Pure Patterns for MQ & IIB components

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Solution Architect

Prolifics

Agenda

Traditional Infrastructure & Applications deployments

- What is slowing you down .. Operational Management.
- Project delays further inhibit.
- Enterprise Deployment is complex.

Advantages of Pure Applications.

- How Does the Pure Application System.
- What can I run on Pure Applications.
- Build your expertise at each level.
- Pure Application + Patterns as a catalyst in cost savings.
- Pattern middleware Cost Reductions.
- Pure Pattern Types

Pure Pattern development and Implementation

- IBM ICCT
- Plug-in Development Kit
- Pure Application : Virtual Pattern Builder
- MQ v8.0.0.3/8.0.0.2 & IIB 10.0.0.1 Patterns
- Virtual System Pattern Management.

Video Demo

- Prolifics MQ & IIB Pattern Deployment Demo
- Summary

What is slowing you down... Operational Management



Lifecycle Spend includes:

- Design Activities
- Resource/Capacity Planning
- Build
- Deployment
- Testing and Verification
- Operational Management
- System Maintenance
- These Activities *RECUR IN EVERY PHASE*.

Operational Management is complex, time consuming and EXPENSIVE!

Project delays further inhibit...

Typical IT Project Time and Budget

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Phase	Time (days)	Budget
Specify/design	73 - 96	14% - 16%
Procure	57 - 112	19% - 21%
Implement	74 – 93	12%
Configure/test	74 – 80	10% - 11%
Cluster & HA	66 – 104	11% - 12%
Backup	44 – 108	10%
Tune	89 – 98	9% - 10%
Management	67 – 110	9 – 10%

34% of new IT projects (US) deploy late

Top Causes of Project Delays

Hardware	
Troubleshooting and tuning production environment	45%
Integration, configuration and testing of the infrastructure	45%
Installation, cabling and network access for the environment	29%
Software	
Integration, configuration and testing of applications	41%
Integration, configuration and testing of middleware	35%
Configuration, build and deployment of applications	34%

Enterprise Deployment is Complex For Example. If deploying a MQ & IIB – here are

Actions

Infrastructure

- Request, Procure, Provision Hardware
- Install OS on destined hardware
- Prepare OS with latest security patches
- Platform
 - Install middleware (MQ & IIB)
 - Configure and tune MQ & IIB server.
 - Install Middleware patches (MQ & IIB) .
 - Create and Configure Clusters.
 - Create Custom Configurations.(WSRR , DP , SSL , Global Cache)
- Capacity
 - Plan, configure for additional capacity for scaling needs
- Developers, multiple environments, Build and Release, and more...



Complexity – a lot of it !!!

How long in your for organization?

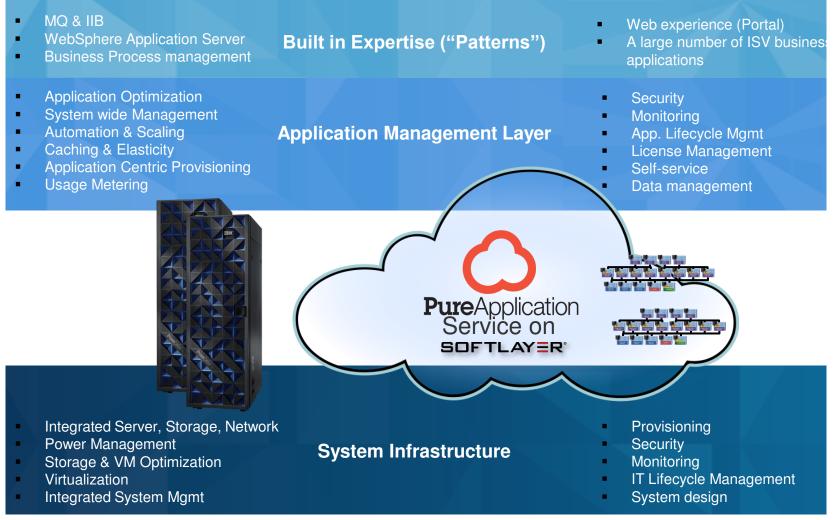
How do you maintain it?

How do you grow it?

