

IBM Tivoli Workload Scheduler for Applications V8.5

Configuring Tivoli Workload Scheduler for Applications for SAP



In this module, you will learn how to configure Tivoli® Workload Scheduler for Applications r3batch method so that you can run and monitor jobs on an SAP server from the Tivoli Workload Scheduler environment.

Extended agent definition

- IBM Tivoli Workload Scheduler uses extended agents (XA) to extend its job scheduling functions on other systems and applications, both in distributed and end-to-end environments
- An extended agent is a workstation that has a host and an access method
- The host is any other Tivoli Workload Scheduler workstation, except another XA; the host is a virtual agent
- The access method is a program that is executed by the hosting workstation whenever Tivoli Workload Scheduler needs to interact with the external system

IBM Tivoli Workload Scheduler uses extended agents (XA) to extend its job scheduling functions on other systems and applications, both in distributed and end-to-end environments. An extended agent is a workstation that has a host and an access method. The host is any other Tivoli Workload Scheduler workstation, except another XA; the host is a virtual agent. The access method is a program that is executed by the hosting workstation whenever Tivoli Workload Scheduler needs to interact with the external system.

Configuration steps

After the access method has been installed on the target hosting workstation, you must configure the extended agent

1. Configuring the SAP R/3 access method
 - Define the workstation
 - Create the option files
2. Configuring the SAP R/3 environment
 - Create the Tivoli Workload Scheduler RFC user
 - Create the authorization profile for the Tivoli Workload Scheduler user
 - Import the transport files onto the SAP server

After the access method has been installed on the target hosting workstation, you must configure the extended agent. To configure the SAP R/3 access method, you perform two steps: Define the workstation and create the option files. To configure the SAP R/3 environment, you perform three steps: Create the Tivoli Workload Scheduler RFC user, create the authorization profile for the Tivoli Workload Scheduler user, and import the transport files onto the SAP server.

Configuring the SAP R/3 access method

Configuring the SAP R/3 access method

XA workstation definition

- The extended agent workstation must be defined into a Tivoli Workload Scheduler database in the standard manner
- In a distributed environment, you can use the composer CLI or the Job Scheduling Console (JSC) GUI and Tivoli Dynamic Workload Console (TDWC) GUI
- In an end-to-end environment, you define the workstation in the CPUREC initialization statement using either Interactive System Productivity Facility (ISPF) or JSC and TDWC GUIs
- To connect to more than one SAP server, you can set up multiple SAP extended agent workstations that connect to the same method but use different options files

The extended agent workstation must be defined into a Tivoli Workload Scheduler database in the standard manner. In a distributed environment you can use either composer CLI or JSC and TDWC GUIs. In an end-to-end environment, you define the workstation in the CPUREC initialization statement using either ISPF or the Job Scheduling Console (JSC) GUI and Tivoli Dynamic Workload Console (TDWC) GUI. To connect to more than one SAP server, you can set up multiple SAP extended agent workstations that connect to the same method but use different options files.

XA workstation definition example

workstation definition:

```

cpuname: SAPCPU
description "SAP extended agent"
os other
node myhost.ibm.tivoli.com
tcpaddr 51111
domain masterdm
for maestro
type x-agent
host HostAgent
access r3batch
end

```

Note: Node name and TCP port have no effect on the SAP agent

The screenshot shows a 'Properties - Workstation in Database' dialog box with the following fields and values:

- Information:**
 - Ignore
 - Name: SAPCPU
 - Domain: (empty)
 - Description: SAP extended agent
 - Workstation Type: Extended Agent
 - Operating System: Other
 - Full Status:
 - Time Zone: (empty)
- Communication Options:**
 - Node Name: r3batch
 - TCP Port: 51111
 - SSL Communication: Disabled
 - SSL Port: (empty)
 - Mailman Server: (empty)
 - Behind Firewall:
 - Auto Link:
- Extended Agent Options:**
 - Access Method: r3batch
 - Host: HostAgent

This is an example of a workstation definition. On the left, you see the workstation definition that was created using the composer program. On the right, you see the Job Scheduling Console Panel for the workstation definition. Note that the node name and TCP port have no effect on the SAP agent.

