

Cisco CNS Performance Engine 2.1

Q. What is the Cisco[®] CNS Family?

A. The Cisco[®] CNS Family consists of software and appliance-based applications that support scalable network deployment, configuration, service assurance monitoring, and on-demand service delivery. Cisco CNS intelligent networking technology is tightly coupled with the network elements via embedded device intelligence. Cisco CNS reduces Capital Expenditures (CapEx) by consolidating management functionality into Cisco devices, decreases operating expenses (OpEx) through automation of manual procedures, and increases revenue opportunities by supporting new services and business models.

Q. What is the Cisco CNS Performance Engine?

A. The Cisco CNS Performance Engine is a software product in the Cisco CNS product family. The software simplifies the collection, aggregation, and forwarding of performance and usage data from a wide variety of Cisco element types and data sources according to policies programmed into it by higher-layer applications. It also processes and correlates performance metrics for particular services and application domains, increasing the manageability of those services. This activity reduces the need for interpretation of large volumes of statistics by network operators, enabling them to view network behavior more quickly, including any trouble spots, such as gateways dropping voice calls.

Q. What are the product's primary features?

A. Among its primary features, the Cisco CNS Performance Engine:

- Provides a comprehensive set of built-in collectors that the user can program to collect:
 - MIB data
 - Tables of data through bulk-file MIBs
 - Cisco Service Assurance Agent (SAA)
 - Cisco IOS[®] command-line interface (CLI) show commands
 - DOCSIS[®] data
 - Voice over IP (VoIP) call detail records (CDRs) and statistics from Cisco voice gateways and Cisco Call Manager Express
 - CDRs, call management records along with hourly and daily summaries from Cisco CallManager
 - Cisco class-based quality of service (CBQoS) MIB data collection
 - Cisco IOS Multiprotocol Label Switching (MPLS) ping and trace troubleshooting suite
 - Flat files of performance data from other Cisco operations support systems (OSSs), such as NetFlow Collection Engine and Cisco BTS 10200 element management system (EMS).



- Enables proactive monitoring by generating threshold-crossing alerts. The user can set thresholds at multiple levels, and against measurement deltas to maximize flexibility.
- Allows the correlation of all call legs of a VoIP call to produce meaningful information related to the network, such as average call success rate.
- Enables the correlation of MPLS VPN traffic with VPN customer information to help enable usage-based accounting and billing systems.
- Provides a simple Extensible Markup Language (XML) interface for the programming of performance-data-collection policies.
- Provides an interface to the Cisco CNS Integration Bus so that certain performance data can be shared with other programmable network-layer applications, and so that the Cisco CNS Performance Engine can be driven by other programmable network-layer applications, such as the Cisco CNS Configuration Engine.

Q. What is new in Cisco CNS Performance Engine 2.1?

A. Release 2.1 builds on top of release 2.0, and introduces the following new features:

- Ability to collect CDRs and call management records, and provide hourly and daily summaries.
- Enhanced security including:
 - Secure Shell (SSH) v1 and v2
 - Secure Sockets Layer (SSL)
 - Secure FTP
 - Simple Network Management Protocol version 3 (authentication only)
- Capture of MPLS Label Switching Protocol (LSP) ping and trace results. The user can configure the collector to start the trace operation automatically if the ping operation fails.
- DOCSIS data collection enhancements, including new templates and collectors.
- The power to trigger new data collections automatically based on detection of threshold crossing.
- NetFlow MPLS VPN usage provider edge (PE)-to-PE aggregation.

Q. What are the applications?

A. The Cisco CNS Performance Engine 2.1 can access a wide range of performance data, which means that it is ideal for performance-management applications. These include reporting, troubleshooting, and planning applications, as well as SLA-management applications.

Q. Is the Cisco CNS Performance Engine 2.1 supported globally?

A. Yes. Cisco CNS Performance Engine 2.1 developer support is available directly from the Cisco Joint Development Program (JDP). Cisco Technical Assistance Center (TAC) support for the Cisco CNS Performance Engine 2.1 is available globally. As the company builds Cisco CNS Performance Engine partnerships, the product will also have presales support available through integrated partners.

Q. What are the components of the Cisco CNS Performance Engine 2.1?

A. The Cisco CNS Performance Engine 2.1 consists of a programmable XML interface; a basic Web graphical user interface (GUI) for configuration and control, if desired; an embedded database, which does not need to be administered by the operator; and several software “collectors,” specifically developed to retrieve particular types of performance information.



