

Integrating an IBM PureApplication Environment

IBM Redbooks Solution Guide

The decision to integrate an IBM® PureApplication® System or IBM PureApplication Software into an existing data center is a disruptive event that affects many teams. This IBM Redbooks® Solution Guide provides a quick look at integrating a PureApplication System or PureApplication Software in to your data center. Figure 1 shows an overview of this process.

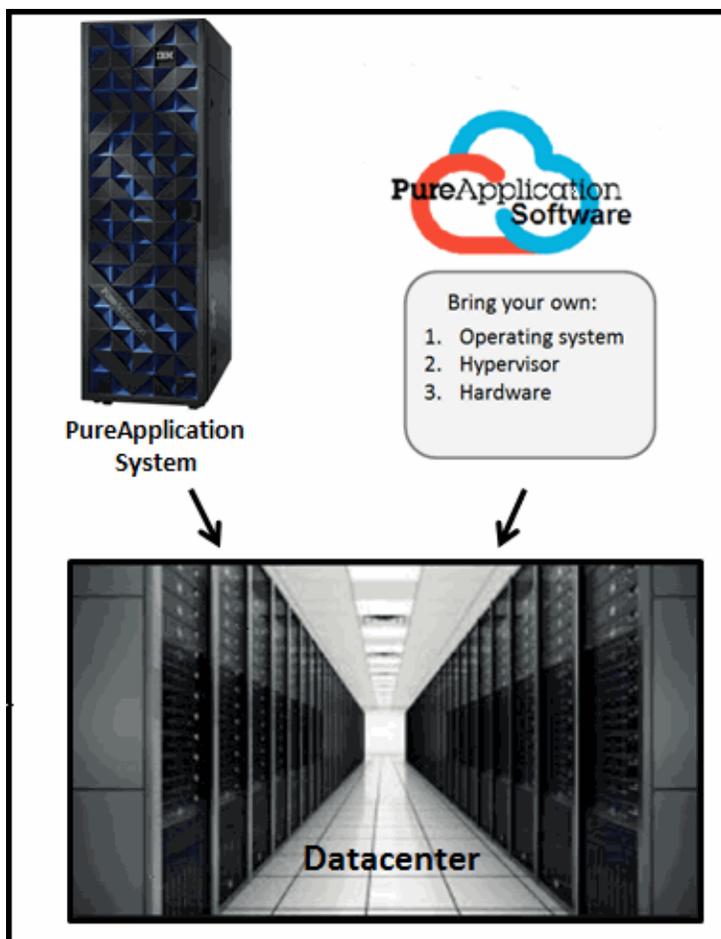


Figure 1. PureApplication products can integrate into your data center

Did you know?

Both PureApplication System or PureApplication Software offer on-premises solutions that use proven patterns to extend your applications, reduce cost and complexity, and ease management.

Business value

Integrating either solution into your data center can provide the following benefits:

- Improve efficiency and economics with next-generation technology that maximizes utilization and lowers cost.
- Ease procurement, design, and management with factory-integrated systems and patterns of expertise.
- Increase capacity in real time for high-density virtualization and fluctuating demands.
- Leverage comprehensive resource pooling, automated provisioning, and a single point of management.

PureApplication System is a platform system that is delivered on a single rack that is designed and tuned specifically for transactional web and database applications. It includes integrated technologies, built-in expertise, cloud capabilities, and virtualization capabilities. The platform includes compute nodes, storage nodes, and networking. PureApplication System includes virtualization and management technology. It also includes a library of components, such as operating systems, application servers, database servers, and integration software. These components are built into reusable patterns.

IBM provides patterns for many of the IBM middleware and database products. These patterns can be used as-is, or enhanced to add the required customization. Some of these offerings, such as IBM WebSphere® Application Server and IBM DB2®, are included in PureApplication System, and other middleware offerings can be purchased and installed on the system.

PureApplication Software can be installed on your existing hardware and VMware infrastructure. Unlike PureApplication System, PureApplication Software does not include any hardware, OS images, or middleware. It requires existing hardware components, such as compute nodes, storage nodes, and networking, to be installed in your data center.

Although the PureApplication Software does not include middleware patterns, after it is purchased and installed, these patterns work the same way as in the PureApplication System.

Solution overview

The architecture of your integration project varies depending on your decision to integrate PureApplication System or PureApplication Software.

