Cisco Tidal Enterprise Scheduler JD Edwards Adapter Guide

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Cisco Tidal Enterprise Scheduler JD Edwards Adapter Guide

Preface

This guide describes the installation, configuration, and usage of the JD Edwards Adapter with Cisco Tidal Enterprise Scheduler (TES).

Audience

This guide is for administrators who install and configure the JD Edwards adapter for use with TES, and who troubleshoot TES installation and requirements issues.

Related Documentation

See the *Cisco Tidal Enterprise Scheduler Documentation Overview* for your release on cisco.com at:

http://www.cisco.com/c/en/us/support/cloud-systems-management/tidal-enterprise-scheduler/products-documentation-roadmaps-list.html

...for a list of all TES guides.

Note We sometimes update the documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see What's New in Cisco Product Documentation at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html.

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Document Change History

The table below provides the revision history for the *Cisco Tidal Enterprise Scheduler JD Edwards Adapter Guide*.

Version Number	Issue Date	Reason for Change
6.0.1	January 2011	• New release.
6.1.0	October 2012	• New release.
6.2.1	June 2014	• Available in online Help only.
6.2.1 SP2	June 2015	• Configuration provided in the TES Installation Guide; usage provided in online Help only.
6.2.1 SP3	February 2016	• Consolidated all JD Edwards Adapter documentation into one document.

Introducing the JD Edwards Adapter

This chapter provides an overview of the JD Edwards Adapter and its requirements:

- Overview
- Requirements

Overview

The Tidal Enterprise Scheduler JD Edwards Adapter facilitates the automation and scheduling of JD Edwards as part of cross-platform, cross-application enterprise process orchestration. The JD Edwards Adapter:

- Uses the same user interface approach as other types of jobs and provides seamless integration of Universal Batch Engine (UBE) management into existing operational processes.
- Provides integrated security management features with the Enterprise Scheduler that can be applied to JD Edwards connections and jobs, ensuring secure management and use of required security credentials.

You can use the JD Edwards Adapter to add complex scheduling functions to an existing JD Edwards solution from a centralized console. You can schedule, launch, monitor, and control JD Edwards Universal Batch Engine (UBE) programs, which are used to execute JD Edwards defined processes. The JD Edwards adapter also provides easy to use access for connectivity setup, job definition, and monitoring.

The JD Edwards Adapter includes the following features:

- JD Edwards connection management to monitor system status with a live connection to the Enterprise Server.
- JD Edwards job management to do the following:
  - Schedule and monitor JD Edwards UBEs from a centralized work console with Scheduler.
  - Specify parameter overrides for data selection and processing options used for job execution.
  - Print, save, and delete report output.
  - Associate defined dependencies and events with Scheduler for scheduling control.
  - Provide job execution control including terminating, holding, and releasing scheduled UBEs.

Requirements

The requirements for the JD Edwards Adapter are as follows:

- Tidal Enterprise Scheduler 6.0.1 or later is required.
- EnterpriseOne Application Release 8.12+ with JD Edwards tools 8.96+
- Cisco Tidal Enterprise Scheduler Adapters require Java 7.

Note See the *Cisco TES Compatibility Guide* for specific versions.

- The *JDE.INI* configuration file on the Enterprise Server must be reviewed and changed, if necessary, to start *jdenet* kernel processes for the XML Dispatcher as described below.

To configure the JDE.INI configuration file on the Enterprise Server:

Step 1 Review and modify the JDE.INI configuration as appropriate for your operating system:

LINUX/SOLARIS/AIX/HPUX

```
[JDENET_KERNEL_DEF16]
krnlName=XML LIST KERNEL
dispatchDLLName=libxmllist.so (.sl for HPUX)
dispatchDLLFunction=XMLListDispatch
maxNumberOfProcesses=1
numberOfAutoStartProcesses=0

[JDENET_KERNEL_DEF22]
krnlName=XML DISPATCH KERNEL
dispatchDLLName=libxmldispatch.so (.sl for HPUX)
dispatchDLLFunction=JDEK_XMLDispatch
maxNumberOfProcesses=6
numberOfAutoStartProcesses=1
```

WINDOWS

```
[JDENET_KERNEL_DEF16]
krnlName=XML List Kernel
dispatchDLLName=xmllist.dll
dispatchDLLFunction=_XMLListDispatch@28
maxNumberOfProcesses=1
numberOfAutoStartProcesses=0

[JDENET_KERNEL_DEF22]
krnlName=XML DISPATCH KERNEL
dispatchDLLName=xmldispatch.dll
dispatchDLLFunction=_XMLDispatch@28
maxNumberOfProcesses=6
numberOfAutoStartProcesses=1
```

AS400

```
[JDENET_KERNEL_DEF16]
krnlName=XML LIST KERNEL
dispatchDLLName=XMLLIST
dispatchDLLFunction=XMLListDispatch
maxNumberOfProcesses=3
```

```
beginningMsgTypeRange=5257
endingMsgTypeRange=5512
newProcessThresholdRequest=0
numberOfAutoStartProcesses=1

[JDENET_KERNEL_DEF22]
krnlName=XML DISPATCH KERNEL
dispatchDLLName=XMLDSPATCH
dispatchDLLFunction=XMLDispatch
maxNumberOfProcesses=6
numberOfAutoStartProcesses=1
```

The `maxNumberOfProcesses` setting provides 6 kernel processes for handling the JDE adapter requests. This number can be tuned up or down depending on the level of activity from the adapter.

The `numberOfAutoStartProcesses` should be set to a value greater than zero so that a kernel process is available to handle adapter requests.

Step 2 If the list, call method and/or ube request types have not been defined in the [XMLLookupInfo] section, add them as shown in the following example:

```
XMLRequestType1=list
XMLKernelMessageRange1=5257
XMLKernelHostName1=local
XMLKernelPort1=0

XMLRequestType2=callmethod
XMLKernelMessageRange2=920
XMLKernelHostName2=local
XMLKernelPort2=0

XMLRequestType7=ube
XMLKernelMessageRange7=380
XMLKernelHostName7=local
XMLKernelPort7=0
XMLKernelReply7=1
```

Step 3 If you make any changes, restart the Enterprise Server.

Configuring the JD Edwards Adapter

Overview

The JD Edwards Adapter software is installed as part of a standard installation of Enterprise Scheduler.

However, you must perform the following steps to license and configure the adapter before you can schedule and run JD Edwards jobs:

- Licensing the JD Edwards Adapter – Apply the license to the JD Edwards Adapter. You cannot define a JD Edwards connection until you have applied the JD Edwards license from Tidal Software.
- Configuring the JD Edwards Adapter – Configure the JDE API (before startup!), debug options, and the HTTPS protocol for the JD Edwards Adapter.
- Securing the JD Edwards Adapter – Define JD Edwards users that the adapter can use to establish authenticated sessions with the JD Edwards server and permit requests to be made on behalf of the authenticated account.
- Defining a JD Edwards Adapter Connection – Define a JD Edwards connection so the master can communicate with the JD Edwards server.

These topics are covered in this chapter.

Licensing the JD Edwards Adapter

Each Enterprise Scheduler connection to a JD Edwards server is licensed as an adapter. You cannot create a JD Edwards connection until you apply the JD Edwards license file. If you purchase the JD Edwards Adapter after the original installation of Enterprise Scheduler, you will receive a new license file authorizing the use of the adapter.

The **License Registration** dialog displays when you click **Register License** on the **License Information** dialog.

To license the JD Edwards Adapter with a full license:

Step 1 Stop the master:

Windows:

a. Click **Start** and select **Programs>TIDAL Software>Scheduler>Master>Service Control Manager**.

b. Verify that the master is displayed in the **Service** list and click **Stop** .

Unix:

Enter **tesm stop**.

Step 2 Rename your license file to *master.lic*.

Step 3 Save and place the file in the **C:\Program File\TIDAL\Scheduler\Master\config** directory.

Step 4 Restart the master:

Windows:

Click **Start** in the Service Control Manager.

Unix:

Enter **tesm start**.

The master will read and apply the license when it starts.

Configuring the JD Edwards Adapter

After installation, there are configuration tasks that you might want to perform before using the JD Edwards adapter:

- Configuring the JDE API Before Startup (Recommended), page 2-10
- Configuring Debug Options for the JD Edwards Adapter, page 2-11
- Configuring the HTTPS Protocol for the JD Edwards Adapter, page 2-15
- Configuring service.props for the JD Edwards Adapter, page 2-18

Configuring the JDE API Before Startup (Recommended)

Prior to using the JD Edwards adapter, TES requires that some specific files on the JDE Server be copied to the TES Master installation directory and configured in the CLASSPATH. Without this configuration, there are two errors that might occur at Master/adapter startup time:

- **Unable to find the configure file jdelog.properties**

  (printed in the JDEdwards.out file from the JDE API jar Base_JAR.jar)

- **Unable to find class loader, JMXMP connection may not work**

  (logged from JDE API ManagementAgent_JAR.jar)

You can prevent getting these errors at startup time by configuring the JD Edwards adapter prior to startup as described below.

To configure the JD Edwards API prior to startup

Step 1 Login to the JDE server.

Step 2 Navigate to C:\JDEdwards\E900\DDP\system\classes.

Step 3 Copy the files **jdelog.properties** and **jmxremote_optional.jar** to your local directory (for example: c:\temp\) where TES Master is installed.

Step 4 Login to the system where the Master is installed.

Step 5 Set the CLASSPATH for your machine type:

- For Windows, change the CLASSPATH in environment variables to point jdelog.properties and jmxremote_optional.jar files. Your class path should look like this:

  ```
  %CLASSPATH%;C:\temp\;C:\temp\jmxremote_optional.jar;
  ```

  where C:\temp is the location of the files you copied in step 3.

- For Linux, use this command to set the CLASSPATH:

  ```
  export CLASSPATH=$CLASSPATH:/opt/JDE:/opt/JDE/jmxremote_optional.jar
  ```

Step 6 Restart the TES Master.

Step 7 To validate that the configuration worked, check for the **Unable to find the configure file jdelog.properties** error in the log file JDEdwardsService.out.

Note Please let Cisco technical support know if you get errors at startup after performing this configuration.

Configuring Debug Options for the JD Edwards Adapter

When defining a connection or a job using the JD Edwards adapter, the options below can be used to assist in debugging:

- Connection Definition Debug Options, page 2-11
- Job Definition Debug Options, page 2-13

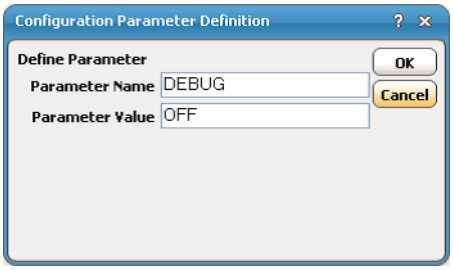
Connection Definition Debug Options

Two JDE Connection definition tabs can be used to configure debugging:

- Options
- Overrides

JDE Connection Definition/Options Tab

DEBUG – This parameter needs to be added to the connection definition Options tab. It turns the debugging function on or off. When set to ON, diagnostic data is added to the adapter log and job output. You may be asked to turn this option on when working with Technical Support to investigate an issue.

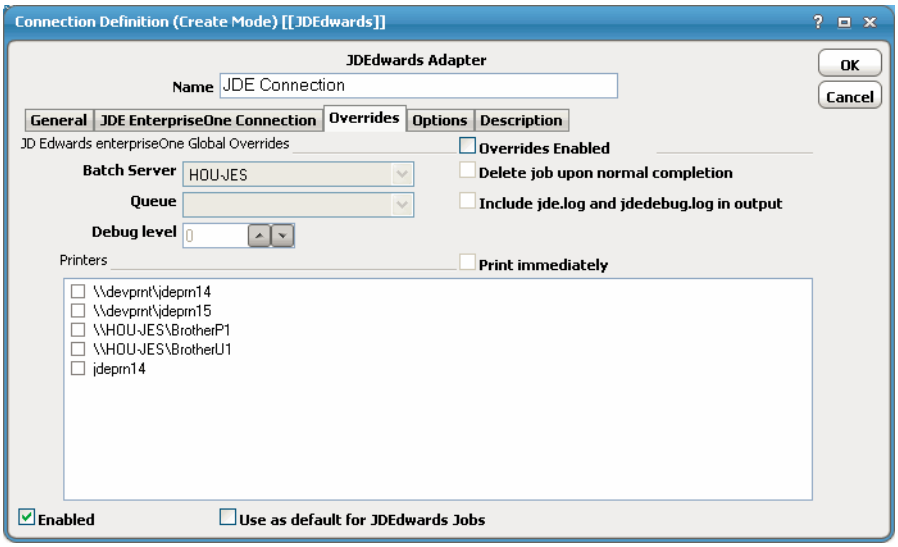


JDE Connection Definition/Overrides Tab

To select and set the following two values, the **Overrides Enabled** check box needs to be checked.

Include jde.log and jdedebug.log in output – Optionally select this check box to include the text from both the log and debug log for the UBE process.

Debug level – Select the up arrow button or down arrow button to set the debug level. Valid values are 0 to 6, 6 being the highest.



