

IBM Tivoli Workload Scheduler for Applications – defining SAP R/3 jobs



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Component:	IBM Tivoli Workload Scheduler for Applications
General Description:	IBM Tivoli Workload Scheduler for Applications: SAP R/3 job definition
Dependencies:	IBM Tivoli Workload Scheduler for Applications 8.2.1 Fixpack 1

This document provides the following information:

- SAP R/3 job definitions
- Raising a SAP event
- Setting SAP R/3 table criteria
- Killing a SAP R/3 job

Introduction

This document supplements the IBM Tivoli Workload Scheduler for Applications version 8.2.1 Fixpack 1 readme.

SAP R/3 job definitions

Replace the section *Using the SAP-specific panels of the Job Scheduling Console* in **Chapter 18. Defining R/3 extended agent jobs** in the document *IBM Tivoli Workload Scheduler for Applications: User's Guide* with the following sections:

Managing SAP R/3 jobs

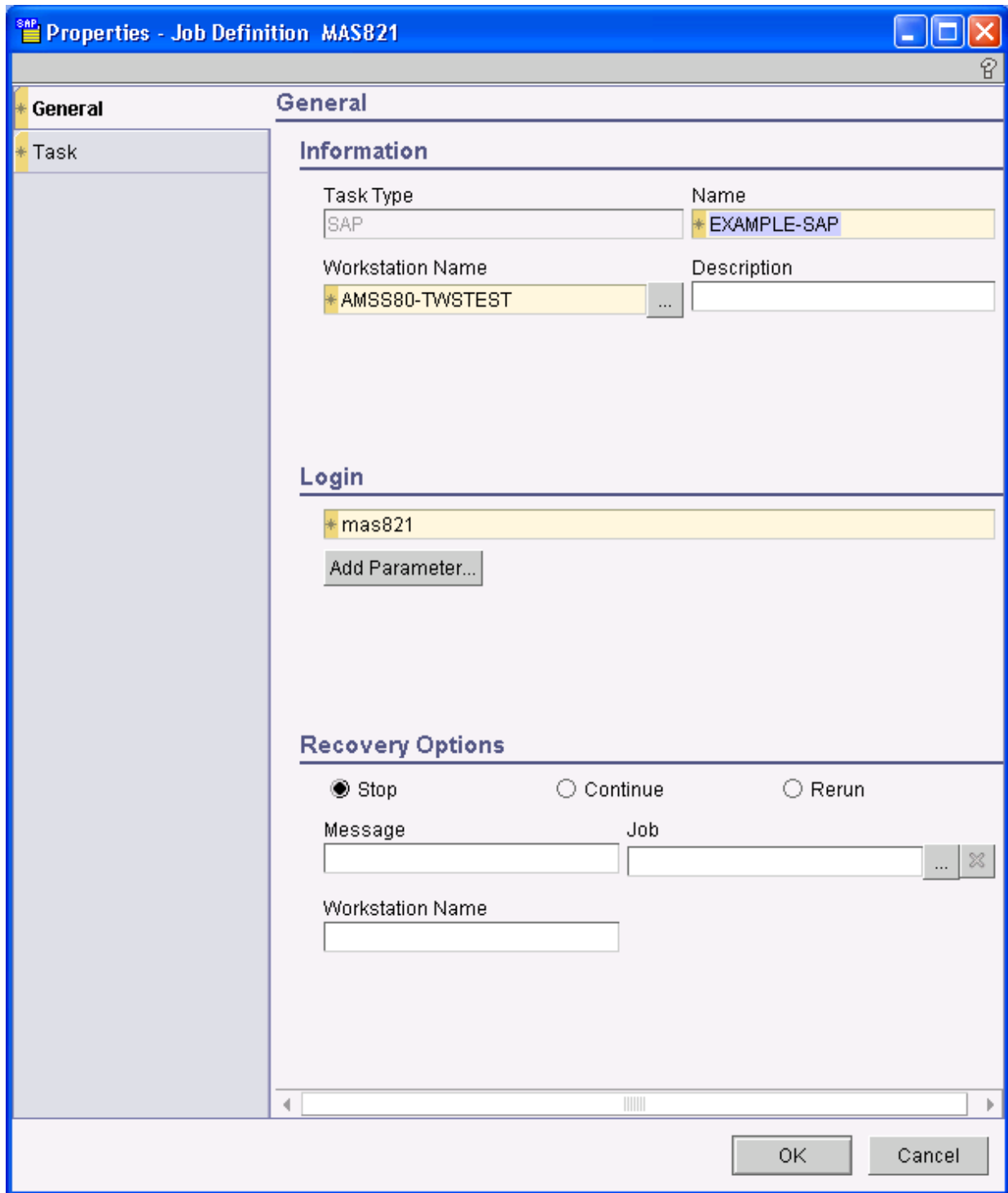
This section describes how to perform the following tasks on the R/3 jobs using Job Scheduling Console:

