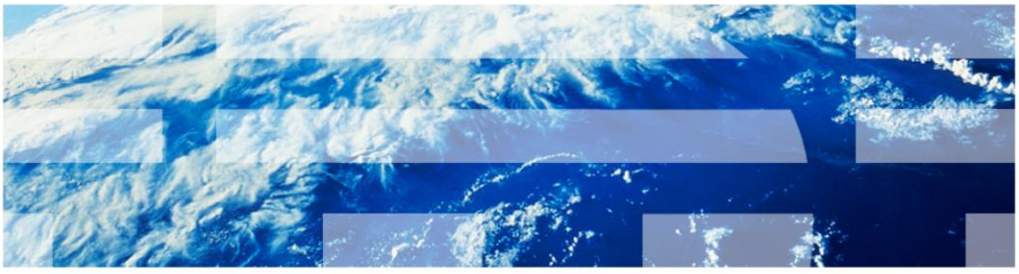
IBM

IBM PureApplication System and IBM Workload Deployer
IBM Business Process Manager Pattern V8.0

Troubleshooting



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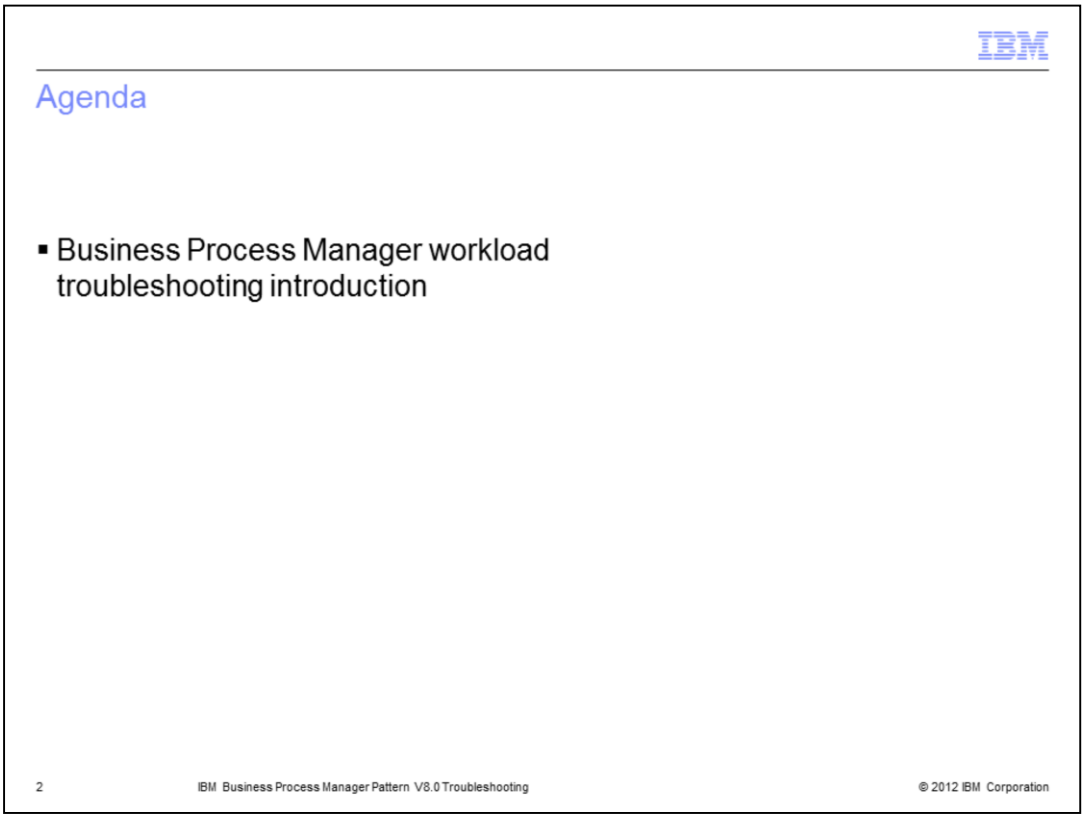
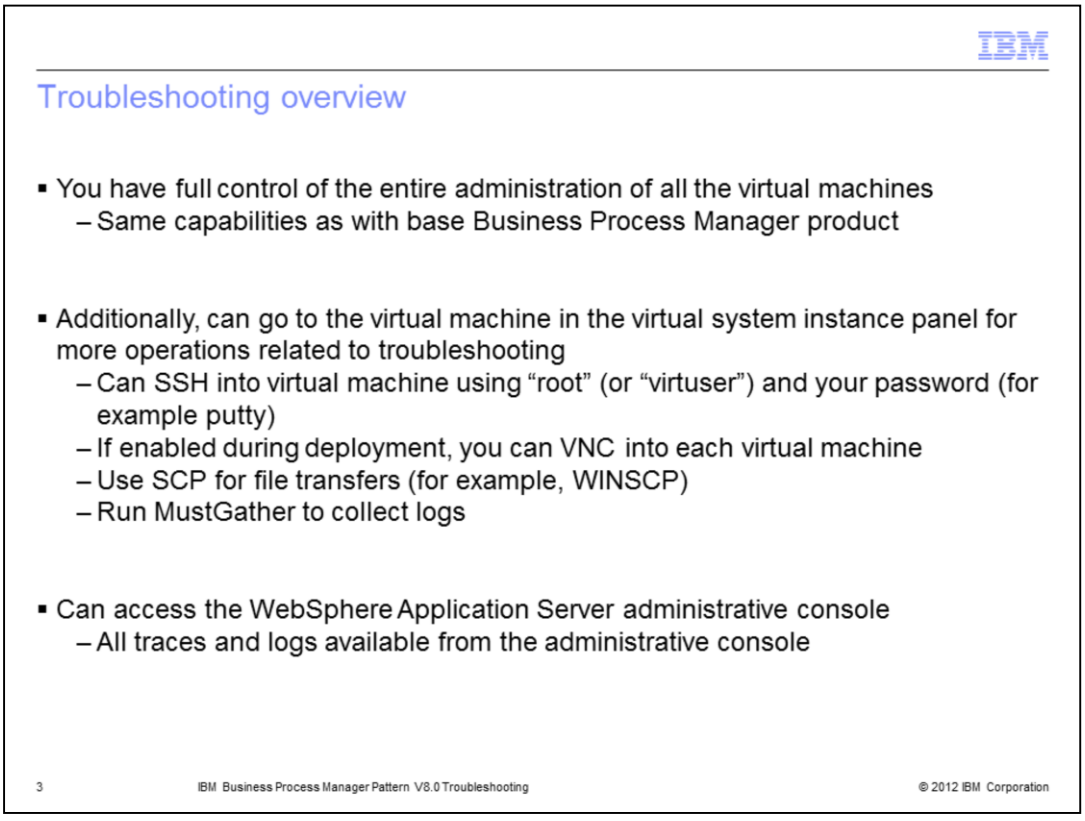
