



Enabling Grids for E-scienceE

# R-GMA Command Line Tool

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[www.eu-egee.org](http://www.eu-egee.org)



Information Society



- To Start the R-GMA command line tool run the following command (you need a valid proxy):

```
$RGMA_HOME/bin/rgma
```

- On startup you should receive the following message:

```
Welcome to the R-GMA virtual database for Virtual Organisations.
=====
Your local R-GMA server is:
  https://rgmasrv.ct.infn.it:8443/R-GMA
You are connected to the following R-GMA Registry services:
  https://rgmasrv.ct.infn.it:8443/R-GMA/RegistryServlet
You are connected to the following R-GMA Schema service:
  https://rgmasrv.ct.infn.it:8443/R-GMA/SchemaServlet
Type "help" for a list of commands.
```

- **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).
- The **#** character can be used to **add comments**.

## 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.**

- **show tables**

**Display the name of all tables existing in the Schema.**

- **describe <tablename>**

**Show all information about the structure of a table.**

- **RGMA uses the standard SQL SELECT syntax to query data, e.g.:**

```
rgma> SELECT * FROM GlueCE
```

- **In R-GMA there are three basic types of query, and they behave differently:**
  - **LATEST Queries:** return only the most recent tuple for each primary key.
  - **HISTORY Queries:** return all historical tuples for each primary key.
  - **CONTINUOUS Queries:** return 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 HISTORY
```

```
rgma> SET QUERY CONTINUOUS
```

- The current query type can be displayed using:

```
rgma> SHOW QUERY
```

## 1. Display all the table of the Schema

```
rgma>show tables
```

## 2. Display information about GlueSite table

```
rgma>describe GlueSite
```

## 3. Basic select query on the table named GlueSite

```
rgma>set query latest
```

```
rgma>show query
```

```
rgma>select Name,Latitude,Longitude from  
GlueSite
```

- The maximum age of tuples to return can also be controlled. By default there is no limit.
- To limit the age of latest or historical tuples use the **SET MAXAGE** command, e.g.:  

```
rgma> SET MAXAGE 120
```
- The current maximum tuple age can be displayed:  

```
rgma> SHOW MAXAGE
```
- To disable the maximum age, set it to none:  

```
rgma> SET MAXAGE none
```
- The **MAXAGE** parameter has a different effect with continuous query. If it is specified, the query will initially return a history of matching tuples up to the specified maximum age.

- R-GMA query also have a **TIMEOUT** property.
- 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, timeout indicates how long the query will continue to return new tuples. Default timeout is 1 minute and it can be changed using the **SET TIMEOUT** command, e.g.:

```
rgma> SET TIMEOUT 180
```

- The current timeout can be displayed using:

```
rgma> SHOW TIMEOUT
```

- Data is inserted into R-GMA 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 its properties then a new producer will be created.
- The SQL INSERT statement may be used to add data to the system:

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

- Producers may be configured to answer the three different types of query. To set the producer type you can use the **SET PRODUCER** command, e.g.:

```
rgma> SET PRODUCER LATEST
```

- The current producer type can be displayed using:

```
rgma> SHOW PRODUCER
```

- For a producer that can answer latest or history queries, tuples must be deleted after some time interval.
- The producer will return tuples to Latest queries provided that they are younger than the **Latest Retention Period (LRP)** .
- Similarly, there is a **History Retention Period (HRP)** for History queries.
- These retention periods can be controlled using:  
`SET PRODUCER latestretentionperiod 600`  
`SET PRODUCER historyretentionperiod 2 hours`
- To show the current HRP/LRP use the commands **SHOW PRODUCER HRP** and **SHOW PRODUCER LRP**.

## 1. Insert and Select using Primary Producer to support Continuous + History query

```
rgma>describe userTable
```

```
rgma>set producer continuous
```

```
rgma>insert into userTable values('cod','string',1.4,66)
```

```
rgma>set query continuous
```

```
rgma>set maxage 1 minutes
```

```
rgma>set timeout 5 seconds
```

```
rgma>select * from userTable
```

- A Secondary producer collects data from individual producers and makes it available with its own Producer component.
- To instruct the secondary producer to consume from table MyTable:

```
rgma> SECONDARYPRODUCER MyTable
```

- The secondary producer may be configured to answer latest and/or history queries:

```
rgma> SET SECONDARYPRODUCER latest
```

- By default the secondary producer can only answer latest queries.
- The current secondary producer type can be displayed using:

```
rgma> SHOW SECONDARYPRODUCER
```

- If the secondary producer can answer history queries, it has an associated **History Retention Period (HRP)**, as for a primary producer.
- This period can be controlled using:

```
rgma> SET SECONDARYPRODUCER  
historyretentionperiod 1 days
```

- To show the current secondary producer HRP, use the following command:

```
rgma> SHOW SECONDARYPRODUCER HRP
```

- Secondary producers do not have a **Latest Retention Period** as this is a property of each tuple and is inherited from the individual producers.

2. **Insert and Select using the Secondary Producer to support the latest query.**

```
rgma>set secondaryproducer latest  
rgma>secondaryproducer userTable  
rgma>show producers of userTable  
rgma>set producer continuous  
rgma>insert into userTable values ('cod','string',5.2,44)  
rgma>set query latest  
rgma>select * from userTable
```

```

rgma> SET SECONDARYPRODUCER LATEST
Secondary producer type : continuous latest
rgma> SECONDARYPRODUCER userTable
Secondary producer - declared table userTable
rgma> SHOW PRODUCERS OF userTable

+-----+-----+-----+
| Endpoint                                     | ID           | Query types |
+-----+-----+-----+
| https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet | 1778662843   | latest      |
| https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet | 1778662842   | latest      |
| https://rgmasrv.ct.infn.it:8443/R-GMA/StreamProducerServlet | 1817910514   | continuous  |
+-----+-----+-----+
3 Rows in set

rgma> SET PRODUCER CONTINUOUS
Producer type : continuous
rgma> INSERT INTO userTable VALUES ("claudio", "stringa", 2.34, 6)
Inserted 1 row into userTable
rgma> SET QUERY LATEST
Set query type to latest
rgma> SELECT * FROM userTable

+-----+-----+-----+-----+-----+-----+
| userId | aString | aReal | anInt | MeasurementDate | MeasurementTime |
+-----+-----+-----+-----+-----+-----+
| claudio | stringa | 2.34  | 6     | 2006-01-26      | 08:52:32        |
+-----+-----+-----+-----+-----+-----+
1 Rows in set.

```

- The **SHOW PROPERTIES** command shows a summary of all properties of the current session:

```
rgma> show properties
```

Property	Value
Query type	latest
Query timeout	1 minutes
Max age of tuples	None
Producer type	continuous
Producer URL	https://rgmasrv.ct.infn.it:8443/R-GMA/StreamProducerServlet
Producer ID	1817910494
Producer HRP	10 minutes
Producer LRP	180 seconds
Secondary producer type	continuous latest
Secondary producer URL	https://rgmasrv.ct.infn.it:8443/R-GMA/ArchiverServlet
Secondary producer ID	519764424
Secondary producer HRP	1 days

```
12 Rows in set
```

- To show a list of all R-GMA producers that produce the table MyTable:

```
rgma> SHOW PRODUCERS OF MyTable
```

- The command line tool can be used in batch mode in three ways:
  - **rgma -c <command>**  
Executes <command> and exits.  
The **-c** option may be specified more than once.
  - **rgma -f <file>**  
Executes commands in <file> sequentially then exits.  
Each line should contain one command.
  - Embedded in a shell script



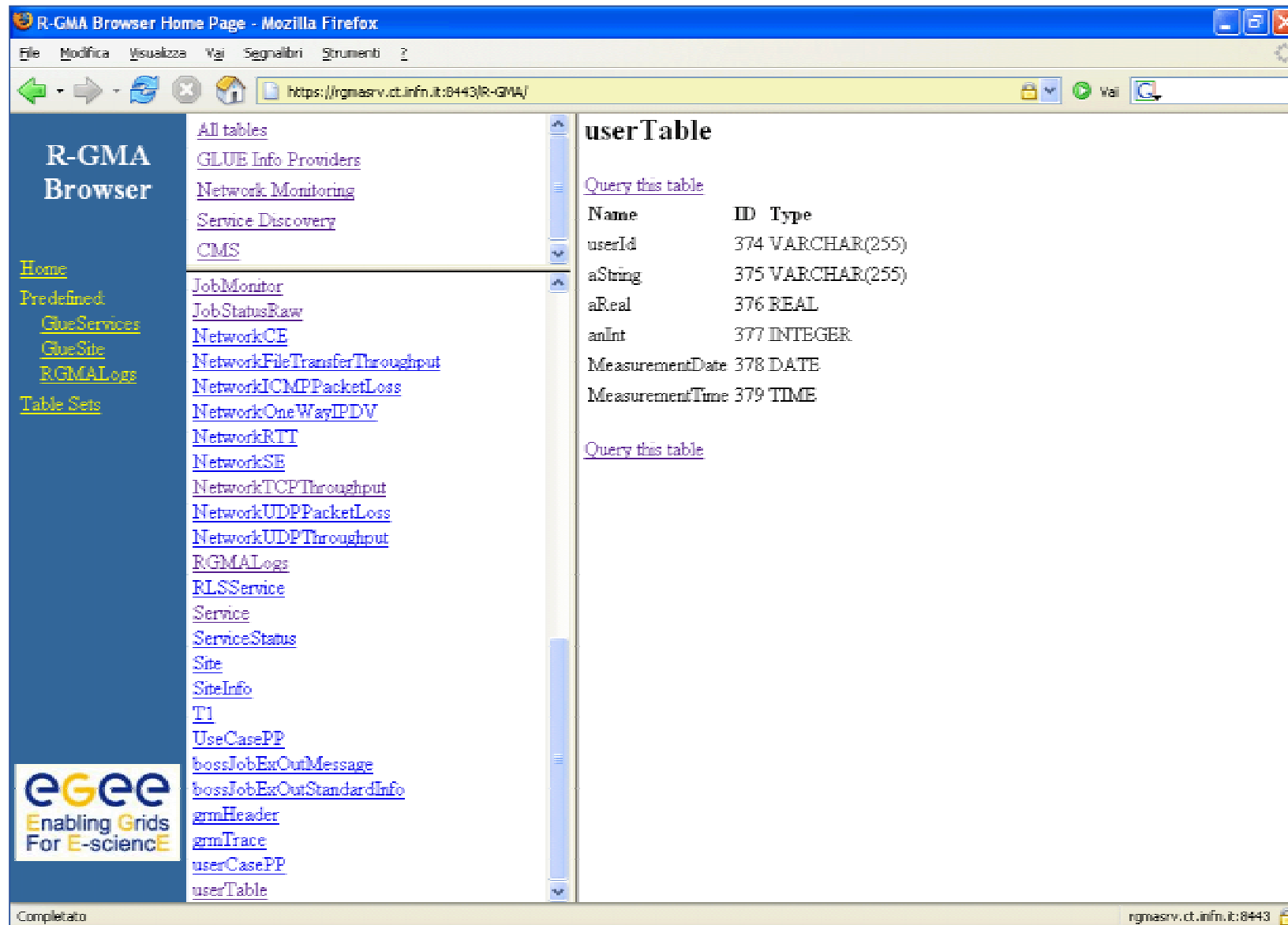
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## R-GMA Browser

