

Reference Guide

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OpenEnterprise Archive File Management Reference Guide (V2.83)

Remote Automation Solutions

Website: www.EmersonProcess.com/Remote



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1 Archive File Management

1.1 Overview

OpenEnterprise provides a richly featured set of functionality for collection and access to historical data. Archive files are the final storage format of this historical data. All data that must be kept longer term is sooner or later moved into an archive file. This causes two major archive file management issues.

1.1.1 Bringing Archives Online and Offline

In order for the OpenEnterprise to access archived data the archive has to be 'online'. This means that the indexes on the archive are loaded into memory.

The Historian Configuration Tool enables a specified number of archive files to be automatically brought online as they are created. However, because of memory overhead, it is not recommended to have too many files online at once.

This means that when data that is older than the time span of the automatic online files is required, there is need of a simple mechanism to bring these older files online manually.

1.1.2 Moving Archive Files Around

When archive files are brought online or taken offline, it is helpful to have them moved to different directories. This makes identification of the archives that are online or offline easier.

In addition, after a long time archives may need to be stored elsewhere. The OpenEnterprise Archive File Management system therefore incorporates an archive file backup utility.

The Archive File Management system takes care of these archive file issues, enabling the user to bring archives online and offline with ease, as well as supporting the use of backup schedules.

