

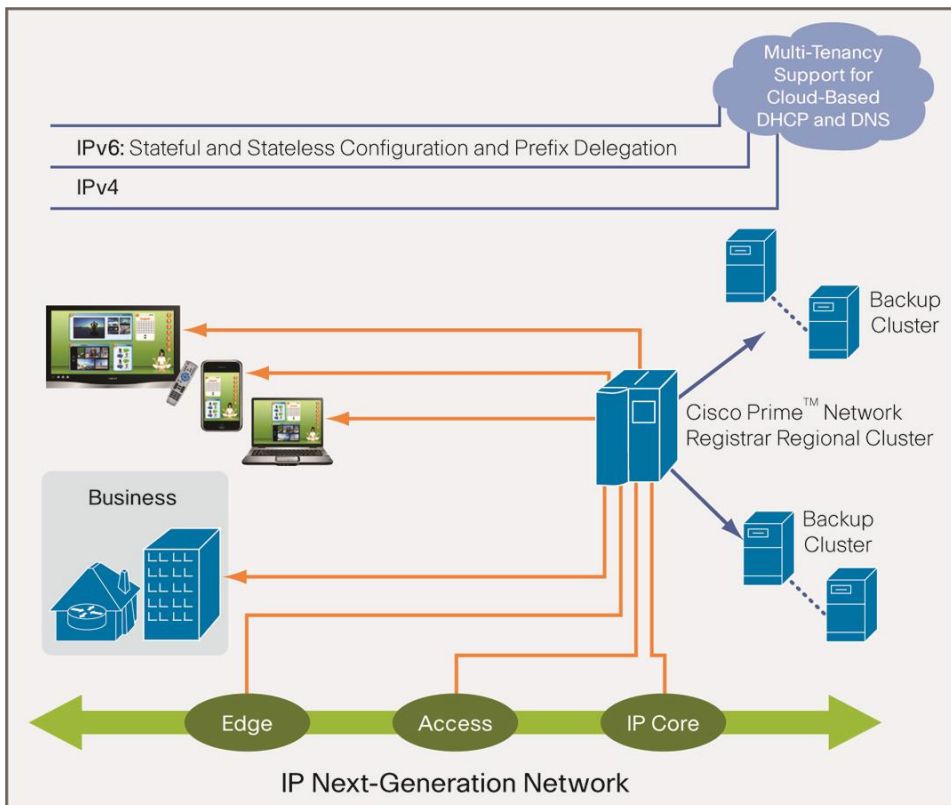
Cisco Network Registrar

Product Overview

Cisco® Network Registrar is a full-featured solution that provides scalable and high performance Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) services and delivers IP address management (IPAM) features to ease administrative tasks. For cable providers, Cisco Network Registrar provides reliable, scalable DNS and DHCP services for millions of devices and forms the basis of a DOCSIS® cable modem provisioning system. Additionally, Cisco Network Registrar plays an important role in service activation for data, voice-over-IP (VoIP), and mobile services.

As IP networks continue to experience exponential growth in size, complexity, and traffic volume, and as the volume of IP addresses and devices continues to explode, network administrators face daunting network management challenges. In addition, network operators are beginning to transition to IPv6 and introduce new technologies and services into their networks (VoIP, video, cloud computing, virtualization, and so on). All of these conditions are driving the need for an integrated DNS, DHCP, IPAM (DDI) solution to effectively manage IP address growth and help automate the adoption of IPv6.

Figure 1. Management Across the Full IP Next-Generation Network



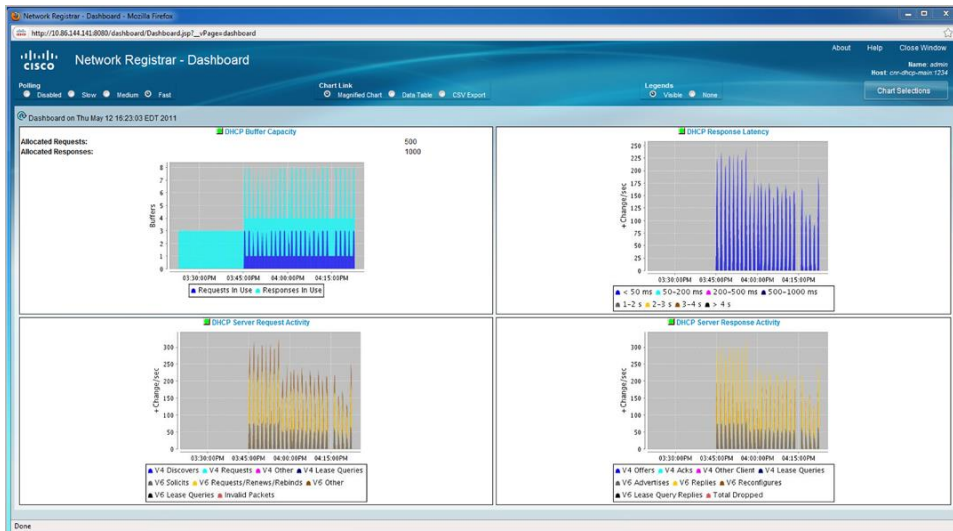
DNS and DHCP are core enabling IP services that are mission-critical in today's service provider and enterprise networks. Without a fast, reliable, and secure DNS service, subscribers' broadband Internet access will be compromised. If DNS fails, the Internet will fail. In addition, many service providers have created a dynamic service delivery infrastructure based on DNS. Service quality and delivery help build competitive advantage and new revenue-generating opportunities for these service providers - high performance, reliable, scalable DNS is a requirement.