Results

- Months before the application is deployed
- On-going proprietary maintenance of **complex** hardware, software and application lifecycle

How does the Pure Application System help?



Pure Application Systems is the operational shift from reactive to Proactive.

Capitalware's MQ Technical Conference v2.0.1.5

What Can I Run on Pure Applications?

Pre-Entitled and Pre-Optimized Middleware Patterns (Entitlement Included to run on Full System)

<u>Pre-Optimized</u> IBM Middleware and ISV Patterns (Available for Additional Purchase)

Custom-built Patterns, Customized IBM Patterns (Pattern-creation tools included)

Anything else that will run on a supported OS



Optimized for PureApplication System

Pre-Entitled

ntegrated Value Breadth of Coverage

Build In Your Expertise at Each Layer

Workload-Aware Management

(e.g. Pure Application System)

- Configure middleware
- Connect middleware components in multi-server topology
- Configure high availability
- Policy-based elasticity
- Ongoing lifecycle management
- Middleware-level monitoring
-all without scripting!

General Purpose Management

(e.g. PureFlex System)

- Provision storage, VMs, VLANs, etc.
- Runbook automation (scripts)
- Infrastructure level monitoring

Most clients will need a mix of both

- Deep value out of the box with no scripting through patterns
- Environment is "modeled" by pattern creators, not "scripted" by users
- Patterns available in PureSystems Centre for select IBM, ISV, and 3rd party products

- Represents "commodity deployment" capability
- Requires user to implement scripts, own part of the process
- Broad coverage: handles the "everything else"



Pure Application + Patterns as a catalyst for drastic cost savings.

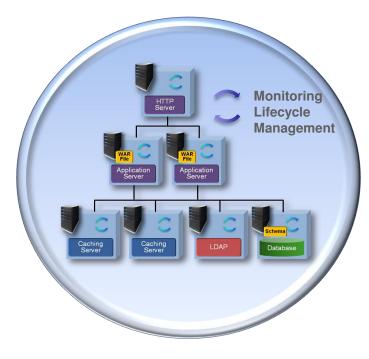
Look beyond PaaS and Patterns alone.

- We foresee almost every customer wanting patterns that automate multiple products for load balancing, monitoring, access control, and integration. So custom patterns will be a must-have.
- This provides a way to deliver continuous build, continuous deploy, continuous test, in a efficient and effective way.
- Application stability can be further enhanced though the use for phoenix servers, test servers that are torn down and recreated clean with each new deploy.
- Enabling a move to a DevOps model where Development and Operations have a closer working relationship and we remove the over the wall mentality.

