

Cisco CRS-1/IOS-XR Device Management

Q. What is Cisco® CRS-1/IOS-XR Device Management?

A. Cisco CRS-1 Device Management provides a cost-effective platform for device management based on Cisco Active Network Abstraction (ANA). Further, Cisco CRS-1/IOS-XR Device Management also provides several prepackaged, fixed-price, custom professional services to deploy and build network management functions tailored to customers' specific network services offerings and operational needs. All professional services for Cisco CRS-1/IOS-XR Device Management will be delivered by the Cisco Advanced Services–led engagement team within a 6- to 12-week timeframe.

Q. Who should deploy Cisco CRS-1/IOS-XR Device Management?

A. Cisco CRS-1/IOS-XR Device Management is designed for service providers and larger enterprises using CRS-1 and XR12000 series routers.

Q. What benefits can customers expect from deploying Cisco CRS-1/IOS-XR Device Management?

A. Cisco CRS-1/IOS-XR Device Management provide service providers and large enterprises with the following features for managing Cisco CRS-1 and Cisco XR12000 series routers:

- Complete CRS-1 and device inventory views covering both physical and logical inventory
- Automatic discovery of device relationships (topology) using Cisco Discovery Protocol and Border Gateway Protocol (BGP)
- Capture and forwarding of device-level alarms to OSS/BSS systems for monitoring at network operations center (NOC) or data center
- Standard northbound interface (XML) that provides a single device mediation platform for all Cisco devices running Cisco IOS® XR Software; standard northbound interface that reduces OSS/BSS integration complexity
- A generic view of all classes of devices or routers that allows network operators to perform automated operational tasks using a GUI that reduces network operator training for CRS-1 and XR12000 devices and Cisco IOS XR Software
- High Availability Warm Standby system that facilitates 24-hour-a-day, 7-day-a-week network operations, services management, and business continuity
- Distributed and scalable architecture that allows network operators to plan, expand, and effectively manage a multi-vendor network with low incremental cost as the network grows

Q. What networking technologies are supported by Cisco CRS-1/IOS-XR Device Management?

A. Cisco CRS-1/IOS-XR Device Management supports IP, Layer 2/3 VPN, xDSL, ATM, Frame Relay, Gigabit Ethernet, Ethernet, 802.1Q, Inter-Switch Link (ISL), Layer 2 Tunneling Protocol (L2TP), and routing protocols (such as BGP).

Q. What major features are provided in Cisco CRS-1 Device Management ?

A. The core technology of Cisco CRS-1/IOS-XR Device Management is Cisco Active Network Abstraction, which provides a unique virtual network element (VNE) abstraction model that dynamically discovers and identifies basic network elements while obtaining end-to-end

visibility of network elements, connections, and dependencies. The building blocks of this model are autonomous virtual software-based network devices, each one cloning the characteristics and properties of its real-world counterpart. The aggregation of these devices creates the virtual model in the same way an aggregation on network elements creates a real-world network. The virtual network elements abstraction model facilitates the three most important characteristics of managing networks:

- High availability and scalability, with no single point of calculation
- Interoperability with existing OSS/BSS infrastructure
- Flexibility to plan and effectively manage core network expansion to match growing services and business needs

Q. What devices are supported in Cisco CRS-1/IOS-XR Device Management?

- A.** Cisco CRS-1/IOS-XR Device Management supports Cisco CRS-1 and XR12000 series routers. Table 1 provides the list of routers and supported Cisco IOS XR Software version.

Table 1. Routers Supported by Cisco CRS-1/IOS-XR Device Management

| Device Family | Devices | Cisco IOS XR Software Release* |
|-----------------------------------|---|---------------------------------------|
| Cisco CRS-1 Routers | Cisco CRS-1 16-Slot Single-Shelf System Cisco CRS-1 8-Slot Single-Shelf System Cisco CRS-1 4-Slot Single-Shelf System | Cisco IOS XR Software 3.4.1 and later |
| Cisco XR12K Series Routers | Cisco XR 12416 Router Cisco XR 12410 Router Cisco XR 12406 Router Cisco XR 12016 Router Cisco XR 12010 Router Cisco XR 12008 Router Cisco XR 12006 Router | Cisco IOS XR Software 3.4.1 and later |

Q. What fixed-price, prepackaged, custom implementation services are available with Cisco CRS-1/IOS-XR Device Management?

- A.** The following fixed-price, prepackaged, custom implementation services are available from Cisco Advanced Services:

- Baseline Deployment Service (mandatory)
- High Availability Configuration Service (mandatory with Cisco ANA Warm Standby)
- Network and Service Activation (optional)
- Network Threshold Management (optional)
- Cisco ANA to Cisco Information Center or IBM Tivoli/NetCool Integration Service (optional)

Note: The Baseline Deployment Service is mandatory. It must be purchased with Cisco CRS-1/IOS-XR Device Management and implementation services and covers a network of up to 30 devices (CRS-1 or XR12000 Series routers). Optionally, the Baseline Deployment Service can be extended to cover larger core networks with more than 30 CRS-1 and XR12000 routers.

Q. Can Cisco CRS-1/IOS-XR Device Management be integrated with my existing OSS applications?

A. Yes, Cisco CRS-1/IOS-XR Device Management is an open solution that allows integration of both internal and external OSS applications. For example, Cisco CRS-1/IOS-XR Device Management offers fixed-price, prepackaged, custom professional services to integrate the Cisco CRS-1/IOS-XR Device Management platform with industry-leading fault manager of managers, Cisco Information Center, or IBM Tivoli/NetCool.

Q. Can I extend Cisco CRS-1/IOS-XR Device Management for network service provisioning and proactive network performance monitoring?

A. Yes, Cisco CRS-1/IOS-XR Device Management can be extended to perform network service activation (or provisioning) on CRS-1 and XR12000 Series routers. The optional Network and Service Activation service package offered by Cisco Advanced Services as a fixed-price, prepackaged, custom service extends Cisco CRS-1/IOS-XR Device Management to perform service activation to suit customers' existing operational environments and workflows. Similarly, the optional Network Threshold Management service package offered by Cisco Advanced Services can be used to extend Cisco CRS-1/IOS-XR Device Management.

For More Information

Refer to the Cisco CRS-1/IOS-XR Device Management data sheet at <http://www.cisco.com/en/US/products/ps6776/index.html>, contact your local account representative, or send an e-mail to ask-ana-crs@cisco.com.



Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

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