

RETURN TO MAIN MENU

Recital Server

Recital Database Server and Recital Mirage Application Server Installation and Configuration Guide for OpenVMS

Recital Corporation,
100 Cummings Center, Suite 318J
Beverly, MA 01915

Recital may have patents and/or patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents.
COPYRIGHT ©1988-2006 Recital Corporation. All rights reserved. All Recital products are trademarks or registered trademarks of Recital Corporation, Inc. Other brand and product names are trademarks or registered trademarks of their respective holders.

Last Updated April, 2006

Recital Database Server Installation

The Recital Database Server runs as part of the Recital Server, also known as the Recital Universal Application Server or UAS. The Recital Server is distributed as a backup saveset.

To obtain a Trial License for the Recital Database Server for evaluation purposes, please visit the Trial Downloads area of the Recital web site <http://www.recital.com>.

If you already have a Recital Database Server License, you can simply download the distribution:

Recital Database Server Downloads	
Compaq Alpha OpenVMS 7.2-1 and above	Download from here
Compaq Integrity Open VMS 8-2.1 and above	Download from here

The Recital Database Server for OpenVMS comes complete with the following OpenVMS Client Drivers:

- Recital Universal JDBC Driver

The Recital Database Server Client Drivers for Windows are also available as a separate distribution:

Recital Database Server Client Driver Downloads	
Windows 2000/XP/2003	Download from here

NOTE: DEC TCP/IP is required to run the Recital Server on OpenVMS.

Log in as system

1. Set the saveset file attributes prior to installation:
`$ set file/attribute=(RFM:FIX,LRL:32256) RDS-OpenVMS-Alpha.sav`
or
`$ set file/attribute=(RFM:FIX,LRL:32256) RDS-OpenVMS-Integrity.sav`
2. Backup the Recital Server files into your chosen directory, *DEVICE:[PATH]*. The installation will create the Recital Server home directory in *DEVICE:[PATH.RECITALXX.UAS]* where XX is the Recital version number.
`$ backup /log RDS-OpenVMS-Alpha.sav/save [*...]`
or
`$ backup /log RDS-OpenVMS-Integrity.sav/save [*...]`

The *RECITALXX* directory will now contain the following:

File	Type	Description
DATA.DIR	Directory	Default data directory (DB_DATADIR).
SHARED.DIR	Directory	Contains files shared by the Recital Server and Recital Terminal Developer.
UAS.DIR	Directory	Recital Server home directory.

3. In order to run the Recital Server it is necessary to define two system logicals: *DB_UAS* and *DB_SHARED*. These logicals need to point to two sub-directories created above. For example, if you extracted the save set onto device "DKA300:" then you would use the following commands to define the logicals:
`$ define/system DB_UAS DKA300:[RECITALXX.UAS]`
`$ define/system DB_SHARED DKA300:[RECITALXX.SHARED]`
4. Execute the login file to set up the required symbols for the Recital Server environment:
`$ @db_uas:login`
5. To complete the installation execute the following command and follow the on screen prompts:
`$ @db_uas:uas install`
If you require a gateway installation, add the gateway name to the command as follows:
`$ @db_uas:uas install <gateway-name>`
e.g.
`$ @db_uas:uas install ingres`

The *UAS* directory will contain the following files and directories:

File	Type	Description
CONFIG.DB	Text	Contains Recital environment set commands. This file is run each time a client connects to the Recital Server.
DB_NETSERVER.EXE	Executable	The Server, activated by the Port Server when a client connects.
DB_RSISERVER.EXE	Executable	The Port Server listens for client requests and starts Server processes when required.
LOGIN.COM	Command file	Contains environment variable settings.
SERVICES.DIR	Directory	Network Services directory
UAS.COM	Command file	Used to start and stop the Port Server.

Your platform may also have gateway server executables, e.g. *DB_ORASERVER.EXE* for the Oracle gateway. The file *ADD_SERVICES.DAT* is used for the Recital Server TCP/IP Services installation and can be removed if required.

RSI Port Services

The services *db_rsibase* and *db_rsimax* must be defined as known services in the DARPA Internet Service before the Recital Server can run. If you do not allow the installation file to set up these services, you must add them manually before continuing.

The port *db_rsibase* is the port used by the *Port Server*. The default is 8001. The *Port Server* allocates ports between this *base* port and the *max* port for client connections. For Recital Servers that are servicing Java clients this value should not be changed.