- Create a new R/3 job in the R/3 database
- Edit a standard R/3 job
- Display details of standard R/3 jobs and Business Warehouse InfoPackages
- Verify the status of scheduled standard R/3 jobs
- Delete a standard R/3 job

Create a new R/3 job in the R/3 database

To create a standard job definition in the IBM Tivoli Workload Scheduler for Applications database, perform the following steps:

1. In the Actions list of the Job Scheduling Console main window, select **New Job Definition**.
2. Select an engine.
3. Select SAP job type. The Properties - Job Definition panel displays.



The panel consists of the following:

- "General page"
- "Task page" on page 4

General page

Use the **General** page to provide general information about the new job definition.

The page consists of the following:

- Information group

Task Type

Displays the SAP task type.

Name Type the name of the job. The name must start with a letter, and can contain alphanumeric characters, dashes, and underscores. The maximum length is 40 characters.

Workstation Name

Type the name of the SAP workstation where the job runs or use the (...) ellipsis button to display a list of SAP workstations.

Description

Type a description of the job. The maximum length is 120 characters.

- Login group:

Login Type the name of the user who launches the job. The maximum length is 47 characters. Specify a user that can log on to the workstation where the job runs. For Windows jobs, the user must also be defined in the database. For more information, see *IBM Tivoli Workload Scheduler Job Scheduling Console User's Guide*.

- Recovery Options group:

Select the recovery option you want to associate with the job if it ends in error. Possible values are:

Stop Do not continue with the next job. The default value is **Stop**.

Continue

Continue with the next job.

Rerun Rerun the job.

Message

Type the text of a recovery prompt to be displayed if the job ends in error. The text can contain up to 64 characters. The recovery prompt is an ad hoc prompt. The **Status of All Prompts** shows all recovery prompts. If a job ended in error, the prompt status is *Asked* and the message is displayed. If a job ended successfully, the status is *Not Asked*.

Job Click the (...) ellipsis button to display a list of recovery jobs from where to select the recovery job to run if the parent job ends in error. Recovery jobs are run only once for each instance of the parent job ended in error.

Workstation Name

Displays the name of the workstation where the recovery job runs. The name is entered automatically when you select a recovery job.

Not all jobs are eligible to have recovery jobs run on a different workstation. Follow these guidelines:

- If either workstation is an extended agent, it must be hosted by a domain manager or a fault-tolerant agent that runs in **Full Status** mode.
- The recovery job workstation must be in the same domain as the parent job workstation.
- If the recovery job workstation is a fault-tolerant agent, it must run in **Full Status** mode.

Task page

Use the **Task** page to provide task information for the SAP R/3 job.

