IBM BPM Pattern 8.5.5
Overview
hybrid cloud platform

PUREAPPLICATION PLATFORM
IBM PureApplication hybrid cloud platform

- Investing in PureApplication capabilities across a hybrid cloud environment to help clients leverage and extend enterprise application investments

### PureApplication Platform

- Application optimization
- System-wide management
- Automation & scaling
- Caching & elasticity
- Application-centric provisioning
- Usage metering
- Security
- Monitoring
- Application lifecycle management
- License management
- Self-service
- Data management

### System infrastructure

- Integrated server, storage, network
- Power management
- Storage & virtual machine optimization
- Virtualization
- Integrated system management
- Provisioning
- Security
- Monitoring
- IT lifecycle management
- System design
PureApplication: Hybrid cloud innovation

Investing in PureApplication capabilities across a hybrid cloud environment to help clients easily leverage and extend enterprise application investments and open technologies

1. PureApplication Software (i.e. V2.0 aka Thor)
   Announce: July 29, 2014   GA: August 29, 2014
   IBM Pattern Engine With Support for Application Containers:

2. PureApplication Service on SoftLayer
   GA: June 13, 2014

3. PureApplication System Gen 2
   GA: May 29, 2014
PureApplication System V2 continues to improve on its strengths

**Time to value management**

Achieve **high availability** for key applications by deploying across multiple systems

Integrate with existing external storage using fiber channel connectivity

Back up what you need, when you need with customized system backups

Provide more **granular access control** for cloud and hardware resources

Simplified system troubleshooting with call-home

**Flexibility of design**

Mix and match software components and operating system images when building patterns

Easily customize the infrastructure used when deploying virtual applications

**Dynamic scaling support** is built in for both virtual system and virtual application patterns

Easily deploy **OpenStack workloads** onto PureApplication
how do Pure V2 enhancements translate into the BPM Pattern?

IBM BPM PATTERN
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acceleration</strong></td>
<td>Repeatable set up of development, test, staging, and production environments leveraging best practices and recommended topologies</td>
</tr>
<tr>
<td><strong>Scaling</strong></td>
<td>BPM environment that is clustered for high availability and scaling</td>
</tr>
<tr>
<td><strong>Elasticity</strong></td>
<td>Elastic scaling with scaling policies to automatically detect when the configuration capacity should be increased</td>
</tr>
<tr>
<td><strong>Monitoring</strong></td>
<td>All components of virtual application environments are monitored by PureApplication System</td>
</tr>
<tr>
<td><strong>Lifecycle Management</strong></td>
<td>Built-in components are pre-configured, tuned, and tested to enable efficient, minimal click deployment and single point of maintenance. Operating System and Database are managed across the system</td>
</tr>
</tbody>
</table>
IBM Business Process Manager Pattern

- previously known as IBM Business Process Manager Application Pattern

Built to operate on the enhanced pattern engine introduced with PureApplication V2.0

PID

- 5725-L40

Parts

- IBM Process Center for Business Process Manager Pattern
- IBM Process Server for Business Process Manager Pattern
- IBM Process Server for Business Process Manager Pattern for non-production environment
better customization capabilities

ENHANCED PATTERN ENGINE
Classic deployment models

Patterns have delivered proven benefits: simplicity, speed, and TCO savings. Over 200 patterns are available today from IBM and business partners.

Virtual system patterns

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

Virtual application patterns

- Highly automated deployments using expert patterns
- Policy-driven elasticity
- Leverages elastic workload management services

Patterns have delivered proven benefits: simplicity, speed, and TCO savings. Over 200 patterns are available today from IBM and business partners.
Customize patterns to meet your IT standards and requirements

The latest generation of pattern technology delivers both simplicity and advanced customization

- New unified pattern engine combines the best of virtual systems and virtual applications
- The advanced automation from virtual applications is now built-in for virtual systems
- The advanced customization provided by virtual systems is now available to virtual applications
Virtual system patterns

- Middleware and OS images are now separate, which makes it easy to use standard OS images across a range of software and allows multiple software components to be stacked on a single OS image.

- A single pattern engine now supports both virtual system and virtual application patterns.

- SLA policies are now supported for virtual system patterns, such as dynamic scaling based on CPU or memory utilization.

- Existing virtual system patterns are still supported and can be deployed without changes.
Virtual application patterns

- Easily customize infrastructure decisions for virtual application components by referencing virtual system patterns.

