

Cisco Solutions for SAP HANA Based on Cisco UCS Servers with Intel Xeon Processor E5 Family CPUs

Solution Brief
July 2015



Highlights

Single-Server Solution

- Meet your memory requirements from 64 GB to 1.5 terabytes (TB) with a single server.

Choice of Blade or Rack Server

- Choose among our 2-socket servers powered by the Intel® Xeon® processor E5 v3 family: our most popular blade server and two rack-server options.

World-Class Performance

- Offering excellent performance at a modest price, these servers can support the fastest Intel Xeon processor E5-2600 v3 family CPUs.

Support for Production and Nonproduction Workloads

- Support production environments with SAP HANA Tailored Datacenter Integration (TDI) and use our SAP-certified servers with your existing network and storage resources.
- Support nonproduction environments with your choice of shared storage or internal disk drives in our rack servers.

Integrate with Your Existing Data Center

- Our architectural approach is based on proven industry standards that avoid proprietary file systems and storage subsystems.

Integration with Enterprise Applications

- The integrated architecture of the Cisco Unified Computing System™ (Cisco UCS®) lets you host SAP HANA and other SAP applications in the same infrastructure as non-SAP business solutions. This capability radically simplifies management, data center services, and data movement between applications.

Most of your SAP HANA workloads fit onto a single server. So why pay more? We offer cost-effective solutions based on our servers with the Intel® Xeon® processor E5 v3 family.



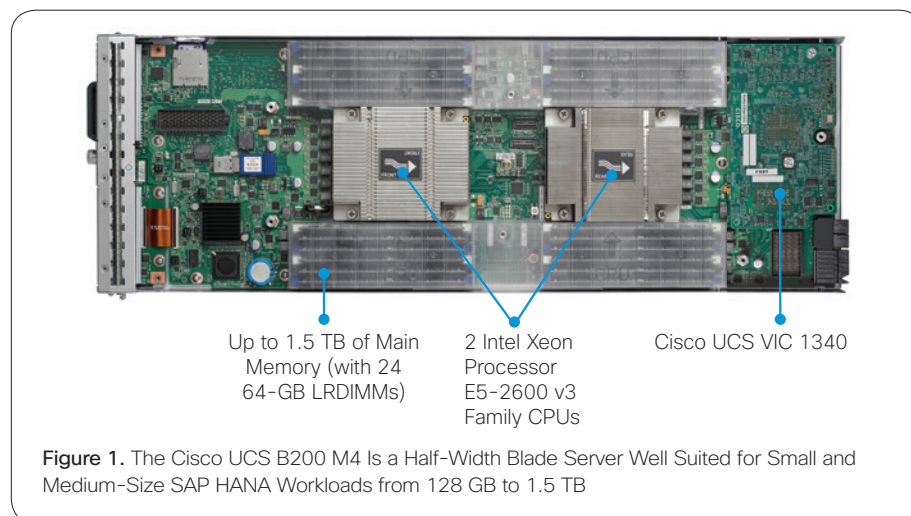
Match Servers to Your Workloads

If you are an SAP customer, you likely run many SAP HANA workloads in your data center. Small and medium-size production workloads and nonproduction development, testing, and training workloads don't need the most powerful servers that Cisco offers. Many of these workloads can run on a single server, and one of the most cost-effective choices is the Cisco UCS® B200 M4 Blade Server powered by Intel Xeon processor E5-2600 v3 family CPUs (Figure 1).

Our Most Popular Server

With world-class performance, a modest price, a 1.5 terabyte (TB) memory capacity, and a compact half-width form factor, the Cisco UCS B200 M4 is Cisco's most popular server. Its power and cooling system can supporting two of the fastest Intel Xeon processor E5-2600 v3 family CPUs, and its small form factor cuts your space requirements in half compared to other SAP-certified blade servers. This single-server solution can support memory sizes from 64 GB to 1.5 TB.

