Deploying IBM Integration Bus as a PureApplication service on SoftLayer

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This tutorial shows you how to deploy the basic IBM Integration Bus Pattern using PureApplication Service on SoftLayer. Patterns automate and simplify the provisioning, monitoring, and maintenance of workloads, enabling you to focus on your applications, and move from off-premise to on-premise when you are ready.

Introduction

This tutorial introduces you to the IBM® PureApplication® Service on SoftLayer®, and shows you how to deploy the IBM Integration Bus Pattern Service -- familiar territory if you have worked with PureApplication Patterns. After deployment, you can connect the IBM Integration Bus instance to any other existing on-premise software component.

Objectives

In this tutorial, you will get an overview of the PureApplication Service on SoftLayer and how to:

• Access the PureApplication Service on SoftLayer
• Deploy the basic IBM Integration Bus Pattern
• Verify that the deployed instance is working as expected

Prerequisites

Free trial: SoftLayer virtual cloud server

Build your free cloud server with help from our experts
This tutorial assumes that you are familiar with IBM PureApplication System, the PureApplication System Cloud, and related software patterns. You will also need an account to access the PureApplication Service on SoftLayer -- the SoftLayer system administrator (or whoever has the authority) can provide you with login credentials if needed. After logging in, you will work with the classic Virtual System Pattern in IBM Integration Bus.

**Introduction to PureApplication System**

IBM PureApplication System provides a way to virtualize, dispense, optimize, and monitor software applications in the cloud. Pre-configured and pre-optimized topologies packaged as patterns in a hypervisor image lies at the core of this Expert Integrated System. A pattern in this context is a logical description of both physical and virtual assets that make up a particular solution.

PureApplication Service extends the following message: through the technology of patterns, PureApplication System provides a faster and simpler way to deploy and manage workloads to SoftLayer (public cloud platform) PureApplication Service is built with dedicated SoftLayer hardware with its own compute, network, and storage components to achieve complete application isolation. The workload interface is identical to PureApplication System, which enables portability of applications across on-premise and off-premise clouds without the need to rearchitect systems. PureApplication Service consists of three main components:

- **PureApplication Service infrastructure**
  - Dedicated bare-metal servers of 4 or 16 cores.
- **PureApplication Service platform**
  - PureApplication monitoring and management with the pattern engine
- **Pattern workloads**
  - Individual software patterns for specific workloads

The introduction alluded to the on-boarding process, which involves these three steps:

1. A user account is established, isolated from other users.
2. The new user account is populated with storage and one or more dedicated and isolated instances. Each SoftLayer Server instance comes with 1TB of storage, with the option to add more in increments of 1 TB.
3. Required patterns are deployed from the catalog into the new user environment.

Figure 1 shows three user accounts created with varying server instances and storage. Client1 and Client3 were close to SoftLayer Site A and therefore were tethered to Site A, while Client2 was provisioned at Site B:
Figure 1. PureApplication service accounts

The PureApplication infrastructure configuration is shown below in Figure 2. Clients can choose from three available sizes: 4 cores (eSeries), 8 cores (mSeries), or 16 cores (sSeries). Each one comes with different cache, memory, and PVU specifications. It is recommended that you double-check the configuration with your SoftLayer administrator.
Now that you know the infrastructure details are, the next question is usually what software you are entitled to as a PureApplication Service user. Table 1 shows the entitled and pre-loaded patterns that are included when you purchase PureApplication Service:

### Table 1. Entitled software with PureApplication Service

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Pre-entitled</th>
<th>Pre-loaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caching Service</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Proxy Service</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>ITM Monitoring Service</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>IBM Image Construction &amp; Composition Tool Pattern</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Red Hat Base OS Image</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>IBM Application Pattern for Java</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Three types of patterns are available on PureApplication System V2:

**Virtual System Patterns**

Provide the most flexibility and customization options. You can choose an operating system to run the pattern on, and then add policies to it.

**Virtual Application Patterns**

Are highly optimized to support a specific workload. The features and functions of the integrated software are limited to only those that are required. This type of pattern requires...
the least amount of customization during deployment, and provides the most direct way to obtaining a rapid return on investment.

