

# Expert Integrated Systems: Best Practices, Problem Determination Tips & Techniques

Venkata Gadepalli (Vishy) - IBM

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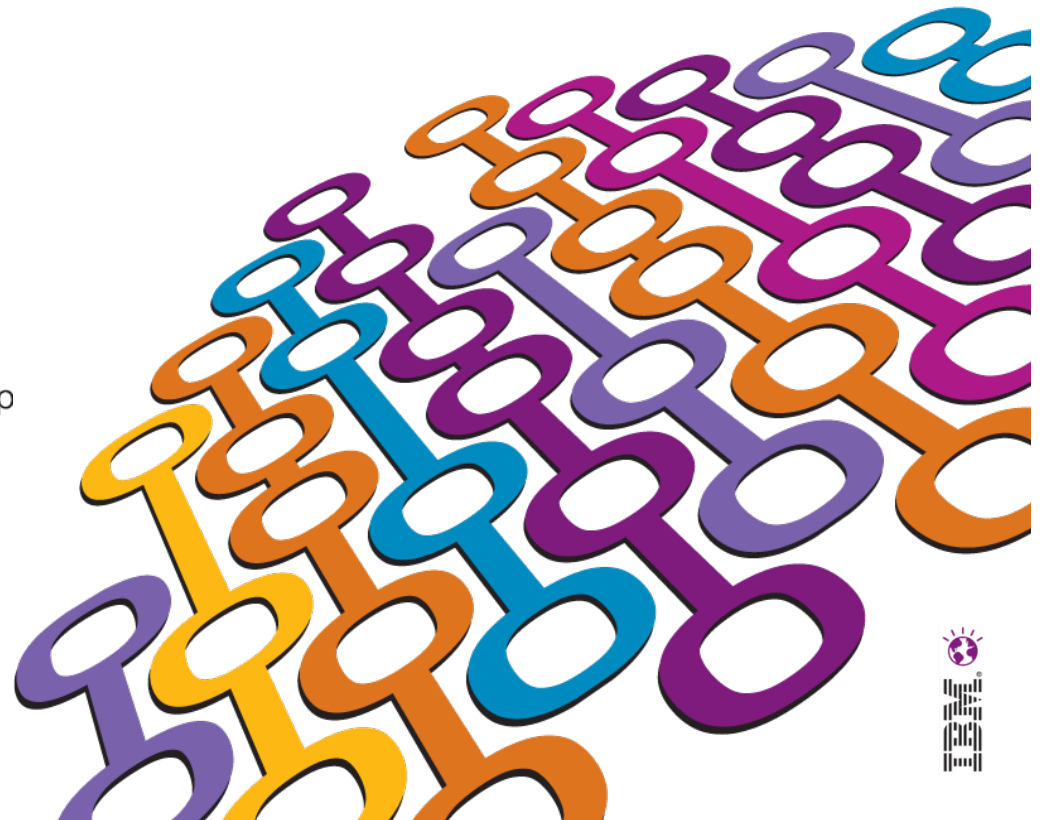
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# Agenda

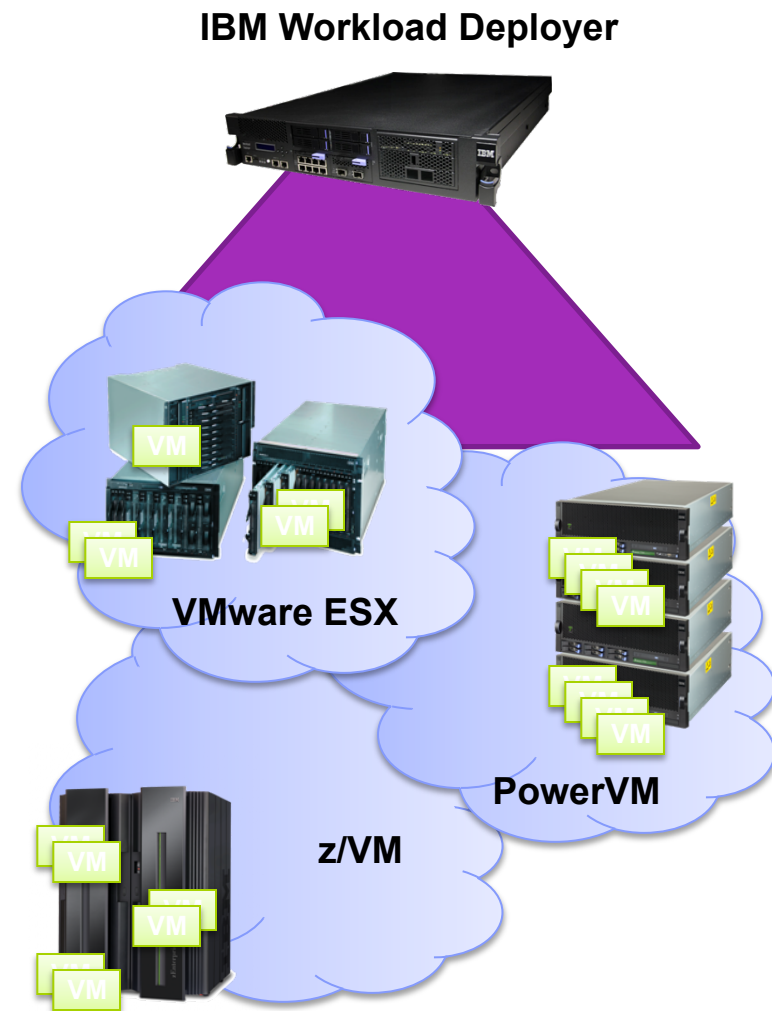
- Best practices through the lifecycle
  - Plan
  - Build
  - Run
  - Manage
- Troubleshooting
  - Appliance
  - Pattern Deployment
  - Virtual Application Patterns
  - Virtual System Patterns



# IBM Workload Deployer (IWD)

## Bring your own private cloud

- IBM Workload Deployer is a secure, self-service cloud management hardware appliance
- Design and deploy consistent and repeatable middleware patterns into your private cloud of virtualized hardware
  - IBM Workload Deployer supports VMware ESX, PowerVM, z/VM
- Bring your own cloud to leverage your existing underutilized hardware
- Full lifecycle management for IBM middleware, limited lifecycle management for third part products





# IBM PureApplication System

## *A Simple, Efficient, Flexible, Virtualized Application Platform*

### Complete, Ready-to-Go Systems

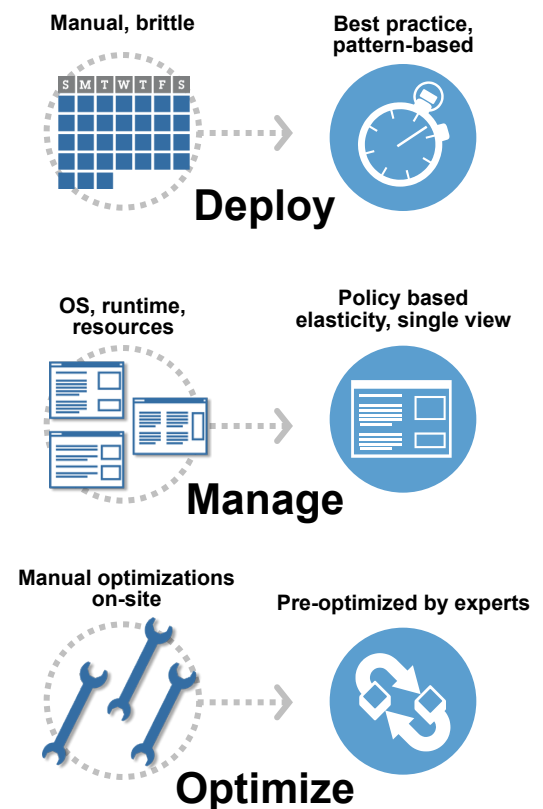
- Pre-integrated, up and running in <4 hours
- Pre-optimized for enterprise application workloads

### Simplify Ongoing Tasks

- Single point of platform and application management
- Repeatable self service application provisioning