- The single pattern engine allows the same content to be used for both types of patterns.

- For virtual application creators, the infrastructure is still hidden, but operations teams now have more control over what is deployed.

- Existing virtual application patterns are still supported and can be deployed without changes.
BPM 8.5.5 Pattern Evolves to Pattern.next

TODAY

- Classic vSys Pattern Engine
- Classic Virtual System Pattern
  - BPM 8.0.1 on IPAS Intel and Power
  - BPM 8.5.0.1 on IPAS Intel
- Virtual Application Pattern
  - BPM 8.5 on IPAS Intel and Power

Better Support in 8.5.5

- Customization
- Scaling
- Maintenance
- Platform Consistency (ICO, PureApp Service on SolfLayer)

Pattern.next

- VAP
- VSP
- Software application
- SLA policies
- OS Image
- Maestro Deployment Framework
- System Topology Pattern
- Choice of OS Image
- BPM 8.5.5 on IPAS Intel and Power

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quickly deploy BPM environments

DEFAULT PATTERNS AND COMPONENTS
Default Patterns

Virtual System Patterns

- BPM Process Center/Process Server with Embedded DB2
- BPM Process Center/Process Server with Embedded DB2 for Migration
- BPM Process Center/Process Server with Embedded DB2 for DR (Classic, disk replication)
- BPM Process Center/Process Server with Embedded DB2 for DR (Stray Node, DB replication)
- BPM Process Center/Process Server with external Oracle

Virtual Application Patterns

- Process Center/Process Server with embedded DB2
Virtual System Pattern - IBM BPM with Embedded DB2

Process Center and Process Server default templates include:

- DB2 HADR
- Two custom nodes with 3-cluster topology
- Automatic Scaling Policies
Virtual System Pattern - IBM BPM with Embedded DB2

**DB2 vSys.next**
- HADR support
- High density support

**IM Repository**
- Multi-version for multi-offering
- Apply ifix and fixpack

**Basic functions from framework**
- Lifecycle script ordering and data mapping
- Remote operation
- Dynamic console link

**ITCAM Support**
- Start/stop/maintenance sequence
- Pattern level parameter
- Licensing

**Scaling Policy**
- Manual
- Auto

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Virtual System Pattern - IBM BPM with External Oracle

Process Center and Process Server Patterns expect Oracle connection information as part of their deployment configuration. The default templates include:

- Two custom nodes with 3-cluster topology
- Automatic Scaling Policies
- **Prerequisite:** IBM BPM databases must be pre-created before pattern deployment
Pattern Components

- Highest level of abstraction with very few moving parts.
- Provided with a process application, it generates the topology and deploys the application.
- Utilizes the IBM BPM Embedded DB2 Virtual System Patterns under the covers.
- The BPM components can be used individually or together.
Deployment of a BPM VAP creates an instance of the corresponding Virtual System Pattern.
Elements of virtual system patterns

- Base image – RedHat or AIX
- Software component - Install binary; Operations
- Script package - Database creation, tuning, table space and schema creation; BPM DE Configuration, tuning, transaction log config and customization; IHS configuration, tuning
- Add on disk - Disks where DB2 and BPM install and configure
- Policy - Scaling policy
Available Software Components and Script Packages

Use the pre-defined patterns as a starting point or build custom patterns using BPM software components and script packages.
Configuring a virtual system pattern in the pattern builder

- Add script packages in pattern editor
- Versioning of patterns, script packages, etc.
Consuming the new BPM 8.5.5 patterns

- For the fastest path to a deployed BPM instance, use **Virtual Application Patterns**

