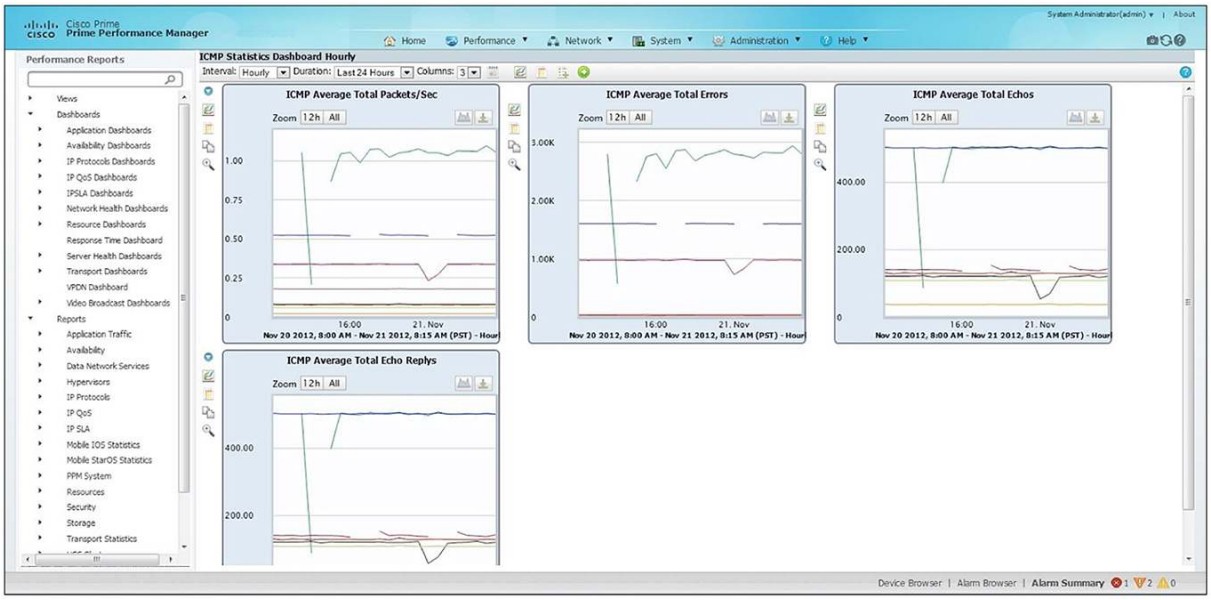
Cisco Prime Performance Manager

In managing today's complex, multiservice networks, introducing new services while ensuring the quality of existing services requires the ability to rapidly identify potential performance and reliability issues.

Cisco Prime™ Performance Manager is a performance management solution that provides immediate, actionable information to help service providers deliver carrier-class voice, video, mobile, cloud, and managed services. It is a highly scalable solution that gathers detailed performance statistics for Cisco® and multivendor network devices deployed across the entire network - from subscriber access all the way to the data center. (Refer to Figure 1.)

Figure 1. Cisco Prime Performance Manager - Statistics Dashboard Example



Cisco Prime Performance Manager is offered as a standalone product or as an integrated component of the Cisco Prime Carrier Management suite, a comprehensive network management solution that drastically simplifies the design, provisioning, and management of carrier-grade networks.

When combined with Cisco Prime Network, Cisco Prime Performance Manager provides operators granular visibility into network and service topologies along with related performance metrics. This provides a powerful solution that provides both postevent fault management and information to proactively avoid future disruptions. Cisco Prime Performance Manager also seamlessly integrates with Cisco Prime Central to provide centralized performance management and service assurance for the entire network.

Benefits

Easy to deploy: Simple and easy installation on single or multiple servers with an embedded database minimizes deployment time.

Easy to use: Intuitive web-based interface provides fast access to performance reports with flexible drill-down options to find more detail.

Easy to extend: Facilitates the dynamic loading of new reports, extensions to existing reports, or the addition of new devices, including non-Cisco equipment, to the network through field customization.

Fast, actionable information: Easy-to-use autodiscovery or GUI-driven integration with Cisco Prime Central and Cisco Prime Network helps ensure fast deployment and centralized access to essential network information. Cisco Prime Performance Manager also provides instant visibility into performance issues through user-defined threshold-crossing alerts (TCAs).

Features

Carrier class scale without the cost: Capable of managing 100,000 devices and approximately 9.7 million interfaces. Cisco Prime Performance Manager is designed for low startup and administrative costs with support for Cisco Unified Computing System™ (Cisco UCS®), Linux, VMware, and an embedded database that eliminates the need for third-party license and maintenance costs. Distributed architecture provides reliability, deployment flexibility, and horizontal scaling to grow with the network.

