525, and 526x to DNIS group “dnis-voip,” and resource pool management is enabled:

```
Router(config)# dialer dnis group dnis-voip
Router(config-dnis-group)# number 522
Router(config-dnis-group)# number 525
Router(config-dnis-group)# number 526x
Router(config-dnis-group)# call-type cas speech
Router(config-dnis-group)# exit
Router(config)# resource-pool enable
```



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**Note** For more information about using wildcards in DNIS profiles, see “Configuring DNIS Groups” in *Configuring Resource Pool Management*.

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## Command Reference

There are no new or modified commands. All other commands used with this feature are documented in the Cisco IOS Release 12.2 command reference publications.

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# Glossary

**AAA**—authentication, authorization, and accounting.

**DNIS**—Dialed Number Identification Service. Telephone service that identifies for the receiver of a call the number that the caller dialed.

**DSP**—Digital Signal Processor.

**NAS**—network access server. Cisco platform or collection of platforms, such as an AccessPath system, that interfaces between the packet world (for example, the Internet) and the circuit world (for example, the PSTN).

**PPP**—Point-to-Point Protocol. Successor to SLIP that provides router-to-router and host-to-network connections over synchronous and asynchronous circuits. Whereas SLIP was designed to work with IP, PPP was designed to work with several network layer protocols and has built-in security mechanisms.

**PSTN**—Public Switched Telephone Network. General term referring to the variety of telephone networks and services in place worldwide.

**RPM**—Resource Pool Manager.

**RPMS**—Resource Pool Manager server.

**SLIP**—Serial Line Internet Protocol. Standard protocol for point-to-point serial connections using a variation of TCP/IP. Predecessor of PPP.

**VPDN**—virtual private dial-up network.

**Note**

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For a list of other internetworking terms, see the *Internetworking Terms and Acronyms* document available on the Documentation CD-ROM and Cisco.com at the following URL:  
<http://www.cisco.com/univercd/cc/td/doc/cisintwk/ita/index.htm>

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