The Cisco UCS B200 has been available in some form since the Cisco Unified Computing System™ (Cisco UCS) was first introduced in 2009, and it forms the



basis for many Cisco Integrated Infrastructure solutions, including FlexPod, SmartStack, VersaStack, and Vblock™ Systems. If you are a Cisco customer, you likely already have some of these servers running SAP workloads in your data center today.

Rack-Server Options

If you prefer rack servers, we also offer single-server production and nonproduction solutions that use Cisco UCS C220 M4 and C240 M4 Rack Servers, also powered by Intel Xeon processor E5-2600 v3 family CPUs. For production use, SAP requires a connection to enterprise shared storage. For nonproduction use, the internal disk drives on these servers can be used for SAP HANA persistence, making them an excellent choice for development, testing, and training environments:

- **Cisco UCS C220 M4 Rack Server** is a 2-socket, 1-rack-unit (1RU) system that supports up to 1.5 TB of memory and up to 8 small-form-factor (SFF) disk drives or solid-state drives (SSDs) with various internal RAID controller options.
- **Cisco UCS C240 M4 Rack Server** is a 2-socket, 2RU system that supports up to 1.5 TB of memory and up to 24 SFF disk drives or SSDs with various internal RAID controller options.

Cost-Effective Solutions

All three servers support memory sizes ranging from 64 GB to 1.5 TB. For

Table 1. Cisco Offers Three Servers for SAP HANA with Intel Xeon Processor E5 v3 Family CPUs

Cisco UCS Servers	Cisco UCS B200 M4	Cisco UCS C220 M4	Cisco UCS C240 M4
Form Factor	• Half-width blade server	• 1RU rack server	• 2RU rack server
Recommended CPU	<ul style="list-style-type: none"> • Nonproduction environments: 2 Intel Xeon processors with at least 8 cores each is recommended, and at minimum the Intel Xeon processor E5-2630 v3 at 2.4 GHz with 8 cores • Production environments: 2 Intel Xeon processors with at least 14 cores each is recommended, and at minimum the Intel Xeon processor E5-2683 v3 at 2.0 GHz with 14 cores, or the Intel Xeon processor E5-2699 v3 at 2.3 GHz with 18 cores 		
Memory	• 64 GB to 1.5 TB of memory using up to 24 DIMM slots		
I/O	• Cisco UCS VIC 1340	• Cisco UCS VIC 1225 or 1227	• Cisco UCS VIC 1225 or 1227
Storage (Production Use with SAP HANA TDI)	• Use Cisco UCS Integrated Infrastructure or existing enterprise networking and storage systems		
Storage (Nonproduction Use)	• Not applicable	• You can use internal 300, 600, or 900-GB 10K disk drives configured with RAID 1 or RAID 5	
RAID Controller (Nonproduction Use)	• Not applicable	• Cisco 12-Gbps SAS Modular RAID Controller (RAID 0, 1, and 10; and RAID 5 and 6 with optional cache module)	

production deployments implemented with SAP HANA Tailored Datacenter Integration (TDI), SAP-certified shared storage is required. For nonproduction deployments your choice of shared or internal storage can be used. Server characteristics are included in Table 1.

Use Existing Servers

If you have older Cisco UCS servers powered by the Intel Xeon processor E5 v2 family, you can use your existing servers with the confidence that they are certified to run current versions of SAP HANA when deployed with SAP



HANA TDI. Servers include Cisco UCS B200 M3, C220 M3, and C240 M3 servers.

Works with Your Existing Data Center

We can put your choice of blade or rack server into production and integrate a single-server solution into your existing data center networking and storage architecture using the SAP TDI model.

We use industry-standard architectures and recognized best practices, so no special IT processes are needed to incorporate or maintain Cisco® solutions for SAP HANA in your data center. Our approach helps you get the multiple SAP HANA environments you need up and running quickly, easily, and with little risk.

For nonproduction environments, you can choose to use our help or deploy these single-server solutions yourself.

Deployed as Part of Cisco UCS

Cisco solutions for SAP HANA are part of Cisco UCS. With Cisco UCS, you can maintain all your applications on the same unified fabric with high-speed, low-latency, deterministic networking to accelerate the flow of intelligence to business applications and meet SAP's networking requirements.