### Built for Cloud

- “Platform as a Service”
- Elastic application runtimes





# Workload Deployer and PureApplication System Lifecycle

## Plan

Maximize utilization with advanced multi-workload capacity planning

## Build

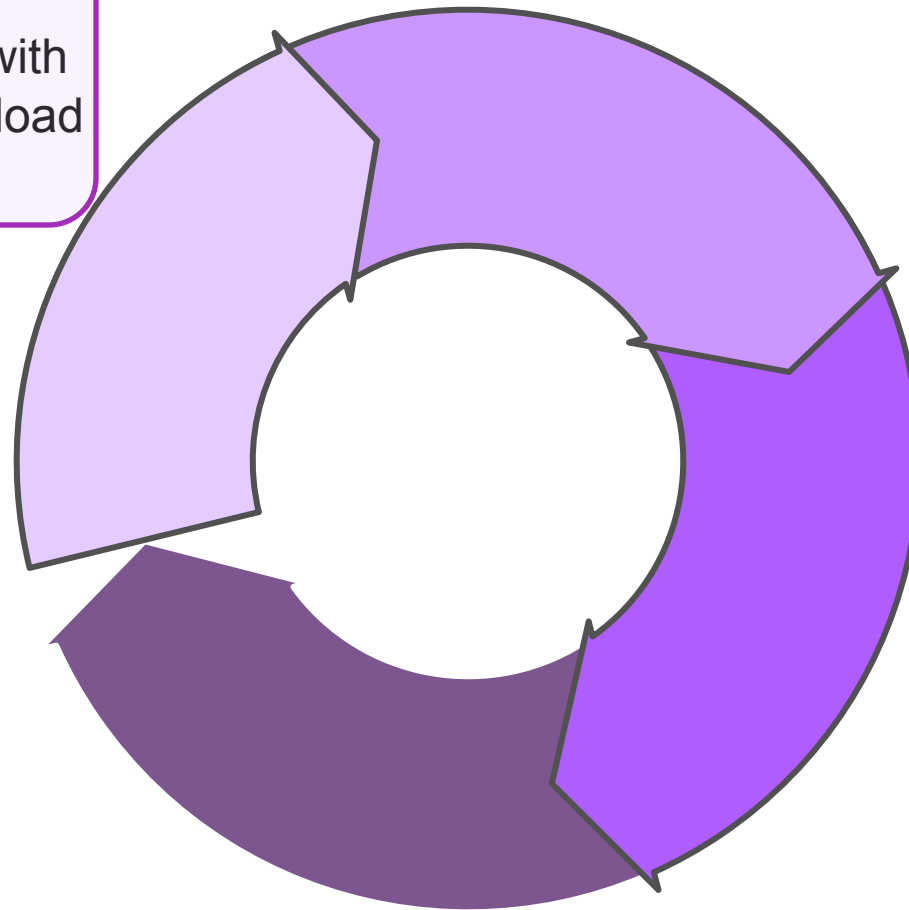
Import existing enterprise standard assets to accelerate adoption

## Manage

Analyze growth trends to predict business workload requirements

## Run

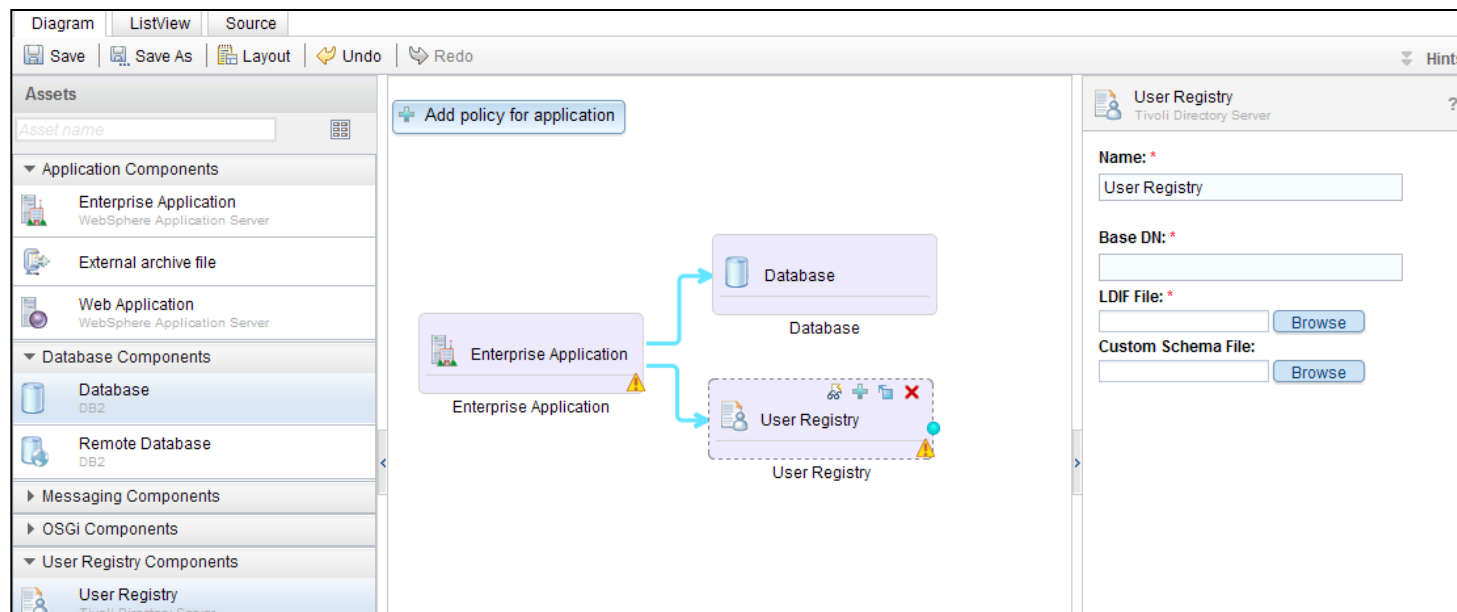
Expanded ecosystem with pre-optimized vendor applications





# Planning Best Practices

- Browse the PureSystem Market Place for relevant assets
- Consider using a Virtual Application Pattern (VAP) when onboarding a new application. VAPs provided additional value-add capabilities when compared to VSPs
- Leverage the all-you-can-eat aspect of PureApplication System, especially with Websphere Application Server (WAS) and DB2 applications





# Workload Deployer and PureApplication System Lifecycle

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## Manage

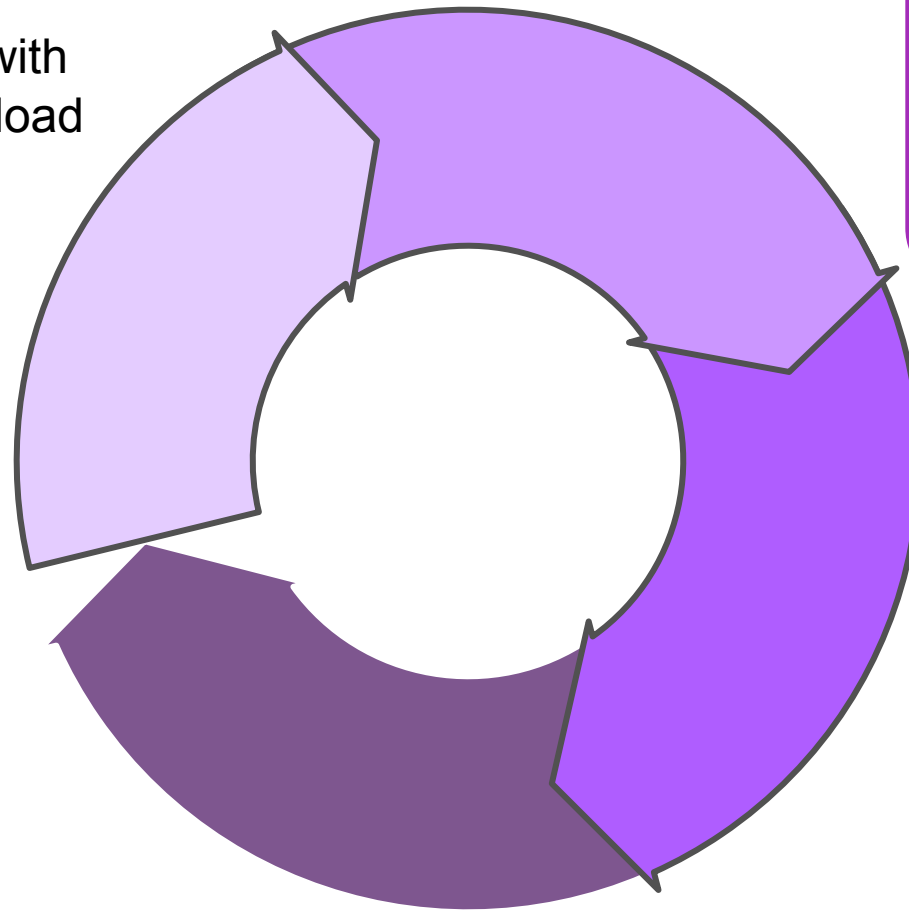
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Expanded ecosystem with pre-optimized vendor applications







# Build Best Practices: General

- Always have 2 hypervisors in each Cloud Group for failover and maintenance
- Leverage shared services when possible for common platform services
- Reuse existing post-provisioning scripts as Script Packages
- Leverage additional assets provided through the PureSystem System Centre