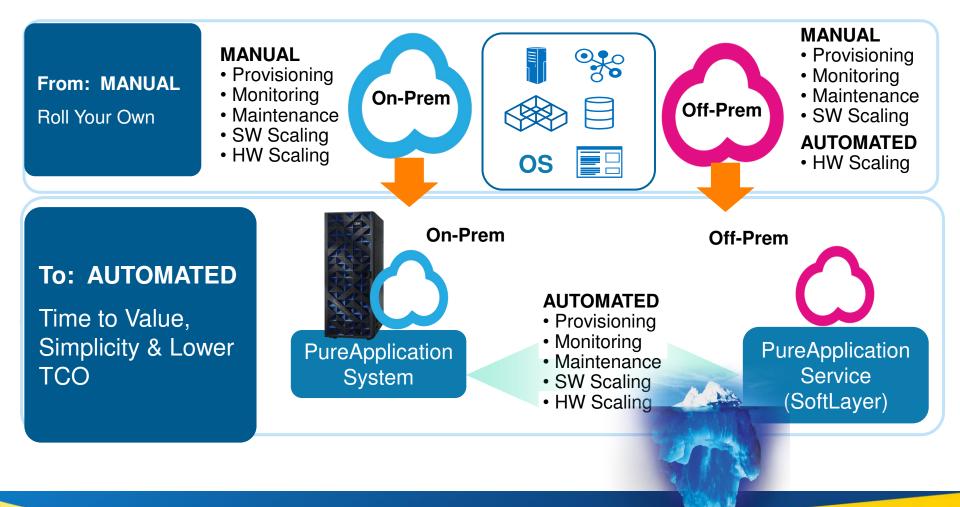
Patterns Middleware cost reduction

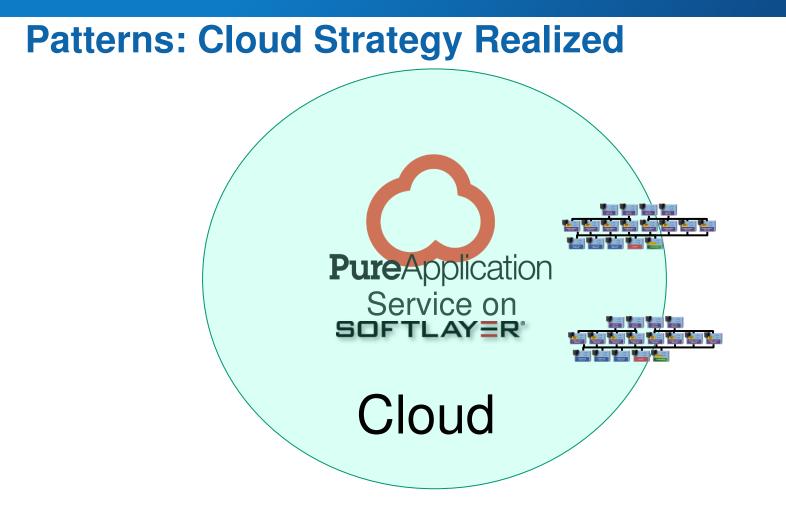
Patterns of Expertise: Proven best practices and expertise for complex tasks learned from decades of client and partner engagements that are captured, lab tested and optimized *into a deployable form*.

- Pre-defined application architecture for each part of the application (MQ,IIB, Database, web server, etc)
 - Pre-installation on an operating system
 - Pre-integration across components
 - Pre-configured & tuned
 - Pre-configured Monitoring
 - Pre-configured Security
 - Lifecycle Management
- In a deployable form, resulting in repeatable deployment with full lifecycle management
- Delivers superior results:
 - •Speed: Faster time to setup, configure
 - •Agility: Less time required to adapt to changes
 - •Efficiency: Reduced costs and resources
 - •Simplicity: Simpler skills requirements
 - •Elasticity: Scale up or down as needed
 - •Repeatability/Control: Lower risk and errors



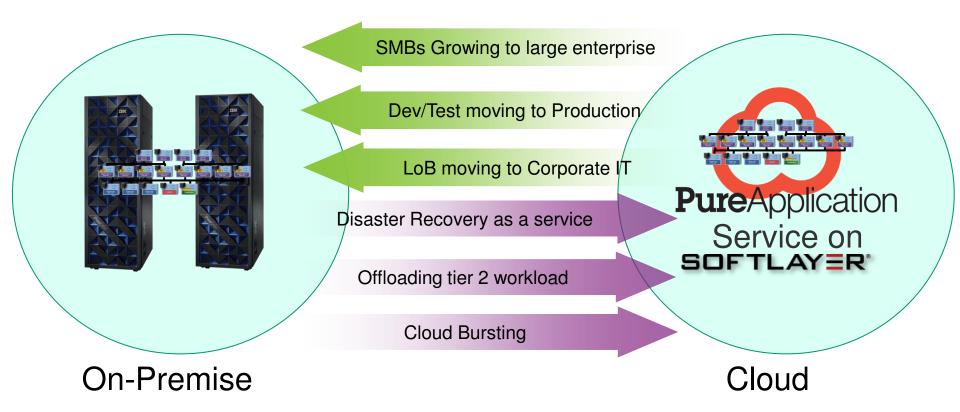
Focus on your application, while Pure Application automates application lifecycle





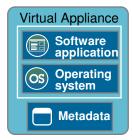
PureApplication Service on SoftLayer is an environment allowing users to deploy and manage patterns with rental economics of public cloud and isolation of private cloud. Potential use for Development, and other Use Cases

Patterns/Application Cloud Strategy Realized



Combine PureApplication Service on SoftLayer with Pure Applications systems to realize new deployment capabilities

Multiple Types of Patterns



Virtual Appliances

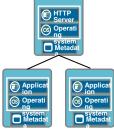
- Standard software installation and configuration on OS
- Images created through extend/capture
- Traditional administration and management model