- For more control over IBM BPM’s configuration, use **Virtual System Patterns**

- To completely customize the BPM topology:
  - Build custom Virtual System Patterns using BPM components
  - Turn these VSPs into a more consumable unit by turning them into Virtual Application Patterns
Building custom pattern components for virtual applications
<table>
<thead>
<tr>
<th>Technical Feature</th>
<th>Comment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DB Tablespace support</td>
<td>For embedded DB2, we create tablespaces tuned for the BPM schema</td>
<td>More scalability</td>
</tr>
<tr>
<td>Single DB support</td>
<td>Enable single database vs three separate databases</td>
<td>Simplified DR for tranlog in database approach</td>
</tr>
<tr>
<td>Oracle database support</td>
<td>Out-of-the-box support now</td>
<td>Easier configuration</td>
</tr>
<tr>
<td>Improved BPM tuning</td>
<td>Some adjustments and more tunings</td>
<td>Improved scalability</td>
</tr>
<tr>
<td>IHS tuning</td>
<td>IHS is now tuned</td>
<td>More scalability</td>
</tr>
<tr>
<td>Embedded ITCAM monitoring option</td>
<td>An option on software components</td>
<td>Easier configuration, Insight into operations</td>
</tr>
<tr>
<td>BPM deployment environment customization</td>
<td>By inputting a customized properties file and on-line changing the parameters of script package. No code change required.</td>
<td>Easier configuration, topology matches your requirements</td>
</tr>
<tr>
<td>HA/DR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embedded DB2 HADR</td>
<td>Reusing DBaaS Pattern.next. No limitation for maintenance.</td>
<td>Reduce maintenance costs</td>
</tr>
<tr>
<td>Transaction log in DB or on GPFS</td>
<td>Out-of-the-box BPM Peer Recovery support</td>
<td>Simplified DR, Easier configuration</td>
</tr>
<tr>
<td>HA IHS</td>
<td>Out-of-the-box HA IHS support</td>
<td>HA, Easier configuration</td>
</tr>
<tr>
<td>HA DMgr</td>
<td>Out-of-the-box HA Dmgr support</td>
<td>Easier DR configuration</td>
</tr>
<tr>
<td>The second standby DB2</td>
<td>First standby DB2 is for HA and the second is for DR</td>
<td>Easier DR configuration</td>
</tr>
<tr>
<td>Default patterns ready for DR solution deployment</td>
<td>Patterns using PureAS’s new DR features, e.g. block storage, GPFS, multi-rack deployment.</td>
<td>Easier DR configuration</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IM Repository support</td>
<td>Easier to apply ifixes and fixpacks, especially when BPM fixpack also requires a WAS fixpack</td>
<td>Reduce maintenance costs</td>
</tr>
<tr>
<td>Latest set of WAS/IHS/BPM fixes</td>
<td>WAS is updated to 8.5.5.3. IHS is 8.5.5.3. Plus latest WAS/BPM ifixes.</td>
<td>Reduce maintenance costs</td>
</tr>
<tr>
<td>Latest DB2</td>
<td>10.5.0.3 with appropriate tuning</td>
<td>Reduce maintenance costs</td>
</tr>
<tr>
<td>Migration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Migration support from on-premise or existing pattern instance</td>
<td>Out-of-the-box support. No extension work is required.</td>
<td>Easier to move from physical to PureAS.</td>
</tr>
</tbody>
</table>
CASE MANAGEMENT
IBM BPM now supports a broader spectrum of process types

Structured Process
Ordered Sequence of Activities

Some Ad Hoc
Some Unordered (Ad-hoc) Activities

Basic Case
Some Activities with with Ordered Steps

Basic Case
Unordered Set of Activities

Process Model
Structured Business Objects

Next Step Determined By
Data
Documents & Folders (restricted use)

Knowledge Worker
IBM BPM v8.5.5 introduced Basic Case Management Feature. The feature can be enabled in the IBM BPM Pattern.

A separately licensed feature of IBM BPM Advanced is required

- **Case activities for ad-hoc collaboration**
  - Ad-hoc activities can be implemented either as simple tasks, or IBM BPM processes
  - Configure ad-hoc activity behavior: Required, Optional, Pre-conditions

- **Embedded, restricted-use content repository to support basic case documents and folders**
  - Note: can be extended with IBM ECM to support unlimited content use cases

- **Simplified, web-based Case design tooling**
  - Designed for knowledge worker SMEs
  - Integrated with Process Designer, Process Center

**Case UI extensions to IBM BPM Process Portal**
- Case Details instance viewer
- Case Folder / Document viewer
- Case Work Items viewers
- Case Search

**Case task visibility via IBM BPM Dashboards**

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How to enable Basic Case Management?

Provided the separate license has been acquired, Basic Case Management support can be enabled:

- at design time for all future instances
- or at deployment time for a specific template.
SCALABILITY
Scale up/down/out/in as load changes – now even in Virtual System Pattern

- Configure how the instance capacity will be increased through additional CPU, memory or number of nodes
- Whether automatically or through manual operations
Auto-Scaling in V8.5.5 – BPM example

Preset levels of scaling, no input required, it just scales, the best way possible.

