

Cisco[®] Prime[™] Network Registrar[®]

What's New in Release 8.0

Cisco Prime Network Registrar Overview

Cisco[®] Prime[™] Network Registrar[®] is a scalable, high-performance, extensible solution that provides integrated Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), and IP address management (IPAM) (DDI) services.

The solution includes the following integrated components and their respective services - all supporting both IPv4 and IPv6:

- A single DHCP server for device network access
- A single DNS server for IP address translation and service delivery
- A DNS caching server that supports DNS Security Extensions (DNSSEC) for added DNS security that is designed to prevent cache poisoning and other attacks
- A powerful, comprehensive IPAM system to automate and manage all IP address requirements

The Solution Offers

- **Speed and scalability:** Blazingly fast, the Cisco Prime Network Registrar DHCP server is also the industry's most scalable-supporting 50 million-plus devices in a single customer deployment. The recursive, extremely fast, Cisco Prime Network Registrar DNS Caching Server offers significant acceleration of DNS query throughput.
- **Reliability:** The solution offers multiple levels of redundancy with DHCP safe failover and support for High-Availability DNS (HA-DNS). A patent-pending discriminating rate limiter provides unsurpassed DHCP avalanche prevention to reduce downtime after network outages.
- **Consolidated IPv4/IPv6 address management:** Cisco Prime Network Registrar includes integrated, full lifecycle management for IPv4 and IPv6 and allows dual-stack deployments on a single server. The full-featured DHCPv6 server provides support for address assignment, both stateless and stateful configuration, and prefix delegation for full IPv6 address management. The IPAM component helps ease the transition to IPv6 with the ability to discover and take inventory of IPv4 and IPv6 resources, plan and model the way an IPv6 network is deployed, and map a current IPv4 network and devices to an IPv6 space.
- **Management complexity minimized with centralization and automation:** Cisco Prime Network Registrar IPAM allows administrators to control and monitor DNS and DHCP servers from a centralized location, providing a single point of data aggregation and delegation. This helps to synchronize information, eliminate many manual, time-consuming, and error-prone tasks, and reduce complexity and operating costs. In addition, with the ability to discover, track, allocate, assign, and reclaim IP addresses automatically, network operators can easily achieve significant efficiencies. Automation also helps eliminate IP conflicts and configuration errors, reducing downtime of DHCP and DNS services and lowering network operating costs.

- **Extensibility:** Powerful, industry-leading extension support for both IPv4 and IPv6 allows network operators to alter and customize DHCP server operations for both IPv4 and IPv6, improving network security, network performance and third party application integration.

New in Release 8.0

The newest release of Cisco Prime Network Registrar (formerly Cisco Network Registrar) adds these significant features and benefits:

- **A new, robust IPAM solution:** Innovative tools provide centralized, full-lifecycle support of IP addresses, facilitating easy, integrated management of IPv4 and IPv6 address space, address assignment, and allocation/reallocation - as well DHCP configurations - all in one solution.
- **DNS caching server:** The Cisco Prime Network Registrar DNS caching server improves speed/performance of high volume recursive queries. The DNS caching server performs DNSSEC validation, authenticating the origin of DNS data as it transits the network and protecting resource records against DNS vulnerabilities such as DNS cache poisoning. The DNS caching server also supports DNS64, providing IPv4 access for hosts with only an IPv6 address.
- **Componentized licensing:** Cisco Prime Network Registrar is licensed by component - DHCP, DNS, IPAM, and DNS Caching are all licensed individually in order to meet different customers' requirements. Components can be purchased individually or as one of two suites (DHCP/DNS or DHCP/DNS/IPAM).

Table 1 provides a detailed listing of enhancements and new features of Cisco Prime Network Registrar.

Table 1. Enhancements and New Features of Cisco Prime Network Registrar

Enhancements and New Features	Description	Benefits
IP Address Planning		
Intuitive GUI	The IPAM module provides a web-based interface that allows users to associate address blocks easily with geography, topology, or other user-defined hierarchies.	Administrators can quickly visualize the network and allocate addresses based on current and future requirements. The easy, intuitive GUI provides a single, comprehensive view of IPv4 and IPv6 addresses.
Planning for hierarchical IPv4 and IPv6 address space with a continual feedback loop	IPAM tools facilitate development of a disciplined IP address plan that can be deployed, monitored and tracked automatically. Network operators can plan and stage IP block or subnet allocation, IP address assignment, addition of a new DHCP pool and associated parameters.	Enables continuous feedback loop to assure accuracy and provide an overall management view. Discovery-to-database reconciliation and exception reporting helps enable operators to view plan discrepancies and potential errors or rogue users.
User definability/flexibility and management of IP address space	A patented container architecture allows the user to define network-specific topology, address spaces, domains, device and block types, and associated attributes. For example, a user can associate address blocks with geography, topology or other user-defined hierarchies.	Network administrators can organize address space in a manner that best matches an organization's structure and conforms to policies and procedures.
Automated address allocation	Automated allocation prevents requiring the operator to manually enter IP addresses. Simplified address renumbering allows movement of address space where it's needed.	Improves worker productivity and network uptime, decreasing costs, and allowing service providers and enterprises to scale seamlessly. Optimal "best fit" address allocation maximizes address utilization efficiency.
Automated and manual IP address and subnet reclaim	When adding a subnet or IP address, automated reclaim provides accuracy assurance that what the database indicates is "free"- is actually free. The reconciliation action then feeds back to the plan in terms of adding or changing the database based on discovered information or the freeing up IP addresses or subnets through reclaim.	Helps ensure that the IP inventory database is accurate and helps free up IP addresses or entire subnets.