DHCP is a core network access technology - every device must be assigned a unique address when connected to the network, a virtually impossible task to undertake manually. Given the increased level of mobility, the advent of converged third- and fourth-generation (3G/4G) networks, and the growing number of end-user network-capable devices, automating the tracking and controlling of users and devices with a high capacity DHCP server is imperative.

Compounding these DNS and DHCP service requirements is the need to automate and centralize the management of these technologies with an easy to use, reliable, and integrated IPAM solution.

Cisco Network Registrar provides an integrated, scalable, reliable solution for DDI across multiple technologies to simplify management of IP addresses and the transition to IPv6.

Figure 2. Cisco Network Registrar real-time server status dashboard



Features and Benefits

- Fast and scalable:** A blazingly fast DHCP server with unmatched performance in the industry, Cisco Network Registrar has the ability to assign more than 14,000 DHCP leases per second. Cisco Network Registrar is also the industry's most scalable DHCP server - supporting 50 million-plus devices in a single customer deployment.
- Reliable:** Cisco Network Registrar helps address unique challenges in large-scale deployments of DHCP and DNS by offering 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 IP address management:** Cisco Network Registrar includes 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. By helping to automate the transition from IPv4 to IPv6, Cisco Network Registrar mitigates IP address scarcity, facilitates deployment of new revenue-generating services, and lowers IP address management overhead.
- **Cloud support:** Multitenant capabilities help enable cloud-based DHCP and DNS services by providing subscribers with secure IP address management and self-service control. Additionally, the multitenant management feature provides the capability to segment data stored on regional and local clusters by tenant and is intended for use by managed service providers to consolidate many small customers on a limited number of local clusters.
- **Minimize management complexity with automation:** With IPAM, Cisco Network Registrar administrators can control and monitor DNS and DHCP servers from a centralized location to synchronize information, reduce outages, and improve efficiency. This capability eliminates many manual, time-consuming, and error-prone tasks and allows for a single point of data aggregation and delegation - making the task of collecting usage data simple and virtually effortless.
- **Easy to deploy and low risk:** Cisco Network Registrar can be deployed as a preconfigured virtual appliance and will run on any VMware ESXi 4.1-capable server - simplifying installation, lowering deployment risks, and reducing startup costs. Cisco Network Registrar spans physical, virtual, and cloud environments to meet user needs with comprehensive, extensible features that differentiate it from other DDI applications on the market today.

Table 1 lists additional features and benefits of Cisco Network Registrar 7.2.

Table 1. Features and Benefits

Feature	Benefit
Rapid Time to Value	
Speed setup and configuration time	Solution interface features help customers quickly set up and configure Cisco Network Registrar properly to enable IP-based services such as VoIP, LAN, and so on. The enhanced interface provides task-oriented web pages for DNS and DHCP configuration.
Installation wizards	To help users through the installation procedure, the wizards provide assistance on each data point or wherever a decision is required. Default configuration is available to allow users to quickly install Cisco Network Registrar. The wizards summarize and present all entered input to users in order to review the configuration values before proceeding with the installation.
Configuration wizard	A configuration wizard helps users navigate through different Cisco Network Registrar configuration steps. With the wizard, users can easily perform DHCP and DNS configuration by entering the parameters that are essential for the configuration. This is the basic configuration mode. The advanced configuration mode is still available for users with more in-depth experience with DNS and DHCP configuration.
Standards and Regulatory Compliance	
CableLabs® DOCSIS 3.0 support	With support for DOCSIS 3.0, Cisco Network Registrar provides Cable Multiple System Operators (MSOs) the capability to roll out new revenue-generating services.
Dynamic Lease Notification	With Dynamic Lease Notification, customers can request external system notification whenever Cisco Network Registrar issues a lease. This feature is used in lawful intercept solutions and long-term storage of customer data for regulatory compliance and operational efficiency.
Simplified Query and Dashboard Capabilities	
Real-time server status dashboard	The dashboard provides an at-a-glance, real-time indicator of the server health, system metrics, alarms and alerts, and inventories of the Cisco Network Registrar server. The dashboard displays graphs for monitoring DHCP and DNS general information, throughput, and error data that can affect network operations. To measure address usage over time, the dashboard can collect DHCP utilization information for a time period and present graphs showing trends that are useful for capacity planning.
Full visibility into lease history for IPv4 and IPv6	Improved UI lease history query: Searching of lease history is now possible both at the local and regional cluster level and is compliant with European Union privacy regulations.