**Cloud Groups**

Default ESX group

Default PowerVM group

**Default ESX group**

Description: Default cloud group for ESX or ESXi

Created on: Dec 5, 2011 7:16:06 PM

Type: Custom cloud group

Current status: All hypervisors available

Updated on: Dec 5, 2011 7:16:06 PM

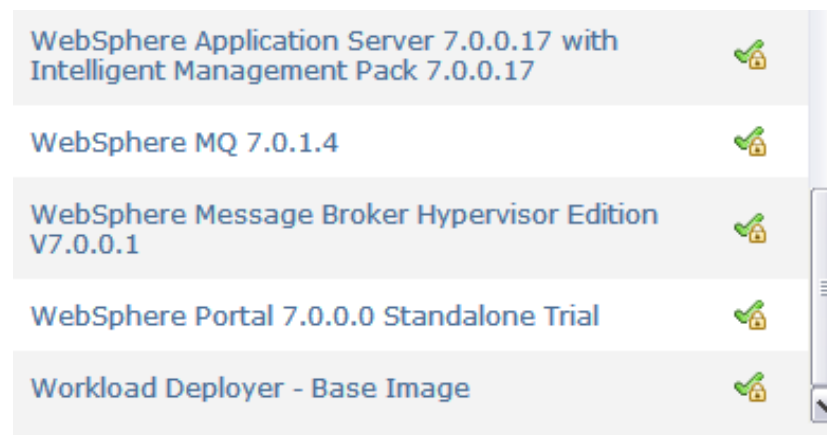
Hypervisor type: ESX





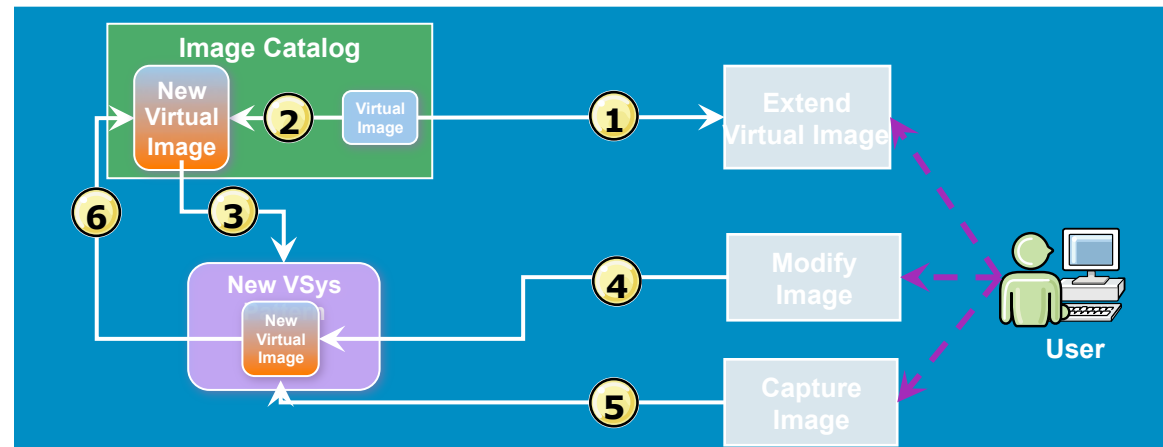
# Build Best Practices: Migrating Apps

- Take advantage of the Advanced Middleware Configuration (AMC) to help with migration of applications onto PureApplication System
- When migrating to PureApplication System with the AMC, it is easier to first do a physical to virtual transformation and then allow AMC to migrate the virtual environment
- Use out-of-the-box images and configuration if applicable instead of immediately customizing since IBM will release fixes and updates which can be applied directly to out-of-the-box materials (e.g. use the provided Hypervisor Edition images instead of building your own)



# Build Best Practices: Extend/Capture

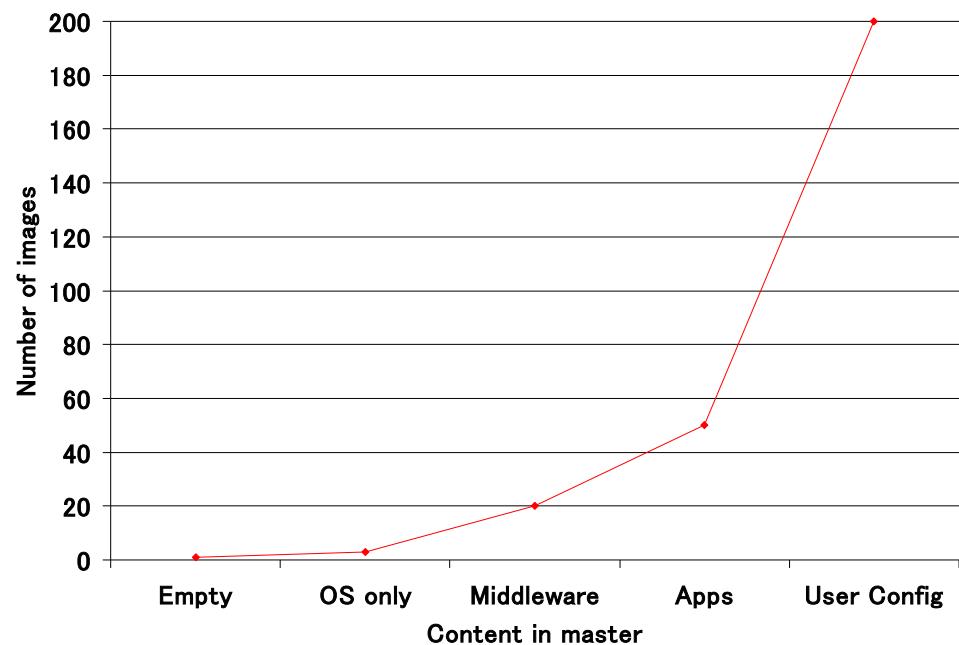
- Use extend and capture for:
  - Large tasks
    - Operating system
    - Large product binaries
  - Slow scripts/tasks
    - Long-running configurations
  - Common tasks
    - Company standard software for every deployment (ie, monitoring agents)
    - Activation framework





# Build Best Practices: Extend/Capture

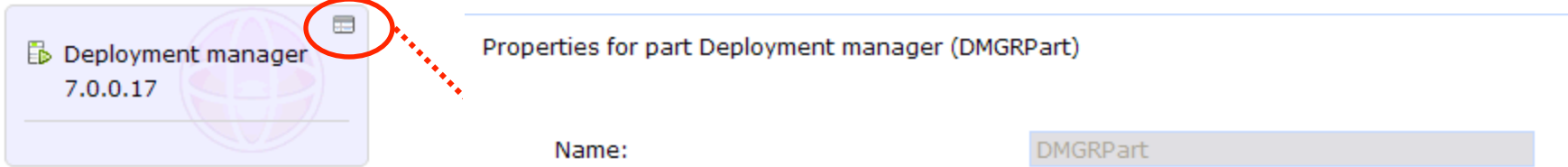
- Use Image Construction and Composition Tool (ICCT) tool to add/modify images in a repeatable way
  - 1520: Building Custom Content for Expert Integrated Systems (Wed, 10:45)
  - 1888 Hands-On Lab: Expert Integrated Systems Custom Content (Thu, 11:45)
- Do not use Extend/Capture for:
  - Frequently changing tasks
    - Applications
    - Dev Components
    - Emergency patches
  - Fast, small tasks
    - Simple configurations





# Build Best Practices: Script Packages

- Write scripts on their target platform
  - Write scripts on the platform on which they will run
  - For scripts on Windows platforms, ensure that the dos2unix tool or a similar tool is run on the scripts before uploading them
- Use qualified configuration parameter names
  - Fully qualify each deployment parameter with respect to its associated script package to ensure the parameters are more recognizable and logically grouped at deployment time
- Mount NFS with large binaries to reduce package size

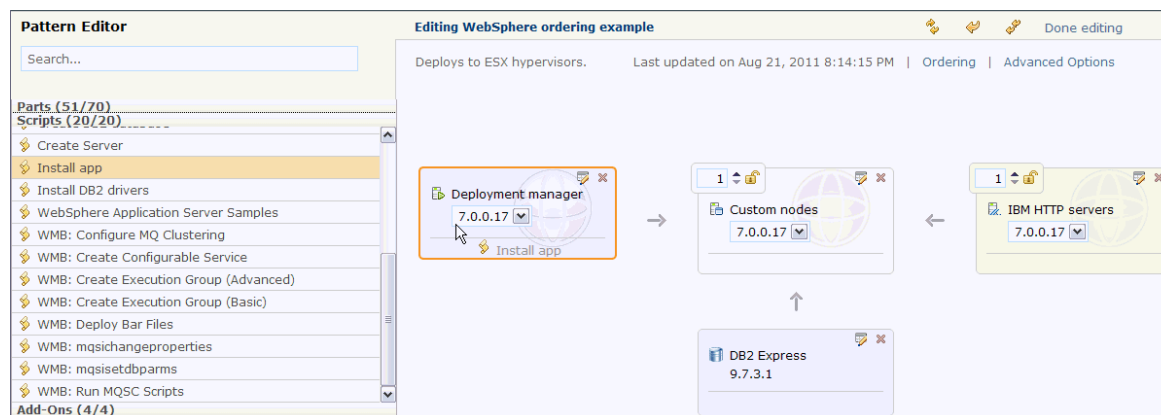


Example: `${DMGRPart.ipaddr}` is used to retrieve the DMgr IP address from any script in any part of the Virtual System



