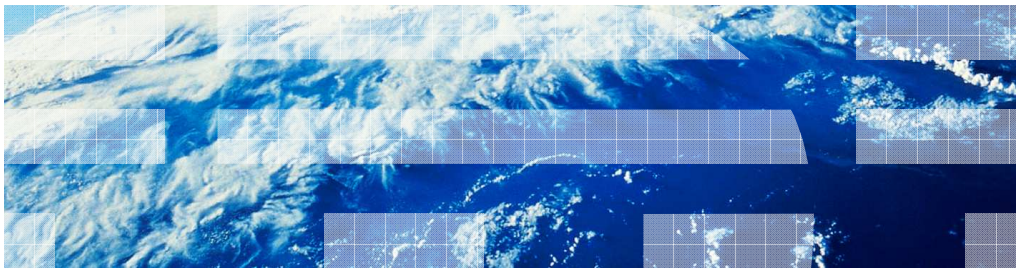
IBM WebSphere CloudBurst Appliance V1.1

Problem determination updates



WebSphere. software

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This presentation will discuss problem determination updates in IBM® WebSphere® CloudBurst™ appliance V1.1.

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- MustGather documentation
- User interface changes

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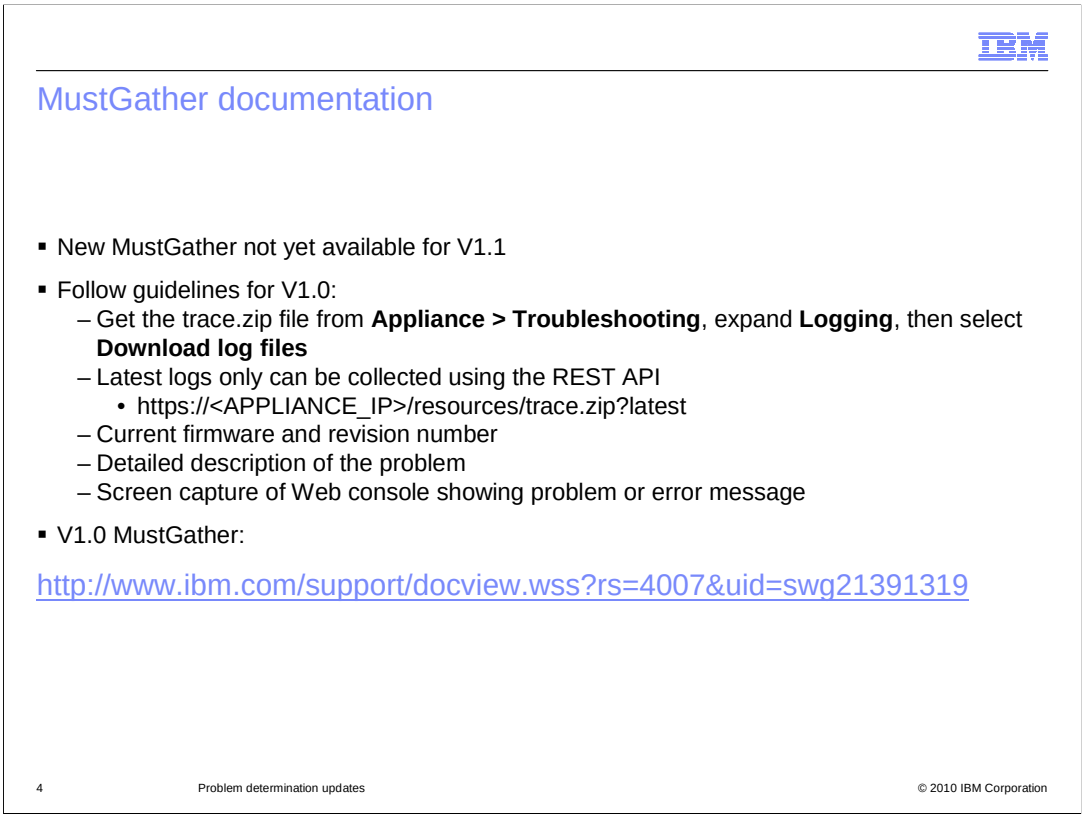
You will see information about “MustGather” documentation for WebSphere CloudBurst issues, and information about user interface changes and how they are related to problem determination.

