Oracle Real-Time Scheduler 1.13.2

Process Control 1.0

User Guide
Revision 1.0

July 2010

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Chapter 1: Introduction

Oracle Real-Time Scheduler has multiple components, each of which consists of a number of separate and discrete applications or processes. These processes may run on one machine, or may run on multiple machines at one site, or multiple machines at separate sites. The processes may be run on one or more hardware platforms.

The Process Control system is that component of Oracle Real-Time Scheduler, which automatically starts the remaining components. It also automatically restarts any stopped components.

1.1. GLOSSARY

- **Slave Processes** *-Are processes that are controlled from the Process Control system. For example: Planner or Resource Manager processes (such as; SmAuto, Switch, GUI Server, rmgw, rts_ws) that are running on a given machine.*
- **Privileged user** *-Is the Root user on Linux or the Administrator on Windows.*

1.2. PROCESS CONTROL

The Process Control system has a single process:

- Process Control Daemon (pcd).

1.2.1 Process Control Daemon

Process Control Daemon is a continuous process running in the background on each host machine that has processes to be controlled. It starts, stops and monitors the status of slave processes running on the same machine.

Chapter 2:Installing Process Control Daemon on Windows

The steps for installing Process Control Daemon on Windows are described in this section. The instructions and illustrations described in this section are based on a Process Control system installation performed on the Windows XP Professional Operating System.

1. Create a user account named ORS under Windows.

   The Process Control Daemon and all processes controlled by the daemon should run under a single user environment. Hence it is recommended that a separate user account be created for this purpose.

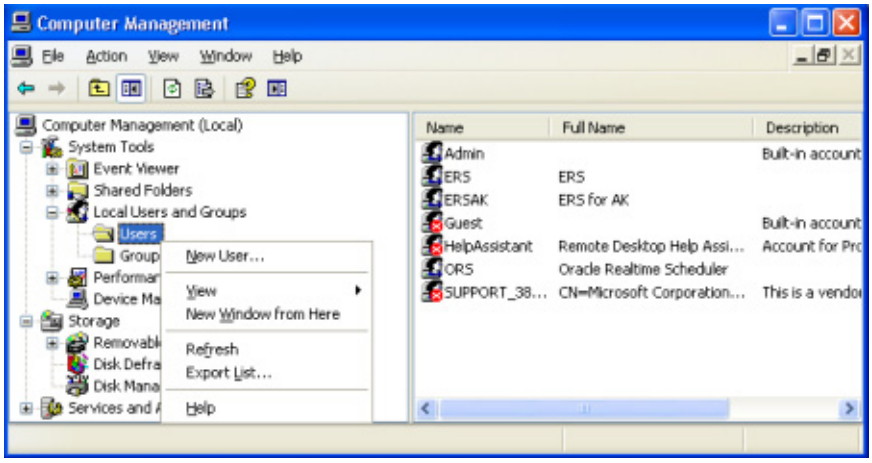
2. You may create a user account called ORS within a group with *write* access to the default ORS installation directory under "*C:\Program Files\Sidewinder"*. For example: Administrator group or Power Users group.

3. Alternatively, you may create the 'ORS' user account as a normal user and install the Process Control Daemon and the ORS components under a directory in which this user has write access. For example: "*C:\Documents and Settings\ORS"* directory.

To create a new local user account in Windows XP Professional:

- Select ***Control Panel, Administrative Tools, Computer Management, Local Users and Groups*** from the ***Start*** menu.

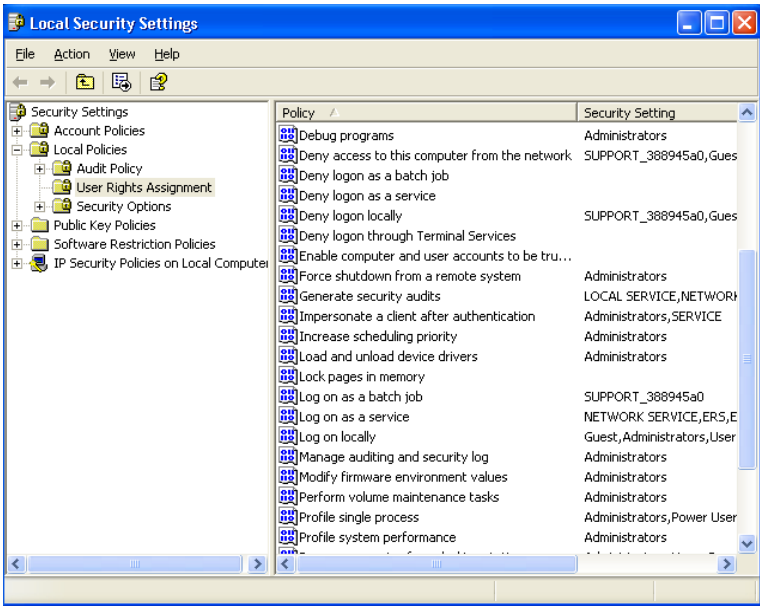
• Right click on the ***Users*** option and enter the New User details



