Sun Role Manager
Application Logging

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Preface

Who should read this Guide

Sun Role Manager Application Logging is intended for use by service providers, deployment-team and system administrators who are responsible for installing Sun[TM] Role Manager software (formerly Vaau's RBACx product) on the target systems and administering it.

Document Conventions

The following conventions are used in this guide.

Information in...	Indicates...
<Italics_Brackets>	A variable that you must enter or select
<RBACX_HOME>	A variable whose value is name of the directory where Role Manager is installed
"Bold"	Information that you must type exactly as shown
Bold Italics	An option on the toolbar or Menu that you must select
[Square Brackets]	A button you must click

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Introduction

This document explains the logging features of the Sun™ Role Manager software (Role Manager). Role Manager has a wide varity of events that can be logged, and the logging for those events can be enabled or disabled as needed. The application logs are generated and stored under the "$RBACX_HOME/tomcat55/logs/" folder in a file named "rbacx.log". The log events can be enabled or disabled by making changes to entries in "log4j.properties" file, which can be found under "$RBACX_HOME/WEB-INF" folder.

Log Properties

This section provides a complete list of all events that can be logged by making changes to the entries in the "log4j.properties" file. Each line in the log4j.properties file indicates logging properties for the corresponding component in Role Manager. For example the JIAM log denotes the logging which needs to be captured during any connection with the IDM instance. The table below provides a list of these properties.

Property	Description
Console Appender	Denotes the format in which the java console logging events will be recorded in the target system. NOTE: This is property only to format the console logging and may not be required to be changed.
File Appender	Denotes the various parameters for the rbacx.log file such as the location, archive format etc. NOTE: This is property only to format the file and may not be required to be changed.

Property	Description
Tomcat logging	If the Application Server is Tomcat then this logging captures detailed events from the Application Server.
VAAU commons logging	This property enables the logging of all the interaction between the various components in Role Manager
Role Manager Core logging	Denotes the core logging of any events inside Role Manager. This property needs to be set for any trouble shooting in Role Manager.
Role Manager Security logging	Denotes the logging of any events related to Role Manager Security. This includes any user creation or login/logout events in Role Manager.
Role Manager Scheduling logging	Denotes the scheduler logging in Role Manager. Any events recorded by the Quartz scheduler can be captured by turning on this property
Role Manager ETL	Captures any events which are recorded by the ETL inside Role Manager
Role Manager IAM logging	Denotes the logging which is recorded by any communication between Role Manager and an IAM server. This includes any File based import inside Role Manager.
Role Manager Reporting logging	Denotes the logging when reports are run inside Role Manager
Role Manager Audit logging	This property captures detailed auditing inside Role Manager such as login /logout events and any changes inside Role Manager
Role Manager Role-Mining logging	Captures all the logging events when Role-Mining is run inside Role Manager
Role Manager IDC logging	Captures all the logging events with the Identity Certification component inside Role Manager
System	Captures the logging of all the events related to the System module in Role Manager
Sandbox	Captures the logging of all the events in Role Manager related to Identity Audit and Role Mining modules
Workflow	Captures all the logging events related to the various Workflows in Role Manager
SqlMap logging configuration	Role Manager is based on a Relational database. Any communication with the database are captured by this property
Spring Framework	Role Manager is based on a spring framework. This property needs to be set during advanced troubleshooting
JIAM log	Denotes all the logging events with a JIAM connection such as CA-Admin
Quartz scheduler	Records all the events by the Quartz Scheduler which is used in Role Manager

Property	Description
DWR	Captures all the events from the JSP pages on the web client in Role Manager
ehcache	Denotes the events with the Cache on the web client in Role Manager
CloverETL	Role Manager uses the Clover ETL framework and this property captures any events which are recorded by the ETL inside Role Manager
C3pO	Role Manager utilizes C3pO for common database pooling and this property captures any related events
JasperReports	Role Manager uses Jasper Reports and this property captures events related to JasperReports

Logging Levels

The logging events in Role Manager are based on log4j and have various logging levels. The table below shows the list of logging levels available in the application.