Flexible user-defined views: Better meet customer needs by quickly building and providing domain-specific views.

Prepackaged reports: Generate more than 4500 prepackaged reports on a wide range of network services, technologies, and devices. Gain more visibility into the network and service performance characteristics on devices. Reports are automatically generated, without the need for complex customization or configuration, reducing the total cost of ownership. (See Figure 1.)

Data collection and processing: Standards-based data collection can be easily applied to any Simple Network Management Protocol (SNMP)-enabled device. Generate 1 minute, 5 minute, 15 minute, hourly, weekly and monthly summarized reports, available in an easy-to-use web interface and as a comma-separated value (CSV) data file that can be exported for integration with third-party operations support systems (OSSs).

Multitechnology support: With extensive support for a wide variety of network services, technologies, and devices, Cisco Prime Performance Manager facilitates proactive service assurance and detection of network congestion.

Table 1 provides details on the features and benefits of Cisco Prime Performance Manager.

Table 1. Cisco Prime Performance Manager Features and Benefits

Feature	Description	Benefit
Architecture		
Autodiscovery	Supports discovery of devices based on given IP address range, seed device, or subnets.	Minimizes the rollout period of the application by using autodiscovery and device-to-unit autoassignment.
Carrier class scale	Supports up to 100,000 devices with close to 9.7 million interfaces and 100 UI clients. Supports distributed installation for horizontal scaling.	Minimizes the need to have multiple installations and reduces the cost of deployment and management complexity. Offers investment protection and allows growing management applications in line with work and traffic

Feature	Description	Benefit
		growth.
High Availability (HA)	Support for both local and geographical HA on gateway and units. Supports failover for units on a 1:1 or **N**:1 basis, where **N** = any number of primary units. High Availability on gateway with clustering.	Helps enable continuous business operations through comprehensive support for failover. Redundant units provide the capability for continuous operations with no stoppage.
IPv6 support	Performs device monitoring on an IPv6 network.	
Linux with VMware, Cisco Unified Computing System, embedded database	Provides best-in-class technology choices and lower-cost platforms.	Lowers total cost of ownership by increasing deployment flexibility and supporting virtualized environments.
Report/View Customization		
Extensions and report customizations	Ability to load new MIBs. Ability to customize existing reports and add new reports. Dynamic loading of new reports without the need for system restart. Ability to customize report display and CSV export options.	Helps enable the rollout of new services or the addition of new devices to the network through field customization.
Customizable views	User-defined views, allowing placement of graphs, tables, and reports in predefined templates. Granular control of type of data to display on graphs and tables. Ability to merge one or more graphs. View of multiple time periods for the same key performance indicator (KPI). User-defined views.	Allows operators to focus on specific areas of the network as needed. Helps meet customer requirements by offering views that are specific to their domains.
User Interface		
Web user interface	Integrated user interface that supports administrative and report viewing functions with online help included.	Eliminates the need to install client applications on multiple client machines and the need to manage client upgrades. Easy-to-use interface with instant access to online documentation, training videos on demand (VoDs), and software download links maximize productivity.
Report viewing user interface	Provides highly flexible report viewing options: • CSV, table, graph-based views. • Network-level summary views for each report. • Very flexible drill-down options from device to corresponding dashboard views, interface views; reports into different time granularity, and so on. • View of predefined reports or generation of custom reports. • Star graphs per device.	Provides visibility to network and traffic behavior at various granularities leading to actionable results toward network optimization and service assurance.
Administrative user interface	Provides a centralized administrative UI for the following functions: • Management of gateway and units. • Assignment of devices to units. • Autodiscovery administration. • Flexible policies for autoassignment of device to unit assignment such as IP address range, subnet, and so on. • User management. • Device administrative operations. • Centralized alarm viewer and context-based alarm viewers. • Report administrative options. • Visibility into various logs. • Default summarized views for aggregate views of the system.	Reduces cost of operations through consolidated administration console and easy-to-use controls.