4. Assign the "*Log on as a service"* right to the 'ORS' user.

To customize users rights in Windows XP Professional:

- Select ***Control Panel, Administrative Tools, Local Security Policy, Local Policies, User Rights Assignment, Log on as a Service*** from the ***Start*** menu.
-



This opens the "Log on as a service Properties" dialog on your display

- Select **Add User or Group**, enter the user name ORS and click **OK**.

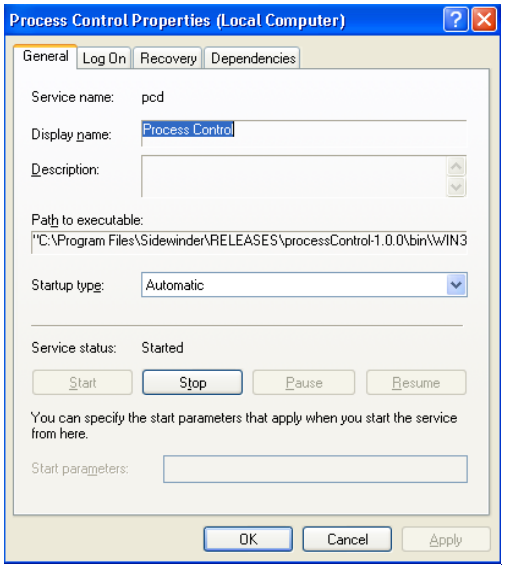
5. Log on as the Administrator user to install the Process Control system for Windows

Note: You need to log in as an Administrator user as the installation of Process Control Daemon requires access to the Windows service control manager (SCM) database.

6. Log on as the ORS user to verify that the Process Control system has been installed correctly.

To verify the installation under Windows XP Professional:

- Select ***Control Panel, Administrative Tools, Services, Process Control.*** This will open the Process Control Properties dialog.
- Select the ***General*** tab
- The Startup type*: should be automatic*, and the Service status: should be *Started*.



7. Configure the Process Control system.

Note: The Process Control installation process automatically creates an initial configuration file called *processes.cfg* under the "*C:\Program Files\Sidewinder\etc*" directory.

To modify the initial Process Control configuration file:

- Change directory to "*C:\Program Files\Sidewinder\etc*".
- Open the initial processes configuration file *processes.cfg using a text editor.*
- Specify the processes to be controlled by the Process Control Daemon.

The initial processes configuration file is a plain text file containing lines in either one of the following formats:

INIT_PROCESS|<Process Identifier>|<Executable>|<Version>|<Configuration File>|

Or

START_PROCESS|<Process Identifier>

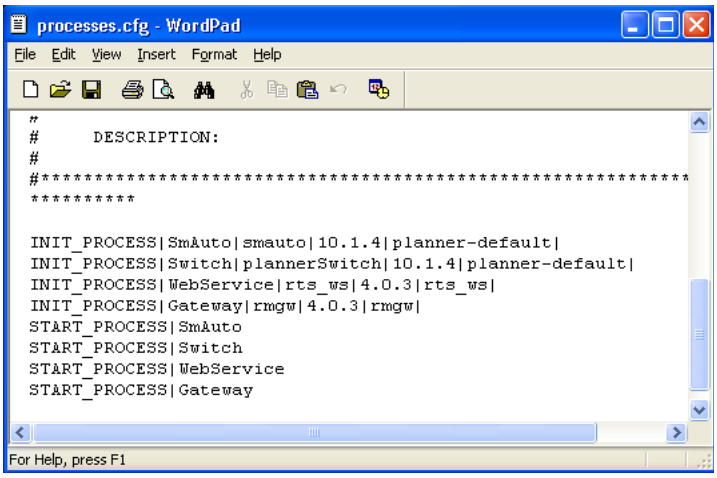
Example:

INIT_PROCESS|SmAuto|smauto|10.1.4|planner-default|

START_PROCESS|SmAuto

The interpretation for the above two lines is to start the *Smauto sub-component,* Planner version 10.1.4 using the *planner-default.cfg* configuration file.

- Save the changes.



The above image is a screenshot of the initial processes configuration file, *processes.cfg*.

