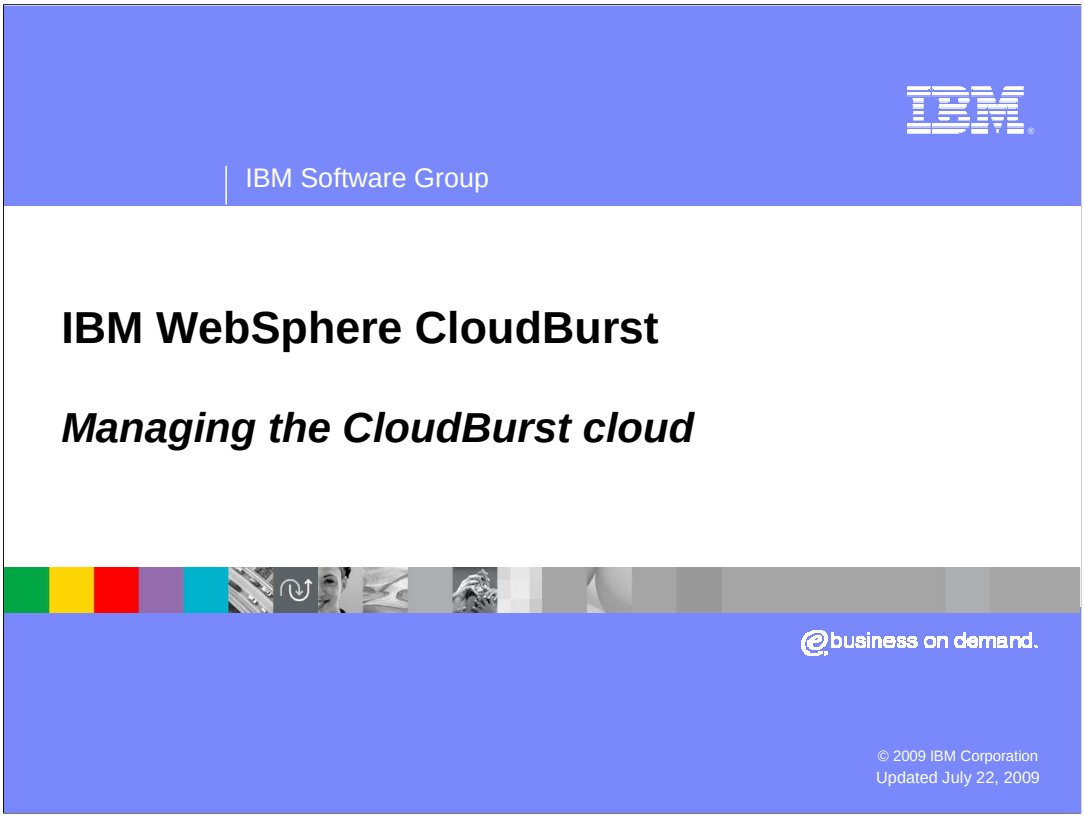


This presentation covers the monitoring capabilities of CloudBurst.

Agenda

- Managing the cloud – Users
  - Virtual systems
- Managing the cloud – Administrators
  - Hypervisors
  - Storage
  - IP groups

This presentation covers the managing and monitoring features of CloudBurst. You will be looking at these features from two different roles. The first role is the user; whose primary responsibility is to create and deploy patterns. The second role is the administrator, who is responsible for managing the underlying infrastructure.

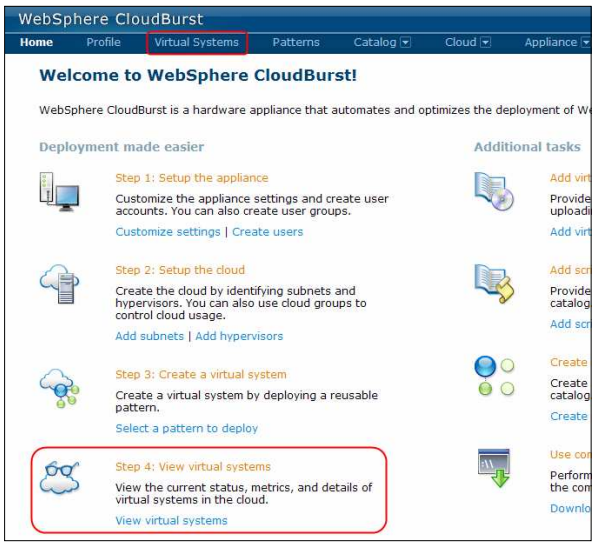
Section

Managing the cloud - User

This section will discuss managing the cloud from the users perspective.