How Archive File Management Works

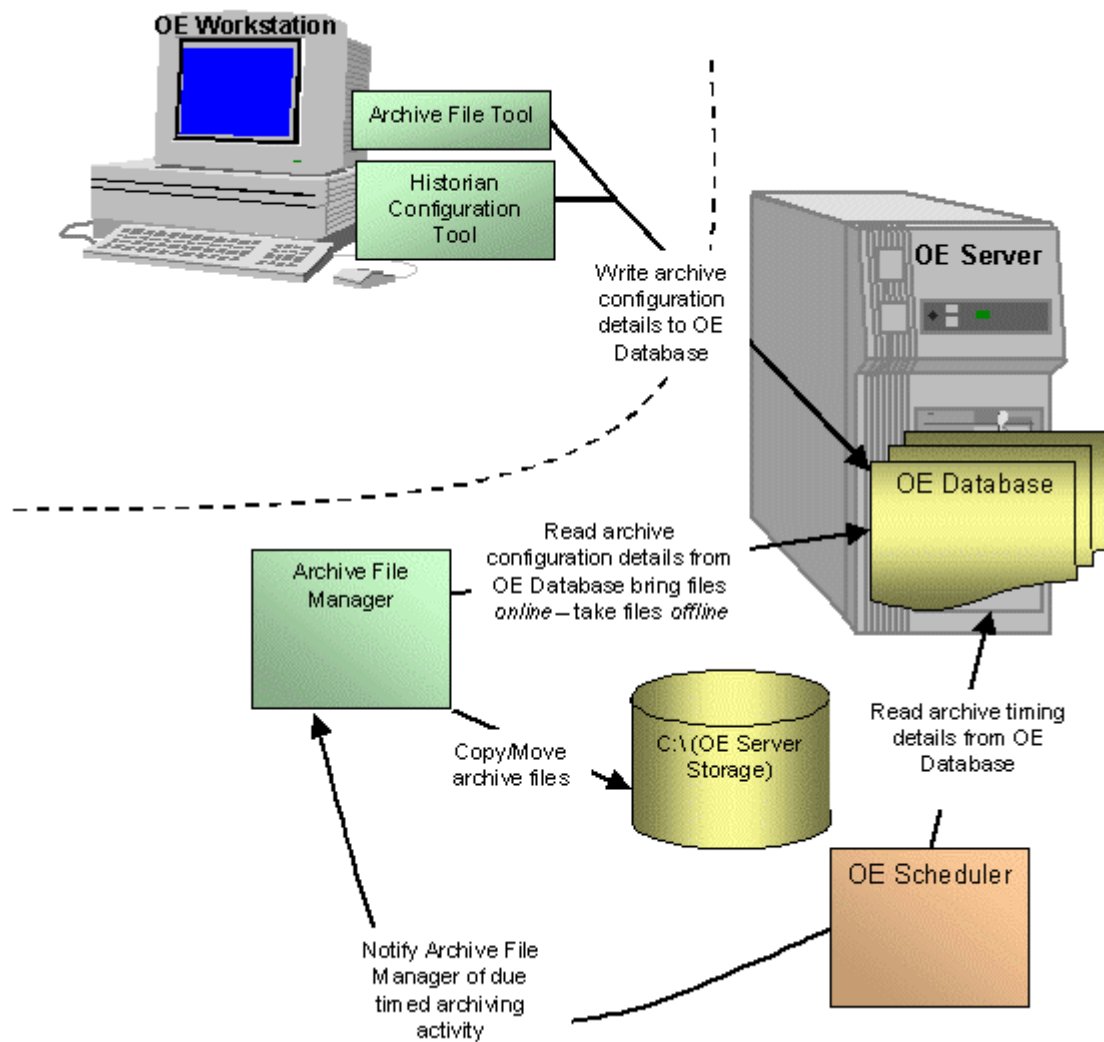
1.2 How Archive File Management Works

The following tasks are required to manage historical archiving.

1. Historian Stream Configuration
2. Archive File Management
3. Scheduling

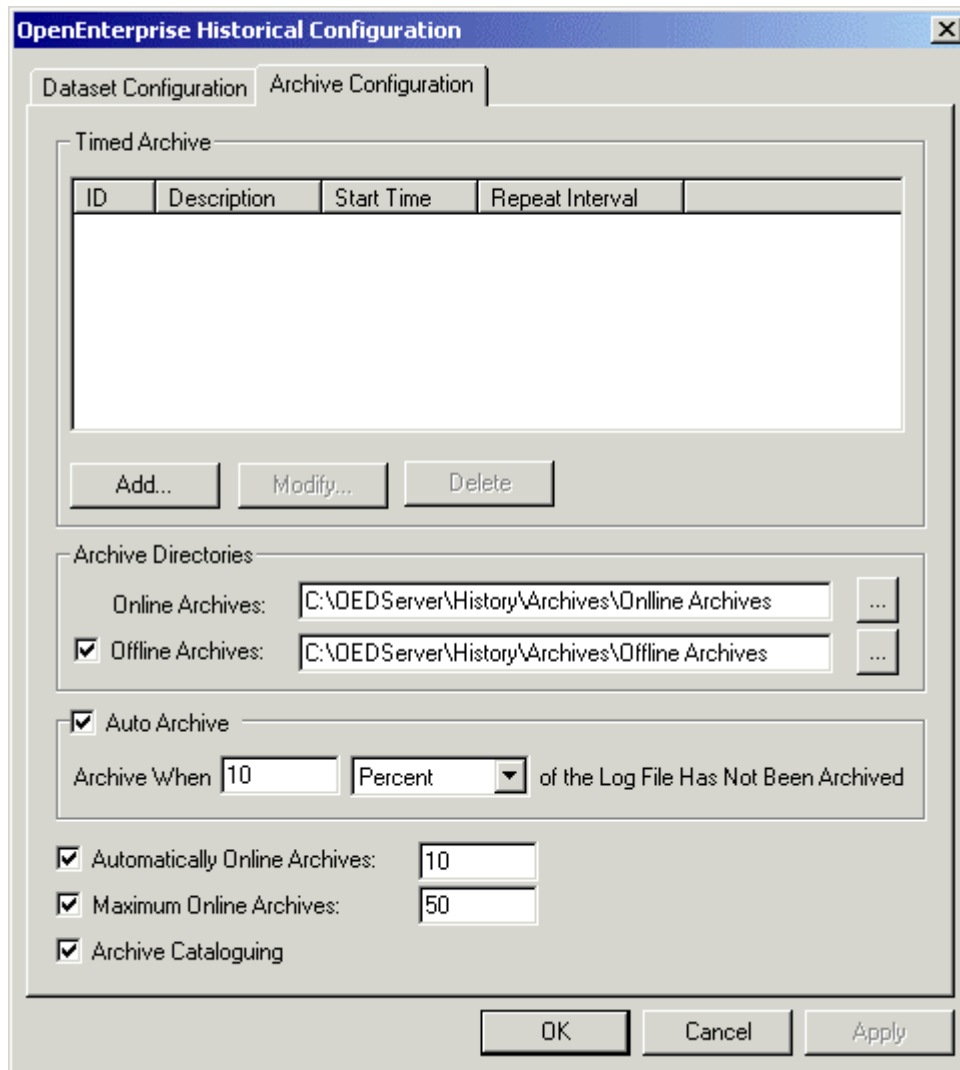
These tasks require the User to configure and manage the Archives, using the Historian and the Archive File Manager Configuration Tools. Two Server components, (the Archive File Manager and the Scheduler) then actually bring the Archive files on and offline according to the Archive configuration found in the database.

