

# Cisco Prime Home 6.X Minimum System Requirements: Standalone and High Availability

White Paper

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## 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
<b>Processors</b>	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.
<b>RAM</b>	Note the preferred RAM specifications for increased system integrity and maintain the optimal DIMM allocation, thus allowing for future upgrades or increases in RAM.
<b>High availability (HA) storage</b>	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 6.0 and later requires the Red Hat Enterprise Linux 6.5 operating system.

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### **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 service layer server, connection layer server, and 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.

#### **Connection Layer Server (Minimum Specifications)**

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 16 GB
- Storage: 140 GB (fiber or fast disk), 10,000 RPM

#### **Service Layer Server (Minimum Specifications)**

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 16 GB
- Storage: 140 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 300,000 CPE devices in a production environment and requires a single service layer server, connection layer server, and 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.

#### **Connection Layer (Minimum Specifications)**

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 32 GB
- Storage: 140 GB (fiber or fast disk), 10,000 RPM

#### **Service Layer (Minimum Specifications)**

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 32 GB
- Storage: 140 GB (fiber or fast disk), 10,000 RPM

#### **Database Server (Minimum Specifications)**

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 48 GB, 64 GB preferred
- Storage: 140 GB (fiber or fast disk), 10,000 RPM
- External storage: 500+ GB; see the "Storage Requirements" section

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## 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 preproduction 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

#### Connection Layer (Minimum Specifications)

Quantity: 2

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 32 GB
- Storage: 140 GB (fiber or fast disk), 10,000 RPM

#### Service Layer (Minimum Specifications)

Quantity: 2

- Processor (RAM dependent): 6 or 8 cores
- RAM (DIMMs): 32 GB
- Storage: 140 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 Auto Configuration Servers (ACSs) and RAID 6 for database servers; at least one hot spare should be available per system. Virtual machines (VMs) should have direct access to SAN storage, rather than use virtualized storage.

#### CPU Recommendation

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

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## **Load Balancers**

Quantity: 2

Cisco recommends advanced hardware load balancers. Software-based solutions (for example, Citrix, HAProxy) can be used too.

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

## **Cisco Prime Home Servers (Hardware)**

### **Service Layer/Connection Layer**

Quantity: 5

- Processor: 8 (Intel)-12 (AMD) CPU cores at 2.5 GHz+
- RAM (DIMMs): 32 GB
- RAID controller with 1 GB battery-backed write-through cache
- Networking: Three network interface cards (NICs):
  - NIC 1: Dedicated external connectivity
  - NIC 2: Dedicated intraserver connectivity
  - NIC 3: Dedicated management connectivity
- Storage: 140 GB+; see the “Storage Requirements” section

## **Cisco Prime Home Servers (Virtual Machine)**

### **Service Layer/Connection Layer**

Quantity: 4

- Processor: 8+ cores at 2.5 GHz+
- RAM (DIMMs): 32 GB
- Networking: Three NICs:
  - NIC 1: Dedicated external connectivity
  - NIC 2: Dedicated intraserver connectivity
  - NIC 3: Dedicated management connectivity
- Storage: 140 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): 48 GB, 64 GB preferred
- RAID controller with 1 GB battery-backed write-through cache
- Networking: Three NICs:
  - NIC 1: Dedicated external connectivity

- NIC 2: Dedicated intraserver connectivity
- NIC 3: Dedicated management connectivity
- Storage: 140 GB (fiber or fast disk), 10,000 RPM
- External storage: 1T+; 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: Three NICs:
  - NIC 1: Dedicated external connectivity
  - NIC 2: Dedicated intraserver connectivity
  - NIC 3: Dedicated management connectivity
- Storage: 140 GB (fiber or fast disk), 10,000 RPM
- External storage: 500 GB+; see the “Storage Requirements” section

## 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




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**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

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