# Build Best Practices: Script Packages

- Script Package Execution
  - Scripts are run on the deployed virtual machines using the root user context
  - If needed, switch user inside your script:
    - `su virtuser -c "./nextShellScript.sh"`
- When writing script packages, make sure to log messages frequently as they are the only means of tracing execution





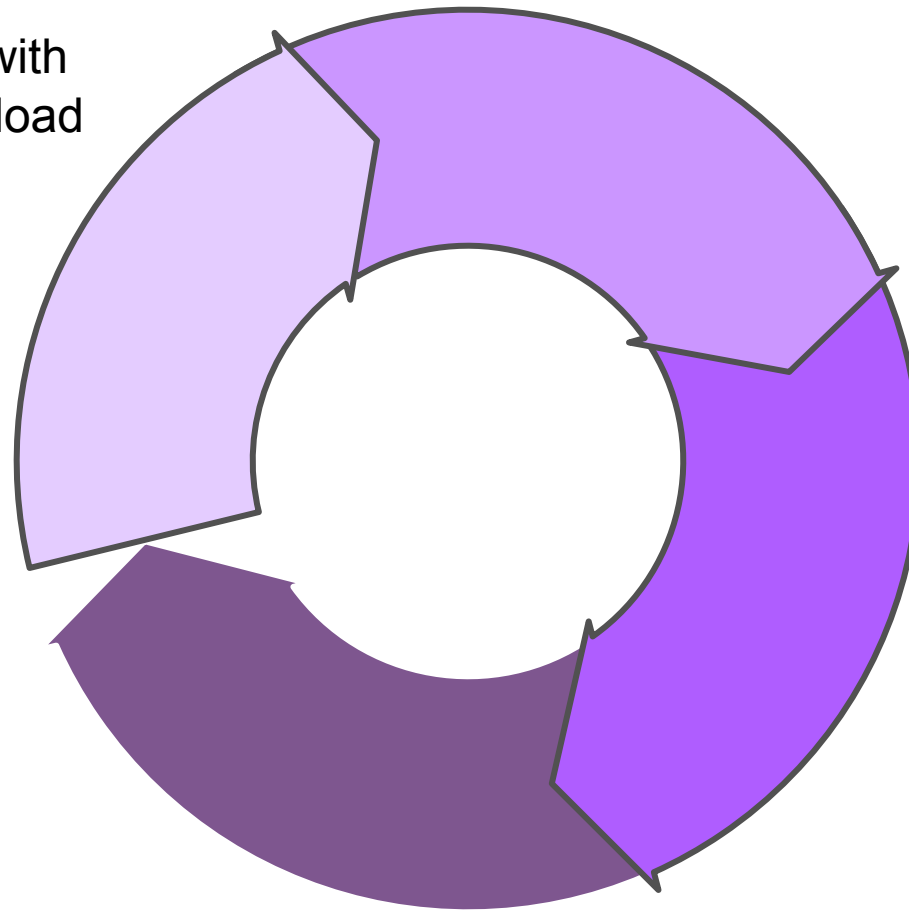
# Workload Deployer and PureApplication System Lifecycle

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## Manage

Analyze growth trends to predict business workload requirements



## Build

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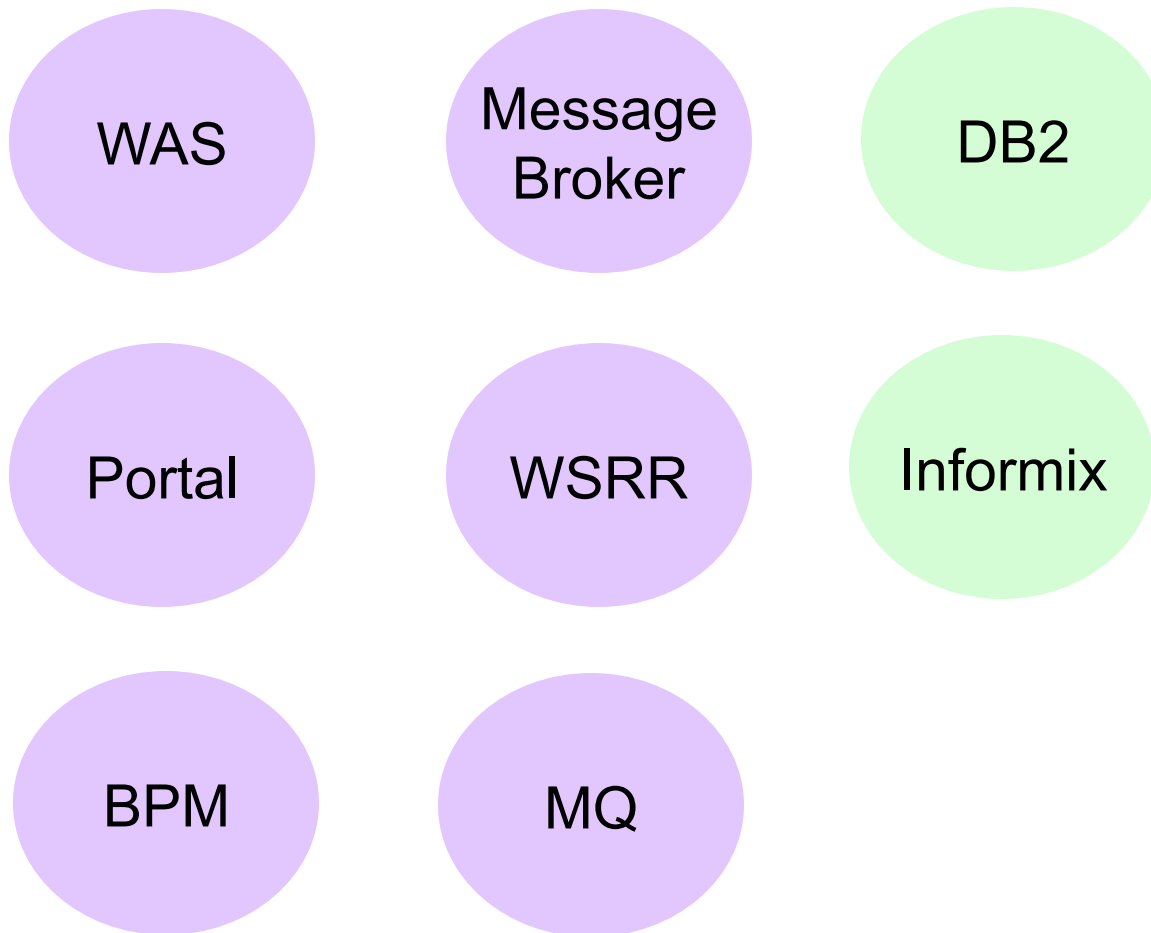
## Run

Expanded ecosystem with pre-optimized vendor applications



# Run Best Practices: General

- Remember that all standard middleware/development best practices apply







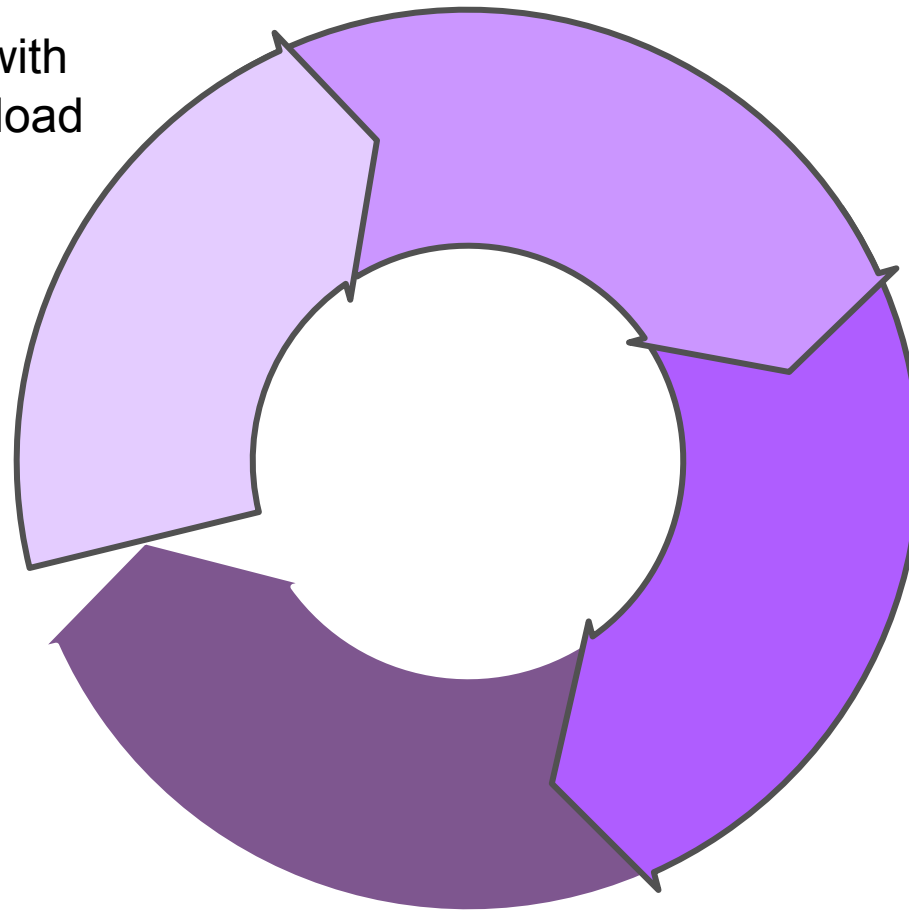
# Workload Deployer and PureApplication System Lifecycle