Feature	Description	Benefit
System Administration		
Grouping and aggregate reporting	Provides logical grouping of interfaces, devices, and other KPIs. Ability to create groups with Group editor. Predefined XML aggregation definitions for commonly requested reports (such as Interface, VPN).	Allows operators to view consolidated performance reports pertaining to a KPI category. Simplifies operations by automatically providing commonly used reports.
Custom Report Builder	Web Report Editor provides a GUI interface that facilitates creating the new XML version/format of any custom web reports. Rather than writing XML code, the user can use the GUI to compose the XML document and display a preview as the document is composed. The user steps through the wizard, working with options that are context specific. Users can also view and edit existing web reports using a simple interface.	Provides more simplified operations through an interface that is much more intuitive.
Automatic generation and emailing of reports	Graphs, reports, dashboards, or customized views are automatically generated so a user can email any of these to a group at a scheduled time. They can be set to be recurring.	Simplifies operations through automation.
Network Administration		
Data collection	Supports SNMPv1-, SNMPv2C-, and SNMPv3-based data collection.	Provides standards-based data collection that can be easily applied to any SNMP-enabled device.
Polling	Provides ability to configure polling parameters by individual device and device group. Displays metrics based on real-time polling (under one minute polling interval).	Facilitates the administration of a large number of devices. Provides more accurate insight into current state of the network.
Data processing	Supports complex calculations based on the raw data collected such as multitable joins, delta, rate, percentage, average, minimum, and maximum calculations. Maintains aggregate summaries for 1 minute, 5 minute, 15 minute, 1 hour, and daily intervals.	Provides meaningful metrics such as availability and utilization.
NetFlow data	As network demands and speeds increase, the ability to monitor capacity, utilization, and detailed information about the traffic flowing on the network can be summarized in a format showing the conversation between two network nodes known as flow. NetFlow is a Cisco implementation, a simple and effective way to increase visibility of the traffic types and usage between two nodes.	Assists in capacity planning and optimization by collecting and identifying the top traffic utilization, capacity (bytes and packets), protocols, and services between two network nodes.
Event/Alarm Management		
Threshold-crossing alerts	Thresholds are rules or policies that determine when a KPI has risen or fallen to a particular level and when an event should be forwarded to a northbound system. Email notifications can be launched from TCAs. Scripts can be automatically executed in response to alerts. Thresholds on subobjects, such as logical interfaces based on type of service (ToS) or a specific class map.	Provides instant and granular visibility into performance issues to help enable rapid resolution. Simplifies operations through predefined TCA alarm definitions for common scenarios.
Event editor	Event-related properties can be modified through the event editor.	Easy to configure custom event properties.
Data export	Predefined data export to the local file system in standards-based format (Third-Generation Partnership Project [3GPP] type A and type B).	Standards-based CSV format to reduce expensive integration costs.

Feature	Description	Benefit
Secure User Management and Administration		
Role-based security	Supports role-based security to distinguish between operator and administrative actions. Supports three predefined roles and two custom roles.	Aligns with organizational security recommendations.
Secure protocols	Support carrier class secure implementations such as secure protocols from UI to gateway; gateway to units; secure protocol to database. Support flexible deployments with firewalls at each of these communications layers.	Aligns with organizational security recommendations.
External authentication	Supports external authentication using Lightweight Directory Access Protocol (LDAP), RADIUS, and TACACS. Supports fallback options for local authentication in the case of external authentication server failure.	Aligns to customer deployment scenarios to use external authentication systems.
OSS Integration		
Cisco Prime Central and Cisco Prime Network integration	Easy-to-use GUI-driven configuration of the integration and installation of cross-launch scripts. Cisco Prime Performance Manager synchronizes device list, credentials, and business tags from Cisco Prime Network. Performance reports generated in Cisco Prime Performance Manager can be contextually cross-launched from Cisco Prime Network. TCAs can be forwarded to Cisco Prime Central or Cisco Prime Network. User management integrated with Cisco Prime Central.	Reduces the cost of systems integration by providing out-of-the-box integration. Easy-to-use single-click configuration lets operators focus on business problems rather than systems integration. Increases efficiencies in performance management and service assurance through centralization. Provides seamless experience for viewing performance reports integrated with network and service topologies driving information for actionable results.
SNMP trap notification to OSS applications	Sends internal Cisco Prime Performance Manager-generated alarms as well as TCAs as event promulgation manager (EPM) SNMP trap notifications based on configurable rules.	Provides easy integration into fault management dashboards for proactive visibility into Cisco Prime Performance Manager-generated errors. (For example, upstream OSS alarms can be filtered by severity.)
Northbound APIs	RESTful APIs.	Simplifies integration with third-party applications.
Report Management		
Mobility	Mobility reports including IOS, StarOS CDMA, StarOS EPC, and StarOS KPI. It also provides SGSN and MME reports.	Facilitates mobile service assurance for customers with CDMA and PMIP deployments. MME and SGSN reporting capabilities serve the LTE and UMTS customers.
Cable	Performance monitoring and management reports for cable access devices including Cisco router uBR10012-CMTS, Wideband EBC, RFGW.	Helps provide cable service assurance.
Data center and virtualization	Reports for key data center components including network, compute, and storage, as well as virtualization. It also provides reports for virtual services and devices.	Trending of compute, network, and storage infrastructure components, facilitating identification of performance issues in the data center. Capacity management reports provide a way to easily identify bottlenecks in compute and network infrastructure.

