



UC4 Rapid Automation
BMC BladeLogic

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Introduction to the Rapid Automation BMC BladeLogic Agent Integration

The BMC BladeLogic Rapid Automation Agent integration works with the UC4 Automation Platform v9. It includes special panels for Connection, Agent and Job objects.

BMC BladeLogic

BMC BladeLogic allows configuring and maintaining deployment processes out-of-the box. Configuration audits and compliance processes allow maintaining a defined state on server assets and enforcing an adherence to organizational standards. In addition, it allows automating day-to-day data center operations and share routine management tasks between functional teams.

Supported Versions

The BMC BladeLogic Agent was developed and tested against BMC BladeLogic v8.1. It requires the UC4 v9 Service Pack 1 or higher.

About Rapid Automation

Rapid Automation (RA) is a generic technology that is able to serve different solutions by connecting to external applications and platforms.

RA Agent

The RA Agent provides a universal framework to connect the RA Solution with the UC4 Automation Platform.

RA Solution

The RA Solution is deployed on an RA Agent and defines the RA Agent's functionality. Additionally the RA Solution defines which Connection, Agent and Job objects are available and what they look like.

Opening Help

The Help files for the BMC BladeLogic Rapid Automation Agent are updated when you upgrade your Agent, not when you upgrade your Automation Engine. Therefore they exist as their own JavaHelp project. To open the Rapid Automation Agent integration help, click Solution Help on the BMC BladeLogic tab of your Connection, Agent or Job objects.

What's New in the Rapid Automation BMC BladeLogic Agent Integration

This is the first release of the BMC BladeLogic Agent. Features of BladeLogic Agent are listed below.

Features of the first release of the BladeLogic Agent include the following:

- Creating UC4 Jobs based on BMC BladeLogic Jobs, independent of its BMC BladeLogic job type
- Providing an integration point by loading available BMC BladeLogic data
- Overriding the default servers specified by each job

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Installation

This document describes the RA Agent installation process.

Install the Agent for Rapid Automation (CD:\Agents\rapidautomation\Core\) as described in the UC4 Automation Platform documentation. You will also find a description of how you can load the RA Solution to the UC4 Database there.

Follow the installation guide and load the RA Solution.

 Java JDK Version 1.6 is required for the RA Agent for BMC Bladelogic

 To use the BMC BladeLogic Agent, the BMC BladeLogic user must have access rights to o receive job and server data and execute jobs!

License File:

Requirement License files for RA Agents need to have an EX.RA.<AGENT TYPE> line in them and be loaded into the database. For more information on loading keyfiles, see the UC4 documentation.

The basic steps for administering the Rapid Automation BMC BladeLogic Agent integration include:

1. Installing the Agent and Loading the BMC BladeLogic Agent integration into UC4.
2. Defining a BMC BladeLogic Connection object.
3. Defining a BMC BladeLogic Agent.

These steps are described in the following topics of this chapter. After these steps are completed, you can define UC4 Jobs to execute BMC BladeLogic Jobs (see section Executing BMC BladeLogic Jobs)

Defining BMC BladeLogic Connection and Agent Object

To link UC4 to BMC BladeLogic, you must create a UC4 Connection object and an Agent.

To create a Connection object and Agent for BMC BladeLogic:

1. Create an environment variable BLADELOGIC_HOME which points to the directory of your BMC BladeLogic installation.

Important! The directory has to have the following structure to run the Rapid Automation BMC BladeLogic Agent:

```
NSH\br
NSH\br\xml\cli
NSH\bin
```

2. Create a UC4 BMC BladeLogic Connection object (CONN > BLADELOGICAGENT > BLADELOGICCONNECTION) in Client 0.

BMC BladeLogic Connection objects include a BMC BladeLogic tab where you specify the location of a BMC BladeLogic Application Server. Additionally the credentials of the user which should be used to execute BladeLogic Jobs must be specified. As depicted in Figure A, at first you must specify the Hostname and Port of the intended BMC BladeLogic Application Server. The user credentials consist of a Username, Password and the unique BMC BladeLogic Profile name. For details please refer to the BMC BladeLogic Server Automation Administration Guide.

B086 - Connection: TEST.CONNECTION

Save Print

Header BMC BladeLogic Documentation

Hostname:

Port:

Username:

Password:

Profile name:

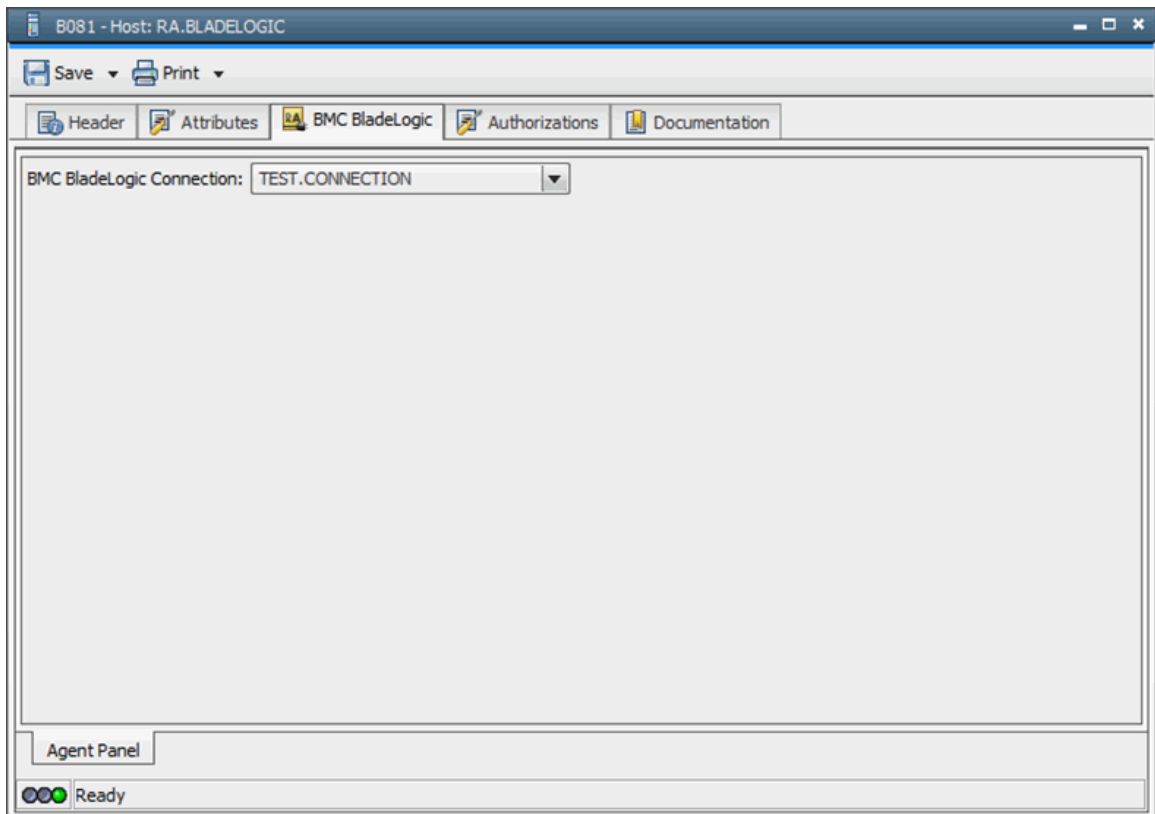
BladeLogic

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Authentication

Using the authentication profile present in the BMC BladeLogic client installation and the login credentials supplied by a BMC BladeLogic Connection, the Rapid Automation BMC BladeLogic Agent authenticates itself against the BMC BladeLogic Application server on startup and creates a BMC BladeLogic session. This session is checked and, if required, renewed upon each consecutive job execution task sent to the Rapid Automation BMC BladeLogic Agent.

3. Create a BMC BladeLogic Agent object (AGENT > BLADELOGICAGENT) in Client 0.
Note: The name of the Agent object name must match the name specified in the ucxcitx.ini file. For more information on the ucxcitx.ini file, see topic Loading the BMC BladeLogic Agent Integration into UC4.
4. Click the BMC BladeLogic tab. A sample BMC BladeLogic Connection with the BMC BladeLogic tab selected is shown below.



5. Select the BMC BladeLogic Connection object you defined.
6. Set the desired authorizations on the Authorizations tab.

Starting the Agent

The RA Agent starts only if an Agent object of the same name exists in system Client 0. You can only create your Agents in the HOST folder using the UC4 Explorer logged in as Client 0. Since the Rapid Automation BMC BladeLogic Agent has additional run-time dependencies, a start.bat file for Windows and a start.sh file for Unix are provided.

Windows


Before you can start the BMC BladeLogic Agent using the shipped start.bat file you have to set the path of the NSH directory which comes with your BMC BladeLogic client installation. Open the start.bat file with any editor and edit the following line:

```
set BLADELOGIC_HOME=C:\bmc\BladeLogic\8.1
```

Unix

Similar to the Windows installation, a start.sh is shipped which needs the correct path of the NSH directory which comes with your BMC BladeLogic Unix client installation. Open the start.sh file with any editor and edit the following line:

```
BLADELOGIC_HOME=/data/bmc/BladeLogic/8.1
```

 You may also start the agent via the UC4 ServiceManager, in this case, please make sure you either use the provided batch files directly or provide the java parameters according to the table below.


Start the Agent using the provided file **start.bat** (Windows) or **start.sh** (UNIX)

This start file assumes that you have your JAVA_HOME variable pointing to a valid Java Runtime Environment installation and BLADELOGIC_HOME pointing to your local BMC BladeLogic installation. The start file defines the necessary parameters for successful startup, which are:

Java Parameter	Mandatory	Description	Default
-Xms32m -Xmx512m	yes	Java Memory Limit Extensions	
-Dblx.cmrootdir	yes	BladeLogic root directory	%BLADELOGIC_HOME%\NSH\br
-Dbladelogic.polling.interval	no	BladeLogic Job Execution Polling Interval (milliseconds)	2000
-Djava.library.path	yes	Library Path pointing to "NSH\bin" directory	%BLADELOGIC_HOME%\NSH\bin
-Dcom.bladelogic.cli.xmldir	yes	BladeLogic XML root directory	%BLADELOGIC_HOME%\NSH\br\xml\cli
-Dcom.bladelogic.cli.debug.release-only	yes	Only enable released BMC BladeLogic API	"false" Important! Do not change this setting.

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Java Parameter	Mandatory	Description	Default
		command set	

 If you try to start the Rapid Automation BMC BladeLogic Agent before selecting a valid Connection object the agent will not start.

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Executing BMC BladeLogic Jobs

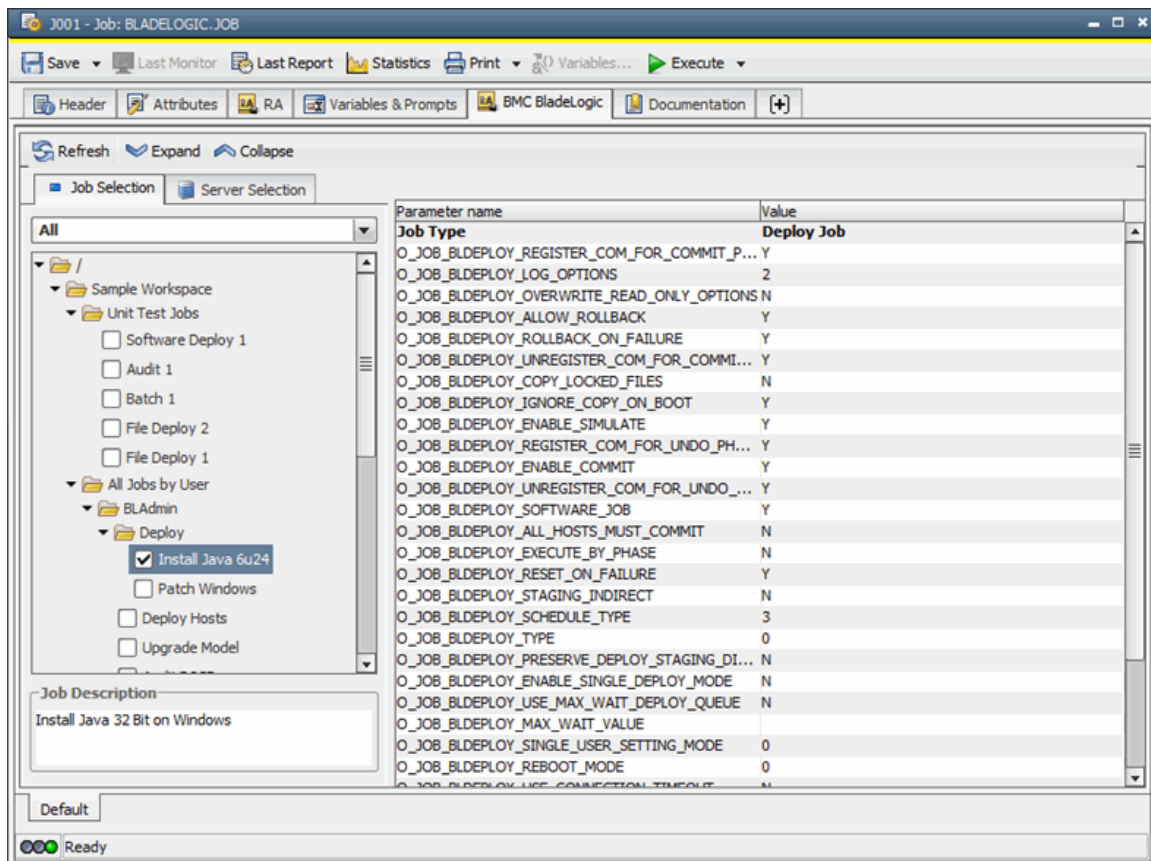
Once you have defined a BMC BladeLogic Connection and Agent object, you can define UC4 Jobs to execute BMC BladeLogic Jobs and specify their target servers.