Once an application takes more power, we keep scaling, first vertically and then horizontally and always automatically (DB2 does the same, but independently, as it may scale at a different rate)

original size:
4 core
2 node

updated size:
6 core
2 node

updated size:
8 core
2 node

updated size:
8 core
3 node
Manual Scaling - Operation

- Add CPU (or memory) for DB2 VM when CPU (or buffer pool) utilization ratio is high and becomes the bottleneck.
- Add CPU (or memory) to BPM custom nodes when the custom nodes CPU utilization ratio becomes key bottleneck.
- Add additional custom node to take extra workload (takes longer than adding CPU/memory).
- Remove a custom node when the workload goes down (e.g. after the peak time).
HIGH AVAILABILITY, DISASTER RECOVERY PATTERNS
Multi-System Deployment

Achieve **high availability** for key applications by deploying across multiple systems

- Deploy a pattern across two systems, choosing where each virtual machine within the pattern should run
- Consolidated view of pattern artifacts across the systems
- A single view to monitor the status of the deployed pattern across both systems
- Greater cost efficiency through finer-grained replication on a workload by workload basis
- Dynamic scaling across cloud groups and across systems
Deploying across multiple systems in a subdomain

Drag and drop virtual machine instances to place them across cloud groups and systems
Leverage highly available shared storage with IBM General Parallel File System (GPFS)

- Highly available (HA) parallel/concurrent access shared file system
- Active/active storage clusters with synchronous replication
  - Requires <300km between systems
- File system can be shared across systems and outside of PureApplication System

- High availability achieved through redundant GPFS servers and file system mirroring
- Configure entirely within a system, or have workloads on the system clustered as part of an external GPFS storage solution
- No special networking infrastructure required (uses existing IP-over Ethernet infrastructure)
General parallel file system (GPFS) support

- **GPFS server**
  - Single virtual application
  - Administrator:
    - Creates storage
    - Chooses the configuration
    - Deploys the pattern
  - Maintenance and management operations provided by the pattern

- **GPFS shared service used to connect to the GPFS server**
  - Simplifies client connection
GPFS client for patterns

- Pattern developer attaches GPFS Client policy to OS Node

- GPFS Server location not needed
  - Connection to GPFS server via shared service

- Storage maximum is a self-imposed quota restriction by the pattern
  - Provides “friendly” tenant support

- File systems are mounted in a common location
  - Linked directory creates a symbolic link to the mounted file system
BPM 8.5.5 Pattern HA/DR

- All BPM 8.5.5 Patterns are HA enabled with transaction logs stored in the database and two custom nodes *by default*, enabling peer recovery in case of node failure.

- To create custom (built from scratch, non-cloned) HA patterns you must use IBM-provided script packages and configure peer recovery by either:
  - Placing the transaction logs into a database
  - Placing the transaction logs on a HA shared file system like GPFS or block storage

- Those coming from IPAS 1.1 firmware remember active/passive rack replication, that is still supported by IBM.

- If you have two IPAS racks running 2.0 firmware configured in a deployment domain IBM provides two BPM HADR patterns.

*A full BPM DR configuration in hours, not weeks!*
### IBM BPM 8.5.5 Pure Application System Pattern – Disaster Recovery Support

<table>
<thead>
<tr>
<th></th>
<th>Key Technology</th>
<th>Physical</th>
<th>Pure App Server</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Simple DR</td>
<td>Cloned Cell</td>
<td>Supported</td>
<td>Supported enhanced with Maintenance Window</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Off-line Replication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Classic DR (SAN)</td>
<td>Cloned Cell</td>
<td><strong>Tested</strong></td>
<td><strong>Tested</strong> supported with Pre-defined Pattern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SAN Replication</td>
<td>Supported</td>
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<td><strong>Tested</strong></td>
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<td>Classic DR (DB)</td>
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<td>Supported</td>
<td>Supported enhanced with WAS TLogs in DB</td>
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<tr>
<td></td>
<td></td>
<td>DB Replication</td>
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<td><strong>Tested</strong></td>
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<tr>
<td>4.</td>
<td>Stray Node (DB)</td>
<td>Single Cell</td>
<td><strong>Tested</strong></td>
<td><strong>Tested</strong> supported via Pre-defined Pattern</td>
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<tr>
<td></td>
<td></td>
<td>Passive Nodes</td>
<td>Supported</td>
<td></td>
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<td></td>
<td></td>
<td>DB Replication</td>
<td><strong>Tested</strong></td>
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<td></td>
<td>Near Local Network</td>
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<td></td>
<td></td>
<td>SAN Replication</td>
<td><strong>Tested</strong></td>
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<tr>
<td>7.</td>
<td>Metro Pair &amp; DR</td>
<td>Cloned Complex</td>
<td>Supported</td>
<td>Supported enhanced with Cross-Rack Federation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cell</td>
<td></td>
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<tr>
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</tbody>
</table>