Infrastructure driven elasticity

Virtual Appliances

Standard TCO

existing applications



Virtual System Patterns

- Automated deployment of middleware topologies
- Traditional administration and management model
- Application and infrastruture driven elasticity

Virtual System Patterns

Improved TCO

virtualized applications



Virtual Application Patterns

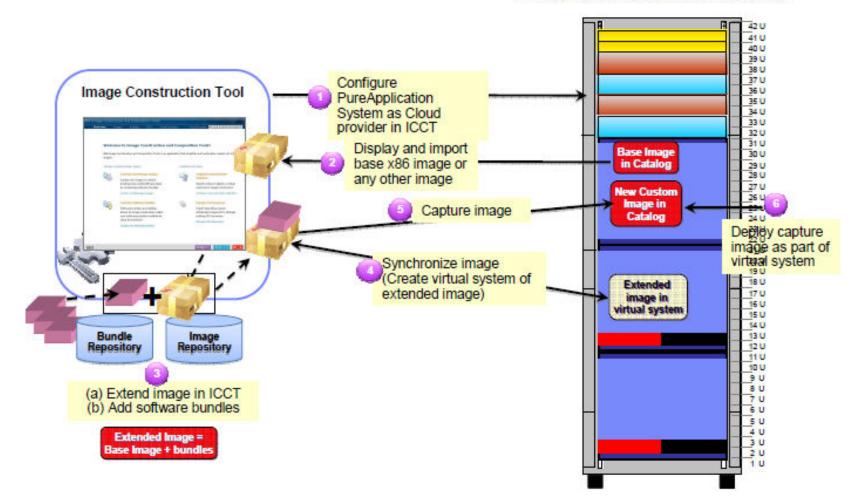
- Highly automated deployments
 using expert patterns
- · Business policy driven elasticity
- Built for the cloud environment
- Leverages elastic workload
 management services

Virtual Application Patterns

Best TCO *cloud* applications

IBM Image Construction & Composition Tool

PureApplication System as cloud provider



IBM Image Construction & Composition Tool

Traditional infrastructure setup

- Create a virtual machine
- Install and configure software on the virtual machine
- Requires knowledge of the software
- Test the virtual machine and software
- Develop scripts and edit the image metadata as needed.
- Requires skill in virtualization technology
- Save the disk image
- Test the image configuration

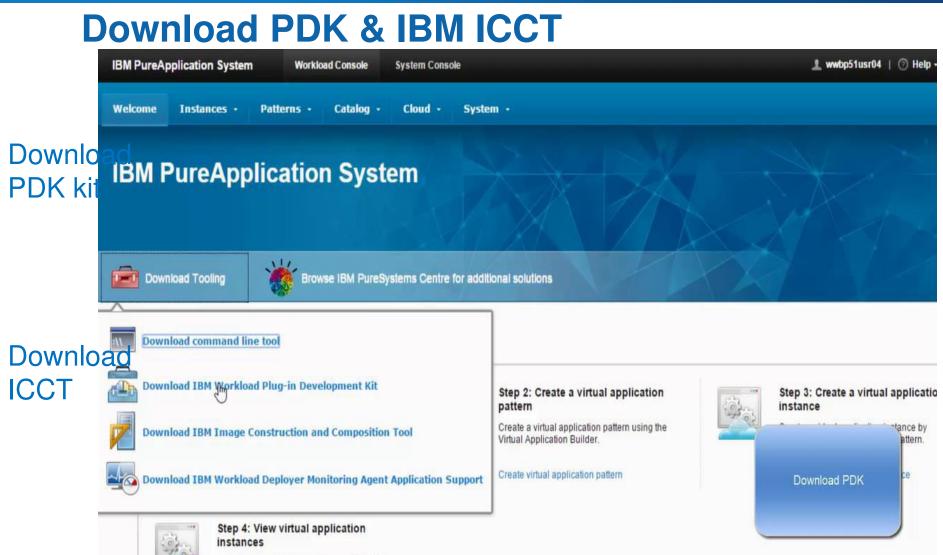
IBM Image Construction & Composition Tool

Features of ICCT

- ICCT tool, no special knowledge is needed:
- Choose a base image
- Add a predefined software bundle
- ICCT automatically saves the image, installs and configures the software bundle .
- -Test the image

Extend/capture is a very simple way to add additional content to an image .

