IBM WebSphere CloudBurst Appliance V2.0.0.2
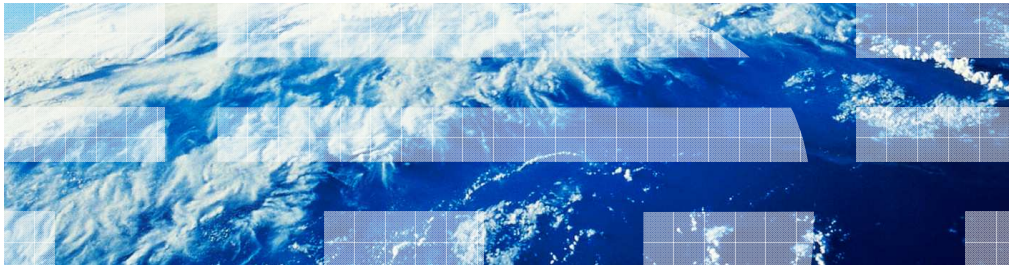
Environment profiles

This presentation will cover environment profiles which were introduced in version WebSphere CloudBurst Appliance version 2.0.0.2.

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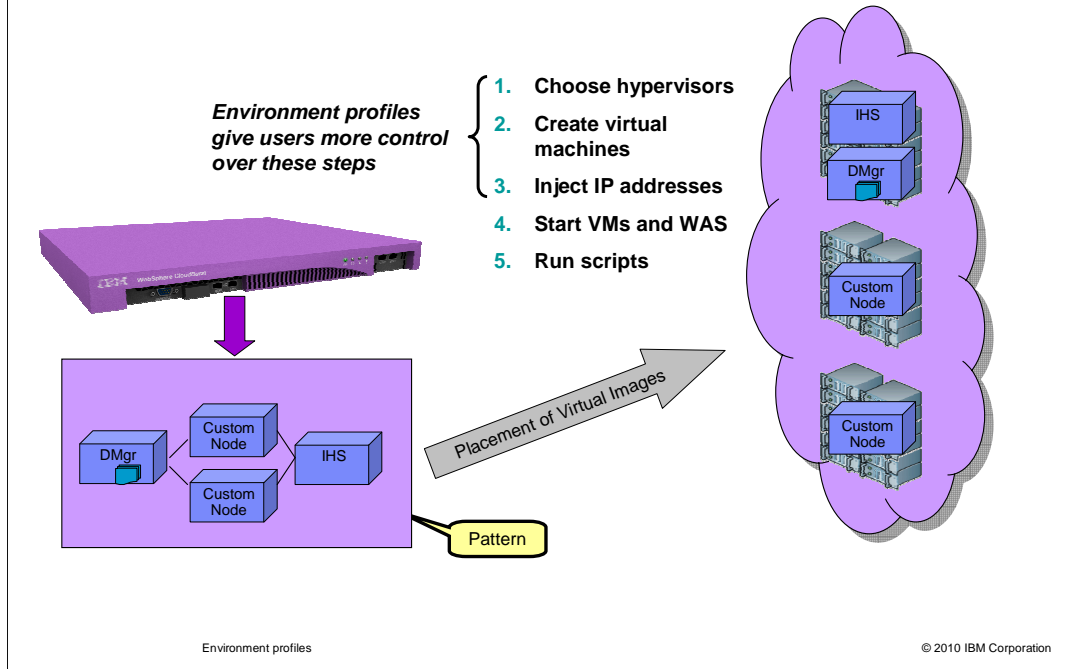Environment profiles   © 2010 IBM Corporation

This presentation will cover all aspects of environment profiles. It will start off with configuration of an environment profile and end with pattern deployment using environment profiles.

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Overview

This section will give an overview of environment profiles.

Overview

Environment profiles give users more control over these steps

1. Choose hypervisors
2. Create virtual machines
3. Inject IP addresses
4. Start VMs and WAS
5. Run scripts

Placement of Virtual Images

Pattern

DMgr   Custom Node   IHS   Custom Node

IHS   DMgr   Custom Node   Custom Node

Environment profiles

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Environment profiles give you the ability to group related deployment configuration, like virtual machine name format, IP address assignment responsibility and cloud groups. Environment profiles also give you the ability to deploy a single pattern to multiple cloud groups.

The graphic in this slide highlights the steps or configuration points in which environment profiles encompass.
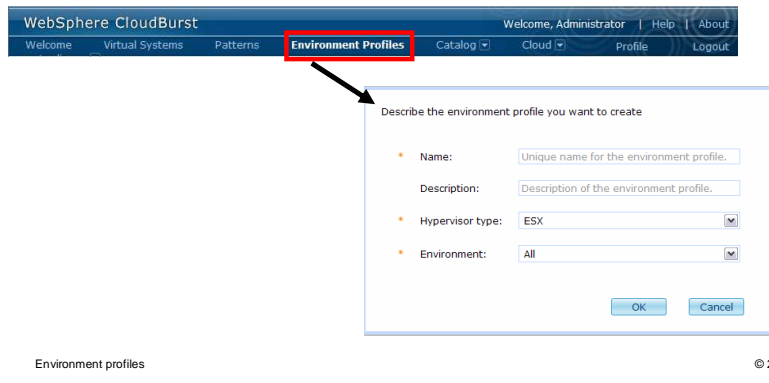
Section

Environment profile configuration

This section will cover environment profile configuration.

