



Enabling Grids for E-scienceE

# Practical on R-GMA

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- R-GMA command line tool.
- Entering Commands.
- Commands.
- Querying Data.
- Maximum AGE of tuples.
- Query Timeout.
- Insert Data.
- Primary Producer.
- Secondary Producer.

- **To Start the R-GMA command line tool run the following command: `$RGMA_HOME/bin/rgma`**
- **On startup you should receive the following message:**

```
Welcome to the R-GMA virtual database for Virtual Organisations.  
You are connected to the R-GMA registry service at  
  
http://<registry-host>:8080/R-GMA/RegistryServlet  
  
Type "help" for a list of commands.  
rgma>
```

- The command line tool can be used in batch mode in two ways:
  - **rgma -c <command>**  
Executes <command> and exits.
  - **rgma -f <file>**  
Executes commands in <file> sequentially then exits.  
Each line should contain one command.

- **Commands** are entered by typing at the **rgma>** prompt and hitting 'enter' to execute the command.
- A **history** of the commands executed can be accessed using the Up and Down arrow keys.
- To **search a command from history** use CTRL-R and type the first few letters of the command to recall.
- **Command autocompletion** is supported (use Tab when you have partly entered a command).

## General Commands

- **help**  
Display general help information.
- **help <command>**  
Display help for a specific command.
- **help examples**  
Display list of example commands.
- **exit or quit**  
Exit from R-GMA command line interface.

- Querying data uses the standard SQL SELECT statement, e.g.: **rgma> SELECT \* FROM ServiceStatus**

The behaviour of SELECT varies according to the type of query being executed. In R-GMA there are three basic types of query:

- **LATEST Queries** only the most recent tuple for each primary key
- **HISTORY Queries** all historical tuples for each primary key
- **CONTINUOUS Queries** returns tuples continuously as they are inserted.

- The type of query can be changed using the SET QUERY command as follow:

```
rgma> SET QUERY LATEST
```

```
rgma> SET QUERY CONTINUOUS
```

- The current query type can be displayed using  

```
rgma> SHOW QUERY
```



- The maximum age of tuples to return can also be controlled. To limit the age of latest or historical tuples use the SET MAXAGE command. The following are equivalent:

```
rgma> SET MAXAGE 2 minutes
```

```
rgma> SET MAXAGE 120
```

- The current maximum tuple age can be displayed using **rgma> SHOW MAXAGE**
- To disable the maximum age, set it to none:  

```
rgma> SET MAXAGE none
```

- The final property affecting queries is the timeout.
  - For a latest or history query the timeout exists to prevent a problem (e.g. network failure) from stopping the query from completing.
  - For a continuous query, the timeout indicates how long the query will continue to return new tuples. The default timeout is 1 minute and it can be changed using

```
rgma> SET TIMEOUT 3 minutes
```

```
rgma> SET TIMEOUT 180
```

- The current timeout can be displayed using  

```
rgma>SHOW TIMEOUT
```

- The SQL INSERT statement may be used to add data to the system:

```
rgma> INSERT INTO Table VALUES ('a', 'b', 'c', 'd')
```

- In R-GMA, data is inserted into the system using a **Producer** component which handles the INSERT statement.
- Using the command line tool you may work with one producer at a time.
- If you change the properties of the producer, a new one is created and all INSERT statements will go to the new producer.

- The current producer type can be displayed using:  
**rgma>show producer**
- To prevent the system becoming full of old data it is possible to set the latest and history retention periods for a producer.

**rgma> SET PRODUCER latestretentionperiod 30  
minutes**

The producer will return tuples to Latest queries that are younger than the latest retention period (LRP)

At the same time it is possible to set the history retention period (HRP).

- **rgma> SET PRODUCER historyretentionperiod 2 hours**

- To instruct the secondary producer to consume from the table MyTable:

```
rgma> SECONDARYPRODUCER MyTable
```

- Like the producer, the secondary producer may be configured to answer latest and/or history queries:

```
rgma> SET SECONDARYPRODUCER latest
```

- (By default the secondary producer can answer both latest and history queries. )
- The current secondary producer type can be displayed using:

```
rgma> SHOW SECONDARYPRODUCER
```