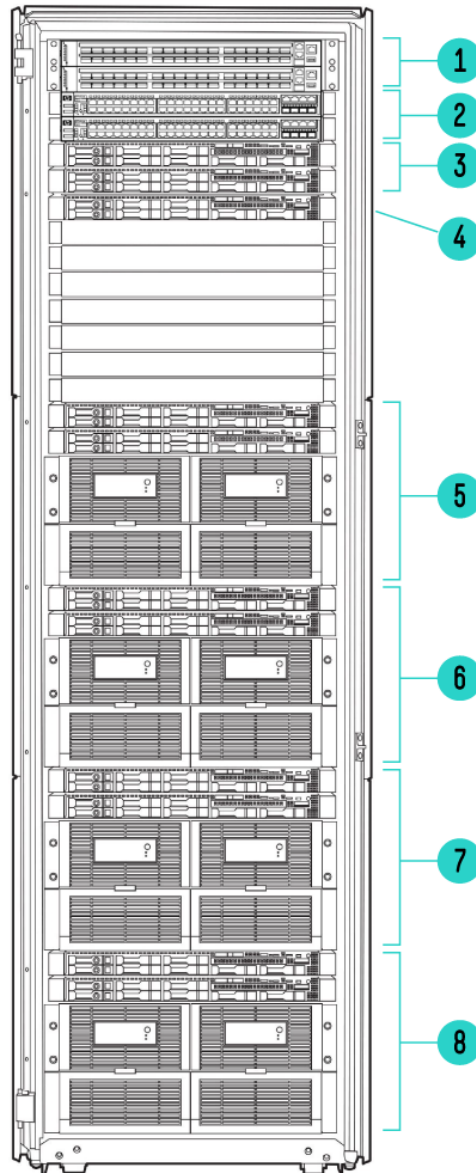


### Overview

### HPE ConvergedSystem 300 for Microsoft Analytics Platform



**Base Rack - Front View**

1. HPE InfiniBand FDR 36 Port Switch (2): HPE ConvergedSystem 300 2.1 for MS APS IB Switch Kit
2. HPE Ethernet Switch 5900AF-48 G -4XG-2QSFP+ (2): HPE ConvergedSystem 300 2.1 for MS APS E Switch Kit
3. PDW Region - Orchestration & Failover Servers: HPE ConvergedSystem 300 2.1 for MS APS Passive Svr Kit (DL360 Gen9 server) (2)
4. Optional: - Failover Server: HPE ConvergedSystem 300 2.1 for MS APS Passive Svr Kit (DL360 Gen9 server) (1)
5. Optional: Data Scale Units: PDW Region
6. Optional: Data Scale Units: PDW Region
7. Optional: Data Scale Units: PDW Region

## Overview

8. PDW Region Base Scale Unit: HPE ConvergedSystem 300 2.1 for MS APS PDW Svr Kit (HPE ProLiant DL360 Gen9 server) (2)  
+ HPE ConvergedSystem 300 2.1 for MS APS Storage Kit (D6020) (1)

## What's New

- Updated with the HPE ProLiant DL360 Gen9 Servers, running on the Intel® Xeon® E5 v4 architecture, to deliver high-performance, low energy consumption, improved uptime, and increased density.
- Updated to the HPE D6020 with 12 Gb/s SAS architecture, designed for data-intensive environments providing dense, cost-effective storage for massive data capacity applications, at low \$/GB.
- Updated with Microsoft Analytics Platform System 2016, now running SQL Server 2016, providing improved data management, increased productivity and enhanced security.
- Updated HPE Support Pack Utility Suite, a unique set of tools designed to simplify and reduce the costs for operational support and maintenance tasks. The Support Pack includes tools to run validation and diagnostics on the HPE ConvergedSystem 300 for Microsoft Analytics Platform and help simplify updates and several other maintenance tasks.
- Updated with 4 TB option for “Add” Data Scale Unit

## At A Glance

HPE ConvergedSystem 300 for Microsoft Analytics Platform is a dedicated data warehouse appliance offering in-memory column store, massive parallel scale-out query processing (MPP), that allows users to scale up to much higher levels of performance and capacity than single SMP systems can offer. HPE and Microsoft have engineered this joint offering based on multiple HPE ProLiant servers (working in parallel through an MPP software layer to function as a single entity), HPE ProLiant Servers, D6020 direct attach storage, high-speed, low-latency interconnects, SQL Server software augmented with the MPP engine, and HPE and Microsoft services and support. HPE ConvergedSystem 300 for Microsoft Analytics Platform lets you scale out data warehouse solutions to petabytes of data for the most demanding business needs. Queries run against tables containing trillions of rows of data are return results in seconds, providing new levels of scalability and performance for large enterprises. Through the use of massively parallel technology, HPE's dense servers and storage subsystems, we are able to achieve outstanding performance.

HPE ConvergedSystem 300 for Microsoft Analytics Platforms are fully integrated and tested. The HPE solution starts with a single rack, each containing up a minimum of two active compute nodes, and orchestration and passive nodes, expandable to eight active compute nodes. With expansion racks, the solution can extend to a maximum of 120 compute nodes. The shared-nothing software architecture is coupled to the hardware solution, pre-installed and optimized to achieve balanced throughput, I/O and processing power. User choices within the pre-configured appliance are minimal; the fine-tuned configuration allows customers to choose size and form factor of disks in the data racks and back up, PDU type, and additional services.

The HPE ConvergedSystem 300 for Microsoft Analytics Platform base rack contains multiple HPE ProLiant DL360 Gen9 servers and HPE D6020 direct-attached storage. The functions within the appliance minimum configuration rack include:

PDW Region Base Scale Unit (Required):

- The PDW Base Scale Unit (PDW Server Kits (2) and Storage Kit (1)) is where the physical data warehouse or data mart is stored.
  - Tables are stored on 2 compute nodes, with the data stored on each node's D6020 storage. Two types of tables are leveraged: replicated tables with copies stored on every node and distributed tables where separate physical tables on multiple compute nodes are logically joined through metadata stored on the control node. By balancing the data across compute nodes and storing different table types appropriately (small dimension tables are replicated; very large fact or transaction tables with billions or even trillions of rows are distributed), the HPE ConvergedSystem 300 for Microsoft Analytics Platform is able to access the data in parallel and achieve high levels of I/O throughput. The massively parallel architecture gives our solution the speed to provide user queries with significantly higher levels of I/O throughput than may be achieved on a scale up SMP system. Customers may choose disk size based on capacity needs of the data warehouse.
- The Orchestration/Failover Server Kit (Passive Server Kit), with optional third node provides the follow functionality:
  - Accept queries from users, and creates an MPP execution plan which instructs one or more compute nodes to execute some portion of the query, often in parallel. Some queries will enter directly, such as from Microsoft Excel or Power BI Desktop, while others may go through an application tier or OLAP cube such as SQL Server Analysis

## Overview

Services.