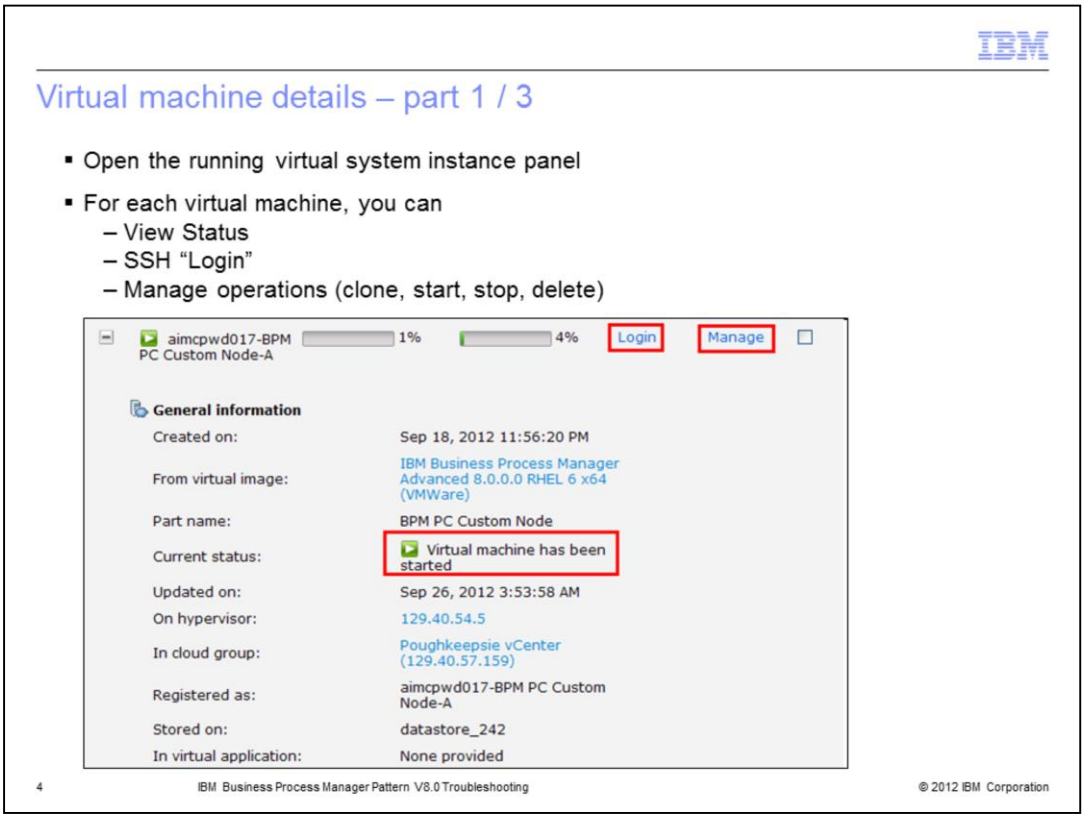
This presentation covers workload troubleshooting of the Business Process Manager Pattern V8.0 in IBM PureApplication System and IBM Workload Deployer.



You will be introduced to some troubleshooting topics related to the Business Process Manager workload.