Level	Description
FATAL	This denotes the least logging and will record events only when there is a FATAL condition against them
ERROR	This level is similar to FATAL and will record events only when there is an ERROR condition
WARN	This is the default level. It records any WARN conditions in Role Manager
DEBUG	This denotes the most logging in Role Manager. Setting any property to this level denotes all the logging details for that property.

Properties File Preview

This section provides a preview of how the content of the typical log4j.properties file look like.

```
log4j.rootLogger=INFO, file

# Console Appender
```

```
log4j.appender.console=org.apache.log4j.ConsoleAppender
log4j.appender.console.layout=org.apache.log4j.PatternLayout
log4j.appender.console.layout.ConversionPattern=%d{ABSOLUTE} %-5p [%c{1}] %m%n

# File Appender
log4j.appender.file=org.apache.log4j.DailyRollingFileAppender
log4j.appender.file.file=logs/rbacx.log
log4j.appender.file.layout=org.apache.log4j.PatternLayout
log4j.appender.file.layout.ConversionPattern=%d{ABSOLUTE} %-5p [%c{1}] %m%n
log4j.appender.file.ImmediateFlush=true
log4j.appender.file.DatePattern='.'yyyy-MM-dd

# Tomcat logging
log4j.logger.org.apache.catalina=WARN

# DON'T EDIT FOLLOWING
log4j.logger.com.vaau.commons.springframework.context.ContextLifecycleListener
=INFO

#VAAU commons logging
log4j.logger.com.vaau.commons=WARN

#RBACx Core logging
log4j.logger.com.vaau.rbacx= WARN
log4j.logger.com.vaau.rbacx.core= WARN
log4j.logger.com.vaau.rbacx.service= WARN
log4j.logger.com.vaau.rbacx.manager= WARN

# RBACx Security logging
log4j.logger.com.vaau.rbacx.security=WARN

#RBACx Scheduling logging
log4j.logger.com.vaau.rbacx.scheduling=DEBUG

# RBACx ETL
log4j.logger.com.vaau.rbacx.etl.manager=WARN

#RBACx IAM logging
log4j.logger.com.vaau.rbacx.iam= DEBUG

#RBACx Reporting logging
log4j.logger.com.vaau.rbacx.reporting=WARN

#RBACx Audit logging
log4j.logger.com.vaau.rbacx.audit=WARN
```

```
# RBACx Role-Mining logging
log4j.logger.com.vaau.rbacx.rolemining=WARN
log4j.logger.com.vaau.commons.datamining=WARN
log4j.logger.com.vaau.commons.ml=WARN
log4j.logger.com.vaau.odm=WARN

# RBACx IDC logging
log4j.logger.com.vaau.rbacx.idc=WARN

# SYTEM
log4j.logger.com.vaau.rbacx.system=DEBUG

# Sandbox
log4j.logger.com.vaau.rbacx.sandbox.ida=WARN
log4j.logger.com.vaau.rbacx.sandbox.rme=WARN

# Workflow
log4j.logger.com.vaau.rbacx.workflow=WARN
log4j.logger.com.opensymphony.workflow.AbstractWorkflow=ERROR

# SqlMap logging configuration. Change WARN to DEBUG if want to see all sql
statements
log4j.logger.com.ibatis=WARN
log4j.logger.com.ibatis.common.jdbc.SimpleDataSource=WARN
log4j.logger.com.ibatis.common.jdbc.ScriptRunner=WARN
log4j.logger.com.ibatis.sqlmap.engine.impl.SqlMapClientDelegate=WARN
log4j.logger.org.springframework.jdbc.datasource.DataSourceTransactionManager=
WARN
log4j.logger.java.sql.Connection=WARN
log4j.logger.java.sql.Statement=WARN
log4j.logger.java.sql.PreparedStatement=WARN

#Spring Framework
log4j.logger.org.springframework=WARN
log4j.logger.org.springframework.rules.values=WARN
log4j.logger.org.springframework.context.support=WARN
log4j.logger.org.springframework.transaction=WARN
log4j.logger.org.springframework.aop.interceptor=WARN
log4j.logger.org.springframework.security=WARN
log4j.logger.org.springframework.security.event.authentication.LoggerListener=
FATAL

# For Trace Logging change them TRACE
log4j.logger.org.springframework.aop.interceptor.PerformanceMonitorInterceptor
```

```
=WARN
log4j.logger.org.springframework.aop.interceptor.CustomizableTraceInterceptor=
WARN

##JIAM log
log4j.category.com.ca=WARN
#log4j.category.com.ca.commons.jndi=DEBUG

#Quartz scheduler
log4j.logger.org.quartz=WARN

#DWR
log4j.logger.uk.ltd.getahead.dwr=FATAL
log4j.logger.org.directwebremoting=FATAL

#ehcache
log4j.logger.net.sf.ehcache=ERROR

#CloverETL
log4j.logger.org.jetel=ERROR

#C3p0
log4j.logger.com.mchange=ERROR

# JasperReports

log4j.logger.net.sf.jasperreports=ERROR

log4j.logger.com.vaau.rbacx.search=WARN

log4j.logger.com.vaau.commons.search=WARN
```

