

# A Closer Look at the PureApplication System

October 2012 | by [Jaqui Lynch](#)

On April 11, 2012, IBM announced the PureSystems platform. The first two members of this new family are IBM PureFlex System and IBM PureApplication System. The PureFlex System is a combination of server, storage and networking hardware with a management infrastructure that provides single pane of glass management for all the compute nodes in the system. You can read more about it in my article, "[A Closer Look at the PureFlex System.](#)"

PureFlex can be seen as an infrastructure system while PureApplication is a platform system. PureApplication System goes beyond just the integration by design for the platform, adding on expert application patterns that ensure scalability and best-of-breed implementations.

Multiple industry surveys show that more than 70 percent of IT budgets are spent on operations and maintenance, leaving very little money and personnel time to implement new technologies and applications. Additionally, [according to IBM](#), more than two-thirds of companies go over schedule on their project deployments. IBM PureApplication System is a member of the family of new expert integrated systems from IBM and is designed to help alleviate these problems by combining an integrated system with a simplified experience and built-in expertise.

## The Technology

PureApplication System uses a purpose-built management system with a unified console. When you log into the PureApplication System, you choose between the workload and system console tabs, depending on the actions you want to take. From the console, you can deploy application environments, monitor virtual servers and environments, apply maintenance, gather data for chargeback, manage licensing and entitlements, monitor hardware utilization and resource consumption.

PureApplication System comes pre-built in four configurations and smaller configurations can be upgraded to the next level as the organization needs increase. These configurations are:

|             | W1500-96 | W1500-192 | W1500-384 | W1500-608 |
|-------------|----------|-----------|-----------|-----------|
| Cores       | 96       | 192       | 384       | 608       |
| Memory      | 1.5TB    | 3.1TB     | 6.1TB     | 9.7TB     |
| SSD Storage | 6.4TB    | 6.4TB     | 6.4TB     | 6.4TB     |
| HDD Storage | 48TB     | 48TB      | 48TB      | 48TB      |

The system is shipped fully assembled and cabled within the rack and upgrades can be completed without powering down the installed machine. The storage consists of 54.4TB (unformatted) that's split between SSDs and hard drives. The system monitors disk usage and optimizes placement of data across the disks so that hot data is stored on the faster SSDs. This helps prevent hot spots and improves I/O performance and is done automatically.

The system is designed for redundancy with a redundant management system, redundant power supplies and storage in multiple RAID arrays. Compute nodes run stateless so it's easy to failover work to another

compute node should there be a hardware failure on a compute node. The base hardware consists of the rack, a Storwize V7000 disk subsystem with two controllers, two expansions and a total of 16 x 400 GB SSDs and 80 x 600 GB HDDs to provide the listed disk space. The compute nodes go into a Flex chassis that holds 14 x half-width compute nodes, 2 x 10Gb Ethernet switches and 2 x 16Gb fiber channel switches. The nodes themselves consist of 2.6 Ghz eight-core Intel processors (16 cores per node) with 256 KB of L2 per core and 4 MB eDRAM L3 per core. Additionally, each compute node has 2 x 4-port 10 GbE and 2 x 2 port 8 Gb/s fibre channel interfaces. A full 608-core system consists of three chassis with 38 compute nodes, redundant PureApplication System Management nodes and redundant VM management nodes—and only consumes approximately 30 KW of power.

## PureApplication Patterns

The PureApplication System goes beyond what PureFlex offers, adding on middleware and expertise in the form of patterns. The integration-by-design ensures that the systems arrive pre-built for cloud, virtualized and tuned for performance. The patterns assist in helping to rapidly deploy workloads such as Java, Web and database applications.

So what are patterns really? Basically a pattern is the pre-defined architecture of an application that encapsulates proven best practices and expertise into a repeatable and easy to deploy format. They include all of the components of the application including:

- Pre-installation of the operating system
- Pre-integration across components
- Configuration
- Tuning and Monitoring
- Security
- Lifecycle Management

Effectively patterns cover everything from mapping out the hardware resources to managing and optimizing the middleware and software, and they come pre-integrated and tested when the system is delivered. The intent of these patterns is to improve agility, efficiency, simplicity and control. Three main different pattern types are available today—virtual appliances, virtual system patterns and virtual application patterns. Virtual appliances assist with the basic operating-system installation and configuration, virtual system patterns are for automated deployment of middleware, and virtual application patterns are the highly automated deployments of expert patterns to assist with elastic cloud deployments.

Patterns can be found at the [PureSystems Centre](#) and as of Sept. 2012, more 125 patterns are available from several vendors. From the PureSystem Centre home page, you can access the developer community as well as download optimized and deployable applications patterns, download fixes and patches, and search for solutions.

When you purchase a PureApplication System you are automatically entitled to run the following products on that system:

- IBM WebSphere Application Server Hypervisor Edition, V7.0 and V8.0
- IBM DB2 Enterprise Server Edition, V9.7 FP5 and V10.1
- IBM Web Application Pattern, V1.0 and V2.0
- IBM Transactional Database Pattern V1.1
- IBM Data Mart Pattern V1.1
- IBM Application Pattern for Java V1.0
- IBM OS Image for Red Hat Linux Systems V2.0

Additionally, separately entitled patterns are available through the PureApplication Centre. These include

additional WebSphere and ISV patterns.

## **Flexible and Robust**

PureApplication System has been generally available since July 2012. It's now proving itself to be a flexible, robust technology for rapidly, reliably and securely deploying standardized application environments. If integration, built-in expertise and a simplified experience are important to you, then I highly recommend you look into PureApplication System. It's built for cloud with optimized application workloads and accelerated implementation times that should reduce the backlog of new applications in your data center.

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<http://www.ibm.com/pureflex/>

IBM PureApplication Home Page

[http://www.ibm.com/ibm/puresystems/us/en/pf\\_pureapplication.html](http://www.ibm.com/ibm/puresystems/us/en/pf_pureapplication.html)

IBM PureApplication Brochure

<http://public.dhe.ibm.com/common/ssi/ecm/en/wab12346usen/WAB12346USEN.PDF>

IBM Flex System Products & Technology, SG24-7984

<http://www.redbooks.ibm.com/abstracts/sg247984.html?Open>

IBM PureApplication Information Centre

<http://pic.dhe.ibm.com/infocenter/psappsys/v1r0m0/index.jsp>

IBM PureSystems Centre

<http://www-01.ibm.com/software/brandcatalog/puresystems/centre/>

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