**Virtual System Classic Patterns**
Provide all of the flexibility and customization options. They consist of an operating system and, potentially, additional IBM software products, such as WebSphere® Application Server or IBM Business Process Manager.

Your SoftLayer instance could be running PureApplication Service V1, which means you only have the Virtual Application Pattern and the Virtual System Classic Pattern. For more information on patterns, see the developerWorks tutorial [Manage the topology with virtual system patterns](https://www.ibm.com/developerworks/).

**Working with PureApplication Service**
While the graphical user interface (GUI) for PureApplication System normally displays two consoles – System Console and Workload Console -- PureApplication Service on SoftLayer offers only the Workload Console, as shown in Figure 3. Note also that there is no System submenu:

**Figure 3. PureApplication Service Console**

To check the Catalog to see available Hypervisor images, select Catalog => Virtual Images. If you do not find the image you want, contact the SoftLayer administrator. All system-related tasks are managed by the SoftLayer hosting team.

For those familiar with PureApplication System, there are tooling options. On the Welcome tab, select **Download Tooling**. The tooling options are shown in Figure 4.

**Figure 4. Tooling options**

As an example, after downloading the command line tool (CLI), unzip the executable to a folder, preferably `C:\IBM\Deployer`. After that, you can use the CLI tool from a pattern perspective, as
you do in PureApplication System. You cannot use the CLI tool from a hardware configuration perspective.

**Working with the IBM Integration Bus pattern**

Assuming that the IBM Integration Bus Hypervisor image is available, select Catalog => Virtual Images, highlight **IBM Integration Bus 9.0.0.0**, and you will see the details in the main pane. In addition to the version and Image Reference Number, it contains two patterns: IBM Integration Bus 9.0.0.0 Basic and IBM Integration Bus 9.0.0.0 Advanced. Click on one of them to go to the Patterns page:

**Figure 5. IBM Integration Bus patterns available with PureApplication Service**

![IBM Integration Bus patterns available with PureApplication Service](image)

Click the **IBM Integration Bus Basic** pattern link. You will be taken to the Virtual System Patterns screen under the Patterns sub-menu. The pattern is simple, with only one virtual machine denoted by the pink box at the bottom of the canvas. Other details of the pattern are also displayed. The value of the field In the cloud now says none because you have not yet deployed the pattern.

**Tip:** Always make a clone of the pattern before modifying it.
To deploy this pattern, click **Deploy**. Most patterns have associated parameters and the IBM Integration Bus pattern is no different. The Advanced version of the IBM Integration Bus pattern has a lot more parameters than the Basic version.

**Figure 6. IBM Integration Bus Basic pattern details**

<table>
<thead>
<tr>
<th><strong>Description:</strong></th>
<th>Basic pattern for IBM Integration Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Created on:</strong></td>
<td>Sep 23, 2014, 4:49:52 AM</td>
</tr>
<tr>
<td><strong>Current status:</strong></td>
<td>Draft</td>
</tr>
<tr>
<td><strong>Updated on:</strong></td>
<td>Sep 23, 2014, 4:49:57 AM</td>
</tr>
<tr>
<td><strong>In the cloud now:</strong></td>
<td>(none)</td>
</tr>
<tr>
<td><strong>Access granted to:</strong></td>
<td>Demo1 [owner]</td>
</tr>
</tbody>
</table>

**Topology for this pattern:**

Deploys to ESX hypervisors.

**Parts in the IBM Integration Bus pattern**

The IBM Integration Bus pattern is simple and has only one virtual part. Provide a unique virtual system name, choose the environment or cloud group, and then configure the IBM Integration Bus part.

When naming the virtual system, choose a name that makes it easy to identify the instance and the environment. When choosing the environment, you can select the IP version and cloud group. In the case of the PureApplication Service, the SoftLayer administrator will let you know which cloud group and IP group to use. In most cases, deployment is scheduled to be immediate, unless you need to schedule the deployment for a later day and time.
Choose the number of virtual CPUs and the memory size. For starters, you can use the default values of one CPU and 2048 MB of memory, and if necessary, increase them later. Finally, choose passwords for root and virtuser, and when done, click OK.