**BPM patterns now at DR parity with physical BPM deployments**
Classic Disaster Recovery – online Replication via SAN

- Web Server
- User Registry
- IP Sprayer
- Node Agt
- Node1
  - DMgr
  - Node Agt
  - App.mem1
  - Sup.mem1
- Node2
  - DMgr
  - Node Agt
  - App.mem2
  - Sup.mem2
- Messaging
  - Msg.mem1
  - Msg.mem2
- AppTarget
  - App.mem1
  - App.mem2
- Support
  - Sup.mem1
  - Sup.mem2
- Database
- Filesystem (NFS)
- WAS Txn Logs
- Storage (SAN)
- Consistency Group
- Primary Datacenter
- Secondary Datacenter

File Copy
for Install & Config Data

SAN Replication
for Runtime Data

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Classic DR (SAN) Pattern

- Block Disk
  - Block Storage replication

- GPFS
  - Primary/Passive

Block Disk
- Block Storage replication

GPFS
- Primary/Passive
Classic DR (SAN)

- **Environment setup**
  - Deploy the BPM Pattern on Rack A
    - On each BPM VM, add block storage volumes that mount on where BPM is installed
    - On each Database VM, add block storage volume that mounts on where databases are
    - Transaction log on GPFS
  - Deploy the BPM Pattern on Rack B
    - Exactly same parameters as pattern on A
    - Specify the same hostnames for each VMs before deploying.
    - Stop the BPM/DB servers and detach volumes so that they can be replicated.
  - *Could place the transaction logs into DB by customizing Pattern.*

- **DB2 HADR in one Rack is for HA only.**

- **When disaster happens**
  - Attach the volumes on Rack B
  - Start DB2 and BPM Servers on Rack B
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<td>Cloned Cell Off-line Replication</td>
<td>Supported</td>
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<td>Req: Maintenance Window</td>
</tr>
</tbody>
</table>
| 2. Classic DR (SAN) | Cloned Cell SAN Replication | **Tested** Supported | **Tested** Supported via a Pre-defined Pattern | Req: Consistency Group  
| | | | | Req: Storage Replication |
| 3. Classic DR (DB) | Cloned Cell DB Replication | Supported | Supported | Req: WAS TLogs in DB  
| | | | | Req: 2nd Standby DB |
| 4. Stray Node (DB) | Single Cell Passive Nodes DB Replication | **Tested** Supported | **Tested** Supported via a Pre-defined Pattern  
| | | | | - Script Package needed to create 2nd standby DB  
| | | | | Req: WAS TLogs in DB  
| | | | | Req: 2nd Standby DB  
| | | | | Req: Cross-Rack Federation |
| 5. Stray Node (SAN) | Single Cell Passive Nodes SAN Replication | Supported | Supported | Req: Consistency Group  
| | | | | Req: Storage Replication  
| | | | | Req: Cross-Rack Federation |
| | | | | Req: Cross-Rack Federation |
| 7. Metro Pair & DR | Cloned Complex Cell Near Local Network SAN Replication | Supported | Supported | |
An Advanced DR Strategy: Stray Node & WAS Logs in the DB
Stray Node (DB Replication) Pattern

Standby Dmgr on second IPAS Rack

Stray Node on second IPAS Rack

Auxiliary Standby DB2 on second IPAS Rack
Stray Node (DB Replication)

- Environment setup
  - Utilize single BPMDB (CMNDB and PDWDB tables all merged into one DB)
  - All transaction data and log in one DB
  - Deploy the BPM Pattern across Rack A and B
    - Two active nodes on Rack A and two stray nodes on Rack B.
    - DB2 HADR on Rack A
    - Configure the Standby Dmgr on Rack B
    - Deploy one DB on Rack B as the second standby DB
    - Modify hosts of stray nodes VMs to redirect original primary DB VM hostname to this second standby DB VM ip.