Feature	Benefit
Improved search capability	Users can search for an IP address and retrieve the relevant information associated with the address. Users can find out the current state of the address, the scope to which it belongs, and the date and time the lease was granted. Users can start the search by entering the IP address or a MAC address that is associated with the IP address.
Full-Featured DHCP Server	
Client reservations	Cisco Network Registrar has been extended to provide client reservations for IPv4 and IPv6 addresses as well as IPv6 prefix delegation. These reservations can be stored internal to Cisco Network Registrar (through the Cisco Network Registrar client entries) or external to Cisco Network Registrar - either in Lightweight Directory Access Protocol (LDAP) or supplied through the DHCP server's extension interface from other external sources. This avoids the need to synchronize data with Cisco Network Registrar's internal databases and provides for a much more dynamic and scalable reservation-based service.
Extensions	Cisco Network Registrar has powerful extension support to allow for DHCP server processing customization. Extensions can be used to classify client types, add/remove/modify options in packets, query or update an external database, and much more.
Bulk lease query	Full search capability on IPv6 lease information, including the following: <ul style="list-style-type: none"> • Query by IPv6 address • Query by client ID • Query by relay ID • Query by link address • Query by remote ID
Static IP Address Management	
Carrier-class lease reservation performance	For users with needs for static IP address assignment, Cisco Network Registrar can handle up to 500,000 lease reservations. Because Cisco Network Registrar supports failover deployment, the enhanced lease reservation synchronizes the lease reservation between the main and the backup server to make sure that any update to the configuration will be populated between these servers. Modification to the reserved lease configuration can be done through the web UI, a command-line interface (CLI), and the Java Software Development Kit (SDK).

System Requirements

Table 2 lists the system requirements for Cisco Network Registrar.

Table 2. System Requirements

Component	Recommendation
Disk	18 GB minimum, fast I/O recommended (15,000 RPM, SATA2/SCSI)
Operating systems	Windows 2008 Server R2, Solaris 10, Red Hat Enterprise Server 5
Hardware	Intel Core Duo or equivalent for Windows and Linux, Sun T5220 for Solaris
Memory	4 GB minimum

Ordering Information

To place an order, visit the [Cisco Ordering Homepage](#). To download software, visit the Cisco Software Center.

Table 3. Ordering Information

Cisco Network Registrar Product Numbers

Product Number	Description
CISCO-NWK-REG	Top level CNR PID (DCT Top Level Ordering Use Only)
L-CISCO-NWK-REG	Top level CNR PID -E-Delivery only (DCT Top Level Ordering Use Only)
CNR-7.2-BASE1K9	Cisco Network Registrar 7.2, Base License/Kit, All platforms, 1,000 IP nodes
CNR-7.2-ADD5K	Cisco Network Registrar 7.2, Add 5,000 IP nodes, License-only
CNR-7.2-ADD10K	Cisco Network Registrar 7.2, Add 10,000 IP nodes, License-only
CNR-7.2-ADD25K	Cisco Network Registrar 7.2, Add 25,000 IP nodes, License-only
CNR-7.2-ADD50K	Cisco Network Registrar 7.2, Add 50,000 IP nodes, License-only

Product Number	Description
CNR-7.2-ADD100K	Cisco Network Registrar 7.2, Add 100,000 IP nodes, License-only
CNR-7.2-ADD500K	Cisco Network Registrar 7.2, Add 500,000 IP nodes, License-only
CNR-7.2-ADD1M	Cisco Network Registrar 7.2, Add 1M IP nodes, License-only
CNR-7.2-ADD2M	Cisco Network Registrar 7.2, Add 2M IP nodes, License-only
L-CNR-7.2-ADD5K	Cisco Network Registrar 7.2, Add 5,000 IP nodes, E-Delivery License-only
L-CNR-7.2-ADD10K	Cisco Network Registrar 7.2, Add 10,000 IP nodes, E-Delivery License-only
L-CNR-7.2-ADD25K	Cisco Network Registrar 7.2, Add 25,000 IP nodes, E-Delivery License-only
L-CNR-7.2-ADD50K	Cisco Network Registrar 7.2, Add 50,000 IP nodes, E-Delivery License-only
L-CNR-7.2-ADD100K	Cisco Network Registrar 7.2, Add 100,000 IP nodes, E-Delivery License-only
L-CNR-7.2-ADD500K	Cisco Network Registrar 7.2, Add 500,000 IP nodes, E-Delivery License-only
L-CNR-7.2-ADD1M	Cisco Network Registrar 7.2, Add 1M IP nodes, E-Delivery License-only
L-CNR-7.2-ADD2M	Cisco Network Registrar 7.2, Add 2M IP nodes, E-Delivery License-only
L-CNR-7.2-SDK=	Cisco Network Registrar 7.2, SDK include E-Delivery License-only