As with all virtual system patterns, while PureApplication System and Workload Deployer provide some troubleshooting capabilities, you also have full access to the normal administration capabilities of the deployed Business Process Manager virtual machines. You can SSH into any of the virtual machines with the root or virtuser ID and password, using a tool such as PuTTY. If VNC is enabled for the virtual machine, you can use VNC to access it. SCP can be used for file transfers; for example, you can use WINSCP. And you can use MustGather script packages to collect logs for troubleshooting. Additionally, the WebSphere Application Server administrative console is available, with all of its normal logs and tracing capabilities.



The running virtual system instance panel provides numerous resources for troubleshooting the virtual machines. Shown on this slide is the **Login** link that allows you to log into the virtual machine with an ID and password. Also, the **Manage** link provides the ability to clone, start, stop or delete the virtual machine. The **Current status** field tells you the current status of the virtual machine.

Virtual machine details – part 2 / 3

- Find the virtual machine's dnsname and IP address

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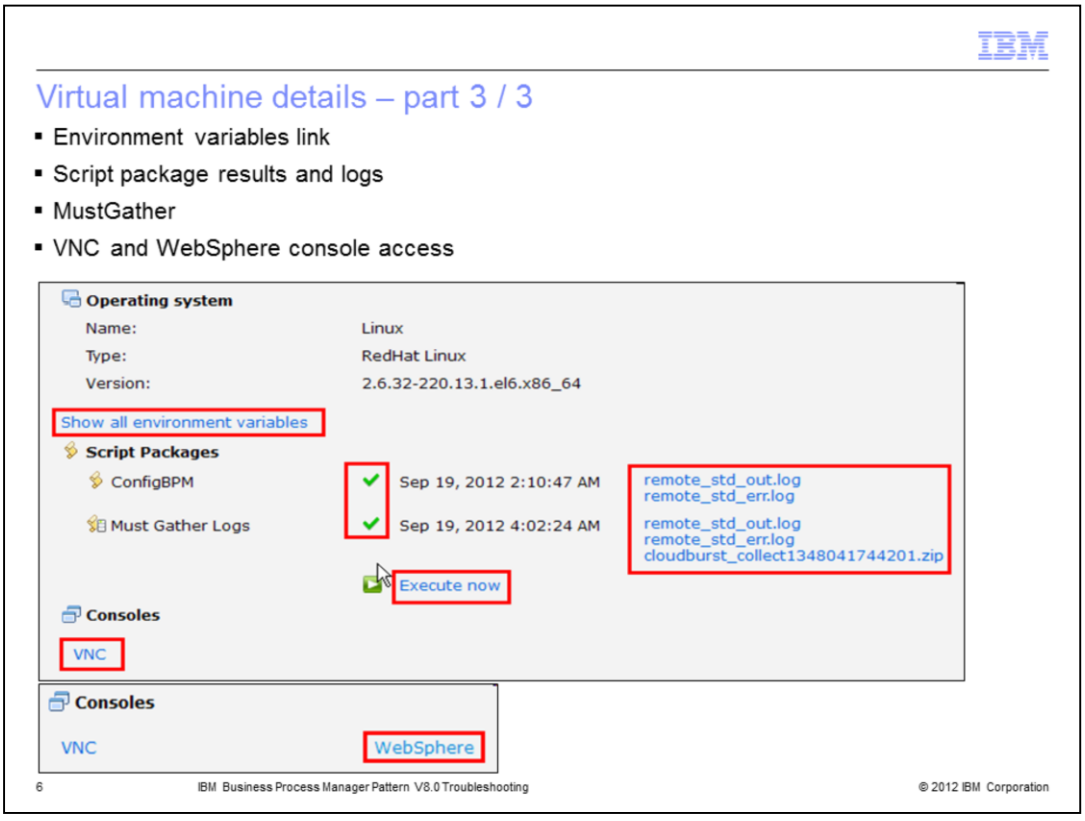
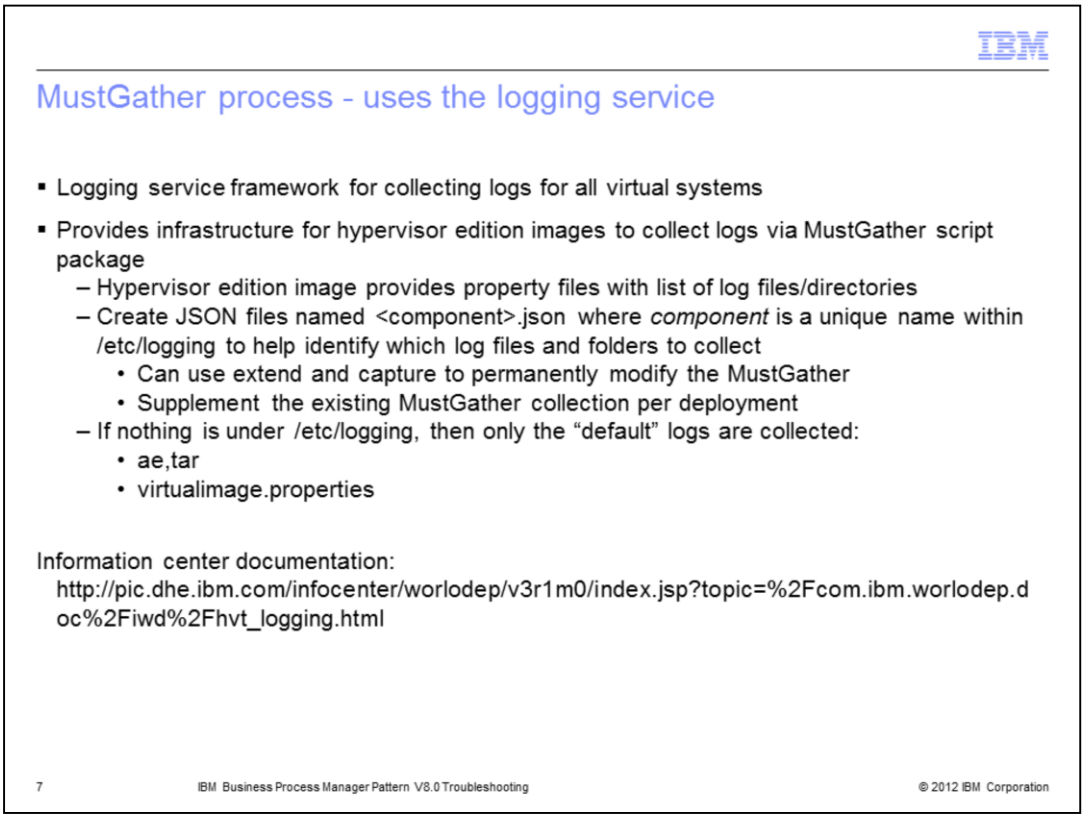
This slide shows you where to find the IP address and host name of the virtual machine.