- Acts internally as the domain controller for all the servers in the HPE ConvergedSystem 300 for Microsoft Analytics Platform and provides the interface for DBAs or data center operations to access and manage the overall solution.

## Optional components

### Data Integration Platform

The Data Integration Platform (DIP) refers to one or more servers you may elect to accompany your purchase of an HPE ConvergedSystem 300 for Microsoft Analytics Platform solution. You may also choose to re-purpose an existing server or set of servers in your environment to provide this functionality. The Data Integration Platform server(s) provides:

- Intermediate location for backups (and therefore a staging area for restore operations)
- A staging location for Extract, Transform, and Load (ETL) or ELT operations, need to load data into the ConvergedSystem 300 for Microsoft Analytics Platform, a server is required.

For detailed information on the Data Integration Platform server and connectivity options to the ConvergedSystem 300 for Microsoft Analytics Platform, please refer to the **Data Integration Platform – Gen9 reference** located on the website:

<http://www.hpe.com/products/cs300aps>.

### Insight Remote Support Server Host

You can unlock all the benefits of your technology investment by connecting your products to HPE. HPE developed Insight Remote Support (IRS) to provide 24x7 real-time hardware event monitoring and secure Internet event submission to help you reduce risk, identify and prevent potentially critical problems for your environment. IRS allows to achieve up to 77% reduction in down time, near 100% diagnostic accuracy and a single consolidated view of your environment.

By connecting, you receive 24x7 monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. Automatic service request submission will save you time monitoring and reporting issues. Collection of configuration information from your devices will help HPE resolve problems more quickly and accurately. (Note, no business information is collected and the data is managed according to the HPE Data Privacy policy). Intelligent analysis of issues provides faster restoration of your monitored devices to operational status.

HPE Proactive Care service and HPE Datacenter Care customers will also benefit from proactive reports and issue prevention activities. For more details, please see <http://www.hpe.com/info/insightremotesupport>.

To enjoy this proactive support experience, you can add the IRS Monitoring software to the recommended configuration (information in Step 7) which can optionally be ordered along with the HPE ConvergedSystem 300 for Microsoft Analytics Platform. You may also use an existing server for that purpose. IRS can also be installed on your Windows Hosting Device or VMware®, Citrix or Hyper-V virtual guest and easily configured to monitor your environment.

For more information about the HPE ConvergedSystem 300 for Microsoft Analytics Platform see:

<http://www.hpe.com/products/cs300aps>

For more information about HPE ProLiant servers see: <http://www.hpe.com/info/proliant>

For more information about HPE Insight software, see: <http://www.hpe.com/info/servermanagement>

For more information about Storage products, see: <http://www.hpe.com/info/storage>

For more information about HPE Racks see: <http://www.hpe.com/info/rackandpower>

For more information about the HPE and Microsoft partnership see: <http://www.hpe.com/partners/microsoft>

## How to Order

### How to order HPE ConvergedSystem 300 for Microsoft Analytics Platform

The method for purchasing the HPE ConvergedSystem 300 for Microsoft Analytics Platform is simple. Start by ordering a PDW Region Base Scale Unit which is comprised of two PDW Server Kits, Orchestration/Failover Servers (Passive Server Kits), and one Storage Kit. You can expand up to three additional data scale units in the first rack. For additional capacity beyond a single rack, scale units can be added to grow up to 7 racks of capacity.

**NOTE:** All racks purchased must be co-located, side by side.

**NOTE:** For detailed ordering information please see the Configuration Information section

**NOTE:** HPE Deployment Services are included as part of the HPE ConvergedSystem 300 for Microsoft Analytics Platform, providing factory integration and onsite deployment services. They feature:

- An assigned project manager to oversee factory and customer site installation activities, including capture of customer specific parameters, proactive communication, planning and scheduling for a coordinated installation at the customer site.
- The majority of the configuration is performed in the HPE factory to allow for a quicker deployment by delivering a ready-to-deploy solution that is pre-configured and tested. Factory integration includes racking, point-to-point cabling, labeling per HPE's guideline, configuration of Ethernet and IB switches and iPDUs, server iLO configuration, Microsoft Analytics Platform System2016 and Windows OS software load and configuration, FW/BIOS update; Microsoft Analytics Platform System Software Validation test.
- A documentation package that details the configuration and settings of the delivered solution, including diagrams of the hardware layout and point-to-point cabling
- HPE Deployment Accelerator Service (Installation and start up services - additional details in the Platform Implementation Service section below)

A choice of HPE support services is available to meet your business needs. The recommended HPE support level is HPE Proactive Care Advanced (with a choice of 4 hour onsite response 24X7 or 6 hour call-to-repair). The minimum required support level is HPE Proactive Care 24X7.

For additional information please visit:

HPE Factory Express: <http://www.hpe.com/info/factoryexpress>

HPE Support services: <http://www.hpe.com/services/support>

HPE Proactive Care services: <http://www.hpe.com/services/proactivecare>

## Standard Features

### HPE ConvergedSystem 300 for Microsoft Analytics Platform software

Microsoft SQL Server software augmented with the MPP engine uses massively parallel processing (MPP) to deliver high performance and scalability on SQL Server and Windows Server® 2012 R2. The MPP architecture helps enable better scalability, better and more predictable performance, reduced risk and a lower cost per terabyte than other data warehousing solutions.

Microsoft SQL Server software partitions large tables across multiple physical nodes, each node having dedicated CPU, memory and storage, and each running its own instance of SQL Server, in parallel shared nothing architecture. SQL delivers improved performance through its unique design.

**NOTE:** Your use of Microsoft Windows Server 2012 R2, Microsoft SQL Server Parallel Data Warehouse Edition or SQL Server Enterprise and the Virtual Machine Manager component of Microsoft System Center 2012 Standard SP1 on this server hardware is subject to the terms and conditions of the Volume License program agreement under which you have acquired licenses to these Microsoft products. You may not use the above software without first acquiring valid server and/or client access licenses from Microsoft or its authorized distributor or reseller. SQL Server Enterprise Edition (SQL EE) core licenses with Software Assurance may be used to license and run SQL Server PDW on the Analytics Platform System appliance For more information see: <http://www.microsoft.com/en-us/server-cloud/products/analytics-platform-system/Purchasing.aspx>

### HPE Factory Express Deployment Service for HPE ConvergedSystem 300 for Microsoft Analytics Platform

HPE Factory Express Deployment Service for HPE ConvergedSystem 300 for Microsoft Analytics Platform provides factory integration, basic onsite installation services, and end-to-end project management from ordering through go-live stage under a single SKU (H8A03A1-201) for a new base rack configuration.

