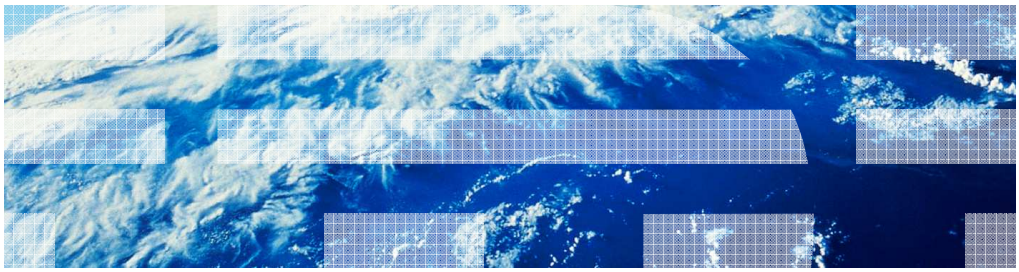
IBM Tivoli Endpoint Manager V8.2

Client level debug and data collection



In this module, you learn about enabling Debug Logging, Usage Profiler, and running the Client Diagnostics utility.

Assumptions

You have basic familiarity with Tivoli® Endpoint Manager

An assumption for this module is that you are familiar with Tivoli Endpoint Manager.

Objectives

When you complete this module, you can perform these tasks:

- Enable and disable Debug Logging by way of a Fixlet® and manually
- Enable and disable Usage Profiler logging by way of a Fixlet and manually
- Run the Client Diagnostic utility by way of Fixlet content or manually

When you complete this module, you will understand how to enable several client debugging options including: Debug Logging, Usage Profiler, and the Client Diagnostic utility.

What kinds of problems can you troubleshoot using this process?

- Performance
- Action failures
- Relevancy issues
- Functionality issues
- Client configuration
- Networking issues

A number of client issues can be diagnosed using this process, including; performance, action failures, relevancy, functionality, client configuration, and networking problems.

Client debug logging (message level logging)

This functionality can be enabled in the console using the content from the BES Support site:

#196 BES Client Setting: Disable Debug Logging

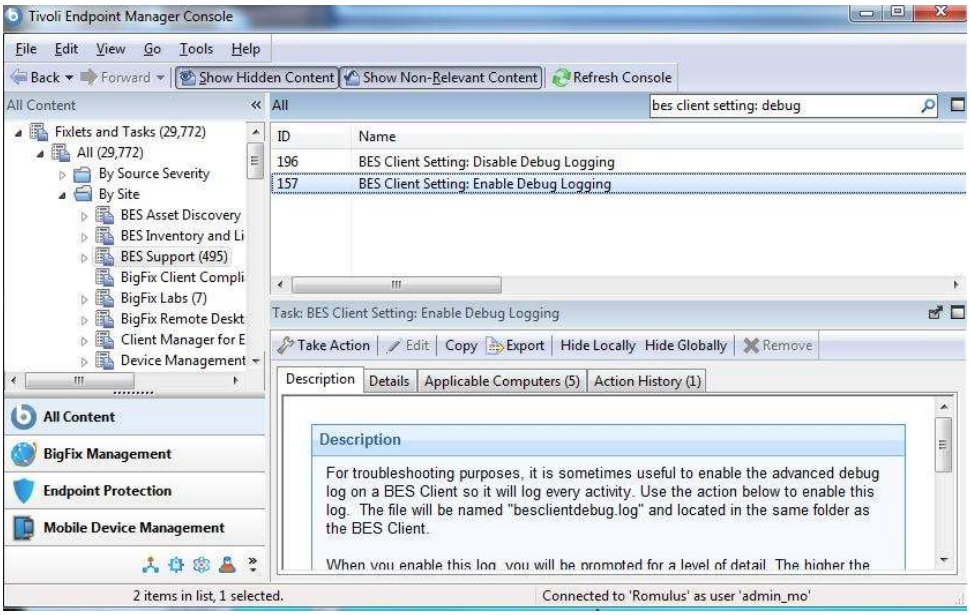
#157 BES Client Setting: Enable Debug Logging

*For maximum data logging use a value of 10000

*Supports both Windows® and UNIX® variants

The Message debug logs can provide a detailed log of client events. By default this log is not turned on. It can be enabled using #196 BES Client Setting: Disable Debug Logging and disabled by way of #157 BES Client Setting: Enable Debug Logging, which are both found in the BES Support site of your Console. When prompted, provide a value of 10000 for maximum logging. This content can be run on Windows and UNIX systems.

Console view for enabling and disabling debug logging



This screen capture shows a Console view of the BES Support content IDs 157 and 196 to enable and disable Debug Logging. Note that the **Description** tab contains additional important information.