If the Rapid Automation BMC BladeLogic agent being unavailable or offline, a fallback solution allows you to edit all settings as well (see section *Offline Job and Server Selection*).

General Options

Option	Behaviour
Refresh	Forces the Rapid Automation BMC BladeLogic Agent job and server list cache to refresh the data by reloading it from the BMC BladeLogic Application Server. All available jobs and servers are updated and displayed for selection. For details please refer to the section <i>Refreshing data after changes in BMC BladeLogic</i> .
Expand	Expands all nodes of the currently active view
Collapse	Collapses all nodes of the currently active view

In the panel on the left, you can use the tabs to switch between the Job Selection view and the Server Selection view. In the main part of the panel you can see a list of the parameters of the job that is currently selected in the Job Selection panel.

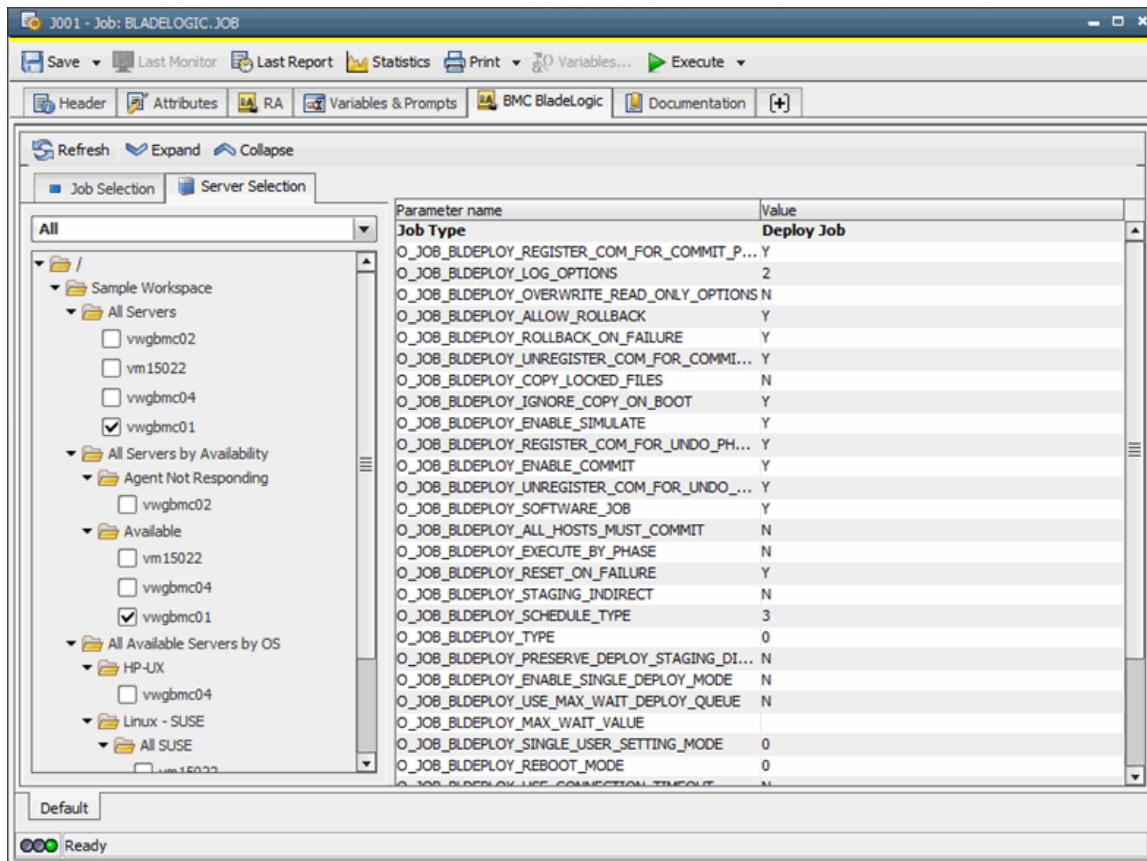


Selecting a BMC BladeLogic Job

In the tree in the Job Selection you can select a single BMC BladeLogic job. This job will be executed in BMC BladeLogic when the UC4 job is executed. Below the tree you can see the Job Description from the BMC BladeLogic Job. The hierarchy of the tree, which is loaded from the BMC BladeLogic Application Server, reflects the BMC BladeLogic job hierarchy. If you want to see the jobs for only one job type, click the down arrow to the right of the box at the top of the Job Selection tab and select the job type from the drop-down list that appears. Note: Due to API restrictions, job Smart Group hierarchies are not loaded from the BMC BladeLogic Application Server

