Cisco Prime Network Registrar 8.1 for Service Providers

IPv4 addresses are running out. The Internet Assigned Numbers Authority (IANA) address pool was exhausted on February 3, 2011, and the Regional Internet Registry (RIR) address pools have already begun to run out of allocatable IPv4 addresses. Compounding this is the growth in demand for network services, driven by rich-media applications, an increasing number of connected users, and the explosive growth in connected devices. To meet this demand, service providers require a full-featured, automated IP address management (IPAM) solution to plan, track, and manage IP addresses and ease the transition to IPv6.

Product Overview

Cisco Prime™ Network Registrar is a high-performance, scalable, integrated Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), and IPAM (DDI) solution that supports the IPv4 to IPv6 transition and allows dual-stack deployments on a single server. 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) and is designed to prevent cache poisoning and other attacks
- A powerful, comprehensive IPAM system to automate and manage all IP address requirements

Features and Capabilities

IP address block management: Cisco Prime Network Registrar IPAM is an easy to use, reliable solution with comprehensive management of IP address space including IP address blocks and subnets managed by service providers. 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 as DHCP and DNS configurations - all in one solution.

Automation improves operational efficiencies and service levels and helps eliminate IP conflicts and configuration errors, reducing downtime of DHCP and DNS services and lowering network operating costs. With the ability to discover, track, allocate, assign, and reclaim IP addresses automatically and tools to model IP data, service providers can significantly streamline operations.

Visibility: Cisco Prime Network Registrar dashboards provide real-time visibility into IPv4 and IPv6 networks, subnet usage, and device connections for faster troubleshooting. An intuitive graphical user interface promotes ease of use and boosts user productivity. The IPAM component allows detailed IP audit reporting and diagnostics as well as operator-defined thresholds and alerts that provide notification of impending address depletion.

Flexibility and control: A patented, flexible container mechanism helps enable a user to define topologies, address spaces (including block allocations and subnets), domains, device types, and associated attributes. Users are also able to fully manage, configure, and report on these user-defined elements with easy customization capabilities across these functions. Granular, role-based IPAM delegation of functional and logical access, visibility, and control allows multiple administrators to manage the system with different rights to the system. Extensive APIs/command-line interfaces (CLIs) help enable integration with external systems for advanced automation that is key for service providers.

Eases IPv4 to IPv6 transition: The solution allows dual-stack deployments on a single server, and the IPAM system eases the transition from IPv4 to IPv6 (as well as IPv6 deployment planning) by providing:

- A single view into IPv4 and IPv6
- Options to integrate IPv4 and IPv6 and migrate seamlessly
- Automatic IP address and subnet discovery and network inventory for address planning and deployment of IPv6

By helping to automate the transition from IPv4 to IPv6, Cisco Prime Network Registrar mitigates IP address scarcity, facilitates deployment of new revenue-generating services, and lowers IP address management overhead.

DNS: Without a fast, reliable, and secure DNS service, subscribers' broadband Internet access will be compromised. In addition, many service providers have created a dynamic service delivery infrastructure based on DNS to help ensure high service quality and competitive service delivery. Cisco Prime Network Registrar DNS is standards compliant, supports both IPv4 and IPv6, and is reliable with support for high availability DNS. High performance delivers query throughput that far exceeds competitive solutions.

DHCP: Cisco Prime Network Registrar DHCP is scalable, fast, and powerful to meet the demands of complex networks and support millions of devices on those networks. Exceptional performance capabilities help ensure that the DHCP server can handle particularly heavy loads, including the surge of demand that typically follows a power failure. In addition, the solution includes support for DHCP failover and a patent-pending discriminating rate limiter for avalanche protection to limit downtime after network outages. The full-featured DHCPv6 server provides support for address assignment, both stateless and stateful configuration, prefix delegation, and prefix stability for full IPv6 address management. Powerful extension support for customizing DHCP server processing allows providers to easily create new solutions for billing, security, lawful interception, and other applications.

Multivendor support: The IPAM component supports multivendor DNS/DHCP servers - including Internet Systems Consortium (ISC DHCP and BIND 9 DNS) and Microsoft.

DNSSEC: A separate, extremely fast caching-only server performs DNSSEC validation and helps to protect resource records against common DNS vulnerabilities.

Cloud: Service providers can deliver Cisco Prime Network Registrar as a cloud-based or managed service to business subscribers. Capabilities include a secure multitenant environment and a web-based self-service portal for tenant administrators when configuring DHCP and DNS.

Operations integration: Given the requirement to assign at least one IP address per new subscriber, automation of the IPAM process within the overall provisioning process can improve time to revenue while reducing provisioning errors. Flexible APIs/CLIs facilitate intersystem provisioning and workflow automation.

Deployment options: Cisco Prime Network Registrar is available as a virtual appliance, offering fast startup and rapid time to value.

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.

Service and Support

Using the Cisco® lifecycle services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

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

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