Clouds on the Horizon: 

**PureApplication**

*System, Service, Software*

*Nik Teshima*  
*PureApplication Product Manager*
What is your main reason for using cloud?

A change of vocabulary:

- **Months** → **Minutes**

A change of mindset:

- “Heroics don’t scale”

A change of approach:

- **Remove bottlenecks: Automate everything!**
Building Custom Cloud Is Not Simple

Client Starting Point

- High Opex spend on application and system lifecycle management
- Reduced flexibility with multi-vendor closed solutions

Virtualized workloads

Application Deployment & Management
- Application high availability
- Complex disaster recovery setup
- Custom application monitoring solution
- Disparate systems for overall troubleshooting

Cloud Orchestration
- Virtual system deployment
- Automation & self-service
- Usage metering
- License management
- Security & Governance
- Maintenance across multi-vendor solution

Infrastructure
- Separately purchased components
- Client integrated and configured server, storage, and network
- Client installed virtualization software
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Virtualized workloads
IBM & Partner Patterns

Client Starting Point

- Built in expertise
- Platform management, monitoring, and virtualization
A True Composable Business Requires Multiple Services
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Infrastructure Services

Defined Patterns Services

Composable Services

Business Services

SaaS

Enterprise Applications

Pure Application

Born on the cloud

BlueMix
Focus on Your Application - let PureApplication Handle the Rest

Private

Public

Deploying AND managing software quickly and easily
PureApplication System: Simplified Cloud Application Lifecycle

**Agile**
- Expertly architected applications deployed in minutes
- Rapid setup and tear-down of development, test & production environments
- Supports Java, C, COBOL, PHP, Node.js and other applications

**High Performance**
- Up to 6.5x better performance for web and database workloads
- Policy driven auto-scaling and auto-balancing of application resources
- Architected for high availability

**Simple**
- Integrated management and maintenance from silicon to application
- Patterns simplify application lifecycle
- Disaster recovery and security; setup and applied in a few clicks
Architected for Resiliency From Metal to Middleware

► **Management Nodes**
  - Both run in active-passive mode, when a failure occurs the IP address is assigned to the new active one

► **Network Controllers**
  - Switches and cabling are redundant (2 of each).
  - Failure of 1 leads to reduced bandwidth, not service

► **Storage Controllers**
  - All storage volumes are accessible from each controller
  - If one fails, the other handles all I/O

► **Storage**
  - SSD storage is configured in RAID 5 array + spares
  - HDD storage is configured in RAID 5 array + spares

► **Compute Nodes**
  - Management system will route around failed DIMMs or cores yielding reduced capacity (server rebalance)
  - If entire node fails, VMs can be moved elsewhere (workload evacuation)
# PureApplication System Family

<table>
<thead>
<tr>
<th>Mini (42U)</th>
<th>x86 Power</th>
<th>Upgrade configurations without taking an outage</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 Cores 0.5 TB RAM</td>
<td>**128 Cores 2.0 TB RAM</td>
<td>2.4 TB SSD 24 TB HDD</td>
</tr>
<tr>
<td>2.4 TB SSD</td>
<td>**24 TB HDD</td>
<td>**32 core increments available</td>
</tr>
<tr>
<td>Enterprise (42U)</td>
<td>x86 Power</td>
<td>Upgrade configurations without taking an outage</td>
</tr>
<tr>
<td>32 Cores 1.0 TB RAM</td>
<td>**224 Cores 7.0 TB RAM</td>
<td>6.4 TB SSD 48 TB HDD</td>
</tr>
<tr>
<td>224 Cores 7.0 TB RAM</td>
<td>**320 Cores 10 TB RAM</td>
<td>**32 core increments available</td>
</tr>
<tr>
<td>320 Cores 10 TB RAM</td>
<td>**384 Cores 12 TB RAM</td>
<td>**32 core increments available</td>
</tr>
</tbody>
</table>

All configurations include:
- Rack, Chassis, PDUs
- Networking (Top of Rack, Chassis & Fibre)
- **Pre-integrated software entitled for full capacity of configuration:** OS, Hypervisor, application server, database, Java runtime, cloud provisioning, management and full stack monitoring

