

IPM FAQs

This appendix provides answers to the following frequently asked questions about IPM:

- What is IPM?
- Do I need to have CiscoWorks for UNIX or CiscoWorks2000 software to use IPM?
- Does IPM require an NMS such as HP OpenView or NetView?
- Does IPM require a dedicated hardware probe to monitor response time and availability?
- Does the IPM application measure response time from the point of view of the management workstation?
- What workstation and network devices do I need to run IPM?
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- What network protocols do IPM and RTR support?
- Do I have to be running Cisco IOS software Release 11.2 or later with the RTR feature on all my routers to get hop-by-hop performance statistics?

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- Should I install the router component of IPM on a backbone router so that it intercepts all paths?
 - Why is IPM no longer part of the CiscoWorks Blue family of products?
 - How does IPM measure response time between network devices in the IP environment?
 - How does IPM measure response time between routers in the SNA environment?
 - Cisco recently announced a partnership with Concord. The Concord Network Health application will generate reports based on the same RTR feature used by IPM. Should I purchase IPM or Concord Network Health?
 - I currently own IPM Version 1.0 for AIX or HP-UX. Can I upgrade to IPM Version 2.0?
 - How much of the router's memory do collectors in RTR consume?
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 - What data collectors are available in IPM 2.0?
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 - How many data collectors can IPM support?
 - When IPM configures the routers, it seems that the configuration is a running configuration and not saved. What happens when the router is rebooted?
 - Where can I find the latest information and software updates for IPM?

What is IPM?

IPM is an application for measuring and monitoring network performance statistics such as response time, availability, packet loss, and errors. You can view these statistics in real time or have IPM store them in its database for historical analysis. You can also use IPM to establish network baselines and monitor thresholds.

Do I need to have CiscoWorks for UNIX or CiscoWorks2000 software to use IPM?

No. IPM is functionally a standalone product. However, IPM can use inventory information stored in CiscoWorks2000 Resource Manager Essentials to define source routers and target devices to collect latency data.

Does IPM require an NMS such as HP OpenView or NetView?

No. IPM is a standalone application. It has no dependencies on these network management platforms.

Does IPM require a dedicated hardware probe to monitor response time and availability?

No. IPM utilizes the Response Time Reporter (RTR) software feature embedded in the Cisco IOS software of a router or Catalyst Route Switch Module (RSM) to measure response time and availability.

Does the IPM application measure response time from the point of view of the management workstation?

No. IPM configures the RTR feature of a router or RSM, running Cisco IOS software, to collect response time information. The network response time is measured from within the network rather than from the management workstation.

What workstation and network devices do I need to run IPM?

IPM is comprised of several distinct pieces of functionality.

- The IPM server application runs on Solaris only.
- The IPM client application, including the user interface, runs on Solaris, Windows 95, Windows 98, and Windows NT. For Solaris, the IPM client can run on the same Solaris workstation as the IPM server or on a different Solaris workstation.
- The IPM application requires a software agent embedded in the Cisco IOS software, called the RTR. At least one router running a Cisco IOS software release that supports RTR is required.
- If you are using IPM to monitor SNA response time, a mainframe application, NSPECHO, must be installed on your MVS system. NSPECHO is distributed with the IPM software.

Can I run IPM on my PC?

You can run the IPM client user interface on Windows 95, Windows 98, or Windows NT on your PC. The IPM server must run on a Solaris workstation.

How do I install the IPM client?

The IPM client may be installed either from the CD distributed with IPM, or by using a web browser to download the IPM client from an IPM server.

Do I have to install any software on the router to use RTR and IPM?

The RTR is embedded in many but not all feature sets of the Cisco IOS software. A release of the Cisco IOS software which supports RTR must be installed on the device IPM uses to measure response time. The following table summarizes which Cisco IOS software releases support RTR and indicates the maximum number of collectors and maximum duration time supported.

Cisco IOS Release	Cisco IOS Feature Set	RTR/IPM Support	Maximum Duration for Collectors	Maximum Number of Collectors
Less than 11.2(8)	All	No	–	–
11.2(8) to 11.2(15)	IP Plus Desktop Plus IBM Enterprise	Yes	23 days	200
	IP Only IP/IPX Desktop	No	–	–
11.2(16) to 11.2(x) (x is greater than 16)	IP Plus Desktop Plus IBM Enterprise	Yes	Forever	200
	IP Only IP/IPX Desktop	No	–	–
11.3(0) to 11.3(5)	All	No	–	–
11.3(6) to 11.3(4)	IP Plus Desktop Plus IBM Enterprise	Yes	Forever	200

How many collectors can be configured on each router platform?