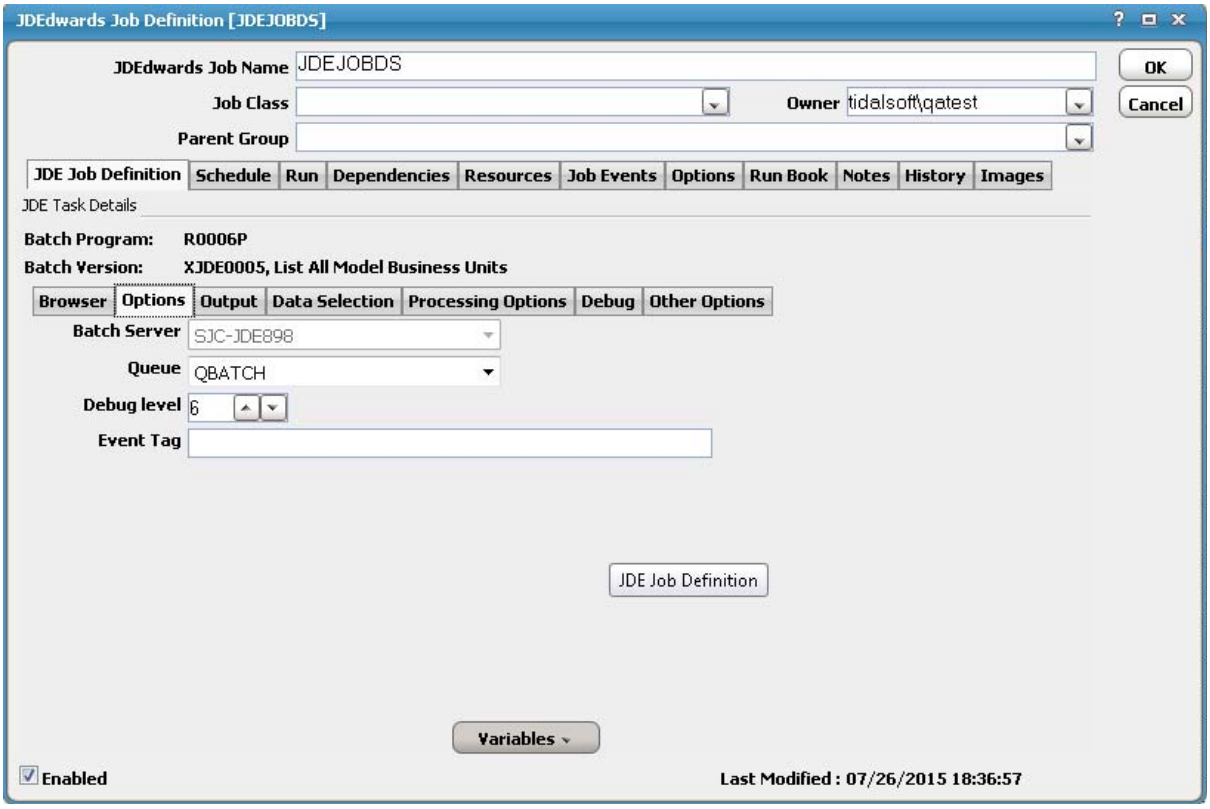
Job Definition Debug Options

Three JDE Job Definition tabs can be used to configure debugging:

- Options
- Output
- Debug

JDE Job Definition/Options Tab

Debug level – Click the up or down arrow buttons to set the UBE debug level. Valid values are 0 to 6, 6 being the highest.

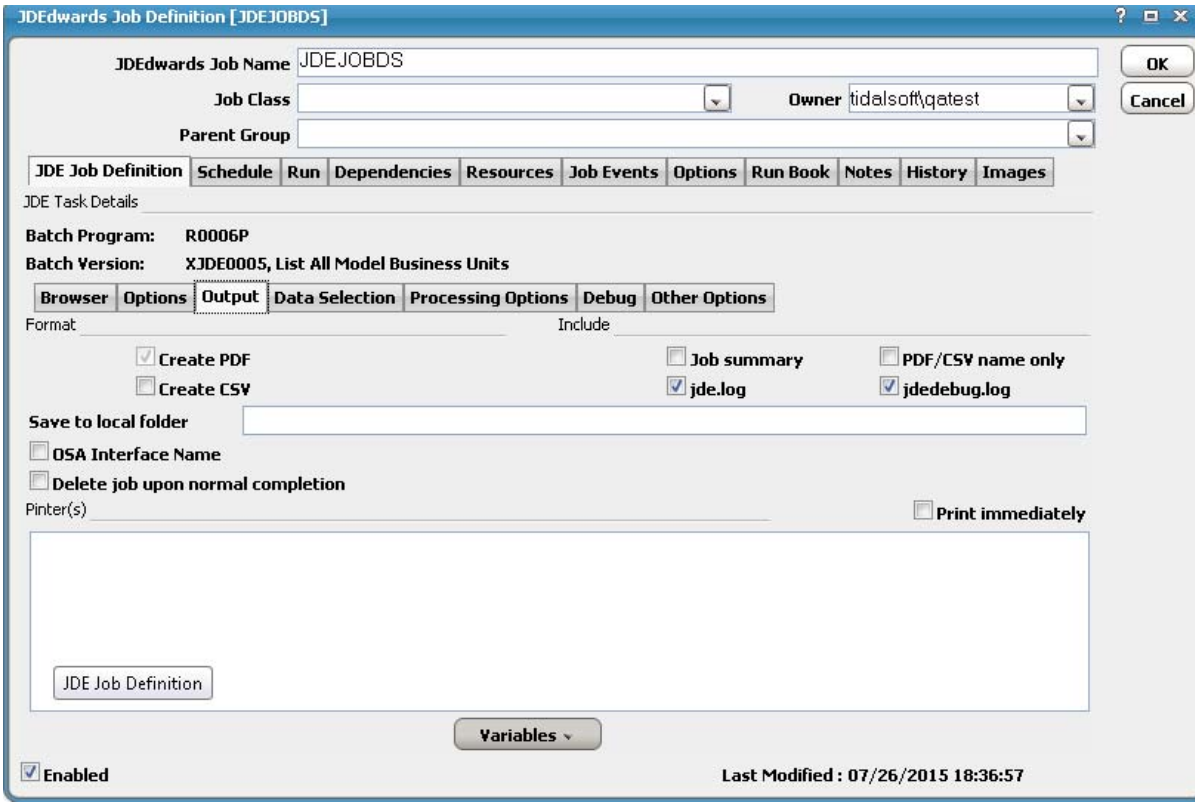


JDE Job Definition/Output Tab

The jde.log and jdedebug.log can be enabled in job definition screen also. To include the logs, the connection must be setup with a UNC and/or FTP path so that adapter can access these files.

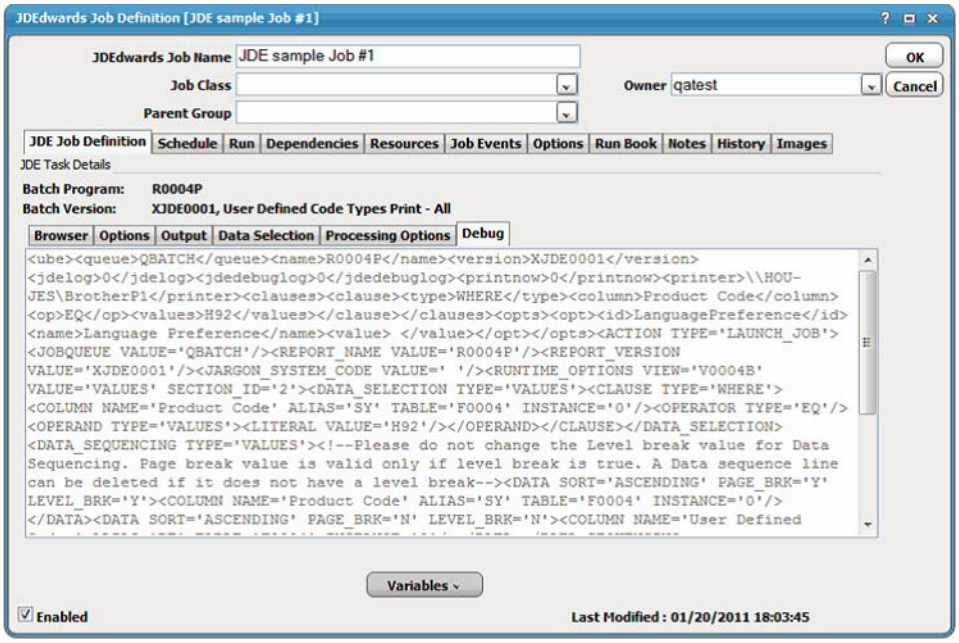
If the jde.log and jdedebug.log is enabled in connection or job definition then the logs would be included in the output summary along with the job output in JAC.

If the **Overrides Enabled** check box is checked in the connection definition, then the connection level value takes precedence.



JDE Job Definition/Debug Tab

If the DEBUG parameter is set to ON in the JDE Connection Definition (see JDE Connection Definition/Options Tab, page 2-11), the job definition debug tab shows the data of UBE in XML format. This page is typically used by Technical Support to assist with problem resolution.



Configuring the HTTPS Protocol for the JD Edwards Adapter

It is recommended that JD Edwards Web servers be configured to use SSL via the HTTPS protocol for Data Services/Data Integrator. If your environment is configured to use HTTP, you can skip this section.

For complete instructions on configuring JD Edwards servers to use the HTTP or HTTPS protocol, refer to the JD Edwards documentation that ships with the product.

Obtain Security Certificates

From a Windows desktop, you can obtain a security certificates for each target JD Edwards server using the Microsoft Internet Explorer Certificate Cache.

Note Although other procedures are available for obtaining the required certificates, the procedure below can be performed from your Windows desktop.

Note You need to carry out the following instructions only if your server certificate is generated in-house (that is, self-signed) or if your server certificate is signed by a Certification Authority that is not trusted by the version of Java you are using. Alternatively, if your adapter connection fails by reporting the error “unable to find valid certification path to requested target” you need to carry out the following instructions.

To obtain target JD Edwards server security certificates

Step 1 Open the Internet Explorer browser and navigate to the following dispatch URL (replacing the server name and port as it applies to your environment).

```
https://<adminHost:adminPort>/admin/servlet/webservices
```

where `adminHost` is where the Data Integrator Administrator is installed and `adminPort` is the port the Data Integrator Administrator is listening on.

A **Security Alert** message displays. If not, click on the lock icon that appears on the URL box.

Step 2 Click **View Certificate** to open the **Certificate** dialog.

Step 3 Click **Install Certificate**.

Step 4 On the **Certificate Import Wizard Welcome** panel, click **Next**.

Step 5 On the **Certificate Store** panel, use the default option **Automatically select the certificate store based on the type of certificate** and click **Next**.

Step 6 On the **Completing Certificate Import Wizard** panel, click **Finish**.

Step 7 If a **Security Warning** message displays informing you that you are about to install a certificate from a certification authority, click **Yes** to continue with the certificate installation.

A message stating *The import was successful* displays.

Step 8 Click **OK** to close the message and return to the **Certificate** dialog.

Step 9 Click **OK** on the **Certificate** dialog. You can close your browser now.

Step 10 Repeat the process for each JD Edwards server that you want to connect to with the JD Edwards Adapter.

Export Security Certificates

After you have obtained the security certificates for the target servers, you must export them from the Internet Explorer cache to a local directory.

To export the cached certificates to a local directory

Step 1 On the local computer, create the following directory for the certificates:

```
C:\JDE-Certs
```

Step 2 In Internet Explorer, select **Tools > Internet Options**.

Step 3 On the **Internet Options** dialog, select the **Content** tab.

Step 4 In the Certificates area, click **Certificates**.

Step 5 On the **Certificates** dialog, select the **Trusted Root Certification Authorities** tab to display the list of trusted certificates. This list should contain the certificates for the target servers that were obtained in the previous procedure (see “Obtain Security Certificates”).

Step 6 Scroll through the list of certificates to find the certificates.

Step 7 Perform the following procedure for each target server certificate:

a. Select the certificate and click **Export** to launch the Certificate Export Wizard.

b. On the **Welcome** panel, click **Next**.

c. On the **Export File Format** panel, use the default option DER encoded binary X.509 (.CER) and click **Next**.

d. On the **File To Export** panel, enter the complete path to the *JDE-Certs* directory and a unique name for the certificate:

```
C:\JDE-Certs\servername.cer
```

e. Click **Next**.

f. On the **Completing the Certificate Export Wizard** panel, click **Finish** to complete the export.

A message stating The export was successful displays.

g. Click **OK** to close the message box.

Step 8 After all target server certificates have been exported, click **Close** to exit the **Certificates** dialog.

Step 9 Click **OK** to close the **Internet Options** dialog.

Import Target Server Certificates Into a Java Keystore

You must now import the target server certificates into a local Java keystore.

Note These instructions assume that a JRE or JDK is in your system PATH.

To import certificates into a Java keystore

Step 1 Open a Windows **Command Prompt** window.

Step 2 Change to the directory where the certificates are stored by entering the following commands:

```
c:
cd \JDE-Certs
```

Step 3 Use the Java keytool utility to import a certificate. The following syntax is used:

```
keytool -import -file <certificate-filename> -alias <servername>-keystore
<your_trusted_keystore.keystore-filename>
```

For example:

```
C:\JDE-Certs>keytool -import -file sdkpubs01.crt -alias sdkpubs01 -keystore
BOXI.keystore
```

Step 4 When prompted to create a password for the keystore, enter a password at the prompt. The keystore utility displays the certificate information.

Step 5 At the **Trust this certificate? [no]** prompt, type **yes** and press **Enter**. The certificate is imported into the **<your_trusted_keystore>.keystore** keystore and the following message displays:

```
Certificate was added to keystore
```

Step 6 Repeat this procedure for each target server.

Step 7 Navigate to the following folder where the Enterprise Scheduler JD Edwards adapter is installed and create a new directory named **config**:

```
<install dir>\master\services\{88EBA24D-7B9A-4EAC-855B-F29D99CE37E9}\config
```

Step 8 Create a text file named *service.props* in the \config directory located under the Adapter's GUID directoryif it doesn't already exist.

Step 9 Open the *service.props* text file and add the following line:

```
Keystore=c:\\JDE-Certs\\<your_trusted_keystore>.keystore
```

(Note the use of escaped backslashes for Windows directories).

Configuring service.props for the JD Edwards Adapter

The **service.props** file is used to configure adapter behavior. **service.props** is located in the \config directory located under the Adapter's GUID directory, You can create both the directory and file if it does not yet exist. The table below lists some of the parameters that can be specified in service.props related to polling, output, and log gathering.