Available view

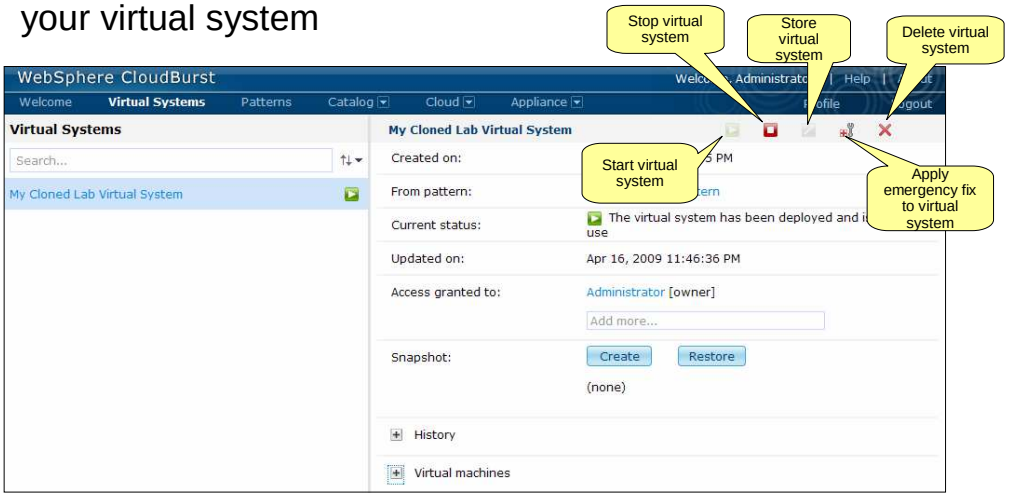
- Virtual system
  - Start and stop virtual system
  - WebSphere® Application Server administrative console
  - SSH
  - VNC



Managing and monitoring your patterns once they are deployed can be achieved by going to the “Virtual Systems” tab. This allows you to view environment metrics, access the WebSphere Application Server administrative console and SSH into the operating system.

Virtual system administration

- From this view you can control and view all aspects of your virtual system



The virtual system's view offers the basic functions of starting, stopping and deleting the virtual systems from the cloud. The thing to note here is that deleting the virtual system will release all of its resources such as hypervisor storage and IP addresses back to the pool. There are three features that deserve a deeper look into; emergency fixes, creating and restoring snapshots and storing virtual systems.

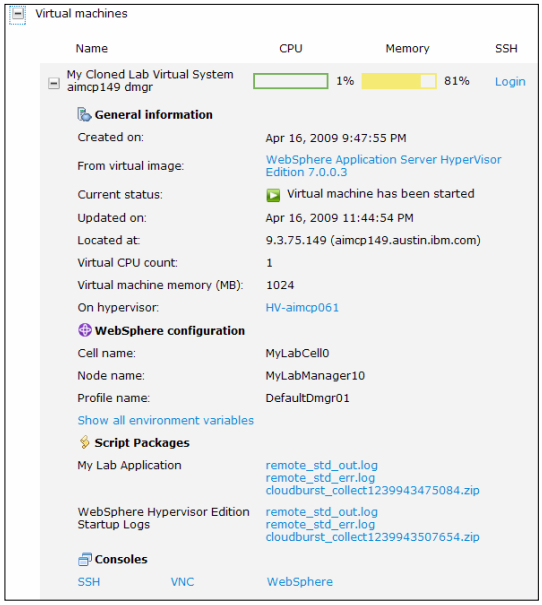
Emergency fixes are applied directly to a running virtual system. IBM maintains the virtual images that come preloaded on CloudBurst. When a new fixpack is available these virtual images are updated and available for import into the CloudBurst appliance. It is not always feasible to wait for the virtual images to be updated and in such cases you can apply an emergency fix directly to the virtual system. The emergency fix is specific to the virtual system in which it was applied against. What this means is that if you re-deploy the pattern this emergency fix is not present in the virtual system. You will need to either update the virtual image and re-deploy the pattern or reapply the emergency fix after the pattern has been re-deployed.

Creating a snapshot is the process of taking copy of the entire state of a virtual system. Restoring from the snapshot takes you back to the state defined by the snapshot. Taking a snapshot of a virtual system will result in every virtual machine that makes up the virtual system having its own snapshot taken. CloudBurst calls out to the hypervisors hosting the virtual machines to take a snapshot. The snapshots are stored on the hypervisor and not in the CloudBurst appliance.

Storing a virtual system releases the resources associated with the virtual system and keeps the virtual system on the hypervisor so that it can be started at a later time. The delete operation releases the associated resources as well, but it also removes the virtual system from the hypervisor.