In this section you will learn about “MustGather” information.



The document that provides information about the collection of troubleshooting data is called “MustGather”. For WebSphere CloudBurst V1.0, it is published as an IBM technical note or “technote” and available on the Internet. The MustGather for WebSphere CloudBurst V1.1 is not yet available. In general, you can continue to use the information in the WebSphere CloudBurst V1.0 MustGather document. You should typically provide the trace files from the appliance, which are gathered by clicking **Appliance,** then clicking **Troubleshooting**, expanding **Logging** and then clicking **Download log files.** If you want to collect only the latest logs, instead of all logs, then use the REST API technique shown in the slide. Always provide the current firmware level, viewed by clicking **Appliance**, then clicking **Settings**, then expanding **Firmware**. Always provide a detailed description of the problem. Frequently it is helpful to provide a screen capture of the administrative console if the problem manifests itself in some visual manner there, or if an error message displays in the administrative console.

The URL for the WebSphere CloudBurst V1.0 MustGather is provided on this slide.

PowerVM deployment errors

- Always gather appliance logs and screen capture of error
- For problems related to PowerVM™ hypervisors, also gather logs for Systems Director and NIM
  - IBM Systems Director – create tar file of logs
    - **/opt/ibm/director/bin/grablogs.sh** - creates tar file of log files and places into /tmp directory
  - NIM – create tar file of NIM director agent logs
    - **tar –cvf /tmp/dir_agent_logs.tar /opt/ibm/director/agent/logs**
- It is helpful to gzip large sets of documentation before sending to IBM support

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For many errors, the WebSphere CloudBurst appliance log files are sufficient, along with a screen snapshot of the administrative console that shows the error. But if the appliance has been communicating with the PowerVM environment when the error occurs, often you will also need logs from the PoweVM environment. On the IBM Systems Director partition, use the ***grablogs.sh*** shell script in the director's bin library to create a tar file of the IBM Systems Director logs. On the NIM partition, tar the logs directory for the director agent. To save space and transmission time, gzip the tar files and compress any bmp screen captures before sending to IBM support.

Section

User interface changes

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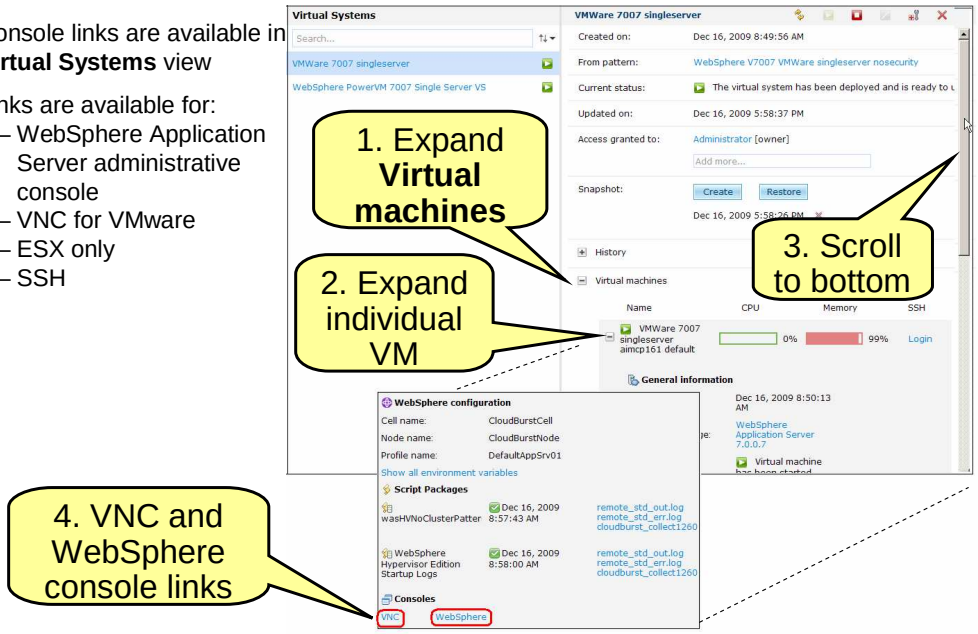
This section will discuss the user interface changes and how that can be helpful for problem determination.