Q. Can the Cisco CNS Performance Engine 2.1 integrate with other OSS vendor applications?

A. The Cisco CNS Performance Engine 2.1 can easily be integrated with other OSS vendor applications by virtue of the Cisco CNS Integration Bus interface and simple XML programmable interface. Early proof-of-concept integrations with service management systems have been possible in less than two weeks and complete product integration within 10 weeks.

Q. What are the minimal software and hardware requirements for the Cisco CNS Performance Engine?

A. The product requires a workstation running Sun Solaris 8 or Red Hat Enterprise Linux 3.0. The recommended platform for Solaris is Sun Netra20; the recommended platform for Linux is the Cisco CNS 2100 Series Intelligent Engine appliances. The recommended configuration for the platform is 1 GB RAM, 36 GB hard disk.

Q. Which Cisco hardware platforms and software releases does the Cisco CNS Performance Engine 2.1 support?

A. The Cisco CNS Performance Engine 2.1 is not bound by particular Cisco IOS Software releases or hardware versions. The MIB collection function is generic. If the installation does not include a MIB, the user can load it into the Cisco CNS Performance Engine 2.1. For the particular value-added applications such as VoIP, the Cisco CNS Performance Engine 2.1 has been tested against Cisco 5300 Series voice gateways running Cisco IOS Software Release 12.2 and later.

In addition, when the Cisco CNS Performance Engine 2.1 forms an integral part of any Cisco Internet OSS integrated offering or domain manager, it is tested with the relevant hardware and Cisco IOS Software releases that constitute the offering.

Q. Does the Cisco CNS Performance Engine 2.1 support a GUI?

A. Cisco CNS Performance Engine 2.1 supports a simple GUI for the MIB-collected data. It is intended for demonstration purposes, and therefore, it is not recommended for normal operation.

The Cisco CNS Performance Engine 2.1 has been integrated with partner-reporting applications, and the user can integrate it in a short time with other third-party or customer-specific applications.

Q. What is the MPLS troubleshooting tool in Cisco CNS Performance Engine 2.1?

A. The Cisco CNS Performance Engine 2.1 supports MPLS ping and traceroute commands via IosCliOpsCollector. With the new dynamic event trigger feature, the user can configure the Cisco CNS Performance Engine 2.1 to proactively monitor and generate alerts for potential problems in an MPLS core network, such as:

- Trigger a collector to execute periodically the MPLS LSP ping
- Configure thresholds for ping failure for the above collector
- Start trace utility automatically for the same LSP/VRF if the LSP generates a ping failed notification ping command

Q. What is the DOCSIS capability?

A. The Cisco CNS Performance Engine 2.1 includes the capability to provide cable modem and cable modem termination system (CMTS) information using the DOCSIS Data Collector. The DOCSIS Data Collector interacts with the cable modem and the CMTS through SNMP, and can use information from a customer's database to assess cable modem-to-CMTS association, and to obtain location information.

Q. Cisco CNS Performance Engine 2.1 has the support for Cisco IOS CLI show command. How does it work?

A. The Cisco CNS Performance Engine 2.1 has the infrastructure to retrieve information from a Cisco IOS CLI show command. Using this feature, the Cisco IOSCLIopsCollector in the Cisco CNS Performance Engine 2.1 can issue a show command to a router through Telnet. The CNS Performance Engine can then extract information using a regular expression (regexp) file associated with the particular show command supplied by the user.

Q. What is the MIB collection capability?

A. The MIB Collector in the Cisco CNS Performance Engine can be used for generic data collection from SNMP agents. The MIB Collector supports individual MIB object identifier instance retrieval with the SNMP get command or retrieval of columns in a table with the SNMP getbulk and getTable commands. It is recommended that the SNMP getbulk command be used when retrieving a large volume of data from one table or multiple tables for better performance. The relative MIB should be loaded before the MIB Collector attempts to collect the data.

Q. What is the Cisco Service Assurance Agent?

A. The Cisco Service Assurance Agent (SAA) is an intelligent software agent in Cisco IOS Software that can be used to measure network performance. By generating synthetic traffic, Cisco SAA can accurately measure round-trip delay, one-way delay, delay variance (jitter), and packet loss. It is a valuable tool for service-level management.

Q. Does the Cisco CNS Performance Engine 2.1 have an embedded network inventory model?

A. No. The Cisco CNS Performance Engine relies on the higher-layer application that is driving it to have knowledge of the network; that is, to have an inventory or object model of the network. The design emphasizes the versatility of the Cisco CNS Performance Engine 2.1's set of services so that other applications can use it.

Q. Where can I find more information?

A. For more information, read the product documentation available at: <http://www.cisco.com/en/US/products/sw/netmgts/ps3795/index.html>



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