The diagram below illustrates the relationship between these components.



1.3 Historian Configuration

The Historian Configuration tool is found within the Toolbox window, and resides on Workstations. It allows the user to configure parameters which affect archiving. These parameters are found on the Archive Configuration Dialog. For detailed information on this dialog, see the Historian Configuration tool help file.



1.3.1 Timed Archiving

Timed archiving allows the user to specify a regular time for archives to be created for a dataset. When the user selects a regular time period for archiving, the Historical Configuration Tool creates a Diary for the dataset.

The Scheduler will then notify the Archive File Manager when to create the archive files for this dataset. The Archive File Manager will then create the archive and place it in the specified Offline directory.

1.3.2 Automatic Archiving

Automatic archiving is based on how much unarchived data is left in the dataset's Log file. This is expressed as a percentage of the whole Log file. When the percentage data within the Log File that has not yet been archived reaches the percentage set here, a new archive is created.

The Archive File Manager will bring the newly created archive file automatically online.

1.3.3 Number of Automatically Online Archives

The number of archives to be brought on line automatically by the Archive File Manager (AFM) is set by the user on this dialog.

If this number is reached, the AFM will take the oldest automatically created archive offline.

It will then place the new archive file in the specified Online directory and the oldest archive file will be moved from the specified Online directory and placed in the specified Offline directory.

1.3.4 Maximum Number of Online Archives

This is the maximum number of automatically brought online archive plus any that the user may bring online using the Archive Configuration Tool.

If the number given here is smaller than the number given in the Automatically Created Archives field, the Archive File Manager ignores this number.

1.3.5 Archive Cataloguing

Archive cataloguing is enabled by default, since archive cataloguing must be enabled in order for Archive File Management to work,.

If archive cataloguing is enabled, a catalogue of archives for the dataset is created in the database. This is used by the Archive File Manager to control the archives.

1.3.6 Online Archive Directory

This directory must match the directory as the Server sees it. Therefore, if the browse button is used, the drive letter and directory selected must mirror the Server's Online archive file directory.

The Archive File Manager will place archives in this directory when they are brought automatically online. If a new automatically created archive file replaces an old one, the old one will be moved into the designated Offline archive file directory.

Archives brought online manually will be moved into this directory as they are brought online by the Archive File Manager.