Enhancements and New Features	Description	Benefits
Address utilization trending and forecasting	The IPAM component allows trending and forecasting of address pools.	Helps to prevent network access failure, calls to the help desk or customer care, lost revenue and expensive troubleshooting time.
Automated DHCP Server Configuration		
Automated configuration and advanced support	The IPAM component provides automated DHCP configuration and support for multitiered addressing, multihomed hosts (to model multiple IP addresses on a given device), DHCP client classes, MAC address processing, client ID, and more.	Operators can significantly reduce network downtime with more accurate DHCP configurations. Advanced configuration support helps to meet complex network operator needs.
DHCP configuration verification and preview	The IPAM component provides built-in verification and preview capabilities.	Helps enable accurate configuration, limiting network outages and IP conflicts.
IP Address Management		
Discovery	Cisco Prime Network Registrar IPAM performs host discovery using a variety of methods including ping, TCP port 80 connections, DNS lookups, Address Resolution Protocol (ARP) cache data, and device OS mapping. Integrated switch port mapping enables support of a broad variety of switches. Router subnet discovery identifies which IPv4 and IPv6 subnets are provisioned on given router interfaces. The solution collects rich network data from a broad variety of multi-vendor Layer 3 routers, Layer 2 switches and DNS/DHCP servers.	Facilitates more accurate address planning and avoidance of IP addressing conflicts. Collection of network actual data enables comparison and reconciliation with the database as well as resolution of any conflicts. Upon completion of discovery, administrators also are able to easily add new devices to the database, identify unauthorized devices on the network and reclaim unused IP addresses.
User-defined thresholds and alerts	Users can set up thresholds and alerts - for example, for notification if an address space is over a designated utilization percentile or if an address pool is forecasted to deplete within a designated time frame.	Proactive management facilitates planning and helps to minimize network outages and IP conflicts.
Granular administrator policies and tiered administration capabilities	Granular administrator policies within Cisco Prime Network Registrar IPAM dictate access to and visibility and control of given functions, geographies, domains, subnets and blocks.	Empowers administrators to delineate and partition responsibilities.
Audit reporting	Audit reporting provides history tracking for administrators, subnets, devices, IP addresses, and containers. Inventory reporting shows which device is assigned to which IP address within the network at any time.	Promotes accountability.
Multivendor DHCP/DNS support	The IPAM component cohesively supports the following additional DNS and DHCP servers: Internet Systems Consortium (ISC DHCP and BIND 9 DNS) and Microsoft.	Allows support of existing infrastructure.
DNS Enhancements		
DNS caching server	The DNS Caching Server component stores DNS query results locally and performs the actual recursion to resolve a given name.	Helps to improve efficiency and reduce DNS traffic across the Internet. Improves the speed and performance of high-volume recursive queries and end-user applications.
DNSSEC support	Cisco Prime Network Registrar DNS Caching Server performs DNSSEC validation and authenticates the origin of DNS data as it transits the network.	Helps protect resource records against DNS vulnerabilities such as DNS cache poisoning. DNSSEC support also helps to ensure the authenticity and integrity of DNS records and servers being accessed and allows compliance for government agencies where DNSSEC is an operational mandate.
DNS64 support	The DNS caching server supports DNS64, synthesizing AAAA (IPv6) records from A (IPv4) records in order to provide an IPv6-only client access to an IPv4-only resource.	Helps facilitate the migration of IPv4 to IPv6.
Componentized Licensing and Purchase Options		
New component licensing	The four Cisco Prime Network Registrar components are all licensed individually. Components can be purchased individually or as one of two suites (DHCP/DNS or DHCP/DNS/IPAM).	Helps meet different customers' requirements and provides a cost savings to those who purchase more than one component.

About Cisco Prime

The Cisco Prime portfolio of enterprise 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, the Cisco Prime portfolio of products supports integrated lifecycle management through an intuitive workflow oriented user experience. The portfolio of Cisco Prime solutions for service providers provides A-to-Z management for IP next-generation networks, mobility, video, and managed services.

For more information about Cisco Prime Network Registrar, visit <http://www.cisco.com/go/networkregistrar>, contact your local account representative, or send an email to ask-networkregistrar@cisco.com.



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