

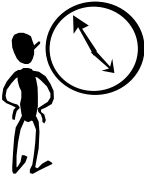
# New models of WAS deployment with IBM Workload Deployer

Rory O'Grady

Jonathan Marshall



# Growing customer pains – increased time to market



Creation of middleware infrastructure takes too long

- Avg. lead time to get new application up – **4 to 6 months**
- Delay caused by approvals, procurement, shipment, hardware installation, license procurement, OS installation, application installation, configuration



Manual or semi-automated efforts are error prone

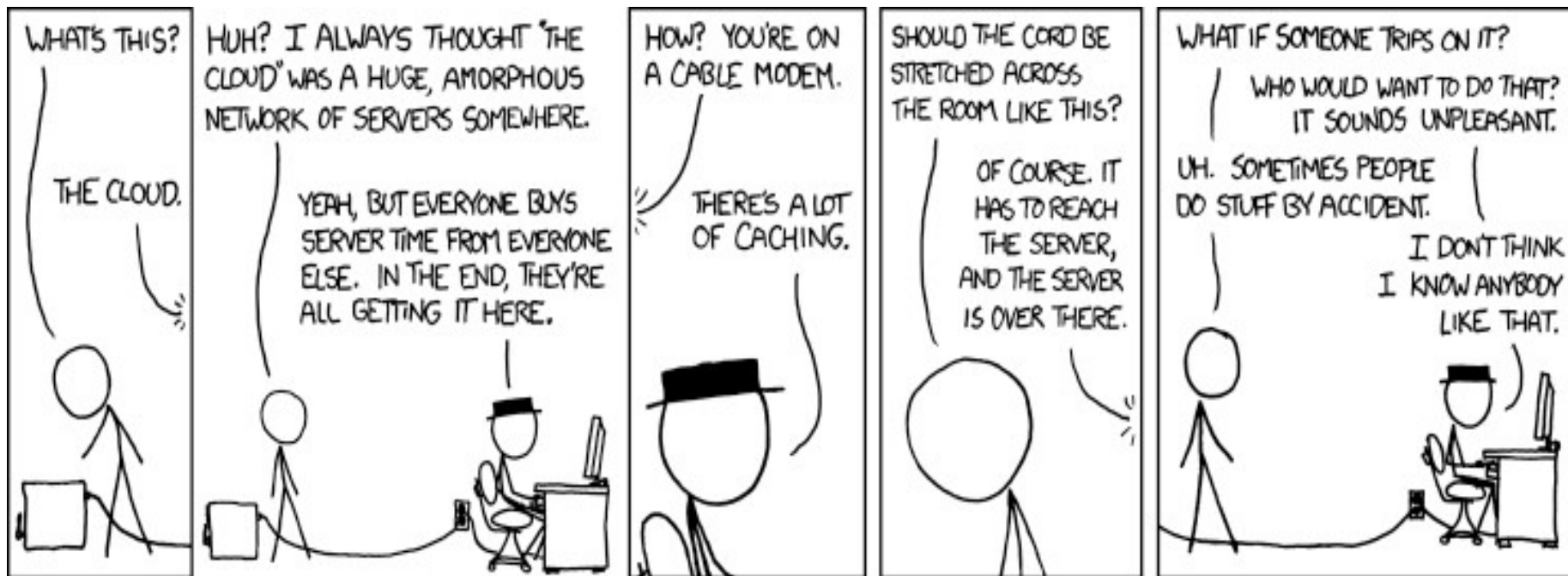
- Bugs are introduced by inconsistent configurations – **30%**
- Often most difficult variety of bugs detected during the move from development to QA or production



Poor resource utilization results in increased cost of labor and hardware.

- Setting up an environment is expensive, so there is an incentive to hold onto it “just in case” – even when no longer needed
- Slow down in technology adoption
- Future environments require new hardware, instead of recycling returned hardware; cycle repeats

# What do we mean by cloud?



What do we mean by cloud?



**Automation**



**Virtualization**



# Cloud Computing Delivery Models



Traditional  
enterprise IT



## Private cloud

- Privately owned and managed.
- Access limited to client and its partner network.
- Drives efficiency, standardization and best practices while retaining greater implementation control.



## Hybrid cloud

- Access to client, partner network, and third party resources.



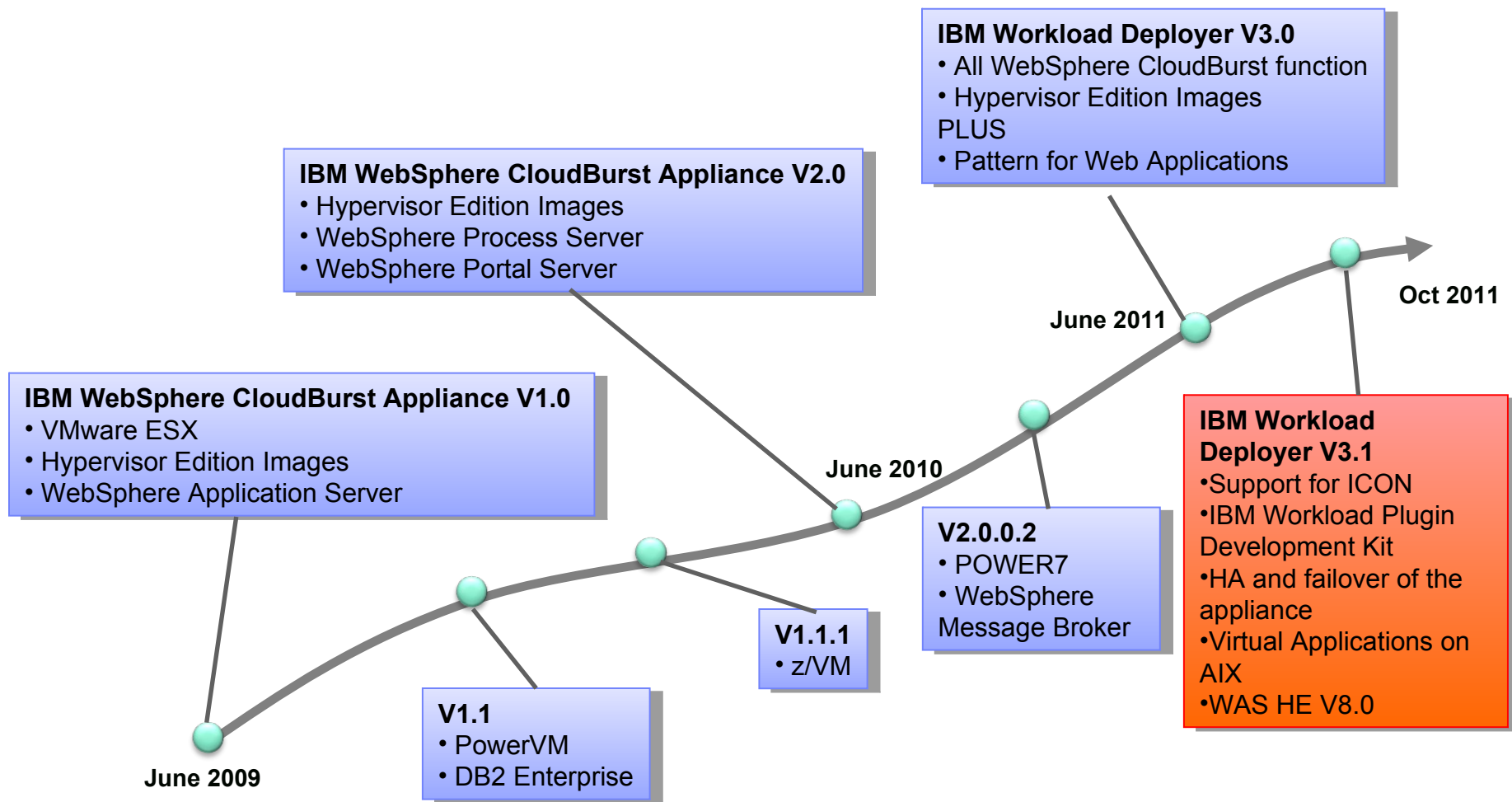
## Public cloud

- Service provider owned and managed.
- Access by subscription.
- Delivers select set of standardized business process, application and/or infrastructure services on a flexible price per use basis.



# IBM Workload Deployer

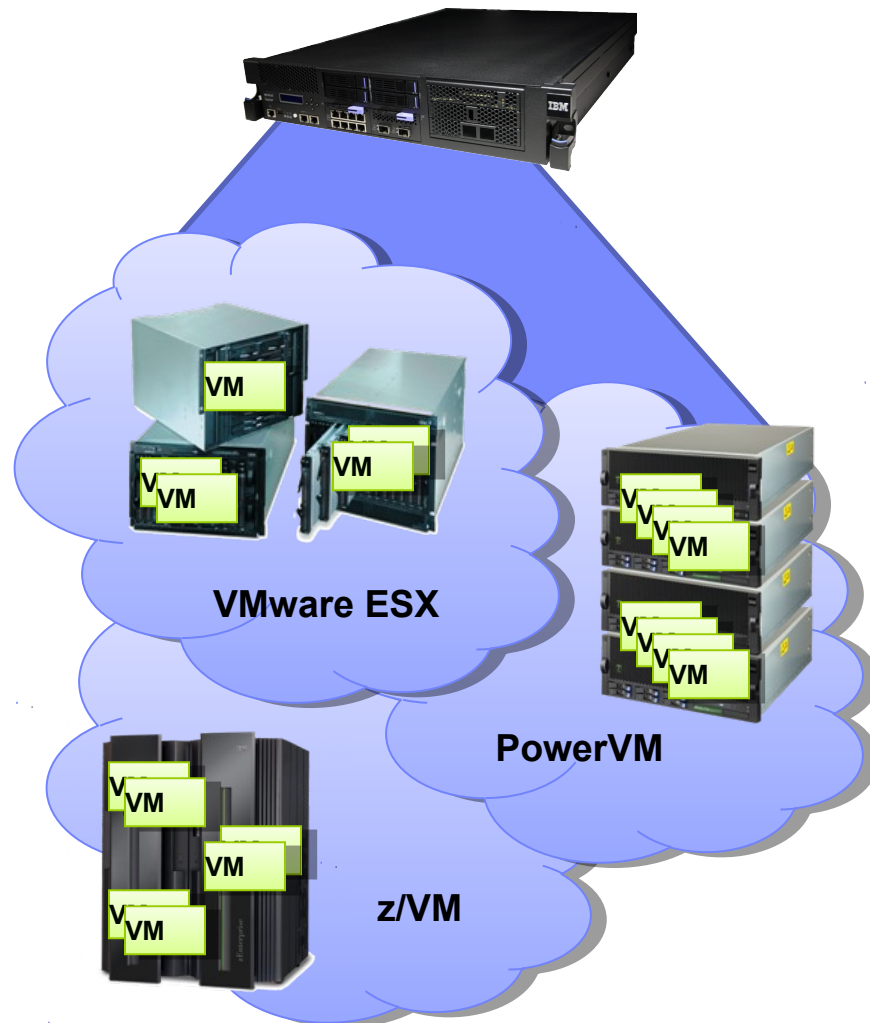
## *Evolution from WebSphere CloudBurst Appliance*