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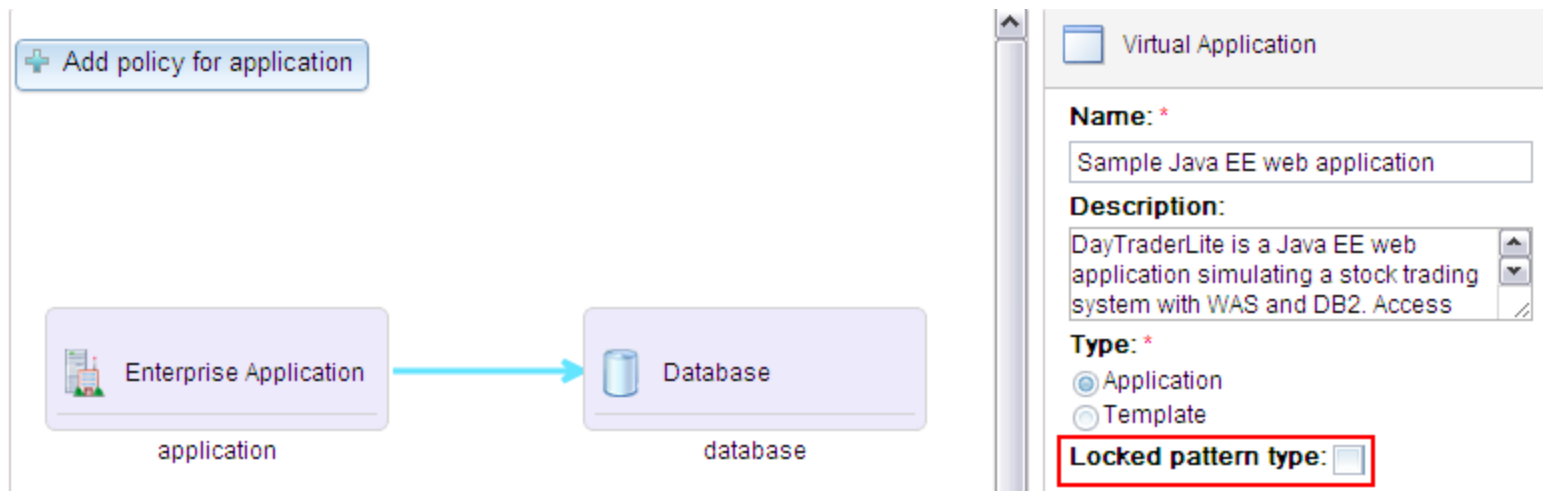
Expanded ecosystem with pre-optimized vendor applications





# Manage Best Practices: General

- Use the Command Line Interface to script common tasks
  - Creates a well-known and repeatable process
- Management should be done through the Deployment UI, Only Secure Shell (SSH) into Virtual Application Pattern VMs as an exception
- "Lock" a Virtual Application Pattern only if you no longer want that application to receive patches and updates
- To make sure components stay synchronized, configure NTP for all parts of your environment (IWD / PureApplication System, Hypervisors, ...)



# Manage Best Practices: Auth & Permissions



- Users/Groups
  - Create users for each person using the system
  - Group Users into Roles with designated access controls
  - Group permissions are additive
- Make use of fine access permission for controlling assets in the appliance
  - Virtual images
  - Script packages
  - Emergency fixes
  - Patterns
  - Virtual systems

**Access granted to:**

- Administrator [owner]
- Developers [read] [remove]
- Testers [read] [remove]
-

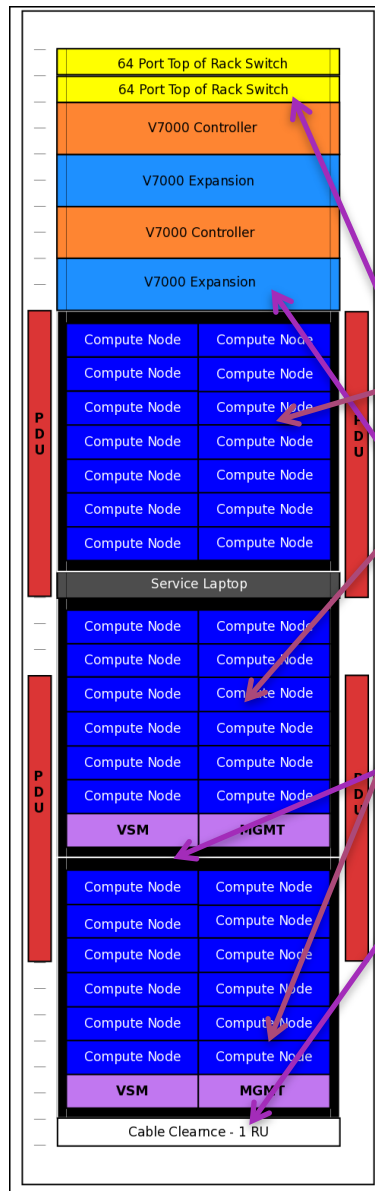




# Appliance Troubleshooting Issues



# IBM PureApplication System - Troubleshooting Breakdown



Workload

- Guest VM and above
  - OS and Middleware
- Patterns deployed to the cloud
  - Virtual Systems
  - Virtual Applications

System

- Everything below Guest VM
- Hardware and Firmware
  - Management, Hypervisor, Compute Nodes, switches, power, storage, etc





# Problem Determination - Logs

IBM PureApplication System creates several log files to determine problems

- **System logs** – accessed via System Console
  - IWD Management logs
    - Mainly related to logs around managing the workloads, deployments
- **Workload logs** – accessed via Workload Console
  - OS level logs from VM
  - Middleware logs from within VM – WebSphere Application Server, DB2, scripts, etc.
    - Related to the actual issues of the middleware runtime components
    - Logs from Configuration scripts



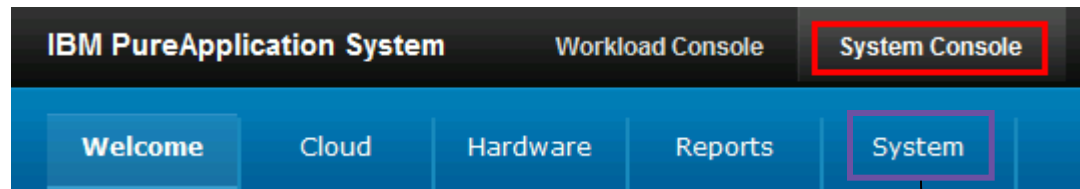
# System related Troubleshooting info

The screenshot shows the IBM PureApplication System console. The top navigation bar includes 'Welcome', 'Cloud', 'Hardware', 'Reports', and 'System'. The 'System' tab is active, showing a dropdown menu with options: Auditing, Settings, System Maintenance, Users, User Groups, Security, Job Queue, **Events**, **Troubleshooting**, Service Level Access, Guided Service Tasks, **Problems**, and Product Licenses. In the top right corner, there are two notification boxes: a yellow warning icon with '50' and a red error icon with '25'. Yellow callout boxes point to these icons with the text: 'Errors and notification – shown as Events (Warning)' and 'Errors and notification – shown as Events (Fatal, Critical, Major)'. Below the navigation bar, there are three main sections: 'Setting up your private cloud', 'Working with virtual machines', and 'Migrating applications into the cloud'. At the bottom, there are three steps for troubleshooting:

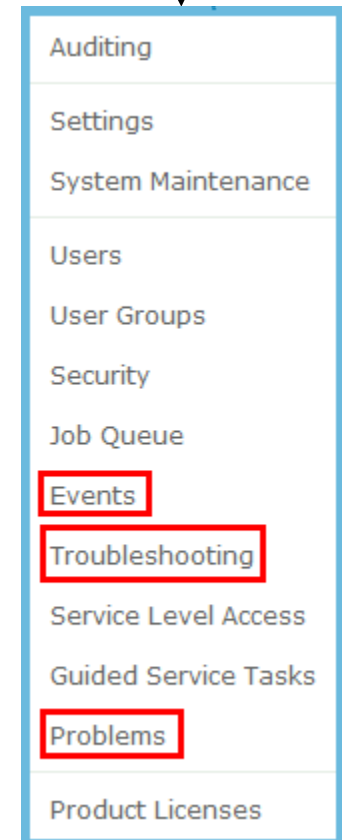
- Step 1: View service level accesses**  
Portals of external interfaces that belong to other components.  
[View service level access](#)
- Step 2: View events**  
Observe what is happening in the environment.  
[View event](#)
- Step 3: Troubleshooting**  
View the current status, metrics, and details of the IBM P System. Determine issues if there is any.  
[View troubleshooting](#)