The screenshot shows the 'Properties - Job Definition MAS821' dialog box with the 'Task' tab selected. The 'Task' section is expanded, showing the following fields and options:

- Task Type:** SAP XBP 2.0
- R/3 Job Type:** Radio buttons for 'Standard R/3 Job' (selected), 'Business Warehouse InfoPackage', and 'Business Warehouse Process Chain'.
- R/3 Job Identity:**
 - Job Name:** *JOB_SAP
 - Job ID:** 05544701
 - User Name:** TWSTEST
 - Job Action:** Buttons for 'New', 'Edit', 'Details...', 'Status...', and 'Delete'.
- Debug and Setting Options:** Checkboxes for 'Trace', 'Debug', 'Disable BDC Wait', and 'Launch Job Immediately'.
- R3 Command Line:** An empty text input field.
- Job Options:** Dropdown menus for 'Job Spoolist', 'PChain Log', 'Job Log', and 'Job Class' (set to 'C').
- Return Code Mapping:** An empty text input field for 'Expression'.

At the bottom right, there are 'OK' and 'Cancel' buttons.

The page consists of the following:

- Task type group:

Task Type

This information field indicates that the job is SAP R/3 task type. The task type depends on the SAP system where you defined the job.

- R/3 Job Type group

R/3 Job Type

Select Standard R/3 job. You cannot create on the SAP system database Business Warehouse InfoPackage and Business Warehouse Process Chain job type using the Job Scheduling Console.

- R/3 Job Identity group:

Job Name

Displays the SAP job name defined in the SAP Job Definition panel displayed with the **New** action.

Job ID

Displays the job identifier assigned by the SAP system when the creation is completed.

User Name

Type the name of a SAP user. The default value is the value of the r3user option contained in the *workstationname_r3batch.opts* file. The default value is displayed when the creation is completed.

New Click **New** to create a standard SAP job in the SAP database. The SAP Job Definition panel displays. **New** is disabled until a workstation has been defined in the Job Page.

The screenshot shows the 'SAP Job Definition' dialog box. The title bar reads 'SAP Job Definition'. The main window is titled 'R/3 Job'. On the left side, there is a tree view with 'R/3 Job' and 'Steps' expanded. The main area contains several input fields: 'Job Name' with 'JOB_SAP' selected, 'Job Class' with 'C', 'Event Id', 'Event Parameter', 'Client' with '500', and 'Target Host'. At the bottom right are 'OK' and 'Cancel' buttons.

- Complete the information as described on the following pages:

- “R/3 Job page” on page 6
- “Steps” on page 7

- Debug and Setting Options group

Trace Select it to create a trace file **dev_rfc** in the Tivoli Workload Scheduler home directory. Make sure you delete the trace option from the job after you have performed debug procedures. The **dev_rfc** file can become very large and disable your system.

Debug Select it to include additional debug information in the stdlist file of the job.

Disable BDC Wait

Select it to disable the BDC Wait option for the job.

Launch Job Immediately

Select it to launch the SAP job immediately.

- R3 Command Line group:

R3 Command Line

Type any flags that are valid for the SAP command line, such as "*-job jobname -id 12345678 -c C -nobdwait -client 500 -exec_client 500 -s 1 -s1 program=BTCTEST -s1 type=a -flag type=exec*".

- Job Options group:

Job Spoolist (for standard R/3 job only)

Select it to retrieve the spool list in the job log. Possible values are:

- Blank
- Enabled
- Disabled

PChain Log (for job process chain only)

Select it to retrieve the job process chain log. Possible values are:

- Blank
- Enabled
- Disabled

Job Log (for standard R/3 job only)

Select it to retrieve the job process chain log. Possible values are:

- Blank
- Enabled
- Disabled

Job Class

Displays the class assigned to the job in the **Job Class** field in the R/3 Job page. Possible values are:

- Blank
- A
- B
- C

- Return Code Mapping group:

Expression

Type a logical expression that defines the success condition. Allowed operators are comparison operators (=, != or <>, >, >=, <, <=) and logical operators (AND, OR, NOT). For example, the expression `RC >= 6` indicates that a return code greater than or equal to 6 means the task is successful.

R/3 Job page: Use the **R/3 Job** page to define or modify the native R/3 job that will be run under the control of Tivoli Workload Scheduler (as a task of the job you specified in the General tab).

The page consists of the following:

Job Name Type the name of the SAP R/3 job.

Job Class Type the class of the SAP R/3 job. Possible values are:

- A
- B
- C

Event ID Displays the identifier of the event defined in the SAP system.