Cisco Prime Performance Manager supports the key Cisco platforms listed in Table 2. In addition, Cisco Prime Performance Manager can provide reports for any SNMP-enabled device on the network. Please refer to Cisco Prime Performance Manager 1.4 compatibility information for the full list of devices that are supported.

Table 2. Examples of Cisco Platforms Supported

CRS-1	ME 3800X, ME 3600X, ME 4900	MWR 2900
ASR 9000	ASR 1000	ISR 1900, ISR 2900, ISR 3800, ISR 3900
7600	ASR 5000, ASR500	Catalyst® 4500, Catalyst 4900
Cisco UCS B Series, C Series	Cisco Nexus® Switches including Cisco Nexus 1Kv	Hypervisors - VMware, Xen, Hyper-V, KVM

Cisco Prime Performance Manager provides a rich set of prepackaged reports based on MIBs along with capabilities to extend to generate new reports and support new devices (Table 3). New MIBs can be added and new report definitions can be dynamically loaded without requiring system restart.

Table 3. Examples of Cisco Prime Performance Manager Reports

Report Category	Second-Level Category	Third-Level Category	Report Type	Standard MIB-Based or Cisco
Application Traffic				
	Authentication, authorization, and accounting (AAA)		Authentication Requests, Authentication Successes, Authentication Failures, Authorization Requests, Authorization Failures, Accounting Requests, Accounting Successes, Accounting Failures	Cisco
	SNMP		Packets, Packet Rates, Traps, Send Packet Types, Send Errors, Receive Packet Types, Packet Type Rates, Receive Variables, Receive Errors	Standard
	TCP		Segments, Segment Rate, Errors	Standard
	User Datagram Protocol (UDP)		Datagrams, Datagram Rate, Errors	Standard
Applications				
	Apache		Bytes, Connections, Idle Workers, Requests, Scoreboard	Standard
	MySQL		Commands, Handler, Locks, Threads	Standard
Availability				
	Interfaces		Interface Availability, ATM Interface Availability, EVC Interface Availability, Multiprotocol Label Switching (MPLS) Interface Availability	Standard
	MPLS tunnels		In Segment Availability, Out Segment Availability, Tunnel Availability	Standard
	Layer 2 VPNs		ATMs, EPL EVPLs, Frame Relays, TDMs, VPLS	Cisco
	Pseudowires		Global Availability, Inbound Availability, Outbound Availability	Cisco
	SNMP ping		SNMP Availability	Standard
Compute				
	ESXi		Data store, Disk, Network, Total CPU, Memory, Availability	Standard
	Hyper-V		Host, Virtual Machine	Standard
	KVM		Host, Virtual Machine	Standard
	UCS Clusters		Chassis, Fabric Interconnect	Standard
	Xen		Host, Virtual Machine	Standard
	vCenter		Data store Clusters, Data stores, Hosts and Clusters	Standard
IP Quality of Service (Quos)				
	Committed Access Rate (CAR)		Traffic Bits/Sec, Traffic Percentage of Access Rate, Traffic Percentage of Interface, Traffic Distribution Percentage, Conform Continue, Conform Dropped, Conform Precedence, Conform Traffic, Conform Transmit, Current Burst, Excess Continue, Excess Dropped, Excess Precedence, Excess Traffic, Excess Transmit	Cisco
	Class map		Pre- and Post-Policy Bytes, Pre- and Post-Policy Byte Rate, Pre- and Post-Policy Utilization, Pre-Policy Statistics, Post-Policy Statistics, Dropped Statistics, Police Statistics, Queuing Discards Statistics, Committed Info Rate Statistics, Peak Info Rate Statistics, Random Early Detection Statistics, Traffic Shaping Statistics	Cisco