Virtual system administration (Continued)

- View virtual system and WebSphere Application Server metrics
- Access WebSphere Application Server administrative console
- Access the operating system using SSH or VNC



Expanding the virtual machines section will present you with metrics for the virtual machines that make up the virtual system. It contains information such as what hypervisor it is located and the virtual machine it is installed on, what IP was assigned and the cell and node name of the WebSphere Application Server environment.

CloudBurst assumes the responsibility of assigning IP addresses to the virtual machines and placement of those virtual machines in the cloud. Since this is the case, CloudBurst provides you with a WebSphere Application Server administrative console link, SSH link and a VNC link into the operating system. These links are found under the Consoles section. Once you open the WebSphere Application Server administrative console you can bookmark it for future reference.

Section

Managing the cloud – Administrators

The next section will discuss managing the cloud from the administrators perspective.

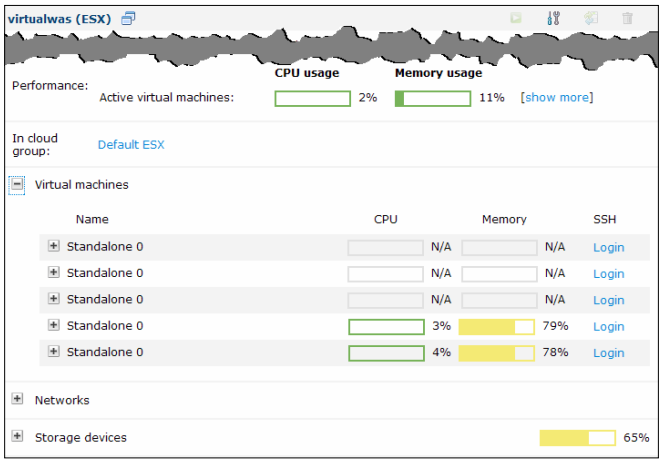
Available views

- Hypervisor
  - Monitor processor and memory usage
  - Grant permissions
- Storage
  - Add and remove data stores
- IP groups
  - Add and remove IPs from the pool

The administrator's job is to manage and monitor the resources that make up the WebSphere cloud. These resources are hypervisors, storage and IP groups.

Hypervisor management

- Hypervisor view includes
  - Overall performance metrics
  - Access to virtual machines
  - Access to available IP address pool
  - Access to available storage

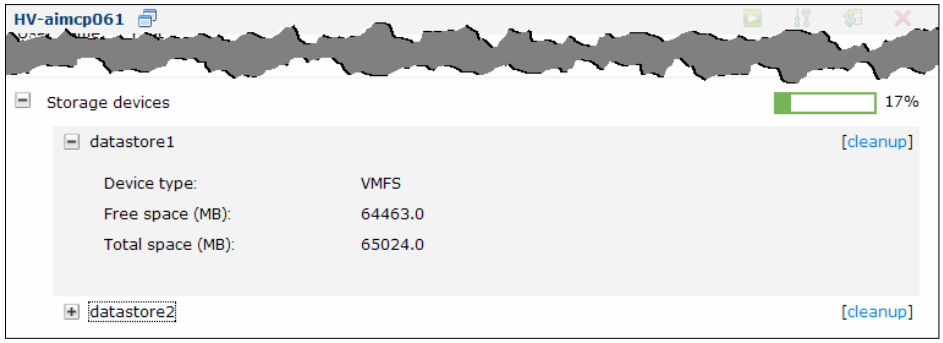


From the hypervisor view you can check processor and memory statistics for the virtual machines running on the hypervisor. When you deploy a virtual system, CloudBurst will communicate with the hypervisor to determine the best location to install the virtual image. CloudBurst makes its decision on placement only once and that is at pattern deployment time. If you find that resources are constrained after deployment it is your responsibility to remedy the situation. You can delete the virtual system and re-deploy the pattern at which point CloudBurst will find the best location to install the virtual image or you can update the virtual machine directly using a hypervisor specific client.

This view also provides you direct access to the operating system of each machine by way of a SSH link.

