

## Cisco Network Registrar Jumpstart

**Q.** What is Cisco® Network Registrar Jumpstart?

**A.** Cisco Network Registrar Jumpstart is a purpose-built, high-performing hardware appliance for Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP), and IP address management (IPAM) (DDI) services. The appliance combines the speed, scalability, and reliability of Cisco Network Registrar, and its robust, world-class DHCP and DNS servers, with the ease-of-deployment of an appliance format and the high performance of Cisco server hardware. The first release of Cisco Network Registrar Jumpstart includes the following:

- Cisco Network Registrar 7.2, CentOS 5.4 and VMware ESXi 4.1 - all preinstalled on the server
- Cisco Unified Computing System™ (Cisco UCS™) C200 M2 (one rack-unit [RU] rack-mount server) with an Intel 2.66 GHz 6 core processor, 24 GB RAM, two 300 GB 15K disk drives (RAID 1, yielding 300 GB total space), and dual power supplies

**Q.** What are the benefits of Cisco Network Registrar Jumpstart?

**A.** Cisco Network Registrar Jumpstart is designed to help network operators address the challenges of network and device growth, the transition to IPv6, and the reduction of operating expenses (OpEx). The solution is fast and easy to implement with low startup costs. DHCP and DNS services can be immediately turned on, configured, and integrated into the network service for fast time to value. The Cisco UCS C200 M2 server provides superior scale and performance in a compact form factor, and the application is preinstalled as a virtual machine, providing support for virtualized data centers. The solution grows with the business; the appliance ships with 1000 permanent IP node licenses, and customers may buy additional licenses to support up to 500,000 IP nodes with this single Cisco UCS server. Finally, Cisco Network Registrar Jumpstart is an integrated solution from one vendor, on one box - all supported by Cisco.

**Q.** How many IP nodes are included with Cisco Network Registrar Jumpstart?

**A.** Cisco Network Registrar Jumpstart includes a base license of 1000 IP nodes. This means that “out of the box,” users can assign up to 1000 DHCP leases and 1000 DNS resource records.

**Q.** Can additional IP nodes be added to the 1000 count base license that is shipped with Cisco Network Registrar Jumpstart?

**A.** Yes. If a network has more than 1000 IP nodes, operators can order additional licenses to cover the remaining IP nodes. Cisco recommends running up to 500,000 active IP nodes for the standard configuration and not to exceed a 1,000,000 active IP node count on a single UCS server. For networks with greater than 500,000 IP nodes, Cisco recommends deploying additional appliances for optimized performance. Cisco also recommends that customers purchase additional appliances for failover situations.

Network settings (lease duration and other lease settings) and performance requirements may affect the total IP node count.

Information concerning licensing for additional IP nodes can be found in the Cisco Network Registrar datasheet at [http://www.cisco.com/en/US/prod/collateral/netmgtsw/ps5698/ps1982/data\\_sheet\\_c78-634879.html](http://www.cisco.com/en/US/prod/collateral/netmgtsw/ps5698/ps1982/data_sheet_c78-634879.html).

- 
- Q.** What operating system runs on the Cisco UCS server?
- A.** Cisco Network Registrar Jumpstart ships preinstalled with and supports the CentOS Linux operating system version 5.4.
- Q.** What are the performance expectations?
- A.** Performance is dependent on a variety of factors. Initial performance testing has shown the following performance characteristics. Note that these numbers were demonstrated on a system for which few of the more advanced features of Cisco Network Registrar were configured (for example, no DHCP lease history, no DHCP failover). In an actual deployment, performance results will vary from those shown below.

Each of the following tests was run individually - they were not run simultaneously.

- DHCPv4:
    - New leases: 4293/second
    - Granting leases to returning clients: 19,798/second
  - DHCPv6:
    - New leases: 1499/second
    - Prefix delegation: 3491/second
    - Granting leases and prefixes to returning clients: 16,254/second
  - DNS Query:
    - New resource records: 43,640 queries/second
    - Returning resource records: 70,588 queries/second
- Q.** Cisco Network Registrar provides DHCP and DNS functionality for Cisco Broadband Access Center (BAC). Is BAC preinstalled on Cisco Network Registrar Jumpstart?
- A.** No, BAC is not preinstalled on Cisco Network Registrar Jumpstart; however BAC 4.2 does provide full support for Linux and Cisco UCS. Red Hat Enterprise Linux 5 (RHEL 5) and Cisco UCS support is now extended to all components of the BAC product including the regional distribution unit (RDU) and the Kerberos Key Distribution Center (KDC).
- Q.** What is the value of introducing a virtualization layer with VMware ESXi 4.1 between the operating system and the hardware if the operator has no plans to run additional virtual machines?
- A.** There is considerable value in running the Cisco Network Registrar virtual machine on top of VMware ESXi 4.1 instead of running the operating system directly on the hardware. The value in this case is not realized so much during day-to-day operations as it is when conditions change or performance weakens. Operators routinely find that the load that they have placed on a particular server has grown beyond what that server can handle as network traffic levels increase and requirements change. At some point, an operator may wish to move Cisco Network Registrar to a larger hardware base. While this task is straightforward in the traditional model where the operating system runs on bare hardware, it is time consuming at best, incurs some risk, and may be hard to fit into a maintenance window. However, in a virtualized environment, such as that provided with the Cisco Network Registrar Jumpstart appliance, the operator can simply shut down the virtual machine, use VMware tools to copy the virtual machine to another VMware platform, and then turn it on. This can reduce a complicated and time-consuming task to one that takes only a few minutes.

- 
- Q.** Can additional virtual machines run on the Cisco Network Registrar Jumpstart appliance? It comes with VMware ESXi 4.1 installed.
- A.** Yes, additional virtual machines can run on the Cisco Network Registrar Jumpstart appliance, assuming sufficient resources (CPU, memory, disk space, disk bandwidth) are available to support them. Running a Cisco Network Registrar regional cluster virtual appliance on the hardware (along with the preinstalled Cisco Network Registrar virtual machine) is one example. Recognize that both the DHCP and DNS servers included in the Cisco Network Registrar Jumpstart appliance are usually constrained in their performance by the bandwidth of the disk. You can see this in the performance numbers above, where the new clients for DHCP require a disk write but granting leases to returning clients does not require any disk access. Thus, it is recommended that operators ensure there is sufficient disk bandwidth available for all of the virtual machines they might want to run.
- Q.** What support is available with Cisco Network Registrar Jumpstart?
- A.** SMARTnet<sup>®</sup> support applies to the hardware. SAS support is available for the Cisco Network Registrar application.
- Q.** What type of warranty does the appliance carry?
- A.** The product ships with a standard 90-day hardware warranty.
- Q.** Where and when can I obtain more information?
- A.** For more information about Cisco Network Registrar Jumpstart 7.2, go to <http://www.cisco.com/go/jumpstart-nr>, contact your local account representative, or send an email to [ask-cnr@external.cisco.com](mailto: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](http://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](http://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)