# System Console – User tasks and its UI



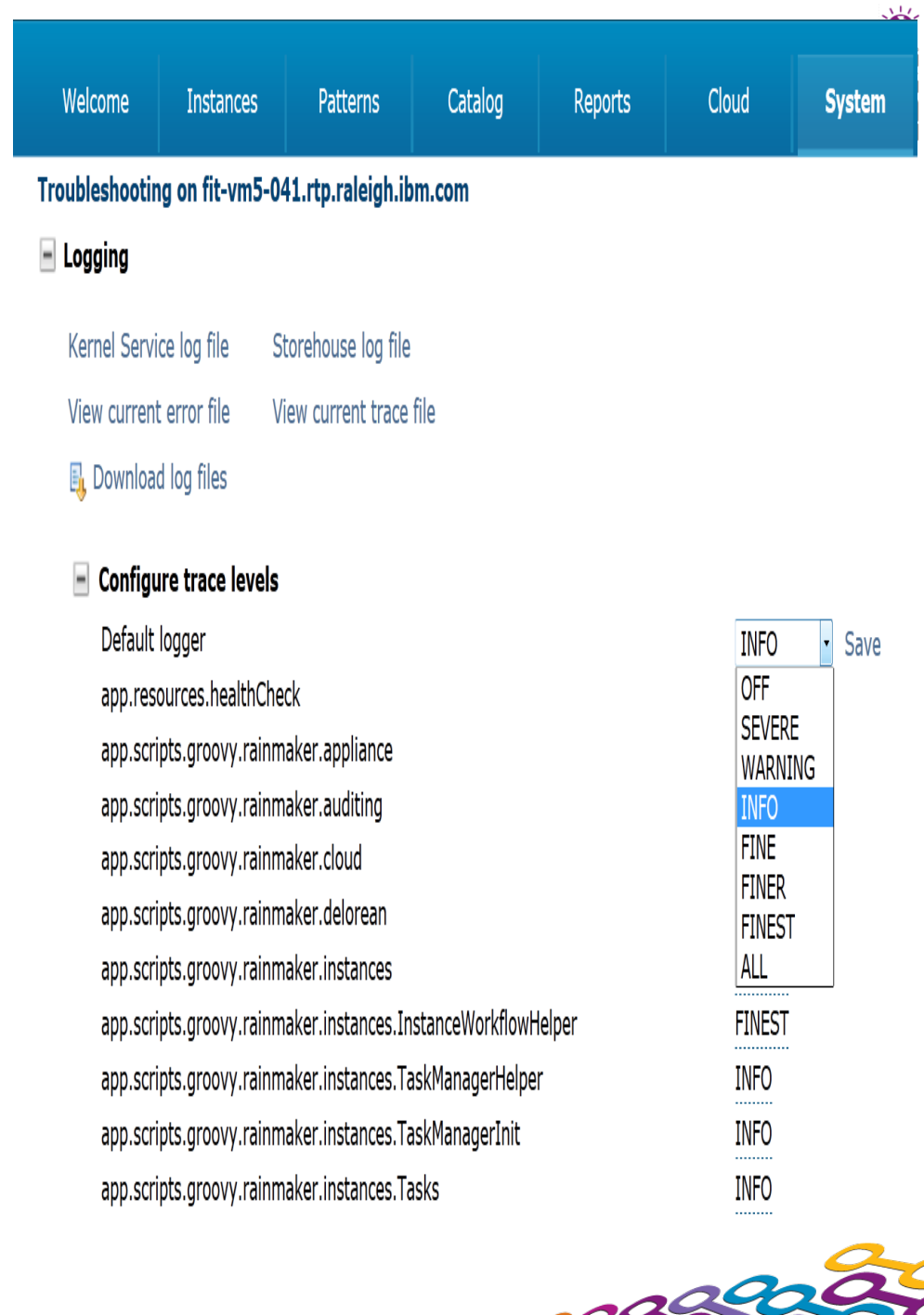
- Access to Troubleshooting UI is through the panel on the right
- **Events** – single view for events sent by different components
- **Troubleshooting** – System logs, Vendor information, LEDs and other information
- **Problems** – list of problems in the system for issues where clients might open a PMR





# Trace Settings

- Ability to add more details in the logs through different Trace settings
- Can add new Trace string if not in the list
  - This allows tracing of components that may not have been included in the list when shipped
- Trace level from no tracing to Finest



The screenshot shows the IBM Cloud console interface. At the top is a navigation bar with tabs: Welcome, Instances, Patterns, Catalog, Reports, Cloud, and System (which is selected). Below the navigation bar, the page title is 'Troubleshooting on fit-vm5-041.rtp.raleigh.ibm.com'. The main content area is divided into two sections: 'Logging' and 'Configure trace levels'.

**Logging**

- Kernel Service log file
- Storehouse log file
- View current error file
- View current trace file
- Download log files

**Configure trace levels**

Default logger	Trace level
app.resources.healthCheck	INFO
app.scripts.groovy.rainmaker.appliance	OFF
app.scripts.groovy.rainmaker.auditing	SEVERE
app.scripts.groovy.rainmaker.cloud	WARNING
app.scripts.groovy.rainmaker.delorean	INFO
app.scripts.groovy.rainmaker.instances	FINE
app.scripts.groovy.rainmaker.instances.InstanceWorkflowHelper	FINER
app.scripts.groovy.rainmaker.instances.TaskManagerHelper	FINEST
app.scripts.groovy.rainmaker.instances.TaskManagerInit	ALL
app.scripts.groovy.rainmaker.instances.Tasks	FINEST

On the right side of the 'Configure trace levels' table, there is a dropdown menu currently showing 'INFO' and a 'Save' button.



# Troubleshooting Pattern Deployment





# Check the Hypervisor Properties

IBM Workload Deployer

Administrator | Help | About | Log

Welcome Instances Patterns Catalog Reports **Cloud** System

### Hypervisors

Search...

siteIT

Type:	ESX
Version:	VMware ESX 4.0.0 build-398348
URL:	https://idptest04.rtp.raleigh.ibm.com/sdk
User name:	root
Password:	..... [edit]
Security certificate:	Accepted
Current status:	Started (move to maintenance mode to make changes)
In cloud group:	siteIT_Cloud_Group





# Check the Hypervisor Properties contd...

## Hypervisors

Search...

siteIT

siteIT

In cloud group: siteIT\_Cloud\_Group

Performance:

CPU usage

Memory usage

Active virtual machines:  20%  26%

+ Hardware

2 cpu packages, 8 cpu cores and 196 GB memory

+ Deployment statistics

12 successful, 0 failed, 0 consecutive failures

+ History

Started (move to maintenance mode to make changes)

+ Virtual machines

**34 total** - 8 stopped - 26 started

+ Networks

1 total, 1 in use, 1 mapped to IPGroups

+ Storage devices

4 total, 3 in use    Right now:  65%    Reserved:





# Trace Log Indicates Connectivity Issues

Executing script package WebSphere Application Server Samples on virtual machine ldtiwdvm100-Standalone-IWD\_ACID\_TEST-2 Mar 14, 2012 3:23:51 PM  
Starting virtual machine ldtiwdvm100-Standalone-IWD\_ACID\_TEST-2 Mar 14, 2012 1:48:01 PM  
Starting virtual machines in virtual system IWD\_ACID\_TEST. Mar 14, 2012 1:48:01 PM  
Registering virtual system IWD\_ACID\_TEST Mar 14, 2012 1:47:37 PM  
Transferring files to hypervisor cache (4 of 4 WebSphere Application Server 8.0.0.1) Mar 14, 2012 1:46:44 PM  
Transferring files to hypervisor cache (3 of 4 WebSphere Application Server 8.0.0.1) Mar 14, 2012 1:46:42 PM  
Transferring files to hypervisor cache (2 of 4 WebSphere Application Server 8.0.0.1) Mar 14, 2012 1:36:08 PM  
Transferring files to hypervisor cache (1 of 4 WebSphere Application Server 8.0.0.1) Mar 14, 2012 1:36:03 PM  
Transferring virtual images to hypervisors Mar 14, 2012 1:35:55 PM  
Generating model for topology and network Mar 14, 2012 1:35:45 PM  
Reserving cloud resources Mar 14, 2012 1:35:35 PM  
Deployment has been queued Mar 14, 2012 1:35:24 PM

[2012-03-14 13:52:07:147 UTC] 00001722 RXA E com.ibm.tivoli.remoteaccess.SSHProtocol beginSessionImpl [10.125.190.100] CTGRI0001E The application could not establish a connection to 10.125.190.100.  
[2012-03-14 13:52:07:148 UTC] 00001712 RXA E com.ibm.tivoli.remoteaccess.BaseProtocol beginSession [10.125.190.100] CTGRI0026E A connection could not be completed to 10.125.190.100 during the specified timeout interval.

