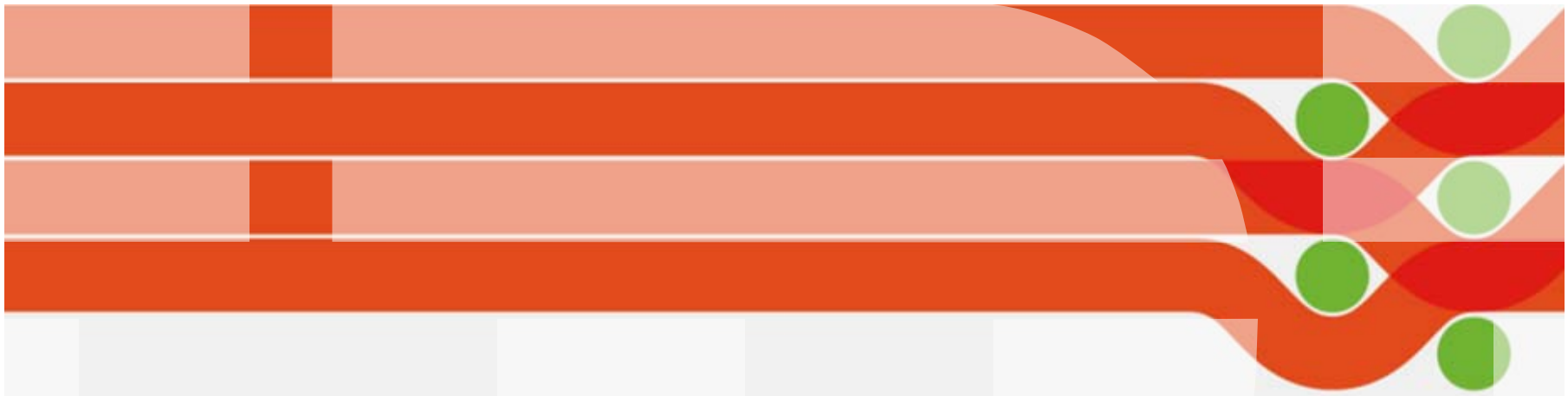
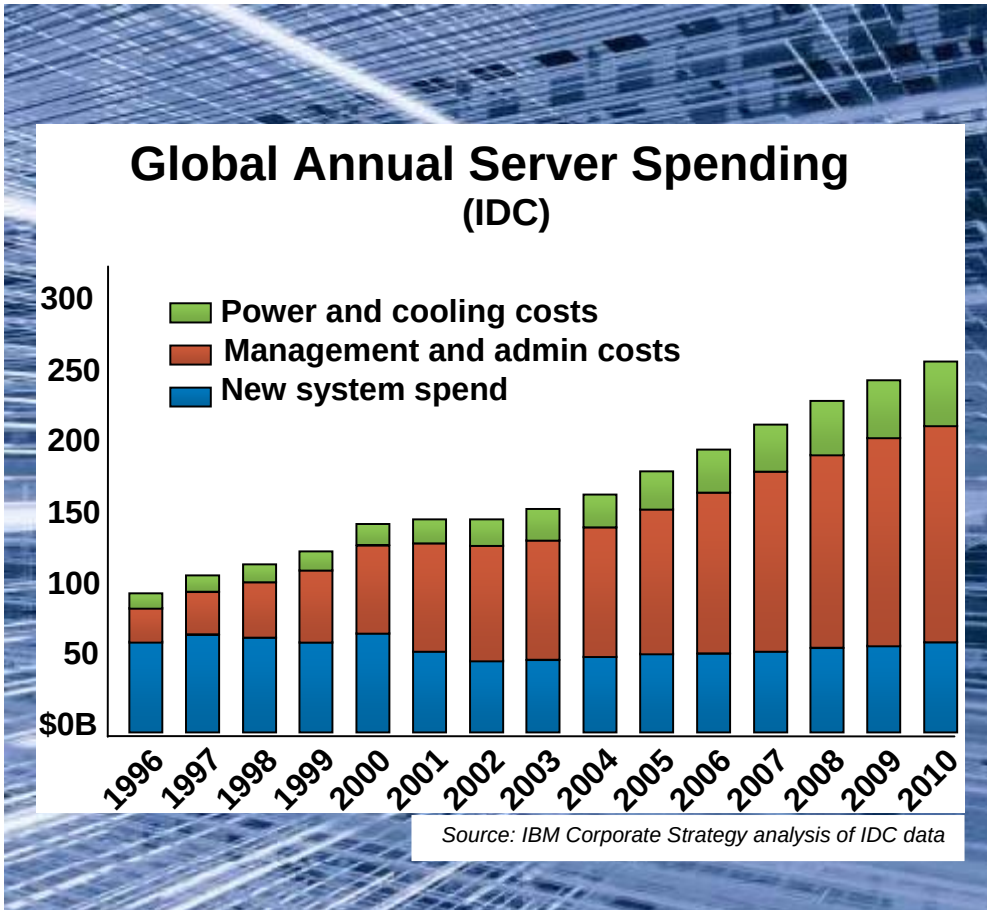
David Schlosser, IBM WebSphere Technical Sales Specialist
August, September 2010

Platform as a Service With WebSphere Cloudburst



The context : a crisis of complexity. The need for progress is clear.



1.5x

- Explosion of information driving 54 % growth in storage shipments every year.

70c per 1$

- 70 % on average is spent on maintaining current IT infrastructures versus adding new capabilities.