The service starts with factory integration of the base rack: servers, storage, switches, and PDUs, which are racked and stacked, along with cabling and labeling. After configuring the hardware, the software is loaded and configured: Windows® operating system; Microsoft Analytics Platform System 2016. The firmware/BIOS is then loaded to conform to the Microsoft Reference Architecture specifications. PDW Appliance Validation tests are conducted, and full appliance diagnostics are performed before systems leave the factory.

Onsite basic installation at the Customer's site includes a hardware check and visual acknowledgment that all hardware components have power.

A complete documentation package is provided in electronic form that details the configuration and settings of the delivered solution. Included will be a system installation guide, a rack elevation drawing, a system interconnect drawing, and a hardware/software system configuration guide.

Factory Express Deployment services are also required when adding equipment to the base rack: H8A03A1-202 for expansion racks ordered at the same time as a base rack, and, H8A03A1-203 for adding expansion racks to an existing base rack. When adding scale units (Add Capacity PDW), H8A03A1-204 (one per order) and H8A03A1-205 (one per server kit) are used to add capacity to an existing HPE ConvergedSystem 300 for Microsoft Analytics Platform.

**NOTE:** The factory integration services included in this solution require a Customer Intent Document (CID) (also known as Site Survey) to assist with the configuration and successful

## Standard Features

installation and implementation of the solution. The CID Reference ID# is required to be in place prior to sale. Before issuing a purchase order against this solution, please contact your Hewlett Packard Enterprise sales representative to engage an HPE Engagement Project Manager (EPM) who will manage the CID process.

For additional information please visit:  
 Datasheet for HP Factory Express Deployment Service for HP Converged Systems:  
<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA5-3488ENN.pdf>

### HPE Deployment Accelerator Service for ConvergedSystem 300 for Microsoft Analytics Platform (onsite)

The HPE Deployment Accelerator Service for ConvergedSystem 300 for Microsoft Analytics Platform (H6K70A1) is a packaged service ordered together with the appliance and provides the customer with a fully functioning ConvergedSystem. After HPE Technical Services has installed the appliance into your data center and connected it to power, HPE TS Consulting service provides:

- Startup and appliance validation
- IP reconfiguration if factory settings need to be changed
- Ethernet 5900 switch configuration based on the CID/site survey and customer network integration requirements.
- Demonstrate connectivity to the ConvergedSystem 300 for Microsoft Analytics Platform web based administration console.
- Install Client Tools and Microsoft SQL Server Data Tools. Generate and load line Items TPC/H test data
- Execute test queries on the Line Items test table
- Optional: Install and configure HPE Insight Remote Support on a server and configure the ConvergedSystem300 for Microsoft Analytics Platform in order to connect to it.
- Optional: If the Data Integration Platform is ordered:
  - Configure the Data Integration Platform with Windows 2012 Standard, Mellanox IB card drivers and IP configuration settings
  - Test Data Integration Platform connectivity with the ConvergedSystem 300 for Microsoft Analytics Platform..
  - Demonstrate a backup and restore operation of the test database on the Data Integration Platform (if ordered)
- As part of this service, we will also explain the operational management of the system as well as demonstrate the backup and restore procedures of the data and hand over operations to your organization.

Service benefits:

- Reduced implementation time and cost
- Peace of mind that comes from knowing the HPE ConvergedSystem 300 for Microsoft Analytics Platform has been built, installed and deployed by specialists in accordance with the manufacturer's product documentation and to the customer's requirements
- It allows the customer's IT resources to stay focused on their core tasks and priorities.

### HPE Support Services

After a successful deployment, HPE and Microsoft work together to provide a solution level support experience for the ConvergedSystem300 for Microsoft Analytics Platform.

HPE and Microsoft collaborate to provide a seamless support experience. The default route for first call is to Microsoft where the dedicated APS/PDW software team triage the issue and collaborate with HPE

## Standard Features

if the problem is hardware related.

Customers also have the option to make the first call into the Advanced Solution Center who will provide holistic support of the entire ConvergedSystem 300 for Microsoft Analytics Platform and collaborate with Microsoft for APS/PDW software related issues.

Support for the HPE ConvergedSystem300 for Microsoft Analytics Platform requires both support from Hewlett Packard Enterprise from the choices outlined below and a separate software support agreement with Microsoft.

- The recommended Hewlett Packard Enterprise support level is HPE Proactive Care Advanced. The minimum required support level is HPE Proactive Care – 3 years (included).
- We highly recommend Premier Support for the Analytics Platform System (APS), available separately from Microsoft.

**NOTE:** Hewlett Packard Enterprise and Microsoft collaborate to resolve issues, leveraging specially aligned collaborative processes between Hewlett Packard Enterprise and Microsoft.

**NOTE:** Each of these support levels include hardware and software reactive support and are available with DMR (defective media retention).

### HPE Proactive Care – 3, 4 or 5 Year

HPE Proactive Care for the ConvergedSystem 300 for Microsoft Analytics Platform begins with providing all of the benefits of proactive monitoring and reporting along with access to Hewlett Packard Enterprise specially trained people to provide a complete solution-level support experience and put in place the fundamentals needed for stability and availability of the Microsoft Analytics Platform environment. Proactive Care helps in problem prevention, with predictive analytics, personalized analysis with recommendations and advice paired with rapid access to technical experts to help rapidly resolve any problem. You receive an enhanced call experience with advanced technical expertise, a single point of contact for the support of all components and end-to-end case ownership. You also benefit from the specially aligned, collaborative reactive processes between Hewlett Packard Enterprise and Microsoft.

Customers can customize their reactive support level by selecting either 6-hour call-to-repair or 24x7 with 4-hour onsite response.

**NOTE:** Proactive features of this service (yearly firmware, patch and software assessment, update recommendations) require the HPE Remote Support Technology tool suite. Some devices and configurations may not be supported by the technologies. In these instances, Hewlett Packard Enterprise will provide the Customer with the steps required to collect the required information and send it to HPE so that those devices can be included in the reports. The current supported devices list is available as part of the release notes for Insight Remote Support found at <http://www.hpe.com/info/insightremotesupport>.

### HPE Proactive Care Advanced – 3, 4 or 5 year

HPE Proactive Care Advanced is the recommended support for ConvergedSystem 300 for Microsoft Analytics Platform environments. It builds on HPE Proactive Care, providing additional benefits such as the assignment of a dedicated, local account support manager (ASM) for collaboration, best practices and critical event management that provides 24x7 fast response and IT service restoration with incident follow-up to prevent a repeat. All of this this is designed to give you an incredibly personalized,

## Standard Features

high-touch support experience that keeps your system fully available and running at peak performance.

HPE Proactive Care Advanced includes credits that you can use to select and fund the specialized service assistance you need, when you need it. You can choose from a range of predefined technical services on the HPE Proactive Select menu, or your ASM can work with you to define the specific advice or assistance you need. It may be for a specific project or to simply purchase the 'HPE Firmware Update Service for ConvergedSystem 300 for Microsoft Analytics Platform'.