## Outbound Connections

Ping remote host

Ping





# Avoid Special Characters in DataStore Names

```
at java.lang.Thread.run(Thread.java:736)
Caused by: com.ibm.venture.vm.BadConnectionException: Error putting file or folder on VMware server. Local path: /router/ramdisk2/mnt/raid-volume/raid0/image/image-cache/img-0.0/SLES11SP1-32-flat.vmdk Remote path:
https://dtps0650.etf.barcapetf.com/folder/cloudburst_cache/virtualimages/5cabdd2c8af7274dee88100dedb4ebc2d758a7cd/SLES11SP1-32-flat.vmdk?dcPath=ha-datacenter&dsName=LDTSPSV0650#T3#TXDA#001 shim=S1_1_copy2 endpoint=S1_1_copy2
localizedMessage="RM14017("(%2Fdrouter%2Framdisk2%2Fmnt%2Fraid-volume%2Fraid0%2Fimage%2Fimage-cache%2Fimg-0.0%2FSLES11SP1-32-flat.vmdk"; "https%3A%2F%2Fdtps0650.etf.barcapetf.com%2Ffolder%2Fcloudburst_cache%2Fvirtualimages%2F5cabdd2c8af7274dee88100dedb4ebc2d758a7cd%
2FSLES11SP1-32-flat.vmdk%3FdcPath%3Dha-datacenter%26dsName%3DLDTSPSV0650%23T3%23TXDA%23001")" causeType=java.lang.IllegalArgumentException cause=java.lang.IllegalArgumentException
at com.ibm.venture.vmware.impl.FaultUtils.badConnection(FaultUtils.java:335)
at com.ibm.venture.vmware.impl.FaultUtils.badConnectionErrorPuttingFile(FaultUtils.java:98)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOnDatastore_Vi25.putRegularFile(PutFileOnDatastore_Vi25.java:251)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOnDatastore_Vi25.call(PutFileOnDatastore_Vi25.java:146)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOnDatastore_Vi25.call(PutFileOnDatastore_Vi25.java:36)
at com.ibm.vespa.util.task.VSPInlineSubtask.call(VSPInlineSubtask.java:193)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOrFolderOnDatastore_Vi25.putRegularFile(PutFileOrFolderOnDatastore_Vi25.java:217)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOrFolderOnDatastore_Vi25$FileToTransfer.transfer(PutFileOrFolderOnDatastore_Vi25.java:155)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOrFolderOnDatastore_Vi25.putFileOrFolder(PutFileOrFolderOnDatastore_Vi25.java:197)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOrFolderOnDatastore_Vi25.call(PutFileOrFolderOnDatastore_Vi25.java:113)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOrFolderOnDatastore_Vi25.call(PutFileOrFolderOnDatastore_Vi25.java:26)
at com.ibm.vespa.util.task.VSPInlineSubtask.call(VSPInlineSubtask.java:193)
at com.ibm.venture.vmware.adapters.VMwareFileSupport2$5.execute(VMwareFileSupport2.java:460)
at com.ibm.venture.vmware.adapters.VMwareFileSupport2$5.execute(VMwareFileSupport2.java:439)
at com.ibm.venture.vmware.adapters.ActionOnVIClientClone.prepare(ActionOnVIClientClone.java:94)
at com.ibm.venture.vmware.adapters.ActionOnVIClient$1.call(ActionOnVIClient.java:97)
at com.ibm.vespa.util.concurrent.VSPMultipleLockForEntity.executeUnderLock(VSPMultipleLockForEntity.java:104)
... 8 more
Caused by: java.lang.IllegalArgumentException ←
at java.net.URL.create(URL.java:853)
at org.apache.http.client.methods.HttpPut.<init>(HttpPut.java:68)
at com.ibm.venture.vmware.impl.HttpClientHook.put(HttpClientHook.java:199)
at com.ibm.venture.vmware.HttpHook.put(HttpHook.java:373)
at com.ibm.venture.vmware.impl.actions.vi25.PutFileOnDatastore_Vi25.putRegularFile(PutFileOnDatastore_Vi25.java:205)
... 22 more
Caused by: java.net.URISyntaxException: Illegal character in fragment at index 180: https://dtps0650.etf.barcapetf.com/folder/cloudburst_cache/virtualimages/5cabdd2c8af7274dee88100dedb4ebc2d758a7cd/SLES11SP1-32-flat.vmdk?dcPath=ha-datacenter&dsName=LDTSPSV0650#T3#TXDA#001
at java.net.URISyntaxException.fail(URISyntaxException.java:2820)
at java.net.URISyntaxException.checkChars(URISyntaxException.java:2993)
```





# Virtual Application/Instance Troubleshooting





# Virtual Application: Troubleshooting

- Virtual Applications patterns
  - In order to create a pattern based on the pattern types, make sure to enable the pattern type and configure the System plug-ins for the pattern type where applicable
    - If not done, you will not be able to view or create the Virtual Application patterns
  - Before you deploy any Virtual Application, ensure that you have default images defined for deployment
    - Cloud → Deploy Default Settings







## Virtual Application: Troubleshooting

- Virtual Application Instance VMs – no administrative control on the middleware components, all control from PureApplication System console or SSH into VM
  - From Virtual Application instance panel, you can view/download logs
    - Go to Virtual Application Instance panel, click Manage and go to Logging or Operations
    - View logs of all VMs
    - Perform advanced Trouble shooting of VM (like set Trace, Generate javacore, Heap dump, System dump, etc.)
    - Modify/remove SSH keys
  - If SSH is enabled, you can SSH into the VM providing the security keys you supplied or had PureApplication System generate during deployment of Virtual Application





# Virtual Application: Logs

[Stop](#) [Delete](#) [Manage](#) [Upgrade](#) [Maintain](#) [Resume](#)

**Started on:** Dec 1, 2011 1:01:14 PM

**Access granted to:** Administrator [owner]  
[Add more...](#)

**Virtual application instance ID:** d-a369290a-95b5-40cd-a18e-8da16dd1f96e

**Status:** Running

**In cloud group:** Daytona PowerVM CG

**Pattern type:** Web Application Pattern Type 2.0

**Middleware perspective (2 in total)**

▼ WAS (application-was) [Endpoint](#)

Name	VM Status	Role Status
application-was.11322766074451	Running <a href="#">Log</a>	WAS

► DB2 (database-db2) [Endpoint](#)

**Virtual machine perspective (2 in total)**

Name	Public IP	VM Status	Started on	Role Status
application-was.11322766074451	9.3.252.51	Running <a href="#">Log</a>	Dec 1, 2011 1:01:28 PM	WAS <a href="#">Endpoint</a>
database-db2.11322766074453	9.3.252.50	Running <a href="#">Log</a>	Dec 1, 2011 1:01:28 PM	DB2 <a href="#">Endpoint</a>

**History** The virtual system has been deployed and is ready to use



# Virtual Application: VM log

- From Virtual Application Instance, click on **Logs** for a given VM

## Log Viewer [ Enterprise\_Application-was.11323930568013 (9.3.75.141) ]

Refresh Download All

GO

Enterprise\_Application-was.113

- OS
  - /var/log
  - .../log/mustGather
- WAS
  - .../logs/server1
    - native\_stderr.log
    - native\_stdout.log
    - SystemOut.log**
    - SystemErr.log

Name: Enterprise\_Application-was.11323930568013 File Name

```
the javax.management.j2ee.ManagementHome interface of
application. The binding location is: ejb/mgmt/MEJB
[12/15/11 7:29:41:964 UTC] 00000008 AbstractEJBRu I C
interface of the Management enterprise bean in the mejb
java:global/ManagementEJB/mejb/Management!javax.managem
[12/15/11 7:29:42:099 UTC] 00000008 AbstractEJBRu I W
[12/15/11 7:29:42:913 UTC] 00000009 webcontainer I com
Extension Factory [class com.ibm.ws.webcontainer.extens
[12/15/11 7:29:42:914 UTC] 00000009 webcontainer I com
Extension Factory [class com.ibm.ws.webcontainer.extens
[VH: WS_EH* ].
[12/15/11 7:29:42:925 UTC] 00000009 webapp I com
WebSphere Admin File Transfer Application.
[12/15/11 7:29:43:044 UTC] 00000009 WASSessionCor I Ses
context for application key admin host/FileTransfer
applicationMg A W
CompositionUn A W
.
applicationMg A W
applicationMg A W
Servlet I com
[transfer]: Initi
webcontainer I com
tion has been boun
webapp I com
applicationMg A W
CompositionUn A W
WebSphere:blaname=ibmasyncrsp.
```