Environment profile

- Create and manage environment profiles by navigating to **Environment Profiles**
- Create an environment profile by clicking ✚
    - Enter unique name
    - Specify a hypervisor type
    - Specify an environment

To create and manage your environment profiles, navigate to "Environment Profiles". To create an environment profile click the green "+" icon. This will bring up a panel where you must enter a unique name for the profile, specify a hypervisor type and environment.

All hypervisors in a profile must be of the same type. "Hypervisor type" can be ESX, PowerVM or z/VM.

"Environment" field is used to group like profiles. There are eight grouping options: "All", "Development", "Test", "Quality Assurance", "Performance", "Research", "Production" and "Pre-Production".

Environment profile configuration

Virtual machine name format: None provided
- Specify the virtual machine name format using pre-defined variables

IP addresses provided by: WebSphere CloudBurst
- Choose who will manage the IP addresses

Deploy to cloud groups:
Name | Alias
Add more...
- Select available cloud groups

Access granted to: Administrator [owner]
Add more...

Environment profiles
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Before the environment profile is ready to use, you must provide additional configuration information.

The "Environment Profiles" window provides fields to group related deployment configuration options, like virtual machine names, IP address assignment responsibility, and cloud groups, together.

The "Virtual machine name format" field allows you to overwrite the VM name format using pre-defined variables. For IBM PowerVM and VMware ESX supported variables are ${*hostname*}, ${n-*counter*} and ${*vs-name*}. For z/VM, only ${n-counter} is supported at this time.

You must choose whether you want the IP address for a virtual machine to be provided by WebSphere CloudBurst or if you want to specify the IP address for individual parts when the pattern is being deployed, called "Pattern deployer". The IP address must not exist in the selected IP group in this case of "Pattern deployer" option.

The "Deploy to cloud groups" field allows you to select available cloud groups that are configured and ready for use. Only valid cloud groups that are configured with the correct hypervisor type are displayed.

The Access granted to field specifies access to this environment profile for other users or groups of users. Initially this field is set to the role of the owner of the environment profile. By default, the Add more box contains the "Everyone" user group. When a user or group has been added, click the link beside the entry to toggle between the allowable access levels (read, write, or all)

Environment profile deployment ready

Test profile

Description:	None provided
Hypervisor type:	ESX
Environment:	All
Created on:	Sep 29, 2010 1:24:44 PM
Current status:	☑ Environment profile can now be use for deployments
Updated on:	Sep 29, 2010 1:29:07 PM
Virtual machine name format:	None provided
IP addresses provided by:	WebSphere CloudBurst

Deploy to cloud groups:

Name	Alias
⊞ vCenter cloud group	vCenter cloud group [remove]
Add more...	

- **Current status** reflects current status of environment profile

Environment profiles

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Once your environment profile is completed and ready to use, the "Current status" field is updated and will display a green check mark.

Section

Variable substitution

This section will cover variable substitution.

Environment profile variable substitution rules

- **Virtual machine name format** field can include predefined variables
  - For ESX and PowerVM hypervisors
    - ${*hostname*}
      - Replaced with the hostname of the virtual machine.
    - ${n-*counter*}
      - Replaced with a counter of n digits.
    - ${*vs-name*}
      - Replaced with the name of the virtual system.
- For z/VM
  - Only ${n-counter} is supported

Virtual machine name format:	My_${hostname}_VM
Virtual machine name format:	My_VM_${3-counter}
Virtual machine name format:	My_${vs-name}_VM ✓

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The environment profile "Virtual machine name format" field supports three pre-defined variables. Those variables are ${hostname}, ${vs-name} and ${n-counter}.

${hostname} is replaced with the hostname of the virtual machine.

${n-counter} is replaced with a counter made up of n digits. For example, if you specified ${5-counter} you end up with "00001", "00002". ${n-counter} supports only prefixes.

${vs-name} is replace with the name of the virtual system.

z/VM only has support for the ${n-counter} in version 2.0.0.2 of the product.

Section

Environment profiles command-line interface

This section will cover the environment profile command-line interface changes to support environment profiles.

Overview

- Command-line interface added the **EnvironmentProfile** object to support environment profiles
- **EnvironmentProfile** object can be used to query, manipulate, add and remove environment profiles
- CLI help is available:
  - help(cloudburst.environmentprofile)

The command-line interface added support for environment profiles by way of the "EnvironmentProfile" object.