Storage management

- From this view you can add, remove and modify the storage devices

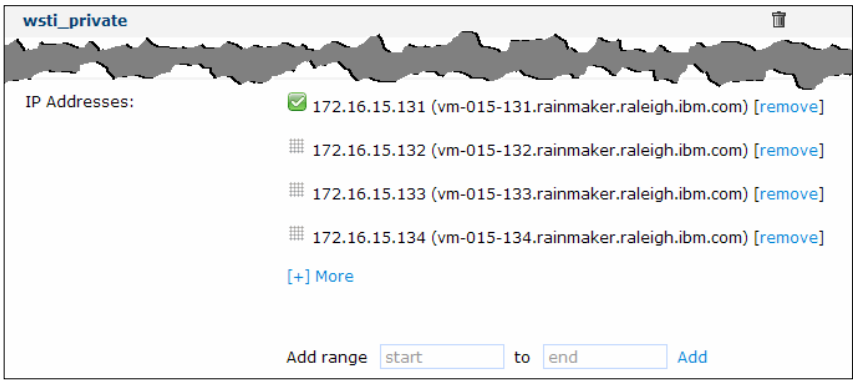


CloudBurst automatically detects and adds all available storage devices connected to the hypervisor. From this view you can see the properties of each storage device.

Your first pattern deployment will result in the virtual images being transferred from the CloudBurst appliance to the hypervisor's storage device and stored as a master read-only copy. Any subsequent pattern deployments will skip the transfer step and use the virtual image from the master read-only copy. By using SAN storage as opposed to local storage you are effectively creating one master read-only copy for all connected hypervisors.

IP group management

- View available IP addresses
- Add and remove IP addresses to and from the pool
- View IP addresses in use

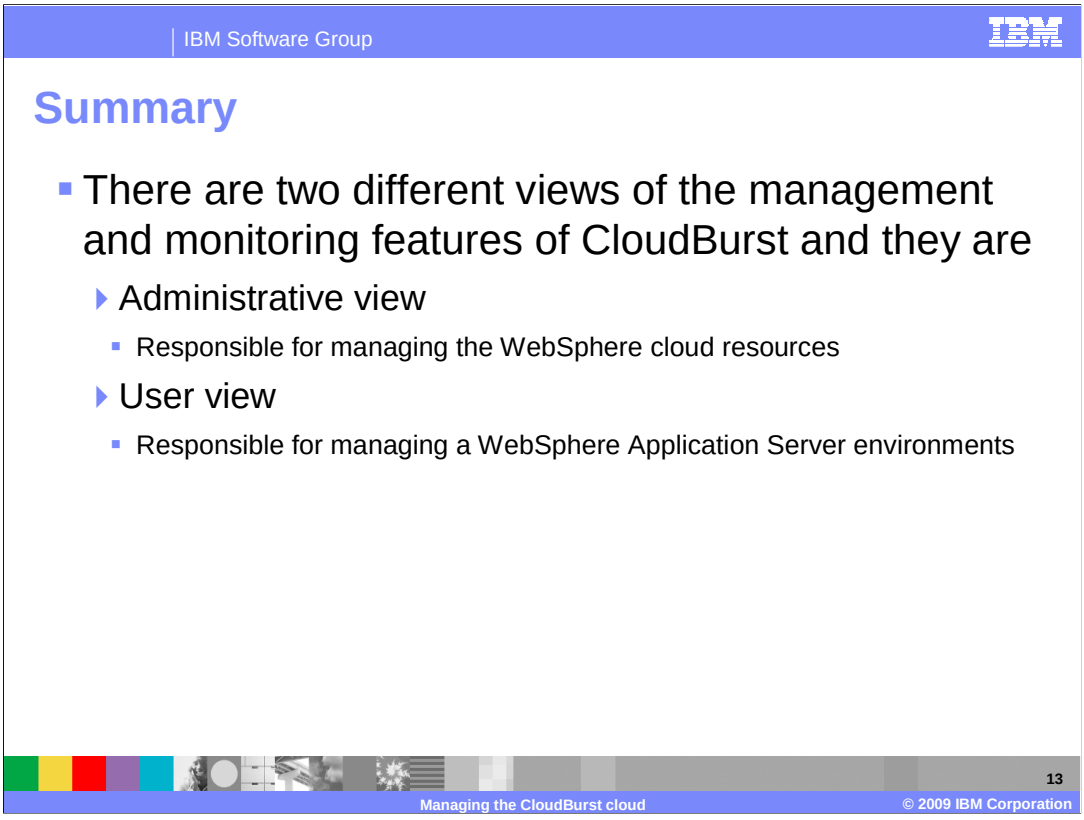


IP group view allows you to add and remove IP addresses from the available pool. If you run into a problem deploying a pattern due to lack of IP addresses you will either need to delete or store some number of virtual systems thus freeing up IP addresses or you will need to add additional IP addresses to the pool.

Section

Summary

Here is a summary of this presentation



As discussed there are two different views when it comes to managing and monitoring your CloudBurst resources. One view is the administrative view which is responsible for managing the WebSphere cloud resources such as hypervisors, storage and subnets. The other view is the user view which is primarily responsible for the WebSphere Application Server environments.

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