

Cisco Prime Home 5.0 Minimum System Requirements (Standalone and High Availability)

White Paper

July, 2012

Contents

Document Summary	3
Document Flow	3
Technical Preface	3
Cisco Prime Home Onsite Deployment Standards	3
Onsite Integration Standards	3
Operating System Standards	3
Core Preproduction (Staging) Minimum Requirements	4
ACS Server (Minimum Specifications)	4
Database Server (Minimum Specifications)	4
Core Production Minimum Requirements - Single Instance	4
ACS Server (Minimum Specifications)	4
Database Server (Minimum Specifications)	4
High Availability Minimum Requirements	4
Preproduction (Staging) Minimum Specifications - Up to 300,000 CPE Devices	5
Load Balancers	5
ACS Servers	5
Database Servers	5
Production Minimum Specifications - Up to 750,000 CPE Devices	5
Storage Requirements	5
CPU Recommendation	5
Load Balancers	5
Cisco Prime Home Servers (Hardware)	5
Cisco Prime Home Servers (Virtual Machine)	6
Cisco Prime Home Database Servers (Hardware)	6
Cisco Prime Home Database Servers (Virtual Machine)	6
Advanced Services: Content Filtering	7
Content Filtering Servers	7
Example of HA Topology	7
Appendix A: Acronyms and Abbreviations	8

Document Summary

This document is intended for Cisco Prime™ Home customers who are integrating hardware and software for the optimal utilization of our proprietary Cisco Prime Home solution offering. These specifications are for reference only and are not to be considered a de facto standard, although they are highly recommended for optimal Cisco Prime Home continuity. The scalability indicated assumes normal operating conditions for the product.

Document Flow

This document includes the following sections:

- [Onsite Integration Standards](#)
- [Operating System Standards](#)
- [Core Preproduction \(Staging\) Minimum Requirements](#)
- [Core Production Minimum Requirements](#)
- [High Availability Minimum Requirements](#)

Technical Preface

Table 1 defines some technical terms used in this document.

Table 1. Technical Preface

Topic	Notes
Processors	Processor cores and RAM are interdependent on the chipset. Consult the vendor for specific requirements while maintaining the minimum Cisco Prime Home requirements given in this document.
RAM	Note the preferred RAM specifications for increased system integrity and maintain the optimal DIMM allocation, thus allowing for future upgrades or increases in RAM
High availability (HA) storage	The Cisco Prime Home solution supports both shared storage solutions as well as a concurrent-writes model. Note that provisions are needed for system configuration to support the HA solution, but this context is outside the scope of this document.

Cisco Prime Home Onsite Deployment Standards

Onsite Integration Standards

Cisco Advanced Services may be engaged to deploy Cisco Prime Home in our customers' environments. Prior to engagement the following standards will be confirmed:

- Customer agreement/understanding that every onsite integration engagement of Cisco Prime Home requires hardware in the following capacity:
 - Preproduction (staging)
 - Production
- Hardware minimum requirements confirmation
- Software minimum requirements confirmation

Operating System Standards

Cisco Prime Home 5.0 and later require the Red Hat Enterprise Linux 6.1 operating system.

Core Preproduction (Staging) Minimum Requirements

This recommended server configuration is capable of supporting up to 150,000 customer premises equipment (CPE) devices in a preproduction environment and requires a single Auto Configuration Server (ACS) and a single database server. The preproduction environment will be utilized for staging, development, and testing. This recommended configuration is not a specification for HA environments; HA minimum requirements are detailed in an additional section of this document.

ACS Server (Minimum Specifications)

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 16 GB
- Storage: 300 GB (fiber or fast disk), 10,000 RPM

Database Server (Minimum Specifications)

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 16 GB
- Storage: 300 GB (fiber or fast disk), 10,000 RPM

Core Production Minimum Requirements - Single Instance

This production-ready recommended server configuration is capable of supporting up to 375,000 CPE devices in a production environment and requires a single ACS server and a single database server. The production environment is intended for live environments and should not be used for development or test purposes. This recommended configuration is not a specification for HA environments; HA minimum requirements are detailed in an additional section of this document.