An "EnvironmentProfile" object represents a particular environment profile defined in WebSphere CloudBurst. Use the EnvironmentProfile object to query and manipulate the environment profile definition on the appliance. Attributes of the EnvironmentProfile object, and relationships between the environment profile and other resources on the WebSphere CloudBurst appliance, are represented as Jython attributes on the EnvironmentProfile object. You can manipulate these Jython attributes using standard Jython mechanisms to make changes to the corresponding data on the WebSphere CloudBurst appliance.

For a full list of the supported "EnvironmentProfile" operations run the command-line interface help operation on "cloudburst.environmentprofile".

Example

- Create and configure an environment profile

```
>>> My_Profile=cloudburst.environmentprofiles<<{'name':'My_Profile','platform':'
ESX','environment':cloudburst.environmentprofile.TEST_ENVIRONMENT}
>>> My_Clouds=cloudburst.clouds['CloudGroup1'][0]
>>> My_IPGroup=cloudburst.ipgroups['aimcp158.ipgroup'][0]
>>> My_Profile.clouds.addCloud(My_Clouds)
>>> My_Profile.clouds[My_Clouds].ipgroups.addIPGroup(My_IPGroup)
>>>
```

- Associate an environment profile with a pattern at deployment time using the command-line interface wizard

```
cloud or environment profile (* to select from list): *
Clouds:
1. CloudGroup1
2. CloudGroup2

Environment profiles:
3. My_Profile
cloud or environment profile (* to select from list): 3
```

Environment profiles

This slide includes example script to create, configure and associate an environment profile with a pattern.

The create and configure example contains the following commands: First, it creates an environment profile passing in a few select parameters (that is "name", "platform" and "environment"). Second, a handle to an existing cloud group is retrieved. Third, a handle to an existing IP group is retrieved. Fourth, the cloud group is added to the environment profile. Fifth and the last step, one of the IP groups associated with the cloud group we just added is marked for use. Note, the handle that we got to the IP group in step three was used to mark the specific IP group contained in the cloud group that you wanted to use. When you add a cloud group to an environment profile all of its associated IP groups are brought along free of charge, but none are marked for use until explicitly marked.

There are two approaches to associating an environment profile with a pattern at deployment. Choice one, is to using straight command-line interface commands. Choice two, is to use the command-line interface wizard. The example provided uses the wizard. The built in help command and information center contain specific information on how to build the command not using the wizard.

Section

Deployment using environment profiles

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This section will cover the deployment process using environment profiles.

Deploy using environment profile

Describe the virtual system you want to deploy.

DF - WebSphere Cluster VS

Choose Environment
○ Use cloud
　In cloud group　FVT Cloud
◉ Use profile
　Environment type　All
　Environment profile　EnvProf_aimcp

Schedule deployment

Configure virtual parts

OK　Cancel

- Choose "Use profile"
- Select a pre-defined environment type for which the environment profile was categorized as
- Choose the environment profile

Environment profiles

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If you are using WebSphere CloudBurst version 2.0.0.2 or later, you can either deploy the pattern to a specific cloud group (default) or you can deploy the pattern using an environment profile that specifies a cloud group or cloud groups to which to deploy.

If you select "Use profile" to deploy the pattern, you will have to select the "Environment type" and a valid "Environment profile" from the drop down lists.

Environment profiles are optional.

If a pattern is associated with an environment profile at deployment time then you will have additional parameters to configure for each virtual image part. For each part you will need to specify a cloud group and IP group. If your environment profile was configured with multiple cloud groups then it is possible to deploy a single pattern to multiple cloud groups.

The "Addresses" field is enabled when the environment profile is set to "Pattern deployer" in the field that indicates who is responsible for assigning the IP address or hostname. If you recall, there were two options. Option one (default), WebSphere CloudBurst assigns the IP address and hostname. Option two, pattern deployer is responsible for assigning this information (see screen capture).

One special note about "Pattern deployer" is that the IP address or hostname that you choose must not be defined in the IP group. It is added by WebSphere CloudBurst after deployment of the pattern. If you choose an IP address that has been defined in the IP group the pattern deployment will fail with a message indicating that the IP is already in use.

Virtual system link to associated environment profile

DF - Single server	
Created on:	Oct 8, 2010 10:41:20 AM
From pattern:	DF - WebSphere single server
Using Environment profile:	Test profile
Current status:	The virtual system has been deployed and is ready to use
Updated on:	Oct 8, 2010 10:48:51 AM
Access granted to:	Administrator [owner]
	Add more...

- Link provided to the environment profile used to create the virtual system

Environment profiles

This field specifies the environment profile, if one was used to create this virtual system, by providing a link to that environment profile. Clicking the link displays the details for that environment profile. If none was specified, then this field says None provided.

Summary

This section will give an overview of what you covered in the presentation.

Summary

- Overview
- Environment profile configuration
- Variable substitution
- Environment profile deployment

This presentation covered environment profiles from configuration to deployment. In addition to environment profiles a new set of pre-defined variables was introduced that you can use to define the format of your virtual machine names.

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