1.3.7 Offline Archive Directory

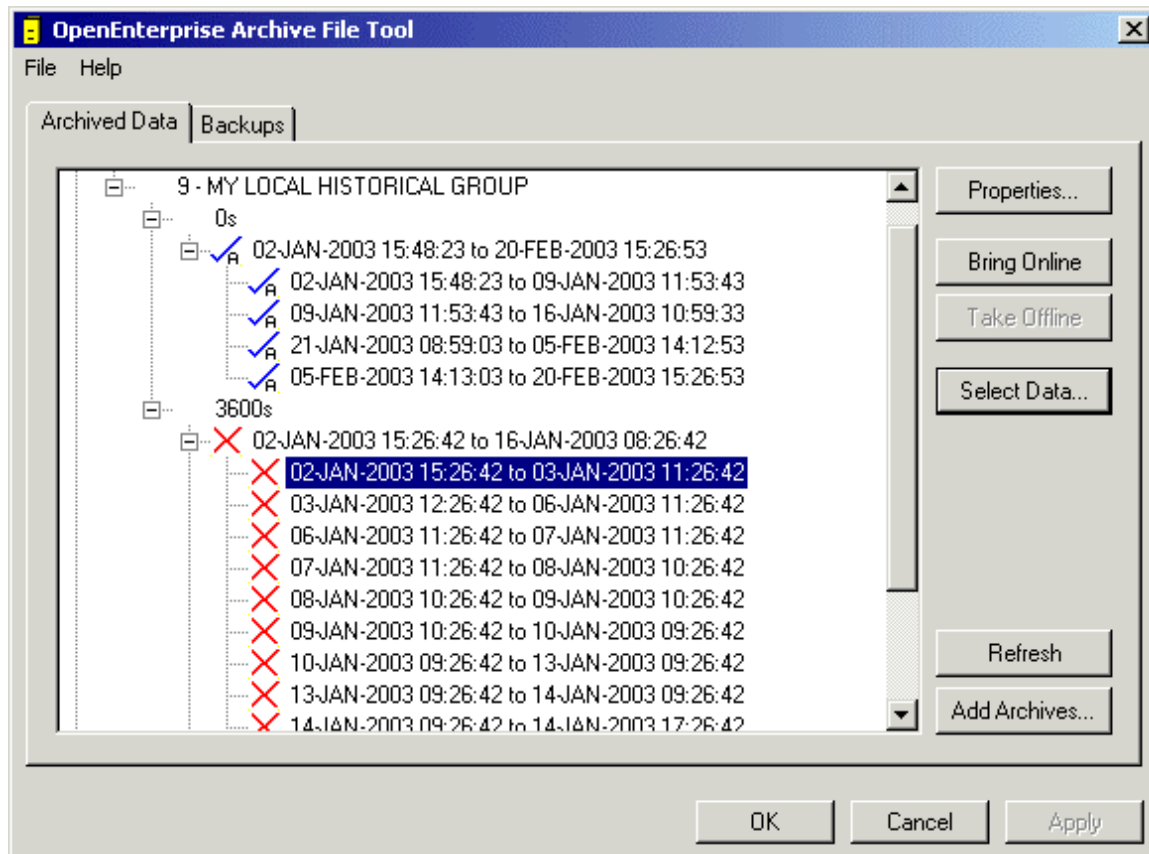
This directory must also match the directory set aside for Offline archives as the Server sees it. This is where all offline archives will be kept. It is recommended to copy files from this directory, if timed backups are being used.

1.4 Archive Management

The Archive File Tool enables the user to manage Archive Files. Archive file management consists of:

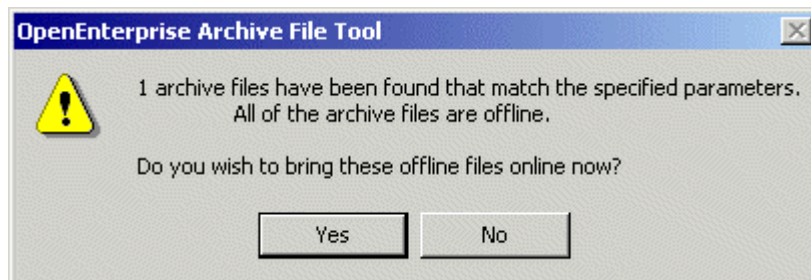
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1. Bringing archive files on and offline.
2. Creating backup regimes.