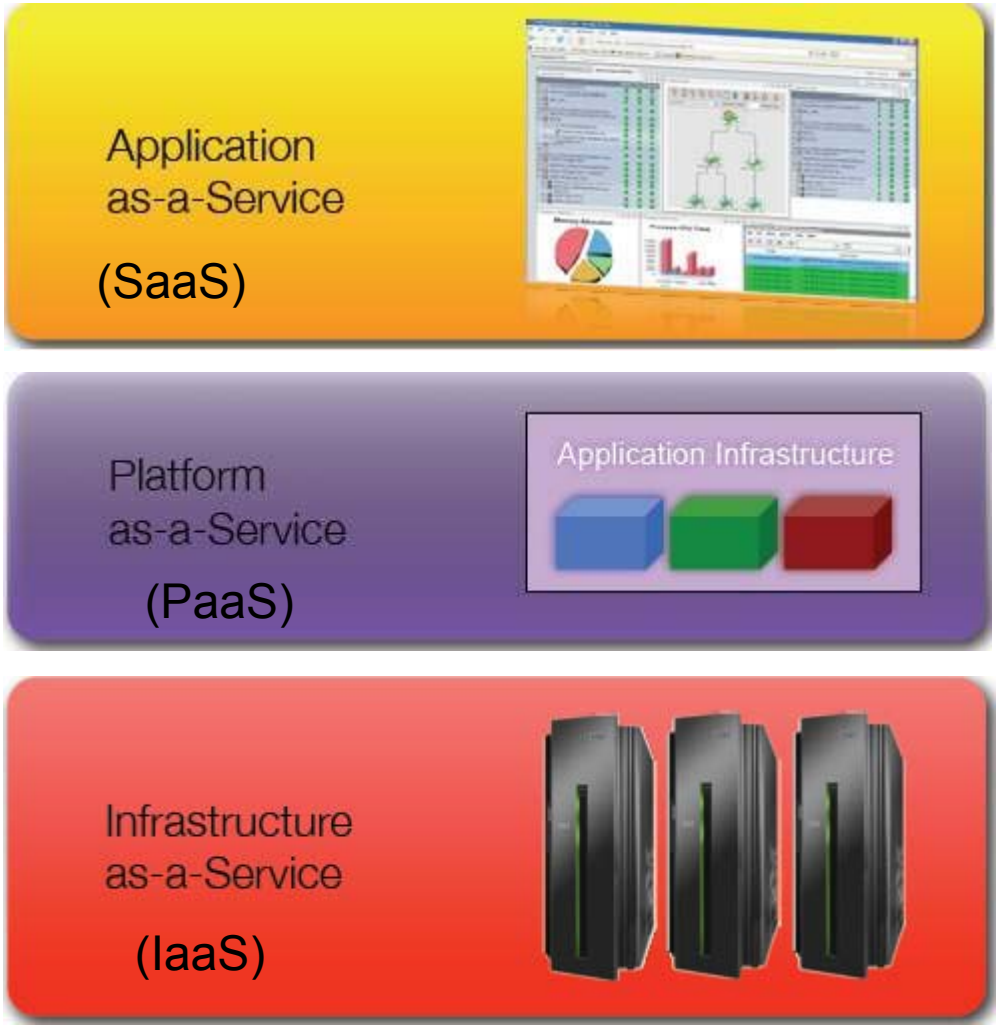
85 % idle

- In distributed computing environments, up to 85 % of computing capacity sits idle.

Clearly, infrastructure needs to be more dynamic to free up budget for new investments and accelerate deployment of superior capabilities being demanded by the business

Cloud service models address complexity

For example: a business needs a business design application.



- SaaS → A business logs into the cloud and uses the applications.
- PaaS → A business logs into the cloud, creates a platform instance and deploys the application to a platform.
- IaaS → A business logs into the cloud, assembles the computing resources into a platform and deploys the application.

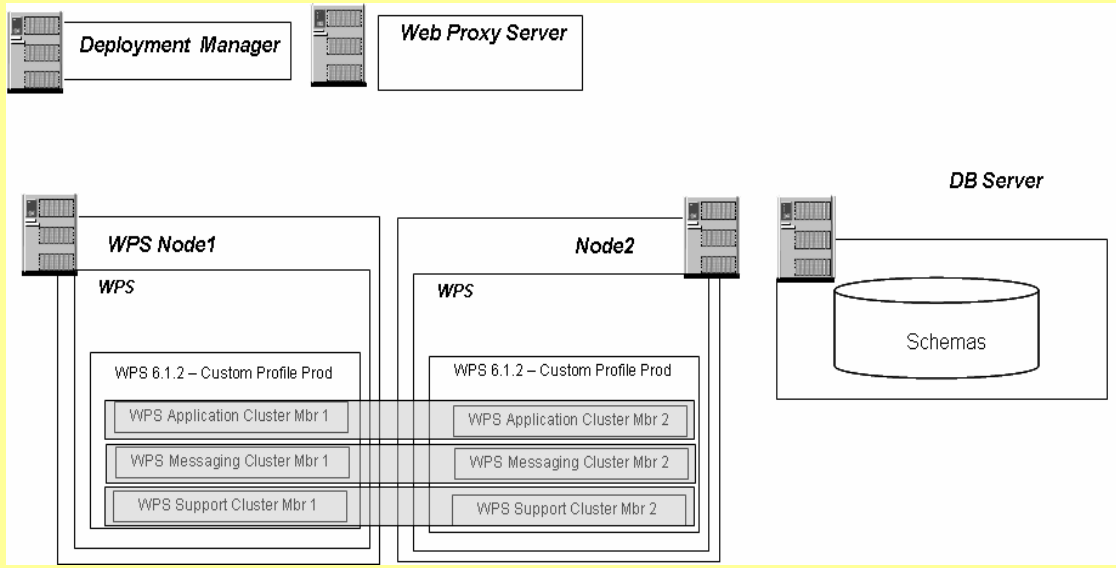
Private, On-Premise Cloud for Platform As A Service

- Optimised Middleware for IT Services
  - Application Server
  - Portal Server
  - Database server
  - Process Server
- Suitable for multiple deployment environments
  - Development
  - Test
  - Production
- Support range and combination of virtualisation platforms