### HPE Datacenter Care

HPE Datacenter Care Service is HPE's most comprehensive support solution tailored to meet your specific data center support requirements. It offers a wide choice of proactive and reactive service levels to cover requirements ranging from the most basic to the most business-critical environments. A mutually agreed upon and executed Statement of Work (SOW) will detail the precise combination of reactive and proactive support features that will be provided under HPE Datacenter Care Service based upon your requirements.

The service includes an assigned account team led by a trained Hewlett Packard Enterprise Account Support Manager (ASM). The team's goal is to form a close working relationship with designated members of your IT staff and gain a clear understanding of your business objectives, key service-level agreements (SLAs), and the key performance indicators (KPIs) you need to meet. Delivery of the various support options you have chosen will be overseen by the ASM and directed at meeting your goals.

### HPE Firmware Update Service for ConvergedSystem 300 for Microsoft Analytics Platform:

On average, customers will perform an Appliance Update once a year. Firmware updates are typically required after a Microsoft Appliance Update (AU) and are crucial for maintaining the overall health of the components included in the hardware stack. Each HPE Converged Systems 300 for Microsoft Analytics Platform appliance is validated and tested to run a specific combination of software, firmware and drivers.

Customers may face a challenge in performing the firmware update of their HPE ConvergedSystem 300 for Microsoft Analytics Platform appliance if they do-not have the technical expertise. To address this challenge, Hewlett Packard Enterprise launched a new Firmware Update Service for HPE ConvergedSystem 300 for Microsoft Analytics Platform, which allows customers to engage HPE experts to implement firmware updates quickly and efficiently, and reduce disruption to their IT environment. This service provides firmware update implementation on the server, storage and networking components

For more information

- **HPE Firmware Update Service for ConvergedSystem 300 for Microsoft Analytics Platform - Solution brief: 4AA6-4863ENW**

### HPE Technology Services Support Credits - 3, 4 or 5 Year

Adding Technology Services Support credits gives the customer the flexibility to bring in technical resources and expert assistance when they need it. It may be for a specific project or simply to implement firmware update recommendations (see section 'HPE Firmware Update Service for ConvergedSystem 300 for Microsoft Analytics Platform' for more details).

HPE also highly recommends **HPE Education Services**, for customer training and education.

Depending upon network integration requirements, optional **HPE Network Integration services** may be needed.



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## Standard Features

For additional information please visit:

HPE Education Services: <http://www.hpe.com/ww/learnproliant>

Technical Services: <http://www.hpe.com/services/technicalservices>

### Warranty Services

The HPE ConvergedSystem 300 for Microsoft Analytics Platform infrastructure is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. As the HPE ConvergedSystem 300 for Microsoft Analytics Platform is a solution made up of many components, the warranty across the different components will vary.

The HPE ConvergedSystem 300 for Microsoft Analytics Platform requires customers to purchase a minimum of 3 year HPE Proactive Care (24x7 hardware/software support with 4 hour onsite hardware response), bringing the support service level of all components to a consistent level

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### HPE Financial Services

To support customers' transition, HPE Financial Services (HPFS) can help in a way that you may not have considered. HPFS can help you invest in your business while preserving precious capital.

For more information, contact your local HPE Financial Services Representative. In the United States, call 1-888-277-5942. In Canada, dial 1-800-HPE-LEASE. For more information please visit:

<http://www.hp.com/hpfinancialservices> for links to HPE Financial Services around the world.

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### Rack Airflow Requirements

#### HPE 642 1075mm Shock Intelligent Series Rack

The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The HPE 642 1075mm Shock Intelligent Series Rack s provide enhanced airflow for maximum cooling (81% total open area on HPE rack front doors), allowing these racks to be fully loaded with servers using the latest processors.

- Front and rear doors: You must allow 830 square inches (5,350 sq. cm) of holes evenly distributed from top to bottom to permit adequate airflow (equivalent to a required 64 percent open area for ventilation).
- The clearance from face of rack to inside of the front door needs to be a minimum of 1.75".
- Side: The clearance between the installed rack component and the side panels of the rack needs to be a minimum of 2.75 inches (7 cm).

## Configuration Information - Factory Integrated Models

This section lists the required steps for ordering a new HPE ConvergedSystem 300 for Microsoft Analytics Platform delivered from the factory. For information on ordering additional capacity for existing appliance environments refer to the section below "Current customers - Expanding your HPE ConvergedSystem 300 for Microsoft Analytics Platform"

**NOTE:** With all rack orders the HPE and Microsoft software will be installed at the factory. Licenses are not included for Windows Server 2012 R2, Microsoft Analytics Platform System 2016 or SQL Server Enterprise or System Center and must be ordered separately

### Step 1: Order the HPE Rack and Switches

<b>HPE ConvergedSystem 300 2.1 for Microsoft APS- Base Rack Kit</b>	HPE ConvergedSystem 300 2.1 for MS APS Base Rack Kit includes the following:	Q0J39A
	<ul style="list-style-type: none"> <li>• One (1) HPE 642 1075mm Shock Intelligent Series Rack</li> <li>• ConvergedSystem lighting, door decal, branded side panes</li> <li>• Cables</li> </ul>	
<b>HPE ConvergedSystem 300 2.0 for Microsoft APS Ethernet Switch Kit</b>	HPE ConvergedSystem 300 2.0 for MS APS Ethernet Switch Kit includes:	H6Y54A (2)
	<ul style="list-style-type: none"> <li>• Two (2) HPE Switch 5900 -48G-4XG-2QSFP+</li> <li>• Cables</li> </ul>	
<b>HPE ConvergedSystem 300 2.0 for Microsoft APS InfiniBand Switch Kit</b>	HPE ConvergedSystem 300 2.0 for MS APS InfiniBand Switch Kit includes:	H6Y55A (2)
	<ul style="list-style-type: none"> <li>• Two (2) HPE IB FDR 36P Managed Switch</li> <li>• Cables</li> </ul>	

### Step 2: Order Power Distribution Unit (PDU)

<b>Power Distribution Units</b>	Choice of three phase or single phase Modular Power Distribution Unit (PDU)	
	<ul style="list-style-type: none"> <li>• <b>Three-phase (2 PDUs per rack):</b> <ul style="list-style-type: none"> <li>- HPE 40A 3 Phase NA/Japan Core Only Intelligent Modular Power Distribution Unit <b>OR</b> <span style="float: right;">AF533A (2) OR</span></li> <li>- HPE 32A 3 Phase Intl Intelligent Modular Power Distribution Unit <span style="float: right;">AF527A (2) OR</span></li> </ul> </li> <li>• <b>Single-phase (4 PDUs per rack):</b> <ul style="list-style-type: none"> <li>- HPE 24A NA/Japan Core Only Intelligent Modular Power Distribution Unit <b>OR</b> <span style="float: right;">AF520A (4) OR</span></li> <li>- HPE 32A Intl Core Only Intelligent Modular Power Distribution Unit <span style="float: right;">AF525A (4)</span></li> </ul> </li> </ul>	