### Virtual machine perspective (2 in total)

Name	Public IP	VM Status	Started on	Role Status
Enterprise_Application-was.11323930568013	9.3.75.141	Running 	Dec 15, 2011 12:29:40 AM	WAS 
cb09DB2-db2.11323930568014	9.3.75.140	Running 	Dec 15, 2011 12:29:40 AM	DB2 



# Virtual Application: Logging

Monitoring **Logging** Operate

Refresh Download All GO

application-was.113228452590

- OS
  - .../log/mustGather
    - ae.tar
    - virtualimage.properties
  - .../pconsole/logs
  - /var/log
- WAS
  - .../logs/server1
    - SystemErr.log
    - SystemOut.log
    - native\_stderr.log
    - native\_stdout.log
  - .../logs/ffdc
    - FfdcSummary.txt
    - ffdc.37661098789575032
    - ffdc.81444019877922411
- IWD Agent

database-db2.1132284525906

- OS
- DB2
  - .../sql/lib/log
    - instance.log
  - .../sql/lib/db2dump
    - db2diag.log
    - db2inst1.nfy
  - .../db2dump/stmmlog
- IWD Agent

- For each VM in the instance, logs are available for:
  - OS, Middleware
- You can download each of the files, all the files or view them in the console

```
WCA_VIRTUAL_MACHINE=/resources/virtualSystems/14/virtualMachines/23
WCA_VIRTUAL_MACHINE=/resources/virtualSystems/14/virtualMachines/23
WCA_USERNAME=\<xor\>bh4JHR4w0BIoNTE4agYUaAYuExEHKGOMJRsbLhEcChA6Eh4NCxY4KxFqBTsRGilnPW2pCwpsJScHCwUNCzwmDA==
WCA_USERNAME=\<xor\>bh4JHR4w0BIoNTE4agYUaAYuExEHKGOMJRsbLhEcChA6Eh4NCxY4KxFqBTsRGilnPW2pCwpsJScHCwUNCzwmDA==
ETHERNET0="Virtual Network 1"
ETHERNET0="Virtual Network 1"
RESET_VIRTUAL_IMAGE_COMMAND=/var/adm/ibmvccoc-postinstall/resetvm.sh
RESET_VIRTUAL_IMAGE_COMMAND=/var/adm/ibmvccoc-postinstall/resetvm.sh
WCA_IPADDRESS=9.3.75.75,9.3.75.254,192.168.0.2,
WCA_IPADDRESS=9.3.75.75,9.3.75.254,192.168.0.2,
WAS_PASSWORD=passwOrd
WAS_PASSWORD=passwOrd
WCA_PASSWORD=\<xor\>bh4JHR4w0BIoNTE4agYUaAYuExEHKGOMJRsbLhEcChA6Eh4NCxY4KxFqBTsRGilnPW2pCwpsJScHCwUNCzwmDA==
WCA_PASSWORD=\<xor\>bh4JHR4w0BIoNTE4agYUaAYuExEHKGOMJRsbLhEcChA6Eh4NCxY4KxFqBTsRGilnPW2pCwpsJScHCwUNCzwmDA==
WCA_VIRTUAL_SYSTEM=/resources/virtualSystems/14
WCA_VIRTUAL_SYSTEM=/resources/virtualSystems/14
RESET_VIRTUAL_IMAGE_COMMAND_LOCATION=/var/adm/ibmvccoc-postinstall
RESET_VIRTUAL_IMAGE_COMMAND_LOCATION=/var/adm/ibmvccoc-postinstall
PURESCALE_IPADDRESS=9.3.75.75
PURESCALE_IPADDRESS=9.3.75.75
WAS_USERNAME=virtuser
WAS_USERNAME=virtuser
VM_IS_IP6=false
VM_IS_IP6=false
```





# Virtual Application: WAS Troubleshooting

▼ Trouble Shooting

+

 Set WebSphere Application Server trace level dynamically

+

 Generate javacore

+

 Generate a Heap Dump for memory analysis

+

 Generate a System Dump for detailed process analysis

+

 Get logs

-

 Install WebSphere Application Server Updates

Description:

 Install updates or interim fixes to WebSphere Application Server

Interim fixes URL:

Click select button to update

Select ▼





# Virtual Application: SSH access to the VMs

- Able to provide or generate SSH keys when deploying a Virtual Application pattern
  - Save the private key for later use to SSH into the VM

**Deploy Virtual Application**

Name: XDStockSandy

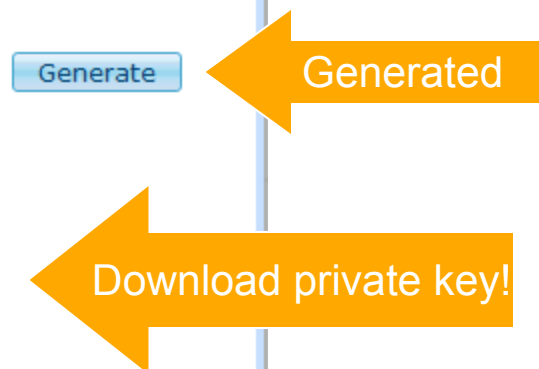
Target cloud group: aimcp158 Cloud

☒ Advanced

SSH Key: BaMKUaK8Oi4Bmtqbcnmi47Gk5f1PDc2vmfCs3  
nVIfksULZGAqzhGd9Dan05cCc1OCXJrWnQS3g  
OiX/KU9BvUoosY8amqJdrZ  
/g5us7ayqEzDvP51UwTat0hrNu1vSR765Q07U  
t44McMacOZij1A1ytCNSsAg1jovf9+b9TLTWv  
7t89uEVEPEa9PHpHqYuNMo  
/KgG6WT+7abqgBxbUrSQtsNJVr2EvRn1c5Y5r  
toNjS98SNuicv286XCk5tywx+YbnxTp4Dxsq6  
r6ajlu6Vc9TY01OqBRYZBplFUjVNzh/7  
iwd-generated-rsa-key-20110613

[Click here to download the file containing the private key](#)

OK Cancel





# Virtual System

## Troubleshooting, Logs, Traces and SSH





# Virtual System VM: Troubleshooting

- Virtual System Instances - you have full control of the entire administration of the Virtual System Instance
  - Go to Virtual System Instance panel for all operations related to Trouble Shooting
  - If enabled during deployment, you can VNC into the VM
  - Can SSH into VM using “root” and your assigned password
  - From Virtual System instance panel, you can view/download logs, and access WebSphere console
  - Traces can be enabled via Middleware console







# Virtual System VM: SSH

- Open the Virtual System Instance panel and for each VM, you can SSH “Login”
- Expanding the VM, you can access the logs

**Daytrader Lab DF**

Created on: Dec 13, 2011 12:17:41 PM

From pattern: Daytrader Virtual System DF

Using Environment profile: None provided

Current status: The virtual system has been deployed and is ready to use

Updated on: Dec 13, 2011 2:27:32 PM

Access granted to: Administrator [owner]

Snapshot: Snapshots are not currently supported by IBM:POWER:AIXLINUX

History The virtual system has been deployed and is ready to use

Virtual machines **2 total - 2 started**

Name	CPU	Memory	SSH	Actions	<input type="checkbox"/> Group Actions
bpte-demo-13-Standalone-Daytrader Lab DF-65			Login	View	<input type="checkbox"/>
bpte-demo-12-DB2_ESE-Daytrader Lab DF-66	1%	2%	Login	View	<input type="checkbox"/>

User name

Password





# Virtual System VM: Logs

- Go to the Virtual System Instance panel and expand the VM to view and download logs, access Middleware consoles

**WebSphere configuration**

Cell name: CloudBurstCell\_1  
Node name: CloudBurstNode\_1  
Profile name: DefaultAppSrv01  
[Show all environment variables](#)

**Script Packages**

Script Package	Status	Timestamp
Install DB2 Drivers DF	✓	Dec 13, 2011 2:24:30 PM
Install Application DF	✓	Dec 13, 2011 2:26:31 PM
WebSphere Hypervisor Edition Startup Logs	!	Dec 13, 2011 2:26:51 PM
Must Gather Logs	✓	Dec 13, 2011 2:27:25 PM

[Execute now](#)

**Consoles**  
WebSphere

**WebSphere Console**

**View and download logs**

remote\_std\_out.log  
remote\_std\_err.log  
[cloudburst\\_collect1323807870624.tar](#)  
remote\_std\_out.log  
remote\_std\_err.log  
[cloudburst\\_collect1323807991132.tar](#)  
remote\_std\_out.log  
remote\_std\_err.log  
[cloudburst\\_collect1323808011002.tar](#)  
remote\_std\_out.log  
remote\_std\_err.log  
[cloudburst\\_collect1323808044948.tar](#)





# Summary

- Best practices through the lifecycle
- Troubleshooting tips & tricks
  - Appliance
  - Pattern deployment
  - Virtual application patterns
  - Virtual system patterns





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