Virtual system console – WebSphere and VNC

- Console links are available in **Virtual Systems** view
- Links are available for:
  - WebSphere Application Server administrative console
  - VNC for VMware
  - ESX only
  - SSH



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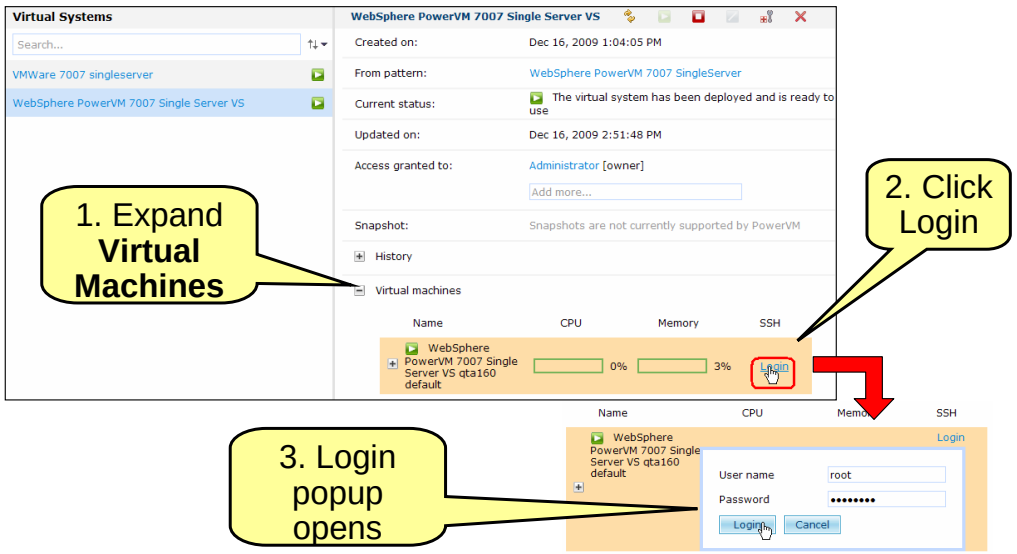
WebSphere CloudBurst V1.1 provides access to not only the WebSphere Application Server administrative console but also to VNC and to SSH consoles as well. These different system console links allow you to login to the virtual machine operating systems and login to the WepSphere Application Server systems for problem determination. If one particular virtual system console is unavailable, it can be helpful to try another type of console so you can run diagnostics and review information.

This slide shows you how to access the **WebSphere** console link and to the **VNC** console link. The consoles are accessed from the **Virtual Systems** view within WebSphere CloudBurst. First, expand **Virtual machines** so that individual virtual machines are seen. Next expand the individual virtual machine of interest. Scroll to the bottom of the information about that individual virtual machine, where you see the **VNC** and **WebSphere** console links. The VNC link displays only for virtual machines deployed on VMware ESX servers.

The location of the SSH console link is shown on the following slide.

Virtual system console access - SSH

- SSH console access
  - Relocated in appliance administrative console



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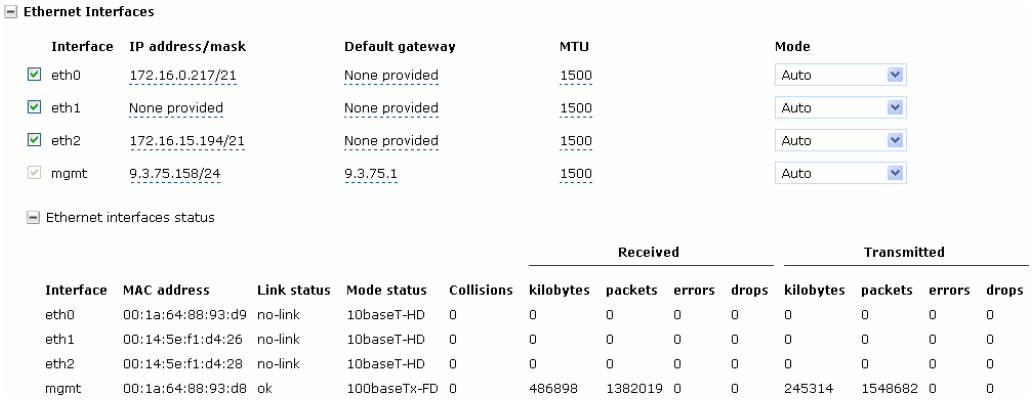
The location of the SSH console link within the WebSphere CloudBurst administrative console is changed in V1.1. The SSH console link is accessed from the **Virtual Systems** view. Expand **Virtual machines** so that individual virtual machines are seen. To the right of each Virtual Machine name are the CPU, Memory and SSH labels. Click the **Login** link under the SSH label. The page will expand to include a login popup, where you type your SSH login credentials and click **Login.**