The integration solutions that are provided by PureApplication System and PureApplication Software are described in *Integrating PureApplication System into an Existing Data Center*, SG24-8285.

Solution architecture

PureApplication System is sometimes referred to as a cloud solution “on a rack”. All of the aspects of a cloud solution are included on the rack, as shown in Figure 2:

- Networking: Includes an Ethernet and Fibre Channel network.
- Storage nodes and expansion: Developed for virtualized environments. The IBM Storwize® V7000 enables highly efficient and policy-based management of files.
- Compute nodes: Contain components, such as microprocessors, memory, and Ethernet controllers. Virtual machines are deployed to compute nodes.

- Virtualization management to control the virtualized environment.
- System management to control workloads and other important components.

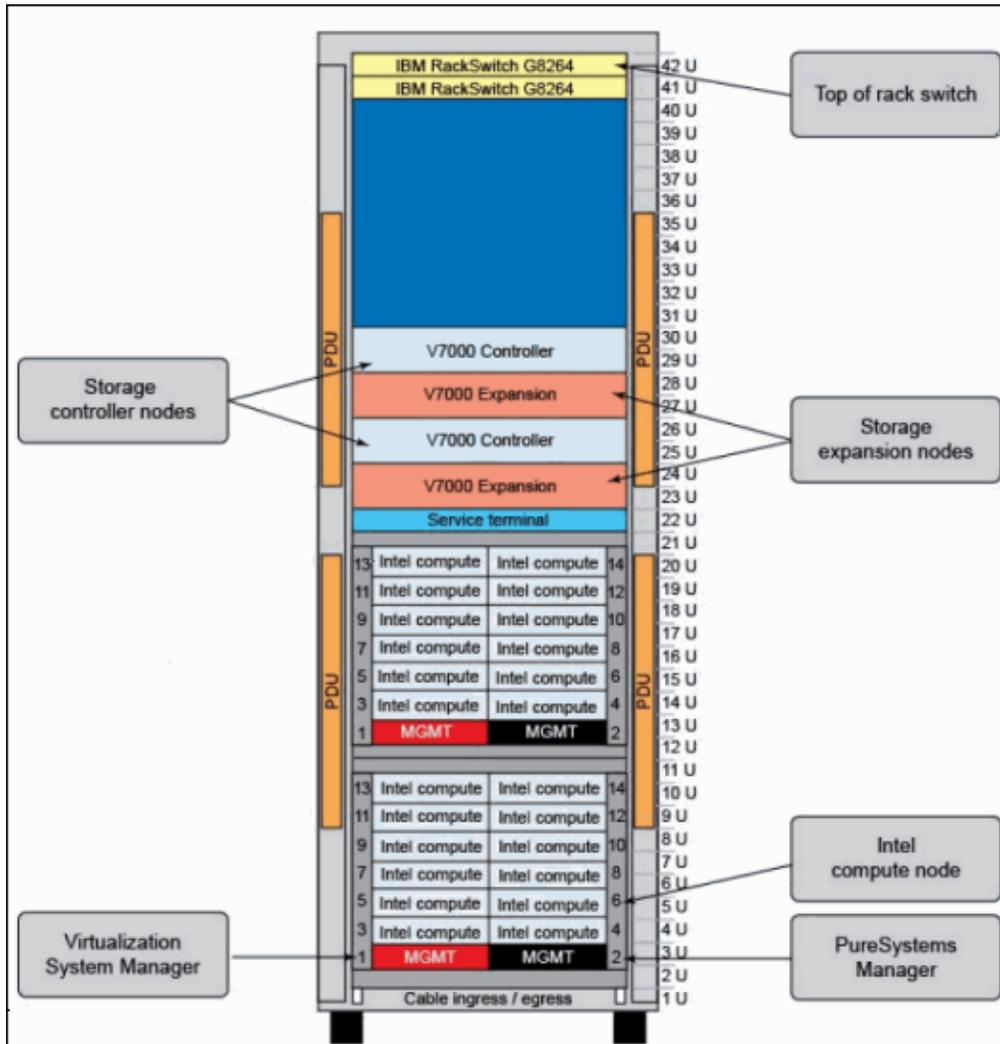


Figure 2. Simplified architecture of PureApplication System (W2500-384)

Solution architecture: PureApplication Software

In general, PureApplication Software can be installed and configured on either a virtual machine running in vCenter 5.1, as shown in Figure 3, or on bare metal, as shown in Figure 4.