- When disaster happens, activate the nodes on Rack B.
### Cloud groups in rack

<table>
<thead>
<tr>
<th>Rack09</th>
<th>Rack55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etern-1583</td>
<td>Etern-1584</td>
</tr>
</tbody>
</table>
| 1
Process_Server_Dmgr | 1
Process_Server_Standby_Dmgr | 1
Primary_DB2 | 1
Standby_DB2 |
| 1
Auxiliary_Standby_DB2 | 1
Custom Node | 1
Stray_Custom_Node | 1
Process_Server_THS |

**Rack**

- Regular Node VMs deployed to Etern-1584 and Etern-1584 CGs on Rack09
- Stray Node VMs deployed to Etern-1585 and Etern-1586 CGs on Rack55

**Pattern component**
MAINTENANCE
Maintaining BPM Patterns

Along with the eFix mechanism which patches deployed pattern instances IPAS 2.0 adds an internal Installation Manager repository for incorporating iFixes and fixpacks into pattern deployments.
Installation Manager Repository

- Internal IM Repository to upload and view the current WAS/BPM ifixes and fixpacks in the repository
Adding an iFix or Fixpack to the Installation Manager Repository
Maintenance - Apply ifix in Pattern

- Apply the efix or ifix using the ifix policy
- Apply the product ifix for both Dmgr and Custom Node
## Maintenance - Apply ifix from Operation

### Operations

<table>
<thead>
<tr>
<th>Operations</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGENT</td>
<td>AGENT</td>
</tr>
<tr>
<td>AUTOSCALING</td>
<td>AUTOSCALING</td>
</tr>
<tr>
<td>Custom_Node.Custom_Node-Image</td>
<td>Image</td>
</tr>
<tr>
<td>Custom_Node.IMM glyphicon</td>
<td>BPM_NODE</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>MAINTENANCE</td>
</tr>
<tr>
<td>MONITORING</td>
<td>MONITORING</td>
</tr>
<tr>
<td>Primary_DB2.Primary_Database_Server-Part</td>
<td>DB2LUW</td>
</tr>
<tr>
<td>Process_Server_Dmgr.IBM_BPM_Process_Server_Deploy Part</td>
<td>BPM_PS_DMGK</td>
</tr>
<tr>
<td>Process_Server_IHS.Process_Server_IHS-Image</td>
<td>Image</td>
</tr>
<tr>
<td>SSH</td>
<td>SSH</td>
</tr>
<tr>
<td>Standby_DB2.Standby_Database_Server-Part</td>
<td>DB2LUW</td>
</tr>
</tbody>
</table>

### Maintenance fixes

- **Fix name**: B.5.5.0-WS-BPM-IFJR56666_8.5.5000.20140527_1624 Process_Server_Dmgr

- **Applied to**: Custom_Node

- **Action**: [X]

**Submit**

**Maintenance fixpacks**
Maintenance - Apply Fixpack

- **Upload via IM Repo**
  - For WAS fixpack, if there are two disk files, you have to repackage them into one file and upload

- **Apply the fixpack**
  - Apply in Pattern. For software component, it will show the different versions
  - Apply the fixpack for existing Pattern Instance from Operation Menu
  - Update the plugin for new fixpack version
    - Click Cloud > System Plug-ins, and select the plugin.bpm 1.0.0.0 plug-in.
    - Click Configure, and enter the dependency into the blank field. For example, ibm.bpm/8550>ibm.websphere.ND/8553 which means BPM 8.5.5 depends on WAS 8.5.5.3.
    - ibm.bpm/8560>ibm.websphere.ND/8554 which means BPM 8.5.6 depends on WAS 8.5.5.4.
MIGRATION
# BPM Pattern Migration Path