Overriding the target servers

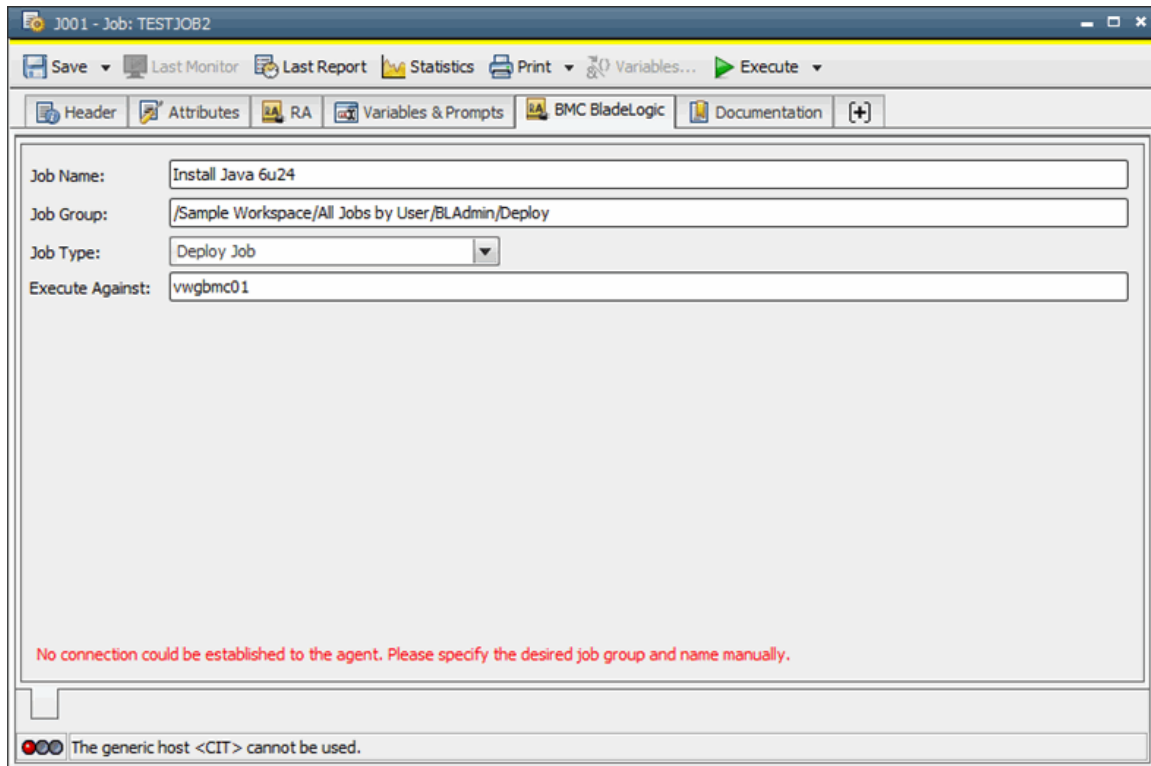
By default, every job has a defined set of target servers against which the job will be executed. In the tree structure on the Server Selection tab, you can see the set of target servers that is defined for the job that is selected on the Job Selection tab. You can also change the set of target servers of the job. If no server is selected for a job, the job's BMC BladeLogic default target servers are used. If you want to see the target servers for only one operating system, click the down arrow to the right of the box at the top of the Server Selection tab and select the operating system from the drop-down list that appears.



Offline Job and Server Selection

If the Rapid Automation BMC BladeLogic agent is unavailable or offline and you open the BMC BladeLogic tab, you see a different version of the tab page (see figure below). On this simplified version of the tab page, you can edit the all settings for the agent, even though the information from the BMC BladeLogic Application Server is not available. This simplified version

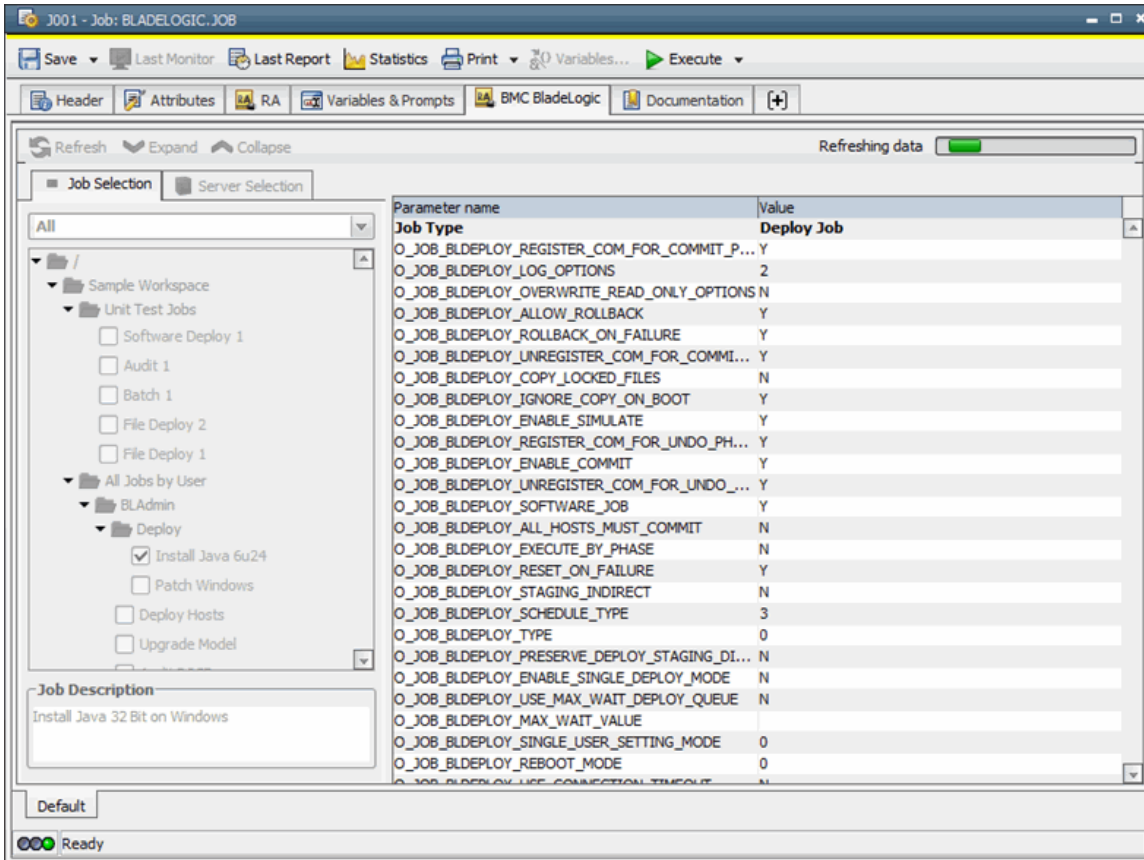
reflects all values that you would see on the standard version (See figures above) and any changes you make here will appear on the standard version as soon as the Rapid Automation BMC BladeLogic Agent is online again.