XA option files

- The Tivoli Workload Scheduler for Applications installation process creates a default global options file for the r3batch access method, named r3batch.opts
- You can also create local option file, named SAPCPU_r3batch.opts, which must be located in the TWS_home/methods directory of the hosting computer for the extended agent

Note: An options file name is case-sensitive

- The options file contains a set of options (one option per line) with this format:
OPTION=VALUE
- Options files can be created and managed as in previous releases with the option editor and manually

Note: If the r3batch method finds the local option file for an extended agent, it ignores the duplicated information contained in r3batch.opts

The Tivoli Workload Scheduler for Applications installation process creates a default global options file for the r3batch access method, named r3batch.opts. You can also create a local option file, named SAPCPU_r3batch.opts, which must be located in the TWS_home/methods directory of the hosting computer for the extended agent. Note that an options file name is case-sensitive. An options file contains a set of options, one option per line, with the format OPTION=VALUE. Options files can be created and managed as in previous versions with the Option Editor and manually. Note that if the r3batch method finds the local option file for an extended agent, it ignores the duplicated information contained in the r3batch.opts file.

XA option files: Options list

Customizing the following global options is optional:

- dep_sem_proj
- icp_sem_proj
- job_sem_proj
- primm_enable
- prnew_enable
- prrel_enable
- prsap_enable
- prunx_enable
- var_sem_proj



These global options are optional. You can only specify these options in the *global* configuration file, *r3batch.opts*.

XA option file: Options list

Customize the following required local options:

r3client	The SAP client number
r3host	The host name of the SAP of the application server
r3instance	The SAP instance number. If r3group is set, this option is ignored
r3password	The password for the r3user
r3sid	The SAP system ID
r3user	The name of the SAP user with which the access method connects to the SAP

The required options are specified in the *local* configuration files. r3client is the SAP client number. r3host is the host name of the SAP of the application server. r3instance is the SAP instance number. If r3group is set, this option is ignored. r3password is the password for the r3user. r3sid is the SAP system ID. r3user is the name of the SAP user with which the access method connects to the SAP.

XA option files: Options list

Customizing the following local options is optional:

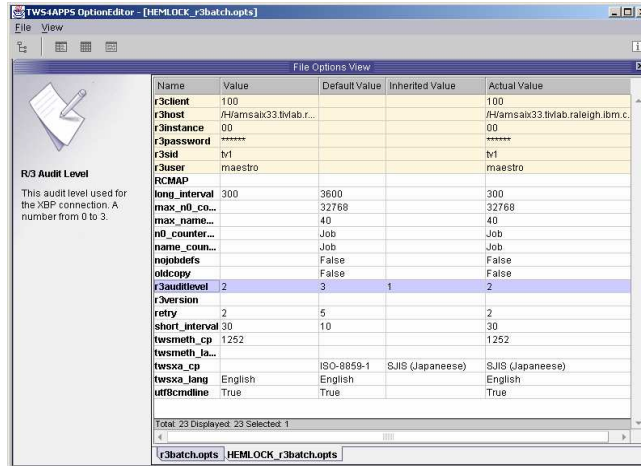
- bapi_sync_level
- job_duration
- primm_enable
- prnew_enable
- prrel_enable
- prsap_enable
- prunx_enable
- r3gateway
- r3group
- r3gwservice



These local options are optional. You can customize the local options only in the *local* configuration files.

XA option files: Option editor

The option editor has been modified to fully manage the new options of the r3batch access method



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Configuring the SAP R/3 environment

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Creating a Tivoli Workload Scheduler RFC user

For Tivoli Workload Scheduler to communicate with SAP R/3, you must create a user ID in SAP R/3 for Tivoli Workload Scheduler batch processing. For security reasons, use a new user ID rather than an existing one

1. Create a new RFC user ID
2. Give this new RFC user ID these attributes:
 - A user type of CPIC, Communications, or DIALOG, depending on the SAP R/3 release
 - A password at least six characters in length
 - The appropriate security profiles, depending on your version of SAP R/3

Note: Tivoli Workload Scheduler requires an RFC user password to start or monitor SAP R/3 jobs. If this password changes in SAP R/3, you must update the options file used by r3batch with the new password

For Tivoli Workload Scheduler to communicate with SAP R/3, you must create a user ID in SAP R/3 for Tivoli Workload Scheduler batch processing. For security reasons, use a new user ID rather than an existing one. Steps to perform are, first, create a new RFC user ID. Second, give this new RFC user ID the specific attributes: a user type of CPIC, Communications, or DIALOG, depending on the SAP R/3 release; a password at least six characters in length; the appropriate security profiles, depending on your version of SAP R/3. Note that Tivoli Workload Scheduler requires an RFC user password to start or monitor SAP R/3 jobs. If this password changes in SAP R/3, you must update the options file used by r3batch with the new password.