Report Category	Second-Level Category	Third-Level Category	Report Type	Standard MIB-Based or Cisco
	Ethernet Flow Point		Interface CIR Utilization	Cisco
	Video Monitoring		Bit Rate, Bytes, Packet Rate, Packets, Lost Packets, Media Rate Variation, Discontinuity Count, RTP Expected Packet, Jitter, Lost Distance, Lost Duration, Lost Fraction, Lost Interval	Cisco
IP Protocols				
	Border Gateway Protocol (BGP)		Total Messages, Total Update Percentage, Peer Messages, Peer Update Percentage, Peer Flap Statistics	Standard
	Internet Control Message Protocol (ICMP)		Packets, Packet Rates, Echoes, Echo Replies, Errors, Destination Unreachable, Time Exceeds	Standard
	Open Shortest Path First (OSPF)		Messages, Message Rates, Neighbor Availability	Standard
	Intermediate System-to-Intermediate System (ISIS)		Interface, Traffic, Database, OTV Statistics	Cisco
	VRF		IntraDevice, Bit Rates, Bytes, Packets	Cisco
IP Service-Level Agreement (SLA)				
	Ethernet Operations, Administration, and Management (OAM)		Jitter Performance, Response Time, One Way Delay, Reachability, Frame Loss	Cisco
	ICMP jitter		Dashboard, Performance, Src->Dest, Dest->Src, Reachability, Response Time, Packet Loss	Cisco
	UDP jitter		Dashboard, Performance, Src->Dest, Dest->Src, Reachability, Response Time, Packet Loss	Cisco
	MPLS OAM		Dashboard, Response Time, Reachability, Operation Time	Cisco
	UDP Round-Trip Time (RTT)		Dashboard, Response Time, Reachability, Traffic Throughput	Cisco
	Video		Dashboard, Operation Failure, Packet Failure, Delay, Jitter, Reachability	Cisco
	VoIP Delay/RTP		Dashboard, Response Time, Reachability, Packet Loss, Jitter	Cisco
	Y1731		Delay, Delay Backward, Delay Forward, Delay Two Way, Delay Variance Backward, Delay Variance Backward Negative, Delay Variance Backward Positive, Delay Variance Forward, Delay Variance Forward Negative, Delay Variance Forward Positive, Delay Variance Two Way, Delay Variance Two Way Negative, Delay Variance Two Way Positive, Loss Backward, Loss Forward, Reachability	
Layer 2 Protocol				
	MSTP		Interface Details, BPDU Statistics	Standard
	RSTP		Interface Details, BPDU Statistics	
	VLAN		Unicast, Multicast, Broadcast, Unknown, Routed Statistics	
Mobile IOS				
			CSG, GGSNs, PCRF, PDNGW, SGW, SLB, SPGW	Standard
Mobile StarOS				
			APN, DCCA, DPCA, IMSA, GTPP, Card, SGW, PDW, Context, GTP-C, GTP-U, Port, Radius Server, eGTP-C, FA, HA, HSGW, LAC, PPP, BCMCS, LNS, MIPv6, MVS, RP, ECS, IP Pool, Port, SAEGW, LMA, MAG, P2P, PGW, ePDG	Standard
NetFlow				
			AS, Conversations, Destination, Prefix, Interfaces, Port, Protocols, Sources, ToS, CGNAT DS-Lite, CGNAT NAT44, CGNAT NAT64 (Session, User, Session with Destination)	Standard

