



IBM Software Group

IBM WebSphere CloudBurst

Troubleshooting with CloudBurst



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This presentation will discuss the IBM CloudBurst troubleshooting.

Overview

- CloudBurst Troubleshooting
- Communication troubleshooting
- WebSphere® Application Server troubleshooting
- Virtual system troubleshooting



This presentation will discuss troubleshooting with the CloudBurst device. There are several ways to troubleshoot problems you might experience while using the CloudBurst device, configuring and deploying virtual systems, and trouble with the WebSphere Application Servers that you deploy with CloudBurst.

Section

CloudBurst troubleshooting



This section will discuss troubleshooting the CloudBurst device.

Troubleshooting categories

- Two categories for troubleshooting with CloudBurst
 - ▶ Troubleshooting the CloudBurst device
 - ▶ Troubleshooting WebSphere Application Server
- When troubleshooting CloudBurst problems
 - ▶ Use CloudBurst device logs for Cloudburst problems
 - ▶ Use WebSphere Application Server logs for application server problems



When using the CloudBurst device, problems can occur in several main areas. The two main categories to focus on when thinking about CloudBurst troubleshooting is problems with the CloudBurst device itself, and trouble with WebSphere Application Server that you have deployed to a virtual system using CloudBurst.

When troubleshooting problems with the CloudBurst device, there are logs for CloudBurst device activities that can be accessed and examined;

similarly for WebSphere Application Server. When experiencing problems with WebSphere Application Server that has been deployed from CloudBurst, the WebSphere Application Server logs should be examined.

CloudBurst troubleshooting

- Troubleshooting link in Appliance tab
 - ▶ Examine and download log and audit files
 - ▶ Verify hardware stats
 - ▶ Check appliance temperatures
 - ▶ Test network connections
 - ▶ Power off and restart the hardware



A common first place to start troubleshooting problems with CloudBurst is the troubleshooting page.

You can access the troubleshooting page from the appliance tab in the CloudBurst administrative console.

The Troubleshooting page has several tools to help you diagnose CloudBurst problems, including access to the CloudBurst log files and audit files. CloudBursts error logs and system logs can be viewed in the browser from the logs section, and the log files can be downloaded for closer examination. The audit files can also be viewed in the browser window, or downloaded from the auditing section of the troubleshooting page.

The Troubleshooting page also has diagnostic information about the CloudBurst hardware including hardware capacity and temperatures.

In cases where the CloudBurst device might not be communicating properly with other hosts on the network, the outbound connections section of the troubleshooting page can be used to ping various hosts from the CloudBurst device to ensure that the outbound communications to other hosts on the network are properly working.

Under the power section of the troubleshooting page, the CloudBurst device can be powered off or rebooted.

Section

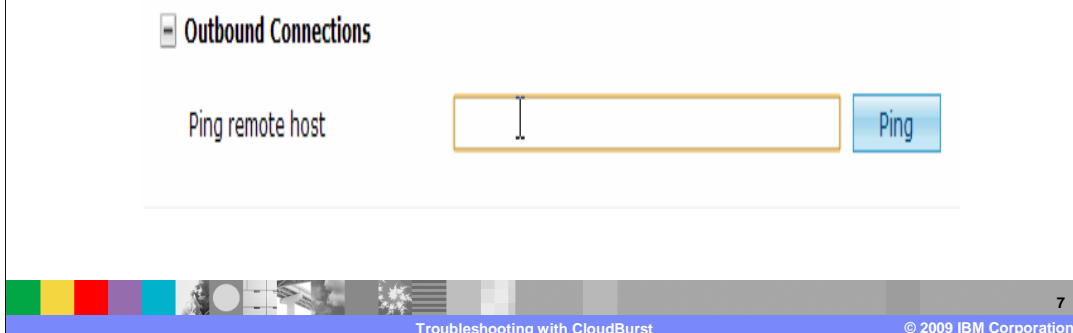
Communication troubleshooting



This section will discuss troubleshooting problems related to the CloudBurst devices network communication.

CloudBurst communication problems

- CloudBurst communication depends on networking configuration
- CloudBurst troubleshooting page can be used to ping hypervisors
- Hypervisor infrastructure tools can be accessed to ping cloudburst device for verification of two-way communication



When communication problems occur, such as, it does not seem that the CloudBurst device is properly talking to a remote host that has a hypervisor installed on it for example, the CloudBurst device can ping the host on the network to make sure that it can properly talk to the host.