Cisco IOS Release	Cisco IOS Feature Set	RTR/IPM Support	Maximum Duration for Collectors	Maximum Number of Collectors
	IP Only	No	–	–
	IP/IPX			
	Desktop			
12.0 and later ¹	All	Yes	Forever	500

¹ Cisco IOS software Release 12.0(T) is not supported by IPM Release 2.0. It will be supported by IPM Release 2.1.

Note A collector is the term that IPM uses to describe an entity that performs a specific measurement between a specific source router and target device.

How many collectors can be configured on each router platform?

The RTR restricts the number of configured collectors to a maximum of 200 per router for Cisco IOS releases 11.2 and 11.3, and 500 collectors per router for Cisco IOS release 12.0 or later. The actual number of supported collectors, however, is dependent on the specific router platform and amount of RAM installed in the router. Test results for some typical platform configurations are as follows:

Platform Series	Cisco IOS Software Release	DRAM (MB)	Maximum Number of Collectors
Cisco 7500	11.2	64	200
	11.3	128	200
	12.0	64	500
Cisco 7200	11.2	120	200
	11.3	120	200
	12.0	56	500
AS5300	11.2	64	200

How many collectors can be configured on each router platform?

Platform Series	Cisco IOS Software Release	DRAM (MB)	Maximum Number of Collectors
	11.3	64	200
	12.0	64	500
Cisco 4700	11.2	32	100
	11.3	64	200
	12.0	64	500
MC3810	12.0	27	500
Cisco 3600	11.2	24	80
	11.3	24	80
	12.0	28	500
Cisco 2600	11.3	48	200
	12.0	48	500
Cisco 2500	11.2	16	100
	11.3	16	100
	12.0	16	500
Cisco 1600	11.2	24	40
	12.0	24	500
Catalyst 5500 RSM	11.2	64	80
	11.3	32	200

Which Cisco hardware platforms support the RTR feature of the Cisco IOS software?

As of the publication of this document, all platforms that support the Cisco IOS software also support the RTR with the exception of the following platforms:

- Cisco 12000 series Gigabit Switch Router (GSR)
- Cisco 1000 series router
- Cisco 700 series router
- Cisco 90 series router

How does IPM interact with the RTR feature of the Cisco IOS software?

IPM uses the Simple Network Management Protocol (SNMP) to configure RTR in the Cisco IOS software of a router or RSM to collect response time and availability statistics. The RTR samples response time and availability to targets (network devices, servers, and PCs) in the network. IPM then uses SNMP to collect response time information from RTR, and stores that information for presentation and analysis.

What is the name of the MIB used by IPM?

IPM configures and queries the RRTMON MIB, which is supported by the RTR feature in the Cisco IOS software. This MIB may be downloaded from the Cisco web site.

Does a target device need to be a router that supports RTR?

No. IPM supports targets as long as they are reachable through IP. These targets may be web servers, PCs, printers, routers, switches, other network devices, or any other device that has an IP address. IPM also supports SNA targets running the NSPECHO application that is provided with IPM.

What network protocols do IPM and RTR support?

IPM and RTR support both IP and SNA response time monitoring.

Do I have to be running Cisco IOS software Release 11.2 or later with the RTR feature on all my routers to get hop-by-hop performance statistics?

No. You are required to be running the RTR feature on only the router actually sourcing the network performance measurements.

Should I install the router component of IPM on a backbone router so that it intercepts all paths?

The answer depends on the number of collectors you are using at any one time. A collector is the entity that IPM creates on a router to collect performance data. The router component of IPM uses memory and CPU cycles, so Cisco recommends that you run the router component on multiple edge routers instead. This setup distributes the load across multiple routers and better simulates typical network traffic patterns.

Why is IPM no longer part of the CiscoWorks Blue family of products?

The CiscoWorks Blue line of products is targeted at customers who have a mixed SNA and IP environment. IPM is now being delivered as part of the CiscoWorks2000 suite to better represent its focus on a wider range of IP-based monitoring requirements.

How does IPM measure response time between network devices in the IP environment?

IPM uses ICMP pings to measure response time between network devices. Ping, because of its low priority in the network, was chosen to show the worst possible response time a network user could see.

How does IPM measure response time between routers in the SNA environment?

