

RETURN TO MAIN MENU

Recital Server

Recital Database Server, Recital Mirage Application Server and Recital Firecat Server Installation and Configuration Guide for UNIX

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

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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 Database Server is distributed as a tar archive file.

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	
IBM AIX® 4.3 and above	Download from here
HP-UX® 10.20 and above	Download from here
Sun® Solaris™ SPARC 2.7 and above	Download from here
Sun® Solaris™ Intel 9 and above	Download from here
SCO OpenServer 5.0.5 and above	Download from here

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

- Recital Universal JDBC Driver
- Recital Universal ODBC Driver (not SCO or AIX)

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

Download the tar file into /tmp

1. *login* or *su* to the *root* account
su root
2. Create a directory on your system called *recital-X.X* where *X.X* is the Recital version number by convention this is created in */usr*
cd /usr
mkdir recital-X.X
3. Download the tar file into this directory
cp /tmp/filename /usr/recital-X.X
4. Cd to the directory
cd /usr/recital-X.X
5. Extract the files from the downloaded tar archive
tar xf filename

The files and directories created will include the following:

File	Type	Description
data	Directory	Default data directory (DB_DATADIR).
platformRDS	Text	Contains the Recital platform code.
setupRDS	Script file	The installation script.
shared	Directory	Contains files for the Recital Server and Recital Terminal Developer.
sharedlib	Directory	Contains shared API library files.
uas	Link	Link to UAS directory.
UAS	Directory	UAS home directory.
uninstRDS	Script file	The script to uninstall the Recital Server.
uninstRDS.lis	Text	Used by <i>uninstRDS</i> .

6. Run the extracted setup script and follow the on screen prompts to complete the installation.
./setupRDS

This will install the Recital Server in a subdirectory called *UAS*. The files and directories created will include the following:

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	Executable	The Server, activated by the Port Listener when a client connects.
db_rsiserver	Executable	The Port Server, listens for client requests and starts Server processes when required.
error	Directory	Default error directory (DB_ERRORDIR).
include	Directory	Default include file directory.
log	Directory	Default log directory (DB_LOGDIR)
mirage	Directory	Default Mirage Applications directory (DB_MIRAGEROOT).
profile.uas	Script file	Contains environment variable settings.
sdk	Directory	Software Developers Kit directory (DB_SDK).
services	Directory	Network Services directory
uas	Script file	Used to start and stop the Port Listener.

Your platform may also have gateway server executables, e.g. *db_oraserver* for the Oracle gateway. The installation links the *uas* script file from the *UAS* directory to */usr/bin/uas*, to make it available without adding the *UAS* directory to *PATH*.

recitalXXUAS.sh

The installation will also create the file */usr/bin/recitalXXUAS.sh* where *X.X* is the Recital version number. This contains the *ROI_ROOT* environment variable, which defines the path for the Recital Server, e.g. if the installation was run in */usr/recital-X.X*, creating the directory */usr/recital-X.X/UAS*, then:

```
ROI_ROOT=/usr/recital-X.X/;          export ROI_ROOT
```

If the Recital Server directory needs ever to be moved, then this environment variable should be updated to reflect the change, or the installation should be rerun.

RSI Port Services

The service *db_rsibase* must be defined in */etc/services* before the Recital Server can run. If you do not allow the installation script to set up this service, you must alter the */etc/services* file manually before continuing.

The service *db_rsimax* is no longer required and can be removed from */etc/services* if it has previously been set in there for an earlier version of the Recital Server.

The port *db_rsibase* is the port used by the *Port Server*. The default is 8001. The *Port Server* pools client connections on this port. For Recital Database Servers that are servicing Java clients this value should not be changed.

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 Mirage Application Server is distributed as a tar archive file.