Property	Applicable Adapter(s)	Default	What it controls
CONN_SYNC	All	N	Setting this flag to Y allows synchronous connections without overloading the RDOnly Thread. If set to N, the adapter might stop trying to reconnect after an outage or downtime.
EnableDynamicPollingInterval	All	N	Use to avoid frequent polling on long-running jobs. When set to Y in service.props of a particular adapter, these properties are enabled: MinDynamicPollInterval—Minimum value should be 5 seconds. MaxDynamicPollIntervalInMin—Maximum value should be 5 minutes. PercentOfEstDuration—Default value is 5.
keystore	BusinessObjects, BusinessObjects BI, BusinessObjects DS, Cognos, JD Edwards, Oracle Applications, VMware, Web Services	<none>	Specify `keystore=c:\\<adapter_certificate_directory>\\<your_trusted_keystore>.keystore` when importing certificates into a Java keystore. See Import Target Server Certificates Into a Java Keystore.

Property	Applicable Adapter(s)	Default	What it controls
OUTPUT_SYNC	All	Y	Enables concurrent output gathering on a connection. To enable this feature, set the value to N in service.props of this adapter.
POLL_SYNC	All	Y	Enables concurrent polling on connections of the same type. This is helpful when there is a heavily load on one connection of an adapter. The heavily loaded connection will not affect the other adapter connection. To enable this feature, set the value to N in the service.props of this adapter.

Securing the JD Edwards Adapter

There are two types of users associated with the JD Edwards Adapter, **Runtime Users** and **Schedulers**. You maintain definitions for both types of users from the **Users** pane.

- Runtime Users

  Runtime users in the context of JD Edwards jobs represent those users and passwords required for authentication. JD Edwards operations require authentication against a valid JD Edwards user as defined by a JD Edwards administrator.

- Schedulers

  Schedulers are those users who will define and/or manage JD Edwards jobs. There are three aspects of a user profile that grant and/or limit access to scheduling jobs that affect JD Edwards:

  – Security policy that grants or denies add, edit, delete and view capabilities for JD Edwards jobs.

  – Authorized runtime user list that grants or denies access to specific authentication accounts for use with JD Edwards jobs.

  – Authorized agent list that grants or denies access to specific JD Edwards Adapter connections for use when defining JD Edwards jobs.

Defining Runtime Users

To define a runtime user:

Step 1 From the **Navigator** pane, expand the **Administration** node and select **Runtime Users** to display the defined users.

Step 2 Right-click **Runtime Users** and select **Add Runtime User** from the context menu (*Insert* mode). You can also right-click to select an existing user in the Users pane and select **Edit Runtime Users** from the shortcut menu (*Edit* mode).

The **User Definition** dialog displays.

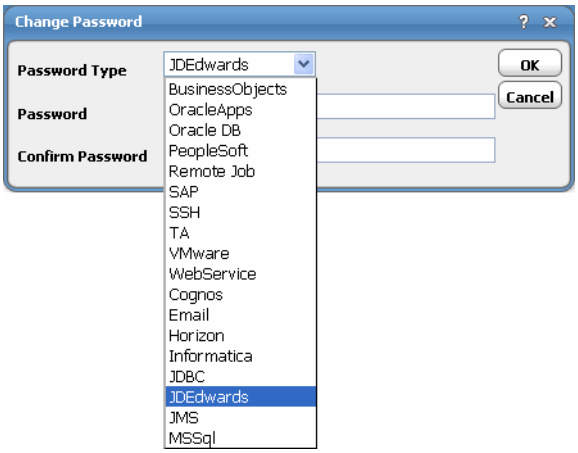
Step 3 If this is a new user definition, enter the new user name in the **User/Group Name** field.

Step 4 For documentation, enter the Full Name or description associated with this user.

Step 5 In the **Domain** field, select a Windows domain associated with the user account required for authentication, if necessary.

Step 6 To define this user as a runtime user for JD Edwards jobs, click **Add** on the **Passwords** tab.

The **Change Password** dialog displays.



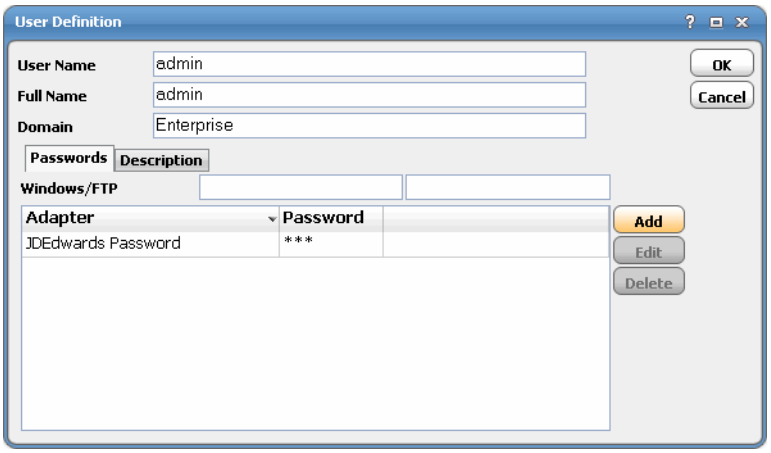
Step 7 Select **JDEdwards** from the **Password Type** list.

Step 8 Enter a password (along with confirmation) in the **Password/Confirm Password** fields.

Only those users with a password specified for JD Edwards will be available for use with JD Edwards jobs. If you want the Scheduler to use FTP to get JDE log and debug log files or save local copies of PDF output, you will also need to provide an FTP password in the row for Windows/FTP Password. You can also create a separate runtime user definition for use with the FTP function. See the **Use FTP** option on the **Options** tab of the **JDE Adapter Connection Definition** dialog in Step 17 on page 26.

The password cannot be blank.

Step 9 Click **OK** to return to the **User Definition** dialog.



The new password record displays on the **Passwords** tab.

Step 10 Click **OK** to add or save the user record in the Enterprise Scheduler database.

Note For more information about the **User Definition** dialog, see the "Users" chapter in your *Tidal Enterprise Scheduler User Guide.*

Authorizing Schedulers to Work With JD Edwards Jobs

Access to the JD Edwards scheduling environment is controlled by assigning JD Edwards functions in a security policy. The scheduling administrator should create a new security policy or edit an existing policy in Enterprise Scheduler as described in the "Users" chapter of the *User Guide*, that in addition to the normal user privileges, includes the capability to add and/or edit JD Edwards jobs. A user whose assigned security policy does not include JD Edwards privileges cannot create and/or run JD Edwards jobs.

To grant JD Edwards access privileges:

Step 1 In the **Navigator** pane, select **Security Policies** to display the **Security Policies** pane.

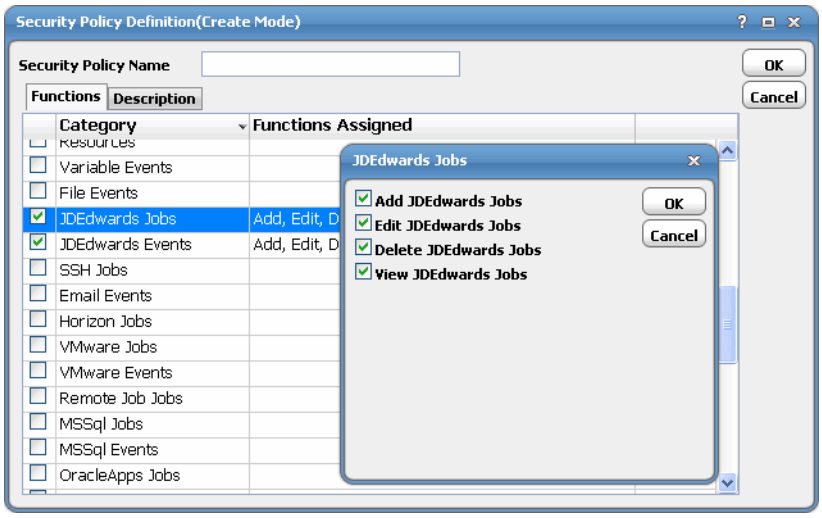
Step 2 Select a security policy for the JD Edwards job privileges and double-click on it to display its **Security Policy Definition** dialog.

Step 3 In the **Security Policy Name** field, enter a name for the policy.

Step 4 On the **Functions** page, scroll down the list of function categories and double-click on the **JDEdwards Jobs** category to display the available functions.

Step 5 Double-click the category row to display the **JDEdwards Jobs** dialog and select the desired job privileges then click **OK**.

A check mark appears next to the **JDEdwards Jobs** function category indicating that one or more functions are selected within the category.



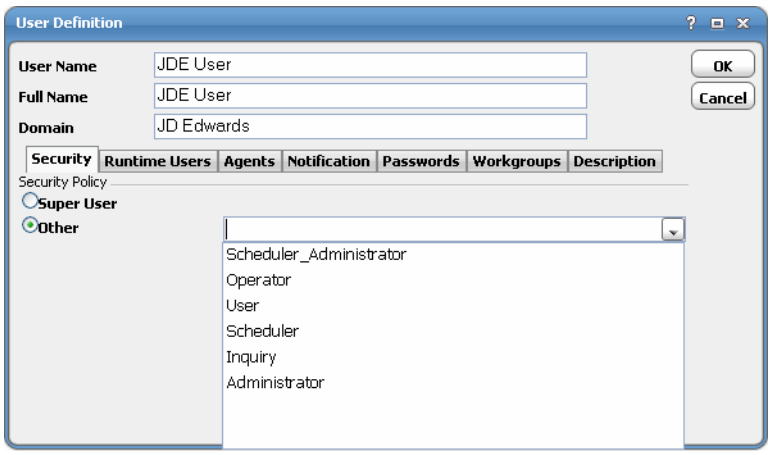
If needed, different security policies with varying authorized functions can be created to provide different levels of access for a variety of users.

To define a Scheduler user to work with JD Edwards jobs:

Step 1 From the **Navigator** pane, expand the **Administration** node and select **Interactive Users** to display the defined users.

Step 2 Right-click **Interactive Users** and select **Add Interactive User** from the context menu (*Insert* mode). You can also right-click a user in the **Interactive Users** pane and select **Edit Interactive User** from the shortcut menu (*Edit* mode).

The **User Definition** dialog displays.



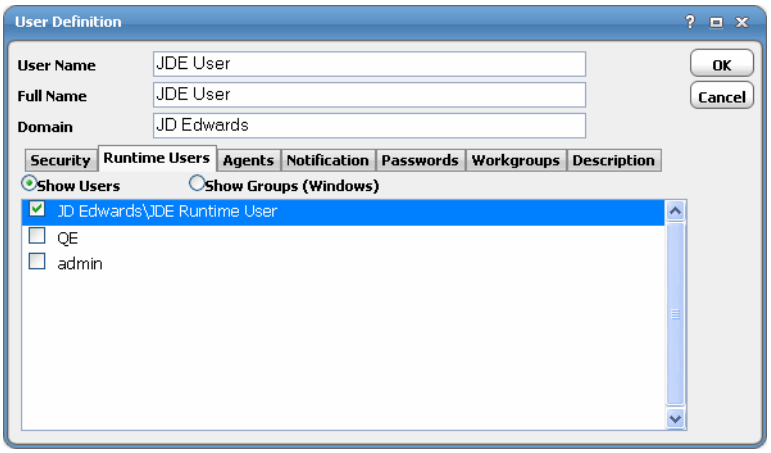
Step 3 If this is a new user definition, enter the new user name in the **User/Group Name** field.

Step 4 For documentation, enter the **Full Name** or description associated with this user.

Step 5 In the **Domain** field, select a Windows domain associated with the user account required for authentication, if necessary.

Step 6 On the **Security** page, select the **Other** option and then select the security policy that includes authorization for JD Edwards jobs.

Step 7 Click the **Runtime Users** tab.



Step 8 Select the JD Edwards users that this scheduling user may use for JD Edwards authentication in JD Edwards jobs.

Step 9 Click the **Agents** tab.

Step 10 Click the check boxes for the JD Edwards connections that this scheduling user can access when scheduling jobs.

Step 11 Click **OK** to save the user definition.

Defining a JD Edwards Adapter Connection

You must create one or more JD Edwards connections before Enterprise Scheduler can run your JD Edwards jobs. These connections also must be licensed before Enterprise Scheduler can use them. A connection is created using the **Connection Definition** dialog.

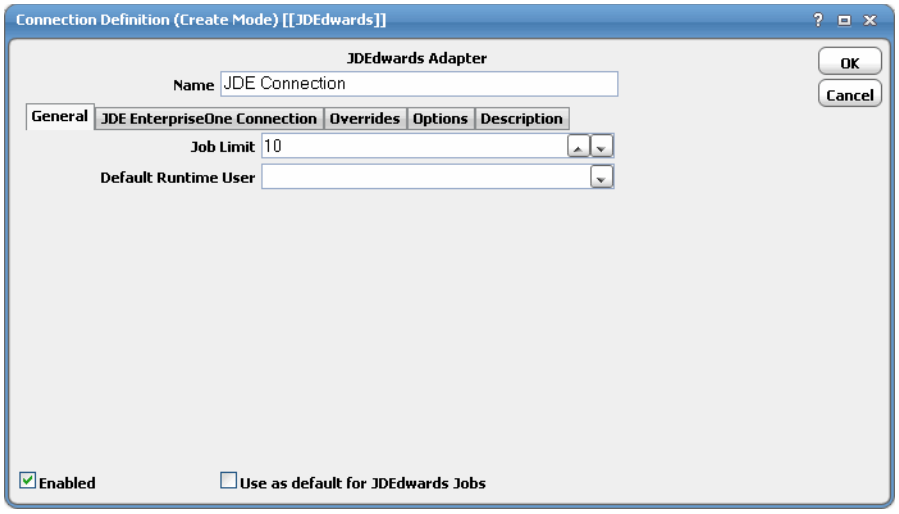
Adding a JD Edwards Adapter Connection

To add a connection:

Step 1 From the **Navigator** pane, navigate to **Administration>Connections** to display the **Connections** pane.

Step 2 Right-click **Connections** and select **Add Connection>JD Edwards Adapter** from the context menu.