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Role Manager Logging and Associated Properties

This section covers some of the most common functions performed in the application. Each example will show the type of function, the severity of message, the module name and the log message.

Tomcat Logging

All the tomcat related errors will be shown in the following manner in the log file. For monitoring purposes, we would have to monitor anything that contains string: [org.springframework.web.context.ContextLoader].

```
15:11:56,500 ERROR [org.springframework**] ***
15:11:56,500 FATAL [org.springframework**] ***


**   refers to the specific module.
***   refers to the actual error message.
```

Examples are shown in the sub-sections below.

Context Initialization

The message below illustrates the error while starting Role Manager. The error indicates that there is a Context initialization failure. In the log message, it indicates which file caused the error.

In the sample error message below, the job.xml file under WEB-INF has caused the error.

Severity: ERROR

Module name: ContextLoader

Log message:

```
15:11:56,500 ERROR [org.springframework.web.context.ContextLoader] Context
initialization failed
org.springframework.beans.factory.BeanCreationException: Error creating bean
with name 'usersImportTrigger' defined in ServletContext resource [/WEB-
INF/jobs.xml]: Error setting property values; nested exception is
org.springframework.beans.PropertyAccessExceptionsException:
PropertyAccessExceptionsException (1 errors); nested propertyAccessExceptions
are: [org.springframework.beans.MethodInvocationException: Property
'cronExpression' threw exception; nested exception is
java.text.ParseException: '?' can only be specfied for Day-of-Month or Day-of-
Week.]
PropertyAccessExceptionsException (1 errors)
```

The message below illustrates the error while starting Role Manager. The error indicates that there is a Context initialization failure. Log message shows that the scheduling-context.xml file under WEB-INF has caused the error. Log message also shows the line in the file that caused the error.

Severity: ERROR

Module name: ContextLoader

Log message:

```
15:22:03,109 ERROR [org.springframework.web.context.ContextLoader] Context
initialization failed
org.springframework.beans.factory.BeanDefinitionStoreException: Line 137 in
XML document from ServletContext resource [/WEB-INF/scheduling-context.xml] is
invalid; nested exception is org.xml.sax.SAXParseException: The string "--" is
not permitted within comments.
```

VAAU Commons Logging

All the Vaau commons logging related errors will be shown in the following manner in the log file. For monitoring purposes, we would have to monitor anything that contains [com.vaau.commons].

```
15:11:56,500 ERROR [com.vaau.commons**] ***
15:11:56,500 FATAL [com.vaau.commons**] ***


**  refers to the specific module.
***  refers to the actual error message.
```

Examples are shown in the sub-sections below.

Context Initialization

The message below shows the information about Role Manager. The message shows the version of Role Manager that is running, and it shows the status of Role Manager.