You can do this in the troubleshooting page under the appliance tab. In the troubleshooting page, there is a section labeled Outbound Connections.

In the Outbound Connections section, you can enter a host name or IP address in the text box and ping that host or IP address.

A green check mark icon opens when the host entered is pinged successfully.

Sometimes a communication problem can occur to hosts trying to connect to the CloudBurst device instead of the device having trouble connecting to an external host.

In this case, it is useful to do the opposite of pinging from the CloudBurst host, and ping from the external host to the device.

When suspected communication problems occur it is recommended to first ping the remote host from CloudBurst, then ping the

CloudBurst device from the remote host to ensure that two-way communication exists between the host and CloudBurst.

Hypervisor infrastructure tools can be used to log into the hypervisor and make sure that the hypervisor can communicate with the CloudBurst device.

Common communication problem: DNS

- CloudBurst has a hard dependency on a local DNS for virtual system deployment
- CloudBurst appliance must be configured with a DNS in the appliance settings
- Hostnames for IP addresses in the cloud resources must resolve with the local DNS
- Reverse DNS lookup is highly recommended

IP Addresses:

- 9.3.75.148 (aimcp148.austin.ibm.com) [remove]
- 9.3.75.150 (aimcp150.austin.ibm.com) [remove]
- 9.3.75.152 (aimcp152.austin.ibm.com) [remove]
- 9.3.75.153 (aimcp153.austin.ibm.com) [remove]

Add range to [Add](#)

Another common communication problem relates to local Domain Name Server configuration.

It is a requirement that the hosts with hypervisors that are communicating with CloudBurst are resolvable with a DNS lookup.

Having reverse DNS lookup enabled in your network environment is also highly recommended.

When creating an IP group in CloudBurst, if the IP addresses that you enter for your remote virtual systems do not resolve in the local DNS, CloudBurst is not able to properly communicate with those hosts. You will see a warning beside the IP address in the IP group configuration that the host name does not resolve. In the screen capture above, you can see that all four of the IP addresses in the IP group are resolved by the domain name server. The corresponding host names are displayed in round brackets.

The domain name server is initially set up when configuring the initial steps of the CloudBurst device using a serial cable connection.

You can modify or add domain name server information in the appliance settings page of the CloudBurst administrative console.

Section

WebSphere Application Server troubleshooting



This section will discuss troubleshooting your WebSphere Application Servers that are deployed using CloudBurst.

WebSphere Application Server problems

- Some WebSphere Application Server problems can be diagnosed from CloudBurst
- Browser based SSH console, VNC console, and WebSphere Application Server administrative console can be accessed from the virtual systems CloudBurst administration console
- Hypervisor infrastructure tools can be used to access the hypervisor and WebSphere Application Server log files
- WebSphere Application Server problems are diagnosed as application server problems are normally diagnosed when in a non-CloudBurst environment



The WebSphere Application Servers that you deploy using the CloudBurst device are able to be troubleshooted the same way you normally troubleshoot problems with WebSphere Application Server.

You can troubleshoot WebSphere Application Server problems using the WebSphere Application Server log files. One way to access these log files is to log into the hypervisor using the infrastructure tools for your particular version. When you log in to the hypervisor, you can access the WebSphere Application Server log files to diagnose your application server problems.

You can access some WebSphere Application Server Hypervisor Edition logs from the virtual systems page in the CloudBurst administrative console discussed in the next section of this presentation.

Section

Virtual system troubleshooting



This section will discuss troubleshooting CloudBurst managed virtual systems.

Virtual system troubleshooting

- Virtual system tab contains virtual system information including current status
- Script packages deployed and run on virtual systems have potential for problems
- Virtual system tab contains logging information for script packages on virtual systems
 - ▶ Standard out logging
 - ▶ Standard error logging
 - ▶ WebSphere Application Server hypervisor edition logs



When you put together application server patterns to deploy using CloudBurst, you might occasionally run into problems when deploying those patterns to virtual systems on a hypervisor. Fortunately, there is helpful information available from the CloudBurst virtual systems page in the administrative console to aid in diagnosing the problem.