<table>
<thead>
<tr>
<th>#</th>
<th>Source</th>
<th>Target</th>
<th>Recommendation</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WPS/WLE</td>
<td>VSP 8.0.1</td>
<td>Not supported</td>
<td>Go to 6, 10</td>
</tr>
<tr>
<td>2</td>
<td>BPM 7.5.x/8.0</td>
<td></td>
<td>Not supported</td>
<td>Go to 7, 11</td>
</tr>
<tr>
<td>3</td>
<td>WPS/WLE</td>
<td>VAP 8.5</td>
<td>Go to 10</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>BPM 7.5.x/8.0</td>
<td></td>
<td>Go to 11</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>VSP 8.0.1</td>
<td></td>
<td>Go to 12</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>WPS/WLE</td>
<td>VSP 8.5.0.1</td>
<td>Go to 10</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>BPM 7.5.x/8.0</td>
<td></td>
<td>Go to 11</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>VSP 8.0.1</td>
<td></td>
<td>Go to 12</td>
<td>Supported</td>
</tr>
<tr>
<td>9</td>
<td>VAP 8.5</td>
<td></td>
<td>Not supported</td>
<td>Go to 15</td>
</tr>
<tr>
<td>10</td>
<td>WPS/WLE</td>
<td>Pattern.Next 8.5.5</td>
<td>Y</td>
<td>Supported</td>
</tr>
<tr>
<td>11</td>
<td>BPM 7.5.x/8.0/8.5</td>
<td></td>
<td>Y</td>
<td>Supported</td>
</tr>
<tr>
<td>12</td>
<td>VSP 8.0.1</td>
<td></td>
<td>Y</td>
<td>Supported</td>
</tr>
<tr>
<td>13</td>
<td>VAP 8.5</td>
<td></td>
<td>Y</td>
<td>Supported</td>
</tr>
<tr>
<td>14</td>
<td>VSP 8.5.0.1</td>
<td></td>
<td>Y</td>
<td>Supported</td>
</tr>
<tr>
<td>15</td>
<td>VAP 8.5</td>
<td>BPM 8.5.0.x</td>
<td>Y</td>
<td>In-place upgrade. Still VAP instance.</td>
</tr>
<tr>
<td>16</td>
<td>VAP 8.5</td>
<td>BPM 8.5.5</td>
<td>Y</td>
<td>In-place upgrade. Still VAP instance.</td>
</tr>
<tr>
<td>17</td>
<td>VSP 8.5.0.1</td>
<td>BPM 8.5.5</td>
<td>Y</td>
<td>In-place upgrade. Still VSP instance.</td>
</tr>
</tbody>
</table>
Pre-defined Virtual System Patterns for Migration

- E.g. BPM Process Server with Embedded DB2 for Migration

Traditional 3 databases

Could move to DB2 HADR after the migration
1. Preparing for migration
   Deploy a simple BPM 8.5.5 pattern so that we can grab the BPM 8.5.5 migration utility. Delete pattern instance after grabbing utilities.
2. Checking for migration readiness via regular migration mechanisms
3. Gather the migration configuration from the source environment
4. Create the target BPM8.5.5 deployment environment using pattern by inputting the DE properties file extracted from source into pattern
   - Enable ITCAMWAS (Optional)
5. Shutting down the source environment and take a database snapshot
6. Upgrading the existing databases
   Backup /Restore databases if required
7. Starting the target environment and importing the snapshot
8. Moving your custom configuration to the target environment
9. Restarting the target environment and verifying the migration
1. Preparing to migrate
   Need deploy a simple BPM 8.5.5 pattern so that we can the BPM 8.5.5 migration utility.
2. Checking for migration readiness
3. Migrating the configuration from the source environment
4. Creating the target 8.5.5 deployment environment using Pattern
   Could input the DE properties file extracted from source into Pattern
   - Enabling ITCAMWAS (Optional)
5. Upgrading the existing databases
   Backup /Restore databases if required
6. Moving your custom configuration to the target environment
7. Restarting the target environment and verifying the migration
CUSTOMIZATION
## BPM Pattern Customization Category