Event Parameter

Displays the parameter of the event defined in the SAP system.

Client Displays the value indicated in the **R3Client** option of the `workstation_r3batch.opts` option file. This field is filled when the job creation completes.

Target Host Type the name of the R/3 workstation where the job is to run.

Steps: Use the **Steps** page to define one or more ABAPs, external programs, or external commands for the SAP R/3 job.

The page consists of the following:

- Common Value group:

Type Specify the type of programs contained in the job. Possible values are:

- ABAP
- External programs
- External commands

Name The name of the SAP step. If you are creating an ABAP jobs type it or use the (...) ellipsis button to display a list of ABAP jobs. If you are creating an external command use the (...) ellipsis button to display a list of external commands. If you are creating an external program, type its name.

User The name of the SAP user who launches the step.

Var / Parm Type any variants or parameters for the step. Variants are used with ABAP modules, and parameters are used with external programs and external commands. Not all ABAPs require variants and not all external programs and external commands require

parameters. Click (...) ellipsis to display a list of variants associated with the ABAP. Use this list to select, create, or change a variant. See "Defining or updating R/3 variants from the Job Scheduling Console" on page 9 for details.

Target Host Type the SAP target host workstation for this step. This option is applicable to external programs and external commands.

- Print Parameters group (for ABAP programs only):

Number of Copies

Type the number of copies you want to print. The default value is **one**.

List Lines

Type the number of list lines.

Output Device

Type the name of the printer or fax. Click (...) ellipsis to display a list.

Columns

Type the number of characters per list line.

Name Spool Request

Type the name of the spool request. Set this only if you do not want to print immediately.

Text Cover Page

Type the description text of the spool request. This text appears on the standard cover page.

Recipient

Type the recipient name for the SAP cover sheet.

Spool Data Set

Type the spool Data Set name.

Print Formatting

Specify the page format of the output. Depending on the printer connected, you can set different formats with different maximum page length and width values in this field.

Authorization

Type the authorization for the spool request. Only users with this authorization can view the contents of the request.

Department

Specify the department name for the SAP cover sheet.

Print Parameters Flags

Click Print Parameter Flags to set the flags for the print parameters.

Archiving Mode

Displays the archive mode for the print parameters.

SAP Cover Page

Specify the SAP cover page. Possible values are:

- X
- Blank
- D. This is the default value.

Spool Retention Period

Specify how long the spool is retained after printing.

Spool Request Priority

Specify the priority for the print. This field is available for jobs created using SAP BC-XBP 2.0. The default value is eight.

Delete After Printing

Select it to delete the print job after printing.

Print Immediately

Select it to print the job immediately.

Selection Cover Page

Select it to select a cover page for the print job.

New Spool List

Select it to create a new spool list for the print job. This field is available for jobs created using SAP BC-XBP 2.0.

Host Spool Cover Page

Type the value to associate to the cover page of the host spool. This field is available for jobs created using SAP BC-XBP 2.0. Possible values are:

- X
- Blank
- D. This is the default value.

- Control Flags group (for external programs only):

Job to wait for Ext Program to End

Select it to run the SAP job when the external program ends.

Output Joblog

Select it to log the output of the job in the SAP system.

Error Output Joblog

Select it to log all the external errors in the SAP system.

Activate Trace Select it to activate the traces.

Defining or updating R/3 variants from the Job Scheduling Console

The action of clicking the ellipsis alongside the **Var/Parm** field in the SAP Job Definition panel displays a Variant List panel. This panel lists all the variants associated with the ABAP featured in the **Name** field in SAP Job Definition and resembles the one shown in Figure 1.