On the running virtual system instance panel, there is also a **Show all environment variables** link and the results of all the script packages with their completion status and logs. Note that you can run the MustGather script package at any time. You need to run it with the root ID in order to download all the logs. Additionally this panel provides links to the VNC console and the WebSphere Application Server console.

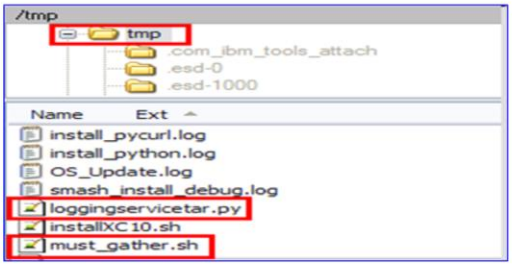


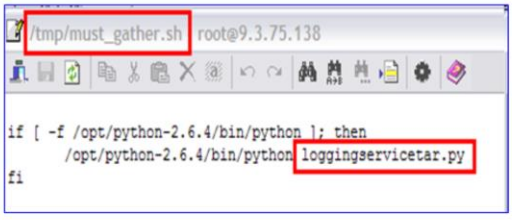
Workload Deployer and PureApplication System provide a logging service for collecting and downloading files and directories for all virtual system patterns (including the BPM pattern) through the MustGather process. One can establish this logging framework permanently in an image, use the extend and capture process to establish the logging framework, or dynamically modify it for each deployment. The basis for the logging service is to provide one or more json files in /etc/logging, one such file per component. If no json files are provided in /etc/logging, then only the default files called ae.tar and virtualimage.properties are collected.

You can learn more detail about the logging service in the information center documentation in the link provided in the slide.

MustGather script - calls the logging service script

- MustGather script is located in /tmp directory
- It calls the loggingservicetar.py script in the same directory
- The logging service script looks in /etc/logging for the json files that provide details about the files and directories to collect
- The cloudburst_collect…zip files are also stored in /tmp





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The MustGather script is located in the /tmp directory in a virtual system virtual machine. It in turn calls the logging service script that is located in the same directory. As stated on the previous slide, the logging service script will look in the /etc/logging directory for json files that tell it which directories and files to collect during the MustGather process. The MustGather collections are also stored in the /tmp directory.

MustGather – DB2 part (process center and process server)

For BPM, for the DB2 virtual machines, the following are the json files in /etc/logging with the directories and files for the MustGather log collection.