The **JDEdwards Adapter Connection Definition** dialog displays.



Step 3 On the **General** page, enter a name for the new connection in the **Name** field.

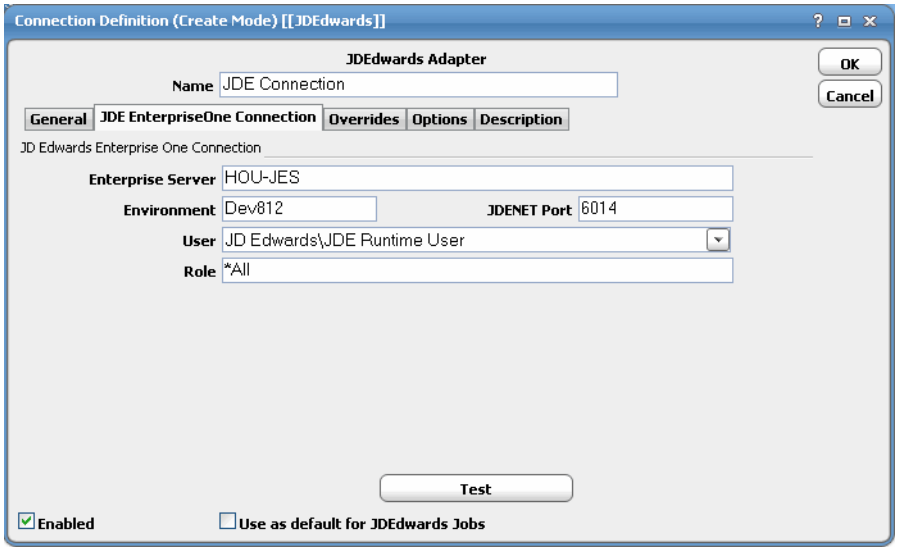
Step 4 In the **Job Limit** field, select the maximum number of concurrent active processes that Enterprise Scheduler should submit to the JD Edwards server at one time.

Step 5 From the **Default Runtime User** drop-down list, you have the option to select the name of a default user for JD Edwards jobs.

The runtime user is used for authentication with JD Edwards to authorize scheduled operations.

Only authorized users that have been defined with JD Edwards passwords display in this list. The selected user is automatically supplied as the default runtime user in a new Enterprise Scheduler JD Edwards job definition.

Step 6 Click the **JD Edwards Connection** tab.



Step 7 In the **Enterprise Server** field, enter the name of your JD Edwards server.

Step 8 In the **Environment** field, enter the environment that you are connecting to.

Step 9 In the **JDENET Port** field, enter the JDEnet listener port.

To determine the correct port to enter, see the following section of the *JDE.INI* configuration file on the Enterprise Server:

```
[JDENET]
serviceNameListen=6014
serviceNameConnect=6014
```

Step 10 From the **User** list, select the associated Runtime User for JD Edwards to be used for connecting to JD Edwards.

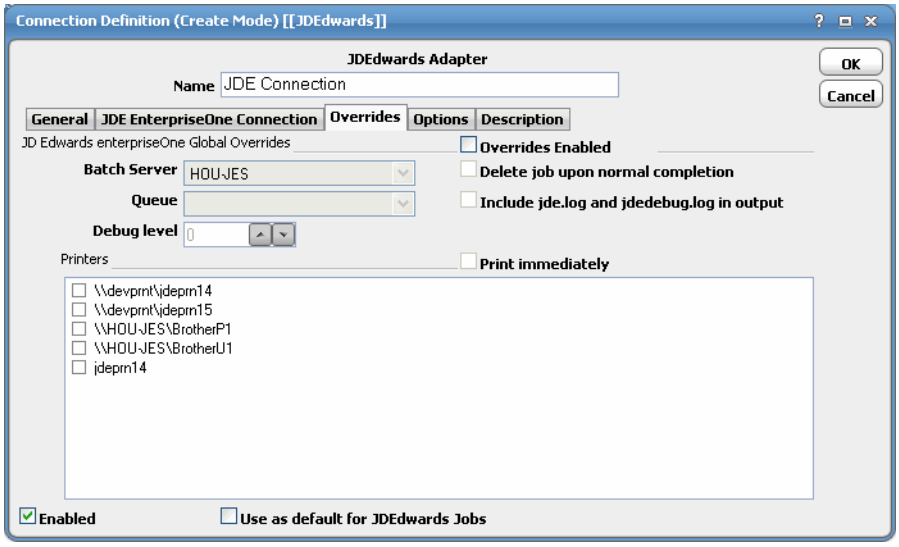
This is a persistent user connection to JD Edwards that is only used for administration and monitoring and for jobs with a matching runtime user. Jobs with a different runtime user specified will create additional temporary connections.

Step 11 In the **Role** field, enter a role associated with the user.

Step 12 Click the **Test** button to test the connection.

Step 13 Click the **Overrides** tab.

The **Connection Definition – Overrides** tab dialog displays.



Use this dialog to temporarily override all jobs that use this connection.

Step 14 Select the **Overrides Enabled** check box if you want to override values that apply to all jobs that use this connection.

This can be useful to temporarily debug an issue or to delete jobs while you are running tests.

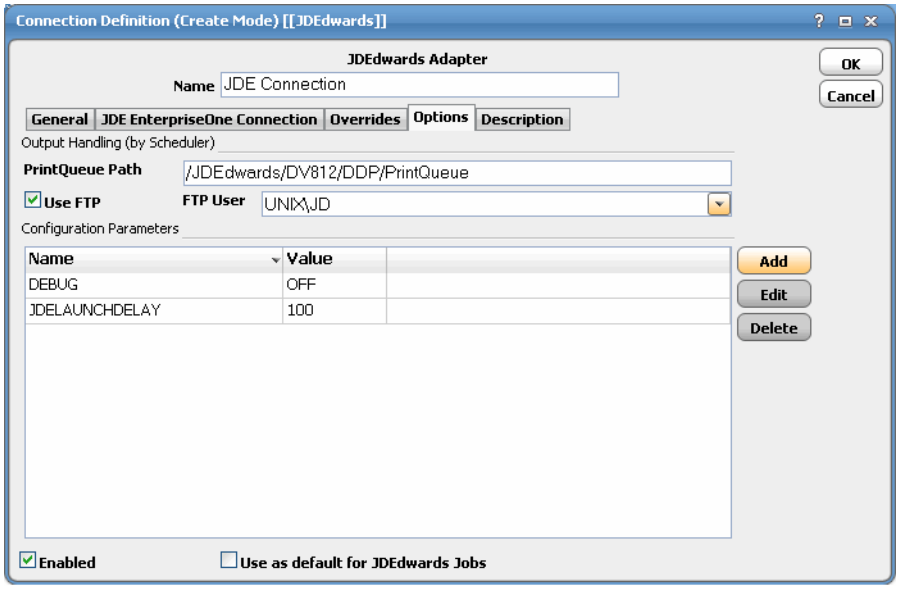
Step 15 Complete the following information in the **JD Edwards EnterpriseOne Global Overrides** section:

- **Batch Server** – This field is read-only
- **Queue** – Select a queue from the drop-down menu. If blank, the default queue for the UBE is used.
- **Delete job upon normal completion** – Optionally select this check box to delete the job and its output when the job completes normally.
- **Include jde.log and jdedebug.log in output** – Optionally select this check box to include the text from both the log and debug log for the UBE process.
- **Debug level** – Select the up arrow button or down arrow button to set the debug level.

- Valid values are 0 to 6.
- **Printer(s)** – Select the printers that you want to use.
- **Print immediately** – Select to send output to the chosen printer(s).

Step 16 Click the **Options** tab to configure parameters for this connection.

The **Connection Definition – Options** tab dialog displays.



Step 17 Complete the following information in the **Output Handling (by Scheduler)** section:

- **PrintQueue Path** – Enter the path as follows:
  - If you are going to use FTP for job output, the path is an absolute or relative path based on the home directory of the chosen FTP logon. (The FTP server defaults to the batch server for the job.)

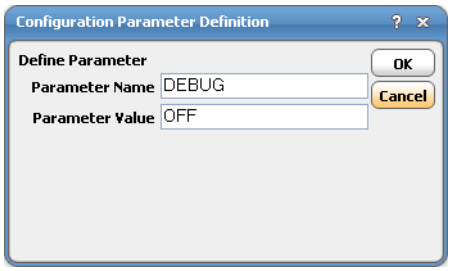
    The path needs to point to the environment's **PrintQueue** folder where PDF output and logs are created. The adapter retrieves files that follow the prefix naming convention <UBE>_<Version>_<JobNo>_PDF.
  - If you are not going to use FTP for job output, enter a valid mapped drive letter or a UNC path.

    The Scheduler master service account needs to have access to the mapped drive or UNC path.

    Enter the path to the output file from the perspective of the Scheduler master. For example, if the **PrintQueue** folder is on a machine mapped on the Scheduler master as the O: drive, but mapped on JD Edwards as the H: drive, the path entered here should use the O: designation. You can use UNC conventions and mapped drives to specify locations on remote machines. If the batch server is not running under Windows you need to have an NFS mount so that the Windows Scheduling master has access to the files, although it is recommended that you choose to use FTP in this case.

    The absolute pathname is needed. Provide the full pathname which includes the root directory and the descending series of subdirectories leading to the resulting **PrintQueue** folder.
- **Use FTP** – Select if the Scheduler should FTP the JDEdwards job output rather than reading the file directly over the network.
- **FTP User** – Select an FTP user from the drop-down menu.

To add or edit parameters, select the parameter and click **Add** or **Edit** to display the **Configuration Parameter Definition** dialog.



The following parameters are available:

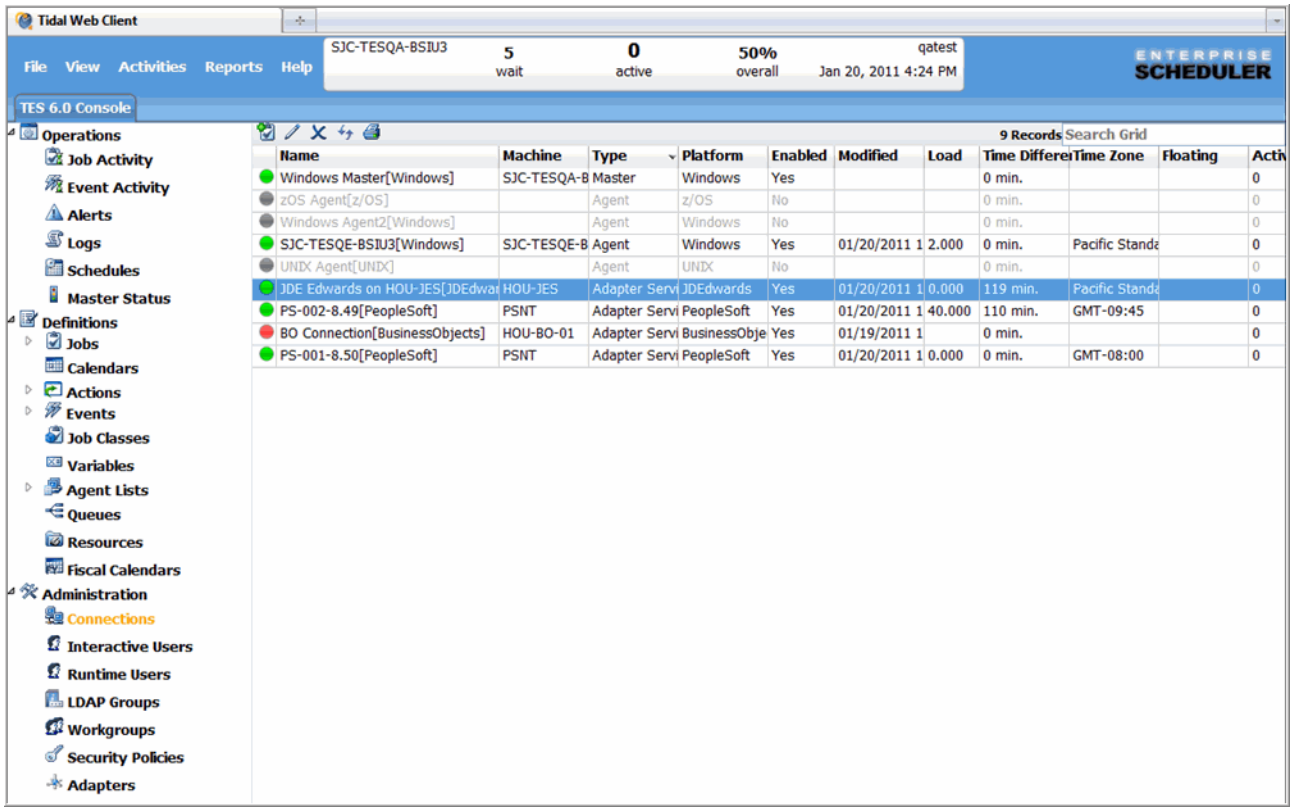
- **DEBUG** – Turns the debugging function on or off. When set to ON, diagnostic data is added to the adapter log and job output. You may be asked to turn this option on when working with technical support to investigate an issue.

  The **Debug** tab only shows in the **Job Definition** dialog if this option is enabled. For more information, see Step 23 on page 36.

- **JDELAUNCHDELAY** – The minimum number of milliseconds to delay between submitting UBE requests to the server. The JDE kernel sometimes has trouble if multiple UBEs are launched simultaneously. 100 ms is recommended.

Step 18 Click **OK** to save the new JD Edwards connection.

The configured connection displays in the **Connections** pane.



The status light next to the connection indicates whether the Enterprise Scheduler Master is connected to the JD Edwards server. If the light is green, the JD Edwards server is connected.

A red light indicates that the master cannot connect to the JD Edwards server. JD Edwards jobs will not be submitted without a connection to the JD Edwards server. You can only define jobs from the Client if the connection light is green.