1.4.1 Direct Selection of Archive

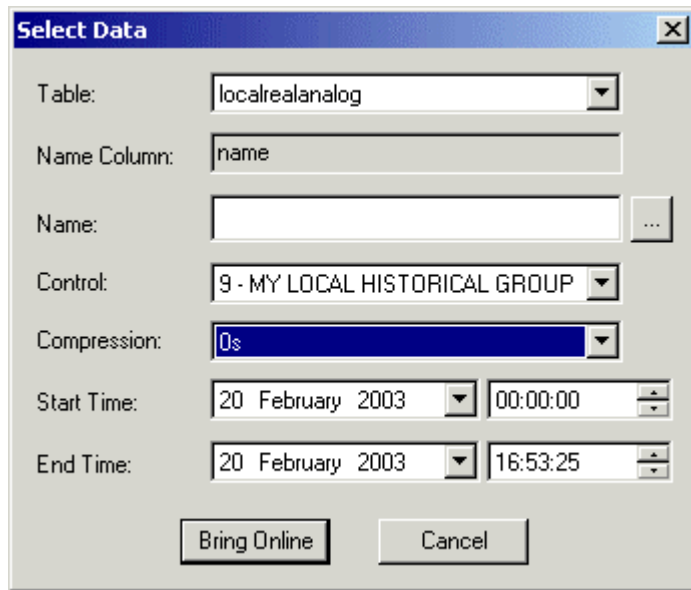
The user selects an offline archive file from the archive file display pane and selects the [Bring Online] button. This action will bring the selected file online. A message is displayed before the action, to give the user a chance to abort the operation:-



1.4.2 Using the Select Data Button

The 'Select Data' dialog is displayed, and the user is able to select the table and dataset of interest. The user specifies a period of time for which archive files are required and the Archive File Tool determines the files that need to be brought online by the Archive File Manager.

These files then have their Bring Online flag set to true in the archive file catalogue, and the Archive File Manager brings them online. Refer to the Archive Manager Configuration Tool help for more information on this dialog.



1.4.3 Taking Archives Offline

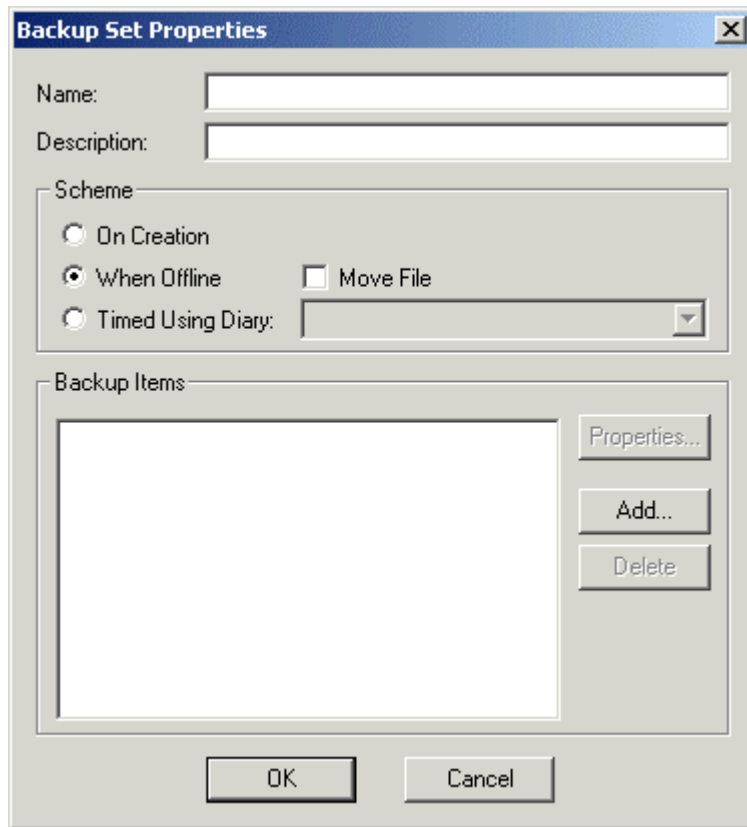
Selected online archives are taken offline with this button.