PureApplication Software on a VM in vCenter 5.1

In this configuration scenario, PureApplication Software and the virtualized compute nodes, networking, and storage are on data centers that are managed by vCenter.

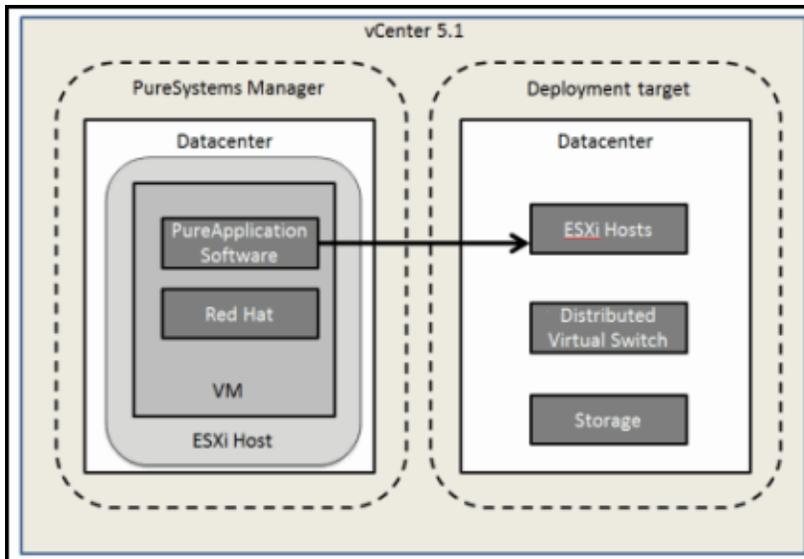


Figure 3. PureApplication Software on a virtual machine

PureApplication Software on bare metal

In this configuration, PureApplication Software is hosted on x86 hardware, and the virtualized compute nodes, networking, and storage are hosted in a data center that is managed by vCenter.

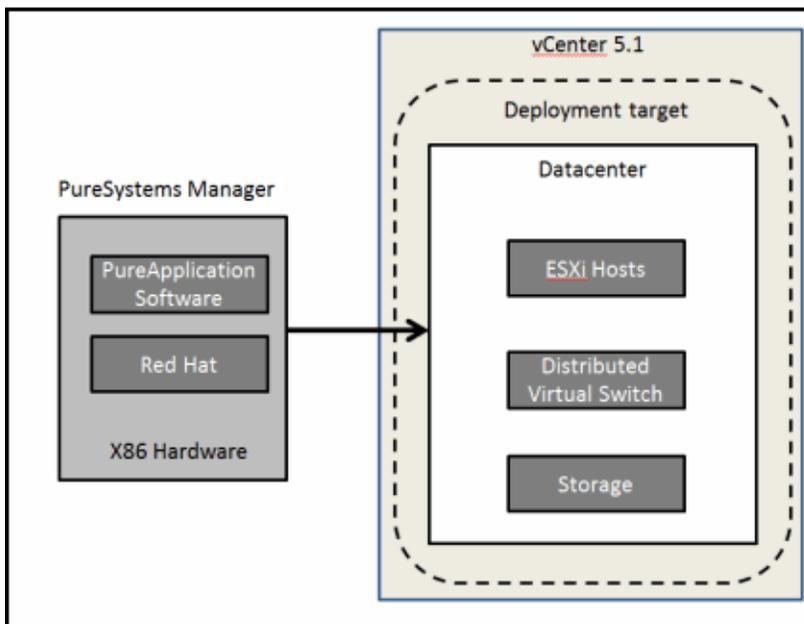


Figure 4. PureApplication Software on bare metal

Usage scenarios

Integration and usage scenarios are described in detail in *Integrating PureApplication System into an Existing Data Center*, SG24-8285. The publication describes integration points and scenarios for PureApplication System and PureApplication Software. The roadmap in Figure 5 aligns specific roles and chapters to provide guidance for an integration project.