If the light is red, you can test the connection to determine the problem. Right-click the connection and select **Test** from the context menu. A message displays on the **Test JD Edwards Connection** dialog describing the problem. Or go to **Operator>Logs** to look for error messages associated with this connection.

Using the JD Edwards Adapter

This chapter describes how to use the JD Edwards Adapter with Enterprise Scheduler which entails:

Defining JD Edwards Jobs

This section provides instructions for defining a JD Edwards job in Enterprise Scheduler and describes the various options that can be included in the jobs.

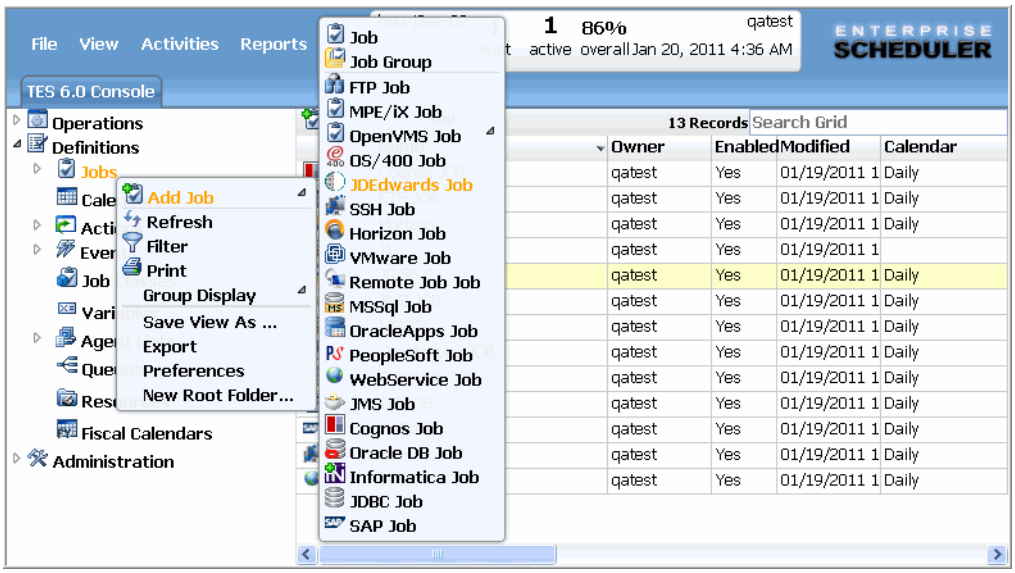
JD Edwards Job Definition

You define jobs to run JD Edwards batch versions (consisting of UBE programs and corresponding collections of data selection and processing options). This section describes the basic steps for defining a JD Edwards job.

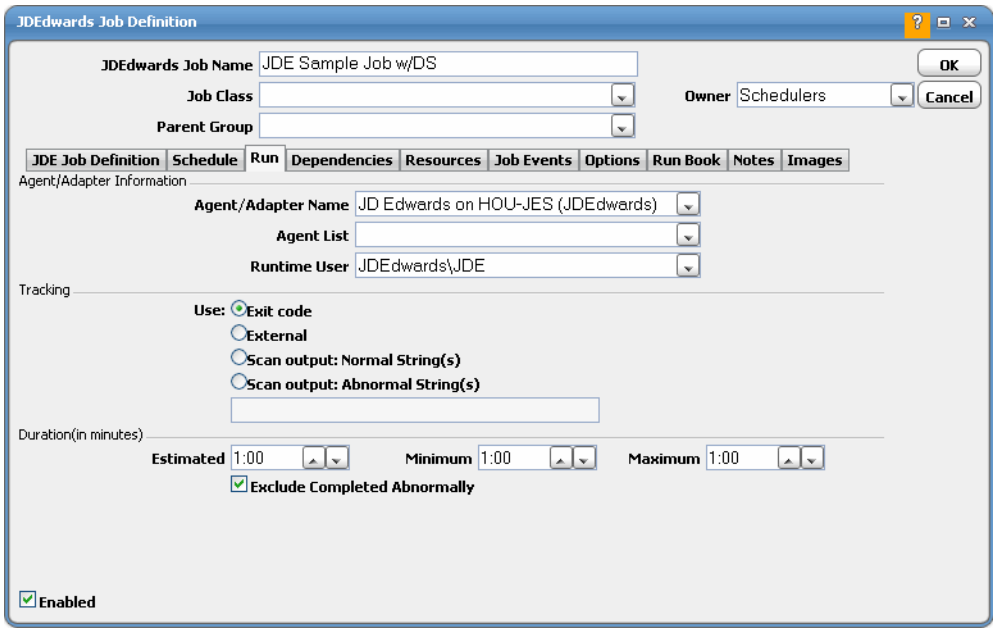
To define a JD Edwards job:

Step 1 In the **Navigator** pane, select **Definitions>Jobs** to display the **Jobs** pane.

Step 2 Right-click **Jobs** and select **Add>JDE Job** from the context menu.



The **JD Edwards Job Definition** dialog displays.



The **Run** tab opens first when defining a new JD Edwards job. You must first specify a name for the job, the JD Edwards adapter connection that will be used for the job, and a valid runtime user who has the appropriate JD Edwards authority for the report being scheduled.

Step 3 In the upper portion of the dialog, specify the following information to describe the job:

- **Job Name** – Enter a name that describes the job.
- **Job Class** – If you want to assign a defined job class to this job, select it from the drop-down list. This field is optional.
- **Owner** – Select the owner of the job. The owner can be an individual Scheduler user or a workgroup (recommended).

- **Parent Group** – If this job exists under a parent group, select the name of the parent group from the drop-down list. All properties in the **Agent Information** section are inherited from its parent job group.

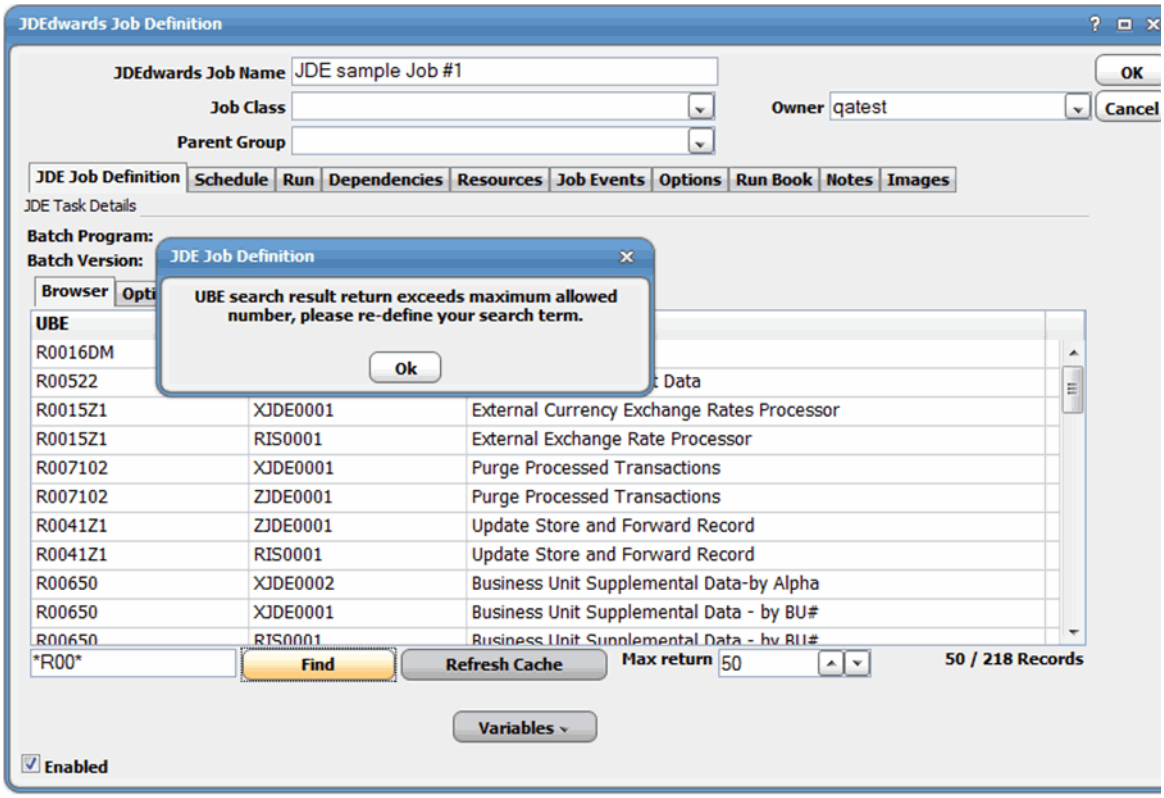
Step 4 Specify the following connection information in the **Agent/Adapter Information** section:

- **Agent/Adapter Name** – Select the JD Edwards adapter connection to be used for this job from the drop-down list.
- **Agent List Name** – Select a list for broadcasting the job to multiple servers or load balancing across servers.
- **Runtime User** – Select a valid runtime user with the appropriate JD Edwards authority for the job from the drop-down list.

Step 5 Specify the appropriate **Tracking** and **Duration** information for the job.

Refer to the *Tidal Enterprise Scheduler User Guid*e for information on these options.

Step 6 Click the **JDE Job Definition** tab.



Step 7 To search for a UBE using the **Find** field located below the **Browser** tab, complete the following steps:

a. In the **Find** field, specify the UBE program name or use wildcards to browse through a list of matching UBE names.

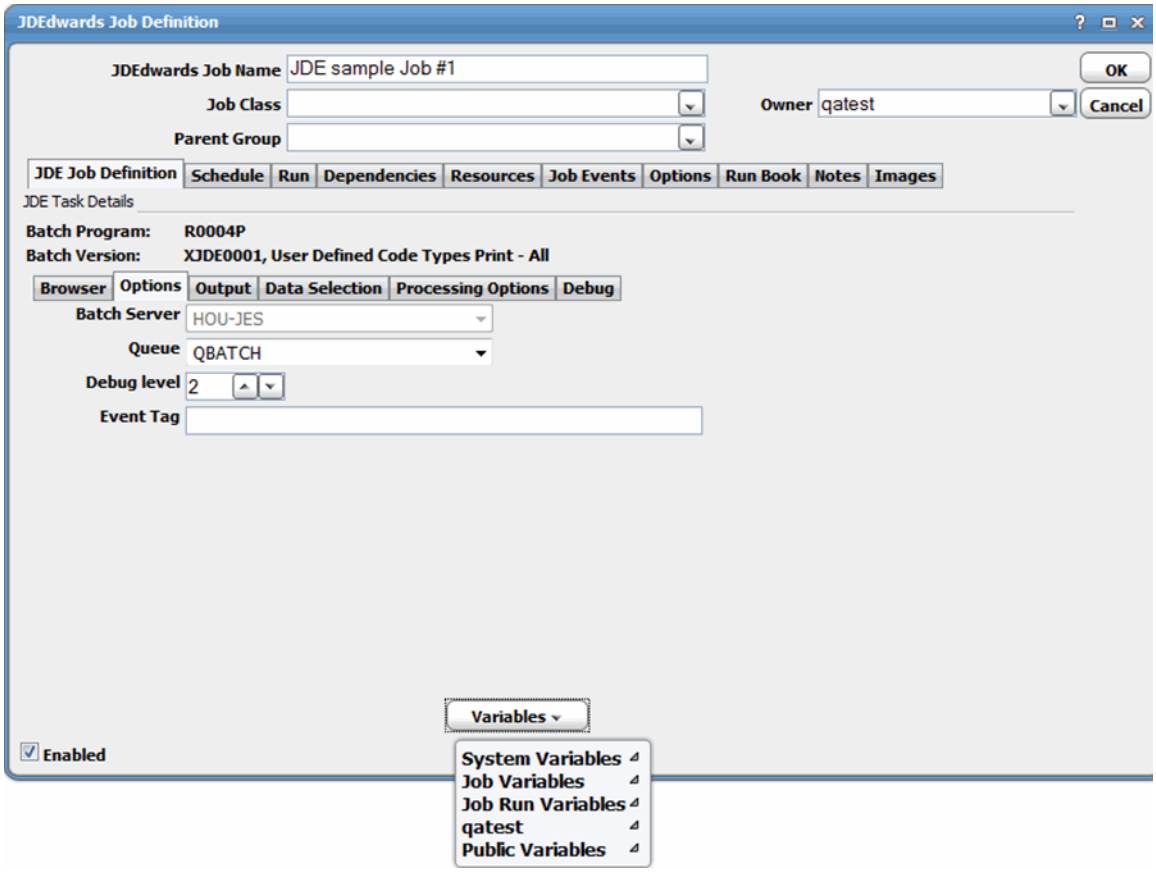
b. Click **Find**.

c. After locating the UBE and corresponding version you want to schedule, double-click the entry or right-click and use the **Select** menu option.

The **JDE Task Details** section is populated with the program and version selected. This is read only.

d. To improve performance, the adapter creates a cache of all UBEs and versions when it connects. If a UBE or version is added after this point, it may not display when Find is used. Use the **Refresh Cache** button to update the list for a specific UBE from the JDE database. This option only updates the matching UBE specified in the Find field. The button is disabled if a wildcard is specified.

Step 8 Click the **Options** subtab.



This tab defines the queue, debug level, and tag that can be included in events.

Step 9 Complete the following information on this dialog:

- **Batch Server** – Displays the batch server the job to which the job is submitted.

  This value is read-only.

- **Queue** – Select a batch from the **Queue** drop-down menu. The default is to use the queue currently associated with the UBE.

- **Debug level** – Click the up or down arrow buttons to set the UBE debug level.

