

# **Recital/4GL and Database Gateways**

## **Using Database Gateways with the Recital/4GL**

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## INTRODUCTION

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The Recital Universal Application Server comes complete with the Recital Relational Database Management System. It can also be extended via database gateways to give full access to other data sources and SQL based RDBMSs. Gateways are available to ODBC data sources, such as Microsoft Access or SQL Server, to JDBC data sources via third party JDBC drivers, to MySQL, PostgreSQL, Informix, Ingres and Oracle and to Recital itself.

<b>DATABASE GATEWAY SERVER</b>	<b>ABBREVIATION</b>
INFORMIX	inf
INGRES	ing
JDBC	jdb
MYSQL	mys
ODBC	odb
ORACLE	ora
POSTGRESQL	pos
RECITAL	rec

Once a connection is established to the server, there are two ways for the Universal Application Server (UAS) to access the data:

1. 'Pass Through' technology. This allows full access to all data related commands provided by the server. The UAS passes SQL statements through to the server without parsing them, so the SQL statements issued must be valid for that particular server. The Remote Data Connectivity Functions can be used to provide automatic cursor creation and fetching when using Pass Through SQL. Please see the SQL Reference Manual for details.
2. Recital/4GL. A subset of the Recital worksurfaces and 4GL commands and functions can be used against the data source.

The SET GATEWAY and LOGIN commands can each be used to establish a connection to a gateway server.

## SET GATEWAY

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SET GATEWAY TO [<gtw file> | <expC1>] [IN <workarea/alias>] [ALIAS <expC2>]

The gateway is defined using a predefined gateway file (.gtw) or a character expression, <expC1>. If <gtw file> | <expC1> is not included with the SET GATEWAY command, the connection in that workarea will be detached. An optional ALIAS <expC2> keyword can be used to specify an alias name for the workarea that is currently connected.

Note: Gateway files can be created using the CREATE CONNECTION or CREATE GATEWAY (Recital Terminal Developer worksurface) commands. Please see the Commands and SQL references manuals for more details.

The basic format of <expC1> is as follows:

```
server@machinename:username/password-database.protocol
```

Parameter	Description
Server	Database server name or abbreviation, e.g. ing or ingres.
Nodename	IP Address or hostname of the machine on which the database resides.
Username	Username to log in to the external database.
Password	Password for username above.
Database	Database to connect to.
Protocol	The network protocol, decnet (DECNET) or tcpip (TCP/IP). If the protocol is not specified, TCP/IP is assumed on Unix/Linux and DECNET on OpenVMS.

```
// Connect to Ingres server
set gateway to "ing@sun5:inguser1/ingpass1-accounts.tcpip"
```

For server-specific variations, please see below:

### JDBC

```
server@machinename:username/password-driver path:url
```

Parameter	Description
Server	Database server name or abbreviation, i.e. jdb or jdbc.
Nodename	IP Address or hostname of the machine on which the JDBC datasource resides.
Username	Username to log in to the external datasource.
Password	Password for username above.
Driver Path	Full name and path of the JDBC Driver.
URL	The JDBC Driver specific url. Optional.

```
// Connect to Recital JDBC Driver
set gateway to "jdbc@linux:jdbuser1/jdbpass1-/usr/java/lib/RecitalJDBC/Recital/sql/RecitalDriver;" + ;
"jdbc:Recital:SERVERNAME=linux1;DIRECTORY=/usr/recital/ud/demo"
```

## ODBC

server@machinename:username/password-datasource

Parameter	Description
Server	Database server name or abbreviation, i.e. odb or odbc.
Nodename	IP Address or hostname of the machine on which the ODBC datasource resides.
Username	Username to log in to the external datasource.
Password	Password for username above.
Datasource	Datasource name as specified in the ODBC Data Source Administrator.

For local ODBC data sources, a short format of <expC1> can be used, specifying only the type as odbc and the datasource name as specified in the ODBC Data Source Administrator.

```
// short format for local ODBC data source
set gateway to "odbc:Northwind"
// long format
set gateway to "odbc@host1:user1/pass1-Northwind"
```

## ORACLE

server@machinename:username/password-service

Parameter	Description
Server	Database server name or abbreviation, i.e. ora or oracle.
Nodename	IP Address or hostname of the machine on which the Oracle database resides.
Username	Username to log in to the Oracle database.
Password	Password for username above.
Service	The service entry is only required when SQL*NET is being used. The information required differs depending on the version of SQL*NET: SQL*NET 1 - service = T:<node>:<SID> SQL*NET 2 - service = <service name>

```
// Connect to Oracle server
set gateway to "ora@host2:scott/tiger-orasamples"
```

## LOGIN

---

LOGIN [<server>,<nodename>,<username>,<password>[,<database> | <datasource> | <directory>  
<service> | <driver path>]]

The LOGIN command allows you to connect to database gateway server via the Recital Universal Application Server. In Character Mode environments, the login command can be issued without specifying all the connection parameters. In this case, a dialog box labeled “LOGIN TO DATABASE SERVER” will be displayed on the screen prompting for the missing parameters.

Parameter	Description
Server	Database server name, e.g. ORACLE.
Nodename	IP Address or hostname of the machine on which the database resides.
Username	Username to login to the external database.
Password	Password for username above.
Database	Database to connect to.
Datasource	ODBC only. The Datasource name as specified in the ODBC Data Source Administrator.
Directory	Recital only. The directory in which the Recital tables reside.
Service	Oracle only. The service entry is only required when SQL*NET is being used. The information required differs depending on the version of SQL*NET: SQL*NET 1 - service = T:<node>:<SID> SQL*NET 2 - service = <service name>
Driver Path	JDBC only. The full name and path of the JDBC Driver. This can optionally be followed by a semi-colon (;) and the JDBC Driver specific url to specify further parameters.

### Example

```
// Recital Gateway  
login "recital", "hp5", "hpuser1", "hppass1", "/usr/recital/data/southwind"
```

```
// Recital JDBC Driver  
server = "jdbc"  
nodename = "host2"  
username = "user1"  
password = "pass1"  
database = "/usr/java/lib/RecitalJDBC/Recital/sql/RecitalDriver;" +  
"jdbc:Recital:SERVERNAME=host2;DIRECTORY=/usr/recital/ud/demo"
```

```
login server,nodename,username,password,database
```

```
// Oracle Gateway  
login "oracle", "orahost", "scott", "tiger", "orasamples"
```