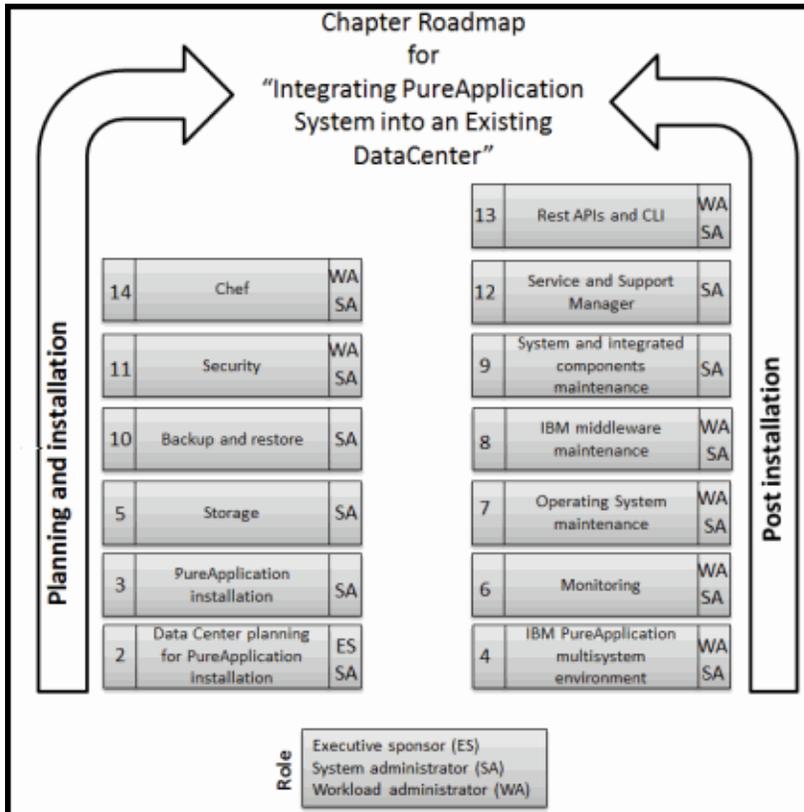


Figure 5. Roles roadmap for Integrating PureApplication System into an existing data center

Integration

If you have existing installations of PureApplication System or PureApplication Software, they can be integrated by joining them into a single management domain, as shown in Figure 6.

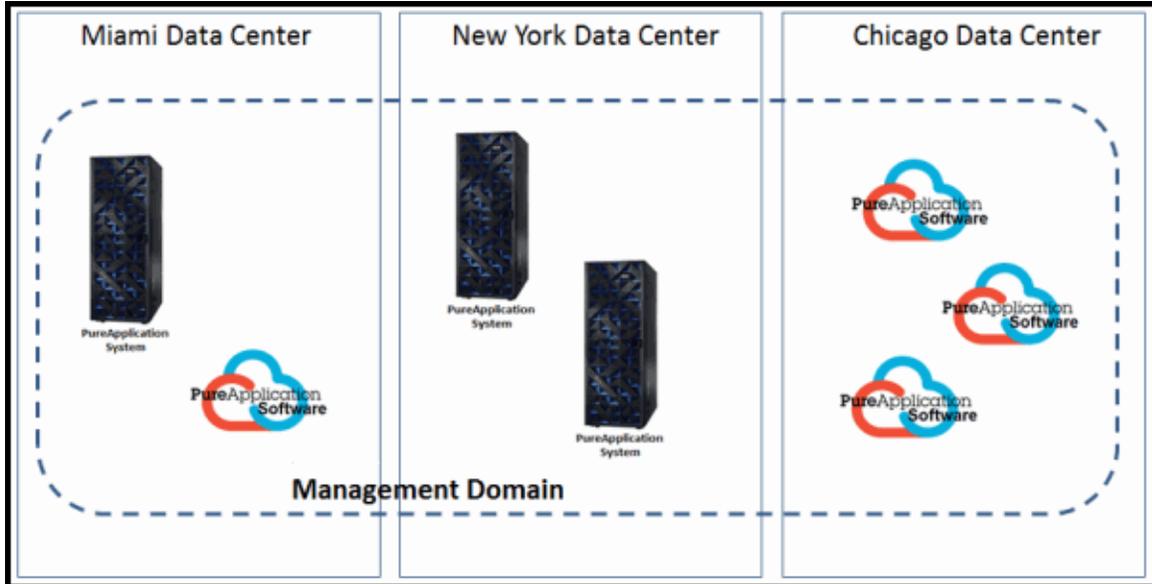


Figure 6. Single management domain

Supported platforms

Tables 1, 2, 3, and 4 show the supported platforms for PureApplication System and PureApplication Software.