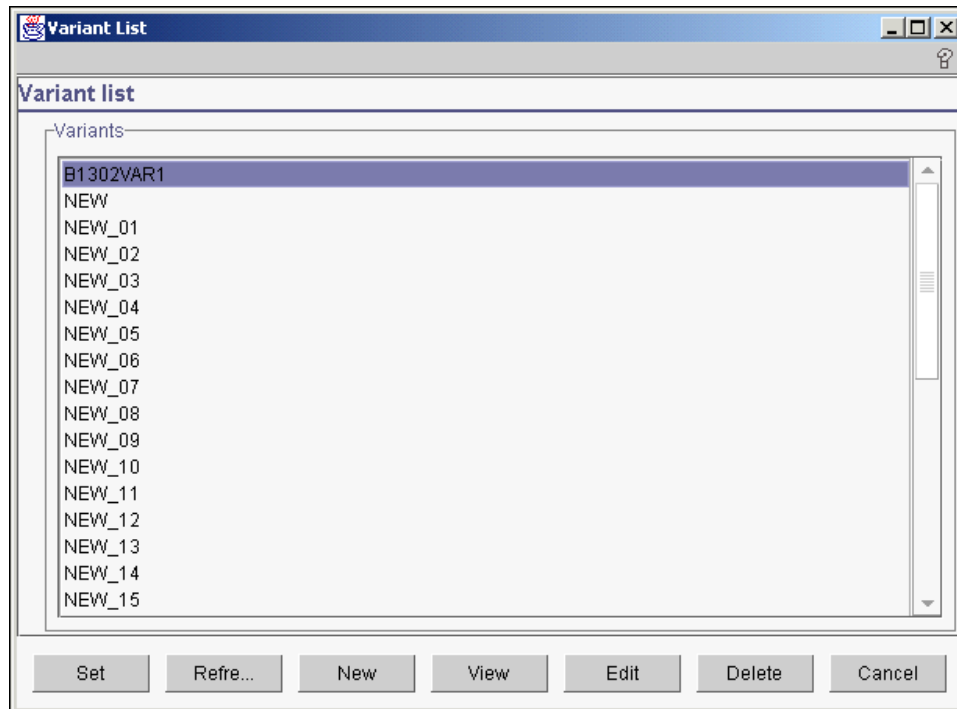


Figure 1. The Variant List panel

From this panel, in addition to other actions, you can create or update variants. To do this, click **New** or **Edit**. A Variant Frame panel similar to that shown in Figure 2 is displayed (if you are editing, the fields and selections will not be empty):

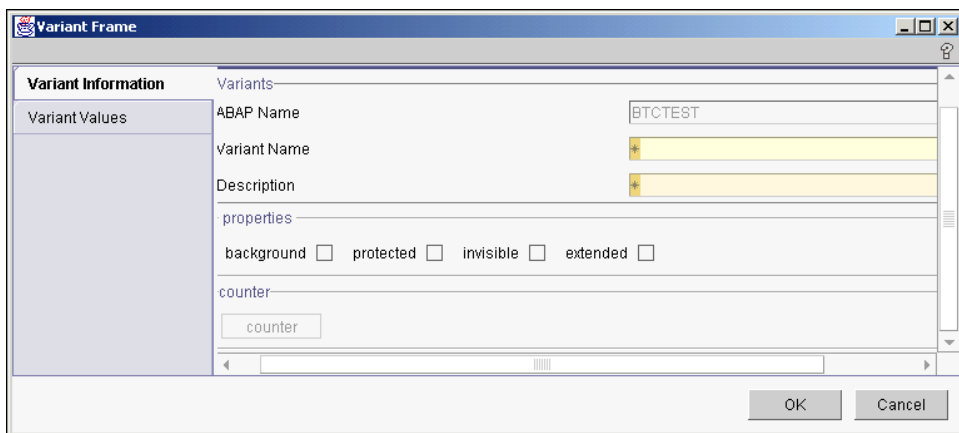


Figure 2. The Variant Information page of the Variant List panel

In the Variant Information page do the following:

1. Enter or modify the variant name and description.
2. Optionally, check a Properties box:

Background

The variant can only be used in background processing.

Protected

The variant is protected against being changed by other users.

Invisible

The variant will not be displayed in the F4 value list in the SAP GUI.

Extended

Allows for the use of placeholders and counters as variant values. If you check this box, the **counter** button becomes available.