Ethernet interface status

- Under **Appliance > Settings**
  - Expand **Ethernet Interfaces**
  - Expand **Ethernet interfaces status**



Ethernet Interfaces

	Interface	IP address/mask	Default gateway	MTU	Mode
☑	eth0	172.16.0.217/21	None provided	1500	Auto
☑	eth1	None provided	None provided	1500	Auto
☑	eth2	172.16.15.194/21	None provided	1500	Auto
☐	mgmt	9.3.75.158/24	9.3.75.1	1500	Auto

Ethernet interfaces status

						Received				Transmitted			
Interface	MAC address	Link status	Mode status	Collisions	kilobytes	packets	errors	drops	kilobytes	packets	errors	drops
eth0	00:1a:64:88:93:d9	no-link	10baseT-HD	0	0	0	0	0	0	0	0	0
eth1	00:14:5e:f1:d4:26	no-link	10baseT-HD	0	0	0	0	0	0	0	0	0
eth2	00:14:5e:f1:d4:28	no-link	10baseT-HD	0	0	0	0	0	0	0	0	0
mgmt	00:1a:64:88:93:d8	ok	100baseTx-FD	0	486898	1382019	0	0	245314	1548682	0	0

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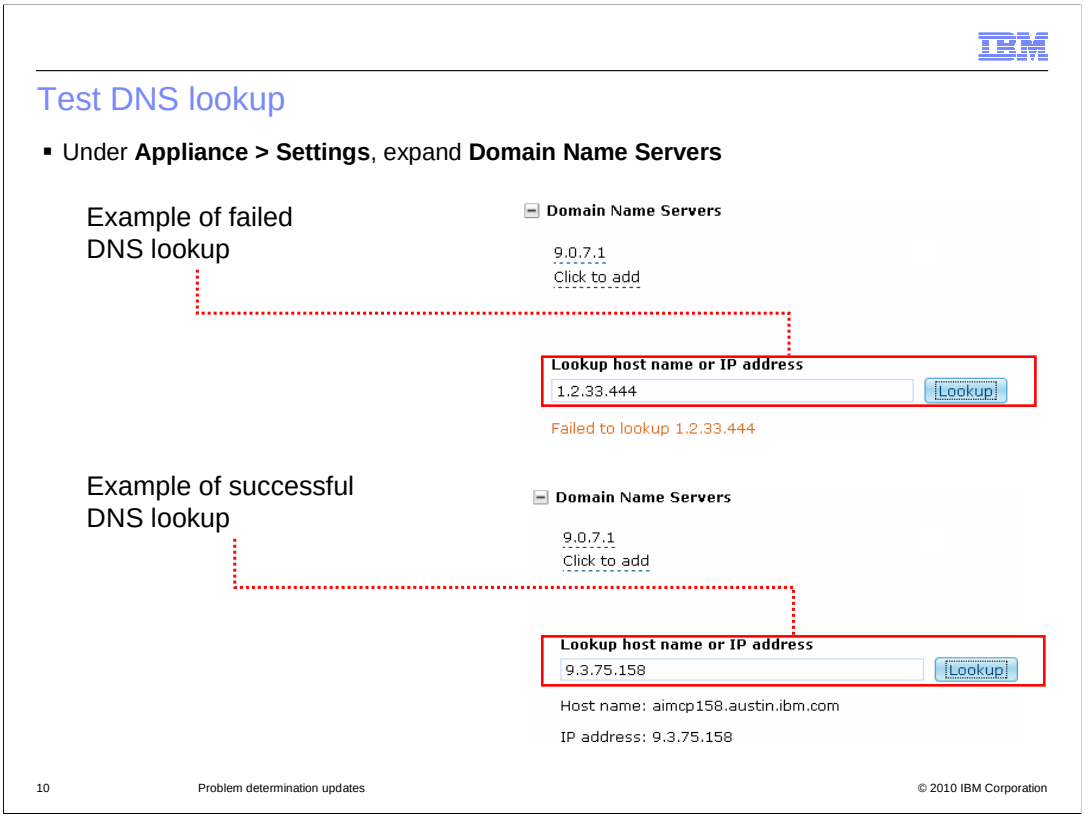
The Ethernet interface status area provides you with statistical information about the Ethernet interfaces running on WebSphere CloudBurst. It can provide diagnostic clues if you think errors are occurring in data transmission or receipt. To access this information, click **Appliance**, then click **Settings**. Then expand **Ethernet Interfaces**. Just below the list of the four interfaces, expand **Ethernet interfaces status**.