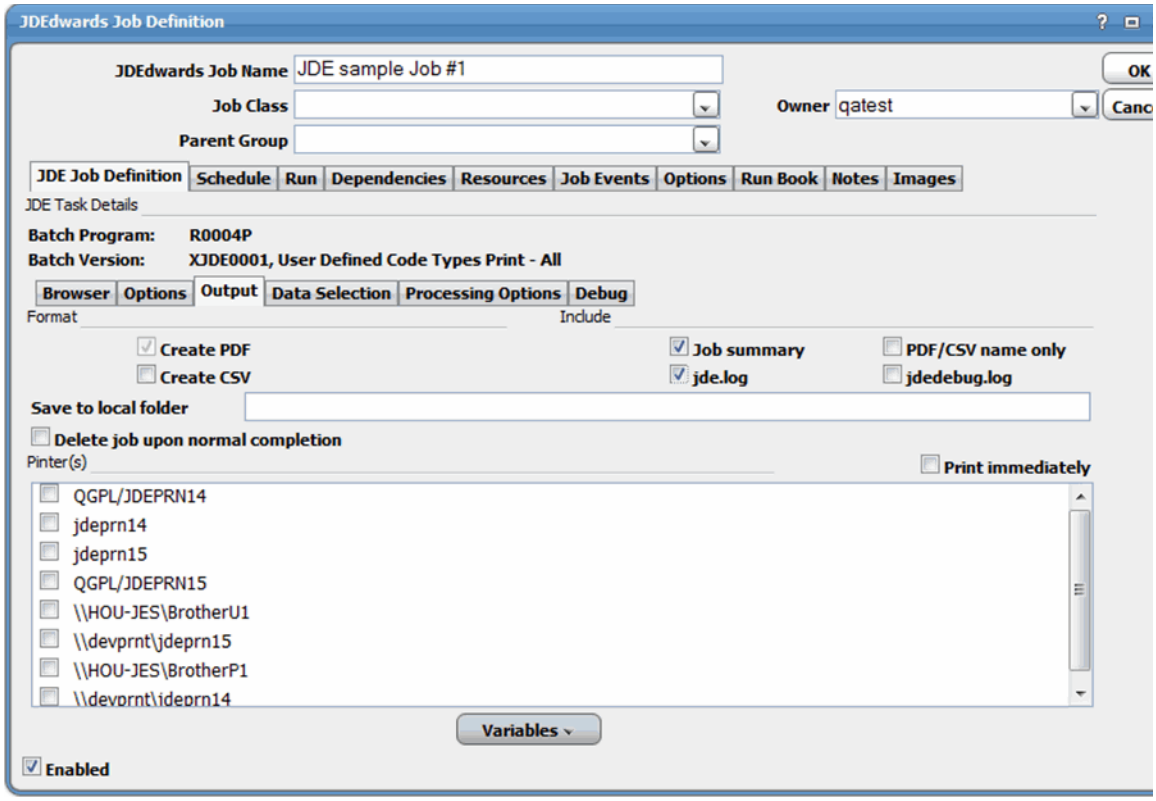
  Valid values are 0 to 6.

- **Event Tag** – This field allows you to associate an identifier that you can refer to in a JD Edwards event.

  For example, if your event sends an email about a new report, you can insert the event tag as a variable in the email's subject line or body text. You can use a variable in this field, such as a local group variable that identifies the customer or other data selection to which this run applies.

  Place the cursor in the field and click **Variables** to enter a variable to be replaced at runtime.

Step 10 Click the **Output** subtab to specify formatting, saving, and printing options.



Step 11 In the **Format** section, check the **Create CSV** check box if you want to create a CSV output file in addition to the PDF file that JD Edwards always creates.

Step 12 In the **Include** section, select the check boxes for the output that you want to include in the Scheduler's output displayed on the **Output** tab of the **Job Details** dialog from the console as described in “To monitor job activity:”.

The **Output** tab of the **Job Details** dialog displays job summary data along with jde.log and jdedebug.log, if configured. An option to display only the PDF name is available so the output can be used as a variable in downstream jobs.

To include log files, the connection must be set up with a UNC and/or FTP path so the adapter can access these files. For more information, see Step on page 26.

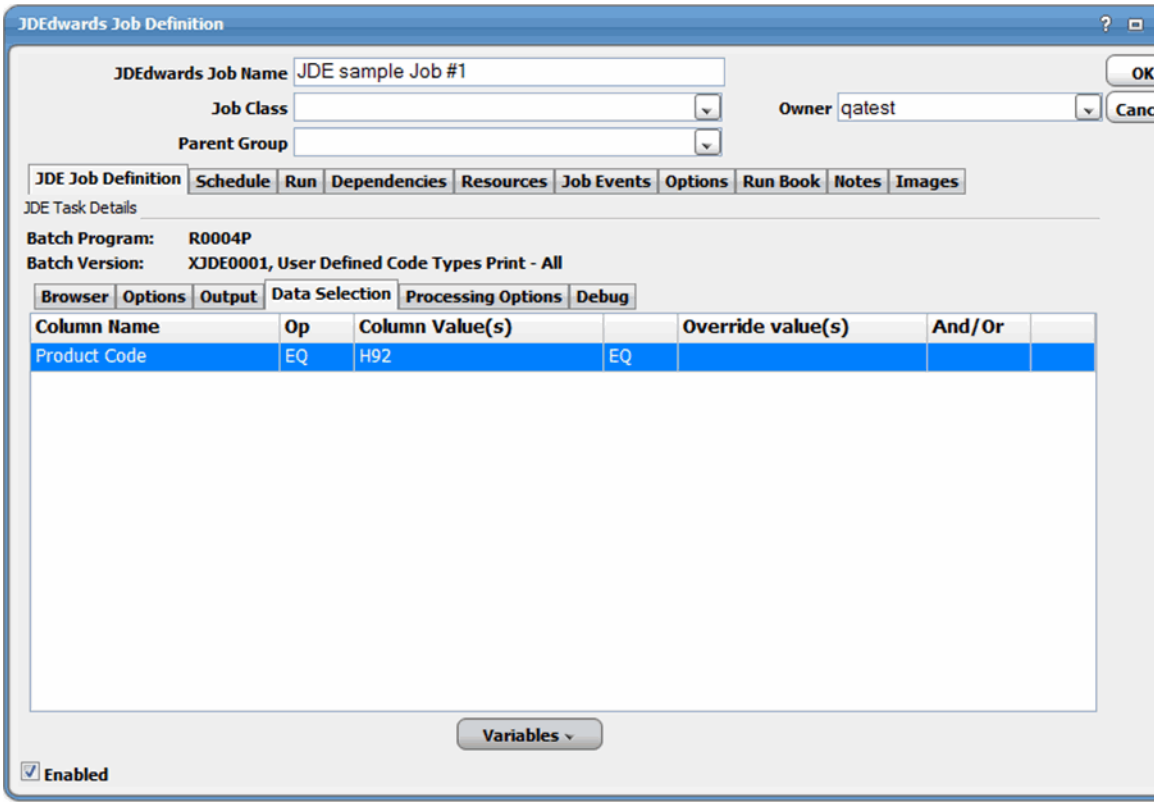
Step 13 (Optional) In the **Save to local folder** field, enter the full local path from the master’s perspective where you want the output to be saved.

Step 14 (Optional) In the **Printer(s)** section, select the **Print immediately** check box and select the check box next to each printer that you want to use.

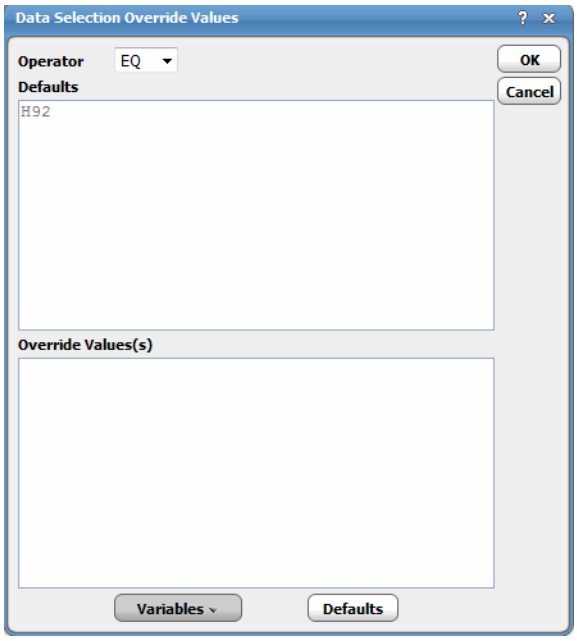
Step 15 (Optional) Select the **Delete job upon normal completion** check box.

This option not only deletes the output on the server, but deletes the job record from JDE's F986110 table.

Step 16 Click the **Data Selection** subtab to override data selection clauses.



Step 17 To edit the override value, double-click the selected row to display the **Data Selection Override Values** dialog.



Step 18 To override the operator, select an operator from the **Operator** list.

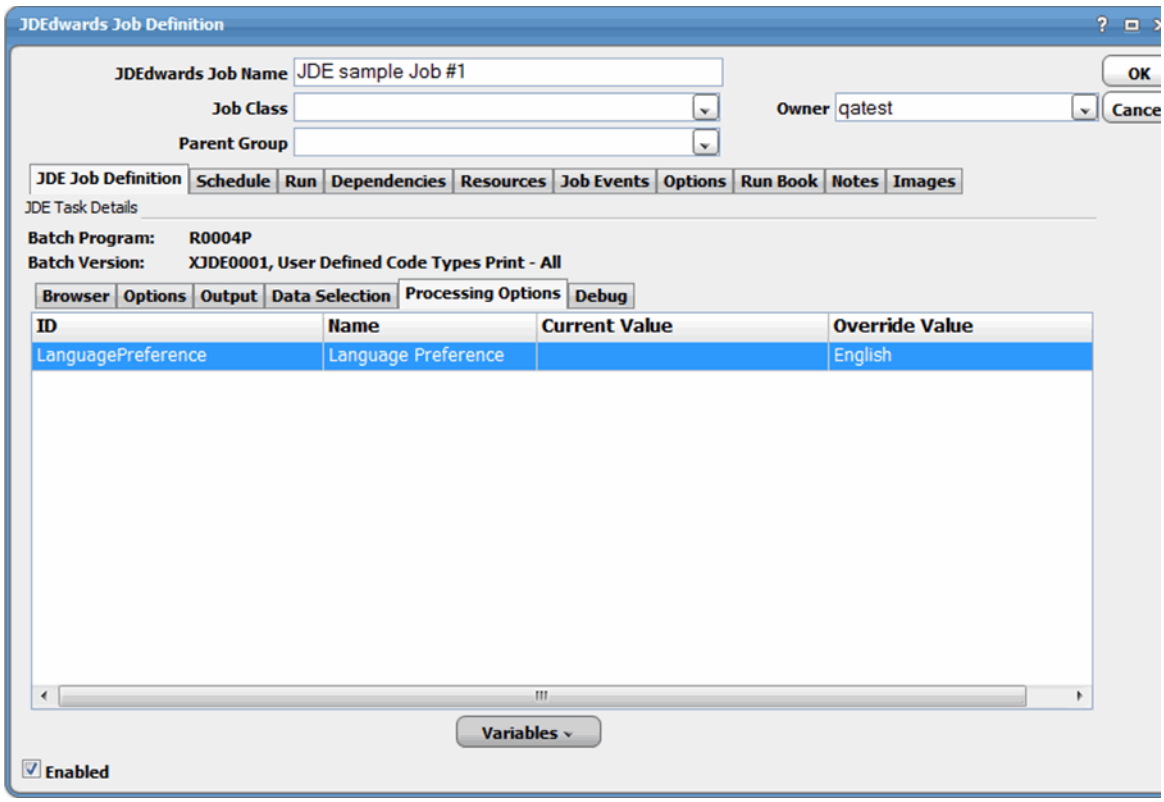
The operator values are as follows:

- **EQ** – Equal
- **NE** – Not equal
- **GT** – Greater than
- **GE** – Greater than or equal to
- **LT** – Less than
- **LE** – Less than or equal to
- **IN** – In a set of values; requires more than one value separated with commas
- **NI** – Not in a set of values; requires more than one value separated with commas
- **BW** – Between a range of values; requires exactly two values, separated with a comma
- **NB** - Not between a range of values; requires exactly two values, separated with a comma

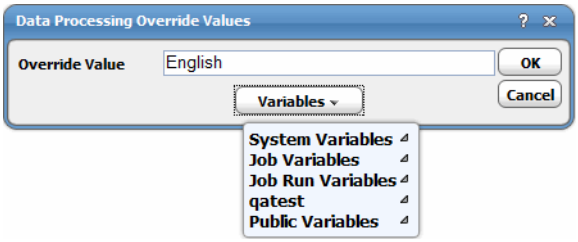
Step 19 In the **Override Value(s)** field, enter a override value. Optionally, click **Variables** to insert a variable to be replaced with a value at runtime.

An empty value in the **Override(s)** field indicates that no override value will be used at time of submission. To explicitly override a value with an empty string, the special variable, <Blank>, must be entered into the field.

Step 20 Click the **Processing Options** subtab to override processing options.



Step 21 To edit the override value, double-click the selected row to display the **Data Processing Override Values** dialog.

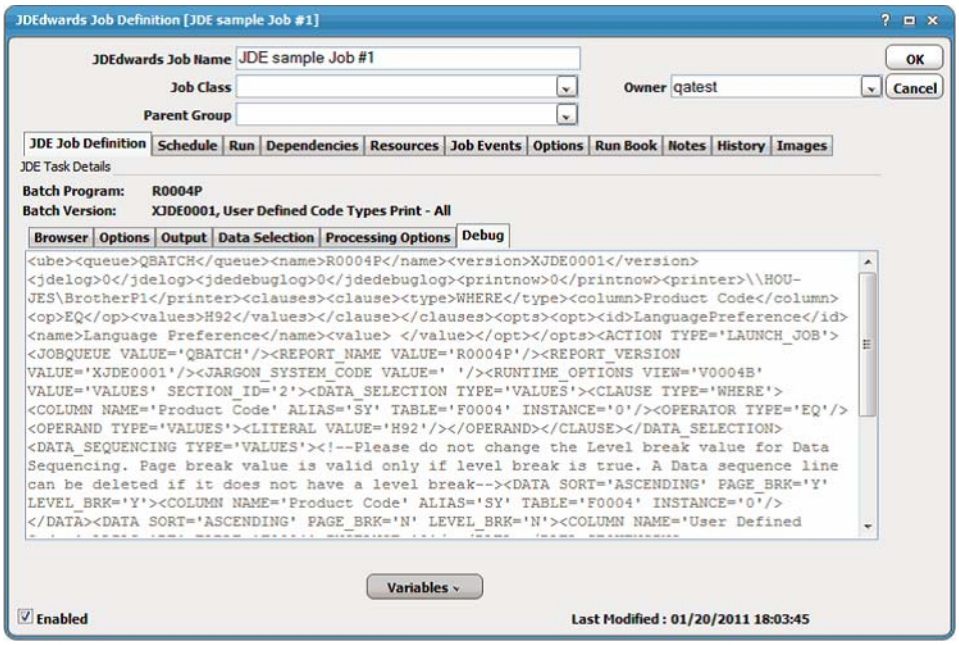


Step 22 In the **Override Value** field, enter a override value. Optionally, click **Variables** to insert a variable to be replaced with a value at runtime.