/etc/logging/db2.json virtuser@129.40.54.16

```
{
    "role":"DB2",
  "types": [
      {
          "logtype": "File",
          "type": "file",
          "name": "/home/bpminst/sqllib/db2dump/db2diag.log"
      },
      {
          "logtype": "File",
          "type": "file",
          "name": "/home/bpminst/sqllib/db2dump/db2inst1.nfy"
      },
      {
          "logtype": "File",
          "type": "dir",
          "name": "/home/bpminst/sqllib/db2dump/stmmlog",
          "pattern": "stmm.*.log"
      }
  ]
}
```

/etc/logging/cocBaseImage.json virtuser@129.40.54.12

```
{ "role":"CoCBase",
  "types": [
      {
          "logtype": "File",
          "type": "dir",
          "name": "/opt/ibm/ae/AR",
          "pattern":"*.*"
      }
  ]
}
```

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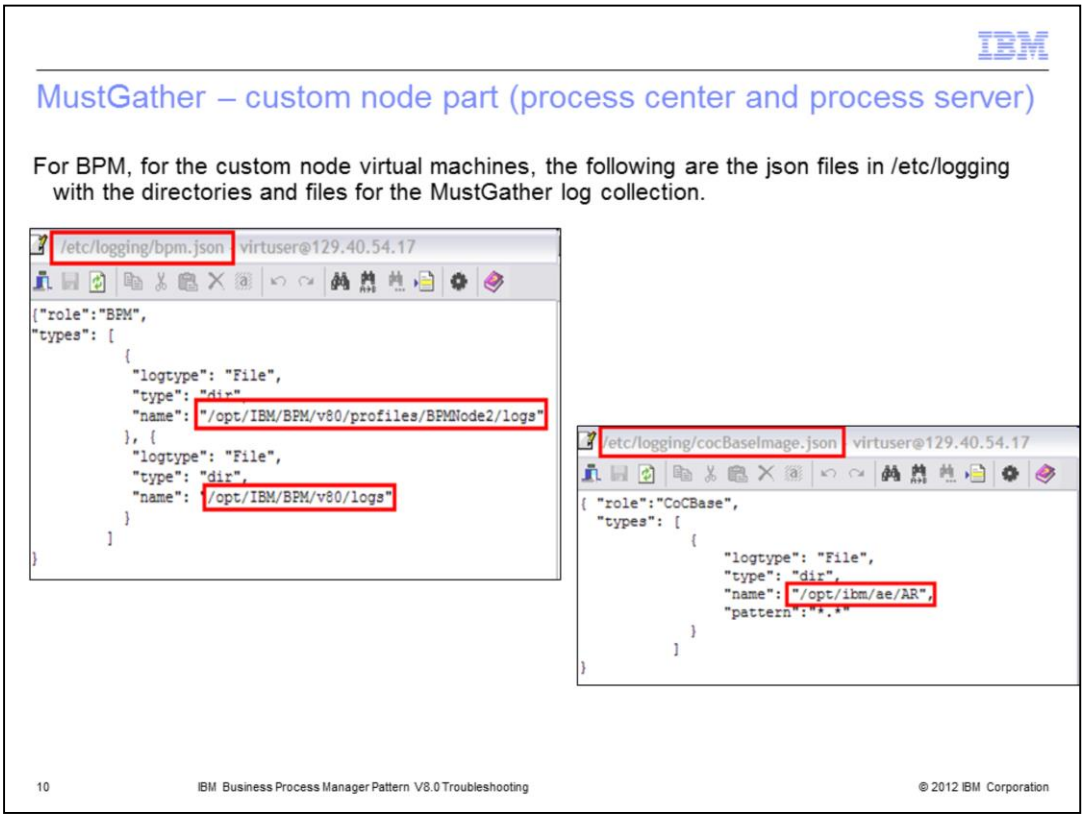
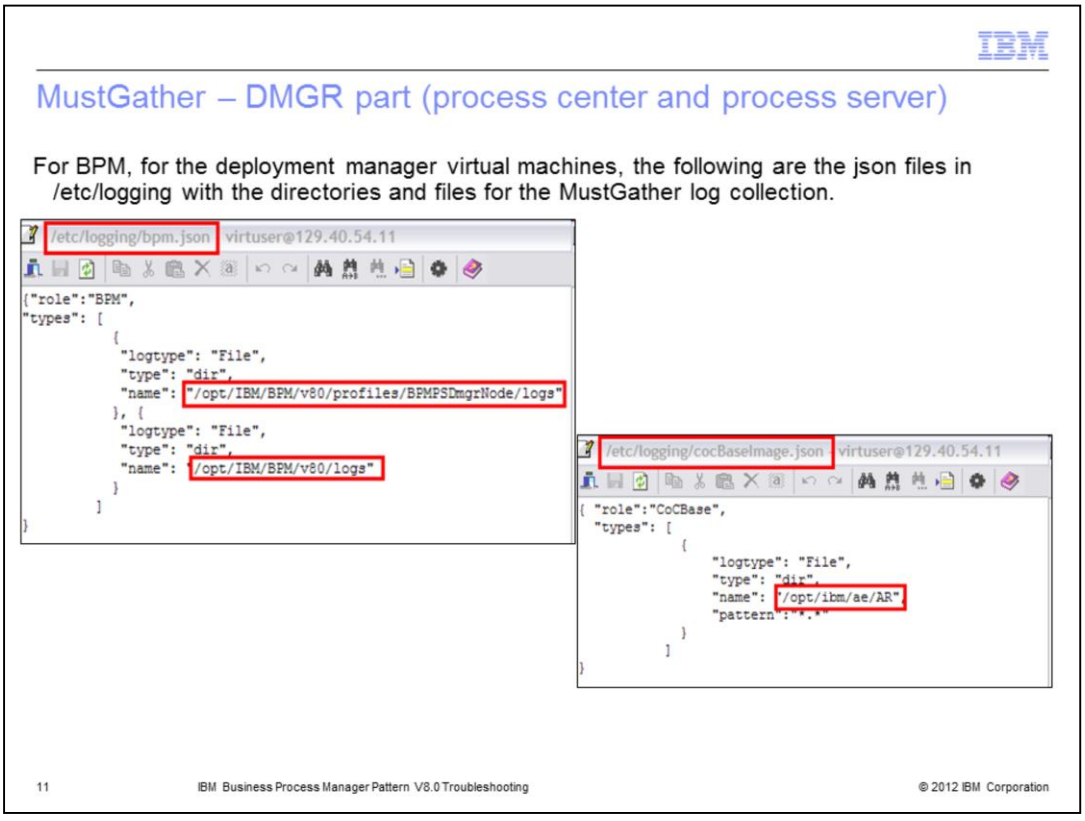
Business Process Manager uses the logging services to collect the logs that are specific to the virtual machine itself, by providing it's unique json files in /etc/logging. This slide shows the directories and files collected in the MustGather process for the DB2 virtual machines.