# VIRTUALIZE: Bring your own private cloud

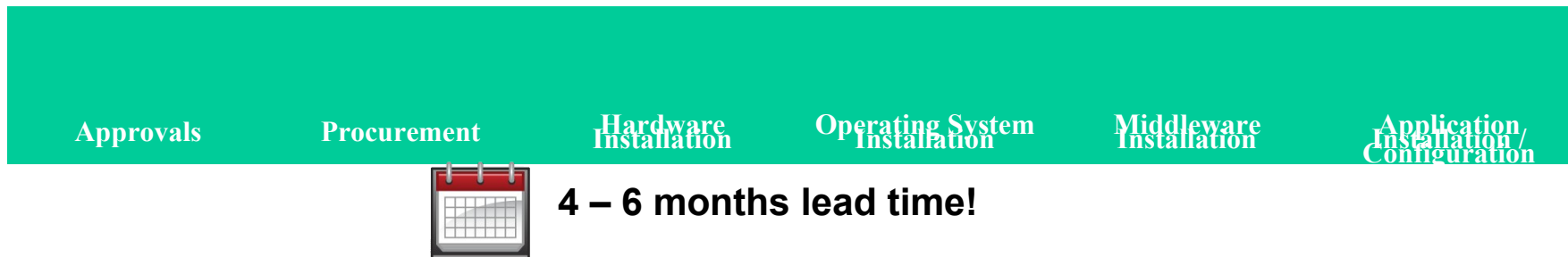
## IBM Workload Deployer

- Secure, self-service cloud management hardware appliance
- Design and deploy consistent and repeatable middleware patterns into your private cloud of virtualized hardware
- Bring your own cloud to leverage your existing underutilized hardware
- Full lifecycle management for IBM middleware, limited lifecycle management for third part products

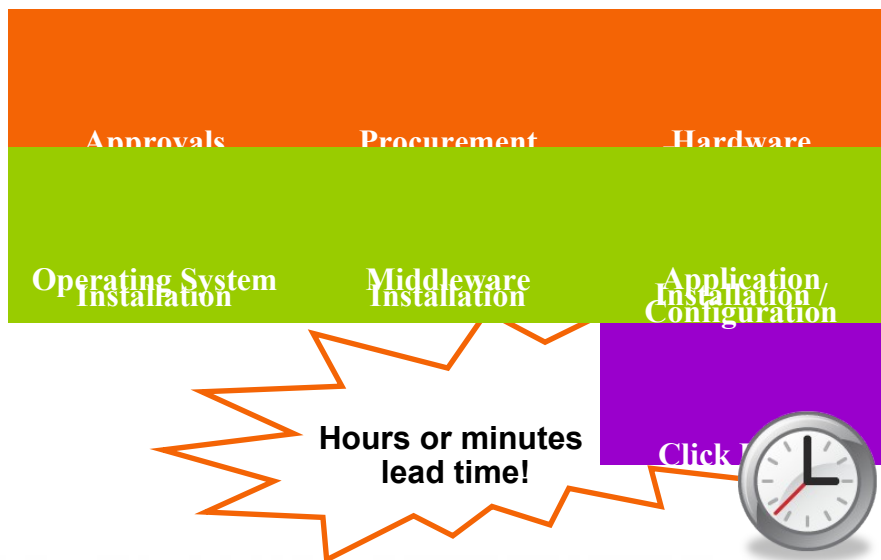


# AUTOMATE: Factor out repetitive tasks

These processes are executed serially for each application environment:



Factor out repetitive tasks to reduce lead time:



Done once at cloud creation / expansion time

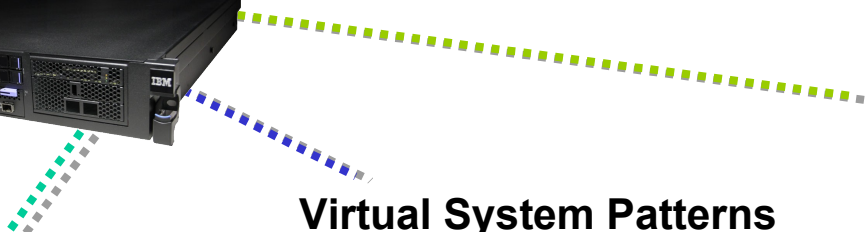
Done once at image customization and pattern creation time

Done for each new deployment





# STANDARDIZE: Middleware models



## Existing Middleware

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

## Virtual System Patterns

- Packaged for virtual environments
- Automated deployment of middleware topologies
- Traditional administration and management model

## Virtual Application Patterns

- Built for the cloud environment
- Highly automated, policy-based deployment
- Leverages elastic workload management services

Workload Platform Services

Virtualized Middleware Services

Virtualized Infrastructure Services

Standard TCO  
*existing applications*

Improved TCO  
*virtualized applications*

Best TCO  
*cloud applications*

Good

Better

Best

# ORGANIZE: Manage cloud resource usage

Dispense a single image, topology or workload



1

Run deployment in the virtual cloud computing environment



2

Return capacity to the pool of available resources

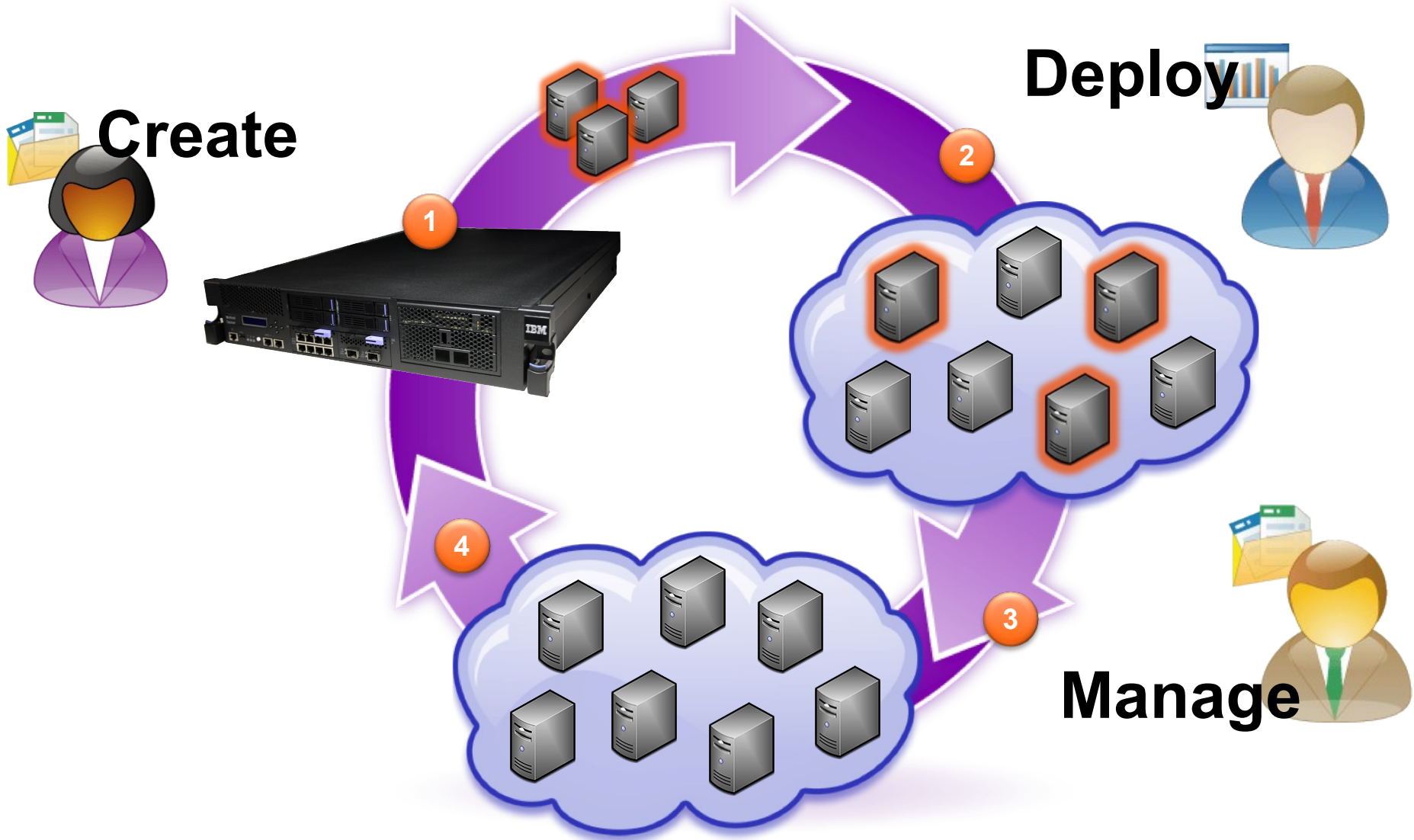


4

At end of reservation, remove deployment from the cloud

3





**Create**



1



Deploy



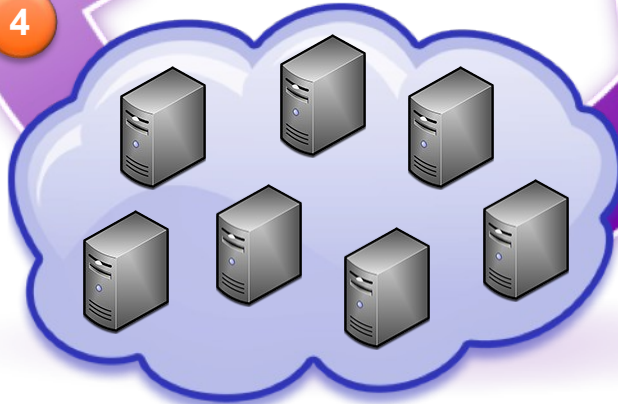
2



Manage



3

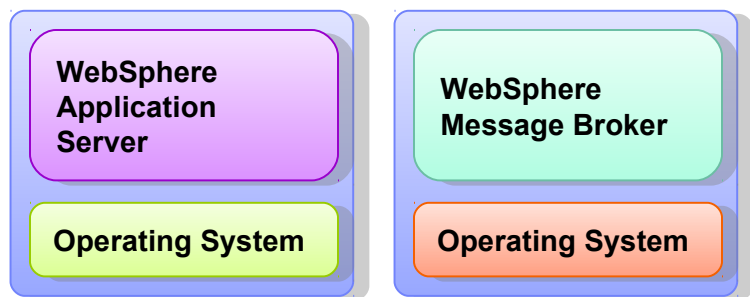


4



# Virtual systems at a glance

## Hypervisor Edition Images (from IBM)



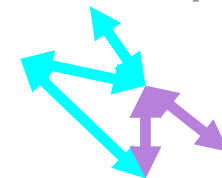
## Script Packages

```

#!/bin/bash
MAXLENGTH=$(cut -d: -f1 < /etc/passwd | wc -L)
MINLENGTH=$MAXLENGTH
SMALLESTNAME=""
#
for NAME in $(cut -d: -f1 < /etc/passwd)
do
  if [ ${#NAME} -eq $MAXLENGTH ]
  then
    echo "The longest username in this system is:" $NAME
    echo "Its length is" $MAXLENGTH
  elif [ ${#NAME} -lt $MINLENGTH ]
  then
    MINLENGTH=${#NAME}
    SMALLESTNAME=$NAME
  fi
done
echo "The smallest username in this system is:" $SMALLESTNAME
echo "Its length is" $MINLENGTH