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	
IBM AIX® 4.3 and above	Download from here
HP-UX® 10.20 and above	Download from here
Sun® Solaris™ SPARC 2.7 and above	Download from here
Sun® Solaris™ Intel 9 and above	Download from here
SCO OpenServer 5.0.5 and above	Download from here

Download the tar file into /tmp

1. *login* or *su* to the *root* account
su root
2. Create a directory on your system called *recital-X.X* where *X.X* is the Recital version number by convention this is created in */usr*
cd /usr
mkdir recital-X.X
3. Download the tar file into this directory
cp /tmp/filename /usr/recital-X.X
4. Cd to the directory
cd /usr/recital-X.X
5. Extract the files from the downloaded tar archive
tar xf filename

The files and directories created will include the following:

File	Type	Description
data	Directory	Default data directory (DB_DATADIR).
platformRDS	Text	Contains the Recital platform code.
setupRDS	Script file	The installation script.
shared	Directory	Contains files for the Recital Server and Recital Terminal Developer.
sharedlib	Directory	Contains shared API library files.
uas	Link	Link to UAS directory.
UAS	Directory	UAS home directory.
uninstRDS	Script file	The script to uninstall the Recital Server.
uninstRDS.lis	Text	Used by <i>uninstRDS</i> .

6. Run the extracted setup script and follow the on screen prompts to complete the installation.
./setupRDS

This will install the Recital Server in a subdirectory called *UAS*. The files and directories created will include the following:

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	Executable	The Server, activated by the Port Listener when a client connects.
db_rsiserver	Executable	The Port Server, listens for client requests and starts Server processes when required.
error	Directory	Default error directory (DB_ERRORDIR).
include	Directory	Default include file directory.
log	Directory	Default log directory (DB_LOGDIR)
mirage	Directory	Default Mirage Applications directory (DB_MIRAGEROOT).
profile.uas	Script file	Contains environment variable settings.
sdk	Directory	Software Developers Kit directory (DB_SDK).
services	Directory	Network Services directory
uas	Script file	Used to start and stop the Port Listener.

Your platform may also have gateway server executables, e.g. *db_oraserver* for the Oracle gateway.

The installation links the *uas* script file from the *UAS* directory to */usr/bin/uas*, to make it available without adding the *UAS* directory to *PATH*.

recitalXXUAS.sh

The installation will also create the file */usr/bin/recitalXXUAS.sh* where *XX* is the Recital version number. This contains the *ROI_ROOT* environment variable, which defines the path for the Recital Server, e.g. if the installation was run in */usr/recital-X.X*, creating the directory */usr/recital-X.X/UAS*, then:

```
ROI_ROOT=/usr/recital-X.X/;          export ROI_ROOT
```

If the Recital Server directory needs ever to be moved, then this environment variable should be updated to reflect the change, or the installation should be rerun.

RSI Port Services

The service *db_rsibase* must be defined in */etc/services* before the Recital Server can run. If you do not allow the installation script to set up this service, you must alter the */etc/services* file manually before continuing.

The service *db_rsimax* is no longer required and can be removed from */etc/services* if it has previously been set in there for an earlier version of the Recital Server.

The port *db_rsibase* is the port used by the *Port Server*. The default is 8001. The *Port Server* pools client connections on this port. For Recital Mirage Application Servers that are servicing Java clients this value should not be changed.

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>).

Recital Firecat Server Installation

The Recital Web Developer Firecat Server runs as part of the Recital Server, also known as the Recital Universal Application Server or UAS. Recital Web Developer is distributed as a tar archive file.