Delivering WebSphere Platform as a Service - Considerations

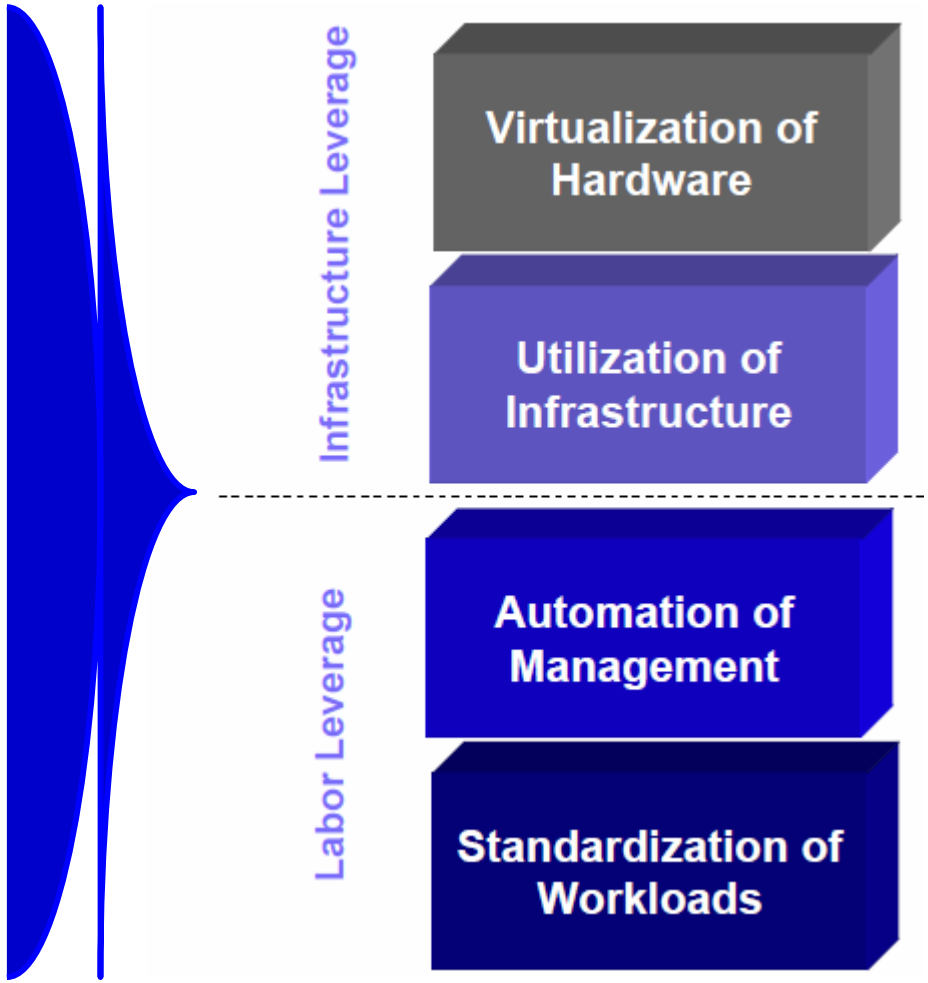
- OS, WebSphere Installations
- Node Specialisation
  - Proxy Server
  - Deployment manager
  - Cluster nodes
  - Database
- Cluster awareness
  - Node specialisation
  - Hostname
  - IP address
  - Node Federation
- Database integration
  - Node deployment
  - Datasource resource configuration
- Application customisation
  - Binaries
  - Configuration
  - Initialisation

Eg: WebSphere Process Server Test/Prod Cell



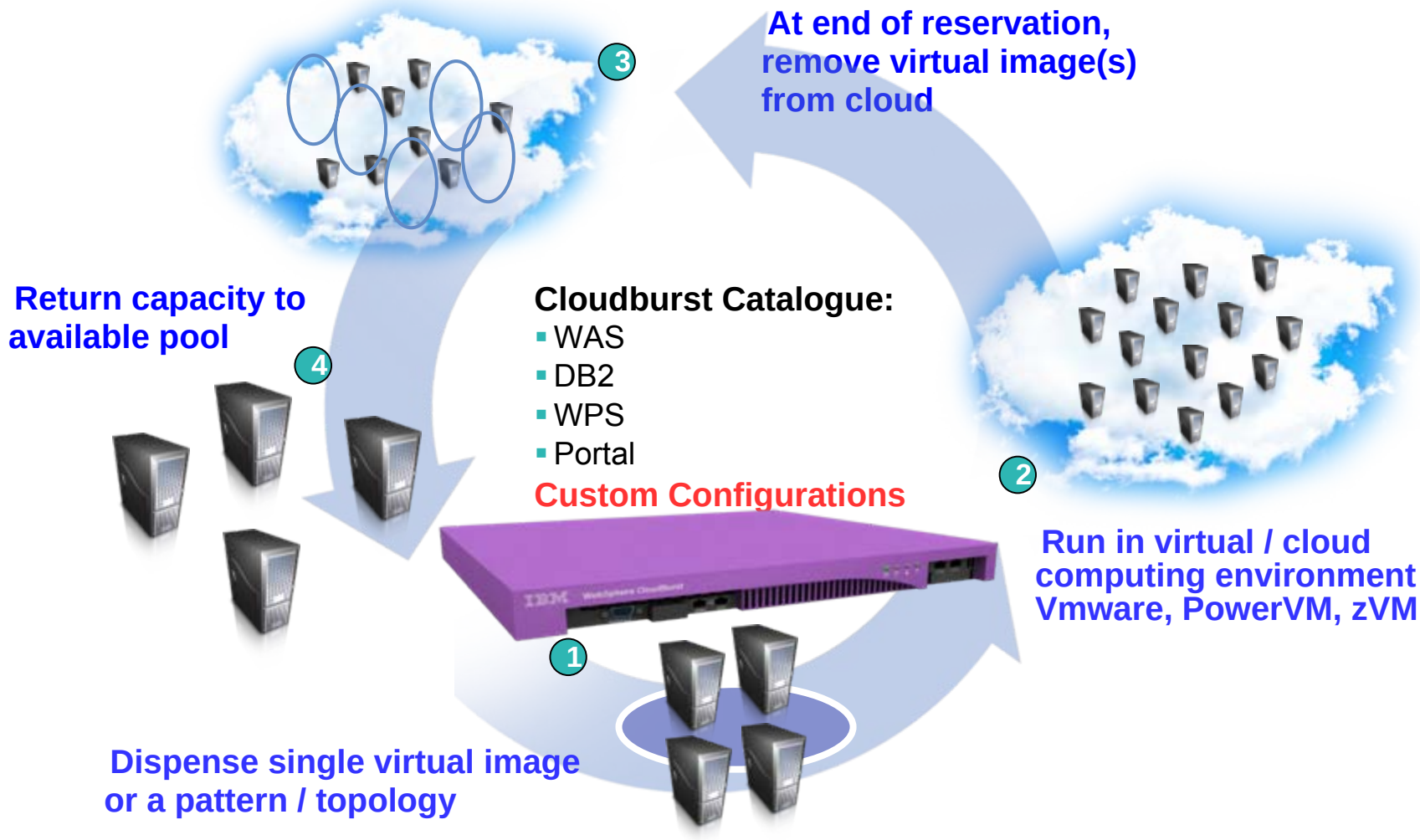
What's needed for on-premise WebSphere Platform As A Service?

- Virtualised Infrastructure
- Platform Catalogue
  - Standard Offerings (with Flexibility)
  - Extensible
  - Multi-node Assembly combinations
  - Control change & access
- Cloud Management
  - Licensing
  - Chargeback
- Self Service
  - Fast deployment
  - Consistent
  - Secure
- License Management
- Maintenance – Fix packs & patches
  - Cloud deployments
  - Catalogue



Addressing Challenges in Middleware Deployment

WebSphere Cloudburst Appliance + Hypervisor Editions of IBM Middleware



What is WebSphere CloudBurst?