```

## Description of Middleware Topology



2 x WebSphere Message Broker, 3 x WebSphere Application Server (cluster)

## Virtual Systems in IBM Workload Deployer

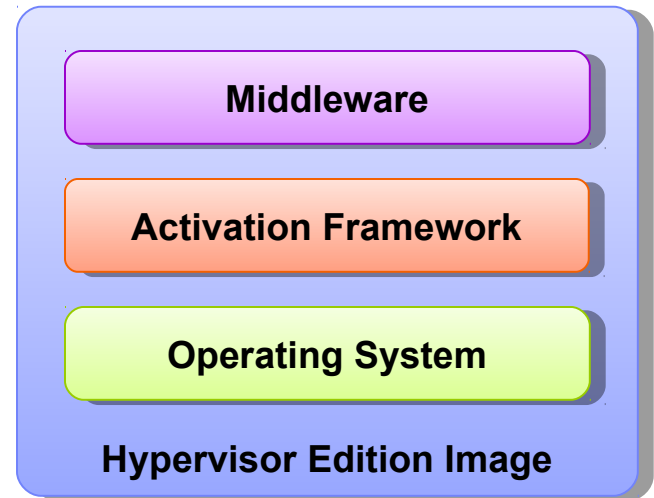


- Multi-server environment deployed as an atomic unit
- Individual components connected to one another
- Ready-to-use environment

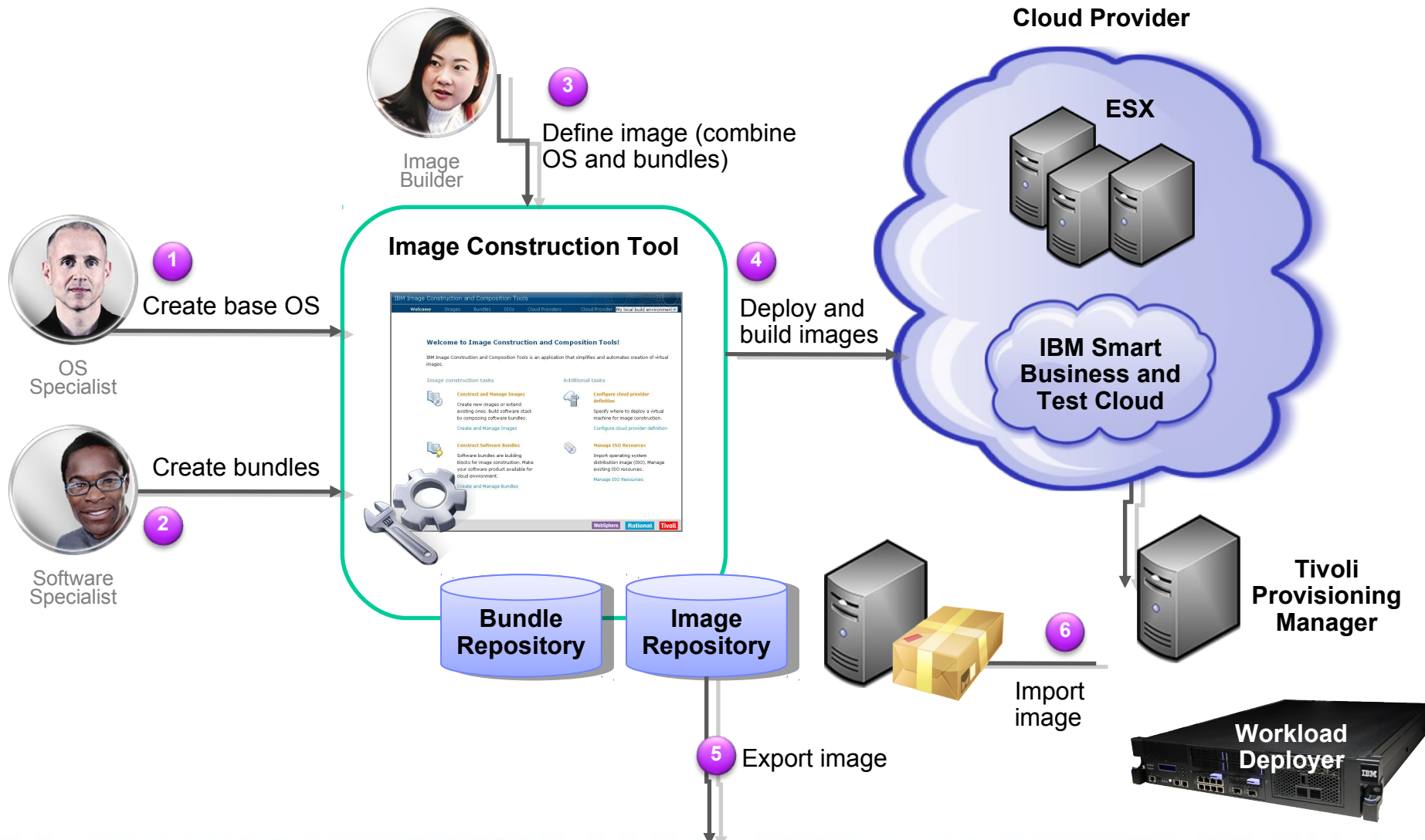


# Hypervisor Edition images

- IBM middleware shipped as an OVF virtual image, ready to run on a hypervisor
- The following products are available:
  - WebSphere Application Server
  - WebSphere Process Server
  - WebSphere Portal Server
  - DB2
  - WebSphere Message Broker
  - WebSphere Business Monitor
  - WebSphere Message Queue
- Products support various combinations of:
  - VMware ESX, z/VM and/or PowerVM hypervisors
  - Red Hat Enterprise Linux, SUSE Linux, AIX
- Maintenance, support, and fixes through IBM for both middleware and OS



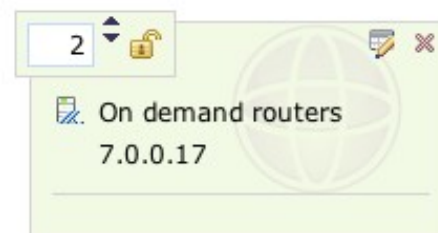
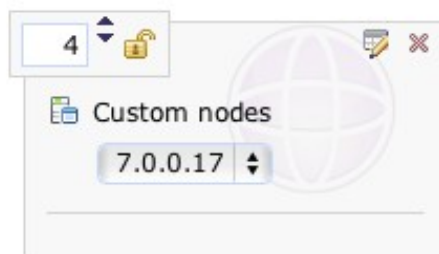
# IBM Image Construction and Composition Tool



# Example: Virtual system pattern

Deploys to ESX hypervisors.

Last updated on Mar 28, 2011 2:10:28 PM | [Ordering](#) | [Advanced Options](#)



Customize virtual system patterns by:

- Selecting middleware version number, initial number of nodes
- Extending or customizing base images
- Including script packages or add-ons



# Virtual applications at a glance

## EAR file



## DDL file

```
pompidou.sql  C:\workspace\ibm\collatz\pompidou\src - VIM
@BEGIN
CREATE TABLE "mytable"();
SELECT AddGeometryColumn('','mytable','the_geom','27582','GEOMETRY',3);
ALTER TABLE "mytable" ADD COLUMN the_texture TEXT;
SELECT AddGeometryColumn('','mytable','coordinates','1','GEOMETRY',2);
INSERT INTO "mytable" VALUES (geomfromwkt('SRID=27582;ITN(((-17.061924 97.299919 0.159569,-1
0.007636 87.297295 -0.025651),(-11.402624 88.288055 -0.026551,-17.061924 97.299919 0.159569));((-1
-18.007636 87.297295 -0.025651),(-17.061924 97.299919 0.159569,-18.155518 -80.284935 -3.027280
-18.007636 87.297295 -0.025651));((-18.155518 -80.284935 -3.027280,-17.061924 97.299919 0.15
9569,-18.528039 -60.307144 -2.616679,-18.155518 -80.284935 -3.027280));((-18.528039 -60.30714
4 -2.616679,-17.061924 97.299919 0.159569,41.844643 74.771332 0.159569,-18.528039 -60.307144
-2.616679));((-18.528039 -60.307144 -2.616679,41.844643 74.771332 0.159569,-0.018115 -33.0040
28 -2.075674,-18.528039 -60.307144 -2.616679));((-0.478115 -33.004028 -2.075674,41.844643 74.
771332 0.159569,11.444562 -2.758082 -1.433855,-0.478115 -33.004028 -2.075674));(11.444562 -2.
758082 -1.433855,41.844643 74.771332 0.159569,28.030223 42.750938 -0.498542,11.444562 -2.758
082 -1.433855));((-07.420677 -32.241708 38.085995,-70.479347 -48.040565 37.781651),(-64.075664
-33.223563 38.085995,-07.420677 -32.241708 38.085995));((-70.479347 -48.040565 37.781651,-07.
420677 -32.241708 38.085995,-73.074341 -47.049081 37.781651,-78.479347 -48.040565 37.781651));
((-18.155518 -80.284935 -3.027280,-74.567005 -58.743116 -3.027280,-18.007636 87.297295 -0.02
5651,-18.155518 -80.284935 -3.027280));',NULL,NULL);
@END
```

## Policies

- Scaling policy (clustering, caching)
- Routing policy
- JVM policy
- Logging policy

## Virtual Applications in IBM Workload Deployer



- Full life cycle management
- Multi-server environment deployed as an atomic unit
- Individual components wired to one another
- Ready-to-use environment



# Virtual application pattern features

## Automatic scaling

Managed environments scale up and down based on observed utilization of compute resources

## Failover

Failed virtual machines are replaced with new VMs which are configured with the old VM's identity

## Load balancing

Requests coming into virtual application environments are load balanced

## Security

ACLs for application sharing and management access, LDAP integration for application security

## Monitoring

All components of virtual application environments are monitored by IBM Workload Deployer



# Virtual Application Builder

The screenshot shows the IBM Workload Deployer Virtual Application Builder interface. At the top, the title bar reads "IBM Workload Deployer - [ Pattern type: webapp 1.0 ]" and "Virtual Application Builder - [ Beta Tradelite 09 ]". Below the title bar are tabs for "Diagram", "ListView", and "Source", and a menu bar with "Save", "Save As", "Layout", "Undo", and "Redo".