### Step 3: Order the PDW Base Region Scale Unit

<b>PDW Base Region Scale Unit</b>	HPE ConvergedSystem 300 for Microsoft Analytics Platform Base Scale Unit is comprised of: HPE ConvergedSystem 300 2.1 for MS APS PDW Svr Kit (2), HPE ConvergedSystem 300 2.1 for MS APS Passive Svr Kit (2), HPE ConvergedSystem 300 2.1 for MS APS Storage Kit (2 TB) (1)
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**Configuration Information - Factory Integrated Models**

**PDW Region Base Scale Unit**

- Two (2) HPE ConvergedSystem 300 2.1 for MS APS PDW Svr Kit, each includes: Q0J41A (2)
    - One (1) HPE ProLiant DL360 Gen9 (2x E5-2667v4) Server includes: AND
      - Eight (8) HPE 32GB (2R x 4) PC4-2400T-R Memory
      - Two (2) HPE 600GB 12G SAS 10K 2.5in
    - HPE iLO Advanced 1-Server
    - Microsoft Windows Server 2012 R2 Standard Edition
    - Microsoft Analytics Platform System 2016
  
- Two (2) HPE ConvergedSystem 300 2.1 for MS Analytics Platform Passive Svr Kit, each includes: Q0J42A (2)
    - One (1) HPE ProLiant DL360p Gen9 (2x E5-2667v4) Server includes: AND
      - Eight (8) HPE 32GB (2R x 4) PC4-2400T-RR Memory
      - Two (2) HPE 600GB 12G SAS 10K 2.5in
    - HPE iLO Advanced 1-Server
    - Microsoft Windows Server 2012 R2 Standard Edition
    - Microsoft Analytics Platform System 2016
  
- Optional: (1) HPE ConvergedSystem 300 2.1 for MS Analytics Platform Passive Svr Kit, each includes: Q0J42A (1) optional
    - One (1) HPE ProLiant DL360p Gen9 (2x E5-2667v4 ) Server includes:
      - Eight (8) HPE 32GB (2R x 4) PC4-2400T-RR Memory
      - Two (2) HPE 600GB 12G SAS 10K 2.5in
    - HPE iLO Advanced
    - Microsoft Windows Server 2012R2 Standard Edition
    - Microsoft Analytics Platform System 2016
  
- One (1) HPE ConvergedSystem 300 2.1 for MS Analytics Platform Storage Kit, includes:: Q0J44A (1)
    - One (1) HPE D6020 Disk Enclosure
      - Seventy (70) HPE 2TB 12G SAS 7.2K 3.5in DP MDL HDD

**NOTE:** The Windows Server 2012 R2 and Microsoft Analytics Platform System 2016 software is preinstalled and preconfigured. Licenses must be purchased separately.

User Data Capacity	User Data (TB) - Single Rack			
	2 Active Servers	4 Active Servers	6 Active Servers	8 Active Servers
2 TB disks	151 TB	302 TB	453 TB	605 TB

User Data Capacity	User Data (TB) - Base Rack + Expansion Rack(s)					
	16 Active Servers (2 racks)	24 Active Servers (3 racks)	32 Active Servers (4 racks)	40 Active Servers (5 racks)	48 Active Servers (6 racks)	56 Active Servers (7 racks)
2 TB disks	1209 TB	1814 TB	2418 TB	3023 TB	3627 TB	4232 TB

**NOTE:** User data capacity is calculated based on disks allocated to database space, factored in the formatted capacity and RAID1, as well as 5x compression ratio.

**NOTE:** Microsoft Analytics Platform System 2016 uses the newest version of memory-

## Configuration Information - Factory Integrated Models

optimized columnstore, which is both updateable and clustered. By reorienting data in a column rather than a traditional row store, organizations can see next-generation performance (up to 50 times) by reducing the query time from hours to seconds and high compression on their data (up to 15 times). This is due to the grouping of data in a columnar format (containing values from multiple rows) that allows for higher efficiency in both storage and the returned dataset. The ability to permanently convert traditional row store tables with the updateable columnstore is another new feature, which dramatically reduces storage (by up to 70 percent) while still providing real-time data warehouse query performance.

### Step 4: Order additional Data Scale Units (Optional)

Order up to three additional Data Scale Units (per rack) of either HPE ConvergedSystem 300 2.1 for MS APS PDW Svr Kit (2), with HPE ConvergedSystem 300 for MS APS Storage Kit (2 TB or 4 TB) (1)

#### HPE ConvergedSystem 300 2.1 for Microsoft Analytics Platform Data Scale Unit(s)

Two (2) HPE ConvergedSystem 300 2.1 for MS APS PDW Svr Kit each includes: Q0J43A (2)

- One (1) HPE ProLiant DL360 Gen9 (2x E5-2667v4) Server includes:
  - Eight (8) HPE 32GB (2R x 4) PC4-2400T-R Memory
  - Two (2) HPE 600GB 12G SAS 10K 2.5in
- HPE iLO Advanced 1-Server software support
- Microsoft Windows Server 2012 R2 Standard Edition
- Microsoft Analytics Platform System 2016

**NOTE:** Microsoft Windows Server 2012 R2 and Microsoft Analytics Platform System 2016 software is preinstalled and preconfigured. Licenses must be purchased separately.

#### With

One (1) HPE ConvergedSystem 300 for MS Analytics Platform Storage Kit- choose from the following options:

- One (1) HPE D6020 Disk Enclosure Q0J44A (1)
  - Seventy (70) HPE 2TB 12G SAS 7.2K 3.5in DP MDL HDD OR
- One (1) HPE D6020 Disk Enclosure Q1Y76A (1)
  - Seventy (70) HPE 4TB 12G SAS 7.2K 3.5in DP MDL HDD

### Step 5: Choose HPE Support and optional Services

HPE ConvergedSystem 300 for Microsoft Analytics Platform orders will include HPE Factory Express Deployment Service, HPE Deployment Accelerator Service, and the minimum HPE 3 year Proactive Care – 24X7.

#### HPE Support Services

Support for the HPE ConvergedSystem 300 for Microsoft Analytics Platform requires support from both HPE and from Microsoft. HPE 3yr Proactive Care 24X7 is the minimum required HPE support level with the option to upgrade to a higher support level to meet your business needs. In addition, customers may choose to purchase HPE Technology Services credits.

## Configuration Information - Factory Integrated Models

These support choices provide specially aligned, collaborative support processes between HPE and Microsoft for seamless resolution of technical issue with the HPE ConvergedSystem 300 for Microsoft Analytics Platform.