This slide shows the directories and files collected in the MustGather process for the custom node virtual machines.



This slide shows the directories and files collected in the MustGather process for the deployment manager virtual machines.

MustGather – HTTP part (process center and process server)

For BPM, for the HTTP server virtual machines, the following are the json files in /etc/logging with the directories and files for the MustGather log collection.

/etc/logging/ihs.json - virtuser@129.40.54.15

```
{
      "role":"IHS",
   "types": [
       {
           "logtype": "File",
           "type": "dir",
           "name": "/opt/IBM/BPM/HTTPServer/logs"
       }
   ]
}
```

/etc/logging/cocBaseImage.json - virtuser@129.40.54.15

```
{ "role":"CoCBase",
  "types": [
            {
                "logtype": "File",
                "type": "dir",
                "name": "/opt/ibm/ae/AR",
                "pattern":"*.*"
            }
          ]
}
```

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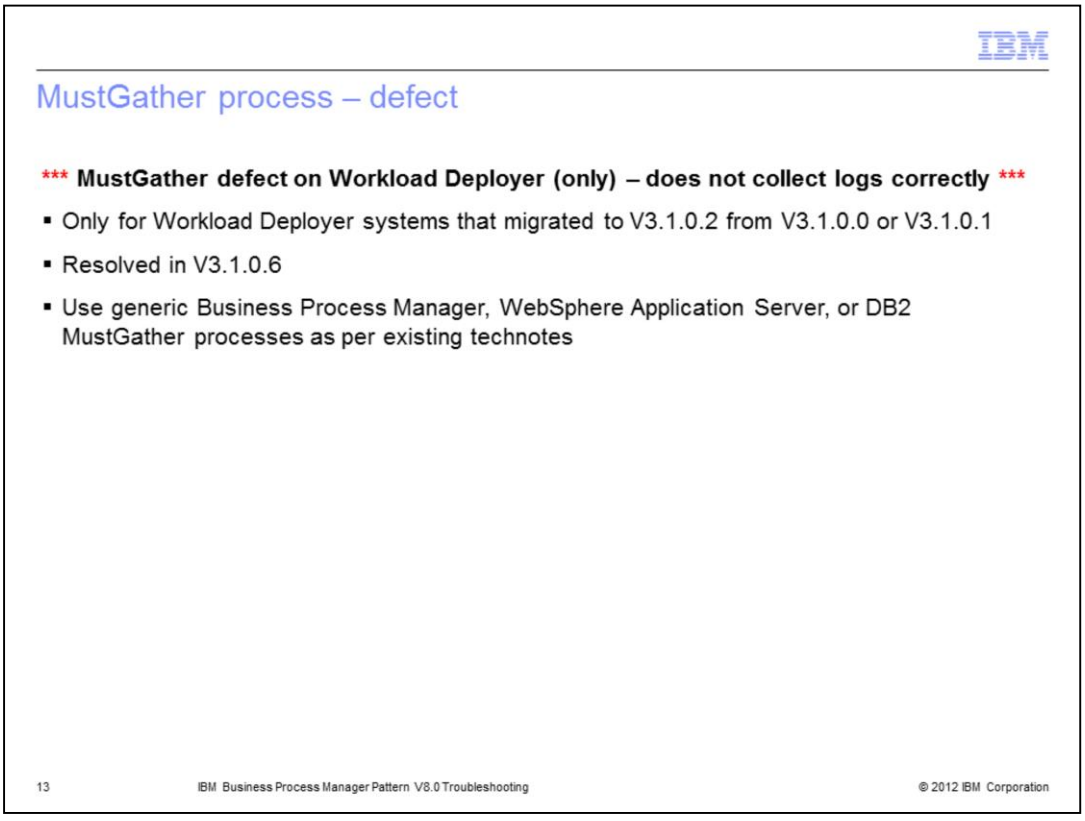
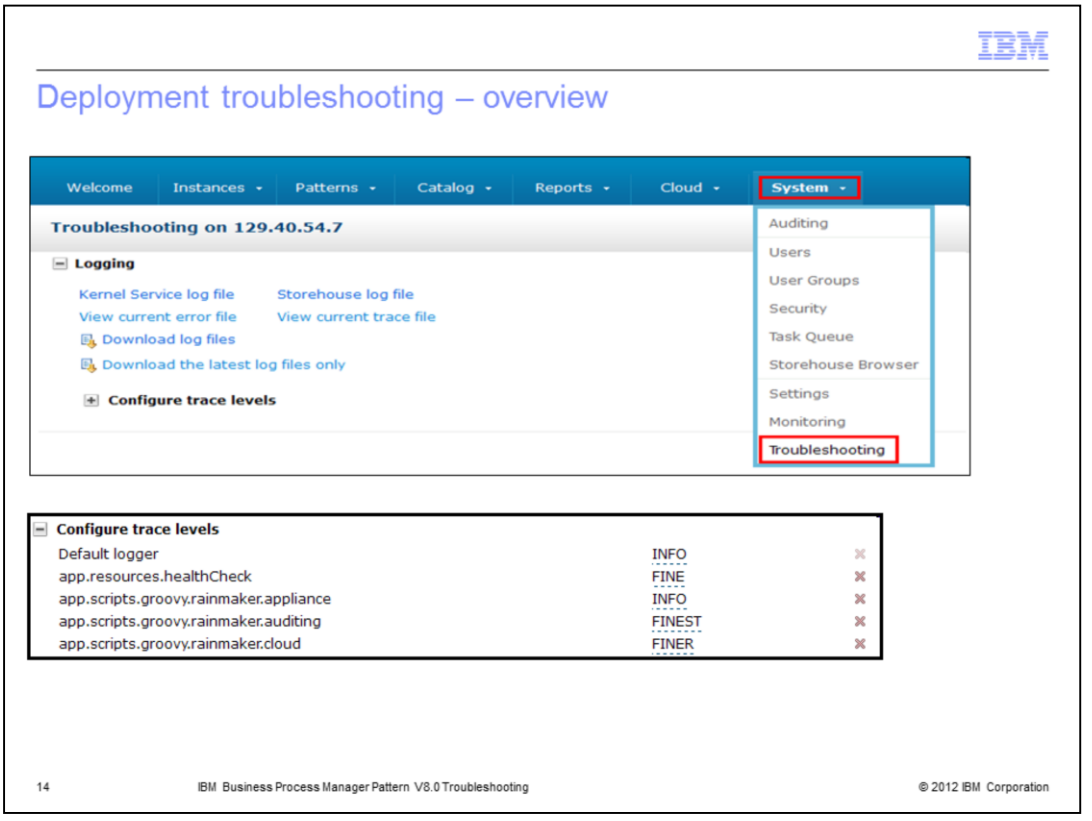
This slide shows the directories and files collected in the MustGather process for the HTTP server virtual machines.