Severity: INFO

Module name: ContextLifecycleListener

Log message:

```
10:30:19,859 INFO
[com.vaau.commons.springframework.context.ContextLifecycleListener] Sun Role
Manager (build: 4.1.0.20080903_406_3061) Started
```


Role Manager Core Logging

All Role Manager core logging related errors will be shown in the following manner in the log file. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx].

```
15:11:56,500 ERROR [com.vaau.rbacx **] ***
15:11:56,500 FATAL [com.vaau.rbacx **] ***
15:11:56,500 ERROR [com.vaau.rbacx.service **] ***
15:11:56,500 FATAL [com.vaau.rbacx.service **] ***
15:11:56,500 ERROR [com.vaau.rbacx.core**] ***
15:11:56,500 FATAL [com.vaau.rbacx.core**] ***
15:11:56,500 ERROR [com.vaau.rbacx.manager**] ***
15:11:56,500 FATAL [com.vaau.rbacx.manager **] ***


**  refers to the specific module.
***  refers to the actual error message.
```

Examples are shown in the sub-sections below.

Sequence Update

The messages below shows Role Manager's back-end activities. The message shows that Role Manager is updating the sequence table in the database.

Severity: DEBUG

Module name: SequenceGeneratorServiceImpl

Log message:

```
13:22:35,203 DEBUG [com.vaau.rbacx.service.impl.SequenceGeneratorServiceImpl]
Getting MemorySequence for sequence name NamespaceKey
13:22:35,203 DEBUG [com.vaau.rbacx.service.impl.SequenceGeneratorServiceImpl]
Creating new MemorySequence for sequence name NamespaceKey
13:22:35,203 DEBUG [com.vaau.rbacx.dao.ibatis.SqlMapSequenceDao] Getting next
count for sequenceName=NamespaceKey, increment=10
13:22:35,218 DEBUG [com.vaau.rbacx.dao.ibatis.SqlMapSequenceDao] Returing next
count for sequenceName=NamespaceKey, count=1010
13:22:35,234 DEBUG [com.vaau.rbacx.service.impl.SequenceGeneratorServiceImpl]
Returning count for sequence name Name
```

Role Manager Security Logging

All the Role Manager security logging related errors are logged as shown below. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.security].

```
15:11:56,500 ERROR [com.vaau.rbacx.security **] ***
15:11:56,500 FATAL [com.vaau.rbacx.security **] ***


**   refers to the specific module.
***   refers to the actual error message.
```

Examples are shown in the sub-sections below.

Login Error

The message below illustrates the warning from Role Manager security. The warning indicates that the user's login or password is incorrect.

Severity: WARN

Module name: UserManagerImpl

Log message:

```
14:14:45,359 WARN [com.vaau.rbacx.security.manager.impl.UserManagerImpl]
RbacxUser with username: 'testuser' not found
```

User Creation

The message below illustrates the information of the user creation. The message indicates that the user "testuser" has been created.

Severity: DEBUG

Module name: RbacxSecurityServiceImpl

Log message:

```
15:35:00,750 DEBUG
[com.vaau.rbacx.security.service.impl.RbacxSecurityServiceImpl] adding user
testuser
15:35:00,750 DEBUG [com.vaau.rbacx.security.manager.impl.UserManagerImpl]
creating user: Last name: User; First name: Test; Email: testuser@sun.com
15:35:00,765 DEBUG [com.vaau.rbacx.security.manager.impl.UserManagerImpl]
setting credentials for testuser: 3dbb4a67672880904958500b68d4ab481116a1b9
```

User Deletion

The message below illustrates the information of the user creation. The message indicates that the user "testuser" has been deleted.

Severity: DEBUG

Module name: RbacxSecurityServiceImpl

Log message:

```
15:34:23,359 DEBUG
[com.vaau.rbacx.security.service.impl.RbacxSecurityServiceImpl] deleting user
testuser
15:34:23,375 DEBUG [com.vaau.rbacx.security.manager.impl.UserManagerImpl]
deleting user: Last name: user; First name: test; Email: testuser@sun.com
```

Role Manager Scheduling Logging

All the Role Manager scheduling related errors will be shown in the following manner. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.scheduling].

```
15:11:56,500 ERROR [com.vaau.rbacx.scheduling **] ***
15:11:56,500 FATAL [com.vaau.rbacx.scheduling **] ***


**   refers to the specific module.
***   refers to the actual error message.
```

Examples are shown in the sub-sections below.

Scheduled Certification Reminder

The message below shows the information for a scheduled execution. The message shows that a certification reminder has executed as scheduled.