**NOTE:** Each of these support levels include hardware and software reactive support and are available with DMR (defective media retention).

**NOTE:** Software support for the Microsoft software must be purchased from Microsoft, We highly recommend Premier Support for the Analytics Platform System (APS), available separately from Microsoft.

### HPE Proactive Care - 3, 4 or 5 Year

HPE Proactive Care in Microsoft Analytics Platform environments begins with providing all of the benefits of proactive monitoring and reporting along with rapid reactive care to put in place the fundamentals needed for stability and availability of the Microsoft Analytics Platform environment. Customers also receive enhanced reactive support for issues, through access to HPE's experts working collaboratively with Microsoft, as needed. It is available with 24x7 4 hour onsite response in three year (H1K92A3), four year (H1K92A4), and five year (H1K92A5) , and 6-hour Call-to-Repair (H1K94A3/4/5) . It is also available with Defective Media Retention (H1K93A3/4/5 & H1K95A3/4/5).

### HPE Proactive Care Advanced – 3, 4 or 5 Year

HPE Proactive Care Advanced is the recommended support for Microsoft Analytics Platform environments. It builds on HPE Proactive Care, providing additional benefits such as the assignment of a dedicated, local account support manager (ASM) for collaboration and best practices and critical event management that provides 24x7 fast response and IT service restoration with incident follow-up to prevent a repeat. All of this is designed to give you an incredibly personalized, high-touch support experience that keeps your system fully available and running at peak performance. It is available with 24x7 4 hour onsite response in three year (HGB35A3), four year (HGB35A4), and five year (HGB35A5), and 6-hour Call-to-Repair (HGB37A3/4/5). It is also available with Defective Media Retention (HGB36A3/4/5 & HGB38A3/4/5).

### HPE Datacenter Care

For large, complex environments where a more personalized, customized approach to support is needed. This is a contractual sale and provides one contract for all a customer's reactive and proactive needs.

## HPE Optional Support Services

### HPE Firmware Update Service for ConvergedSystem 300 for Microsoft Analytics Platform:

This service is available for purchase using credit-based services offered by Hewlett Packard Enterprise.

- A Full Appliance Update Service for HP Enterprise Data Warehouse (V1 Architecture) will require 30 credits, and 10 credits for each for additional Data Rack
- A Full Appliance Update Service for HPE ConvergedSystem 300 for Microsoft Analytics Platform or HP AppSystem for Microsoft SQL Server 2012 Parallel Data Warehouse (V2 Architecture) will require 20 credits, and 10 credits for each for additional Data Rack
- More details can be found in the **HPE Proactive Select Services Menu** (p.14) (<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA4-3393ENW.pdf>)

## Configuration Information - Factory Integrated Models

This service can also be purchased in multiple quantities of service product numbers, depending on the type and number of HPE products to be updated, using the following product numbers:

- H0JS4A1/ H0JS4AE for HPE CS300 for APS Full Appliance Firmware Update Service
- H0JS3A1/ H0JS3AE for HPE CS300 for APS Device Firmware Update Service

To order the Firmware Update Service for HPE ConvergedSystem 300 for Microsoft Analytics Platform, please contact an HPE sales representative, your HPE Technology Services Account manager or authorized HPE reseller for questions and to estimate the quantity of HPE Firmware Update Service required to update the desired set of HPE products.

### HPE Technology Services Support Credits

- 3, 4 or 5 Year

Adding Technology Services Support credits gives the customer the flexibility to bring in technical resources and expert assistance when they need it. It may be for a specific project or simply providing help to implement software or firmware update recommendations. (see section 'HPE Firmware Update Service for ConvergedSystem 300 for Microsoft Analytics Platform' for more details).

## Step 6: (Optional) HPE 5900 Ethernet Switch Transceiver Options

The ConvergedSystem 300 for Microsoft Analytics Platform has two HPE 5900AF-48G-4XG-2QSFP\_ Switches (Ethernet switches) (JG510A) and two Mellanox InfiniBand FDR switches (670769-B21) in each rack. The external network should be connected to either the InfiniBand switches (for data loading, backup, etc.) and/or the Ethernet switches. Each Ethernet switch is configured with 2 x 1 GbE or 10GbE ports available for customer connectivity. The table below lists the transceivers which are supported in these modules (The 40GbE option is not currently available).

The ConvergedSystem 300 for Microsoft Analytics Platform has a total of four fixed 1Gb/10Gb SFP+ connections available to use for the customer Ethernet network. Up to four transceivers for the connections to the HPE 5900 switches in the ConvergedSystem 300 for Microsoft Analytics Platform, plus up to four cables to connect to the customer's network may be required. Additionally, any required transceivers to connect to the customers' existing switches.

**IMPORTANT: Be sure to order any transceivers and/or networking cables which may be required. Transceivers need to be the same type on both ends. They are not included with the appliance.**

Fiber optic cables options, please select from either Tables 1 and 2 or Table 3 (4 recommended per table).

Table 1. Transceivers that install into the HPE 5900

Description	Part Number
HPE X120 1G SFP LC LH40 1550nm Transceiver	JD062A
HPE X120 1G SFP LC BX 10-U Transceiver	JD098B
HPE X120 1G SFP LC BX 10-D Transceiver	JD099B
HPE X120 1G SFP LC LX Transceiver	JD119B
HPE X120 1G SFP LC SX Transceiver	JD118B
HPE X125 1G SFP LC LH40 1310nm Transceiver	JD061A
HPE X125 1G SFP LC LH70 Transceiver	JD063B
HPE X130 10G SFP+ LC SR Transceiver	JD092B
HPE X130 10G SFP+ LC LRM Transceiver	JD093B
HPE X130 10G SFP+ LC LR Transceiver	JD094B
HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A

## Configuration Information - Factory Integrated Models

Table 2. LC/LC FC Cables

Description	Part Number
HPE 2m Multi-mode OM3 LC/LC FC Cable	AJ835A
HPE 5m Multi-mode OM3 LC/LC FC Cable	AJ836A
HPE 15m Multi-mode OM3 LC/LC FC Cable	AJ837A

Table 3. 10G Transceivers install into Module's SFP+ Ports

Description	Part Number
HPE X2A0 10G SFP+ to SFP+ 7m Active Optical Cable	JL290A
HPE X2A0 10G SFP+ to SFP+ 10m Active Optical Cable	JL291A
HPE X2A0 10G SFP+ to SFP+ 20m Active Optical Cable	JL292A

### IMPORTANT:

Not all transceivers support Multimode cables. Please refer to the [HPE FlexFabric 5900 Switch Series](#) documentation for details or consult with your HPE representative.

Copper cables options, please select from Table 4 (4 recommended).