**Figure 7. Properties in the IBM Integration Bus pattern**

If all required configuration parameters are filled in, you will see green checkmarks against each field on the deployment summary screen, as shown in Figure 8. Click OK to schedule the deployment of the IBM Integration Bus pattern.

**Figure 8. IBM Integration Bus pattern deployment summary**
After you deploy the IBM Integration Bus instance, highlight it to see the details. Here is what really happens when the pattern is deployed. As shown in Figure 8, one or more virtualized environments is configured and managed by IBM. On each environment, you can deploy the IBM Integration Bus pattern using a certain cloud group and IP group. After a successful deployment, you can then install and manage the workloads.

**Tip:** The IBM Blue zone is the IBM intranet and IBM Yellow zone is the extranet.

**Figure 9. PureApplication Service on SoftLayer details**

Now that the IBM Integration Bus instance is up and running, verify the installation: go to the virtual machine and run the command `dspmqver`. After verification, you can start using the instance normally, as you do on a traditional server or on PureApplication System, by creating a simple collection of MQ resources and configuring IBM Integration Bus.

**Conclusion**

This tutorial showed you how to deploy the basic IBM Integration Bus Pattern using PureApplication Service on SoftLayer. No matter what pattern you choose, the emphasis is on automating and simplifying the set-up process so that you can focus on your application. The value of patterns in the off-premise environment (PureApplication System on SoftLayer) is similar to the on-premise environment (PureApplication System) -- patterns automate the provisioning, monitoring, and maintenance of workloads, and enable you to move from from off-premise to on-premise when you are ready.
Acknowledgments

The authors would like to thank IBM Software Engineer and PureApplication Systems Developer Jeffrey T. Klier for reviewing this tutorial.
Resources

- **IBM Integration Bus resources**
    This post in the IBM Integration Community blog shows you how to run IBM Integration Bus on SoftLayer.
  - [SoftLayer home page](https://www.softlayer.com/)
    Information on SoftLayer products, services, and solutions.
  - [IBM Integration Bus V9 Knowledge Center](https://www.ibm.com/support/knowledgecenter/SSEMKD_9.0.0/)
    A single portal to all IBM Integration Bus documentation, with conceptual, task, and reference information on installing, configuring, migrating to, and using IBM Integration Bus.
  - [IBM Integration Bus developer resources page](https://www.ibm.com/support/knowledgecenter/SSEMKD_9.0.0/pibdevguide/)
    Downloads, tutorials, education, product info, how-to articles, and other resources to help you use IBM Integration Bus to enable connectivity and transformation in heterogeneous IT environments for businesses of any size using a wide range of platforms, including cloud and z/OS.
    Product features, use cases, and resources.
  - [Video: What’s new in IBM Integration Bus](https://www.youtube.com/watch?v=example_video)
    A short YouTube video showing key IBM Integration Bus features.
  - [Download IBM Integration Bus Developer Edition](https://www.ibm.com/support/knowledgecenter/SSEMKD_9.0.0/pibdevguide/)
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    Forum on mqseries.net for user questions, answers, and tips.
  - [Track IBM Integration Bus user requirements](https://www.ibm.com/support/track-user-requirements)
    Create, view, and track IBM Integration Bus user requirements.

- **IBM PureApplication System resources**
  - [IBM PureApplication System Information Center](https://www.ibm.com/support/knowledgecenter/SSEMKD_9.0.0/paisinfo/)
    A single portal to all IBM PureApplication System conceptual, task, and reference information on installing, configuring, and using IBM PureApplication System.
  - [IBM PureSystems developer resources](https://www.ibm.com/support/knowledgecenter/SSEMKD_9.0.0/paisdevguide/)
    Latest trials, downloads, tutorials, and other developer resources for IBM PureSystems products and services.
  - [IBM PureSystems Centre](https://www.ibm.com/resourcetools/puresystems/)
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  • **developerWorks on Twitter**
    Check out recent Twitter messages and URLs.

  • **IBM Education Assistant**
    A collection of multimedia educational modules that will help you better understand IBM software products and use them more effectively to meet your business requirements.
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