1.4.4 Adding Archives from the Backup Directory

This button allows the user to browse for archive files from a backup directory, in order to bring them online.

1.4.5 Archive Backups

The user is able to create 'Backup Sets', which consist of a defined backup regime to which Control Group datasets may be bound. For detailed information see the Archive Configuration Tool help file.



1.4.5.1 On Creation

If this option is chosen, then the Archive File Manager will create a backup copy for every archive file when it is created. It will place this backup file in the designated backup directory, as defined on the Backup Item Properties dialog of the Archive File Tool.

1.4.5.2 When Offline

This option takes archive files as they come automatically offline and copies them to the designated backup directory.

1.4.5.3 Move File

The 'Move File' box option is enabled when the 'When Offline' backup regime is chosen.

1.4.5.3.1 When to check this box...

When keeping online and offline archives in the same common folder. If the box is unchecked in this type of setup, when the archive is taken offline, whether automatically or manually, it will remain in the common archive folder. This will result in a continuous build up of archive files in the common archive directory.

On such systems, it may be desirable to remove archives from the common archive directory when they are taken offline. If this box is checked, the archive will be moved to the designated backup directory when it is taken offline.

This results in the common archive directory becoming a kind of online directory, and the designated backup directory becomes a kind of offline directory. However, to manually place files online from the backup directory, the user will have to first use the **[Add Archives...]** button on the 'Archived Data' tab to add the archives back into the common archive directory.

1.4.5.3.2 Do not check this box if...

The archiving system is using a separate folder for online and offline archives.

In this case, if the 'When Offline' regime is used for backing up archives, when the archive is brought offline, normally it will be moved from the Online folder to the Offline folder, and a copy will be placed in the designated backup directory.

If this box is checked on such a system, then the archive will be moved directly from the Online folder to the backup folder, but no copy will be placed in the Offline directory. This will cause problems because the Archive File Manager will then not be able to find the file in the designated Offline directory.

1.4.5.4 Timed Using a Diary

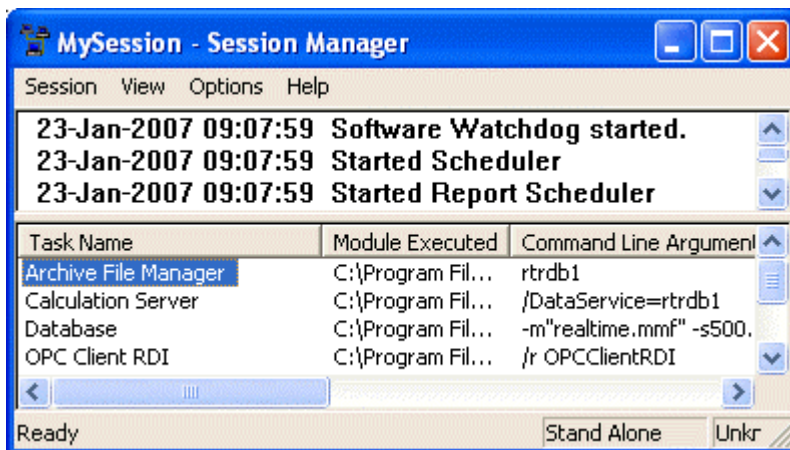
This option uses a diary to copy files from the online or offline directory to the backup directory at intervals specified by the diary.

This option uses the functionality of the Scheduler. The Scheduler notifies the Archive File Manager when the diary is due. The Archive File Manager then copies the files.

Note: The original archive files are not deleted.

1.4.6 Archive File Manager

The Archive File Manager runs on the OpenEnterprise Server as part of the OpenEnterprise Session.



It uses the information created by the Historian Configuration and the Archive File tools to know when to create archives, and where the archives should be kept.