1. IBM Hardware appliance

- WebSphere CloudBurst function
- WebSphere Application Server images
- WebSphere Application Server patterns
- Additional Hypervisor Edition product images

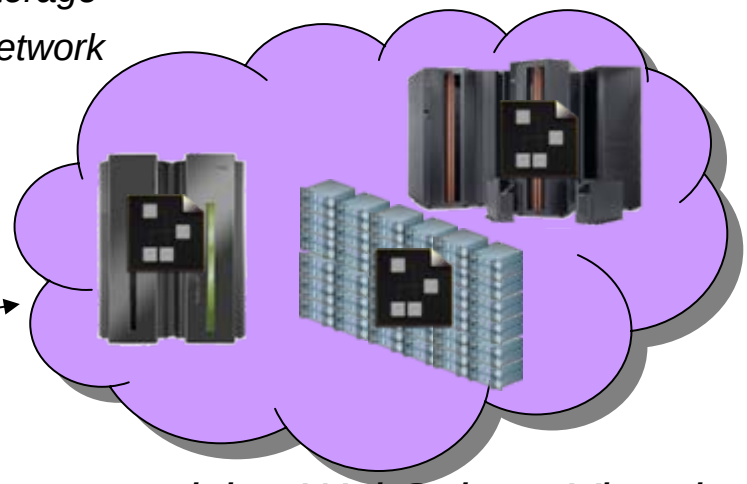
Users and Groups **OVF images** **Patterns and Scripts**

Web 2.0 UI, CLI, and REST APIs

2. …that manages your on-premise cloud…

Bring your own Enterprise cloud

- Hypervisors (VMware, PowerVM, zVM)
- storage
- network



3. … comprising WebSphere Virtual Systems

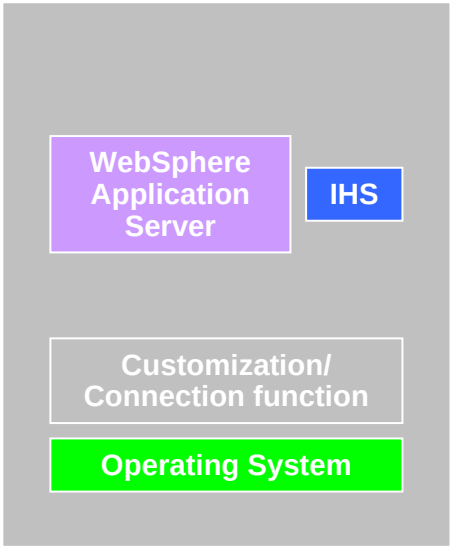
- Customize and extend images and patterns for your applications
- Dispense and run in the cloud
- Life-cycle management and optimization

IBM Hypervisor Edition Products

- Shipped ready to run on a hypervisor (VMware ESX, PowerVM, z/VM)
- Open Virtualization Format standard base packaging
- No installation required (just run)
- Maintenance, support, and fixes through IBM for entire image
- Single virtual image capable of supporting single servers or clusters
- Cloudburst Metadata – assemby parts & patterns

Contains parts:

Administrative agents
Custom nodes
Deployment manager
IBM HTTP servers
[show less]
Job manager
Standalone server
On demand routers



WebSphere Application Server Hypervisor Edition v6.1 and v7
•Full support for WAS Feature Packs
•VMware ESX, PowerVM, zVM
•**Intelligent Management Pack** option provides WebSphere Virtual Enterprise features

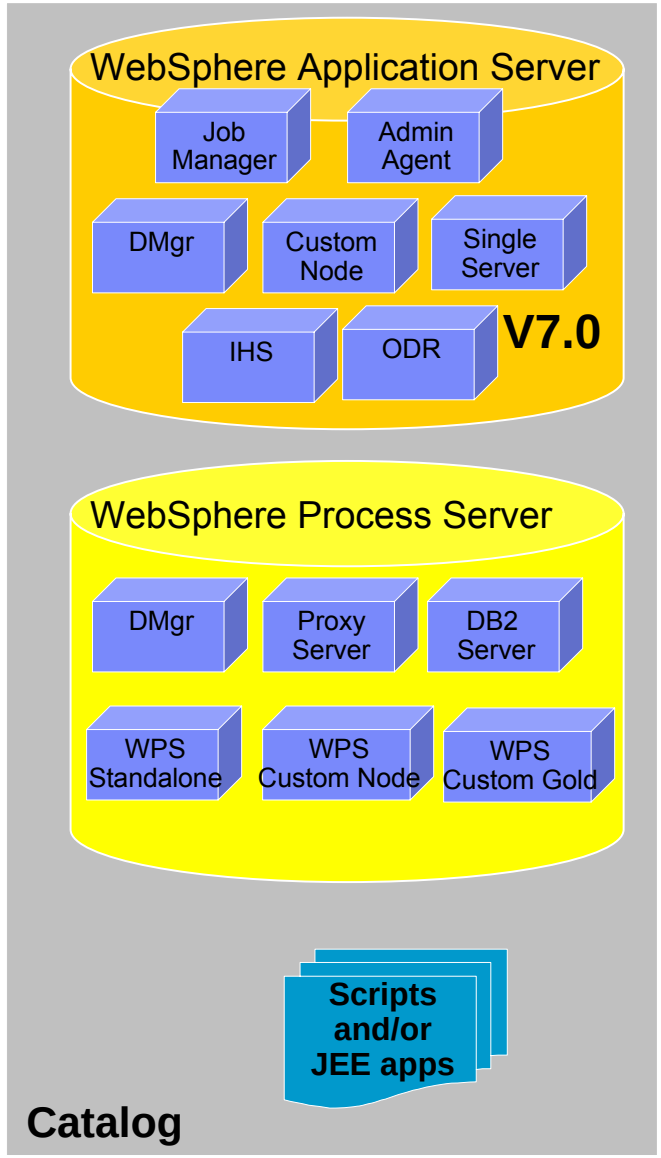
WebSphere Process Server Hypervisor Edition v6.2 and v7
•Pre-configured database
•VMware ESX and PowerVM