How can you enable these settings manually?

- How do you turn on more detailed logging for the Windows Tivoli Endpoint Manager client?

```
[HKEY_LOCAL_MACHINE\SOFTWARE\BigFix\EnterpriseClient\Settings\Client\_BESClient_EMsg_Detail]
"value"="10000"
[HKEY_LOCAL_MACHINE\SOFTWARE\BigFix\EnterpriseClient\Settings\Client\_BESClient_EMsg_File]
"value"="c:\BESClientDebug.log"
[HKEY_LOCAL_MACHINE\SOFTWARE\BigFix\EnterpriseClient\Settings\Client\_BESClient_EMsg_EvalLog]
"value"="1"
```

- After applying the settings, restart the BES Client service to begin logging. To disable client Debug Logging, delete the registry entries and restart the BES Client service to stop logging.
- More information can be found in the Knowledge Base topic:
  How do I turn on more detailed logging for the TEM Client
  http://www-304.ibm.com/support/docview.wss?uid=swg21505962

Sometimes a client is not available in the console to enable debugging, and it is necessary to enable this logging manually. You enable debug logging for the Windows Tivoli Endpoint Manager client by way of these registry values. After applying the settings, restart the BES Client service to begin logging. To disable client Debug Logging, delete the registry entries and restart the BES Client service to stop logging. More information on this process can be found in the attached Knowledge Base article.

How do you turn on more detailed logging for a UNIX, Linux®, or Mac Tivoli Endpoint Manager client?

You can manually create these settings by adding them to the **besclient.config** client configuration file on the endpoint.

- Stop the Tivoli Endpoint Manager BES client process
- Update the **/var/opt/BESClient/besclient.config** file with these settings (as some settings might already exist in the file, make sure to preserve them and add these settings in addition to them)

```
[Software\BigFix\EnterpriseClient\Settings\Client\_BESClient_EMsg_File]
effective date = {now}
value = /var/log/BESClient/besclient.log
[Software\BigFix\EnterpriseClient\Settings\Client\_BESClient_EMsg_Detail]
effective date = {now}
value = 10000
[Software\BigFix\EnterpriseClient\Settings\Client\_BESClient_EMsg_EvalLog
  ]
effective date = {now}
value = 1
```

- Start the Tivoli Endpoint Manager BES client process

Sometimes a client is not available in the console to enable debugging, and it is necessary to enable this logging manually. The following changes to the clients **besclient.config** file can be made to enable this logging. You must stop the client service, make your changes, and then restart the service again.

Additional information for non-Windows debug logging

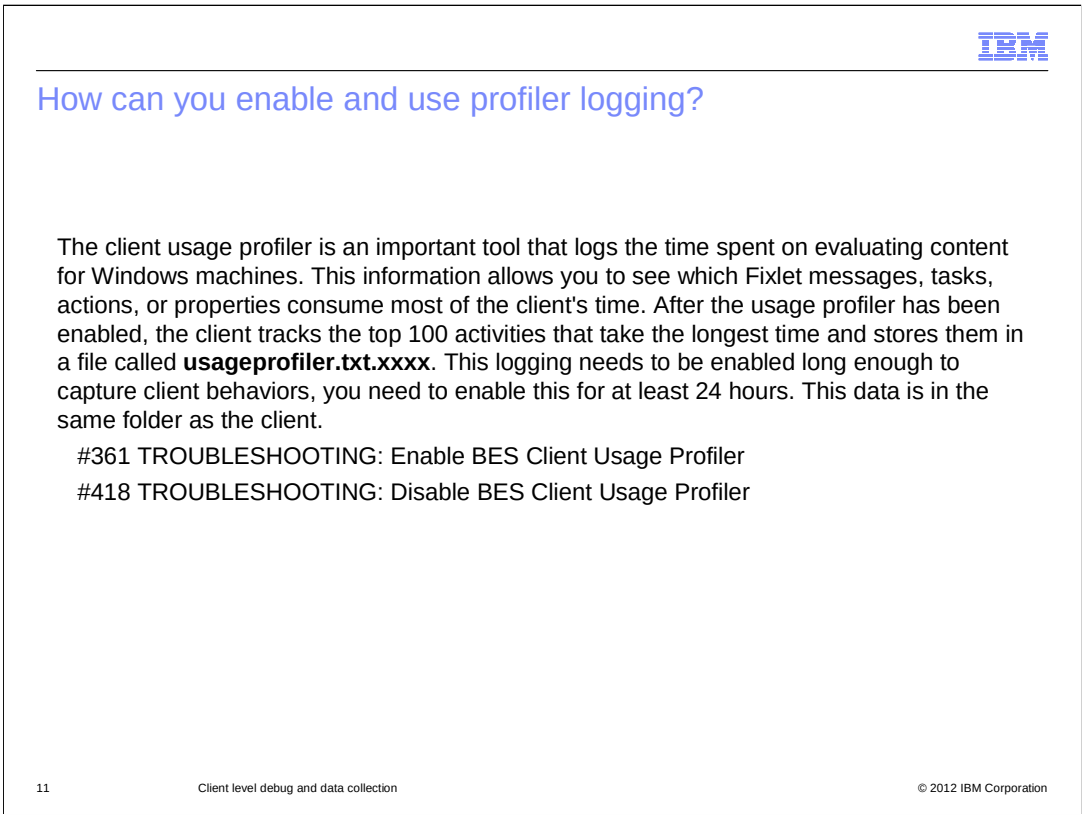
More information can be found in the Knowledge Base article:
How do I turn on detailed message debug logging for the non-Windows TEM Client
http://www-304.ibm.com/support/docview.wss?uid=swg21506110