The virtual systems page in the administrative console can be used to browse to the configuration of the particular virtual system you are having problems with. You can drill down into the details of the virtual system to see what the virtual system has deployed. For example, the virtual system will display which pattern you have deployed on it. You can expand a history section to see the details of what transactions have happened between the CloudBurst device and the virtual system. This is very handy for instances where a virtual system is not deployed properly; you can see in the history section how far CloudBurst got before something went wrong during a deployment. You can also see how long it has taken for a virtual system to be deployed from the history.

Logging information for scripts deployed to virtual systems can be accessed from this page in the administrative console as well. The next slide will examine the details that are available to help troubleshoot a virtual system in the administrative console.

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Script package log file links

Virtual machines

Name	CPU	Memory	SSH
VS1 aimcp148 default	1%	89%	Login

General information

Created on: May 18, 2009 2:51:54 PM
 From virtual image: [WebSphere Application Server HyperVisor Edition 7.0.0.3](#)
 Current status: ✔ Virtual machine has been started
 Updated on: May 18, 2009 3:02:05 PM
 Located at: 9.3.75.148 (aimcp148.austin.ibm.com)
 Virtual CPU count: 1
 Virtual machine memory (MB): 1024
 On hypervisor: [HV-aimcp059](#)

WebSphere configuration

Cell name: CloudBurstCell0
 Node name: MyLabNode10
 Profile name: DefaultAppSrv01
[Show all environment variables](#)

Script Packages

My Demo Script Package [remote_std_out.log](#)
[remote_std_err.log](#)
[cloudburst_collect1242676915100.zip](#)

WebSphere Hypervisor Edition Startup Logs [remote_std_out.log](#)
[remote_std_err.log](#)
[cloudburst_collect1242676936834.zip](#)

Consoles

[SSH](#) [VNC](#) [WebSphere](#)

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When you are logged in to the CloudBurst administrative console and you are examining the virtual systems tab, selecting a particular virtual system that is deployed will show you details about that system.

If you open the details for the virtual machines, you can see the general information about the virtual machine. The date it was created, the virtual image used to create the virtual machine, and the current status are some examples of the helpful debugging information you can see from this screen.

Further information about the virtual system is available here as well, including the hypervisor that it is deployed on and the WebSphere Application Server's cell, node, and profile names.

Links to log files are available here for the deployed virtual systems. If there were script packages that were part of the deployment, they might generate log files that are accessible here. Log files for standard out and standard error traces for the script package executions can be accessed here. Also log files for WebSphere Application Server Hypervisor Edition can be either viewed in your browser window from the links on this administrative console page, or can be downloaded.

At the bottom of the virtual systems page, there are three links available for troubleshooting related consoles.

You can access the SSH console for your virtual machine, a VNC console for your virtual operating system, and the WebSphere Application Server administrative console for the application server deployed on your hypervisor. You can use these links to access the various parts of your virtual system to help in daily administrative tasks, and to help during times of troubleshooting.

Summary

- Use CloudBurst logs to check for appliance errors
- Use hypervisor infrastructure to examine potential WebSphere Application Server problems and gain access to application server logs
- Use CloudBurst administrative console troubleshooting page for CloudBurst logs and tools
- Script package error logs can be seen in the logs available on the Virtual Systems page, and consoles can be accessed
- Verify communication between CloudBurst appliance and hypervisor using connectivity tools
 - ▶ Verify two way communication by accessing hypervisor using hypervisor infrastructure to ping CloudBurst device

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Troubleshooting with CloudBurst

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There is a lot of useful information available from CloudBurst when troubleshooting the CloudBurst device and the virtual systems that are deployed from it. The administrative console troubleshooting page that is available from the Appliance tab is a good place to start when troubleshooting. The CloudBurst logs are available on that troubleshooting page, and the device can be double checked to make sure that it can ping other hosts on the network to verify network connectivity.

Pinging the CloudBurst device from the hypervisor that you are working with is also another good place to start troubleshooting. If you cannot ping the hypervisor host from CloudBurst, or cannot ping the CloudBurst device from the hypervisor tools, a network communication problem is probable.

Using the virtual systems tab in the CloudBurst administrative console you can see what pattern has been deployed to the virtual machine and what virtual image was used to create the virtual system. You can see if there were any errors generated when script packages deployed to that virtual system were run by examining the log files. You can gain access to the administrative console for WebSphere Application Server that is deployed on the virtual system using the link available from the virtual systems page as well.

When troubleshooting problems with WebSphere Application Server, you can use the hypervisor infrastructure tools to access the hypervisor and examine the application server logs on the deployed virtual machine without using CloudBurst.

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