For extended variants, you can use placeholders and counters that eliminate the error-prone task of adjusting values and thus dramatically minimize the effort for variant maintenance. Placeholders and counters are preprocessed by Tivoli Workload Scheduler and the values are automatically adjusted when the job is launched. Supported placeholders and counters are:

Table 1. Placeholders and counters for extended variants

Symbol	Meaning	Syntax
\$S	Timestamp	YYYYMMDDHHMM
\$D	Day of the month	DD
\$_D	Date	YYYYMMDD
\$M	Month	MM
\$Y	Year	YY
\$_Y	Year	YYYY
\$H	Hour	HH
\$T	Minute	MM
\$_T	Time	HHMMSS
\$Nx	Counters	10 counters: \$N0 - \$N9 (\$N = \$N0)

Table 1. Placeholders and counters for extended variants (continued)

Symbol	Meaning	Syntax
\$(date expression)	Date expression	Like the datecalc command. Enclosed within \$(and).
\$(arithmetic expression]	Arithmetic expression	Arithmetic expressions allowing for +, -, *, and / operations between integers and counters.

In the Variant Values page, the fields and values are dynamically built through r3batch depending on the characteristics of the variant or step and are identical to the ones contained in the equivalent SAP panel.

Editing a standard SAP R/3 job

To edit a standard R/3 job, perform the following steps:

1. In the Work with engines pane, select an *engine* → *database list* → *job definition list*. The list of job pane displays all the available jobs.
2. Double-click the R/3 job you want to edit. The Properties - Job Definition panel displays.
The panel consists of the following:
 - “General page” on page 2
 - “Task page” on page 4
3. Modify the information contained in the pages as appropriate.
4. To modify the R/3 job information on the R/3 database, in the Task page click **Edit**. The SAP Job definition panel displays.
5. Modify the information described on the following pages as appropriate:
 - “R/3 Job page” on page 6
 - “Steps” on page 7

In the R/3 job page, when you modify the **Job Name** and click **OK**, the **Job ID** in the Task page is automatically replaced with the one associated to the new job name.

In the Steps page, for each step you modify, click the **Modify Step** icon. This operation saves the new step information in the R/3 database.

6. Click **OK**. The Properties- Job Definition dialog displays.
7. Click **OK**.

Displaying details of a standard R/3 job or of Business Warehouse Info Package

To display details of a standard R/3 job or of a Business Warehouse Info Package, perform the following steps:

1. In the Work with engines pane, select an *engine* → *database list* → *job definition list*. The list of job pane displays containing the available jobs.
2. Double-click the R/3 job whose details you want to display. The Properties - Job Definition panel displays.
The panel consists of the following:
 - “General page” on page 2
 - “Task page” on page 4
3. In the Task page click **Details**. The Details panel displays. It contains all the information relevant for the job.
4. Click **OK**. The Properties- Job Definition dialog displays.
5. Click **OK**.

Verify the status of a standard R/3 job

To verify the status of a standard R/3 job, perform the following steps:

1. In the Work with engines pane, select an *engine* → *database list* → *job definition list* The list of job pane displays containing the available jobs.
2. Double-click the R/3 job whose status you want to display. The Properties - Job Definition panel displays.

The panel consists of the following:

- “General page” on page 2
 - “Task page” on page 4
3. In the Task page click **Status**. The R/3 Job Status panel displays with the status of the job.
 4. Click **OK**. The Properties- Job Definition dialog displays.
 5. Click **OK**.

Deleting a standard R/3 job from the R/3 database

To delete a standard R/3 job from the R/3 database, perform the following steps:

1. In the Work with engines pane, select an *engine* → *database list* → *job definition list* The list of job pane displays containing the available jobs.
2. Double-click the R/3 job whose status you want to display. The Properties - Job Definition panel displays.