Severity: INFO

Module name: VaauSchedulerEventListenerImpl

Warn message:

```
14:19:00,187 INFO
[com.vaau.rbacx.scheduling.impl.VaauSchedulerEventListenerImpl] Job executed:
Certification Reminder, SYSTEM
```

Scheduled Account Import Job

The message below shows the information for a scheduled execution. The message shows that an account import job has executed as scheduled.

Severity: DEBUG

Module name: IAMJob

Warn message:

```
14:21:00,062 DEBUG
[com.vaau.rbacx.scheduling.manager.providers.quartz.jobs.IAMJob] Accounts
Import job executed successfully = true
```

Role Manager IAM Logging

All the Role Manager IAM related errors will be shown in the following manner. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.iam].

```
15:11:56,500 ERROR [com.vaau.rbacx.iam **] ***
15:11:56,500 FATAL [com.vaau.rbacx.iam **] ***


**   refers to the specific module.
***   refers to the actual error message.
```

Examples are shown in the sub-sections below.

User Import

The message below illustrates the error from a user file import. The error indicates that there is a data type violation. The first column in the schema file is specified by "statusKey". In the user file, it has "Active" corresponding to the "statusKey". However, the "statusKey" is defined to be either "1" as active or "2" as inactive. The correct data type corresponds to the "statysKey" should be either 1 or 2.

Severity: ERROR

Module name: UserFileReader

Log message:

11:29:00,593 ERROR [UserFileReader] PropertyAccessExceptionsException (1 errors)

Schema file:

statusKey,manager,primaryEmail,firstName,middleName,username

User file imported with error:

Active,testmanager,testuser@email.com,Test,User,testuser

Correct user file:

1,testmanager,testuser@email.com,Test,User,testuser

Account Import

The message below illustrates the error from an account file import. The error indicates that the account file does not match the schema file. The schema file shows that one role will be importing to the account. However, the account file has 2 roles. Instead of importing 2 roles as 2 attributes, the correct way to do it is to import the 2 roles into the "role" attribute as 1 attribute.

Severity: ERROR

Module name: CSVAccountFileReader

Log message:

```
11:53:02,625 ERROR [CSVAccountFileReader] BAD RECORD FORMAT: File:
UNX_01_accounts, line no. 1, doesn't match schema, found
[testuser,JOB_1,JOB_2,UNX]
```

Schema file:

name<CorrelationKey>,role,endpoint

Account file imported with error:

testuser,JOB_1,JOB_2,UNX

Correct user file:

testuser,"JOB_1,JOB_2",UNX

Unknown User

The message below illustrates the error from an account file import. The error indicates that the user of the account file does not match any users in the database. In this case we can configure the system to either drop the account or correlate to a default globaluser.

Severity: ERROR

Module name: CSVAccountFileReader

Log message:

```
12:12:01,015 ERROR [CSVAccountFileReader] CORRELATION ERROR: Unknown global
user 'test-user' for account 'test-user'
```

Schema file:

name<CorrelationKey>,role,endpoint

Account file imported with error:

test-user, "JOB_1,JOB_2",UNX

Correct user file:

testuser,"JOB_1,JOB_2",UNX

Role Manager Reports Logging

All Role Manager reporting related errors will be shown in the following manner. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.reporting].

```
15:11:56,500 ERROR [com.vaau.rbacx.reporting **] ***
15:11:56,500 FATAL [com.vaau.rbacx.reporting **] ***


**  refers to the specific module.
***  refers to the actual error message.
```

Examples are shown in the sub-sections below.

Generating Reports

The messages below show the information when generating reports. The messages show the type of report it is generating, and it also shows the location the file is running from.