The interface is divided into three main sections:

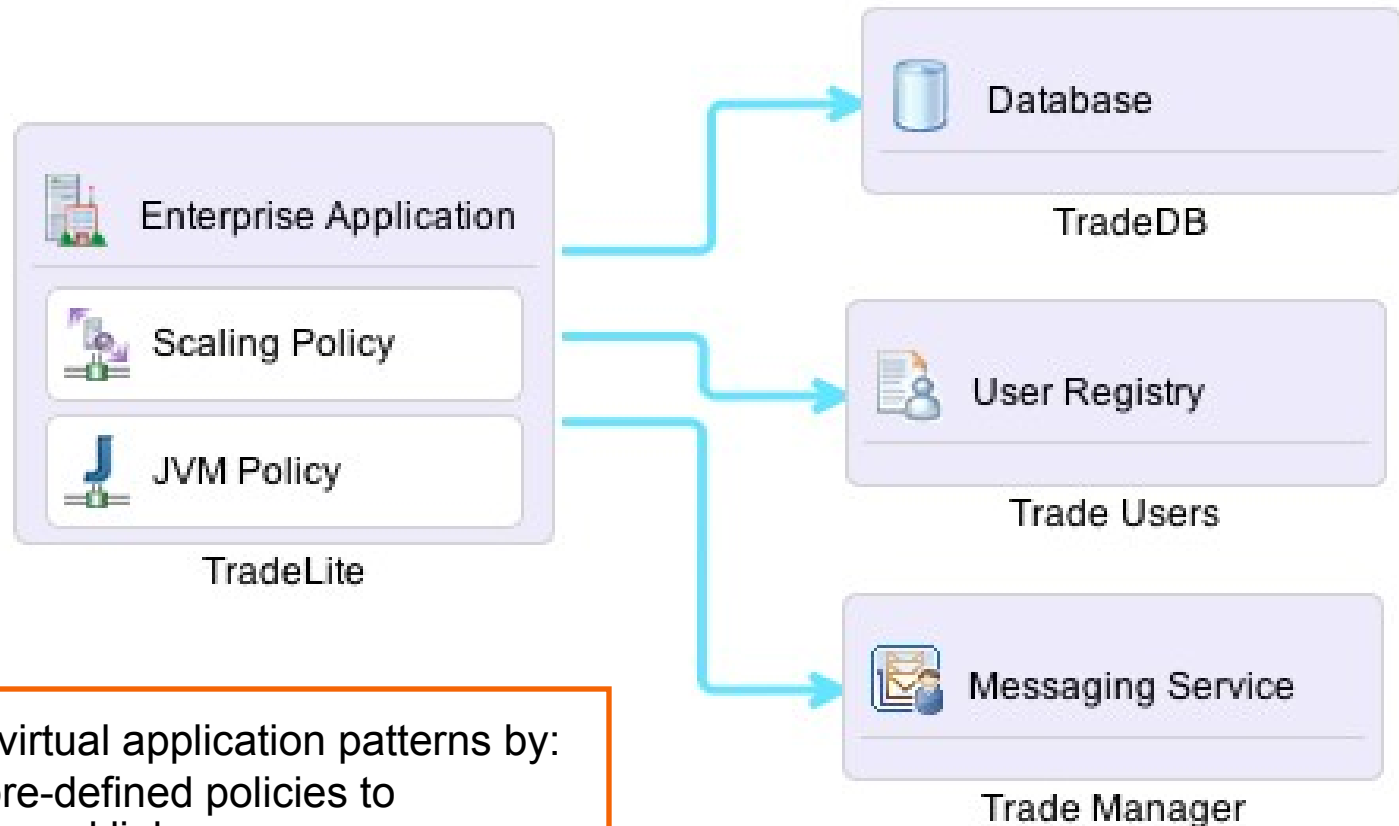
- Assets Panel (Left):** A list of available components categorized into "Application Components", "Database Components", "Messaging Components", "OSGi Components", "User Registry Components", and "Other Components". The "Enterprise Application" and "Database" components are highlighted with orange boxes.
- Canvas (Center):** A workspace for building the application. It contains a diagram with an "Enterprise Application" component (represented by a dashed box) linked to a "Database" component (represented by a cylinder icon). A "JVM Policy" component is also shown. A warning icon is visible near the JVM Policy component. A button "Add policy for application" is at the top left of the canvas.
- Configuration Panel (Right):** A detailed view of the selected "Enterprise Application" component. It shows configuration fields for "Name" (Enterprise Application), "EAR File" (artifacts/tradelite.ear), and various timeout values: "Total transaction lifetime timeout (sec)" (120), "Async response timeout (sec)" (120), "Client inactivity timeout (sec)" (60), and "Maximum transaction timeout (sec)" (300). A "JVM Policy" component is also listed at the bottom of this panel.

Drag assets onto the canvas to define application and related resources

Define cross-component links and add policies; respond to warning messages to build well-formed applications

Specify configuration details for components, policies, and links

## Example: Virtual application pattern (web application)

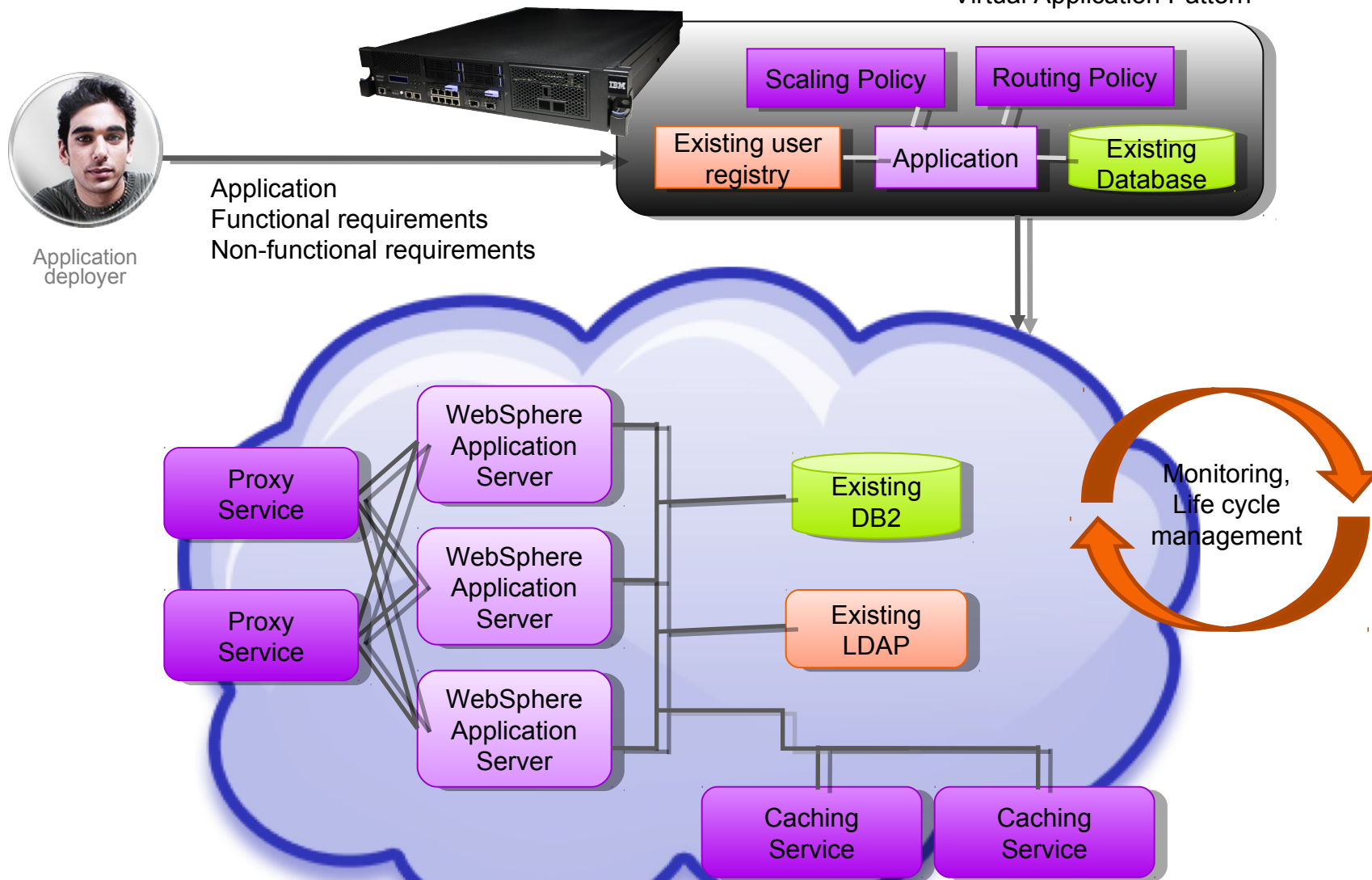


Customize virtual application patterns by:

- Adding pre-defined policies to components and links
- Specifying exposed configuration parameters

# Sample virtual application – pattern to instance

Virtual Application Pattern



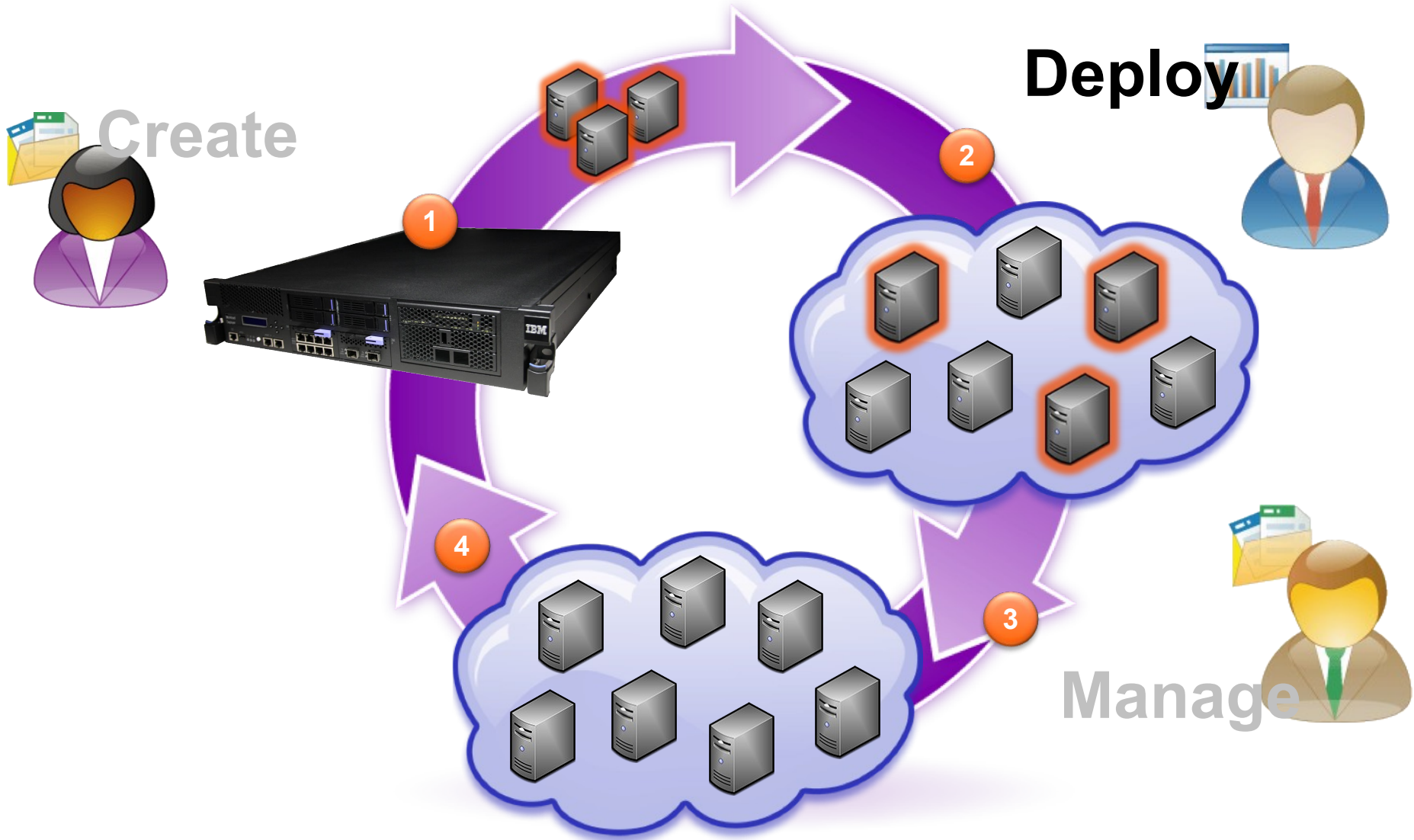
# Using a script package in a virtual system pattern