Setting	Description	Mandatory	Default
Job Name	Name of the BMC BladeLogic job that should be executed.	Yes	
Job Group	Full path of the job group in which the BMC BladeLogic job is stored.	Yes	
Job Type	Type of the BMC BladeLogic job. Select the job type from a list of common types, or select "Other" and type the identifier of the job type in the box that appears.	Yes	
Execute Against	Semicolon-separated list of servers that this job should be executed against. If no list is supplied, the default servers that are specified in the BMC BladeLogic job are used.	No	Default servers that are specified in the BMC BladeLogic job

Refreshing data

after changes in BMC BladeLogic. Upon initial start of the Rapid Automation BMC BladeLogic agent, the job and server data from the BMC BladeLogic Application Server are loaded into the internal cache of the agent. When changes are made to the configuration of the BMC BladeLogic Application Server, you need to manually load the changes into the cache of the Rapid Automation BMC BladeLogic agent. You load the changes by clicking the Refresh button in the job definition panel. A progress bar appears and displays until the refresh is complete.



Note: Anyone who connects to the Rapid Automation BMC BladeLogic during the refresh process will see the refresh progress bar and, when the refresh is complete, will also see the new job and server data. However, users who have the Job Selection panel open when another user starts a refresh will not be notified of changed data and will have to close and reopen the panel to see the refreshed data.

Rapid Automation BMC BladeLogic Agent Reports

The Rapid Automation BMC BladeLogic Agent produces several reports that describe the results from the jobs that it has executed.

These include two common reports that print for every job type:

- A generic report
- A log message report

In addition, for certain job types the BMC BladeLogic produces reports that contain information related to the job execution:

- Audit report
- Batch report
- Compliance report
- Deploy report

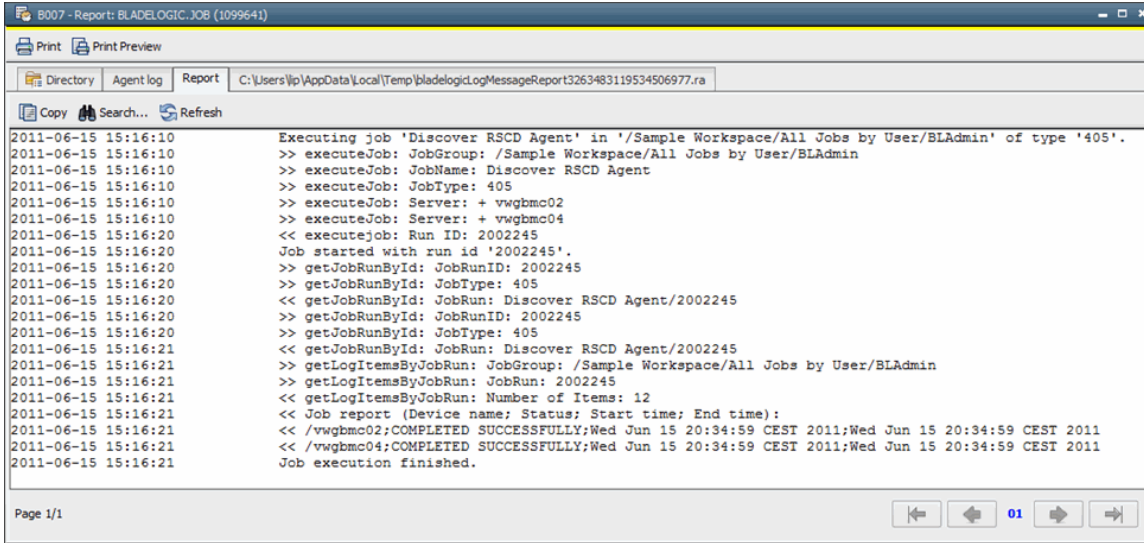
A brief description and sample of all of the reports follows. However, for detailed information concerning the content of the additional reports, see the BMC BladeLogic Server Automation User Guide and related BMC BladeLogic documents.

Generic Report

For each UC4 job that is successfully executed, a generic report that contains the following information is produced:

- Each action that was invoked on the BMC BladeLogic Application Server using its API
- The values of the action's parameters
- The return values of the invoked actions
- A final summary about the status of the execution for each server, consisting of the following:
 - The host name
 - The status (COMPLETED SUCCESSFULLY, COMPLETED WITH ERRORS)
 - The start time of the BMC BladeLogic job on the server
 - The end time of the BMC BladeLogic job on the server

A sample generic report for a BMC BladeLogic Component Discovery Job:

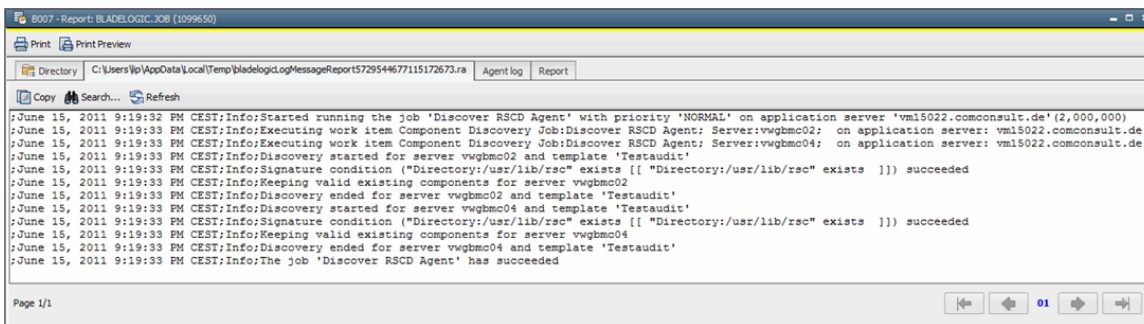


Log Message Report

For each BMC BladeLogic job run, log messages are extracted. These messages are printed on a comma-separated report that contains the following fields:

- Affected server, for generic messages, this field is left blank
- Timestamp of message
- Log Level (Error, Warning or Info)
- Message

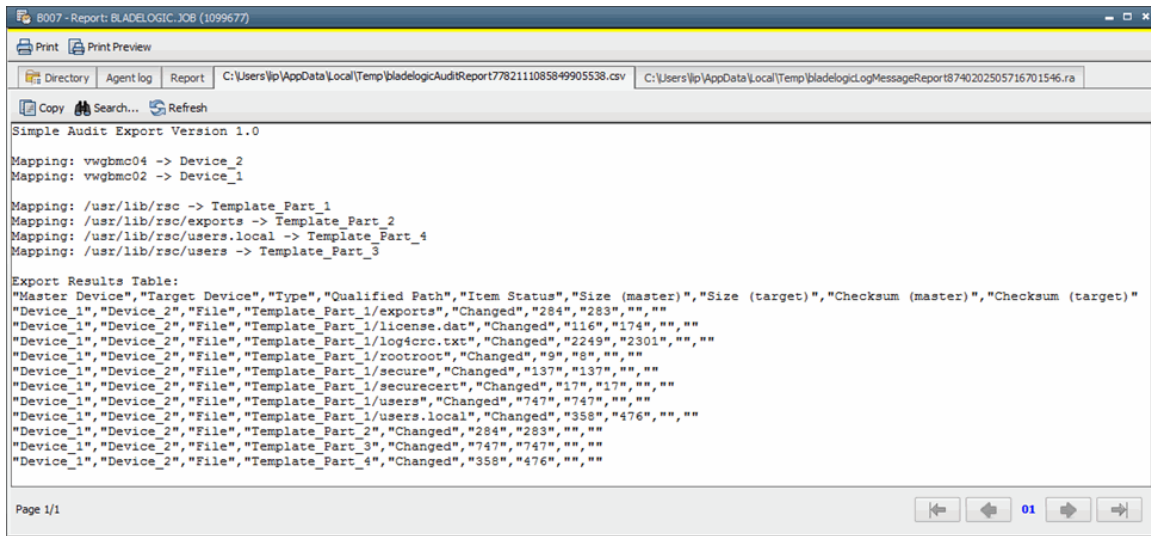
These messages are first sorted by the affected server, starting with generic messages and then sorted by the corresponding timestamp. A sample Log Message Report for a BMC BladeLogic Component Discovery Job is shown in the figure below:



Audit Report

The Audit Report contains information concerning the comparison result of servers and snapshots towards a reference configuration. The discrepancies between the specified devices are listed for each item in the monitoring set.

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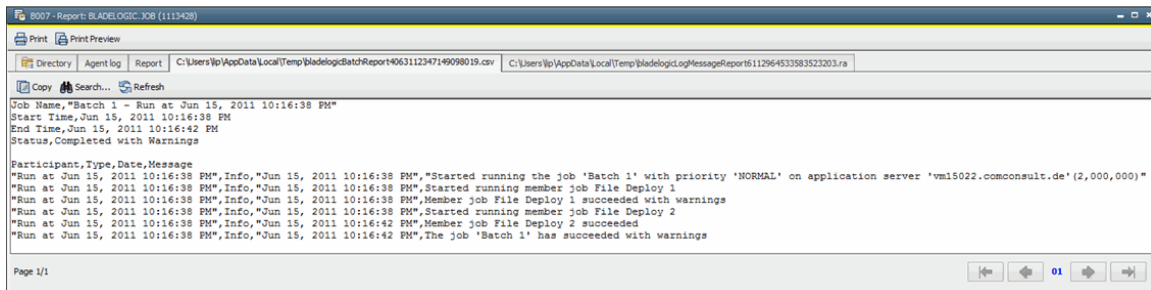


```
Simple Audit Export Version 1.0
Mapping: vvgbmc04 -> Device_2
Mapping: vvgbmc02 -> Device_1
Mapping: /usr/lib/rsc -> Template_Part_1
Mapping: /usr/lib/rsc/exports -> Template_Part_2
Mapping: /usr/lib/rsc/users.local -> Template_Part_4
Mapping: /usr/lib/rsc/users -> Template_Part_3

Export Results Table:
"Master Device","Target Device","Type","Qualified Path","Item Status","Size (master)","Size (target)","Checksum (master)","Checksum (target)"
"Device_1","Device_2","File","Template_Part_1/exports","Changed","284","283","",""
"Device_1","Device_2","File","Template_Part_1/license.dat","Changed","116","174","",""
"Device_1","Device_2","File","Template_Part_1/log4jrc.txt","Changed","2249","2301","",""
"Device_1","Device_2","File","Template_Part_1/rootroot","Changed","9","8","",""
"Device_1","Device_2","File","Template_Part_1/secure","Changed","137","137","",""
"Device_1","Device_2","File","Template_Part_1/securecert","Changed","17","17","",""
"Device_1","Device_2","File","Template_Part_1/users","Changed","747","747","",""
"Device_1","Device_2","File","Template_Part_1/users.local","Changed","358","476","",""
"Device_1","Device_2","File","Template_Part_2","Changed","284","283","",""
"Device_1","Device_2","File","Template_Part_3","Changed","747","747","",""
"Device_1","Device_2","File","Template_Part_4","Changed","358","476","",""
```

Batch Report

The Batch Report contains information of a concatenated set of other jobs. For each contained job, its result and any informational messages are printed.