- Extend / capture process automated and repeatable
- Add deploy-time parameters for your bundles



View the current status, metrics, and details of virtual application instances.

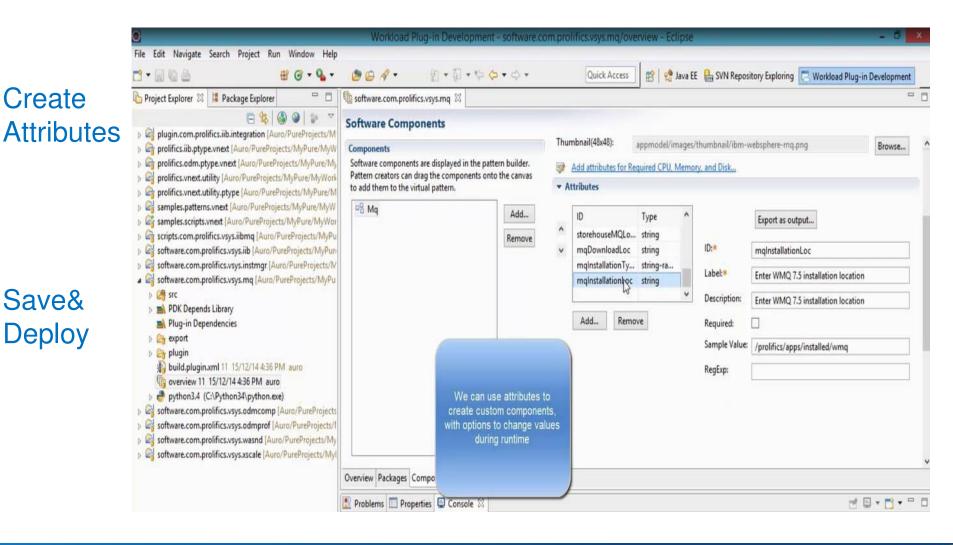
Pure App: Plug-in Development Kit

Download Project Explorer Package Explorer Open Perspective X PDK Image: Project Sib.integration [Auro/PureProjects/MyPure/MyW] Image: Project Sib.integration [Auro/PureProjects/MyW] Image: Project Sib.integration [Auro/PureProjects/MyW] Image: Project Sib.integration [Auro/PureProjects/MyW] Image: Project Sib.integration [Auro/PureProjects/MyW] Image: Project Sib.i	ė.		Workload Plug-in Developmen	it - Eclipse
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Plug-in Development kit – New project

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PDK – Pattern Next Custom Components



Pure App: Virtual Pattern Builder

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Pure App: MQ 8 & IIB 10 Virtual System Pattern

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🚍 myQM	Lock all attributes	S Node	Lock all attributes
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MQ v8	test qm	MQ v8 &	IB10NODE
Pure	* Dead Letter Queue	IIB 10	Queue Manager
	SYSTEM.DEAD.LETTER.QUEUE		IB10QMGR
Patterns		Pure	
		Patterns	

Pure App:VSP Builder MQ 8.0.03/8.0.0.2

	IBM Pattern Builder	AM ORDERING LIST VIEW SOURCE	
VSP	COMPONENTS	Pattern Name: MQ Demo Pattern Type: Virtual System Pattern Type 1.0	
Pattern Builder Drag, Drop, Deploy	f debug Allocate directories on the GPFS shared file server AP_NFSD setup images bicFixInstallWAS	The pattern is saved [X] Advanced Options	Pattern Name MQ Demo Version 1.0 Description
	Software Image: Commerce Software Software Image: Commerce Software Software Image: Commerce Software Software Image: Commerce Software Image: Components Image: Commerce Software Pattern Image: Commerce Software Components Image: Commerce Software Image: Commerce Software Image: Commerce Software <td>MC server 21.20 * Software and Scripts * CM1 6.00.2 * CM2 8.00.2 *</td> <td>Description Type Pattern Pattern Pattern Pattern Onlock plug-ins usage Unlock plug-ins Lock all plug-ins except Foundation plug-ins Lock all plug-ins Lock all plug-ins</td>	MC server 21.20 * Software and Scripts * CM1 6.00.2 * CM2 8.00.2 *	Description Type Pattern Pattern Pattern Pattern Onlock plug-ins usage Unlock plug-ins Lock all plug-ins except Foundation plug-ins Lock all plug-ins Lock all plug-ins
	Components CuramDBPostConfigSteps CuramPreConfig CuramWASConfig		Pattem-level Parameters Add new parameter