Cisco Network Registrar Upgrade Product Numbers

Product Number	Description
CNR-7.2-UPG-BS1K9	Cisco Network Registrar 7.2, Version Upgrade, Base License/Kit, All platforms, 1000 IP nodes
CNR-7.2-UPG-A5K	Cisco Network Registrar 7.2, Version Upgrade, 5,000 IP nodes, All platform, License only
CNR-7.2-UPG-A10K	Cisco Network Registrar 7.2, Version Upgrade, 10,000 IP nodes, All platform, License only
CNR-7.2-UPG-A25K	Cisco Network Registrar 7.2, Version Upgrade, 25,000 IP nodes, All platform, License only
CNR-7.2-UPG-A50K	Cisco Network Registrar 7.2, Version Upgrade, 50,000 IP nodes, All platform, License only
CNR-7.2-UPG-A100K	Cisco Network Registrar 7.2, Version Upgrade, 100,000 IP nodes, All platform, License only
CNR-7.2-UPG-A500K	Cisco Network Registrar 7.2, Version Upgrade, 500,000 IP nodes, All platform, License only
CNR-7.2-UPG-A1M	Cisco Network Registrar 7.2, Version Upgrade, 1M IP nodes, All platform, License only
CNR-7.2-UPG-A2M	Cisco Network Registrar 7.2, Version Upgrade, 2M IP nodes, All platform, License only
L-CNR-7.2-UPG-A5K	Cisco Network Registrar 7.2, Version Upgrade, 5,000 IP nodes, All platform, E-Delivery License-only
L-CNR-7.2-UPG-A10K	Cisco Network Registrar 7.2, Version Upgrade, 10,000 IP nodes, All platform, E-Delivery License-only
L-CNR-7.2-UPG-A25K	Cisco Network Registrar 7.2, Version Upgrade, 25,000 IP nodes, All platform, E-Delivery License-only
L-CNR-7.2-UPG-A50K	Cisco Network Registrar 7.2, Version Upgrade, 50,000 IP nodes, All platform, E-Delivery License-only
L-CNR-7.2-UPG-A100K	Cisco Network Registrar 7.2, Version Upgrade, 100,000 IP nodes, All platform, E-Delivery License-only
L-CNR-7.2-UPG-A500K	Cisco Network Registrar 7.2, Version Upgrade, 500,000 IP nodes, All platform, E-Delivery License-only
L-CNR-7.2-UPG-A1M	Cisco Network Registrar 7.2, Version Upgrade, 1M IP nodes, All platform, E-Delivery License-only
L-CNR-7.2-UPG-A2M	Cisco Network Registrar 7.2, Version Upgrade, 2M IP nodes, All platform, E-Delivery License-only

Cisco Network Registrar Unified Computing System (UCS) Product Numbers

Product Number	Description
CNR-7.2-20KSUB-K9	Cisco Network Registrar 7.2, 20,000 Subscriber License/Kit, UCS Platform Only, includes 100,000 IP
CNR-7.2-ADD50KSUB	Cisco Network Registrar 7.2, 50,000 Subscriber License, UCS Platform Only, includes 250,000 IP
CNR-7.2-ADD100KSUB	Cisco Network Registrar 7.2, 100,000 Subscriber License, UCS Platform Only, includes 500,000 IP
L-CNR-7.2-20KSUBK9	Cisco Network Registrar 7.2, 20,000 Subscriber License/Kit, UCS Platform Only, includes 100,000 IP- E-Delivery License-only

Product Number	Description
L-CNR-7.2AD50KSUB	Cisco Network Registrar 7.2, 50,000 Subscriber License, UCS Platform Only, includes 250,000 IP- E-Delivery License-only
L-CNR-7.2AD100KSUB	Cisco Network Registrar 7.2, 100,000 Subscriber License, UCS Platform Only, includes 500,000 IP- E-Delivery License-only

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 Network Registrar, visit <http://cisco.com/go/cnr>, contact your local account representative, or send an email to ask-cnr@external.cisco.com.



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco Logo are trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and other countries. A listing of Cisco's trademarks can be found at www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1005R)