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

If you already have a Recital Web Developer License, you can simply download the distribution:

Recital Web Developer Downloads	
IBM AIX® 4.3 and above	Download from here
HP-UX® 10.20 and above	Download from here
Sun® Solaris™ SPARC 2.7 and above	Download from here
Sun® Solaris™ Intel 9 and above	Download from here
SCO OpenServer 5.0.5 and above	Download from here

Download the tar file into /tmp

1. *login* or *su* to the *root* account
su root
2. Create a directory on your system called *recital-X.X* where *X.X* is the Recital version number by convention this is created in */usr*
cd /usr
mkdir recital-X.X
3. Download the tar file into this directory
cp /tmp/filename /usr/recital-X.X
4. Cd to the directory
cd /usr/recital-X.X
5. Extract the files from the downloaded tar archive
tar xf filename

The files and directories created will include the following:

File	Type	Description
platformRWD	Text	Contains the Recital platform code.
setupRWD	Script file	The installation script.
shared	Directory	Contains files for the Recital Server and Recital Terminal Developer.
sharedlib	Directory	Contains shared API library files.
uas	Link	Link to UAS directory.
UAS	Directory	UAS home directory.
uninstRWD	Script file	The script to uninstall the Recital Server.
UninstRWD.lis	Text	Used by <i>uninstRWD</i> .
webroot	Directory	Default Web root directory (DB_WWWROOT).

6. Run the extracted setup script and follow the on screen prompts to complete the installation.
./setupRWD

This will install the Recital Server in a subdirectory called *UAS*. The files and directories created will include the following:

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_httpserver	Executable	The Firecat Web Server.
db_rsiserver	Executable	The Port Server, listens for client requests and starts Server processes when required.
error	Directory	Default error directory (DB_ERRORDIR).
hosts.allow	Text	Contains hostname or IP addresses of clients permitted access to the Recital Firecat Web Server (DB_HTTP_ALLOW).
hosts.deny	Text	Contains hostname or IP addresses of clients denied access to the Recital Firecat Web Server (DB_HTTP_DENY).
include	Directory	Default include file directory.
log	Directory	Default log directory (DB_LOGDIR).
profile.uas	Script file	Contains environment variable settings.
uas	Script file	Used to start and stop the Port Listener.

The installation links the *uas* script file from the *UAS* directory to */usr/bin/uas*, to make it available without adding the *UAS* directory to *PATH*.

recitalXXUAS.sh

The installation will also create the file */usr/bin/recitalXXUAS.sh* where *XX* is the Recital version number. This contains the *ROI_ROOT* environment variable, which defines the path for the Recital Server, e.g. if the installation was run in */usr/recital-X.X*, creating the directory */usr/recital-X.X/UAS*, then:

```
ROI_ROOT=/usr/recital-X.X/;          export ROI_ROOT
```

If the Recital Server directory needs ever to be moved, then this environment variable should be updated to reflect the change, or the installation should be rerun.

RSI Port Services

The service *db_rsibase* must be defined in */etc/services* before the Recital Server can run. If you do not allow the installation script to set up this service, you must alter the */etc/services* file manually before continuing.

The service *db_rsimax* is no longer required and can be removed from */etc/services* if it has previously been set in there for an earlier version of the Recital Server.

The port *db_rsibase* is the port used by the *Port Server*. The default is 8001. The *Port Server* pools client connections on this port.

Recital Firecat Web Server notable profile.uas settings

Environment Variable	Description
DB_HTTP_ALLOW	Points to a text file with a list of hostnames or IP addresses of clients permitted access to the Recital Firecat Web Server. Default file is <i>hosts.allow</i> .
DB_HTTP_DENY	Points to a text file with a list of hostnames or IP addresses of clients denied access to the Recital Firecat Web Server. Default file is <i>hosts.deny</i> .
DB_HTTP_ENABLED	Enable HTTP requests.
DB_PORT80_ENABLED	Enable HTTP requests on port 80 (default is 8001 only).
DB_WWWACCOUNT	Points to a user account under which Recital Firecat processes should run.
DB_WWWDEFAULT	Points to the default web page file.
DB_WWWPASSWORD	The password for the DB_WWWACCOUNT above. . Not currently used – see Note below.
DB_WWWPWFILE	The password file.
DB_WWWRUNASGUEST	Determines whether Recital Firecat processes should run under the guest user account.
DB_WWWROOT	Points to the web root directory.
UASLOG_PORT	Enable Port Server logging.