Pure App:Virtual Pattern Ops Management

Pattern runtime Management

Monitoring

Logging

Operations

Main Console

Instance Console Maintenance mode 🔵 💿		👔 MQ Demo o
Monitoring Logging Operations	Links Main Console	
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Go	/var/mqmlqmgrsiQM3/errors/AMQERR01LOG	
/ITM/logs /logs/MQ_server.11434633423950.AGENT /logs/MQ_server.11434633423950.MAINTENANCE /logs/MQ_server.11434633423950.MONITOFING	EXPLANATION: The listener process has started. ACTION: None.	
 /logs/MQ_server.11434633423950.MQ_server.Image /logs/MQ_server.11434633423950.QM1-Part console.log scripts.log 		
Imos.log logs/MQ_server.11434633423950.QM2-Part logs/MQ_server.11434633423950.RHUSClient logs/MQ_server.11434633423950.SECUREVMPOLICY logs/MQ_server.11434633423950.SEH logs/MQ_server.11434633423950.SEH	AMQ5808: Queued Publish/Subscribe Daemon started for queue manager QM1. EXPLANATION: Queued Publish/Subscribe Daemon started for queue manager QM1. ACTION: None.	
/MQ_server.114346334239501ogs 1ogs/install MQ	06/18/2015 01:23:02 PM - Process(18362:1) User(mgm) Program(runmqchi) Host(ipas-ipar-109-065) installation(installation1) VRMF(8:0:0:2) QMgr(QM1)	
/ingriteriors /QM1/emore	AMQ8024 WebSphere MQ channel initiator started	
AMQERR01.LOG	EXPLANATION:	
ALACERBANI CO	The channel initiator for nueue SYSTEM CHANNEL INITO has been started	

Video Demo

Let's Continue the Conversation....

