BEA WebLogic Server R
Logging Enhancements

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Logging Enhancements

This document describes the enhancements made to the Logging capabilities in WebLogic Server 10.3.

Hierarchical Logging Configuration

Previous releases of WebLogic Server only allowed setting a Severity at the handler level. In addition, there was no way to control the severity of messages coming from different Loggers. The Logging functionality in WebLogic Server now provides finer control of Logging Severity at the granularity of the logging source generating the message. This capability is provided through a predefined set of Severities that are defined in the `weblogic.logging.Severities` class.

The Logging source can be:

1. Generated Logger classes from the XML I18N catalog using `weblogic.i18ngen.`
2. Instances of the Commons Logging application programming interfaces (APIs) when the WebLogic Server implementation of the Commons `org.apache.commons.logging.LogFactory` interface is enabled.

The Log MBean interface offers two additional attributes:

- `LoggerSeverity`–Defines the Severity level of the root logger in the WebLogic Server Logger tree. The default value is `Info`. All child nodes in the logger tree will inherit this value if `LoggerSeverityProperties` attribute for individual nodes is not configured explicitly.
- `LoggerSeverityProperties`–Defines the Severity level of a package or a Logger node in the WebLogic Server Logger tree. Each node is identified by the fully qualified logger name. The WebLogic Server Logger names that come from the I18N catalog are not qualified with a package notation whereas the `org.apache.commons.logging.Log` instances are typically qualified with a dot notation. A logger node inherits the Severity of its nearest parent that is explicitly configured.

Use Case and Examples

By default only log messages of Severity `Warning` and above should be logged across all Loggers. Only EJB subsystem messages from WebLogic Server at `Info` level should be allowed.

Messages from Axis using Commons Logging need to be logged at the `Info` level. Set the `LoggerSeverity` attribute to `Warning` which affects all loggers by default. The `LoggerSeverityProperties` attribute is populated with the following entries:

```
EJB = ‘Info’
org.apache.axis = ‘Info’
```

The following WLST session script lists the configuration steps:

```
wls:/mydomain/edit/Servers/myserver/Log/myserver!>p=java.util.Properties()
wls:/mydomain/edit/Servers/myserver/Log/myserver !>p.put('EJB', 'Info')
```

```
wls:/mydomain/edit/Servers/myserver/Log/myserver!>p.put('org.apache.axis',
'Info')
wls:/mydomain/edit/Servers/myserver/Log/myserver!>
cmo.setLoggerSeverity('Warning')
wls:/mydomain/edit/Servers/myserver/Log/myserver!>
cmo.setLoggerSeverityProperties(p)
wls:/mydomain/edit/Servers/myserver/Log/myserver !>
save()
Saving all your changes ...
Saved all your changes successfully.
wls:/mydomain/edit/Servers/myserver/Log/myserver !>
activate()
Activating all your changes, this may take a while ...
The Edit Lock associated with this edit session is released once the activation
is completed.
Activation completed
wls:/mydomain/edit/Servers/myserver/Log/myserver>
```

The following snippet from the `config.xml` file shows the saved configuration:

```
 <log>
    <logger-severity>Warning</logger-severity>
    <logger-severity-properties>org.apache.axis=Info;EJB=Info</logger-severity-
properties>
    <stdout-severity>Debug</stdout-severity>
 </log>
```

These attributes can also be overridden on the server start-up command line by providing the following switches:

```
–Dweblogic.log.LoggerSeverity=”Warning”
–Dweblogic.log.LoggerSeverityProperties=”org.apache.axis =Info;EJB=Info”
```

Note that debug messages in WebLogic Server are still controlled by the ServerDebug MBean interface. There is no need to set the `LoggerSeverity` value to `Debug` in order for Debug messages to flow to the log file. Enabling a specific ServerDebug MBean attribute is sufficient. The `LoggerSeverity` at the root level can be `Info`.