<table>
<thead>
<tr>
<th>Customization type</th>
<th>Customization scenario</th>
<th>VSP</th>
<th>VAP</th>
<th>Pattern.next</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topology</strong></td>
<td>Bring your own OS</td>
<td>Not feasible</td>
<td>Direct support</td>
<td>Direct support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oracle database support</td>
<td>Customizing ConfigBPM script package</td>
<td>Direct support (BPM DB component)</td>
<td>Direct support (Script package for Oracle)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arbitrary database support</td>
<td>Customizing ConfigBPM script package</td>
<td>Direct support (BPM DB component)</td>
<td>Simple customization by uploading properties file and changing script package keys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiple HTTP Servers</td>
<td>Customized script package</td>
<td>Complex Customization plugin</td>
<td>Direct support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dmgr+node1 on one VM</td>
<td>Customized script package</td>
<td>Complex Customization plugin</td>
<td>Customized Pattern</td>
<td>In Pattern.Next, this could be customized pattern.</td>
</tr>
<tr>
<td><strong>Deployment</strong></td>
<td>Database separation</td>
<td>Direct support</td>
<td>Direct support</td>
<td>Direct support</td>
<td>Maintain DBs in separate pattern</td>
</tr>
<tr>
<td></td>
<td>HTTP server separation</td>
<td>Remove IHS part; customized script package</td>
<td>Complex Customization plugin</td>
<td>Remove IHS part; customized script package</td>
<td>E.g. they can replace it with F5</td>
</tr>
<tr>
<td></td>
<td>Pattern instance across rack</td>
<td>Customize the pattern structure (split parts); customize the script package</td>
<td>Complex Customization plugin</td>
<td>PureAS cross-rack deployment feature to support this</td>
<td></td>
</tr>
<tr>
<td><strong>Post-deployment</strong></td>
<td>New LDAP type support</td>
<td>Additional script package</td>
<td>Customization plugin</td>
<td>Additional script package</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Integrating with other software</td>
<td>Additional script package</td>
<td>Customization plugin</td>
<td>Additional script package</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extra configuration for security/SSO</td>
<td>Additional script package</td>
<td>Customization plugin</td>
<td>Additional script package</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OS level customization</td>
<td>Additional script package or extended image</td>
<td>Customization plugin</td>
<td>Additional script package or extended base OS image</td>
<td>E.g. create user/group.</td>
</tr>
<tr>
<td></td>
<td>Reuse existing scripts</td>
<td>Additional script package</td>
<td>Customization plugin</td>
<td>Additional script package</td>
<td>Consider to have a script package as asset to configure ssh between VMs so that the original VSP users can reuse their scripts if there are remote calls via ssh</td>
</tr>
<tr>
<td></td>
<td>Any agent on VMs</td>
<td>Additional script package</td>
<td>Customization plugin</td>
<td>Additional script package</td>
<td></td>
</tr>
</tbody>
</table>

- Easy to customize
- Hard to customize
- Very hard to customize
APPENDIX
IBM BPM 8.5.5 Pattern Refresh and iFix IFJR52129

- BPM 8.5.5 Pattern media refreshed on January 2, 2015
- Includes
  - Fixes incompatibility with PureApp 2.0.0.1 firmware
  - Updated BPM license which includes DB2 Pattern License.
  - Remove restriction allowing setting minimum number of vCPUs to 1.
  - Enabled verbose garbage collection log rotation.
  - Expose the BPM Cell name as a pattern parameter.
  - Expose the BPM DMGR host and soap port for easier integration with the BPM pattern.
- For customers who already have the BPM Pattern downloaded and installed on a rack these features are also available via iFix JR52129, available for download from FixCentral.
BPM 8.5.5 Default Patterns

E.g. Process Center with Embedded DB2, VSP

Mini View

Standard View

Virtual System Pattern Elements

- Base image - Redhat or Aix
- Software component - Install binary; Operations
- Script package - Database creation, tuning, table space and schema creation; BPM DE Configuration, tuning, tranlog config and customization; IHS configuration, tuning
- Add on disk - Disks where DB2 and BPM install and configure
- Policy - Scaling policy

Default Virtual System Patterns

PC/PS with embedded DB2
PC/PS with embedded DB2 for Migration
PC/PS with embedded DB2 for DR (Classic, disk replication)
PC/PS with embedded DB2 for DR (Stray Node, DB replication)
PC/PS with external Oracle

Default Virtual Application Patterns

PC/PS with embedded DB2

For user to have a quick start

Wrapped into Pattern Components which are used in virtual application pattern

All topology details with configurability and customizability

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Pre-defined Virtual System Patterns

- 10 Patterns with 5 for Process Center and 5 for Process Server
  - All are locked. Clone a pattern before doing any customization.

Virtual System Patterns

<table>
<thead>
<tr>
<th>Name</th>
<th>Version</th>
<th>Status</th>
<th>Created by</th>
<th>Updated by</th>
<th>Created on</th>
<th>Updated on</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPM Process Center with External Oracle</td>
<td>1.0</td>
<td>Read-only</td>
<td></td>
<td></td>
<td>Sep 24, 2014, 9:41:50 PM</td>
<td>Sep 24, 2014, 9:41:50 PM</td>
<td></td>
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</tbody>
</table>