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Backup Slides

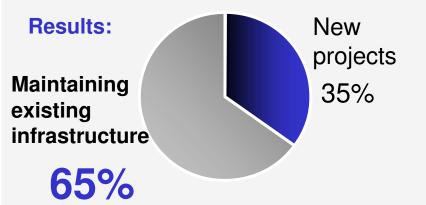
PureApplication System W1500		W1500-32	W1500-64	W1500-96	W1500-192	W1500-384	W1500-608			
	Processor		8 core, 2.6	GHz Intel Sandy B	ridge EP processoi	r, 115 W				
[Compute Node		Dual Processor, 16-core, 256GB memory							
[Memory/Compute Node		256GB (8 2	x16GB, 1333 MHz,	DDR3, LP RDIMM	S(1.35V))				
[Network cards/Compute Node		1 x EN4	1054 – 4 port 10Gb	Ethernet Mezz Ad	apter				
Compute	Fibre cards/Compute Node	1 x FC 3172 - 2 port 8Gb Fibre Channel Mezz Adapter								
[# Compute nodes	2	4	6	12	24	38			
[# Cores	32	64	96	192	384	608			
	Memory	512 GB	1 TB	1.5 TB	3.1 TB	6.1 TB	9.7 TB			
	Solid State Drive (SSD)	6 x 400GB 2.5 i	6 x 400GB 2.5 in. SSD (E-MLC) 16 x 400GB 2.5 in. SSD (E-MLC)							
	Hard Disk Drive (HDD)	40 x 600 GB 2	.5 in. 10k HDD	80 x 600 GB 2.5 in. 10k HDD						
Ctorogo	Storage Controller	1 x IBM Storwize \	/7000 Disk System	2 x IBM Storwize V7000 Disk System						
Storage	Storage Expansion	1 x IBM Storwise V	700 Storage Drawer	2 x IBM Storwise V700 Storage Drawer						
[Total Storage SSD	2.4 TB unformatte	ed / 1.6 TB usable	6.4 TB unformatted / 4.8 TB usable						
	Total Storage HDD	24.0 TB unformatte	d / 21.6 TB usable	48.0 TB unformatted / 43.2 TB usable						
Network	Top of Rack Switches (TOR)	BLADE Network Technologies TOR G8264 switches for Customer Data Center & Rack to Rack communications								
Network	Transceivers	Choice of: 10GbE Fibre, 1GbE Fibre, 1GbE Copper, Direct Attach Cabling (DAC / Twinax)								
	Network / Chassis	2 x EN4093 – BNT 10GbE								
Chassis	Fibre / Chassis	2 x FC5022– Brocade 48 16GbFC								
	Chassis	1 x Accipit	er Chassis	3 x Accipiter Chassis						
Power	Power Distribution Unit (PDU)		North America - International	4 x 60A 3ph - North America 4 x 32A 3ph - International						
Mmgt Node			2 x PureSystems Manager (PSM) 2 x Virtualization System Manager (VSM)							
Rack	Rack	1.3 M 19" En	terprise Rack	2.0 M 19" Enterprise Rack						
	Weight	365.6 Kg (815 lb)	385.6 Kg (850 lb)	936 Kg (2027 lb)	953 Kg (2095 lb)	1016 Kg (2232 lb)	1088 Kg (2391 lb)			
Specs	Power	Max: 5.5 kW Typical: 4.68 kW	Max: 6.5 kW Typical: 5.52 kW	Max: 7.9 kW Typical: 5.9kW Label: 14kW	Max: 10.4 kW Typical: 7.8 kW Label: 17.4 kW	Max: 15.4 kW Typical: 11.6 kW Label: 24.3 kW	Max: 21.2 kW Typ.: 15.9 kW Label: 31.1 kW			
	Dimensions	Height: 1240 mm (4	49 in) / Depth: 1000	Height:	2.015 m (79.3 in)	/ Depth: 1.098 m	(43.3 in) /			

Technology Evolution in IT Operations

Least efficient data centers

Use of new technology:

43% first and fast technology adoption
1% move virtual machines to meet desired outcomes
21% use storage virtualization
3% use a storage service catalog (tiered storage)



In LOperations Most efficient data centers Use of new technology: 86% first and fast technology adoption 58% move virtual machines to meet desired outcomes 93% use storage virtualization 87% use a storage service catalog (tiered storage)



- According to Gartner's analysis worldwide IT spending in 2013 was about \$3.7T
- IBM's 2012 Data Center Study showed that only 1 in 5 organizations allocate more than half their IT budget to new projects and innovation

~ \$2T in IT annual spend in Operations

Pre-Optimized and Pre-Entitled Middleware

- Clients have entitlement to run the following software on the full capacity of the System
 - Virtual System Patterns:
 - □ IBM OS Image for Red Hat Linux Systems v1 (RHEL 64-bit v6.2)
 - □ IBM WebSphere Application Server Hypervisor Edition v7 (WAS 7.0.0.21)
 - □ IBM WebSphere Application Server Hypervisor Edition v8 (WAS 8.0.0.2)
 - □ IBM WebSphere Application Server Hypervisor Edition v8.5 (WAS 8.5.0.0)
 - □ IBM WebSphere Application Server Hypervisor Edition v8.5 (WAS 8.5.5.0)
 - □ IBM Data Mart Pattern 1.1.0.8 (with DB2 BLU Acceleration)
 - □ IBM DB2 (9.7 FP5, 10.1, 10.5 with BLU Acceleration)
 - □ Automation Framework HV (for migrating applications)
 - Virtual Application Patterns:
 - □ IBM Application Pattern for Java 1.0
 - □ IBM Workload Deployer Pattern for Web Applications v1 (with WAS v7)
 - □ IBM Web Application Pattern 1.0, 2.0 (with WAS v8)
 - □ IBM Transactional Database for Cloud v1.1 (with DB2 9.7 FP5)
 - □ IBM Data Mart for Cloud v1.1 (with DB2 9.7 FP5)
 - Any other software that clients run on PureApplication System is traditionally licensed (i.e. PVUs) on a sub-capacity basis