More information can be found in the Knowledge Base article (DCF) for non-Windows Debug Logging.

How can you collect and use debug logging?

- Enable logging using content or manual settings
- Reproduce the issue
- Collect logs manually in the default installation directory such as:
  - Windows: **<drive>:\Program Files\BigFix Enterprise\BES Client**
  - Non-Windows: **/var/log/BESClient/besclient.log**
- This data can be collected as part of #323 TROUBLESHOOTING: Run Client Diagnostics

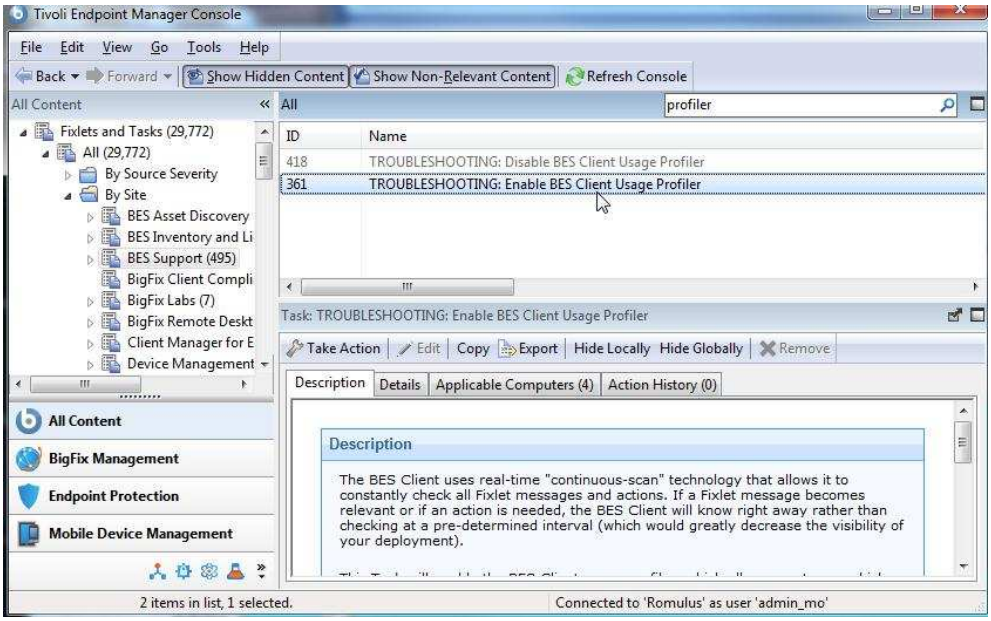
In a client troubleshooting issue, you can enable the logging by way of content or manually. You can then reproduce the issue you are troubleshooting. After the issue has re-occurred or a sufficient time period has passed you can disable and collect this log. The log is written locally to the client for manual collection or is collected automatically as part of the Client Diagnostic tool.



The client usage profiler is an important tool that logs the time spent on evaluating content. This information allows you to see which Fixlet messages, tasks, actions, or properties consume most of the client's time. After the usage profiler has been enabled, the client tracks the top 100 activities that take the longest time and stores them in a file called **usageprofiler.txt.xxxx**. As this logging needs to be enabled long enough to capture client behaviors, enable logging for at least 24 hours. This data is in the same folder as the client. It can be enabled and disabled by way of Fixlet content from the BES Support site of your Console:

- #361 TROUBLESHOOTING: Enable BES Client Usage Profiler
- #418 TROUBLESHOOTING: Disable BES Client Usage Profiler

Console view for enabling and disabling debug logging



This screen capture shows a Console view of BES Support content IDs 361 and 418 to enable and disable the client Usage Profiler. Note that the **Description** tab often contains important information for review.