1) Define the script package in the appliance catalog

**Catalog > Script Packages**, then create the empty script package, upload the script archive  
Optionally override configuration parameters

2) In the **Pattern Editor**, drag script package onto pattern part where you want to run it

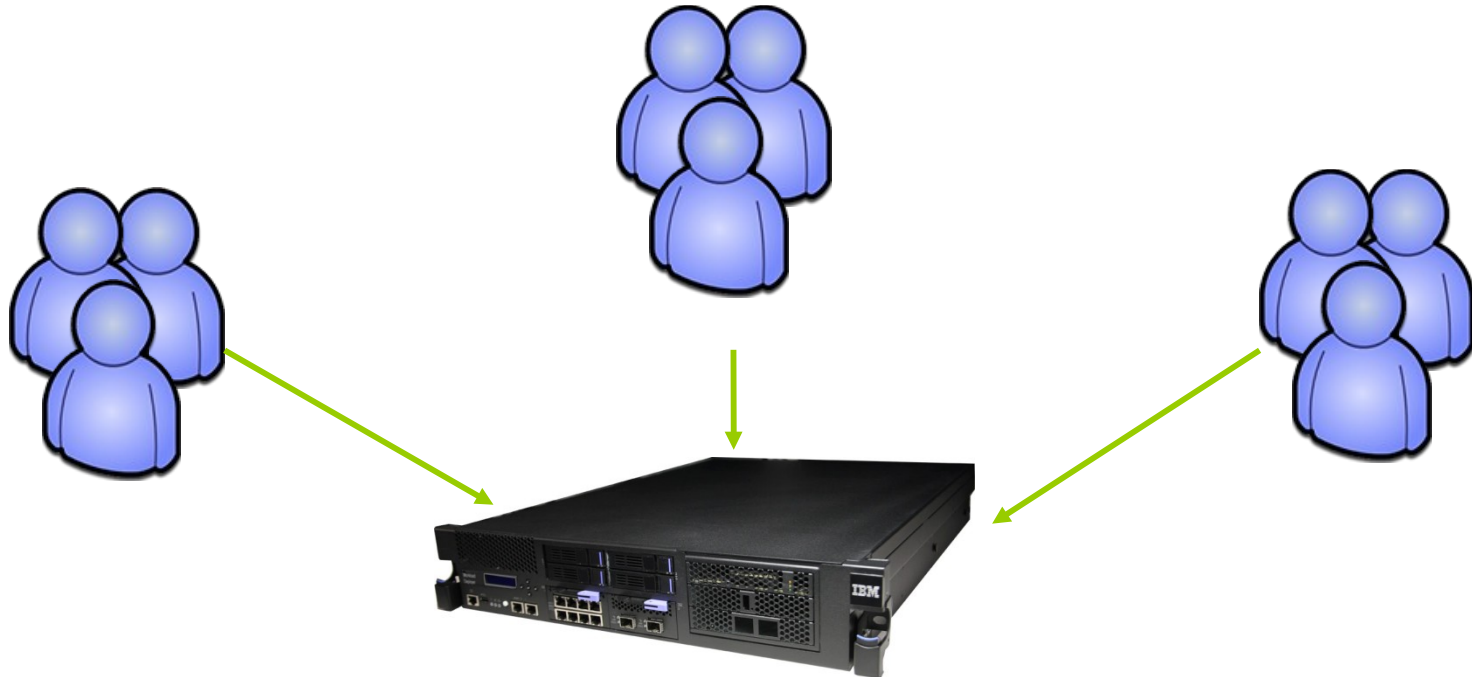
The screenshot displays the IBM Pattern Editor interface. On the left, the 'Pattern Editor' sidebar shows a search bar and a list of parts. Under 'Scripts (11/11)', the 'WebSphere Application Server Samples' script package is highlighted. The main area, titled 'Editing Sample cluster', shows a diagram of a cluster. A 'Deployment manager' node (version 7.0.0.13) is connected to 'Custom nodes' (version 7.0.0.13). A mouse cursor is positioned over the 'Add IBM HTTP Server node' script package, which is being dragged into the 'Custom nodes' section. The interface includes a 'Done editing' button and a timestamp 'Last updated on Nov 18, 2010 5:54:26 PM'.



# Supporting a shared environment

IBM Workload Deployer enables the sharing of resources among multiple groups or teams within an organization

- Access to an environment profile can be restricted to specific users / groups in the appliance security configuration
- Resource limits in environment profiles allow administrators to control resource usage in the shared environment



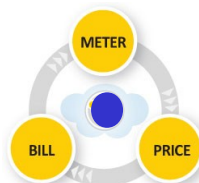


# Shared resource pool management



## User & Group management

- Access control
- Simple user and group creation
- Create groups to manage specific set of users
- Assign different permissions to users and groups



## Usage metering and reporting

- Track usage of cloud resources on a per-user basis
- Excel-readable metering data for chargeback within your organization



## IP Pool management

- Assign IP address from an IP pool to deployed VMs
- Unused IP addresses from terminated VMs are returned back to the pool



## Hypervisor management

- Group hypervisors into cloud groups – logical pools of hypervisors
- Manage multiple cloud groups

# Virtual system deployment

To deploy a virtual system pattern, provide:

Instance name

Deployment environment

- IPv4 / IPv6, cloud group, or environment profile

Schedule (optional)

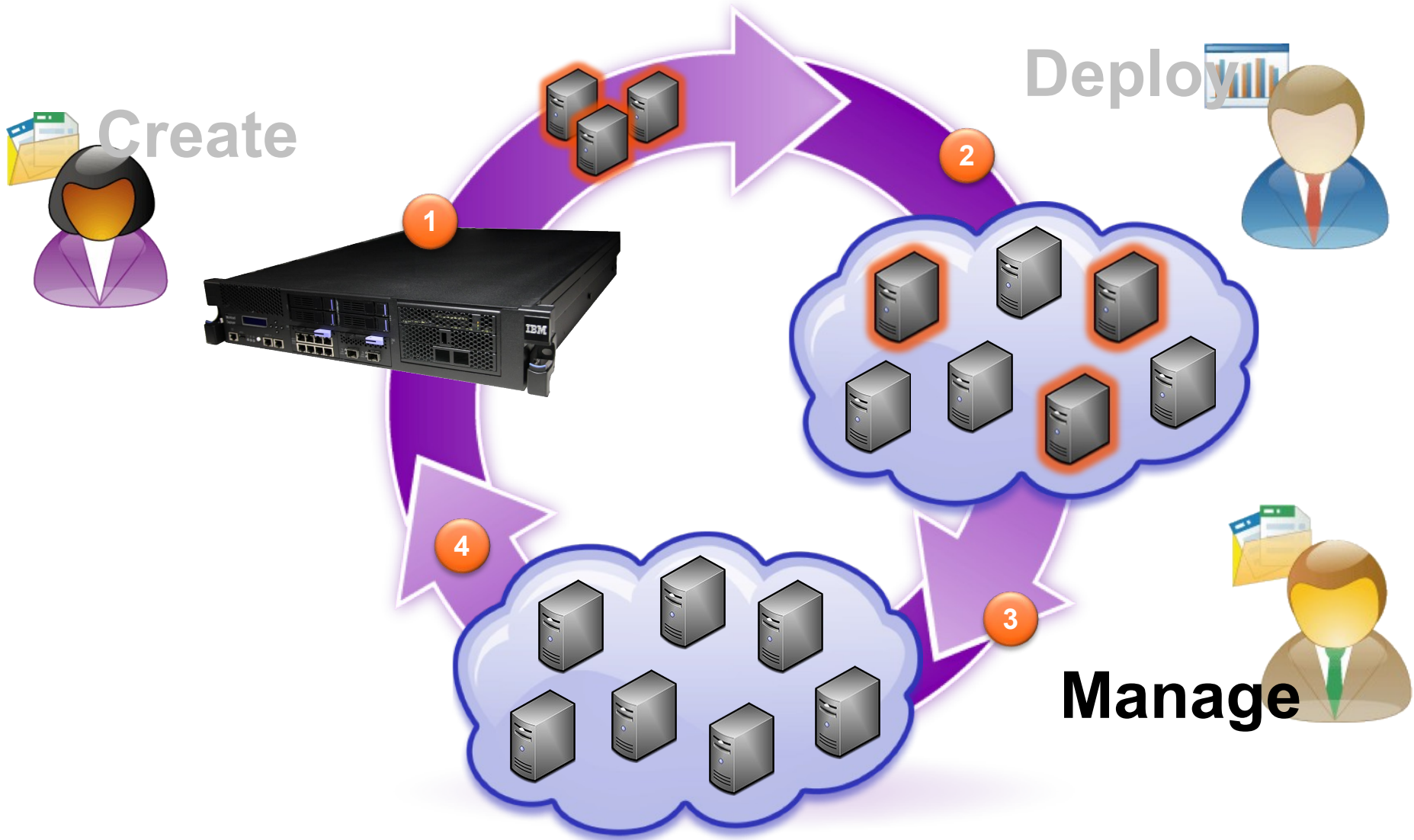
Part configuration information for all parts

- For example, virtual CPU and memory allocation, passwords, script parameters

Describe the virtual system you want to deploy.