Severity: DEBUG

Module name: JasperReportsUtils

Log message:

```
10:33:09,390 DEBUG
[com.vaau.rbacx.reporting.renderer.jasperreports.JasperReportsUtils] --->
checking if 'C:\Vaau\rbacx-4.0\reports\BusinessUnitUsers.jrxml' has any sub-
reports that need compiling
10:33:09,406 DEBUG
[com.vaau.rbacx.reporting.renderer.jasperreports.JasperReportsUtils] --->
C:\Vaau\rbacx-4.0\reports\BusinessUnitUsers.jrxml has following sub-reports --
> []
10:33:09,406 DEBUG
[com.vaau.rbacx.reporting.renderer.jasperreports.JasperReportsUtils] --->
following sub-reports require compilation []
10:33:09,406 DEBUG
[com.vaau.rbacx.reporting.renderer.jasperreports.JasperReportsUtils] checking
if report file --> 'C:\Vaau\rbacx-4.0\reports\BusinessUnitUsers.jrxml'
requires compilation
10:33:09,406 DEBUG
[com.vaau.rbacx.reporting.renderer.jasperreports.JasperReportsUtils] --->
compiling reports []
```

Role Manager Audit Logging

All the Role Manager audit related errors will be shown in the following manner in the log file. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.rbacxaudit].

```
15:11:56,500 ERROR [com.vaau.rbacx.rbacxaudit **] ***
15:11:56,500 FATAL [com.vaau.rbacx.rbacxaudit **] ***


**  refers to the specific module.
*** refers to the actual error message.
```

Examples are shown in the sub-sections below.

Audit Logging

The message below shows the information when users are logging in or logging out of Role Manager. It also captures all the changes made in Role Manager.

Severity: DEBUG

Module name: RbacxAuditUtil

Log message:

```
10:33:09,390 DEBUG [com.vaau.rbacx.rbacxaudit.util.RbacxAuditUtil] ---> User
"testuser" logged in
```

Role Manager Role-Mining Logging

All Role Manager audit related errors will be shown in the following manner in the log file. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.rolemining].

```
15:11:56,500 ERROR [com.vaau.rbacx.rolemining **] ***
15:11:56,500 FATAL [com.vaau.rbacx.rolemining **] ***
15:11:56,500 ERROR [com.vaau. commons.datamining **] ***
15:11:56,500 FATAL [com.vaau. commons.datamining **] ***


**  refers to the specific module.
*** refers to the actual error message.
```

Examples are shown in the sub-sections below.

Role-Mining Logging

The message below shows the information for the role-mining. The messages show the users and their accounts involve in the role-mining process.

Severity: INFO

Module name: BasicAccountAttributesInstanceCreator

Log message:

```
16:05:48,937 INFO
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Creating VaauMiningInstances for 7 users.
16:05:48,937 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] User --> ZTB0019 has no accounts, just using user's properties
16:05:48,937 INFO
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Created 1 VaauMiningInstances for user.
16:05:48,937 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] User --> ZPK0070 has no accounts, just using user's properties
16:05:48,937 INFO
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Created 1 VaauMiningInstances for user.
16:05:48,937 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] User --> ZSB0077 has no accounts, just using user's properties
16:05:48,937 INFO
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Created 1 VaauMiningInstances for user.
16:05:48,937 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] User --> ZAK0056 has no accounts, just using user's properties
16:05:48,937 INFO
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Created 1 VaauMiningInstances for user.
16:05:48,937 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] User --> YJE0036 has 1 accounts, using account attributes
16:05:48,937 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Creating one mining row per user
16:05:48,937 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Adding account YJE0036] attributes to mining instance
16:05:48,953 DEBUG
[com.vaau.rbacx.rolemining.service.support.BasicAccountAttributesInstanceCreat
or] Account ---> YJE0036, attributes -----> [role]
```

Role Manager IDC Logging

All the Role Manager IDC related errors will be shown in the following manner. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.idc].

```
15:11:56,500 ERROR [com.vaau.rbacx.idc **] ***
15:11:56,500 FATAL [com.vaau.rbacx.idc **] ***


**  refers to the specific module.
*** refers to the actual error message.
```

Examples are shown in the sub-sections below.

Certification Reminder

The message below shows the number of certification reminders that have been fired.

