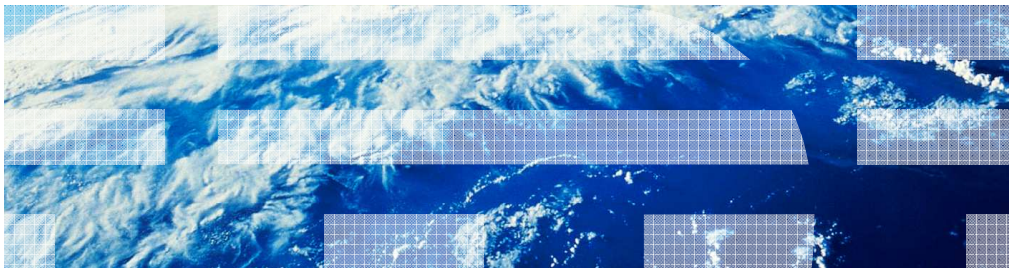

IBM WebSphere CloudBurst Appliance V2.0

Dynamic virtual machine operations



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This presentation will cover the virtual machine dynamic operations introduced in WebSphere CloudBurst Appliance V2.0.

Agenda

- Overview
- Virtual machine operations
- Summary

This presentation will start by providing an overview of what dynamic operations are available. Next, you are shown how to use the various operations provided by this new feature. Finally, a brief summary of the content covered will be presented to help solidify your understanding.

Overview

This section will give an overview of the new dynamic operations.

Dynamic virtual machine operations

- Create a clone of an existing virtual machine to handle increased workload
 - Script packages marked for “on virtual system creation” are executed
- Delete a clone of an existing virtual machine when workload decreases or virtual machine is behaving improperly
 - Script packages marked for “on virtual system deletion” are executed
- Manual intervention required
 - Your responsibility to monitor the environment and clone or delete the virtual machines
 - Your responsibility to regenerate routing rules on virtual machine clone
 - Your responsibility to drain active activity of clone before virtual machine delete

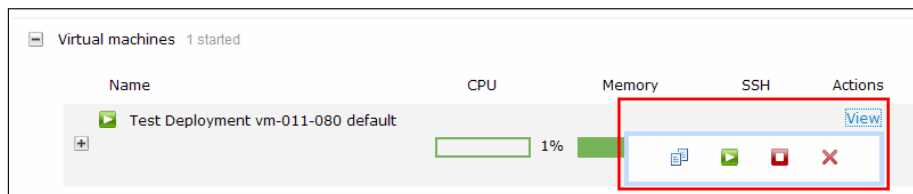
The WebSphere CloudBurst dynamic virtual machine operations give you the ability to add and remove individual virtual machines post deployment. This feature gives you a great deal of flexibility to react to your changing environment workload, but it is your responsibility to monitor the environment and start the actions when appropriate.






Virtual machine operations

This section will cover the virtual machine operations.

Virtual machine operations

- Navigate to: **Virtual Systems** > *your_virtual_system* > **Virtual machines** > *VM_name* > **View**
- Available operations
 - **Clone** this virtual machine
 - **Start** this virtual machine
 - **Stop** this virtual machine
 - **Delete** this virtual machine

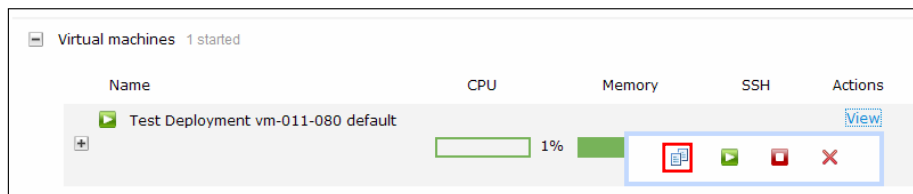


Name	CPU	Memory	SSH	Actions
 Test Deployment vm-011-080 default	<div style="width: 1%;"><div style="width: 1%;"></div></div> 1%	<div style="width: 1%;"><div style="width: 1%;"></div></div>		View    

Each virtual machine that makes up the virtual system now has four additional operations. Those operations are “Clone”, “Start”, “Stop” and “Delete”. Each of the operations is covered in more detail in follow up slides. To view or use these operations navigate to “**Virtual Systems** > *your_virtual_system* > **Virtual machines**” and click the “**View**” link next to the virtual machine that you are interested in performing an action against.