How can you collect usage profiler data?

This data can be manually collected in the default directory in a series of files called **usageprofiler.txt.xxxx**:

C:\Program Files\BigFix Enterprise\BES Client

This data is also collected as part of #323 TROUBLESHOOTING: Run Client Diagnostics

More information can be found in the Knowledge Base article (DCF):
What is the Client Usage Profiler
http://www-304.ibm.com/support/docview.wss?uid=swg21506248

This data can be collected in the root installation directory such as **C:\Program Files\BigFix Enterprise\BES Client** in a series of files called **usageprofiler.txt.xxxx**. This information is also collected by #323 TROUBLESHOOTING: Run Client Diagnostics. More information can be found in the Knowledge Base article (DCF): http://www-304.ibm.com/support/docview.wss?uid=swg21506248

Client diagnostics (1 of 2)

There are many situations where you want to run the BES Client Diagnostics utility and gather up data files, including Debug and Usage Profiler. The BES Client Diagnostics tool is a small command line utility that gathers various statistics and files from Tivoli Endpoint Manager clients for analysis. The information provided by the tool is useful in analyzing a Tivoli Endpoint Manager deployment and troubleshooting client issues.

Note: If you are doing extended message Debug Logging or client Usage Profiler logging you can wait until you have gathered enough of this logging data before running the BES Client Diagnostics utility

ID 353: TROUBLESHOOTING: Run BES Client Diagnostics

There are many situations where you want to run the BES Client Diagnostics utility and gather up data files, including Debug and Usage Profiler. The BES Client Diagnostics tool is a small command line utility that gathers various statistics and files from Tivoli Endpoint Manager clients for analysis. The information provided by the tool is useful in analyzing a Tivoli Endpoint Manager deployment and troubleshooting client issues. Note: If you are doing extended message Debug Logging or client Usage Profiler logging you can wait until you have gathered enough of this logging data before running the BES Client Diagnostics utility. This utility can be run and collected by way of the BES Support site, ID number 353: TROUBLESHOOTING: Run BES Client Diagnostics.

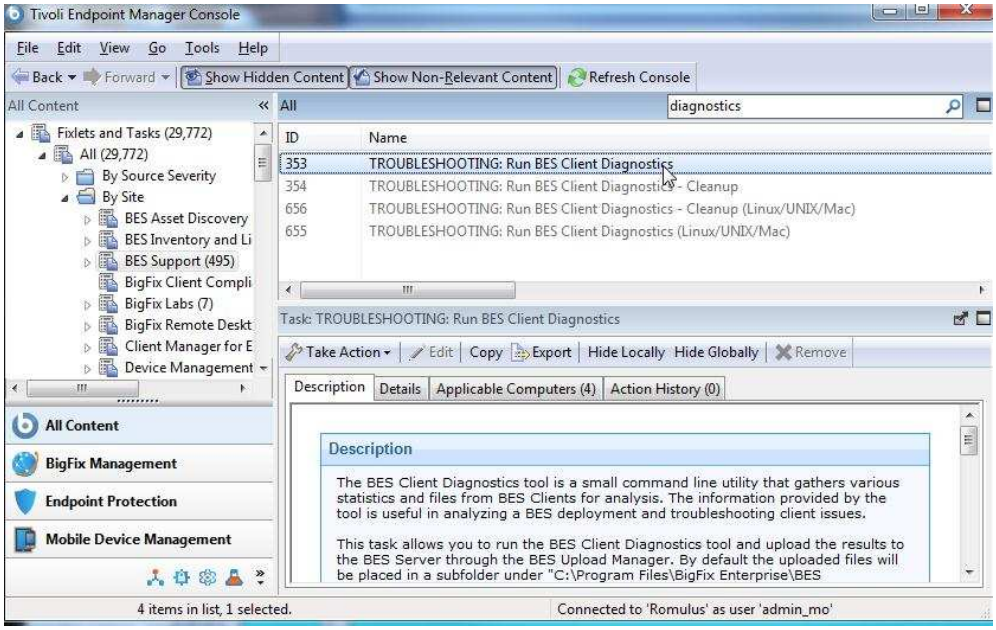
Client diagnostics (2 of 2)

What kinds of information are collected?