An empty value in the **Override(s)** field indicates that no override value will be used at time of submission. To explicitly override a value with an empty string, the special variable, <Blank>, must be entered into the field.

Step 23 Click the **Debug** subtab to aid in troubleshooting the UBE version's associated data in XML format.

This page is typically used by support to assist with problem resolution.



Note The Debug tab only shows if DEBUG=ON is specified on the **Options** tab of the **Connection Definition** dialog. For information on enabling this option, see Step on page 26.

The **Debug** tab displays the XML definition associated with the selected UBE and version.

Monitoring JD Edwards Job Activity

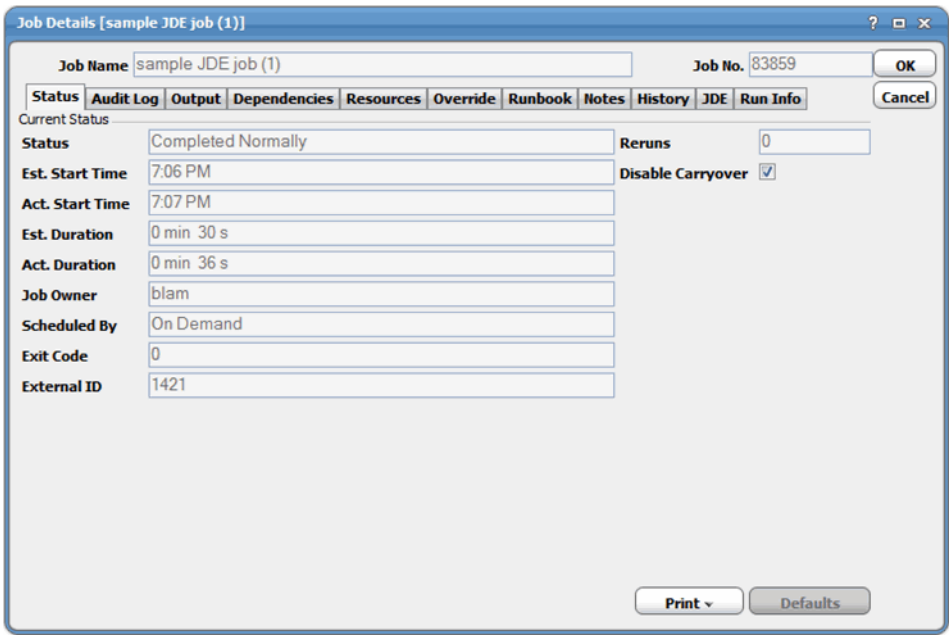
As JD Edwards tasks run as prescheduled or event-based jobs, you can monitor the jobs as you would any other type of job in Enterprise Scheduler using the Job Details dialog. You can also use Business Views to monitor job activity and view when the jobs are active. (See the *Tidal Enterprise Scheduler User Guide* for instructions on using Business Views.)

To monitor job activity:

Step 1 In the **Navigator** pane, select **Operations>Job Activity** to display the **Job Activity** pane.

Step 2 Right-click to select a job and choose **Details** from the context menu.

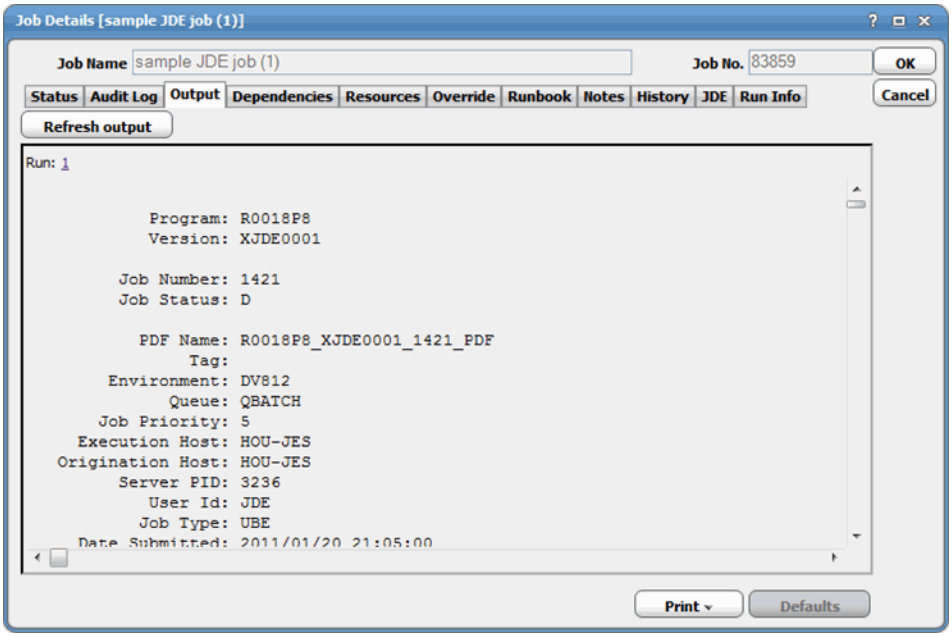
The **Job Details** dialog displays.



The **Status** page displays by default. You can view the status of the job, the start and end time, how long it ran, and how it was scheduled. The external ID is the JDEdwards job number.

Step 3 Click the **Output** tab to view a task summary after the job completes.

If you chose to include the jde log and/or jde debug log for the UBE, that will be shown below in the summary.

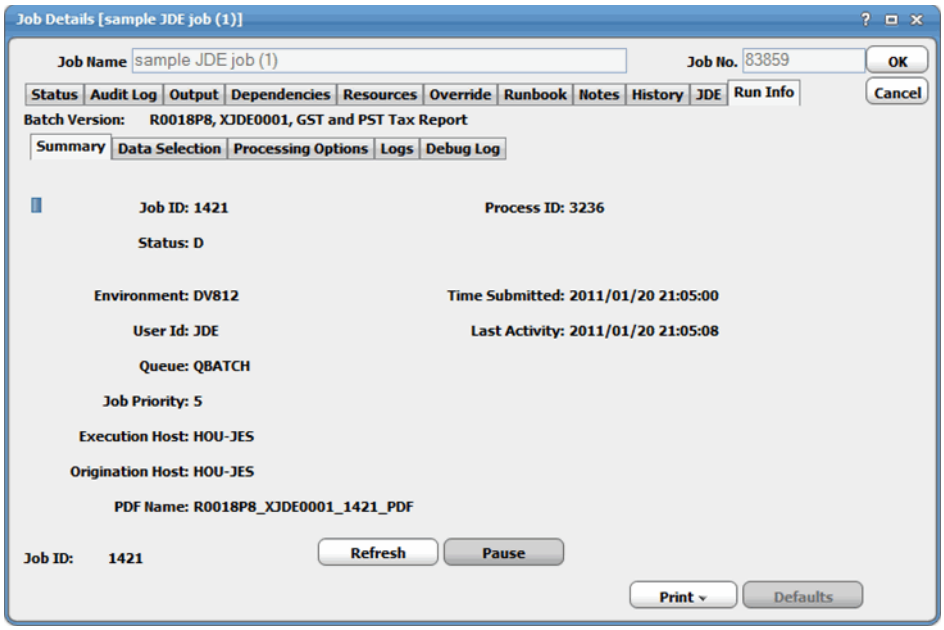


Step 4 Click the **JDE** tab to view job definition details and the variables that are used when the job was submitted and to make any changes for a specific job before it is run.

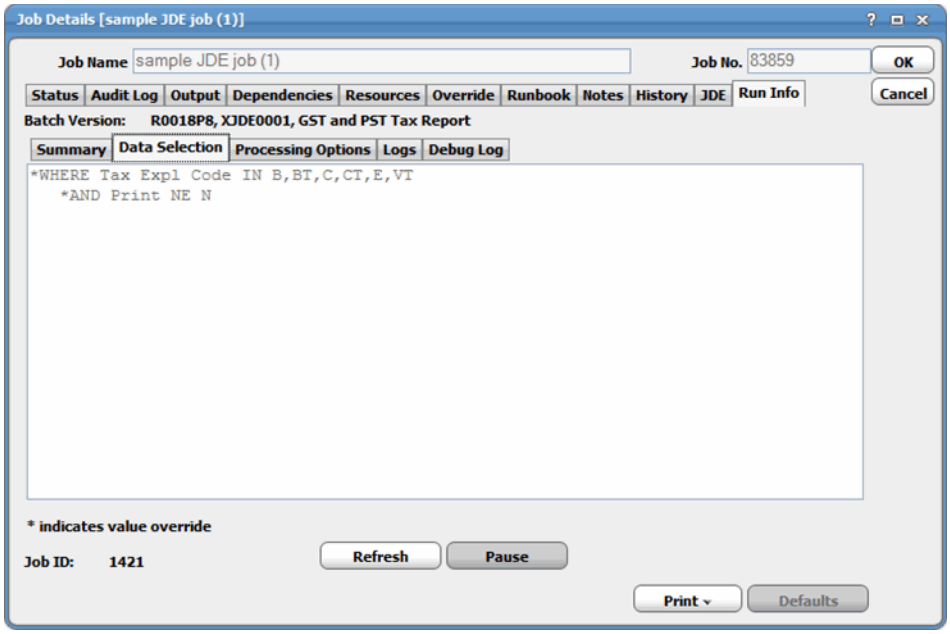
Step 5 Click the **Run Info** tab to view additional details about the job.

You can also view information about the runtime status while the job is running, including any runtime value overrides that are in affect.

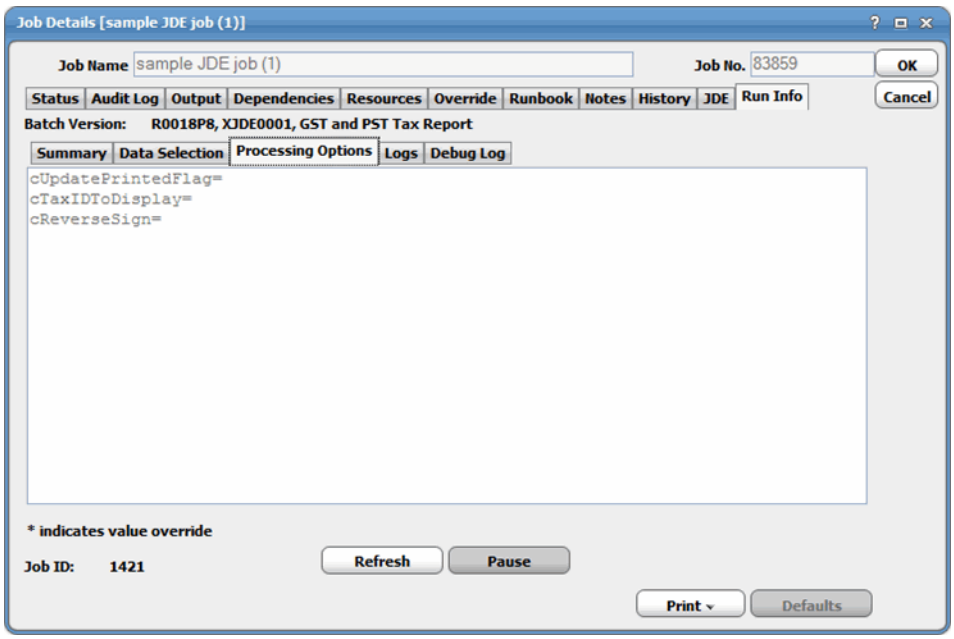
You can also view the logs in real time if the connection is configured to access the logs. For information on including these log files in the output, see Step on page 25.



Step 6 Click the **Data Selection** subtab to view the data selection values that were in effect during this run.

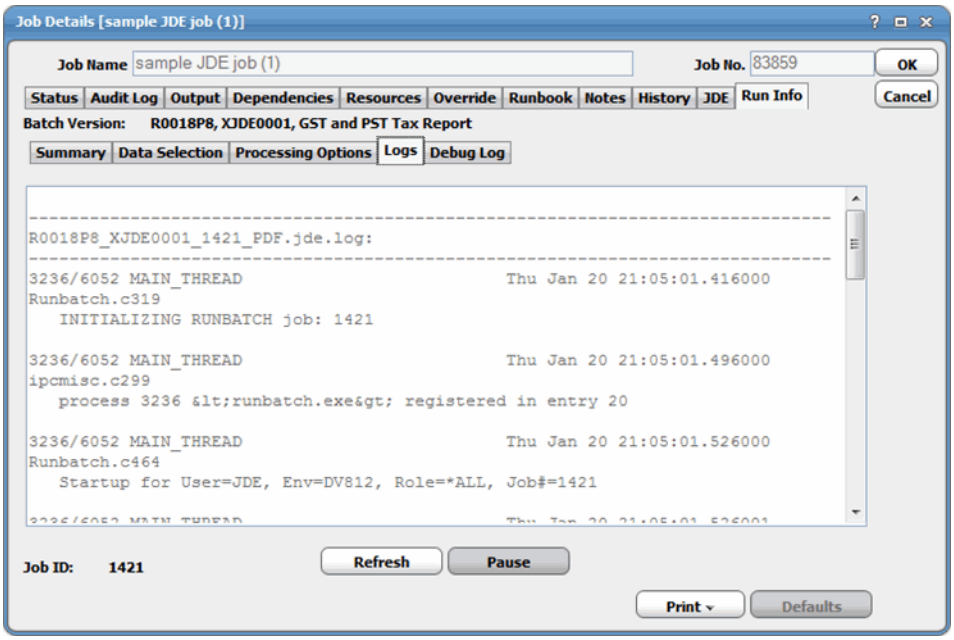


Step 7 Click the **Processing Options** subtab to view the processing options that were in effect during this run.