The port *db_rsimax* is the upper limit of the range of ports reserved for the Recital Server. The default is 8101, but this can be increased (or decreased) providing it does not conflict with any other services. The number of *Server* processes is limited by the Recital Database Server License, and/or the number of available ports (*db_rsimax* minus *db_rsibase* + 1) specified.

Licensing the Recital Database Server

If you have been sent a license for the Recital Database Server, please follow the instructions on the fax or email for installation. For details of purchasing Recital Database Server licenses, please contact Recital (email info@recital.com or visit <http://www.recital.com>).

Recital Mirage Application Server Installation

The Recital Mirage Application Server runs as part of the Recital Server, also known as the Recital Universal Application Server or UAS. The Recital Server is distributed as a backup saveset.

To obtain a Trial License for the Recital Mirage Application Server for evaluation purposes, please visit the Trial Downloads area of the Recital web site <http://www.recital.com>.

If you already have a Recital Mirage Application Server License, you can simply download the distribution:

Recital Mirage Application Server Downloads	
Compaq Alpha OpenVMS 7.2-1 and above	Download from here
Compaq Integrity Open VMS 8-2.1 and above	Download from here

NOTE: DEC TCP/IP is required to run the Recital Server on OpenVMS.

Log in as *system*

1. Set the saveset file attributes prior to installation:
`$ set file/attribute=(RFM:FIX,LRL:32256) MAS-OpenVMS-Alpha.sav`
or
`$ set file/attribute=(RFM:FIX,LRL:32256) MAS-OpenVMS-Integrity.sav`
2. Backup the Recital Server files into your chosen directory, *DEVICE:[PATH]*. The installation will create the Recital Server home directory in *DEVICE:[PATH.RECITALXX.UAS]* where XX is the Recital version number.
`$ backup /log MAS-OpenVMS-Alpha.sav/save [*...]`
or
`$ backup /log MAS-OpenVMS-Integrity.sav/save [*...]`

The *RECITALXX* directory will now contain the following:

File	Type	Description
DATA.DIR	Directory	Default data directory (DB_DATADIR).
SHARED.DIR	Directory	Contains files shared by the Recital Server and Recital Terminal Developer.
UAS.DIR	Directory	Recital Server home directory.

3. In order to run the Recital Server it is necessary to define two system logicals: *DB_UAS* and *DB_SHARED*. These logicals need to point to two sub-directories created above. For example, if you extracted the save set onto device “DKA300:” then you would use the following commands to define the logicals:
`$ define/system DB_UAS DKA300:[RECITALXX.UAS]`
`$ define/system DB_SHARED DKA300:[RECITALXX.SHARED]`
4. Execute the login file to set up the required symbols for the Recital Server environment:
`$ @db_uas:login`
5. To complete the installation execute the following command and follow the on screen prompts:
`$ @db_uas:uas install`
If you require a gateway installation, add the gateway name to the command as follows:
`$ @db_uas:uas install <gateway-name>`
e.g.
`$ @db_uas:uas install ingres`

The *UAS* directory will contain the following files and directories:

File	Type	Description
CONFIG.DB	Text	Contains Recital environment set commands. This file is run each time a client connects to the Recital Server.
DB_NETSERVER.EXE	Executable	The Server, activated by the Port Server when a client connects.
DB_RSISERVER.EXE	Executable	The Port Server listens for client requests and starts Server processes when required.
LOGIN.COM	Command file	Contains environment variable settings.
SERVICES.DIR	Directory	Network Services directory
UAS.COM	Command file	Used to start and stop the Port Server.

Your platform may also have gateway server executables, e.g. *DB_ORASERVER.EXE* for the Oracle gateway. The file *ADD_SERVICES.DAT* is used for the Recital Server TCP/IP Services installation and can be removed if required.

RSI Port Services

The services *db_rsibase* and *db_rsimax* must be defined as known services in the DARPA Internet Service before the Recital Server can run. If you do not allow the installation file to set up these services, you must add them manually before continuing.

The port *db_rsibase* is the port used by the *Port Server*. The default is 8001. The *Port Server* allocates ports between this *base* port and the *max* port for client connections. For Recital Servers that are servicing Java clients this value should not be changed.