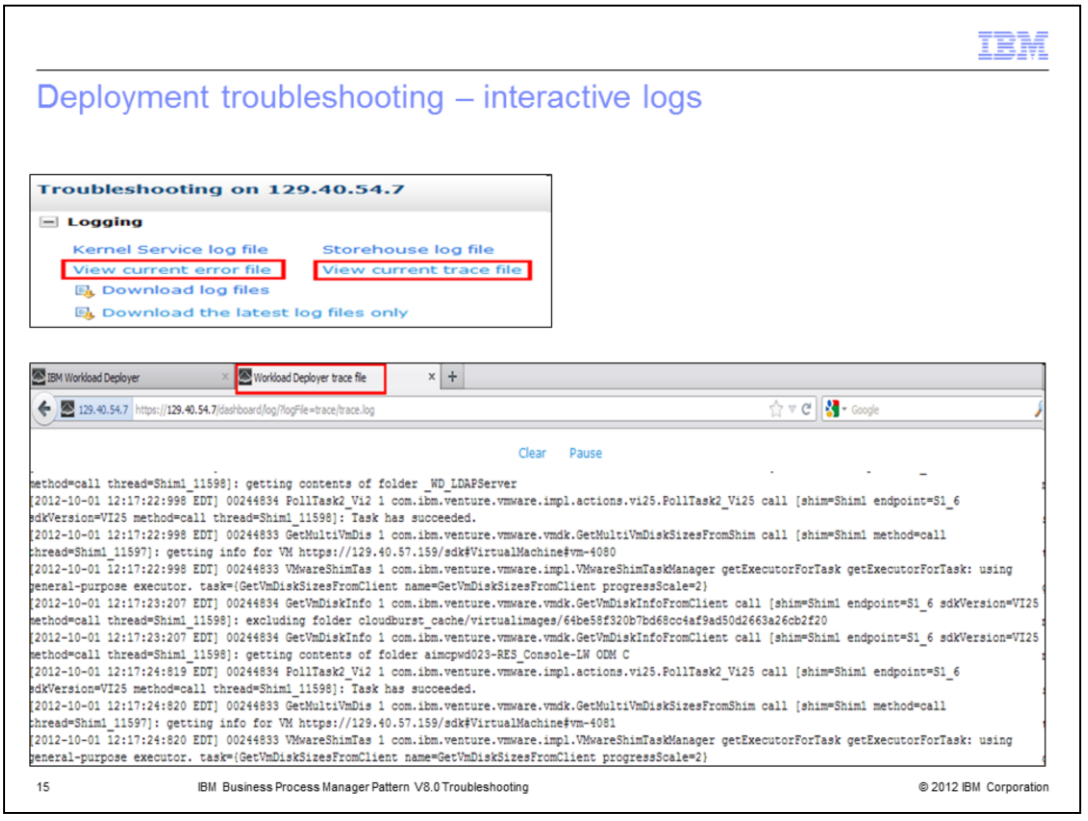


At the time of writing, an internal defect is open against the Workload Deployer product because, under specific conditions, the MustGather script is not working correctly. Your Workload Deployer system will have this problem if you migrated to V3.1.0.2 from V3.1.0.0 or from V3.1.0.1. If you obtained a new Workload Deployer system with V3.1.0.2, then your system should not experience this issue. The MustGather log collection does work as expected on PureApplication System. The issue is resolved in V3.1.0.6 of Workload Deployer. In the meantime, the generic MustGather processes must be followed for Business Process Manager, WebSphere Application Server, and DB2, as described in existing technotes.



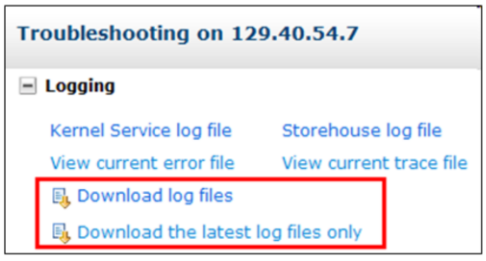
In addition to logs at the virtual machine level, there are also logs available at the workload level that can be useful for troubleshooting deployment problems. For PureApplication System, you can find options related to these logs in the workload console under the System tab and selecting the Troubleshooting option. For Workload Deployer, the Troubleshooting option is under the System tab.

In the Logging section of the Troubleshooting option, there are several log options. For Business Process Manager, you can ignore the Kernel Service and Storehouse log files, since these relate strictly to virtual application patterns. There are links for viewing the current log file and current trace file interactively. But typically you will download the log files for review or to provide to IBM support. The log files are kept in an internal repository and some of these log files are stored as archived files after they