- Gathers a variety of information about the local computer (name, OS, domain information, user, drive space, language, and so on)
- Gathers a variety of information about the Tivoli Endpoint Manager Client (masthead information, service status, path, license information, client settings, for example)
- Checks each Fixlet site to ensure that it is gathered on the latest version
- Collects all retrieved properties in a QnA format
- Analyzes log files
- Checks for consistency across Tivoli Endpoint Manager Client version files and collects the upgrade history
- Performs a test to determine the distance to all Tivoli Endpoint Manager Relays (use the –r command line option)
- Performs a test to determine the distance to all Tivoli Endpoint Manager Relays (must run the tool with a command line argument –runrelayselector)
- Summarizes all warnings and errors
- Saves a copy of the __**BESData** folder and the Tivoli Endpoint Manager Client registry keys
- Creates a human readable XML output of the client's Fixlet history (SiteData)
- Saves a copy of the Client Usage Profiler log and EMsg log if they exist
- Compresses the data for easy collection
- Collects the client debug log
- Collects the Usage Profiler log

What information is collected by the Client Diagnostics tool? See the list of specific information collected by this tool.

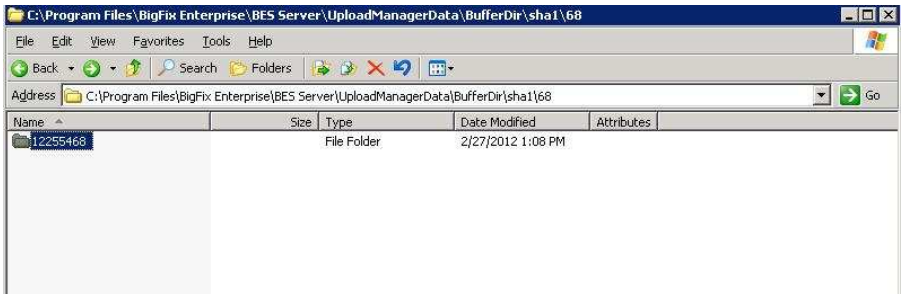
Client diagnostics content example



The Client Diagnostics content available in the Tivoli Endpoint Manager Console in the BES Support Site is shown. Note that information should be reviewed in the **Description** tab.

Collecting client diagnostic data from the Tivoli Endpoint Manager server

- If you use the content to run Client Diagnostics this information is automatically collected and uploaded to the Tivoli Endpoint Manager server. This information is contained in the UploadManagerData directory on the Tivoli Endpoint Manager server. This information is organized by Computer ID number.
- You can enable a Client property for Computer ID to view in the console, see; http://www-01.ibm.com/support/docview.wss?uid=swg21506265



If you use the Fixlet content to run the Client Diagnostics utility, this information is automatically collected and uploaded to the Tivoli Endpoint Manager server. This information is contained in the **UploadManagerData** directory on the Tivoli Endpoint Manager server. This information is organized by Computer ID number. You can enable a Client property for Computer ID to view in the console, see the Knowledge Base (DCF) article shown. See the example screen capture for a client upload directory found on the Tivoli Endpoint Manager server.

Client diagnostics: Manual collection

This tool can be run manually on Windows systems in situations in which you do not have access to the Tivoli Endpoint Manager Console, or the endpoint itself is not communicating

Tivoli Endpoint Manager > TEM Utilities > TEM Client Diagnostics

https://www.ibm.com/developerworks/mydeveloperworks/wikis/home?lang=en#/wiki/Tivoli%20Endpoint%20Manager/page/TEM%20Client%20Diagnostics

More information can be found in the Knowledge Base article (DCF):
What is the BES Client Diagnostics Tool
http://www-01.ibm.com/support/docview.wss?uid=swg21567025

Running Client Diagnostics manually (Windows only). This tool can be run manually in the situation in which you do not have access to the Tivoli Endpoint Manager Console, or the endpoint itself is not communicating. This tool can be downloaded from the download page and run manually on an endpoint. The tool outputs data files in the same directory in which it was run. More information can be found in the Knowledge Base article shown.

Summary

Now that you have completed this module, you can perform these tasks:

- Enable and disable Debug Logging by way of a Fixlet and manually
- Enable and disable Usage Profiler logging by way of a Fixlet and manually
- Run the Client Diagnostic Utility by way of Fixlet content or manually

These logging options can be used to track a variety of issues including; performance, action failures, relevancy, functionality, client configuration, and networking problems

Enabling and collecting this data can also significantly decrease the time to resolve a Support case (PMR)

You can provide this information to your Support representative when opening a new case

Now that you have completed this module, you can understand how to enable several client debugging options including: Debug Logging, Usage Profiler, and the Client Diagnostic utility. These logging options can be used to track a variety of issues including; performance, action failures, relevancy, functionality, client configuration, and networking problems.

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