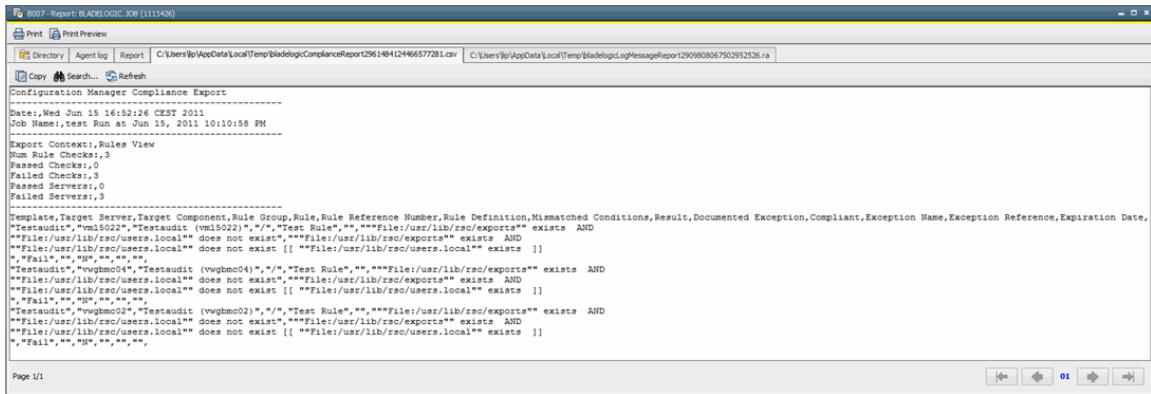
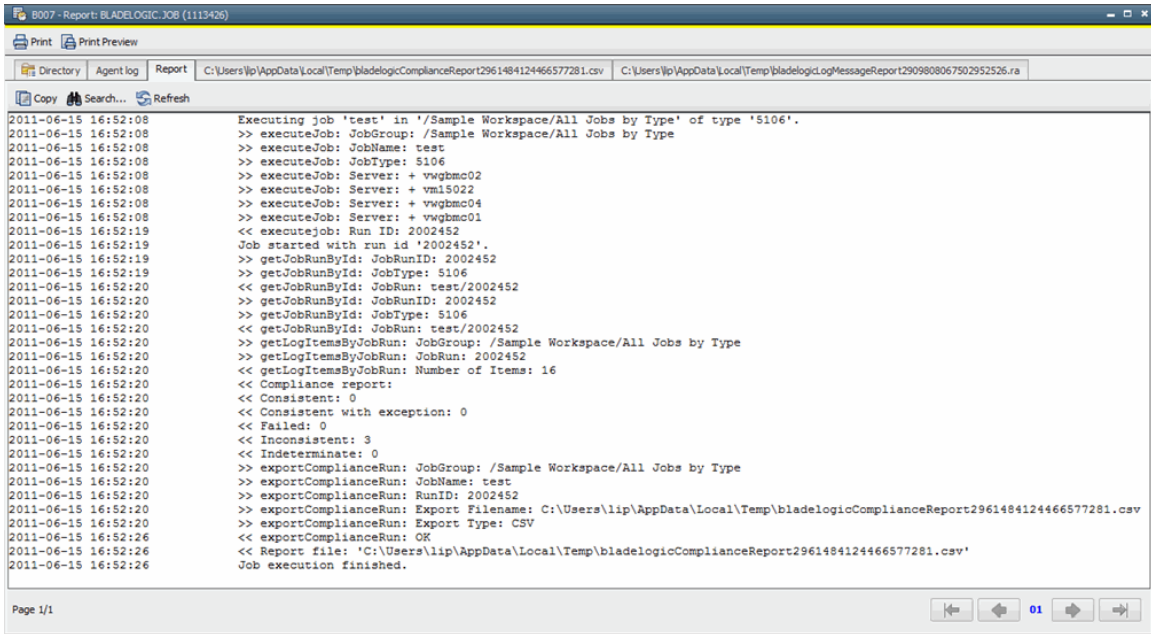


```
Job Name,"Batch 1 - Run at Jun 15, 2011 10:16:38 PM"
Start Time,Jun 15, 2011 10:16:38 PM
End Time,Jun 15, 2011 10:16:42 PM
Status,Completed with Warnings

Participant,Type,Date,Message
"Run at Jun 15, 2011 10:16:38 PM",Info,"Jun 15, 2011 10:16:38 PM","Started running the job 'Batch 1' with priority 'NORMAL' on application server 'vm15022.comconsult.de' (2,000,000)"
"Run at Jun 15, 2011 10:16:38 PM",Info,"Jun 15, 2011 10:16:38 PM","Started running member job File Deploy 1"
"Run at Jun 15, 2011 10:16:38 PM",Info,"Jun 15, 2011 10:16:38 PM","Member job File Deploy 1 succeeded with warnings"
"Run at Jun 15, 2011 10:16:38 PM",Info,"Jun 15, 2011 10:16:38 PM","Started running member job File Deploy 2"
"Run at Jun 15, 2011 10:16:38 PM",Info,"Jun 15, 2011 10:16:42 PM","Member job File Deploy 2 succeeded"
"Run at Jun 15, 2011 10:16:38 PM",Info,"Jun 15, 2011 10:16:42 PM","The job 'Batch 1' has succeeded with warnings"
```

Compliance Report

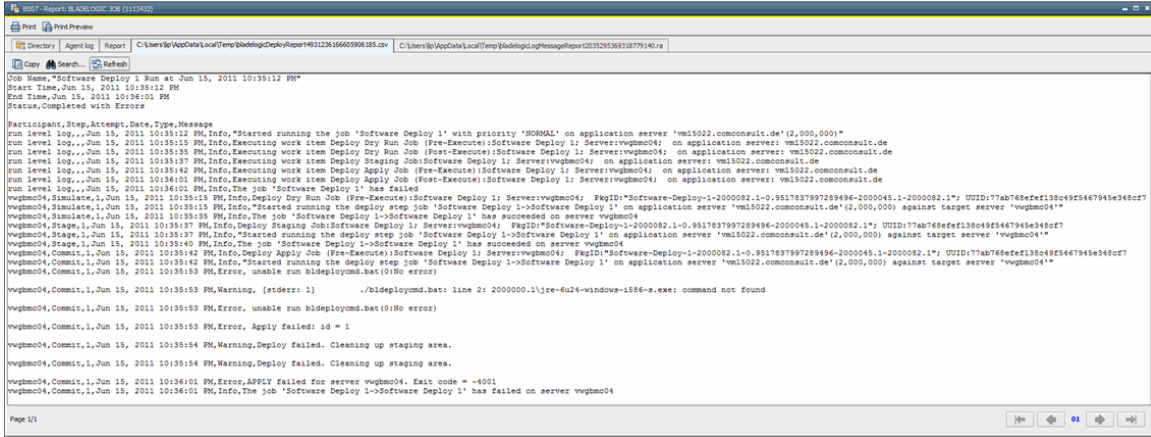
The Compliance Report contains comparison results. The required part and property conditions of the compliance rules are compared with the component's compliance parts. The report lists how many compliance rules have failed, are inconsistent and have executed successfully.