**32 core increments available**
Cloud Application Platform – Built In

Quickly deploy cloud-ready solutions onto PureApplication System
- BPM
- Mobile
- Portal
- Business Intelligence
- Commerce
- and more…

Pattern-based deployment
Common cloud platform
Dynamic resource scalability
Automation IT resource provisioning

User-based self-service
Catalog of services
Multi-tenancy
Usage-based reporting
License Management
Automated IaaS
Service level management

Deploy
Deploy
Deploy

Deploy
Deploy
Deploy
Driving built-in expertise with IBM’s patterns of expertise

What the business wants…

What’s required…

What a pattern automates…

Patterns include:
- Application topology
- Pre-integrated across components
- Pre-configured & tuned
- Pre-configured monitoring & security
- Pre-installed on an operating system
- Lifecycle Management

- Expertise
- Repeatability
- Simplicity
- Agility
- Governance
- Elasticity
- Efficiency
Patterns Make Deploying Scalable Web Application - Simple

Drag ... Drop ... Deploy
Setup Dynamic Auto-Scaling for Applications – in just few seconds

OR… choose to write 100s of lines of proprietary code + incur CapEx for unused capacity reserved for peak loads
Weeks of manual effort & documentation and ongoing maintenance

- Less than 90 minutes to deploy IBM recommended highly available golden topology in a repeatable fashion
- Ability to customize and extend the pattern
- Easier management and maintenance with ability to monitor and apply maintenance at the pattern level vs. individual server instances
IBM Software Pattern Inventory for PureApplication System W2500 (Intel)

- IBM API Management 2.0
- **IBM Application Pattern for Java 1.0** *
- IBM Business Intelligence 1.0, 2.0
- IBM Business Process Manager 8.0.1, 8.5
- IBM Connections 4.0
- IBM Content Foundation Pattern 5.2
- **IBM Data Mart Pattern 1.1.0.8 (with DB2 BLU Acceleration)** *
- **IBM DB2 (9.7 FP5, 10.1, 10.5 with BLU Acceleration)** *
- IBM Domino 9.0
- IBM Encryption Pattern for Guardium Encryption Expert
- IBM Encryption Pattern for SecurityFirst SPxBitFiler
- IBM Informix 11.7, 12.10
- IBM InfoSphere Information Server 9.1
- IBM Integration Bus 9.0 (evolution of Message Broker)
- IBM Maximo Asset Management 7.5
- IBM Messaging Extension for Web App Pattern 2.0
- IBM Mobile Application Platform 5.0.6, 6.0
- IBM Operational Decision Manager 8.0.1, 8.5
- IBM SOA Policy 2.0

- IBM SOA Policy Gateway 2.0, 2.5
- IBM Software Delivery and LifeCycle Patterns
  - Collaborative Lifecycle Mgmt 4.0.2
  - Rational Application Developer 8.5
  - Test Virtualization Server and Workbench
- **IBM Transactional Database Pattern 1.1** *
- **IBM Web Application Pattern (1.0, 2.0)** *
- IBM Web Content Manager 8.0
- **IBM WebSphere App Server HV (7.0, 8.0, 8.5, 8.5.5)** *
- IBM WebSphere Message Broker 8.0
- IBM WebSphere Cast Iron 6.4, 7.0
- IBM WebSphere Commerce Pattern 1.0 (for WC Enterprise 7.0)
- IBM WebSpere Datapower XG45 V5.0, V6.0
- IBM WebSphere Datapower XI52 V5.0, V6.0
- IBM WebSphere MQ 7.5
- IBM WebSphere Portal Server 8.0
- IBM WebSphere Transformation Extender Launcher 8.4, 8.4.1
- Microsoft Dynamics v2008
- Microsoft Exchange for Intel
- Microsoft Sharepoint V2010
- Microsoft SQL Server V2012
- Oracle DB Enterprise Edition v11g, R2

* Pre-entitled with PureApplication System
More than 130 leading ISVs have optimized more than 200 applications as IBM PureApplication “Patterns of Expertise” to automate deployment, simplify management, and accelerate time to value.
Three ways to get the value of patterns of expertise on PureApplication System