WebSphere Portal Hypervisor Edition v6.1.5
•Pre-configured database

DB2 Enterprise virtual image

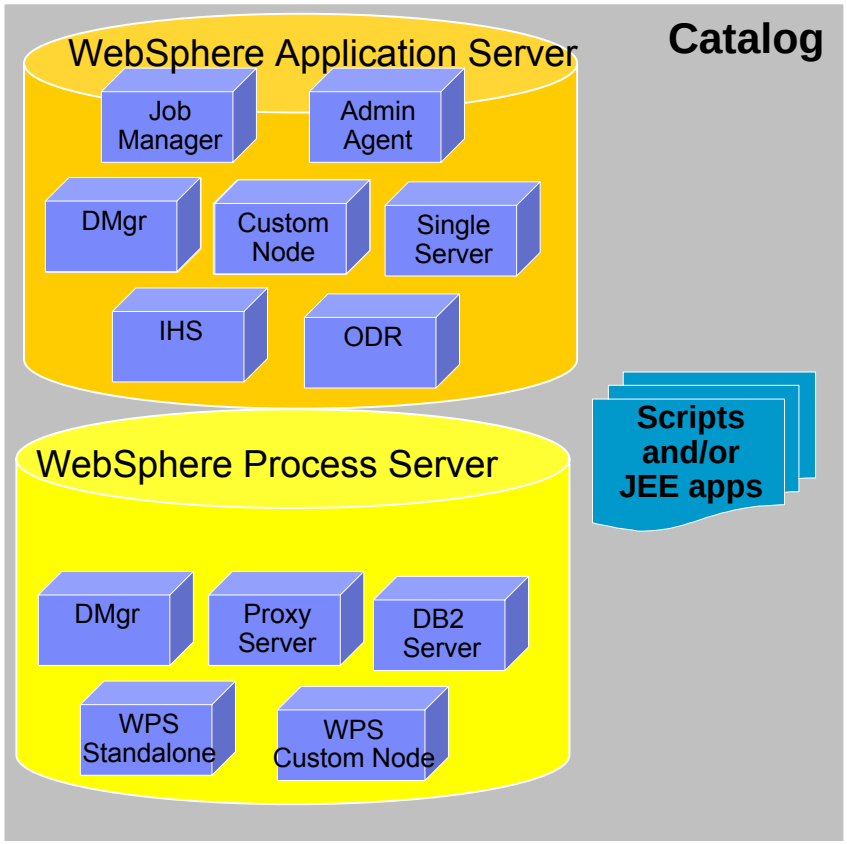
Catalogue

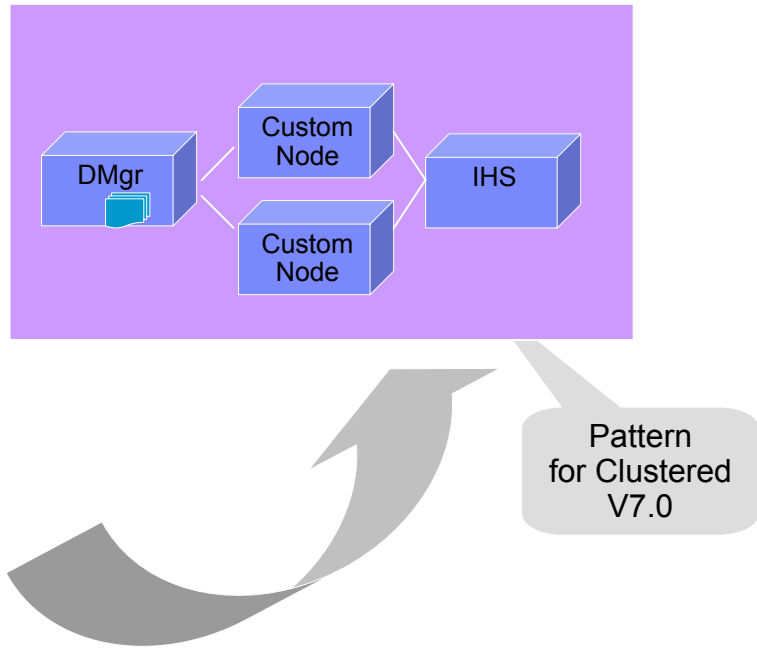
- IBM provided Virtual Images
  - WebSphere Application Server Hypervisor Edition (V6.1, V7.0)
  - WebSphere Process Server
  - WebSphere Portal Server
  - DB2 Enterprise
- User virtual images
  - Cloned
  - Cloned & extended
- User supplied Script packages
  - wsadmin or other scripts
  - JEE applications
- Licenses
- Maintenance



Patterns

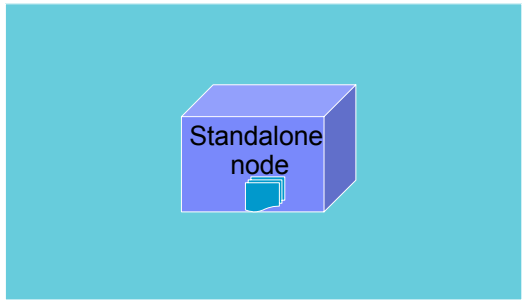
- Pattern is one or more virtual images and script packages from the catalog to satisfy a certain deployment topology
- Example: Creating pattern of WebSphere V7.0 Clustered topology



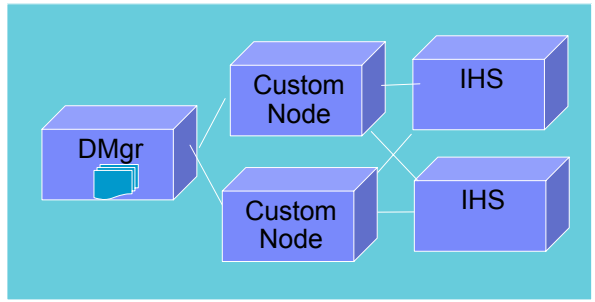


Example Preloaded WebSphere Application Server Patterns

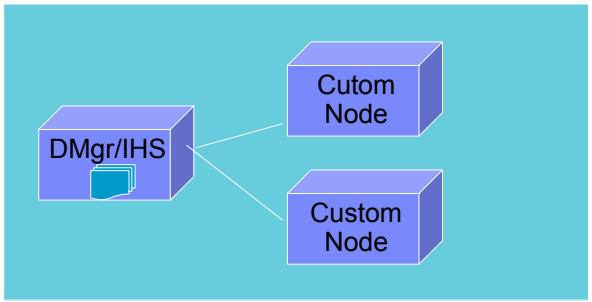
Single Server



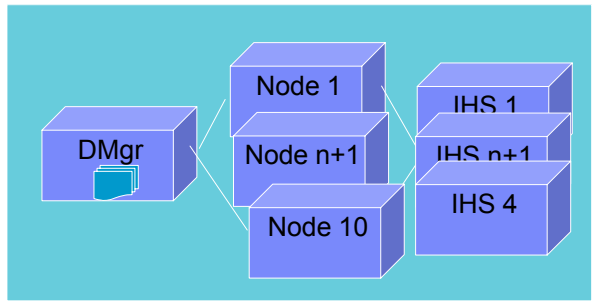
WebSphere cluster



WebSphere cluster (dev)

