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Recital Server

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

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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 (UAS) is available in 2 glibc versions, each as an rpm package and a tar archive. The following command, issued at the Linux prompt will provide glibc information:

```
# /lib/libc.so.6
```

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	
Intel Linux RedHat 9 and above, RedHat Enterprise recommended (glibc 2.3 and above)	Download rpm file from here Download tar file from here
Intel Linux RedHat 7.2 and above (glibc 2.2)	Download rpm file from here Download tar file from here

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

- Recital Universal JDBC Driver
- Recital Universal ODBC 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

RPM Package Installation:

1. Download the RPM file into */tmp*
2. *login* or *su* to the *root* account
su root
3. Install the package by double-clicking on its icon or using the *rpm* command
cd /tmp
rpm -i filename.rpm

This will install The Recital Server for Linux in the directory */usr/recital-X.X/UAS* where X.X is the Recital version number

TAR Archive Installation:

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

This will install the Recital Server in a sub-directory called *UAS*.

The Recital Server 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.

The */usr/recital-X.X* directory will include the following:

File	Type	Description
data	Directory	Default data directory (DB_DATADIR).
platformRDS	Text	Contains the Recital platform code
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.

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, by default this is `/usr/recital-X.X/UAS` where X.X is the Recital version number:

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

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 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 available in 2 glibc versions, each as an rpm package and a tar archive. The following command, issued at the Linux prompt will provide glibc information:

```
# /lib/libc.so.6
```

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	
Intel Linux RedHat 9 and above, RedHat Enterprise recommended (glibc 2.3 and above)	Download rpm file from here Download tar file from here
Intel Linux RedHat 7.2 and above (glibc 2.2)	Download rpm file from here Download tar file from here

RPM Package Installation:

1. Download the RPM file into */tmp*
2. *login* or *su* to the *root* account
su root
3. Install the package by double-clicking on its icon or using the *rpm* command
cd /tmp
rpm -i filename.rpm

This will install The Recital Server for Linux in the directory */usr/recital-X.X/UAS* where X.X is the Recital version number

TAR Archive Installation:

1. Download the tar file into */tmp*
2. *login* or *su* to the *root* account
su root
3. 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
4. Download the tar file into this directory
cp /tmp/filename /usr/recital-X.X
5. Cd to the directory
cd /usr/recital-X.X
6. Extract the files from the downloaded tar archive
tar xf filename
7. Run the extracted setup script
./setupRDS

This will install the Recital Server in a sub-directory called *UAS*.

The Recital Server 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.

The */usr/recital-X.X* directory will include the following:

File	Type	Description
data	Directory	Default data directory (DB_DATADIR).
platformRDS	Text	Contains the Recital platform code
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.

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, by default this is `/usr/recital-X.X/UAS` where X.X is the Recital version number:

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

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 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 available in 2 glibc versions, each as an rpm package and a tar archive. The following command, issued at the Linux prompt will provide glibc information:

```
# /lib/libc.so.6
```

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	
Intel Linux RedHat 9 and above, RedHat Enterprise recommended (glibc 2.3 and above)	Download rpm file from here
	Download tar file from here
Intel Linux RedHat 7.2 and above (glibc 2.2)	Download rpm file from here
	Download tar file from here

RPM Package Installation:

1. Download the RPM file into */tmp*
2. *login* or *su* to the *root* account
su root
3. Install the package by double-clicking on its icon or using the *rpm* command
cd /tmp
rpm -i filename.rpm

This will install The Recital Server for Linux in the directory */usr/recital-X.X/UAS* where X.X is the Recital version number

TAR Archive Installation:

1. Download the tar file into */tmp*
2. *login* or *su* to the *root* account
su root
3. 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
4. Download the tar file into this directory
cp /tmp/filename /usr/recital-X.X
5. Cd to the directory
cd /usr/recital-X.X
6. Extract the files from the downloaded tar archive
tar xf filename
7. Run the extracted setup script
./setupRWD

This will install the Recital Server in a sub-directory called *UAS*.

The Recital Server 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.

The */usr/recital-9.2* directory will include the following:

File	Type	Description
platformRWD	Text	Contains the Recital platform code.
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.
webroot	Directory	Default web root directory (DB_WWWROOT).

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, by default this is */usr/recital-X.X/UAS* where X.X is the Recital version number:

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

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 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 hosts.allow.
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 hosts.deny.
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_WWWPWFIL	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_WWWPWFIL must be set to a filename and the DB_WWWPASSWORD must be commented out:

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

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

```
# 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

The Recital Server can be managed using the `uas` script or the `service` command, if available.

Starting the Recital Server:

```
# uas startup  
or  
# service recital start
```

Restarting the Recital Server:

```
# uas restart  
or  
# service recital restart
```

Stopping the Recital Server:

```
# uas stop  
or  
# service recital stop
```

Is the Recital Server Running?:

```
# uas status  
or  
# service recital status
```

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_rsserver`) 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.