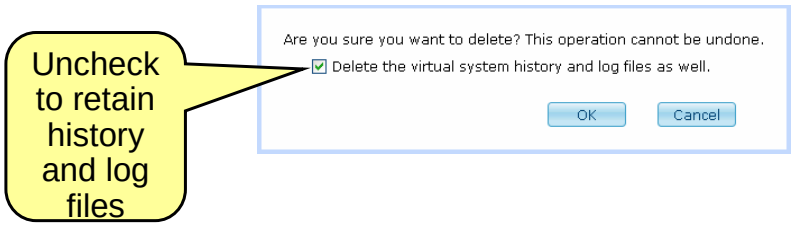
The status information lists the interface name, MAC address, link status and mode status. The **Collisions** column lists the number of collisions that occur from the appliance and other network devices in the same Ethernet segment. Next you see statistics about the amount of data that was received and transmitted. The **errors** columns lists the number of errors that occurred on the “received” and on the “transmitted” interface since the appliance was last rebooted. The **drops** columns lists the number of packets that have been dropped on the “received” and on the “transmitted” interface since the appliance was last rebooted.



The **Domain Name Servers** function has been enhanced in WebSphere CloudBurst V1.1 to include a “lookup” function. To access this new function, click **Appliance**, then click **Settings**. Then expand **Domain Name Servers**. You will see the new lookup function under the list of domain name servers. Type the host name or IP address you want to investigate into the box labeled **Lookup host name or IP address**, then click **Lookup.** The response from the lookup can help you determine if there are problems with the DNS or with an IP address or host name entry. All IP resources for WebSphere CloudBurst must be resolvable by host name or by IP address. Thus you can use the lookup function to verify host names and IP addresses of the IP resources defined within WebSphere CloudBurst, including IP groups, VMware servers, PowerVM partitions, DNS, and the appliance itself.

Soft delete for virtual systems

- When deleting a virtual system, optionally leave history and log files in place
- Allows for investigation and troubleshooting after virtual system removed from hypervisor