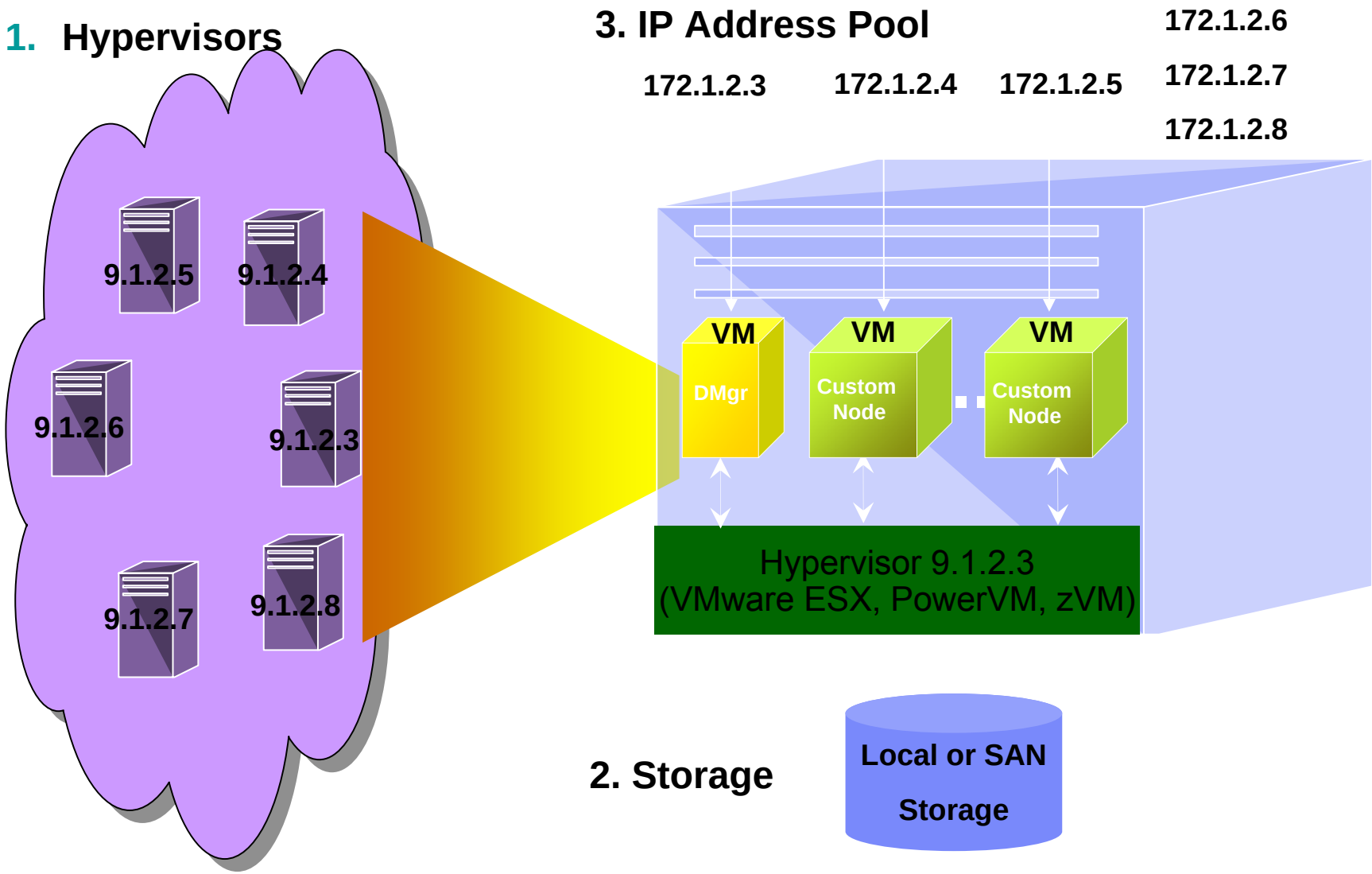


WebSphere cluster (large)



Advanced Options for messaging, session persistence, and global security available

Bring Your Own Private Cloud



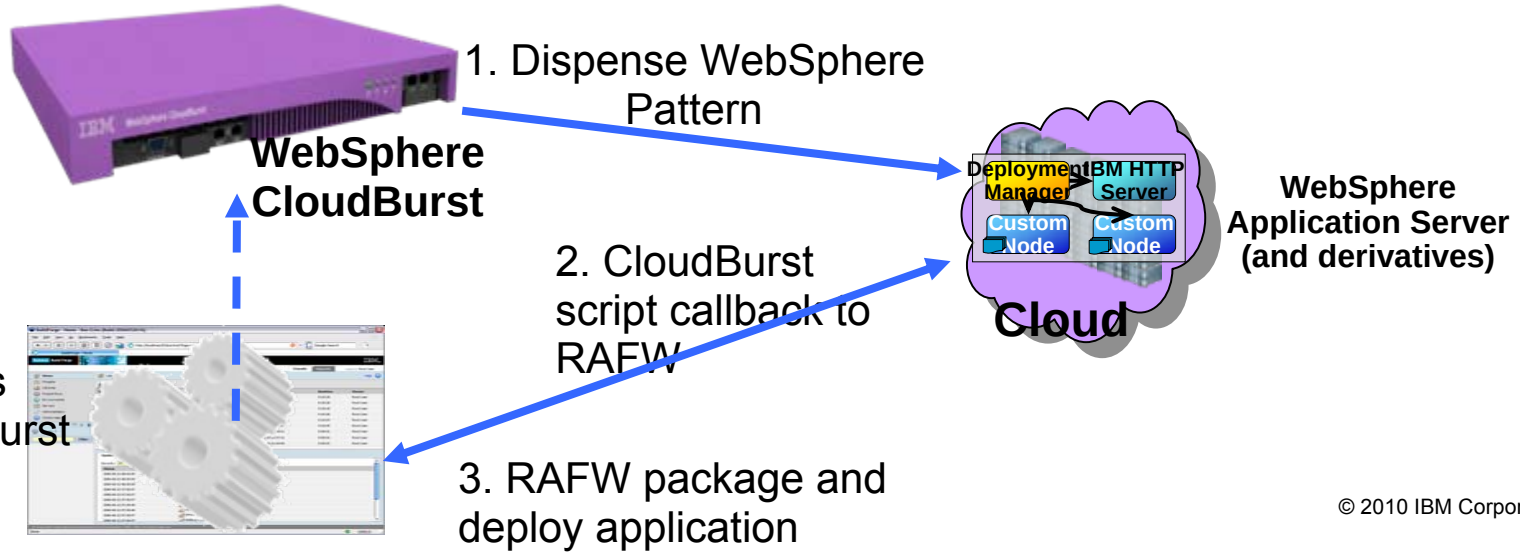
WebSphere Cloudburst Appliance – User Interaction

3 interfaces

- Web UI
- Command Line Interface
- REST API's

Everything that is done in the Web UI or CLI invoke the REST API's under the covers.