In the SNA environment, IPM uses an SNA ping. The IPM application includes a component that runs on the mainframe. The router component of IPM sends a block of data (the request) to the mainframe component, which responds with a block of data (the response). Both the request and response sizes can be customized by the user so that traffic flow for various applications can be modeled. IPM supports the “SNA ping” over dependent logical unit (LU) sessions. IPM also measures SNA response time from a router to the mainframe over a system services control point (SSCP)-LU session. For these types of sessions, the mainframe component of IPM is not necessary. In this scenario, IPM uses an SNA ECHOTEST to solicit an SNA REQ ECHO from the mainframe over the SSCP-LU session.

Cisco recently announced a partnership with Concord. The Concord Network Health application will generate reports based on the same RTR feature used by IPM. Should I purchase IPM or Concord Network Health?

IPM and Concord Network Health have different features and benefits. IPM is a network response time and troubleshooting tool. The reporting features within IPM are designed to troubleshoot network response time and availability problems. Concord Network Health is designed to report on multiple performance statistics on devices from multiple vendors. IPM also supports viewing real-time statistics and analyzing multiple paths and multiple hops. The Concord application does not provide these features.

I currently own IPM Version 1.0 for AIX or HP-UX. Can I upgrade to IPM Version 2.0?

No. IPM 2.0 currently supports server functionality on Solaris only, and client functionality on Solaris, Windows 95, Windows 98, and Windows NT. The AIX and HP-UX versions of IPM are being End of Lived (EOLed) and there are no plans at this time to support future versions of IPM on AIX or HP-UX.

How much of the router's memory do collectors in RTR consume?

The router memory consumed by Echo collectors depends on the version of Cisco IOS software running on the router:

- For routers running Cisco IOS software Release 11.2 to 11.3 or 12.0, each Echo collector consumes 40 KB of router memory.
- For routers running Cisco IOS software Release 12.0(3)T or later, each Echo Collector consumes 14 KB of router memory.

The router memory consumed by a Path Echo collector is dependent on the number of paths and the number of hops in the path for each collector.

When will the IPM server be available on Windows NT?

A new release of IPM that supports the IPM server running on Windows NT will be available in the second quarter (summer) of 2000.

How frequently can network performance measurements be taken?

RTR generates several measurements per hour, then IPM polls the router once per hour and collects summarized statistics for that one-hour period. You can set the sampling interval for RTR as often as 1-10 seconds, but for optimal performance, we recommend that you set the sample interval to at least 60 seconds (1 minute). This is the default value.

When IPM collects the data from the RTR using SNMP, is this data average or summarized in any way?

You can view up-to-date real-time statistics in the Real Time Display window as RTR collects the data from the collector. However, IPM does not store the real-time data in the IPM database. IPM only stores the hourly summarized data in the IPM database.

When IPM collects the data from the RTR using SNMP, is this data average or summarized in any way?

The data is summarized and averaged in a variety of ways. IPM displays the data in the Response Graphs window in hourly, daily, weekly, and monthly increments. IPM also displays average, minimum, and maximum calculations of the data over the monitoring period. IPM also provides an automatic aging facility for summarizing and aging older data.

Are there plans to support IPM on Solaris for Intel platforms?

No. The demand seems to be relatively low for IPM running on this platform, while the demand for supporting other platforms and adding additional features to the existing platforms is fairly high. So the likelihood of IPM on Solaris for Intel being supported is relatively slim.

What data collectors are available in IPM 2.0?

IPM Release 2.0 provides support for the following types of operations:

- ICMP Echo
- ICMP Path Echo
- SNA Echo

Is IPM packaged with CiscoWorks2000?

Yes. With IPM Release 2.0, IPM is packaged with CiscoWorks2000 in the Routed WAN Management bundle. IPM might also be included in other CiscoWorks2000 bundles in the future.

How many data collectors can IPM support?

There is no functional limit on the number of collectors that IPM can support. However, it is recommended that you limit the maximum number of collectors per IPM server to 1000.

When IPM configures the routers, it seems that the configuration is a running configuration and not saved. What happens when the router is rebooted?

IPM handles configuring the source router using running configurations entirely. IPM automatically reconfigures the router after a reboot. You do not have to do anything special from the router command line after a reboot. Also, IPM does not interact with or destroy any manually generated collectors.

Where can I find the latest information and software updates for IPM?

Updated product information and software updates for IPM are available at the following URL: <http://www.cisco.com/kobayashi/sw-center/netmgmt/cw2000/IPM.html>

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