Capture your own expertise:
- Capture existing expertise for operating system and middleware installation through integrated tooling
- Integrated tooling to create your custom patterns (also available to download or use on IBM SmartCloud at no charge)
- Dynamically combine pre-defined components to build new image packages
- Create a standard VM format in Open Virtual Format

Use third-party application patterns of expertise

Use IBM patterns of expertise throughout the system
Brazilian Bank selects PureApplication System over Oracle & EMC/Cisco for ATM application

**Business Challenge**
Replace existing ATM application infrastructure to improve availability, reign in software licensing fees and reduce manual IT provisioning efforts

**Solution:** Selected PureApplication System for Java app that supports 37,000 ATMs

**Win Details:**
- Outperforms the competition: PureApplication technology proven in two weeks (Oracle took 8 weeks and EMC and Cisco failed to finish)
- Demonstrated DB2 replacement of OracleDB in PoC

**Expected Benefits:**
- Reduced setup time by 70 percent
- Improved upgrade times by 30 percent
- Lowered energy costs by 50 percent
- Simplified management and maintenance
- Dynamic scale to meet fluctuating demand
- Uses Patterns of Expertise to speed development, deployment and management
IBM GTS Assessment of PureApplication

PureAS addresses these environments:
- Stack Management & Monitoring
- Application Deployment & Lifecycle
- Application Design & Development
- Middleware Runtime & Lifecycle
- Operating System
- Hypervisor
- Hardware (compute, storage, networking, etc)

Customer, GBS (AMS) or 3rd Party scope – significant savings from this scope

GTS SO Scope

15%-22% lower Technology costs
35%-50% lower Labor costs
38%-47% lower Energy & Cooling costs

Contact IBM for a complimentary assessment of business value and impact on your environment

Database, server, storage, network, infrastructure, middleware

Does not include Application Management Savings
Requires utilization of IBM pattern developers and SO
Delivery Standardized patterns and support

IBM Global Technology Services (GTS) is amongst the largest IT strategic outsourcing providers. GTS uses non-IBM and IBM technology. This GTS assessment compares a Build As Usual (BAU) environment for 500 Server environment.
What is PureApplication Service on SoftLayer?

Run **applications you have**
with the **cloud economics you want**
and the **isolation you need**

**Separate**
Built with **dedicated** SoftLayer hardware to isolate compute, network & storage to keep applications safer off-prem

**Seamless**
**Portability** of traditional enterprise applications across on-prem and off-prem clouds **without re-architecting** system topology, storage, network designs, etc. via Patterns

**Simple**
Easier way to run, scale and manage traditional enterprise applications and the underlying infrastructure

**Speedy**
Faster way to adopt off-prem cloud for traditional enterprise applications via Patterns

**Same**
Identical interface & experience for developers & operations on-prem & off-prem
Using Hybrid Cloud Options Together Strategically

- Extend enterprise apps with mobile
- Test and learn – rapid experimentation
- Optimization: Dev/Test, Offloading, Etc.
- Market Expansion and Globalization

On-Prem

Off-Prem
Finding the information you need

I want to…

Find patterns & updates
Read articles & information
Collaborate & share

I start here:

PureSystems Centre
Extending the Value of IBM PureSystems

Which helps me get here:

- **Passport Advantage** to buy & download patterns
- **Fix Central** to download updates to patterns & systems
- **Information Center**
- **Support Portal**
- **developerWorks**
- **Blogs**
- **YouTube**
- **User Community** to connect with PureApplication clients, Business Partners & IBM experts
- **Forums** to get answers and share ideas

www.ibm.com/PureSystems/Centre
Questions?
IBM Software Pattern Inventory for PureApplication System W2700 (Power)
(as of 2/7/2014)

- IBM Application Pattern for Java 1.0
- IBM Business Intelligence 1.0, 2.0
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- IBM Messaging Extension for Web App Pattern 2.0
- IBM Mixed Language Application Modernization Pattern 1.0 * (Runtime pre-entitled, Extensions separate purchase)
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