As a result, WebSphere CloudBurst is fully programmable and can integrate into existing management infrastructure.



WebSphere Cloudburst benefits – PaaS on-premise cloud

Setting Up WebSphere Process Server Topologies - Comparison

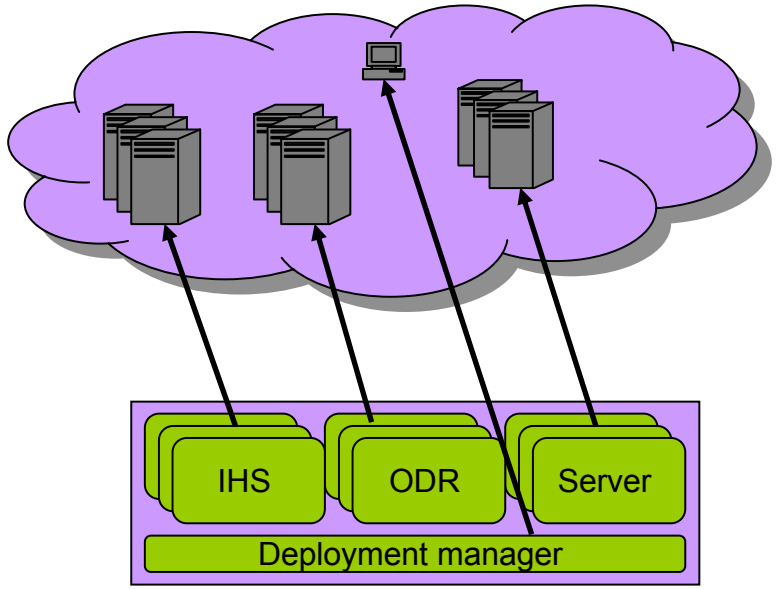
	Manual Configuration	Deployment Environment Wizard	WPS Hypervisor Edition + CloudBurst Appliance
Panels	Dozens	Over a dozen	**7**
Clicks	Many Dozens	Dozens	**14**
Passwords	Over 10	Over 10	**2 (maximum)**
Time	**16-20 hours**, for a WPS infrastructure expert	**4-8 hours** – for an experienced practitioner (*)	**10-60 minutes** – no experience required in some cases
On-Demand & Self-Service			

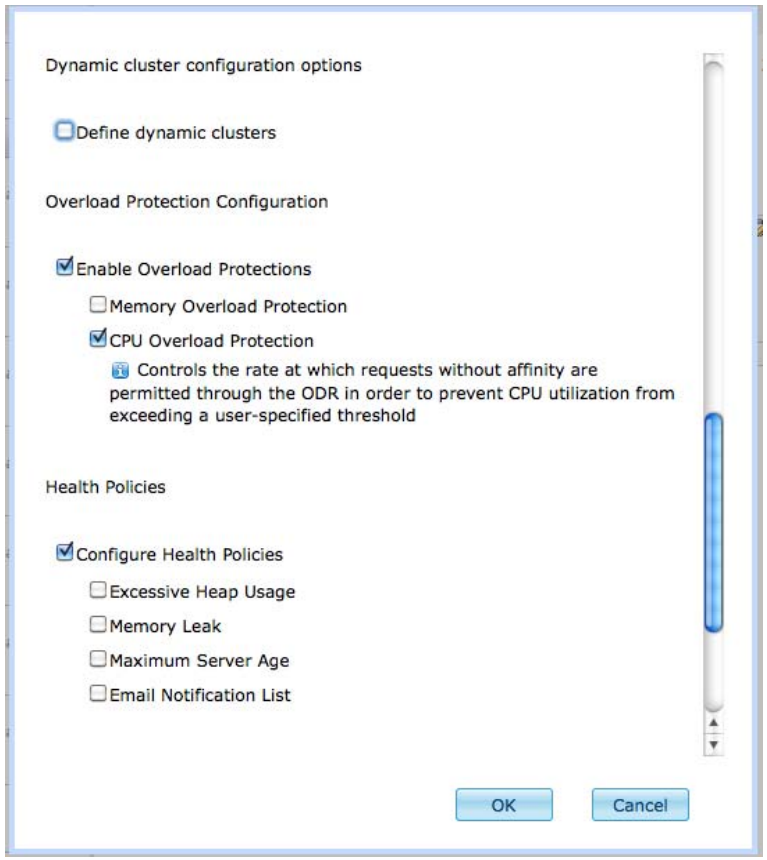
(*) This estimate doesn't include DB installation and configuration

Thank you!

Intelligent Management Pack option for WAS-HV

- Delivers WAS-HV patterns with IBM WebSphere Virtual Enterprise functionality into the cloud



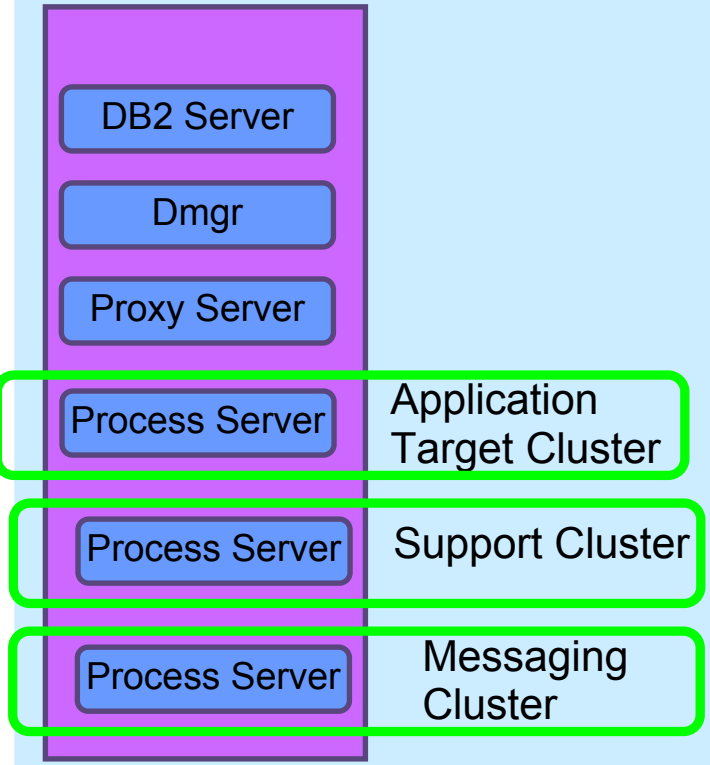


- Provides self-optimizing and autonomic PaaS in your private cloud!