Deploy Report

For BMC BladeLogic Deploy jobs (Software Deploy Jobs, File Deploy Jobs and BLPackage Jobs), an additional report contains information about the installation and deployment status. Any errors which occur during the remote installation phase are included as well as successful installation of packages and components on the target servers.

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```
8007 - Report: BLADELOGIC_KB (1112432)
Print Preview
C:\Users\Bj\AppData\Local\Temp\bladelog\DeployReport\91123616605906185.cvx
C:\Users\Bj\AppData\Local\Temp\bladelog\log\message\Report\203325369318779140.r

Job Name: "Software Deploy 1 Run at Jun 15, 2011 10:35:12 PM"
Start Time: Jun 15, 2011 10:35:12 PM
End Time: Jun 15, 2011 10:36:01 PM
Status: Completed with Errors

Participant, Step, Attempt, Date, Type, Message
run_level_log,,,Jun 15, 2011 10:35:12 PM,Info,"Started running the job 'Software Deploy 1' with priority 'NORMAL' on application server 'vm15022.comconsult.de'(2,000,000)"
run_level_log,,,Jun 15, 2011 10:35:15 PM,Info,Executing work item Deploy Dry Run Job (Pre-Execute):Software Deploy 1; Server:vwgmc04; on application server: vm15022.comconsult.de
run_level_log,,,Jun 15, 2011 10:35:15 PM,Info,Executing work item Deploy Dry Run Job (Post-Execute):Software Deploy 1; Server:vwgmc04; on application server: vm15022.comconsult.de
run_level_log,,,Jun 15, 2011 10:35:17 PM,Info,Executing work item Deploy Staging Job:Software Deploy 1; Server:vwgmc04; on application server: vm15022.comconsult.de
run_level_log,,,Jun 15, 2011 10:35:17 PM,Info,Executing work item Deploy Apply Job (Pre-Execute):Software Deploy 1; Server:vwgmc04; on application server: vm15022.comconsult.de
run_level_log,,,Jun 15, 2011 10:35:17 PM,Info,Executing work item Deploy Apply Job (Post-Execute):Software Deploy 1; Server:vwgmc04; on application server: vm15022.comconsult.de
run_level_log,,,Jun 15, 2011 10:36:01 PM,Info,The job 'Software Deploy 1' has failed
vwgmc04,Simulate,1,Jun 15, 2011 10:35:15 PM,Info,Deploy Dry Run Job (Pre-Execute):Software Deploy 1; Server:vwgmc04; PkgID:"Software-Deploy-1-2000082.1-0.951783797289496-2000045.1-2000082.1"; UUID:77ab768efef138c4925647945e348cf7
vwgmc04,Simulate,1,Jun 15, 2011 10:35:15 PM,Info,"Started running the deploy step job 'Software Deploy 1->Software Deploy 1' on application server 'vm15022.comconsult.de'(2,000,000) against target server 'vwgmc04'"
vwgmc04,Simulate,1,Jun 15, 2011 10:35:15 PM,Info,The job 'Software Deploy 1->Software Deploy 1' has succeeded on server vwgmc04
vwgmc04,Stage,1,Jun 15, 2011 10:35:17 PM,Info,Deploy Staging Job:Software Deploy 1; Server:vwgmc04; PkgID:"Software-Deploy-1-2000082.1-0.951783797289496-2000045.1-2000082.1"; UUID:77ab768efef138c4925647945e348cf7
vwgmc04,Stage,1,Jun 15, 2011 10:35:17 PM,Info,"Started running the deploy step job 'Software Deploy 1->Software Deploy 1' on application server 'vm15022.comconsult.de'(2,000,000) against target server 'vwgmc04'"
vwgmc04,Stage,1,Jun 15, 2011 10:35:40 PM,Info,The job 'Software Deploy 1->Software Deploy 1' has succeeded on server vwgmc04
vwgmc04,Commit,1,Jun 15, 2011 10:35:42 PM,Info,Deploy Apply Job (Pre-Execute):Software Deploy 1; Server:vwgmc04; PkgID:"Software-Deploy-1-2000082.1-0.951783797289496-2000045.1-2000082.1"; UUID:77ab768efef138c4925647945e348cf7
vwgmc04,Commit,1,Jun 15, 2011 10:35:42 PM,Info,"Started running the deploy step job 'Software Deploy 1->Software Deploy 1' on application server 'vm15022.comconsult.de'(2,000,000) against target server 'vwgmc04'"
vwgmc04,Commit,1,Jun 15, 2011 10:35:53 PM,Error, unable run bldeploycmd.bat(0/No error)
vwgmc04,Commit,1,Jun 15, 2011 10:35:53 PM,Warning, [stderr: ] /bldeploycmd.bat: line 2: 2000000.1\jre-6u24-windows-156-a.exe: command not found
vwgmc04,Commit,1,Jun 15, 2011 10:35:53 PM,Error, unable run bldeploycmd.bat(0/No error)
vwgmc04,Commit,1,Jun 15, 2011 10:35:53 PM,Error, Apply failed: id = 1
vwgmc04,Commit,1,Jun 15, 2011 10:35:54 PM,Warning,Deploy failed. Cleaning up staging area.
vwgmc04,Commit,1,Jun 15, 2011 10:35:54 PM,Warning,Deploy failed. Cleaning up staging area.
vwgmc04,Commit,1,Jun 15, 2011 10:36:01 PM,Error,APPLY failed for server vwgmc04. Exit code = -6001
vwgmc04,Commit,1,Jun 15, 2011 10:36:01 PM,Info,The job 'Software Deploy 1->Software Deploy 1' has failed on server vwgmc04

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```