Virtual machine operations (clone)

- Clone operation
 - Creates copy (clone) of the virtual machine
 - Multiple clone operations can occur simultaneously under the same virtual system
 - Script packages marked to run **at virtual system creation** get run after the virtual machine has been created
 - Any maintenance applied to the source virtual machine is applied to the cloned virtual machine automatically



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Dynamic virtual machine operations

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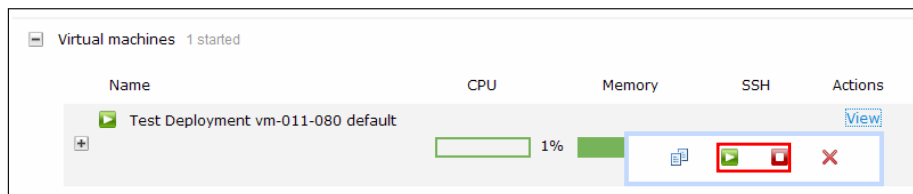
The clone operation allows you to create a copy of the virtual machine. This feature can be used when the workload has exceeded the resources of the existing virtual machines. Cloning a virtual machine is a manual process and requires that you monitor your environment and initiate a clone operation when appropriate.

If the virtual machine you are cloning contains any script or maintenance packages, those script packages and maintenance packages are applied to the newly created virtual machine. Script packages are applied to the new virtual machine using the same “executes” preferences that you had specified for the original virtual machine. For example, if any of your script packages were marked to run “at virtual system creation” those script packages get run at virtual machine creation. The same logic applies to script packages marked to be run “when I initiate it” and “at virtual system deletion”. In addition, if you are cloning a virtual machine that is a “custom node”, WebSphere CloudBurst will invoke the “addNode” command against the new node to add it to the cell.

The ability to start multiple clone operations at the same time can save you time. The only limiting factor is that the virtual machines must all belong to the same virtual system.

Virtual machine operations (start and stop)

- Start and stop operation
 - Ability to start or stop individual virtual machines
 - Before V2.0 this ability was performed at the virtual system level



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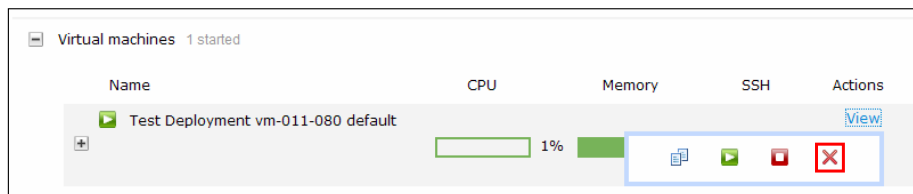
Dynamic virtual machine operations

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Before V2.0, you cannot start or stop a virtual machine independent of the virtual system. You had to stop or start all virtual machines under a virtual system. With V2.0 you can now start or stop individual virtual machines. This ability allows you to more precisely react to changing workload or to a misbehaving server.

Virtual machine operations (delete)

- Delete operation
 - Deletes virtual machine from virtual system
 - Multiple delete operations can occur simultaneously under the same virtual system
 - Script packages marked to run **at virtual system deletion** will get run before deleting the virtual machine
 - Before V2.0 this ability was performed at the virtual system level



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Dynamic virtual machine operations

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The delete operation allows you to delete a virtual machine. This feature can be used when the virtual machines far exceed the workload or if a virtual machine is misbehaving. As with cloning a virtual machine, the deletion of a virtual machine requires that you monitor your environment and initiate a delete operation when appropriate.

During the delete operation any script packages whose “**execute**” field is marked with “**at virtual system deletion**” will get run before deleting the virtual machine. In addition, if you are deleting a virtual machine that is a “custom node”, WebSphere CloudBurst will invoke the “removeNode” command against the node to remove it from the cell. One caveat is that the node must be in a started state in order for the “removeNode” command to be executed and the node removed from the cell. If your node is in a stopped state then it is not removed. To remove the node in this scenario you run the “cleanNode” command.

The ability to start multiple delete operations at the same time can save you time. The only limiting factor is that the virtual machines must all belong to the same virtual system.

Section

Summary

This section will cover a summary of the presentation.

Summary

- Ability to clone, start, stop and delete individual virtual machines that make up a virtual system
- Increase or decrease virtual machines based on demand
- Manual step required to clone, start, stop or delete an individual virtual machine

The new dynamic virtual machine operations give you the capability to clone, start, stop and delete individual virtual machines that make up a virtual system. Before V2.0, you were not able to clone a virtual machine and you were limited to acting on the entire virtual system as a whole. Based on demand you can now create and teardown virtual machines to keep your environment healthy. These operations are not performed automatically, so manual monitoring and initiation is required.



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