- Virtual system name:  
Small cell instance
- Choose Environment
- Schedule deployment
- Configure virtual parts
- Standalone server

OK Cancel



# Virtual system operations

IMP Cluster System 99

Created on:	Oct 8, 2011 12:03:15 AM
From pattern:	<a href="#">IMP Cluster Pattern 99</a>
Using Environment profile:	None provided
Current status:	The virtual system has been deployed and is ready to use
Updated on:	Oct 8, 2011 12:54:50 AM
Access granted to:	Administrator [owner] <input style="width: 100%;" type="text" value="Add more..."/>
Snapshot:	<div style="border: 1px solid #ccc; display: inline-block; padding: 2px 10px; margin-bottom: 5px;">Create</div> (none)

---

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

---

+ Virtual machines **4 total** - 4 started

---

+ Comments There are no comments yet

- Use the virtual system toolbar to:
- Refresh the display
- Start / stop / store the instance
- Apply service
- Delete the instance
- Take virtual system snapshots and restore to a previous snapshot
- See history of operations on the virtual system



# Virtual machine operations

Access individual virtual machines – SSH, VNC, administrative console

Use the action toolbar to start / stop / delete individual VMs

Manually clone VMs in your system

For example, add an extra custom node to your cluster

Monitor CPU and memory utilization for each VM

Optionally adjust CPU and memory allocation in the VM details section

Virtual machines 4 total - 4 started

Name	CPU	Memory	SSH	Actions	Group Actions
+  vm-25-020-DMGR-IMP Cluster System 99-8	<input type="text"/> 0%	<input type="text"/> 26%	Login	View	<input type="checkbox"/>
+  vm-25-019-Custom Node-IMP Cluster System 99-9	<input type="text"/> 0%	<input type="text"/>		View	<input type="checkbox"/>
+  vm-25-018-Custom Node-IMP Cluster System 99-10	<input type="text"/> 1%	<input type="text"/> 31%	Login	View	<input type="checkbox"/>
+  vm-25-017-ODR Node-IMP Cluster System 99-11	<input type="text"/> 1%	<input type="text"/> 27%	Login	View	<input type="checkbox"/>



# Virtual system maintenance

Hypervisor Edition images include bundled fixes and tools for applying maintenance Update Installer, Installation Manager

Latest middleware and operating system fixes are bundled with new image releases

To keep your virtual systems up-to-date, you can:

Deploy a new virtual system using updated Hypervisor Edition images from IBM

- Must manually patch images customized extension

Apply maintenance to virtual systems using the

- Use the update package that comes each Hypervisor Edition
- Use emergency fixes that you load into appliance catalog

Use existing maintenance practices

Describe your service request.

Schedule service

Select service level or fixes

Move to service level

Apply emergency fixes

WAS iFix 4

Product administrator user name and password

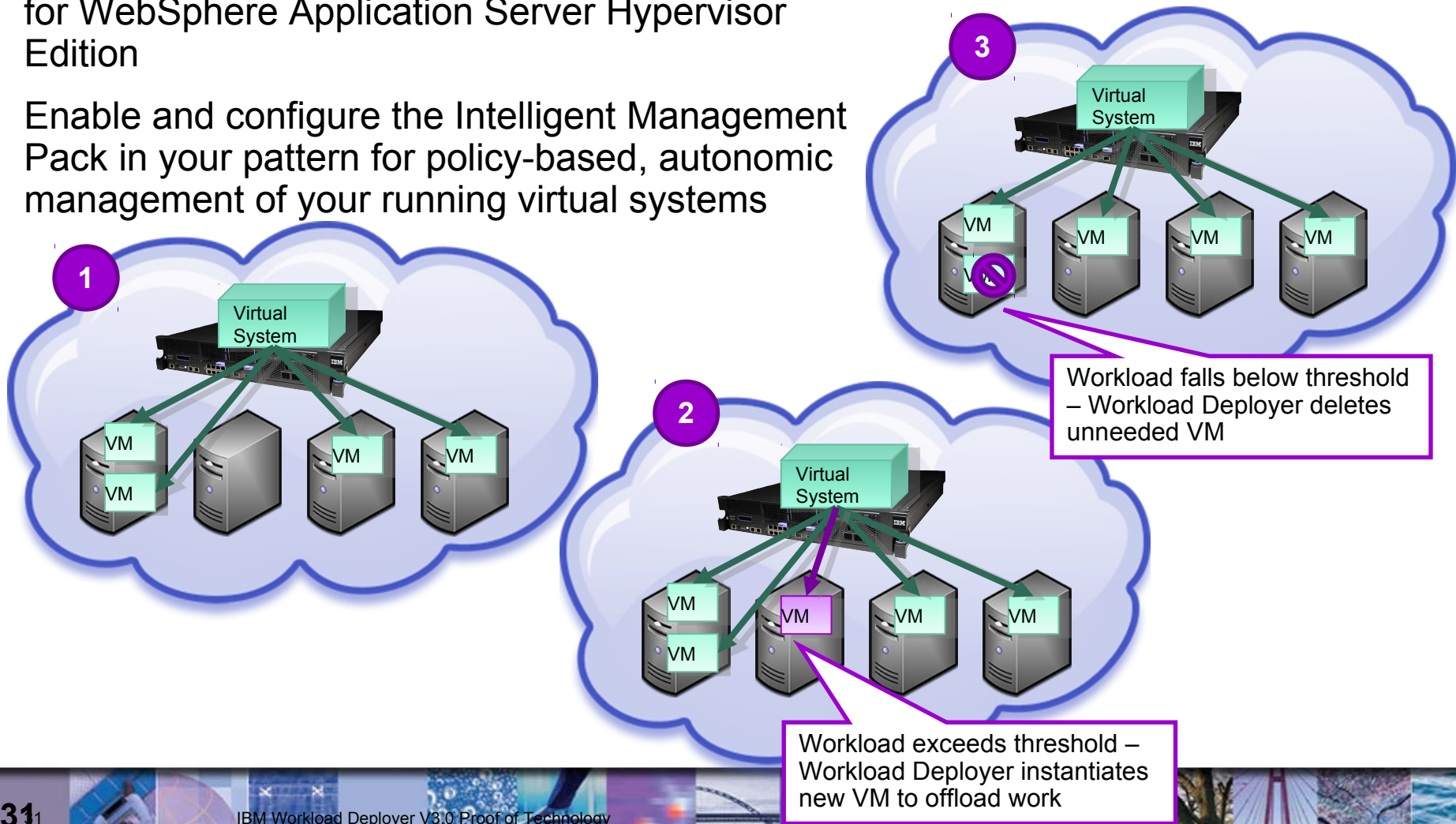
A snapshot will be taken before applying service.

OK Cancel

# Autonomic management with Intelligent Management Pack

Intelligent Management Pack is an optional add-on for WebSphere Application Server Hypervisor Edition

Enable and configure the Intelligent Management Pack in your pattern for policy-based, autonomic management of your running virtual systems



# License management

## License awareness

- Notify virtual image owners when license usage reaches the thresholds set below

## IBM products

Below are the products that can be deployed from this appliance. The list is generated by checking the contents of your virtual images against the product list in the IBM Software Catalog. You can specify how many processor value units (PVUs) you own for each product. When enabled, license awareness will alert you when PVU usage approaches a given threshold.

- Update IBM Software Catalog and Processor Value Unit (PVU) Table

Product	Product ID	Enforcement	Licenses owned (PVUs)	Notify if usage reaches	Licenses in use (PVUs)	Licenses reserved (PVUs)	In the cloud now
IBM WebSphere Application Server Hypervisor Edition	5724-X89	Ignore <input type="button" value="v"/>	2500 <input type="button" value="up"/> <input type="button" value="down"/>	90.0 % <input type="button" value="up"/> <input type="button" value="down"/>	0	0	<a href="#">0 virtual systems</a>

- Specify your entitlement level for products in the catalog
- Specify your enforcement policy (Ignore, Warn, Enforce)
- Receive notifications when you reach a configured threshold (for example, 90%)
- Generate license usage reports





# Summary





# Reference materials

For more information:

IBM Workload Deployer V3.0 announcement letter:

<http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=an&subtype=ca&appname=g pateam&supplier=897&letternum=ENUS111-073>

Pattern for Web Applications announcement letter:

<http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=an&subtype=ca&appname=g pateam&supplier=897&letternum=ENUS211-140>

Pattern for DB2 Workgroup Server Edition announcement letter:

<http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=AN&subtype=CA&htmlfid=897/ENUS211-254&appname=USN>

IBM Workload Deployer V3.0 information center:

<http://publib.boulder.ibm.com/infocenter/worlodep/v3r0m0/index.jsp>

WebSphere Education offering:

ZU904 IBM Workload Deployer V3.0 Technical Overview (6 hours)

Self-paced virtual class consisting of recorded lectures and product demos



# Reference materials

## For more information:

### Release notes:

IBM Workload Deployer, Version 3.0.0.1

<http://www-01.ibm.com/support/docview.wss?uid=swg27021908&wv=1>

IBM Workload Deployer Patterns

<http://www-01.ibm.com/support/docview.wss?uid=swg27021904&wv=1>

IBM WebSphere Application Server Hypervisor Edition Intelligent Management Pack  
Version 7.0

<http://www.ibm.com/support/docview.wss?uid=swg21502482>




# Questions



# Screen Shots



# Logging in



The screenshot shows the login interface for IBM Workload Deployer. The title "IBM Workload Deployer" is at the top. Below it are two input fields: "User name:" with the value "jbohn@us.ibm.com" and "Password:" with a masked password of 12 dots. A "Login" button is positioned below the password field, with a mouse cursor hovering over it. At the bottom left, there is a link "Forgot your password?". The IBM logo is in the bottom right corner. A copyright notice "© Copyright IBM Corporation 2011. All Rights Reserved." is centered at the very bottom of the page.

Users and groups are assigned different rights based on their role.

# Main Workload Deployer Screen



## IBM Workload Deployer



[Download command line tool](#)

### Setting up your private cloud



#### Step 1: Set up the appliance

Customize the appliance settings and create user accounts. You can also create user groups.

[Customize settings](#) | [Create users](#)



#### Step 2: Set up the cloud

Create the cloud by identifying IP groups and collections of hypervisors called cloud groups.

[Add IP groups](#) | [Add cloud groups](#)



#### Step 3: Add virtual images

Provide new virtual images to the catalog by uploading files or extending pre-built images.

[Add virtual images](#) | [Add script packages](#)



#### Step 4: Set up pattern types

Install and configure the pattern types to enable the creation of virtual application patterns.

[Add pattern types](#) | [Settings for Platform Service](#)

### Working with virtual applications

### Working with virtual systems

### Working with virtual appliances



# View Members & Permissions for a Group

The screenshot displays the IBM Workload Deployer web interface. At the top, the navigation bar includes 'Welcome', 'Instances', 'Patterns', 'Catalog', 'Reports', 'Cloud', and 'Appliance'. The user is identified as 'Joe Bohn'. The left sidebar shows a list of 'User Groups' with 'iwd\_salesAndServices' selected. The main content area shows details for this group, including its description, creation and update dates, a list of members (Mami Tsuchiya, Yoshio Ono, Georg Ember, Markus Keppeler), and a list of permissions with checkboxes and radio buttons for selection.

**IBM Workload Deployer** Welcome, Joe Bohn | Help | About

Welcome Instances Patterns Catalog Reports Cloud **Appliance** Profile Logout

### User Groups

Search...