The port *db_rsimax* is the upper limit of the range of ports reserved for the Recital Server. The default is 8101, but this can be increased (or decreased) providing it does not conflict with any other services. The number of *Server* processes is limited by the Recital Mirage Application Server License, and/or the number of available ports (*db_rsimax* minus *db_rsibase* + 1) specified.

Licensing the Recital Mirage Application Server

If you have been sent a license for the Recital Mirage Application Server, please follow the instructions on the fax or email for installation. For details of purchasing Recital Mirage Application Server licenses, please contact Recital (email info@recital.com or visit <http://www.recital.com>).

Administering the Recital Server

Starting the Recital Server

To start the Recital Server, enter:

```
$ @db_uas:uas startup
```

or

```
$ set default db_uas
```

```
$ @uas startup
```

Confirmation will be given that the Recital Server has been started. If the Recital Server cannot be started, details will be logged in the file *uas.log* in the *UAS* directory.

Is the Recital Server Running?

To check whether the Recital Server is running, enter:

```
$ @db_uas:uas active
```

or

```
$ set default db_uas
```

```
$ @uas active
```

Confirmation will be given that the Recital Server is 'active' or 'NOT active'.

Stopping the Recital Server

To stop the Recital Server, enter:

```
$ @db_uas:uas shutdown
```

or

```
$ set default db_uas
```

```
$ @uas shutdown
```

Confirmation will be given that the Recital Server has been stopped.

Logging

Logging can be set up to log Port Server, Server and Gateway Server activity.

NOTE: Logging should only be enabled when required, generally at the request of Recital Corporation Support personnel. It is not recommended for general usage.

To set up logging, one or more of the following symbols can be added to the *login.com* file. The Recital Server must be restarted before symbol changes will be recognized. Each symbol should be set to the name of a log file. The log files will be created in the UAS directory.

Symbol	Logs Activity of...
UASLOG_PORT	Port Server (db_rsiserver)
UASLOG_NET	(Net) Server (db_netserver)
UASLOG_ORA	Oracle Server (db_oraserver)
UASLOG_INF	Informix Server (db_infserver)
UASLOG_ING	Ingres Server (db_ingserver)
UASLOG_JDB	JDBC Server (db_jdbserver)
UASLOG_REC	Recital Server (db_recserver)

Extract from login.com

```
$ uaslog_port == port.log
$ uaslog_net == net.log
$ uaslog_oras == ora.log
$ uaslog_inf == inf.log
$ uaslog_ing == ing.log
$ uaslog_jdb == jdb.log
$ uaslog_rec == rec.log
```

Where several Server processes can be active at the same time, version numbers are added to the file names. For example, the activity of the first Net Server process will be logged to *net.log*, the second to *net001.log*, the third to *net002.log* etc.

Other notable login.com settings

Symbol	Description
DB_DATE	Date format for the Server License. The default is <i>American</i> . This should not be changed. The global date format for applications can be changed using the SET DATE command in the config.db file.
DB_ENCRYPTION	Determines whether the Recital Server expects username and password information in connection strings to be encrypted.
DB_LOCAL_LOGIN	Determines whether unauthenticated local access with the username password combinations of recital/recital or ?? is allowed or disallowed.
DB_MAXWKA	The maximum number of concurrent Record Sets/open tables per process. The default is 20; this can be increased to 256.
DB_PRINT	Operating System printer commands to run. Default is the script <i>print.vms</i> .
RSI_RETRIES	Number of times a connection attempt will be tried before returning an error. Default is 30.
RSI_TIMEOUT	Number of seconds between each connection attempt. Default is 1.
RSI_SPAWNWAIT	Number of seconds the Port Listener will wait to verify that the server it called was successfully started. Default is 10.

Users & Groups

The Recital Server uses the standard Operating System usernames, passwords and user and group IDs to control access and permissions.

NOTE: Using the Local Login facility, local connections can be made with the username/password combinations of recital/recital or ?/?. DB_LOCAL_LOGIN must be set to 'yes' for this to operate.

NOTE: The Recital Server is licensed per concurrent connection (or for unlimited connections) not per named user.