The panel consists of the following:

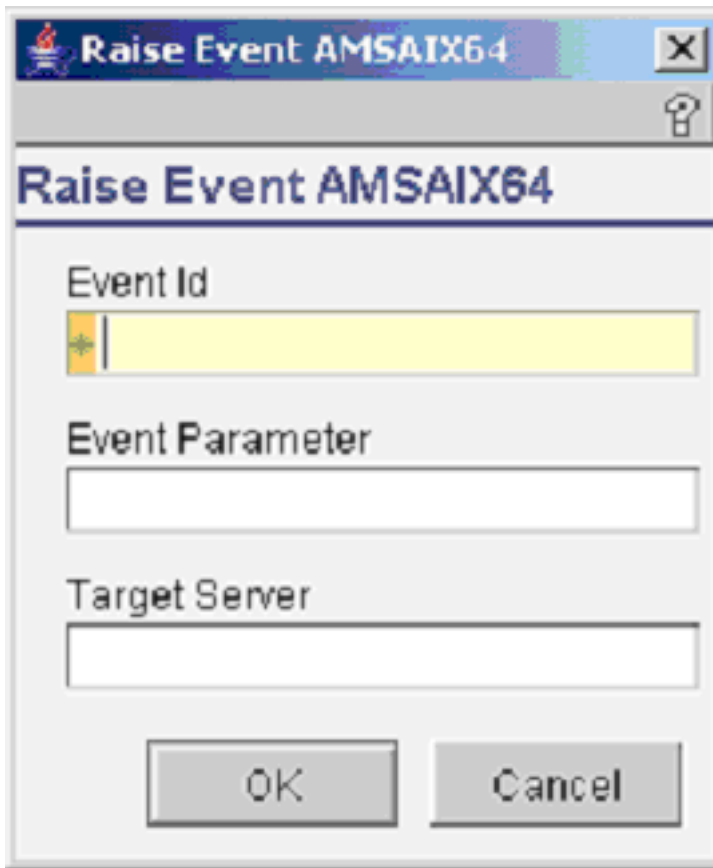
- “General page” on page 2
 - “Task page” on page 4
3. In the Task page click **Delete**, to delete the R/3 job displayed in the **Job Name** field. To delete a job different from the one displayed in the **Job Name** field click the (...) ellipsis button and display the list of available jobs. Select the job you want to delete.
 4. Click **OK**. The Properties- Job Definition dialog displays.
 5. Click **OK**.

Raising a SAP event

You can raise events on SAP R/3 jobs in the Tivoli Workload Scheduler database.

To raise an event on a SAP R/3 job, perform the following steps:

1. If you are using the XBP 2.0 SAP system, be sure of the following:
 - The job interception feature is switched off.
 - There are no activities running for the interception handling.
 - The TBCICPT1 R/3 table does not contain entries that match the interception criteria for your job.
2. On the SAP R/3 system, create a job that has as start condition a SAP event. When you create this job its status is released.
3. In the Work with engines pane, select an *engine* → *database list* → *job definition list* The list of job pane displays the available jobs.
4. Select a Tivoli Workload Scheduler job whose workstation has been defined to connect to the SAP R/3 system.
5. Right-click the job and select **Raise Event**.
The Raise Event panel opens.



The panel consists of the following:

Event Id

The identifier of the event that is to be raised.

Event Parameter

The parameter of the event that is to be raised.