- iwd\_fit\_construct
- iwd\_salesAndServices**
- iwd\_fit\_admin
- Everyone
- iwd\_fit\_deploy
- iwd\_rational\_deploy

#### iwd\_salesAndServices

Description: Set of users that sell and execute IBM Services

Created on: Aug 29, 2011 5:10:19 PM

Updated on: Sep 6, 2011 4:01:03 PM

Group members:

- Mami Tsuchiya
- Yoshio Ono
- Georg Ember
- Markus Keppeler

[\[show more\]](#)

Permissions:

- Deploy patterns in the cloud
- Create new patterns
- Create new environment profiles
- Create new catalog content
- Cloud administration
  - Read-only view
  - Full permissions
- Appliance administration
  - Read-only view
  - Full permissions
- IBM License Metric Tool (ILMT)

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# Defining Hardware Pools Called “Cloud Groups”

The screenshot shows the IBM Workload Deployer web interface. The top navigation bar includes 'Welcome, Administrator | Help | About' and a secondary bar with 'Welcome', 'Instances', 'Patterns', 'Catalog', 'Reports', 'Cloud', and 'Appliance'. The left sidebar is titled 'Cloud Groups' and contains a search box and two entries: 'FIT Cloud Group' and 'Rational Cloud Group'. A modal dialog is open in the center, titled 'Describe the cloud you want to create.' It contains the following fields:

- Name:** Production Cloud
- Description:** WestCoast Prod Cloud
- Hypervisor type:** A dropdown menu with 'ESX' selected and highlighted in blue. Other options visible are 'PowerVM' and 'z/VM'.
- Group type:** (This label is present but the field is not clearly visible).

Below these fields is a section titled 'Provide the credentials for Virtual Center' with the following fields:

- Host name:** vcenter.western.com
- User name:** pokey
- Password:** Masked with dots
- Verify password:** Passwords do not match

At the bottom of the dialog are 'Create' and 'Cancel' buttons. A vertical scrollbar is visible on the right side of the dialog.

details and options

# View Cloud Group Details

**IBM Workload Deployer** Welcome, Administrator | Help | About

Welcome Instances Patterns Catalog Reports **Cloud** Appliance Profile Logout

### Cloud Groups

Search...  
FIT Cloud Group  
Rational Cloud Group

### FIT Cloud Group

Type: Custom cloud group

Current status: All hypervisors available

Updated on: Sep 1, 2011 11:28:15 AM

Hypervisor type: ESX

Use linked clones: Enable

Overcommit storage by: 0% You must specify a value greater than zero to overcommit storage.

CPU allocation: 85% The specified CPU will be allocated for deployments.

Cloud memory allocation: 85% The specified memory will be allocated for deployments.

Hypervisors:	Status	Hypervisors	CPU	Memory
		fit-esx-6	34%	72%

Add more...

Hardware PVUs: 800

Access granted to: Administrator [owner]  
Everyone [read] [remove]  
iwd\_rational\_deploy [read] [remove]  
iwd\_fit\_construct [all] [remove]  
Robbie Minshall [read] [remove]  
Add more...

# License Management in IBM Workload Deployer

## License awareness

Notify virtual image owners when license usage reaches the thresholds set below

## IBM products

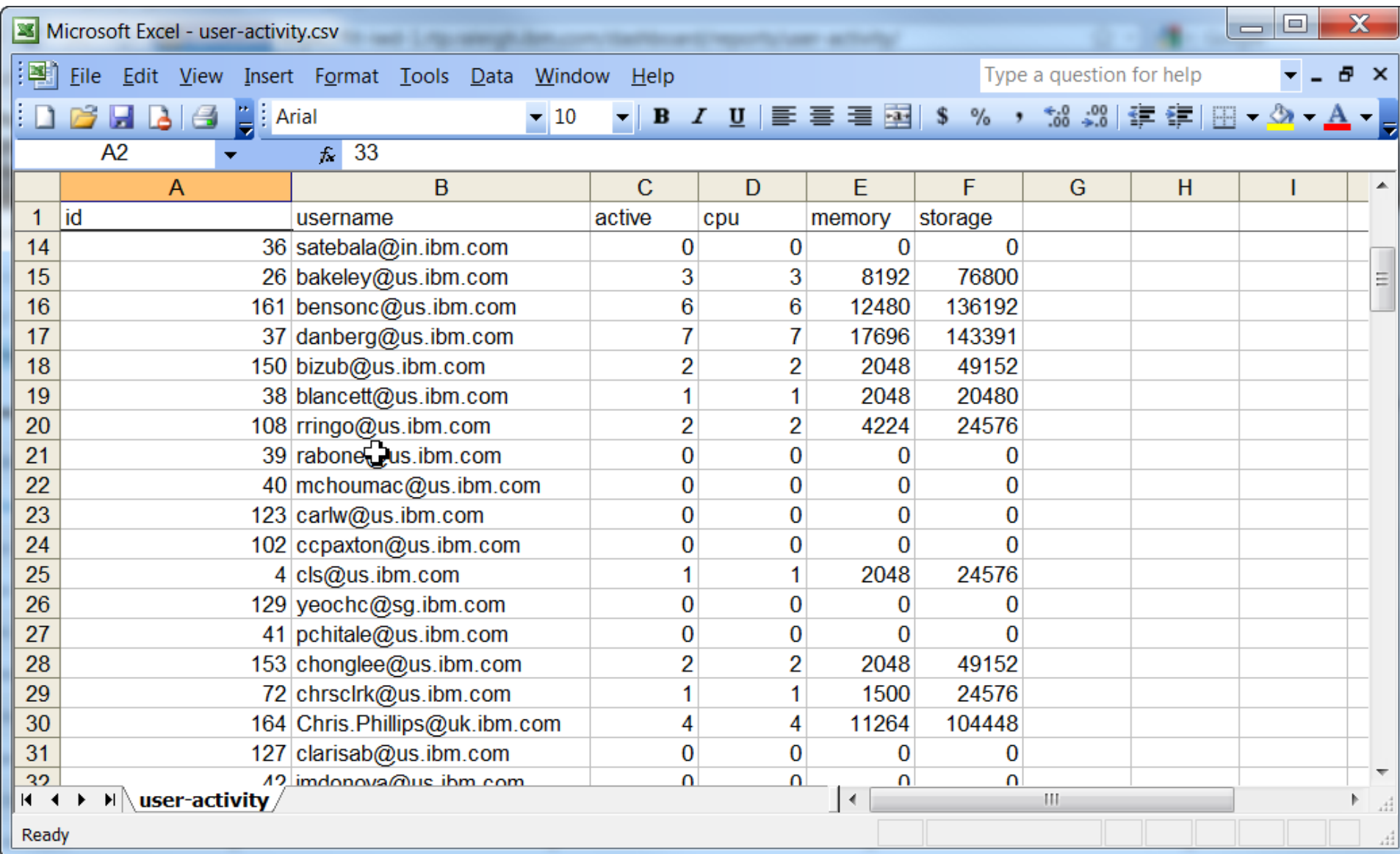
Below are the products that can be deployed from this appliance. The list is generated by checking the contents of your virtual images against the product list in the IBM Software Catalog. You can specify how many processor value units (PVUs) or SERVER licenses you own for each product. When enabled, license awareness will alert you when PVU or SERVER license usage approaches a given threshold.

Update IBM Software Catalog and Processor Value Unit (PVU) Table

Cloud capacity (PVU): 1360

Product	Product ID	License type	Enforcement	Licenses owned	Notify if usage reaches	Licenses in use	Licenses reserved	In the cloud now
IBM DB2 Express Edition Server Option	5724-E49	Server	Ignore	4	90.0 %	1	1	1 virtual systems
NOVELL SUSE LINUX ENTERPRISE SERVER FOR X86, AMD64, & INTEL EM64T (MAXIMUM 32 CPU) 1-YEAR SUBSCRIPTION WITH NOVELL STANDARD SUPPORT INCLUDING 12X5 UNLIMITED ELECTRONIC AND TELEPHONE SUPPORT	5724-L43	Server	Enforce	5	90.0 %	4	4	4 virtual systems
IBM WebSphere Application Server Hypervisor Edition	5724-X89	PVU	Warn	1000	90.0 %	1110	1260	13 virtual systems
IBM WS App Svr Hyper Ed for Novell SLES on Sys z-Novell Sub Not required	5725-A12	PVU	Ignore	0	90.0 %	0	0	0 virtual systems
IBM WebSphere Application Server Hypervisor Edition on AIX	5725-A25	PVU	Ignore	0	90.0 %	0	0	0 virtual systems
IBM WebSphere App Svr Hypervisor Edition for Red Hat Enterprise Linux Svr	5725-A26	PVU	Ignore	1200	90.0 %	1120	1310	14 virtual systems

# Usage Reporting in IBM Workload Deployer



Microsoft Excel - user-activity.csv

Type a question for help

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

A2 = 33

	A	B	C	D	E	F	G	H	I
1	id	username	active	cpu	memory	storage			
14	36	satebala@in.ibm.com	0	0	0	0			
15	26	bakeley@us.ibm.com	3	3	8192	76800			
16	161	bensohc@us.ibm.com	6	6	12480	136192			
17	37	danberg@us.ibm.com	7	7	17696	143391			
18	150	bizub@us.ibm.com	2	2	2048	49152			
19	38	blancett@us.ibm.com	1	1	2048	20480			
20	108	rringo@us.ibm.com	2	2	4224	24576			
21	39	rabone@us.ibm.com	0	0	0	0			
22	40	mchoumac@us.ibm.com	0	0	0	0			
23	123	carlw@us.ibm.com	0	0	0	0			
24	102	ccpaxton@us.ibm.com	0	0	0	0			
25	4	cls@us.ibm.com	1	1	2048	24576			
26	129	yeochc@sg.ibm.com	0	0	0	0			
27	41	pchitale@us.ibm.com	0	0	0	0			
28	153	chonglee@us.ibm.com	2	2	2048	49152			
29	72	chrscrk@us.ibm.com	1	1	1500	24576			
30	164	Chris.Phillips@uk.ibm.com	4	4	11264	104448			
31	127	clarisab@us.ibm.com	0	0	0	0			
32	12	imdonova@us.ibm.com	0	0	0	0			

user-activity

Ready

# Defining a Virtual Application Pattern

The screenshot displays the IBM Workload Deployer web interface. At the top, the navigation bar includes 'Welcome, Administrator | Help | About' and a menu with 'Welcome', 'Instances', 'Patterns', 'Catalog', 'Reports', 'Cloud', 'Appliance', 'Profile', and 'Logout'. The main content area is titled 'Virtual Application Patterns' and features a search bar and a list of patterns on the left. A modal dialog box titled 'Create Application' is open in the center. The dialog has a close button (X) in the top right corner. Inside the dialog, the heading reads 'Start building your virtual application.' followed by the instruction 'Choose one template of selected pattern type to start building your virtual application.' Below this, there is a 'Pattern type' dropdown menu currently set to 'WebApp Pattern Type 1.0'. A list of templates is shown below the dropdown, with 'Blank JEE web application' selected and highlighted in blue. Other templates include 'Blank application', 'Kev\_test1', and 'TradeLite template'. To the right of the template list, there is a 'Description:' section with a 'More information' link (i icon) and the text 'Application template for simple JEE Web application including WAS and DB2'. Below the description is a 'Preview:' section containing a diagram of a server stack. The diagram shows a 'Web Application' icon pointing to a 'WebSphere Application Server' icon. At the bottom right of the dialog, there are two buttons: 'Start Building' and 'Cancel'.

