IBM PureApplication System

Deploying virtual system patterns

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This presentation describes how to deploy the virtual system patterns in IBM PureApplication™ System. Deployed virtual system patterns are called "virtual system instances". A separate presentation covers managing the life cycle of the deployed instances.

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This short presentation goes into the details of virtual system pattern deployment and then provides a summary.

Virtual system pattern deployment steps

Deploy

Daytrader Static Cluster Virtual System   Refresh   Deploy   Edit   C

- From the virtual system pattern attribute window, click the "**Deploy**" button to deploy the pattern

- Deployment steps
    1. Specify a unique name for the virtual system (instance) to be deployed
    2. Choose an environment profile to deploy pattern into
    3. Schedule a deployment time (now or for future time) and optionally end time
    4. Configure virtual image parts (if not already configured during pattern creation) – can modify any unlocked value at deployment time

Describe the virtual system you want to deploy.

Virtual system name:
DayTrader Static Cluster VSys   **1**

Choose environment   **2**

Schedule deployment   **3**

Configure virtual parts   **4**

OK   Cancel

Check mark indicate configuration is complete unless you need to modify

No check mark indicate more configuration needed

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From the Workload console, select the virtual system pattern you want to deploy and, on its attribute panel, click the **Deploy** link. Deploying a pattern requires four steps. Step one is to provide a unique name for the virtual system instance to be deployed. Step two is to choose an environment profile into which to deploy the pattern. The environment profile specifies the cloud group and IP group used for the deployment, and other parameters. Step three is to schedule the deployment time. You can choose a future date. And you can choose whether the virtual system instance should stay deployed indefinitely or be deleted on a specific date. Finally, step four is to configure any remaining configurable options for the virtual image parts and script packages.

This slide provides more detail on scheduling the deployment of a virtual system pattern. You have the option to deploy it immediately or schedule the deployment for a future time. The default option is to deploy immediately. You can also specify how long the deployed virtual system instance will run -- either indefinitely or until some later time. The default option is to run indefinitely.

Configure a virtual system pattern deployment

- Configuration parameters are specific to the parts of the virtual system pattern
- Values for the parameters that were provided by the pattern developer are shown and, if not locked, they can be overridden at deployment time
- A green check indicates that you have provided all the required parameter values for the part. No green check indicates that you still need to provide one or more required parameter values before the pattern can be deployed.

Describe the virtual system you want to deploy.

Virtual system name:
DayTrader Static Cluster VSys

Choose environment

Schedule deployment

Configure virtual parts
    Deployment manager
    DB2 Enterprise
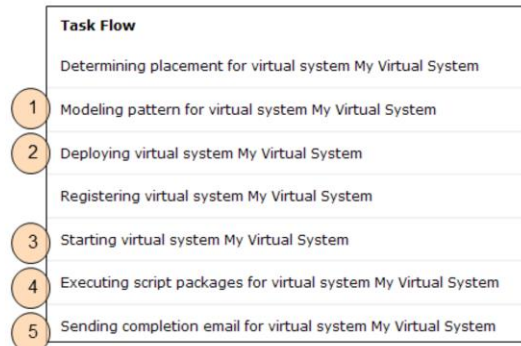   Custom nodes

OK   Cancel

This slide provides more detail on configuring the pattern's virtual image parts and script package variables. The configuration parameters are specific to the parts involved in the virtual system pattern. The developer of the pattern can provide values for the configuration parameters and has the option to lock them. At deployment time, you can only change the values of the unlocked parameters. The configuration parameters for a virtual image part in the pattern include the variables from the script packages that are added to that part.

In the example shown on this slide, there are three parts: Deployment manager, DB2® Enterprise and Custom nodes. The green check marks by DB2 Enterprise and Custom nodes indicate that the parameters for those two parts have already been specified. There is no green check mark by the Deployment manager part, which means that you still need to specify one or more required parameters before the pattern can be deployed.

Virtual system pattern deployment – Task queue

Pattern deployment steps in detail
1. PureApplication System determines placement of the virtual system
2. Virtual system is deployed into the cloud
3. Virtual machines are configured (OS configured and started; middleware configured and started)
4. Add-ons and script packages are transferred to target virtual machines and run (add-ons run before scripts). The scripts are run in the order specified in the pattern.
5. If enabled, email is sent to virtual system owner with success or failure of virtual system deployment

Task Flow

Determining placement for virtual system My Virtual System

1. Modeling pattern for virtual system My Virtual System
2. Deploying virtual system My Virtual System

Registering virtual system My Virtual System

3. Starting virtual system My Virtual System
4. Executing script packages for virtual system My Virtual System
5. Sending completion email for virtual system My Virtual System

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This slide describes the steps of the pattern deployment process. The screen capture is of "Task Queue" and shows seven steps. More detail is provided for five of those steps.

In the first step for which more detail is provided, PureApplication System determines where the virtual machines that make up the virtual system should be placed on the compute nodes in the cloud group. This placement is based on an algorithm that takes into consideration many factors, such as the load on each of the compute nodes in the cloud group and licensing costs. Another factor it considers is the spread of same type VMs, such as WebSphere® nodes, across different compute nodes to provide better failover behavior.

In the second step for which more detail is provided, PureApplication System transfers the virtual images to the destination compute nodes that were determined in the first step.

In the third step, PureApplication System configures and starts the operating system and WebSphere Application Server. Also, any needed federation is performed. Once this step completes, your WebSphere Application Server environment is fully functional.

In the fourth step, add-ons and script packages are transferred using SSH, extracted, and run using root authority. PureApplication System runs all add-ons before running script packages. PureApplication System runs the script packages in the order specified in the pattern by the pattern developer.

Finally, in the fifth step, PureApplication System sends an email notification containing a status message to the owner of the virtual system.

Virtual system instance (deployed patterns)

- At deployment time, a new virtual system instance is created with the name specified during deployment
- You can view the new instance in the Instances > Virtual Systems panel of the Workload console
- The status line in the panel will continuously show the status as the deployment steps run
    - The final status is "The virtual system has been deployed"
- The History section of the instance lists each of the deployment steps in details

Current status: ▶ The virtual system has been deployed

When the pattern deployment starts, PureApplication System creates a new virtual system instance with the name you provided. You can view the new instance in the Instances and Virtual Systems panel of the Workload console. PureApplication System updates the status line on that panel as the deployment steps are run. The final status is "The virtual system has been deployed". The history section of the instance lists each of the deployment steps in detail. In the case of a deployment failure, seeing the last successful step and the failed step is helpful for troubleshooting.

Summary

- Virtual system pattern deployment is a single-click action
    - You provide the configuration parameters for the VM and the scripts
    - You provide the target deployment environment profile, Cloud group and IP group to use for the deployment
- New virtual system instance is created, which is used to manage the deployed instance

In summary, virtual system pattern deployment is a simple, single-click action. You provide the configuration parameters for the virtual machine and the scripts, plus the target deployment environment profile, Cloud group, and IP group to use for the deployment. Within a short time, the resulting instance is ready. A separate presentation covers managing the life cycle of the deployed instance and how to interact with the virtual machines.

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