The Archive File Manager uses the archive catalogue table (Table name:- ArchiveCatalogue_table) to keep track of the archive files. It brings archive files manually online and takes them offline at the users request via the Archive File Tool.

For archive files which are manually brought online for a specified amount of time, the Archive File Tool creates a temporary diary and a scheduled event. At the time set by the user, the Scheduler informs the Archive File Manager that it is time to take the file offline.

When files are brought online or taken offline manually, the Archive File Manager also places the archive in its online or offline directory, as configured by the Historian Configuration Tool when the historical stream is created.

The Archive File Manager also copies archive files to the designated backup directory according to the backup regime specified by the Archive File Tool.

With backup regimes that use a diary the Scheduler informs the Archive File Manager when the diary has expired, and the Archive File Manager copies the archive files from the designated source directory to the backup directory.

1.4.6.1 Copying and Moving Files

This topic explains what actions the Archive File Manager performs on archive files in different circumstances.

1.4.6.1.1 The Archive File Manager copies files when...

- An archive is brought manually online. The file is copied from the Offline folder or a backup folder to the Online folder.
- When using the 'On Creation' backup regime. The archive is placed into the Online folder and a copy is placed into the designated backup directory.
- When using the 'Timed Using Diary' backup regime. When the backup is due, the archive is copied from the designated source directory into the designated backup directory.

1.4.6.1.2 The Archive File Manager moves files when...

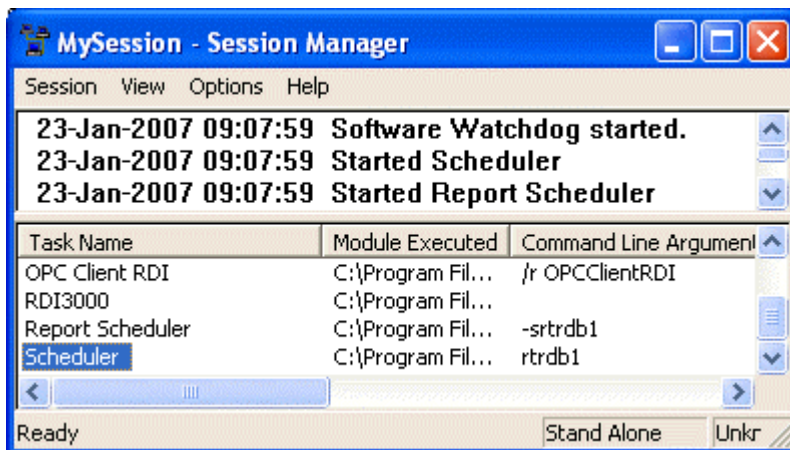
- An archive goes from online to offline status and an Offline directory has been specified. It is moved from the online directory to the Offline directory.
- If a 'When Offline' backup regime is used with the 'move file' directive and no offline directory has been specified. The file is deleted from the common (used for both online and offline) archive directory and moved into the designated backup directory.

1.4.6.1.3 The Archive File Manager leaves files alone when...

- They are taken offline in a system which has no Offline folder specified.
- They are in the designated Offline folder.

1.5 The Role of the Scheduler

The Scheduler runs on the OpenEnterprise Server as part of the OpenEnterprise Session.



The Scheduler takes on responsibility for any timed element to do with bringing files online or taking them offline. When a file is brought online using the Archive File tool, the user may specify a time to bring the file automatically offline again. The Archive File tool then creates a temporary diary and also a scheduled event which uses the diary. The Scheduler then notifies the Archive File Manager to take the file offline again by setting the takeoffline attribute of the archive catalogue table to TRUE at the time specified in the diary.

The Scheduler is also involved in the backup process when a Backup Set uses a diary to time backup activity. The Archive File tool creates a scheduled event in the tobescheduled table which uses the diary selected. When the diary expires, the Scheduler sets the dobackup attribute of the archivebackupset table to TRUE, and the Archive Manager creates the backup files.

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