ACS Server (Minimum Specifications)

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 16 GB
- Storage: 300 GB (fiber or fast disk), 10,000 RPM

Database Server (Minimum Specifications)

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 32 GB, 48 GB preferred
- Storage: 300 GB (fiber or fast disk), 10,000 RPM

High Availability Minimum Requirements

High availability environments are utilized to offer optimal uptime in the event of a system failure as well as for systems maintenance. The Cisco Prime Home solution architecture requires the utilization of load balancers to help ensure distributed transactions on server instances. Below are the minimum requirements for HA environments in pre- and live production. High availability also provides additional capacity for handling an increased number of CPE devices.

Preproduction (Staging) Minimum Specifications - Up to 300,000 CPE Devices

Load Balancers

Quantity (minimum): 1

ACS Servers

Quantity: 2

- Processor: 6 or 8 cores
- RAM (DIMMs): 16 GB
- Storage: 300 GB (fiber or fast disk), 10,000 RPM

Database Servers

Quantity: 2

- Processor: 6 or 8 cores
- RAM (DIMMs): 32 GB, 48 GB preferred
- Storage: 500 GB (fiber or fast disk), 10,000 RPM

Production Minimum Specifications - Up to 750,000 CPE Devices

Storage Requirements

Unless otherwise noted, all storage must consist of 15,000 RPM SAS drives, running through an array controller with at least 1 GB of battery-backed, write-through cache. Either a local RAID controller or an external fibre channel Storage Area Network (SAN) may be used, but must conform to this specification. RAID level should be at least RAID 5 for ACS servers and RAID 6 for database servers; at least one hot spare should be available per system. Virtual machines should have direct access to SAN storage, rather than use virtualized storage.

CPU Recommendation

Cisco recommends AMD Opteron-based servers. Intel Xeon may also be used; hyperthreading does not count toward core requirements.

Load Balancers

Quantity: 2

Cisco recommends advanced hardware load balancers. Software-based solutions (for example, Citrix) should not be used.

- Load balancer requirements:
 - HTTP transactions/second (TPS): 1000
 - Maximum SSL TPS: 500

Cisco Prime Home Servers (Hardware)

Quantity: 2

- Processor: 8 (Intel)-12 (AMD) CPU cores at 2.5 GHz+
- RAM (DIMMs): 24 GB, 32+ GB preferred
- RAID controller with 1 GB battery-backed write-through cache

- Networking: 2 network interface cards (NICs):
 - NIC 1: Dedicated external connectivity
 - NIC 2: Dedicated intraserver connectivity
- Storage: 300 GB+; see the “Storage Requirements” section

Cisco Prime Home Servers (Virtual Machine)

Quantity: 2

- Processor: 8+ cores at 2.5 GHz+
- RAM (DIMMs): 24 GB, 32+ GB preferred
- Networking: 2 NICs:
 - NIC 1: Dedicated external connectivity
 - NIC 2: Dedicated intraserver connectivity
- Storage: 300 GB+; see the “Storage Requirements” section

Cisco Prime Home Database Servers (Hardware)

Quantity: 2

- Processor: 8 (Intel)-12 (AMD) CPU cores at 2.5 GHz+
- RAM (DIMMs): 24 GB, 32+ GB preferred
- RAID controller with 1 GB battery-backed write-through cache
- Networking: 2 NICs:
 - NIC 1: Dedicated external connectivity
 - NIC 2: Dedicated intraserver connectivity
- Storage: 500 GB+; see the “Storage Requirements” section

Cisco Prime Home Database Servers (Virtual Machine)

Cisco Prime Home database servers running in VMs are not recommended but are achievable. It should be noted that RAM, processor, and I/O requirements far exceed that of hardware deployments. Network Attached Storage (NAS) or SAN enclosures utilizing iSCSI are not feasible and will negate the option to deploy Cisco Prime Home database servers in VMs. Virtualized database servers **must** have direct access to attached SAN storage that meets our minimum storage requirements, **not** virtualized, iSCSI, or NAS storage.

