



HP Departmental Private Cloud reference architecture

Let HP and Microsoft accelerate your journey to the cloud

Today, businesses of all sizes are re-examining the way they approach IT. They are looking to cloud technologies to improve resource utilization, enable rapid design and deployment of standardized IT services, and provide a cost-effective mechanism for disaster recovery. Cloud technologies also enable organizations to outsource IT functions that are important, but not strategic to your business, and insource IT functions that involve sensitive data or valuable intellectual property.

Built to align with the Microsoft® Private Cloud Fast Track specification, the HP Departmental Private Cloud reference architecture (RA) combines HP and Microsoft best practices for virtualization and cloud deployment. Designed for environments that support between 50 and 500 users, the HP Departmental Private Cloud can be configured as a simple virtualization platform that supports either Windows® Server 2012 or Windows Server 2008 R2. It can also be transformed into a private cloud with the addition of Microsoft System Center.

Blending the best of HP and Microsoft technologies

Drawing on expertise and experience gained from a thirty-year partnership, HP and Microsoft have delivered a simple two-node private cloud that combines the power of HP Converged Infrastructure, Microsoft Windows Server 2012, and Microsoft System Center in a simple RA. Built from two HP ProLiant DL360e Gen8 servers, the HP P2000 G3 MSA Array System, and two HP E2910-24G al switches, this RA is designed to strike the optimum balance between high availability (HA), performance, and cost.

With the Departmental Private Cloud RA, HP provides all the documentation you will require to get the solution up and running—including an installation guide, a companion installation video, and Scripting for Cluster Creation guide.¹ And, because the HP Departmental Private Cloud is based on the HP Essential Rack HA Smart Bundle, it is easy to purchase all the components you require, from your HP reseller partner. The Essential Rack HA Smart Bundle is a member of the HP Virtualization Smart Bundles for ProLiant Gen8 Servers. These Smart Bundles range from Essential Tower level to Essential Rack HA to Scalable Rack HA solutions. To know more about Virtualization Smart Bundles from HP, please visit hp.com/go/virtkit.

Choosing the right systems management

The Departmental Private Cloud is optimized for Microsoft Windows Server 2012 and can be managed standalone or as part of a larger Microsoft System Center ecosystem.

For mid-size businesses that are deploying their first cloud, we recommend the new server manager in Windows Server 2012 to manage cluster nodes and create Microsoft Hyper-V virtual machines (VMs). HP iLO Advanced can help you manage your servers from anywhere, whether the OS is running or offline. And, with new Windows Server 2012 capabilities such as “shared nothing” live migration, NIC teaming, Hyper-V Replica, and over 2300 Windows PowerShell cmdlets, your environment gains outstanding new high availability, flexibility, and manageability upgrades.

When deploying the Departmental Private Cloud in a branch office environment managed from a central data center, we recommend using Microsoft System Center. System Center is designed to facilitate standardized design and self-service roll out of IT services as well as host server and VM backup. Using HP Insight Control in conjunction with Microsoft System Center allows IT departments to manage and update server hardware in conjunction with the OS and applications through a unified management toolset.

¹ The Scripting for Cluster Creation Guide will be published at a later date.



Key features and benefits

The HP Departmental Private Cloud brings together the latest of HP servers, storage, and networking to deliver excellent performance at a reasonable price point.

High-performance storage with HP P2000 G3 SAS MSA Array System

- Up to 19.6 K mixed read/write IOPS enables superior performance for your demanding workloads
- Volume copy cloning and standard 64 snapshots offer extra data protection and simplified data recovery
- Simple SAS connectivity at 6 GB/s provides high-performance connectivity without the network complexity of Internet Small Computer System Interface (iSCSI) or Fibre Channel solutions

Cost-effective, scalable network with HP E2910-24G al Switch

- Twenty-four 1 GB ports, with a lifetime warranty and lifetime software updates
- 10 GB upgrade option, for high-performance uplinks, when required

Easy installation and sizing with step-by-step guidance from HP

- Step-by-step guidance to install and configure a highly available, two-node private cloud
- An installation video, which shows how experts install the Departmental Private Cloud, step by step
- Scripting for Cluster Creation Guide

Simplified setup and management with two DL360e Gen8 servers

- Two 6-core processors, 146 GB of internal storage and 24 GB of memory (with the ability to expand to 384 GB) provide the power your demanding workloads require
- HP iLO 4 management enables remote control, fault monitoring, and power management from any network-connected location—significantly simplifying server setup
- HP Insight Online provides one-stop remote monitoring and support of your infrastructure, helping end users or HP reseller partners manage servers and storage over the Internet

HP Departmental Private Cloud based on the Essential HA Rack Smart Bundle

Part of the HP Smart Bundle for Hyper-V family, the Essential HA Rack Smart Bundle comes with the following specifications. If you wish to implement the Departmental Private Cloud RA, you can reference the Essential HA Rack Smart Bundle while placing an order with your HP reseller partner.

Technical specifications



	Part number	Quantity	Description
Base bundle hardware	668815-001 (AMS) 668815-421 (EMEA)	2	HP DL360e Gen8 E5-2430 8SFF Perf Server
	652605-B21	4	HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC
	650931-B21	2	HP H221 Host Bus Adapter for Gen8 Servers
	AW594B	1	HP P2000 G3 SAS MSA Dual Control SFF Array
	507127-B21	12	HP 300GB 6G SAS 10K 2.5in DP ENT HDD
	407339-B21	4	HP Ext Mini SAS 2m Cable
Software	701600-A21	2	MS WS12 Datacenter ROK E, F, I, G, S SW
Basic support services	U6D59E	2	HP 3-year 4-hour 24x7 DL360e HW Support
	UF526E	2	HP 3-year 24x7 IC Env ML-DL-BL SW Support
	UV046E	1	HP 3-year Support Plus 24 MSA2K S64 Volume Copy Service
Optimized support services	U6G82E	2	HP 3-year 4-hour 24x7 DL360e w/IC ProCare Service
	U4C01E	1	HP 3-year 4-hour 24x7 MSA2000 G3 Arrays Proactive Care Service
Recommended startup services	U6E13E	2	HP Startup DL360e Service
	UA868A	1	HP Startup MSA Service
Recommended networking	J9145A	2	HP E2910-24G al Switch
Basic networking support	U2856E	2	HP 3-year 4-hour 24x7 Networks Stack 24 HW Support
Optimized networking support	U2L00E	2	HP 3-year 4-hour 24x7 Proactive Care Stack 24 Switch Service

Essential HA Rack Smart Bundle configuration is available from HP-authorized resellers. Specifications and availability may vary by region.

Realize the power of two

The HP and Microsoft global strategic alliance is one of the longest standing business relationships of its kind in the industry. For 30 years, we have worked together to design and deliver complete, integrated technology solutions to increase the speed and effectiveness of business.

Together, only HP and Microsoft deliver the powerful combination of HP Converged Infrastructure, Microsoft Windows Server, and Microsoft System Center to help you break through the integration challenges of virtualization and accelerate your journey to the cloud.

Get your cloud journey on the fast track

Learn how your business can benefit from the Departmental Private Cloud reference architecture. To browse through installation guides, videos, and Scripting for Cluster Creation guide described in this paper, visit hp.com/learn/ws2012.

Access the white paper at: <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA4-3327ENW.pdf>

Access the video at: youtube.com/watch?v=LKaokacmG0I

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