Report Category	Second-Level Category	Third-Level Category	Report Type	Standard MIB-Based or Cisco
Network Services				
	Load Balancing		ACE, NetScaler	Cisco
	Symmetricom		Networking, Symm Interface, Physical, Temperature, TP5000, TP5000e	Cisco
	Virtualization		Fabric Path, VDC, vPC	Standard
Resources				
	Buffers		Misses Percentage - Small/Med/Big, Percentage - Large/Huge, Utilization - Small/Med/Big, Utilization - Large/Huge, Failures Percentage	Cisco
	CPU		Utilization, Processes Utilization	Cisco
	Memory		Memory Pool Utilization	Cisco
	Swap Space		Statistics, Utilization, Bytes	Cisco
	Disk		Space Statistics, Utilization, Bytes, IO, Inodes	Cisco
Transport Statistics				
	ATM interface		Dashboard, Utilization, Availability, Bit Rates, Bytes, Byte Rates, Packets, Packet Rates, Errors, Error Percentage, Discards, Discard Percentage, Broadcast Percent, Multicast Percent, Unicast Percent	Standard
	ATM PVC		Interface Utilization, Cells, Cell Rate, Bytes, Byte Rate, Packets, Packet Rate	Cisco
	Cable		CMTS, CMTS DOCSIS3, EVC QoS, Wideband	Cisco
	EVC interface		Dashboard, Utilization, Availability, Bit Rates, Bytes, Byte Rates, Packets, Packet Rates, Errors, Error Percentage, Discards, Discard Percentage, Broadcast Percent, Multicast Percent, Unicast Percent	Standard
	Ethernet errors		Ethernet Errors	Standard
	Interface		Dashboard, Utilization, Availability, Bit Rates, Bytes, Byte Rates, Packets, Packet Rates, Errors, Error Percentage, Discards, Discard Percentage, Broadcast Percent, Multicast Percent, Unicast Percent, Extended Errors	Standard
	Layer 2 VPN		ATM, EPL EVPL, Frame Relay, TDM, VPLS	Cisco
	Layer 3 VPN		Layer 3 General VPN, Layer 3 Multicast VPN	Cisco
	MPLS		In Segment, Label Distribution Protocol (LDP), MPLS interface, Out Segment, Traffic Engineering (TE) tunnel	Standard
	Optical		Ethernet, Generic Cards, OTN, SDH, SONET, Sensor	Standard
	RMON		Dashboard, Packets Received, Size, Broadcast/Multicast Packets Received, Oversize/Undersize Packets, Fragments, Collisions, Drop Events	Cisco
	TDM Interface		DSn (DS1, DS2), En (E1, E2)	Cisco
	Pseudowire		Global Availability, Inbound Availability, Outbound Availability, Bit Rates, Bytes, Byte Rate, Packets, Packet Rate	Cisco
Video Broadcast				
	Conditional Access		DBDS Satellite Conditional Access ADP Dashboard	Cisco
	DBDS		Communication, Controller, DNCS, GQAM, QPAK	
	Satellite Signals		DBDS Satellite Signal Levels, DBDS Satellite Signal Error	
	Cisco TelePresence		Call Management, Call Information, Call Data Monitoring, Call Transmitted, Call Received, Call Stream Type, Call Jitter, Organization, Peripheral, Region, Resource, Service Provider	

Please see the Cisco Prime Performance Manager User Guide for information on how to view and utilize reports as well as manage report policies.

System Requirements

The server and web browser system requirements for Cisco Prime Performance Manager can be found in the Cisco Prime Performance Manager 1.4 Quick Start Guide.

About Cisco Prime

The Cisco Prime portfolio of IT and service provider management offerings empowers IT organizations to more effectively manage their networks and the services they deliver. Built on a service-centered foundation, Cisco Prime supports integrated lifecycle management through an intuitive workflow-oriented user experience - providing A-to-Z management for evolved programmable networks (EPNs), mobility, video, cloud, and managed services.

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco services help you to protect your network investment, optimize network operations, and prepare the network for new applications to extend network intelligence and the power of your business. For more information about Cisco services, please visit the Cisco Services page on Cisco.com.

Ordering Information

Cisco Prime Performance Manager is available for purchase through regular Cisco sales and distribution channels worldwide. See Table 4 for part numbers. To place an order, visit the Cisco Ordering Homepage.

Table 4. Ordering Information for Cisco Prime Performance Manager 1.4

Part Number	Description
PERFMGR-1.4-K9	Cisco Prime Performance Manager 1.4 Base Application
PERFMGR-1.4-SBY-K9	Cisco Prime Performance Manager 1.4 - Standby Application (Redundancy)
PERFMGR-1.4-LAB-K9	Cisco Prime Performance Manager 1.4 Laboratory License (Not for Production Use)
PERFMGR-1-GR-A-RTM	Cisco Prime Performance Manager 1.x Group A Right to Manage
PERFMGR-1-GR-B-RTM	Cisco Prime Performance Manager 1.x Group B Right to Manage
PERFMGR-1-GR-C-RTM	Cisco Prime Performance Manager 1.x Group C Right to Manage
PERFMGR-1-GR-D-RTM	Cisco Prime Performance Manager 1.x Group D Right to Manage
PERFMGR-1-GR-E-RTM	Cisco Prime Performance Manager 1.x Group E Right to Manage
PERFMGR-1-GR-F-RTM	Cisco Prime Performance Manager 1.x Group F Right to Manage

For More Information

For more information about Cisco Prime Performance Manager, contact your local account representative or visit the Cisco Prime Performance Manager Overview at www.cisco.com/go/performance.

Download a no-cost, 60-day evaluation version of Cisco Prime Performance Manager from the Cisco Marketplace at www.cisco.com/go/nmsevals.

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Printed in USA C78-728854-03 11/13