Table 4. Direct Attach Copper Cables

Description	Part Number
HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HPE FlexNetwork X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C

## Step 7: (Optional) Order additional peripheral systems

In addition to the core HPE ConvergedSystem 300 for Microsoft Analytics Platform components, you may also want to order systems to support additional capability. This includes a Data Integration Platform Server (DIP server) to support data integration. To enjoy a proactive support experience, you may add a server to run the HPE Insight Remote Support Monitoring software if the customer does not already have a system identified for this function.

**NOTE:** The servers in this section are not part of the HPE ConvergedSystem 300 for Microsoft Analytics Platform and are only provided as recommendations for these functions. There is no requirement that the customer purchase these configurations as outlined below.

The Data Integration Platform is a companion product for the ConvergedSystem 300 for Microsoft Analytics Platform that is purchased separately. This can be customized to fit each customer environment and server configuration. Please refer to our detailed technical whitepaper: [Data Integration Platform – Gen9 reference](#), located on the website:

<http://www.hpe.com/products/cs300aps>.

This whitepaper contains detailed BOMs, and please be sure and add the necessary cables for network connectivity to the InfiniBand and Ethernet switches in the appliance. The recommended connectivity from the Data Integration Platform to the appliance is via InfiniBand for the fastest data loading performance. You must also include cables for connecting to the customer network.

**NOTE:** Data Integration Platform does not ship with any preconfigured software or with an OS installed. Any software or

## Configuration Information - Factory Integrated Models

configuration installation is performed on-site defined by the customer requirements. This server also does not ship in the same rack and will ship separately.

<b>HPE Insight RS Server Platform</b>	One (1) HPE DL360 Gen9 8-SFF CTO Server	755258-B21(1)
	One (1) HPE DL360 Gen9 E5-2690v3 FIO Kit	755396-L21(1)
	One (1) HPE DL360 Gen9 E5-2690v3 Kit	755396-B21(1)
	Four (4) HPE 8GB 1Rx4 PC4-2133R-15 Kit	726718-B21(4)
	Two (2) HPE 600GB 6G SAS 10K 2.5in SC ENT HDD	652583-B21(2)
	One (1) HPE DL360 Gen9 SFF DVD/USB Univ Media Bay Kit	764632-B21(1)
	One (1) HPE 1U SFF Easy Install Rail Kit	734807-B21(1)
	One (1) HPE P440ar 2GB FBWC Smart Array Cntrlr	749974-B21(1)
	One (1) HPE Ethernet 1GbE 4P 331FLR FIO Ad	629135-B22(1)
	Two (2) HPE 800W CS Plat PL Ht Plg Pwr Supply Kit	720479-B21(2)
	One (1) MS WS12 R2 Std FIO Npi E/F/I/G/S SW	755997-B21 (1)
	One (1) HPE iLO Adv 1-Svr incl 1yr TS&U SW	512485-B21(1)

HPE Insight Remote Support (Insight RS) can be configured for the customer as part of the initial installation and startup deployment service. This requires a server outside the appliance to install and configure the HPE Insight RS management software on. If the customer is not already using Insight RS in their environment today or has not identified an existing server for this role then it is recommended that you add an Insight RS server to the order

**NOTE:** This is only a recommended configuration and can be modified to suit individual customer requirements.

**NOTE:** If ordered, this Insight Remote Support server will ship as a separate server and does not ship with any preconfigured software or with an OS installed, and is not integrated into the appliance rack. **NOTE:** Insight Remote Support software is not pre-installed and setup on this server. The installation and configuration of the Insight RS software occurs on-site during the appliance installation.

## Current customers - Expanding your HPE ConvergedSystem 300 for Microsoft Analytics Platform

**NOTE:** This section lists the required steps for ordering additional components to existing HP AppSystem for Parallel Data Warehouse or HPE ConvergedSystem 300 for Microsoft Analytics Platform.

**NOTE:** Support for the HPE ConvergedSystem 300 for Microsoft Analytics Platform requires support from both HPE and from Microsoft. HPE 3yr Proactive Care 24X7 is the minimum required HPE support level with the option to upgrade to a higher support level to meet your business needs. Software support for the Microsoft software must be purchased from Microsoft.

### Step 1: If adding capacity (PDW ) requires a new rack, order an expansion rack

<b>HPE ConvergedSystem 300 2.1 for Microsoft APS Expansion Rack Kit</b>	HPE ConvergedSystem 300 2.1 for MS APS Expansion Rack Kit includes the following:	Q0J40A
	<ul style="list-style-type: none"> <li>One (1) HPE 642 1075mm Shock Intelligent Series Rack</li> <li>ConvergedSystem lighting, door decal, branded side panes</li> <li>Ethernet and IB Cables to connect to existing rack on-site</li> </ul>	
<b>HPE ConvergedSystem 300 2.0 for Microsoft APS Ethernet Switch Kit</b>	HPE ConvergedSystem 300 2.0 for MS APS Ethernet Switch Kit includes:	H6Y54A(2)
	<ul style="list-style-type: none"> <li>Two (2) HPE Switch 5900 -48G-4XG-2QSFP+</li> <li>Cables</li> </ul>	
<b>HPE ConvergedSystem 300 2.0 for Microsoft APS InfiniBand Switch Kit</b>	HPE ConvergedSystem 300 2.0 for MS APS InfiniBand Switch Kit includes:	H6Y55A (2)
	<ul style="list-style-type: none"> <li>Two (2) HPE IB FDR 36P Managed Switch</li> <li>Cables</li> </ul>	



## Configuration Information - Factory Integrated Models

### Step 2: If adding PDW Data Scale Units

**HPE ConvergedSystem 300 2.1 for Microsoft APS Add PDW Server Kit** HPE ConvergedSystem 300 2.1 for MS APS Add PDW Svr Kit (2), HPE ConvergedSystem 300 2.1 for MS APS Storage Kit (2 TB or 4 TB) (1) Q0J42A (2)  
AND

- Two (2) HPE ConvergedSystem 300 2.1 for MS APS Add PDW Svr Kit each includes:
  - One (1) HPE ProLiant DL360 Gen9 (2x E5-2667v4 ) Server includes:
    - Eight (8) HPE 32GB (2R x 4) PC4-2400T-R (DDR4-1333) Memory
    - Two (2) HPE 600GB 12G SAS 10K 2.5in
  - HPE iLO Advanced 1-Server
  - Microsoft Windows Server 2012 R2 Standard Edition
  - Microsoft Analytics Platform System 2016
- One (1) HPE ConvergedSystem 300 for Microsoft Analytics Platform Storage Kit- choose from the following options:
  - One (1) HPE D6020 Disk Enclosure Q0J44A (1)
    - Seventy (70) HPE 2TB 12G SAS 7.2K 3.5in DP MDL HDD OR
  - One (1) HPE D6020 Disk Enclosure Q1Y76A (1)
    - Seventy (70) HPE 4TB 12G SAS 7.2K 3.5in DP MDL HDD

**NOTE:** Microsoft Windows Server 2012 R2 and Microsoft Analytics Platform System 2016 software is preinstalled and preconfigured. Licenses must be purchased separately.