Target Server

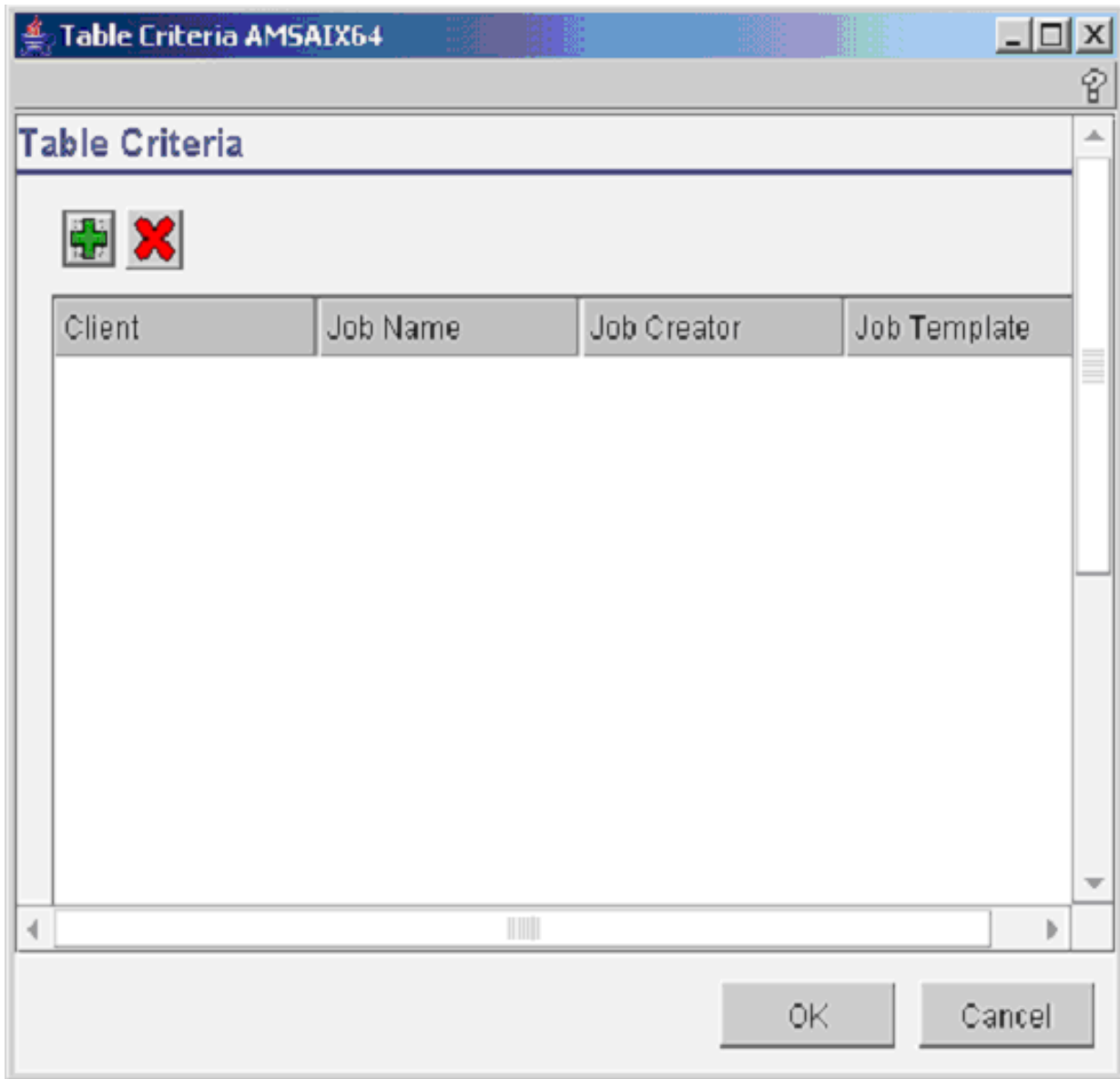
The server where the event is to be raised.

6. Click **OK**. The event is raised.

Setting SAP R/3 table criteria

To set table criteria on a SAP R/3 job, perform the following steps:

1. In the Work with engines pane, select an *engine* → *database list* → *job definition list*. The list of job pane displays the available jobs.
2. Right-click the job and select **Table Criteria**.
The Table Criteria panel opens.



The panel consists of the following:

Client The client workstation of the SAP R/3 job.

Job Name

Specify a filter to match a set of SAP R/3 jobs. Use the * (asterisk) to match a set of jobs.

Job Creator

Specify a filter to match a set of SAP R/3 job creator. Use the * (asterisk) to match a set of jobs.

Job Template

Specify the template that was used to create the SAP R/3 job. For more information see Chapter 23. Job interception and parent child feature.

3. Perform one of the following action:

Add To add a new interception criteria.

Delete To delete a new interception criteria.

Select a row

To modify an interception criteria.

4. Click **OK**