Severity: DEBUG

Module name: ReminderManagerImpl

Log message:

```
12:43:00,171 DEBUG [ReminderManagerImpl]  No. of first certification reminders
= 19
12:43:00,171 DEBUG [ReminderManagerImpl]  No. of second certification
reminders = 0
12:43:00,171 DEBUG [ReminderManagerImpl]  No. of third certification reminders
= 0
12:43:00,171 DEBUG [ReminderManagerImpl]  No. of fourh certification reminders
= 0
12:43:00,171 DEBUG [ReminderManagerImpl]  No. of fifth certification reminders
= 0
12:43:00,171 DEBUG [ReminderManagerImpl] [finished] firing certification
reminders, took 31ms
```

Certification Creation - 1

The message below shows the information for the certification. The messages show that some of the users and their accounts involve in the certification are not being created because the users or the accounts are not active.

Severity: DEBUG

Module name: RbacxIDCServiceImpl

Log message:

```
16:20:59,375 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
creating full certification 'T2'
16:20:59,390 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
loading global users from business units --> [3066]
16:20:59,453 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
loaded 2 GlobalUsers, took 63ms
16:20:59,453 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
creating IDC Users...
16:20:59,500 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
loading Accounts, Roles and Policies for 2 users
16:20:59,515 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
loaded Accounts, Roles and Policies for 2 users, took 15ms
16:20:59,515 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]  -->
user: ZRC0217
16:20:59,546 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl] ---->
user 'ZRC0217' has no accounts to certify
16:20:59,546 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl] --->
user Craig, Ryan has not accounts, and will not inlcluded
16:20:59,546 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]  -->
user: ZTJ0071
16:20:59,546 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl] ---->
user 'ZTJ0071' has no accounts to certify
16:20:59,546 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl] --->
user Jorgensen, Thomas has not accounts, and will not inlcluded
16:20:59,546 DEBUG [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
created 0 IDC Users , took 93ms
```

Certification Creation - 2

The message below shows the information for the certification creation job. The messages show that the business unit involved in the certification is not being created because the users or the accounts are not active.

Severity: ERROR

Module name: RbacxIDCServiceImpl

Log message:

```
16:40:01,203 ERROR [com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl]
ERROR: unable to create certification: T3_Aaron Hackett - ZAH0140
com.vaau.rbacx.idc.IDCInvalidArgumentException: BusinessUnit 'Aaron Hackett -
ZAH0140' has no acitve users to certify
at
```

```
com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl.createCertification(RbacxI
DCServiceImpl.java:511)
at
com.vaau.rbacx.idc.service.impl.RbacxIDCServiceImpl.createCertifications(Rbacx
IDCServiceImpl.java:256)
at
com.vaau.rbacx.scheduling.executor.certification.CertificationJobExecutor.exec
ute(CertificationJobExecutor.java:22)
at
com.vaau.rbacx.scheduling.manager.providers.quartz.jobs.AbstractQuartzJob.exec
ute(AbstractQuartzJob.java:58)
at org.quartz.core.JobRunShell.run(JobRunShell.java:191)
at org.quartz.simpl.SimpleThreadPool$WorkerThread.run(SimpleThreadPool.java:
516)
```

JIAM Logging

All the JIAM related errors will be shown in the following manner. For monitoring purposes, we would have to monitor anything that contains [com.vaau.rbacx.idc].

```
15:11:56,500 ERROR [com.vaau.rbacx.idc **] ***
15:11:56,500 FATAL [com.vaau.rbacx.idc **] ***


**   refers to the specific module.
***   refers to the actual error message.
```

Examples are shown in the sub-sections below.

IDM Connection

The message below shows the error establishing the connection to an IDM environment. The messages show that there is a failure establishing the connection to CA Etrust IAM Solution.

Severity: DEBUG

Module name: operations

Log message:

```
16:27:43,765 DEBUG [com.ca.commons.jndi.beans.operations] Search[0] Failed:
javax.naming.CommunicationException: localhost:20390 [Root exception is
java.net.ConnectException: Connection refused: connect]
16:27:43,796 ERROR [com.vaau.rbacx.iam.ca.ETrustIAMSolution] Error getting
```

```
ETrust Iam Server
```

```
com.ca.iam.model.IAMCommunicationException:
javax.naming.CommunicationException: localhost:20390 [Root exception is
java.net.ConnectException: Connection refused: connect]
```

```
at com.vaau.rbacx.iam.ca.ETrustIAMSolution
$ETrustIamServerPoolFactory.makeObject(ETrustIAMSolution.java:1725)
```