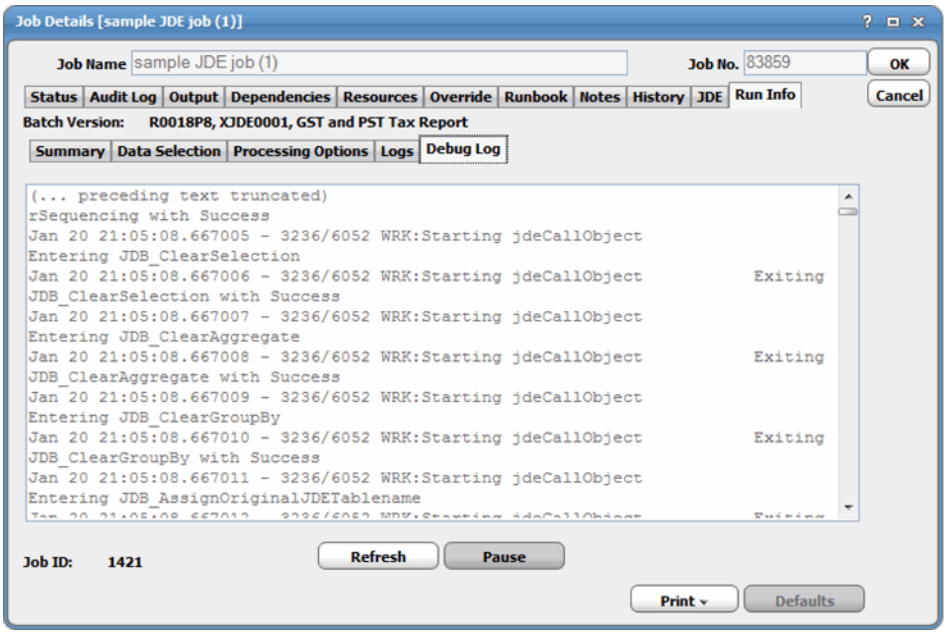
Step 8 Click the **Logs** subtab to view the log generated during the run.

If the job has not completed yet, the log may not be complete.



Step 9 Click the **Debug Log** tab to view the debug log associated with the job, if any.

Because debug logs can be very large, only the last part of the file is shown, but this can be very useful to see what a job is doing while it is running.



Step 10 When you have finished viewing the job activity details, click **OK** to close the dialog.

Controlling JD Edwards Jobs

Scheduler provides the following job control capabilities:

- Hold a job waiting to run.
- Stop/Resume a job that is currently pending.
- Abort an active job.
- Rerun a job that completed.
- Make last minute changes to a JD Edwards job.
- Delete a job instance before it has run.

Holding a Job

JD Edwards jobs are held in the same way as any other Scheduler job. A JD Edwards process can be held before it is launched.

To hold a job:

Step 1 From the **Job Activity** pane, right-click on the job.

Step 2 Select **Job Control>Hold/Stop**.

Stopping/Resuming a Job

JD Edwards jobs are stopped/resumed in the same way as any other Scheduler job. This only applies if a job submitted to JD Edwards has a status of **Pending**. Once the job has started running, it is not possible to stop.

Aborting a Job

JD Edwards jobs are aborted in the same way as any other Scheduler jobs. When a JD Edwards job is aborted, the job is deleted from the database and will no longer appear as a JD Edwards job.

To abort a job:

Step 1 From the **Job Activity** pane, right-click on the job.

Step 2 Select **Job Control>Cancel/Abort**.

Rerunning a Job

On occasion, you may need to rerun a JD Edwards job. You can override parameter values first, if necessary, from the **JD Edwards** tab of the **Job Details** dialog.

To rerun a job:

Step 1 From the **Job Activity** pane, right-click the JD Edwards job you need to rerun.

Step 2 Select **Job Control>Rerun** option from the context menu.

Making One Time Changes to a JD Edwards Job Instance

Prior to a run or rerun, you can edit data on the **JDE** tab of the **Job Details** dialog. To ensure that there is an opportunity to edit the job prior to its run, you can set the **Require operator release** option on the **Options** tab of the **JDEdwards Job Definition** dialog. Use this function to make changes to a JD Edwards job after it enters Waiting on Operator status as described in the following procedure.

To make last minute changes:

Step 1 From the **Job Activity** pane, double-click a JD Edwards job to display the **Job Details** dialog.

Step 2 Click the **JDE** tab.

Step 3 Make the desired changes to the job as described in "To define a JD Edwards job:".

Step 4 Click **OK** to close the **Job Details** dialog.

Step 5 If this job is Waiting on Operator, perform one of the following tasks:

- To release the job, select **Job Control>Release**.
- To rerun the job with changes, select **Job Control>Rerun**.

Deleting a Job Instance Before It Has Run

JD Edwards job instances are deleted in the same way as any other Scheduler job. Deleting a job from the **Job Activity** pane removes the job from the Scheduler job activity only. The original definition is left intact.

To delete a job instance:

Step 1 From the **Job Activity** pane, right-click the JD Edwards job to be deleted.

Step 2 Select **Remove Job(s) From Schedule**.

Defining JD Edwards Events

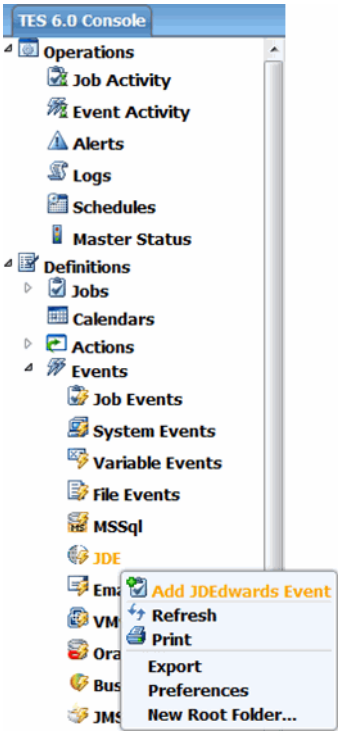
Using the JD Edwards Adapter, you can define events that can be used for alerting and invoking an automated response through email and/or inserting additional jobs into the schedule. The **Event Definition** dialog is displayed when you add or edit a JD Edwards event. Enterprise Scheduler can monitor events and then take one or more actions when the event trigger occurs. You must configure a calendar for the event from the **Schedule** tab to schedule when the event is enabled, which is when monitoring will occur. If needed, you can configure the monitor to operate only during certain time periods or leave the monitor in operation at all times.

JD Edwards Event Definition

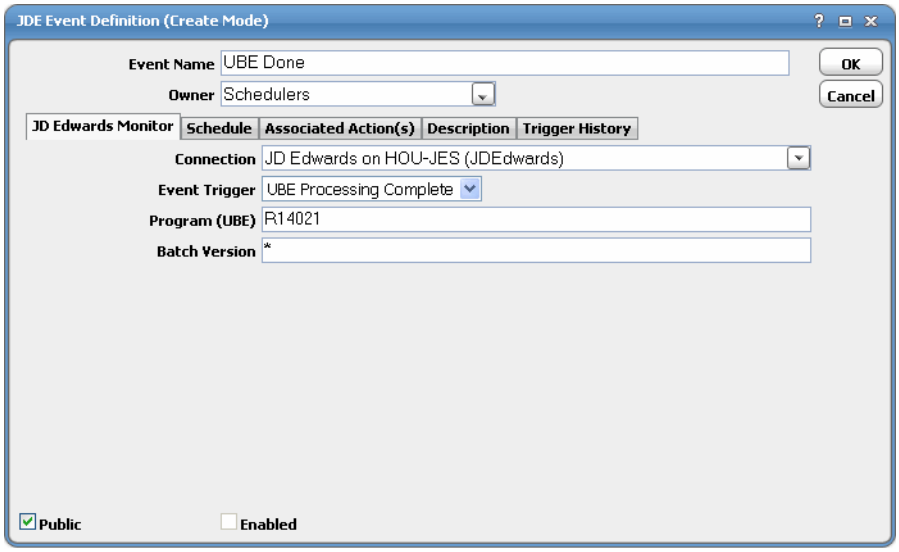
To define a JD Edwards event:

Step 1 In the **Navigator** pane, navigate to **Definitions>Events>JDE**.

Step 2 Right-click **JDE** and select **Add JDEwards Event** from the context menu.



The **JDE Event Definition** dialog displays.



Step 3 Enter a name for the event in the **Event Name** field.

Step 4 Select an owner from the **Owner** drop-down list.

Step 5 In the **Monitor** area, specify the following information:

- **Connection** – Select the JDEdwards connection from the drop-down list.

  This is the connection that will be monitored for the specified event.

- **Event Trigger** – Select the condition that causes Scheduler to trigger the associated actions.

  Currently, the only event trigger is **UBE Processing Complete**. Monitoring is only for jobs initiated by the Scheduler.

  An event can be triggered upon UBE completion to pass JD Edwards job specific variables to any scheduling action, such as setting variables, submitting other jobs, and sending e-mails and alerts.

- **Program (UBE)** – Enter the batch program that you want to monitor.

  You can use regular expression wildcards in this field.

- **Batch Version** – Optionally enter the batch version.

  You can use regular expression wildcards in this field.

Note The other tabs on the JDE Event Definition dialog are general event configuration options and are not specific to the JD Edwards Adapter. Any action that is available in Enterprise Scheduler, such as sending email, generating alerts, sending SNMP traps, setting variables, and adding jobs, is available as a response to a JD Edwards event.

Step 6 Click **OK** to save the event definition.

Define an Action for an Event

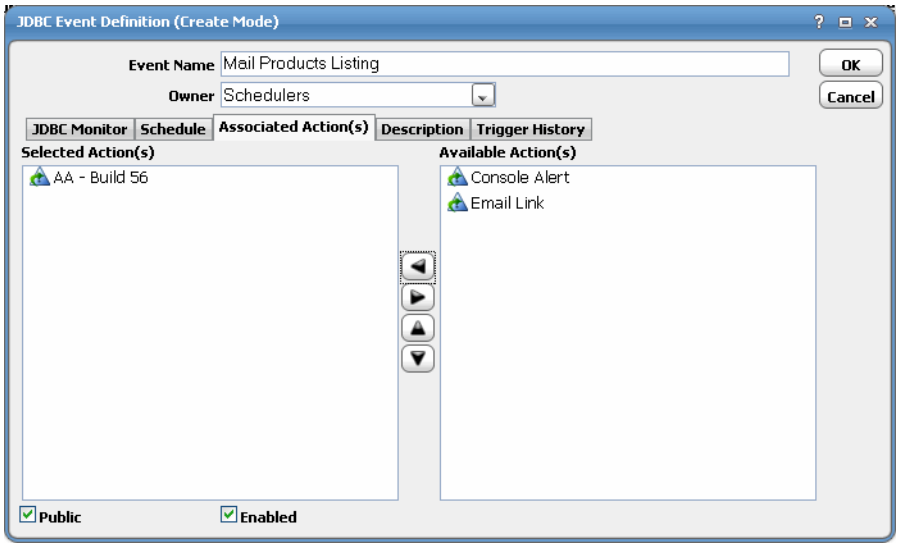
You can add any action for a JD Edwards event that is available in Enterprise Scheduler.

For example, to define an email action for a JD Edwards event:

Step 1 In the **Navigator** pane, select **Definitions>Events>JDE** to display the **JDE Event Definition** dialog.

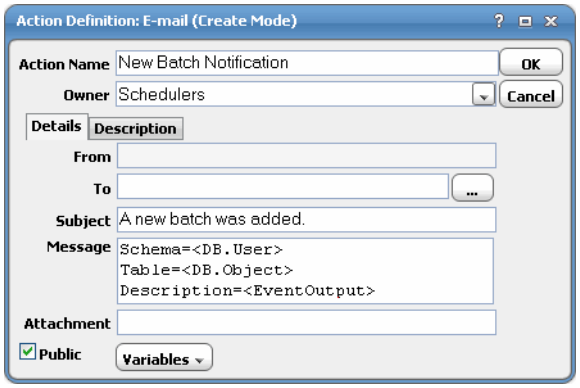
Step 2 Right-click **JDEdwards Events** and select **Edit Event** from the context menu to display the **JDEdwards Event Definition** dialog.

Step 3 Click the **Associated Actions** tab.

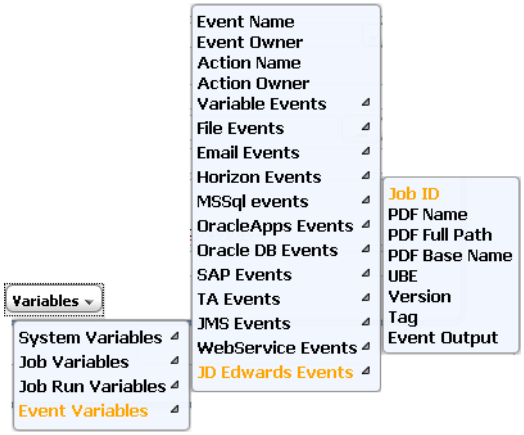


Step 4 In the **Available Actions** section, right-click and select **Add Mail Action**.

The **Action Definition: E-Mail** dialog displays.



The JD Edwards event variables that are available with the JDEdwards Adapter are shown below, and only apply when the action is associated with a JD Edwards event.



Step 5 Complete the required fields on the **Action Definition** dialog and click **OK**.