# Editing a Virtual Application

IBM Workload Deployer - [ Solution: webapp 1.0 ] Virtual Application Builder - [ DayTrader ]\*

Diagram | ListView | Source

Save | Save As | Layout | Undo | Redo

Assets

Asset name

- Application Components
  - Enterprise Application  
WebSphere Application Server
  - External archive file
  - Web Application  
WebSphere Application Server
- Database Components
  - Database  
DB2
  - Remote Database  
DB2
- Messaging Components
  - Messaging Service  
WebSphere MQ
  - Queue  
WebSphere MQ
  - Topic  
WebSphere MQ
- OSGi Components
  - External OSGi Bundle Repository
  - OSGi Application  
WebSphere Application Server
- Transaction Processing Components
  - CICS Transaction Gateway
- User Registry Components
  - User Registry  
Tivoli Directory Server
- Other Components

Layers

+ Add policy for application

```
graph LR; TradeLite[Web Application] --> TradeDB[Database]
```

Web Application  
WebSphere Application Server

Name: \*  
TradeLite

WAR File: \*  
artifacts/tradelite.war

Context Root:  
trade

# IBM Workload Deployer Instantiates Virtual Application As...





# Add a Scaling Policy

IBM Workload Deployer - [ Pattern Type: WebApp Pattern Type 1.0 ] Virtual Application Builder - [ jdbc/TradeDataSource ] \*

Diagram | ListView | Source

Save | Save As | Layout | Undo | Redo

Assets

Asset name

- Application Components
  - Additional archive file
  - Enterprise Application  
WebSphere Application Server
  - Existing Web Service Provider Endpoint
  - Policy Set
  - Web Application  
WebSphere Application Server
- Database Components
- Messaging Components
- OSGi Components
- Transaction Processing Components
- User Registry Components
- Other Components

Enterprise Application

Database

database

Scaling Policy

Enterprise Application

EAR File: \*

artifacts/tradelite.ear

Total transaction lifetime timeout (sec):

120

Async response timeout (sec):

120

Client inactivity timeout (sec):

60

Maximum transaction timeout (sec):

300

Interim fixes URL:

*Click select button to update*

Select

Scaling Policy  
Web/Enterprise Application

Enable session caching:

Scaling Type

Response Time Based

Scaling in/out when Web response time is out of threshold range(ms):

0 10000

Range: 1000 - 5000

Instance number range of scaling in/out: \*

1 50

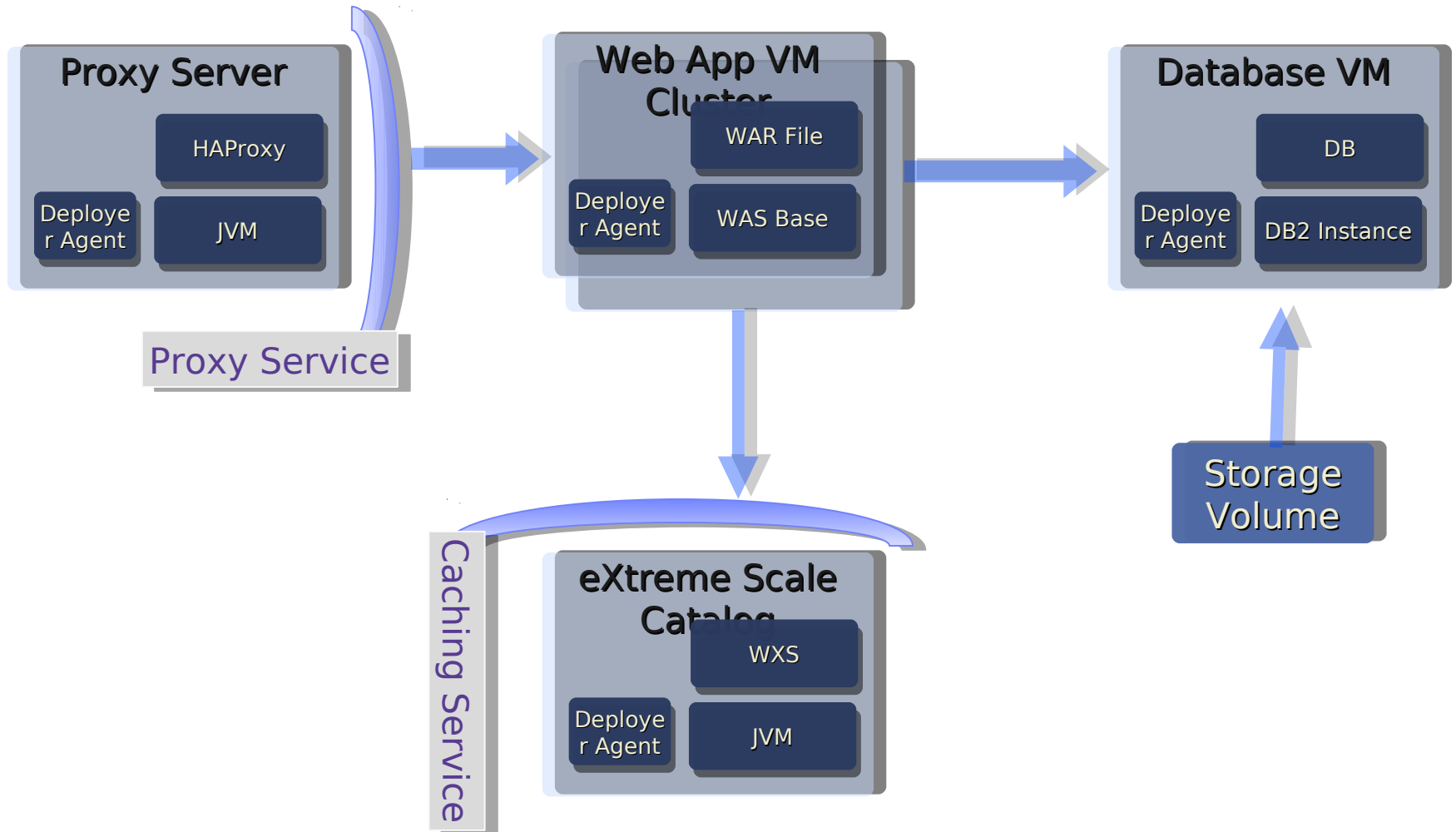
Range: 2 - 16

Minimum time (sec) to trigger add/remove: \*

120

Layers

# The Virtual Application Now Maps To:



# Creating a Virtual System Pattern

**IBM Workload Deployer** Welcome, Administrator | Help | About

Welcome Instances Patterns Catalog Reports Cloud Appliance Profile Logout

### Pattern Editor

Search...

**Parts (123/123)**  
**Scripts (86/86)**

- Add IBM HTTP Server node
- cartwTest1
- cartwTest2
- ChongCreateServers\_1
- ChongInstallApplicaion1
- chongRemoveScriptPackage\_1
- Create DB2 Data Source to a highly available DB2 Enterprise database cluster
- Create DB2 Data Source to a highly available DB2 Express database cluster
- Create DB2 Data Source to standalone DB2 Enterprise server
- Create DB2 Data Source to standalone DB2 Express server
- Create DB2 database
- Create Servers JWR
- Create Servers ondrej
- DayTrader Sample
- IBM\_LAB\_BFA
- IBM\_LAB\_BFA2
- IBM\_LAB\_DB2\_CLIENT
- IBM\_LAB\_IM\_144
- IBM\_LAB\_JAVA\_16
- IBM\_LAB\_LOAD\_VNC
- IBM\_LAB\_NETWORK\_DRIVE
- IBM\_LAB\_RAf3x
- IBM\_LAB\_RAf\_ALL

**Add-Ons (6/6)**

### Editing jbohn DayTrader raf and DB

Deploys to ESX hypervisors. Last updated on Oct 7, 2011 3:25:56 PM | Ordering | Advanced Options

Done editing

```
graph LR; DM[Deployment manager] --> CN[Custom nodes]; CN --> IHS[IBM HTTP servers]
```

**Deployment manager** (7.0.0.17)

- Cluster configuration
- RAFW Integration Script
- iwd\_VMCompliance
- Create DB2 Data Source to standalone DB2 Enterprise server

**Custom nodes** (7.0.0.17)

- JVM tuning
- iwd\_VMCompliance

**IBM HTTP servers** (7.0.0.17)

- iwd\_VMCompliance

**Database** (7.0.0.2)

- Create DB2 database

# Deploy a Virtual System

The screenshot displays the IBM Workload Deployer web interface. The main window shows a configuration page for a virtual system named "jbohn DayTrader raf and DB", which is currently in a "Draft" state. The configuration includes details such as the update time (Oct 7, 2011 3:27:48 PM), the current status (Draft), and the user with access granted (Administrator [owner]).

A modal dialog box is open in the center of the screen, titled "Describe the virtual system you want to deploy." The dialog contains the following configuration options:

- Virtual system name: westcoast HR1
- Choose Environment
- Schedule deployment
- Configure virtual parts
  - Deployment manager
  - Custom nodes
  - IBM HTTP servers
  - Database

The dialog has "OK" and "Cancel" buttons at the bottom. In the background, a diagram of the virtual system architecture is visible, showing components like "IBM HTTP servers 7.0.0.17" and "iwd\_VMCompliance".

# Deploy a Virtual System (cont.)

The screenshot displays the IBM Workload Deployer web interface. The main window shows a pattern named "jbohn DayTrader raf and DB" in a "Draft" state, updated on Oct 7, 2011 3:27:48 PM. A modal dialog box is open, titled "Fill in the required values for this part of the pattern." The dialog contains the following fields:

- Name: DatabasePart
- \* Virtual CPUs: 1
- \* Memory size (MB): 3072
- \* Reserve physical CPUs: False
- \* Password (root):
- \* Verify password:
- \* Password (virtuser):
- \* Verify password:

Buttons for "OK" and "Cancel" are at the bottom of the dialog. In the background, a diagram shows a component "Database 7.0.0.2" and another component "IBM HTTP servers 7.0.0.17" with a sub-component "iwd\_VMCompliance".

# View Details of a Running Virtual System

The screenshot displays the IBM Workload Deployer interface. The top navigation bar includes 'Welcome, Administrator | Help | About' and a menu with 'Welcome', 'Instances', 'Patterns', 'Catalog', 'Reports', 'Cloud', and 'Appliance'. The left sidebar shows a list of virtual systems, with 'jbohn DayTrader recreate' selected. The main panel shows details for this system, including its creation date, pattern, status, and a table of virtual machines.

**Virtual Systems**

- jbohn
- jbohn DayTrader DB
- jbohn DayTrader raf
- jbohn DayTrader recreate**
- jbohn RAF\_SERVER

**jbohn DayTrader recreate**

Created on: Sep 30, 2011 5:02:27 PM

From pattern: [jbohn DayTrader raf](#)

Using Environment profile: None provided

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

Updated on: Oct 5, 2011 11:55:37 AM

Access granted to: [Joe Bohn \[owner\]](#)

Snapshot:   
(none)

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

**Virtual machines** 4 total - 4 started

Name	CPU	Memory	SSH	Actions	Group Actions
iwctest58-DMGR-jbohn DayTrader recreate-652	<input type="text" value="0%"/>	<input type="text" value="2%"/>	Login	View	<input type="checkbox"/>
iwctest56-Custom Node-jbohn DayTrader recreate-653	<input type="text" value="1%"/>	<input type="text" value="7%"/>	Login	View	<input type="checkbox"/>
iwctest49-					