reach a certain size. If you use the option called **Download the latest log files only**, then the archive files are not downloaded and you only get the most recent logs. If you use the option called **Download log files**, all the log files in the internal repository are downloaded and you will get a significantly larger set of logs that includes all the archived logs. Additionally there is an option to configure the trace levels, based on IBM direction.



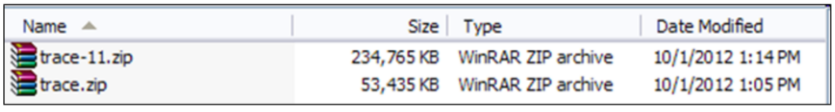
This slide shows an example of what you see when you select either the **View current error file** or **View current trace file** options. A new browser window is opened and the rolling, interactive log is displayed.

Deployment troubleshooting – download logs



Rest APIs:

- https://129.40.54.7/resources/trace.zip
- https://129.40.54.7/resources/trace.zip?latest



Name	Size	Type	Date Modified
trace-11.zip	234,765 KB	WinRAR ZIP archive	10/1/2012 1:14 PM
trace.zip	53,435 KB	WinRAR ZIP archive	10/1/2012 1:05 PM

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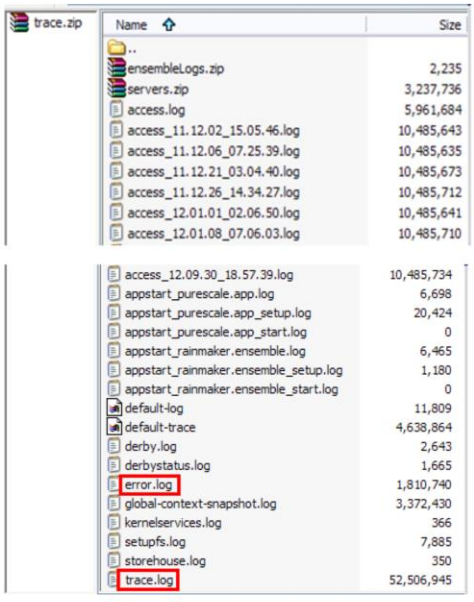
Here is an example of the difference in size between downloading all the logs and only the latest logs. Also, shown on the slide are the Rest APIs that you can use to download these log collections programmatically.

Deployment troubleshooting – downloaded latest logs



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This slide shows an example of the logs that are downloaded when you select the option **Download the latest logs files only**. Typically the two most useful logs for troubleshooting are the error.log and trace.log.

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