Note: To use the user account specified in *DB_WWWACCOUNT*, the *DB_WWWPWFILE* must be set to a filename and the *DB_WWWPASSWORD* must be commented out:

```
DB_WWWPWFILE="{DB_ROOT}passwd.db" ;export DB_WWWPWFILE
#DB_WWWPASSWORD="" ;export DB_WWWPASSWORD
```

The following command will encrypt the password and write it to the file specified by *DB_WWWPWFILE*:

```
# dbadmin -passwd <password>
```

Licensing Recital Web Developer

If you have been sent a license for Recital Web Developer, please follow the instructions on the fax or email for installation. For details of purchasing Recital Web Developer 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:

```
# 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*.

Is the Recital Server Running?

To check whether the Recital Server is running, enter:

```
# uas active
```

Confirmation will be given that the Recital Server is 'active' or 'NOT active'. Any active Server connections will also be listed. The Unix *ps* command can also be used to check for the *Port Server* process (*db_rsiserver*) or for *Server* processes (*db_netserver*).

Stopping the Recital Server

To stop the Recital Server, enter:

```
# uas shutdown
```

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

Listing Recital Server User Information

To list information about the users currently connected to the Recital Server, enter:

```
# uas status
```

This will give the following information about currently connected users: Name, Client, Server, IP Address, Login time, Group ID, User ID and Process ID.

About the Recital Server

The *uas* script can also give information about the Recital Server.

To obtain platform information, enter:

```
# uas info -p
```

To check for a valid/invalid license, enter:

```
# uas info -l
```

To get version information, enter:

```
# uas info -v
```

To get compile date information, enter:

```
# uas info -r
```

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 environment variables can be added to the *profile.uas* file or set at the Operating System prompt. The Recital Server must be restarted before environment variable changes will be recognized. Each environment variable should be set to the name of a log file. The log files will be created in the UAS directory.

Environment Variable	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 profile.uas

```
UASLOG_PORT="port.log" ; export UASLOG_PORT
UASLOG_NET="net.log"   ; export UASLOG_NET
UASLOG_ORA="ora.log"   ; export UASLOG_ORA
UASLOG_INF="inf.log"   ; export UASLOG_INF
UASLOG_ING="ing.log"   ; export UASLOG_ING
UASLOG_JDB="jdb.log"   ; export UASLOG_JDB
UASLOG_REC="rec.log"   ; export UASLOG_REC
```

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.

The Recital Server can also be started with the 'logging' parameter, in which case, all relevant logging will take place.

uas startup logging

If the environment variable DB_LOGDIR is set to an existing directory, all log files will be written to this directory. If not, the log files will be created in the UAS directory.

Other notable profile.uas settings

Environment Variable	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.
DB_MAXDBO	The maximum size of a compiled program file. Default is 256k.
DB_PRINT	Operating System printer commands to run. Default is the script <i>print.unix</i> .
DB_PRINTOPT	Printer options used by the <i>print.unix</i> script file. Default is "-onobanner -c"
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 Database 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 Services

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 or Xbase 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=/usr/recital/apps/myapp/data/cust.dbf
#
# customer file should be opened exclusively
useoptions=exclusive
#
# specify index files to be used
index1=/usr/recital/apps/myapp/indexes/cust1.ndx
index2=/usr/recital/apps/myapp/indexes/cust2.ndx
index3=/usr/recital/apps/myapp/indexes/cust3.ndx
index4=/usr/recital/apps/myapp/indexes/cust4.ndx
index5=/usr/recital/apps/myapp/indexes/cust5.ndx
index6=/usr/recital/apps/myapp/indexes/cust6.ndx
index7=/usr/recital/apps/myapp/indexes/cust7.ndx
#
# same directory for 'accounts.dbf'
[accounts]
datafile=accounts.dbf
index1=/usr/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.