Note: *Absolute path names must be used to point to directory locations (leading to maps, log files etcetera) within the* Oracle Real-Time Scheduler *processes configuration files.*

8. Restart the Process Control service if required.

   To restart the service:

- Select ***Control Panel, Administrative Tools, Services, Process Control.***
  This will open the Process Control Properties dialog.
- Select the ***General*** tab
- Select the ***Stop*** button and wait until the Service status: is changed to *Stopped*.
- Now select the ***Start*** button to restart the Service.
  The Service status: must change back to *Started*.

Chapter 3:Installing Process Control Daemon on Linux

The steps for installing Process Control Daemon on Linux are described in this section.

1. Create a user account named ORS under Linux.

   The Process Control Daemon and all processes controlled by the daemon should run under a single user environment. Hence it is recommended that a separate user account be created for this purpose.

2. Extract the Process Control software from the tgz file to the ORS installation directory using the following command:

   gzip -dc processControl-1.0-linux.tgz | tar xvf - <return>

   Or

   tar xzvf processControl-1.0-linux.tgz <return>

   Note: The extension tgz indicates that the file was created as a tar file and then compressed using the gzip command.

   This will create the "*processControl-1.0*" directory under RELEASES directory within the ORS installation directory structure.

3. Install the Process Control Daemon for Linux.

To install the Process Control Daemon for Linux:

- Log in as the Root user.
- Change directory to "*RELEASES/processControl-1.0/bin*" under the ORS installation directory.
- Type ***./install*** to run the install script.

To uninstall Process Control system for Linux:

- Run the uninstall script from this location as the Root user.

4. Verify that the Process Control Daemon for Linux has been installed correctly.

To verify the correctness of the installation:

- Type ***/etc/init.d/pcd***

  The response following a successful installation will be;

Usage: /etc/init.d/pcd { start | stop | status }

5. Starting Process Control Daemon

To start Process Control Daemon

- Type ***/etc/init.d/pcd start***

  Expect the following response:

  - Starting pcd service...
  - Password:<specify password here>

6. Stopping Process Control Daemon

To stop Process Control Daemon

Type ***/etc/init.d/pcd stop***

Expect the following response:

- Shutting down pcd service...
- Checking Process Control Daemon status

To check the status for Process Control Daemon

- Type ***/etc/init.d/pcd status***

  Expect the following response:

  - /etc/init.d/pcd: pcd is running...

    Or

  - /etc/init.d/pcd: pcd is stopped

7. Configure the Process Control system.

   The Process Control installation process automatically creates an initial configuration file called *processes.cfg* under the ORS installation s etc directory.

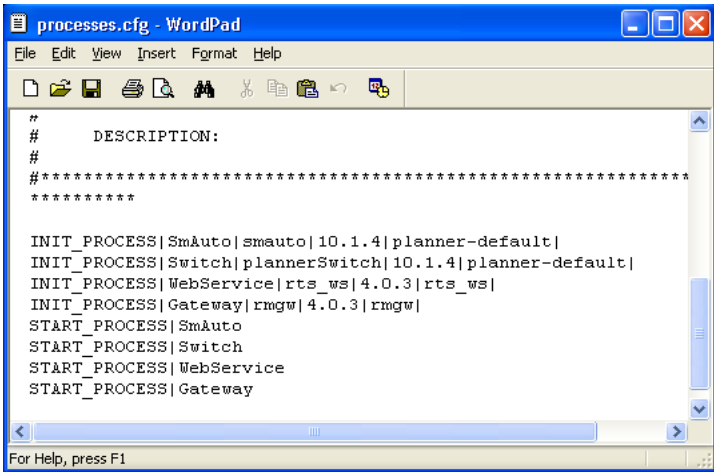
To modify the initial Process Control configuration file:

- Change directory to "*etc*" under the ORS installation directory.
- Open the initial processes configuration file processes.cfg using a text editor.
- Specify the process(es) to be controlled by the Process Control Daemon.
- The initial processes configuration file is a plain text file containing lines in either one of the following formats:

  INIT_PROCESS|<Process Identifier>|<Executable>|<Version>|<Configuration File>|

  Or

  START_PROCESS|<Process Identifier>
- Save the changes.



The above image is a screenshot of the initial processes configuration file, *processes.cfg*.

Example:

INIT_PROCESS|SmAuto|smauto|10.1.4|planner-default|

START_PROCESS|SmAuto

The interpretation for the above two lines is to start the Smauto sub-component, Planner version 10.1.4 using the *planner-default.cfg* configuration file.

Note: *Absolute path names must be used to point to directory locations (leading to maps, log files etcetera) within the* Oracle Real-Time Scheduler *processes configuration files.*

8. Restart the Process Control service if required.

To restart the service:

- Stop Process Control Daemon by typing ***/etc/init.d/pcd stop***
- Start Process Control Daemon by typing ***/etc/init.d/pcd start***

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