NOTE: User and Group IDs can be used in *Access Control Strings* for Recital database table Protection and Security. Please see table creation documentation for further information:

- SQL *Create Table* command
- Recital 4GL *Create* command

Network Service

Network Services provide the ability for developers to write procedures that run independent of any user interaction. Such procedures could for example import data at a specific date and time from remote data sources into a database on the server. Typically a Network Service will “sleep” for a period of time and then repeat its work. Network Services have the standard program extensions of prg/dbo and reside in the services sub-directory of the Recital Server. Whenever the Recital Server is started, the Port Server (db_rsiserver) will run any programs residing in the services directory.

Configuration Files

Two files can be created on the server to further configure the Recital Server environment: *sysodbc.ini* and *config.db*.

The *sysodbc.ini* file is used for accessing Recital tables from different directories on the server. It can also be used to associate a table and its index files, or to specify that a particular table should be opened exclusively rather than shared. The *sysodbc.ini* file should reside on the server in the directory specified in the client connection.

The *config.db* file is a text file containing Recital/4GL Set Commands. Set Commands can be used, for example, to set caching levels, to set the date format or to set the file format. Multiple config.db files can be used, allowing specific Set Commands to be issued on a per application basis. The Recital Server will run the config.db file in its home directory first. It will then run the config.db file in the directory specified in the client connection if one exists.

Sample sysodbc.ini file

```
##
## File: sysodbc.ini
##
# data and index files are in different directories
[customer]
datafile=DIA1:[RECITAL.APPS.MYAPP.DATA]CUST.DBF
#
# customer file should be opened exclusively
useoptions=exclusive
# specify index files to be used
index1=DIA1:[RECITAL.APPS.MYAPP.INDEXES]CUST1.NDX
index2=DIA1:[RECITAL.APPS.MYAPP.INDEXES]CUST2.NDX
index3=DIA1:[RECITAL.APPS.MYAPP.INDEXES]CUST3.NDX
index4=DIA1:[RECITAL.APPS.MYAPP.INDEXES]CUST4.NDX
index5=DIA1:[RECITAL.APPS.MYAPP.INDEXES]CUST5.NDX
index6=DIA1:[RECITAL.APPS.MYAPP.INDEXES]CUST6.NDX
index7=DIA1:[RECITAL.APPS.MYAPP.INDEXES]CUST7.NDX
# same directory for 'accounts.dbf'
[acc]
datafile=DIA1:[RECITAL.APPS.MYAPP.DATA]ACCOUNTS.DBF
index1=DIA1:[RECITAL.APPS.MYAPP.INDEXES]ACCOUNTS.NDX
# end of sysodbc.ini
```

Sample config.db file

```
*****
* File: config.db
* Purpose: System wide startup file for Recital Server
* Author: Recital Corporation
* Date: 27-Apr-2006
* Copyright (C) 1986 - 2006 Recital Corporation, Inc.
* All rights reserved worldwide.
*****
Set icache to 2  && index cache size
Set dcache off  && disable database caching
Set syslog off && disable system logging
Set transaction isolation level read uncommitted
&& current transaction state
*****
```

Visual FoxPro, FoxPro, FoxBase, Clipper, dBase Compatibility

Compatibility settings can be included in the Server home or connection home config.db files. Please see the General Xbase Migration Guide and the Recital 4GL Reference Guide for full information on the following SET COMMANDS:

```
SET CLIPPER ON|OFF
SET CLIPPER5 ON|OFF
SET COMPATIBLE ON|OFF
SET COMPATIBLE TO [DBASE3 | DBASE4 | DB4 | FOXPRO | FOXPLUS | FOXBASE | CLIPPER |
CLIPPER5 | RECITAL | VFP]
SET EDITFIELD ON|OFF
SET FILECASE ON|OFF
SET FILETYPE TO [RECITAL | DBASE3 | DBASE4 | DB4 | FOXBASE | FOXPRO | FOXPLUS |
CLIPPER | VFP]
SET INDEXEXT TO [<expC1>[, <expC2>]]
SET MEMOEXT TO [<expC>]
SET PCEDIT ON|OFF
SET PCEXACT ON|OFF
SET PCFILTER ON|OFF
SET PCGRAPHICS ON|OFF
SET PCKEYS ON|OFF
SET PCLOCKING ON|OFF
SET PCPICTURE ON|OFF
SET PCSAYS ON|OFF
SET PCUNIQUE ON|OFF
```

The Guides also contain information about converting tables from other Xbase formats into the Recital format using the CONVERT command and DBCONVERT utility.