Table 1. Intel - x86 Mini systems

Model	Compute	Memory per core	Storage
W2500-32m	32 cores	16 GB	2.4 TB SSD 24 TB HDD
W2500-64m	64 cores	16 GB	2.4 TB SSD 24 TB HDD
W2500-96m	96 cores	16 GB	2.4 TB SSD 24 TB HDD
W2500-128m	128 cores	16 GB	2.4 TB SSD 24 TB HDD

Table 2. Intel - x86 Enterprise systems

Model	Compute	Memory per core	Storage
W2500-32	32 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-64	64 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-96	96 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-128	128 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-160	160 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-192	192 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-224	224 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-320	320 cores	32 GB	6.4 TB SSD 48 TB HDD
W2500-384	384 cores	32 GB	6.4 TB SSD 48 TB HDD

Table 3. IBM POWER® Mini systems

Model	Compute	Memory per core	Storage
W2700-32m	32 cores	16 GB	2.4 TB SSD 24 TB HDD
W2700-64m	64 cores	16 GB	2.4 TB SSD 24 TB HDD
W2700-96m	96 cores	16 GB	2.4 TB SSD 24 TB HDD
W2700-128m	128 cores	16 GB	2.4 TB SSD 24 TB HDD

Table 4. IBM POWER Enterprise systems

Model	Compute	Memory per core	Storage
W2700-32	32 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-64	64 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-96	96 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-128	128 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-160	160 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-192	192 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-224	224 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-320	320 cores	32 GB	6.4 TB SSD 48 TB HDD
W2700-384	384 cores	32 GB	6.4 TB SSD 48 TB HDD

For detailed PureApplication System requirements, see the IBM Knowledge Center article found at the following website:

http://www-01.ibm.com/support/knowledgecenter/SSCR9A_2.1.0/doc/iwd/gsr_prerequs.dita

PureApplication Software

With PureApplication Software, you can use your own hardware and VMware platform. PureApplication Software can be installed in a virtualized or non-virtualized (bare metal) environments. Table 5 provides a generalized list of requirements:

Table 5. Overview of PureApplication Software requirements

Requirement	Notes
CPU	Minimum of 8 cores.
Memory	Minimum of 80 GB.
Partitions	3 disks.
Red Hat YUM	Configured YUM repositories for Red Hat Enterprise Linux Version 6.6 and extra packages for Enterprise Linux.
RPM packages	Several packages are automatically installed from YUM repositories.
Inbound ports	Several are required for inbound traffic.
Ports for internal communication	Several are required for communication between components.
Compute nodes	No more than 32.

The key ingredient to using PureApplication Software is the virtualization environment. It must be configured before installing PureApplication Software. Table 6 and Table 7 outline those requirements.

Table 6 Installation requirements for PureApplication Software Version 2.1.0.1

PureSystem Manager Red Hat Enterprise Linux version	vCenter version	ESXi version
x86 64-bit Red Hat Enterprise Linux Version 6.6 with the latest updates	vCenter server V5.1U2a or vCenter server V5.5 U2	ESXi V5.1 U2 or ESXi V5.5 U2

Table 7 Installation requirements for PureApplication Software Version 2.1.0.0

PureSystem Manager Red Hat Enterprise Linux version	vCenter version	ESXi version
x86 64-bit Red Hat Enterprise Linux Version 6.6 with the latest updates	vCenter server V5.1U2a	ESXi V5.1 U2

For detailed PureApplication Software requirements, see the IBM Knowledge Center article found at the following website:

https://www-01.ibm.com/support/knowledgecenter/SSL5ES_2.1.0/doc/getstart/sysreqs.dita

Ordering information

These products are available only through IBM Passport Advantage®. For more information, contact your PureApplication sales representative or organizational Passport Advantage representative.

Ordering information is shown in Table 8.

Table 8. PureApplication System part numbers

Program name	PID number	Charge unit description
PureApplication System W2500	5725-Q93	Per appliance installation
PureApplication System W2700	5725-Q94	Per appliance installation

Ordering information for PureApplication Software is shown in Table 9.

Table 9 PureApplication Software

Program name	PID number	Charge unit description
PureApplication Software	5725-Q52	Per 12-month software subscription

Related information

For more information, see the following documents:

- IBM PureApplication System and IBM PureApplication Software product page
http://www.ibm.com/ibm/puresystems/us/en/pf_pureapplication.html
- IBM Offering Information page (announcement letters and sales manuals)
http://www.ibm.com/common/ssi/index.wss?request_locale=en
- IBM PureSystems® Centre:
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