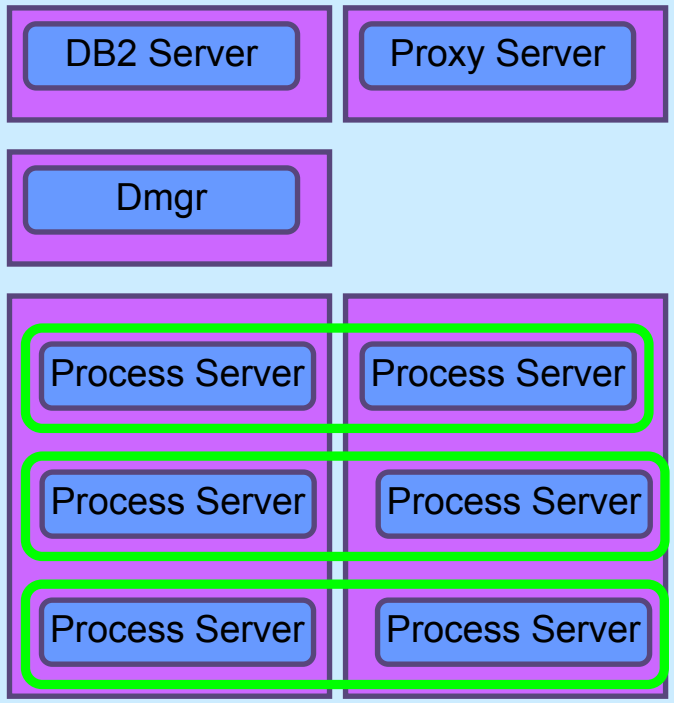
WebSphere Process Server Patterns

Remote messaging, remote support Process Server deployment pattern

Single Machine
Simulated scalable

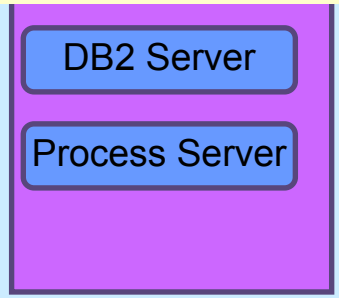


Five machines, scalable

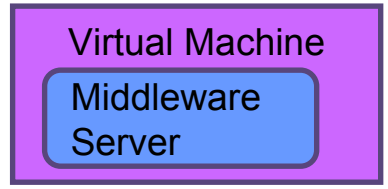


Stand Alone

Single Java Virtual Machine (JVM)

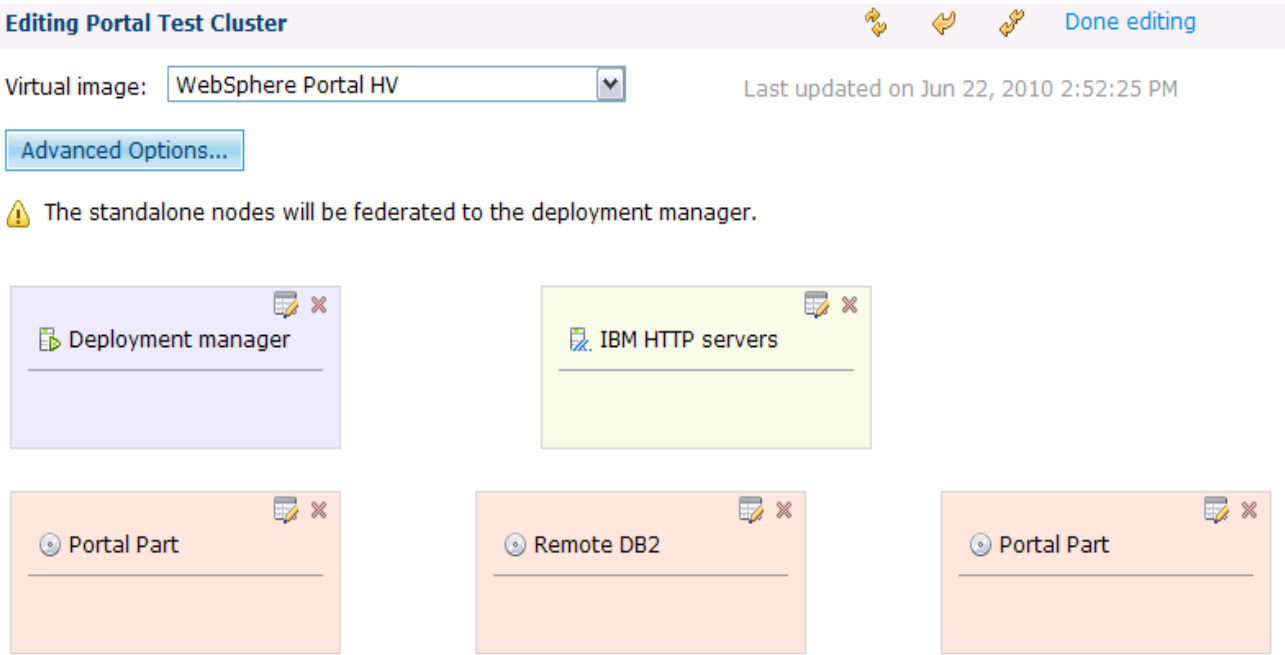


Key



WebSphere Portal Server & Content Manager Hypervisor Editions

- WebSphere Portal Server v6.1.5 HV
- Contains Pre-configured
  - Stand alone server pattern
  - Portal part for assembling clusters & multi-server patterns
  - Web Content Management
  - Portal Light enablement
  - Local or Remote DB2
  - HTTP Server
  - Security enablement



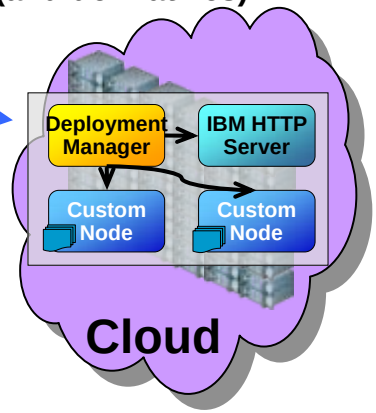
What is Intelligent Management Pack

- The Intelligent Management Pack is an optional add-on to the WebSphere Application Server Hypervisor Edition (on any supported platform)
- The Intelligent Management Pack represents IBM's WebSphere Virtual Enterprise functionality delivered in a form that is able to be dispensed through WebSphere CloudBurst Appliance
- The end result is self-optimizing and autonomic private clouds!

Rational Automation Framework for WebSphere CloudBurst

1. Dispense WebSphere Pattern

WebSphere Application Server (and derivatives)



Start: RAFW Invokes CloudBurst

2. CloudBurst script callback to RAFW

3. RAFW package and deploy application

This scenario can be extended to include additional Rational components including Rational Asset Manager, Rational AppScan, and Rational Software Architect