### Step 3: Services

Factory integration and services will be included with the order for additional scale units to be added on-site.

Factory Express Deployment services are also required when adding equipment to the base rack: H8A03A1-202 for expansion racks ordered at the same time as a base rack, and, H8A03A1-203 for adding expansion racks to an existing base rack. When adding scale units (Add Capacity PDW), H8A03A1-204 (one per order) and H8A03A1-205 (one per server kit) are used to add capacity to an existing HPE ConvergedSystem 300 for Microsoft Analytics Platform.

### Step 4: Support

Select the support level that matches the support for the existing HP AppSystem for Parallel Data Warehouse or HPE ConvergedSystem 300 for Microsoft Analytics Platform. See section title 'Choose Support and Services' for more details. Provide the existing SAID (Support Account Identification) number when ordering the additional scale units.

## Technical Specifications

<b>Technical Specifications</b>	<b>Dimensions</b> (per rack)	Height	42U, 78.816 in (200.19cm)
		Width	23.535 in (59.78 cm)
		Depth	42.741in (108.56 cm)
	<b>Shipping Dimensions</b> (per rack, with packaging materials)	Height	85.35 in (216.80 cm)
		Width	35.43 in (90cm)
		Depth	50.87 in (129.20 cm)
	<b>Maximum load</b>	Rack	2250 lb (726kg)
	<b>Color</b>	Doors	Black with Silver extrusion
		Frame	Black
	<b>Clearance</b> (for air flow and access)	Front	48 in (121.9 cm)
		Rear	30 in (76.2 cm)
	<b>Temperature range</b>	Operating	50° to 90° F (10° to 35° C)
		Non-Operating	-22° to 140° F (-30° to 60° C)
	<b>Relative humidity</b>	Operating	15 to 85% relative humidity (Rh)
	<b>Altitude</b>	Operating	3000 meters maximum.
	<b>Power Usage -Operating</b>	¼ Rack (2 active nodes)	3.0 kW (14.4A at 208V)
		½ Rack (4 active nodes)	4.5 kW (21.6A at 208V)
		¾ Rack (6 active nodes)	6.0 kW (28.8A at 208V)
		Full Rack (8 active nodes)	7.5 kW (36.0A at 208V)
	<b>Power Usage -Idle</b>	¼ Rack (2 active nodes)	2.2 kW (10.6A at 208V)
		½ Rack (4 active nodes)	3.3 kW (15.9A at 208V)
		¾ Rack (6 active nodes)	4.4 kW (21.1A at 208V)
		Full Rack (8 active nodes)	5.5 kW (26.4A at 208V)
	<b>BTU rating, maximum</b>	¼ Rack (2 active nodes)	10300 BTU/hr
		½ Rack (4 active nodes)	15400 BTU/hr
		¾ Rack (6 active nodes)	20500 BTU/hr
		Full Rack (8 active nodes)	25600 BTU/hr
	<b>BTU rating, idle</b>	¼ Rack (2 active nodes)	7500 BTU/hr
		½ Rack (4 active nodes)	11300 BTU/hr
		¾ Rack (6 active nodes)	15000 BTU/hr
		Full Rack (8 active nodes)	18800 BTU/hr
	<b>Power Connections</b>	<b>Three-Phase Power</b>	NA/Japan <b>or</b> International Option
		Per rack	(2) CS8365C or (2) IEC60309 532P6W
		<b>Single-Phase Power</b>	NA/Japan <b>or</b> International Option
		Per rack	(4) NEMA L6-30p or (4) IEC60309 332P6
	<b>External Network Connections</b>	<b>Location</b>	<b>Connection Speed/Connection Type</b>
		HPE FlexFabric 5900AF 48G 4XG 2 QSP+ (Ethernet Switch 1)	10GbE / SFP+
		HPE FlexFabric 5900AF 48G 4XG 2 QSP+ (Ethernet Switch 2)	10GbE / SFP+
		Mellanox IB FDR 36P Managed Switch (InfiniBand Switch 1)	36 IB FDR (56 Gb/s) / QSFP
		Mellanox IB FDR 36P	36 IB FDR (56 Gb/s) / QSFP

## Technical Specifications

Managed Switch  
(InfiniBand Switch 2)  
HPE FlexFabric 5900AF 1 GbE / RJ45  
48G 4XG 2 QSP+  
(Ethernet Switch 1)  
HPE FlexFabric 5900AF 1 GbE / RJ45  
48G 4XG 2 QSP+  
(Ethernet Switch 2)

**NOTE:** No direct sustained sunlight.

**NOTE:** The maximum load for the HPE Intelligent Series Rack is 3000 lb (907.18kg).

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<b>Environmental-friendly products and approach</b>	<b>End-of-life management and recycling</b>	<p>Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. To recycle your product, please go to: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a> or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <a href="http://www.hp.com/go/green">http://www.hp.com/go/green</a>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HEWLETT PACKARD ENTERPRISE OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.</p>
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## Summary of Changes

Date	Version History	Action	Description of Change:
13-Feb-2017	From Version 15 to 16	Changed	Added 4TB "Add" Data Scale Unit
28-Nov-2016	From version 14 to 15	Changed	Changes made throughout QuickSpec
29-Apr-2016	From Version 13 to 14	Changed	Removed HDInsight, added firmware service.
01-Jun-2015	From Version 12 to 13	Changed	Changes made to all the sections on the document.
10-Jun-2014	From Version 11 to 12	Changed	Changes made throughout the QuickSpec
27-Jun-2013	From Version 10 to 11	Changed	Title change only to: HP AppSystem for Microsoft SQL Server 2012 for Parallel Data Warehouse
25-Mar-2013	From Version 9 to 10	Changed	Changes made throughout the QuickSpec
19-Oct-2012	From Version 8 to 9	Changed	Changes made throughout the QuickSpec
24-Sep-2012	From Version 7 to 8	Changed	Changes made throughout the QuickSpec.
22-Jun-2012	From Version 6 to 7	Changed	Changes made throughout the QuickSpec.
26-Mar-2012	From Version 5 to 6	Changed	Changes made throughout the QuickSpec.
17-Feb-2012	From Version 3 to 5	Changed	Changes made throughout the QuickSpec.
26-Sep-2011	From Version 2 to 3	Changed	Steps 1, 2 and 3 were revised in Configuration Information - Factory Integrated Models.
22-Jun-2011	From Version 1 to 2	Changed	Configuration Information - Factory Integrated Models was revised Control rack and Data rack maximum loads were revised in Technical Specifications What's New was added to the Overview AMD Opteron is a US Registered trademark of AMD Corporation was removed from the Copyright Notice.



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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.

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