Quantity: 2

- Processor allocation: 8+ cores at 2.5 GHz+
- RAM (DIMMs): 48 GB, 64 GB preferred
- Networking: 2 NICs:
 - NIC 1: Dedicated external connectivity
 - NIC 2: Dedicated intraserver connectivity
- Storage: 500 GB+ directly attached storage

Advanced Services: Content Filtering

Content Filtering Servers

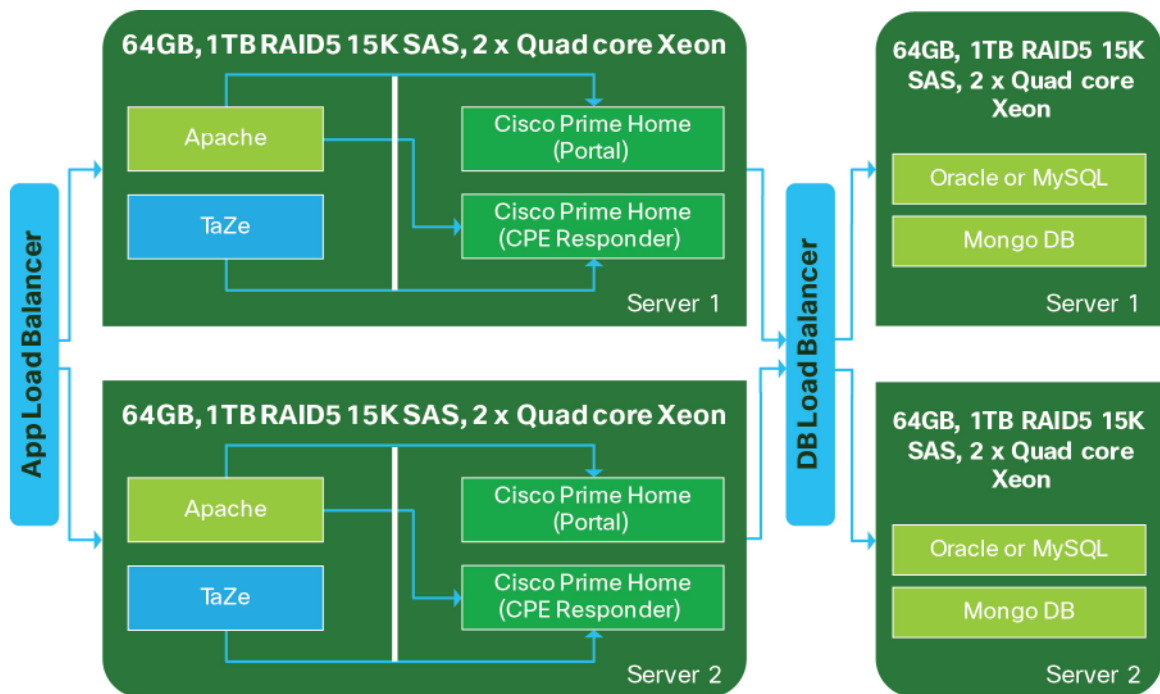
Quantity: 2

- Processor: 8 (Intel)-12 (AMD) CPU cores at 2.0 GHz+
- RAM (DIMMs): 16 GB
- Networking: 2 NICs:
 - NIC 1: Dedicated external connectivity
 - NIC 2: Dedicated intraserver connectivity
- Storage: 300 GB+; see the “Storage Requirements” section

Example of HA Topology

Figure 1 shows an example of high availability typology.

Figure 1. Example of HA Topology



Appendix A: Acronyms and Abbreviations

Table 2 defines the acronyms and abbreviations used in this document.

Table 2. Document Acronyms and Abbreviations Defined

Acronym	Description
ACS	Auto Configuration Server
CPE	Customer premises equipment
DIMM	Dual in-line memory module
GB	Gigabyte
HA	High availability
OS	Operating system
RAM	Random access memory
RHEL	Red Hat Enterprise Linux
RPM	Revolutions per minute



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 or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: 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. (1110R)