Cisco UCS

Cisco UCS is a single unified system that includes computing, networking, and storage access. It is organized around a high-speed, low-latency unified fabric that is the basis for Cisco SingleConnect technology. The system is stateless, programmable infrastructure with model-based management integrated into the system.

With more than 100 world records on industry-standard benchmarks,

Cisco UCS offers more than flexibility, efficiency, scalability, and low total cost of ownership (TCO): it also delivers the performance you need.

Cisco UCS Servers

Cisco UCS supports a broad range of blade and rack servers that have been certified for SAP HANA. The Cisco UCS B200 M4, the topic of this document, is a cost-effective choice for small and medium-size production environments and nonproduction environments.

We offer a choice of blade and rack servers certified for production use, all powered by the Intel Xeon processor E7 v3 family (Figure 2). The Cisco UCS B260 M4 Blade Server can help you start small and scale up to 768 GB, and then join with a second server to create a Cisco UCS B460 M4 server with 4 sockets and a 1.5 TB memory capacity. These servers can then be clustered for a total of up to 60 TB using SAP HANA TDI.

Cisco Solutions for SAP HANA Based on Cisco UCS Servers with Intel Xeon Processor E5 Family CPUs

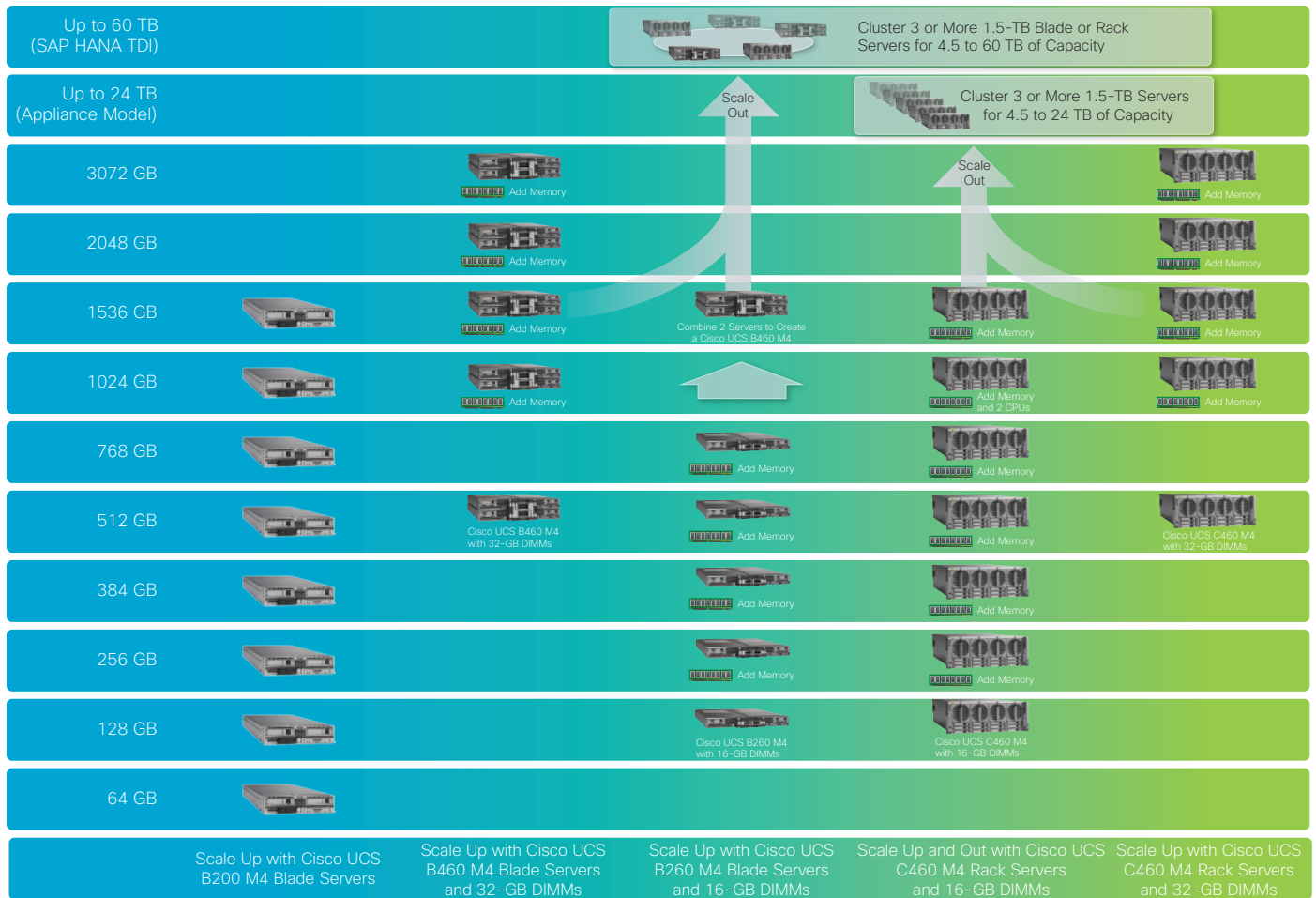


Figure 2. With Cisco UCS Servers, You Can Scale Up and Out with Blade or Rack Servers and Mix and Match Servers in a Single Cluster

Similarly, the Cisco UCS C460 M4 server can scale up or out using either an appliance model (up to a total of 24 TB in a cluster) or SAP HANA TDI (for up to 60 TB). No other vendor allows you to mix and match blade and rack servers in an SAP HANA TDI deployment.

Cisco SingleConnect Technology

Cisco SingleConnect technology provides an exceptionally easy, intelligent, and efficient way to connect and manage computing resources in the data center. With the Cisco UCS fabric interconnects and Cisco virtual interface cards (VICs), you can have three networks—IP, storage, and

management—running on a single set of cables and a single set of I/O adapters. Because Cisco UCS is form-factor independent, you can run both blade and rack servers in the same system.

Programmable Infrastructure