Uncheck to retain history and log files

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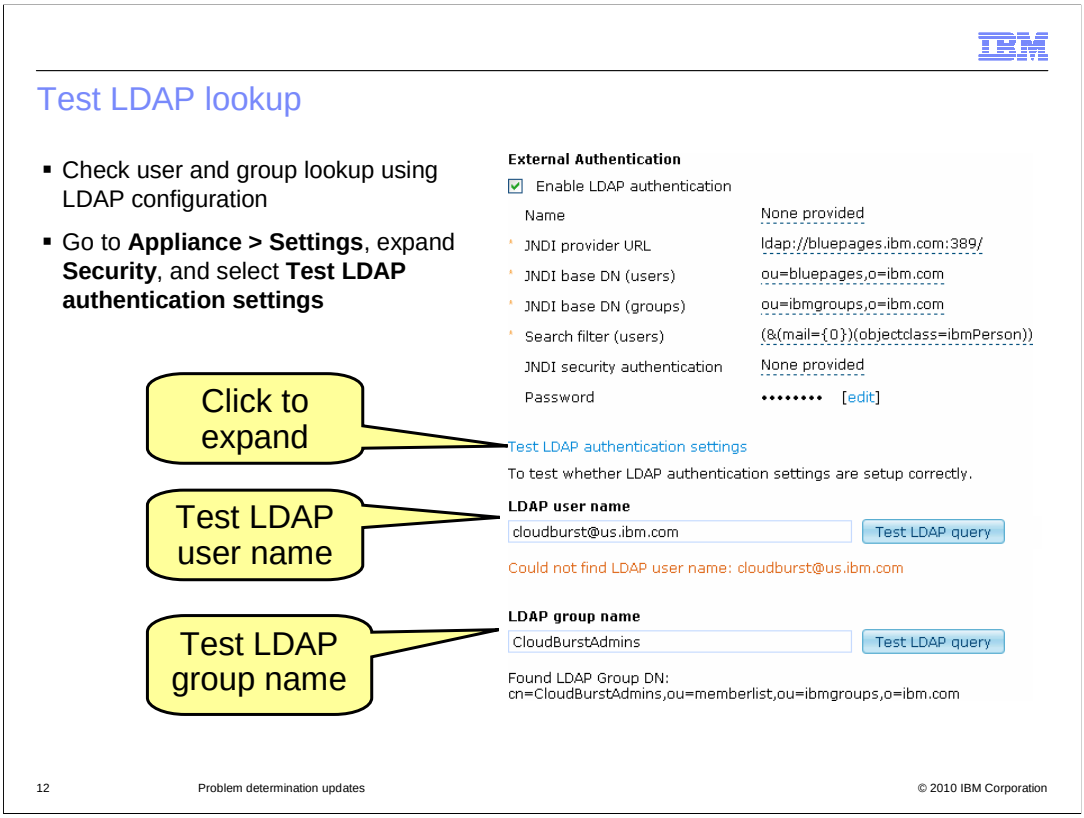
When deleting a virtual system, you have the option of leaving the history and log files in place. This allows the diagnostic information for the deleted virtual system to remain in the trace and logs files, in case it is needed for future investigation. Simply uncheck the box labeled **Delete the virtual system history and log files as well** when you delete the virtual system.



In WebSphere CloudBurst V1.1, you can now test LDAP authentication settings, LDAP user name and LDAP group name entries by using **Test LDAP authentication settings**. Click **Appliance,** then click **Settings**, then expand **Security**. Click the **Test LDAP authentication settings** link to allow the page to expand to reveal the new function. Type in an LDAP user name you want to test under **LDAP user name** and click **Test LDAP query**. Type in an LDAP group name you want to test under **LDAP group name** and click **Test LDAP query**. The response message displays just below the dialogue box.

Improved messages for task processing

- Firmware upgrade
  - Firmware file upload progress messages
  - Notification that upgrade has started
- Backup and restore
  - Percentage progress messages on backup and restore
  - Dry run check on restore
- Task queue
  - Status available for queued tasks

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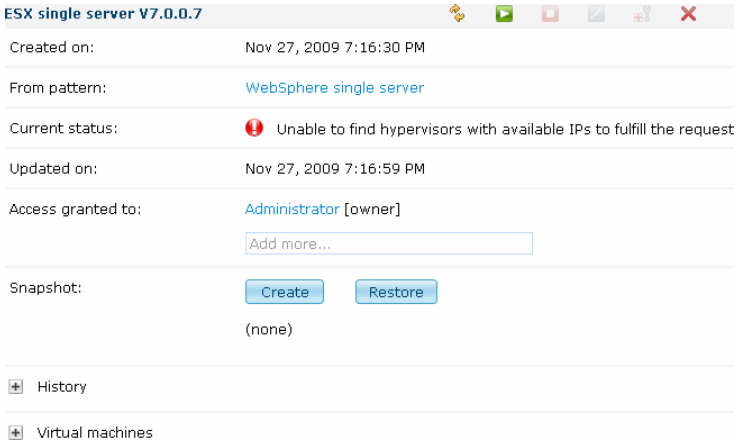
WebSphere CloudBurst V1.1 has improved messages for task processing. During firmware upgrades, you now see progress messages as the firmware upgrade file uploads to the appliance. Once the firmware file is uploaded, you will then see a message below the firmware dialog box that the upgrade process has started. The backup and restore function provides a percentage progress message during backup processing and during restore processing. There is also a “dry run” check for restore. The task queue for the appliance now shows status for the tasks waiting to run.