Creating the authorization profile for a Tivoli Workload Scheduler user

- There are two alternative ways to create the authorization profile for Tivoli Workload Scheduler user
 - Using transaction su02 and manually creating the profile
 - Using the Profile Generator (transaction PFCG)



There are two alternative ways to create the authorization profile for Tivoli Workload Scheduler user: using transaction su02 and manually creating the profile; or Using the Profile Generator (transaction PFCG).

Copying the correction and transport files

- The setup file loads four correction and transport files into the Tivoli Workload Scheduler home directory
- Copy and import these correction and transport files to the SAP R/3 server as follows:
 1. On your SAP R/3 database server, log on to the SAP R/3 system as an administrator
 2. Copy the control file and data file from the *TWS_home\methods* directory to the following directories on your SAP R/3 server:
 - copy *control_file* /usr/sap/trans/cofiles/
 - copy *data_file* /usr/sap/trans/data/
 3. Import transport files into SAP R/3 database using “tp import” command

The setup file loads four correction and transport files into the Tivoli Workload Scheduler home directory. Copy and import these correction and transport files to the SAP R/3 server as follows. First, on your SAP R/3 database server, log on to the SAP R/3 system as an administrator. Second, copy the control file and data file from the *TWS_home\methods* directory to the following directories on your SAP R/3 server: copy *control_file* /usr/sap/trans/cofiles/; copy *data_file* /usr/sap/trans/data/. Third, import transport files into the SAP R/3 database using the “tp import” command.

Delivered transport files (1 of 2)

- The names of `control_file` and `data_file` vary from release to release
 - The files are located in the `TWS_home\methods` directory and have the following file names and formats:
 - For SAP R/3 releases earlier than 6.10
 - K000xxx.TV1 (control file) and R000xxx.TV1 (data file)
 - K900xxx.TV2 (control file) and R900xxx.TV2 (data file)
 - For SAP R/3 releases 6.10 or later
 - K9000xx.TV1 (control file) and R9000xx.TV1 (data file)
 - K9007xx.TV1 (control file) and R9007xx.TV1 (data file)
- where `x` is a digit generated by the SAP system

The names of *control_file* and *data_file* vary from release to release. The files are located in the `TWS_home\methods` directory and have different names and formats. For SAP R/3 releases earlier than 6.10, they are named K000xxx.TV1 (control file) and R000xxx.TV1 (data file) or K900xxx.TV2 (control file) and R900xxx.TV2 (data file).

For SAP R/3 releases 6.10, or later, they are named K9000xx.TV1 (control file) and R9000xx.TV1 (data file) or K9007xx.TV1 (control file) and R9007xx.TV1 (data file), where `x` is a digit generated by the SAP system.

Delivered transport files (2 of 2)

For Tivoli Workload Scheduler for Applications version 8.5, the following files are used:

- For SAP R/3 releases earlier than 6.10
 - K000538.TV1 (for standard jobs scheduling)
 - R000538.TV1 (for standard jobs scheduling)
 - K900294.TV2 (for IDoc monitoring and job throttling)
 - R900294.TV2 (for IDoc monitoring and job throttling)
- For SAP R/3 releases 6.10 or later
 - K900044.TV1 (for standard jobs scheduling)
 - R900044.TV1 (for standard jobs scheduling)
 - K900751.TV1 (for IDoc monitoring and job throttling)
 - R900751.TV1 (for IDoc monitoring and job throttling)

On this slide is a list of control files and data files that are used in Tivoli Workload Scheduler version 8.5.

Summary

- After you install Tivoli Workload Scheduler for Applications for SAP, you need to configure it so that you can connect to the SAP server and perform jobs on the server.
- More information is available at this address:
<http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=/com.ibm.tivoli.itwsfa.doc/awsaumst118.htm>

In summary, after you install Tivoli Workload Scheduler for Applications for SAP, you need to configure it so that you can connect to the SAP server and perform jobs on the server. For more detailed information about how to configure Tivoli Workload Scheduler for Applications for SAP method, refer to the link to the IBM Information Center that is listed on the slide.



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