Cisco UCS programmability provides an outstanding, stateless, foundational

platform for your SAP and other data center applications. With Cisco UCS Manager, you can apply predefined Cisco UCS service profiles to any server and bring the server into immediate compliance with the configuration required to optimally run your SAP applications.

Bare-Metal or Virtualized Deployment

Cisco Solutions for SAP HANA support your choice of operating system: Red Hat Enterprise Linux for SAP HANA (RHEL4HANA) or SUSE Linux Enterprise Server for HANA (SES4HANA).

The solutions are designed to run on a bare-metal server or in a virtualized environment on VMware vSphere 5 (VMware vSphere 6 when available) or SAP HANA multiple-container systems. These options give you the flexibility to run production environments on bare-metal servers while supporting your test and development environments as virtual machines.

Flexible Scaling with Cisco Support

The Cisco hardware is supported by your choice of nonproduction, production, and business-critical levels of Cisco SMARTnet™ Service.

Additional Cisco Solution Support helps you quickly resolve problems by adding a solution-level perspective to the underlying device-level service contracts. Cisco Solution Support gives you a single point of contact to help you manage, troubleshoot, and resolve the problems that may arise in complex, multivendor systems across a variety of Cisco and third-party products.

Easy Ordering

Cisco partners make it easy to purchase a Cisco Solution for SAP HANA, with simplified ordering and onsite installation services available.

This makes it easy to quickly deploy a small but powerful, SAP HANA

environment in your enterprise and to scale it quickly without the expense or risk entailed in designing and building your own custom solution.

For More Information

Learn more about Cisco Solutions for SAP HANA at <http://www.cisco.com/go/sap>.

For more information about Cisco UCS, visit <http://www.cisco.com/go/ucs>.

Note: Solution power consumption varies with the specific server and storage configurations ordered. Please contact your sales representative or your product solutions specialist to determine the exact power requirements for your configuration.



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.