Improved error messages

- Better messages on error conditions for:
  - Pattern deployment
  - Image import
  - Image extension
  - Networking and cloud environment



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There are now improved error messages within many functions in the appliance. In this example, pattern deployment has issued a message indicating that deployment has failed because it was unable to find hypervisors with available IP addresses to fulfill the deployment request. The error messages have also been improved in image import, image extension, in functions that deal with networking, and functions that manage the cloud environment.

Database reset from the serial console

- Resetting the appliance allows recovery when the database has been corrupted
  - The reset removes all configuration data on the appliance
- To reset the appliance database
  - Log in to the serial console using the cbadmin ID
  - When prompted, choose option 3 to **Reset Installation**
  - You have to verify that you want to
  - reset the appliance by answering **YES** twice to the prompts in the console
  - After the reset, the appliance reboots

```
Please select an action:
  1) Configure Networking
  2) Configure Locale
  3) Reset Installation
  4) Show Network Device Status
  5) Logout
Enter 1-5: 3
```


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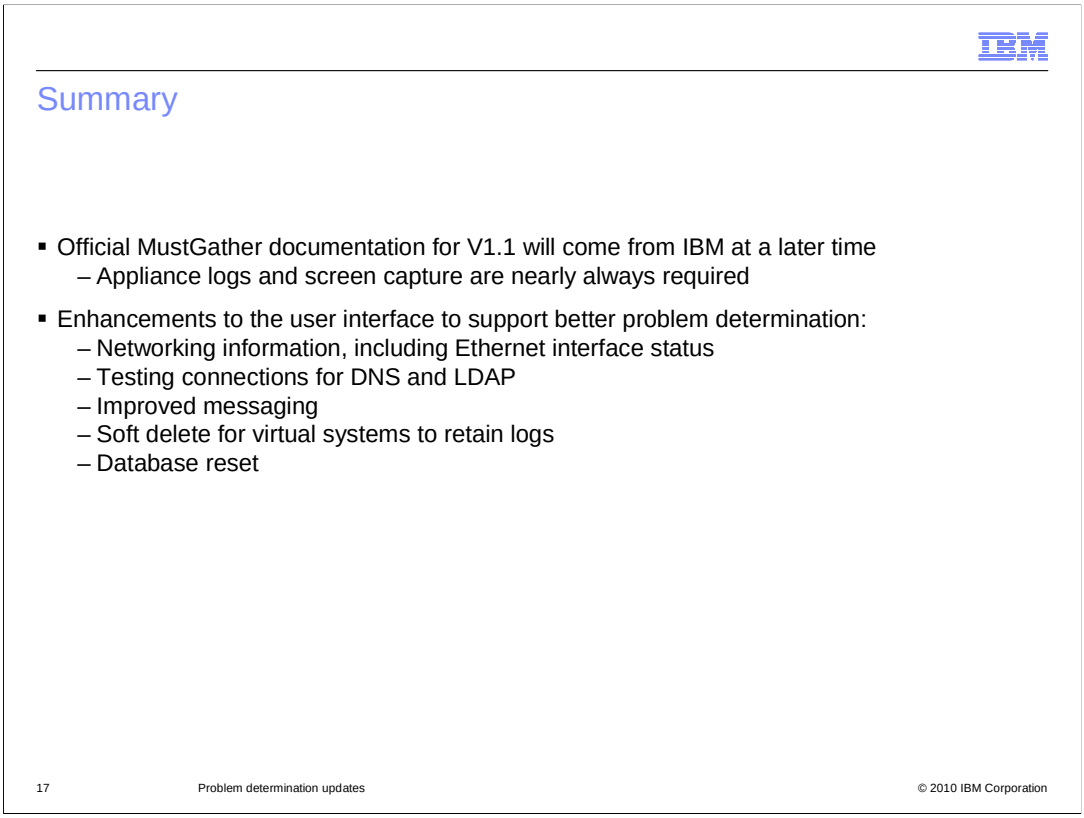
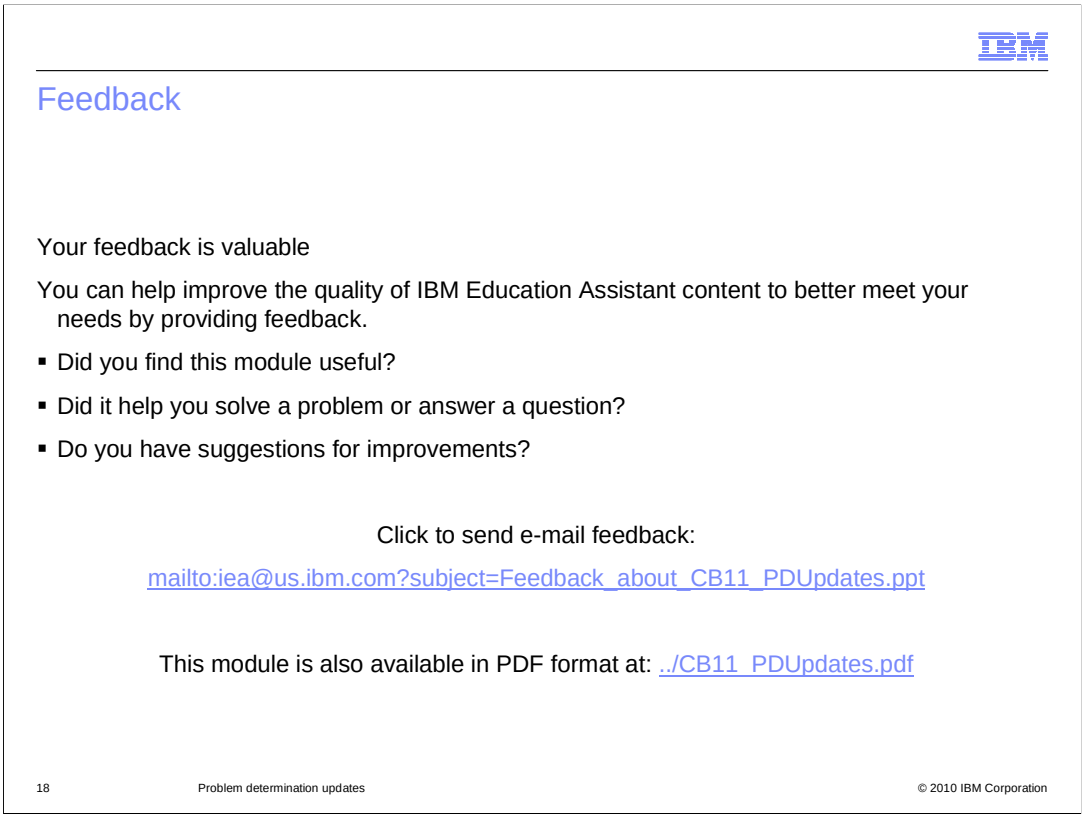
If you encounter a situation where the appliance database has been corrupted, you likely will need to reset the appliance database. If you use a serial console, attach the serial connection cable from the console to the serial interface port on the front of the appliance and power on the console. If you are using a serial terminal emulator on an external computer, attach the serial interface cable from the external computer to the serial interface port on the front of the appliance and start the terminal emulator program. You must then log in to the serial console using the cbadmin user ID. You should then see an action list of five action items. To reset the database, type **3** for the **Reset Installation** option and press ENTER. You are prompted to reply “YES” twice to ensure you really want to reset the appliance database. A database reset will remove all configuration data from the appliance, including catalog images, scripts, virtual systems, and patterns. After the reset operation completes, the appliance automatically reboots.

This section presents a summary of the problem determination updates.



The official MustGather documentation for WebSphere CloudBurst V1.1 is not yet published. You can use the information in this presentation plus the V1.0 MustGather information to determine the data you need for issues you encounter. Almost all problem require the appliance logs and, if possible, a screen capture of the error. Many enhancements were made to the WebSphere CloudBurst V1.1 user interface to provide more diagnostic information, including additional networking information such as the Ethernet interface status information, new testing facilities for DNS and LDAP security, and improved messaging in many functions within the appliance. Remember that when deleting a virtual system you do not have to delete the related system logs if you think those logs might be helpful in diagnosing a problem. If you think the appliance database is corrupted, you can use the database reset function to remove all configuration data from the database.



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