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INFSO-RI-508833



R-GMA Browser Home Page - Mozilla Firefox

File Modifica Visualizza Vaj Segnalibri Strumenti ?

https://rgmasrv.ct.infn.it:8443/R-GMA/

**R-GMA Browser**

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## userTable

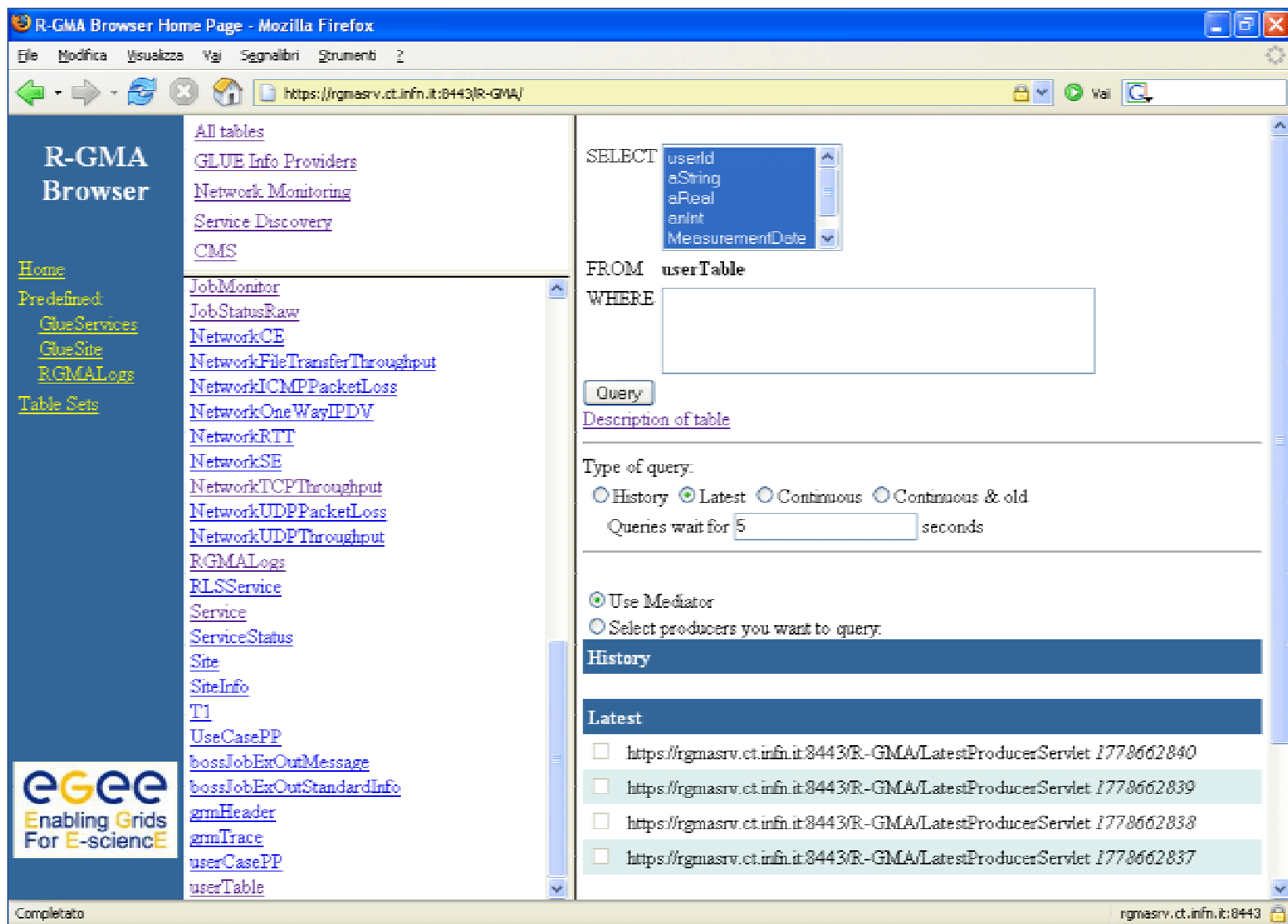
[Query this table](#)

Name	ID	Type
userId	374	VARCHAR(255)
aString	375	VARCHAR(255)
aReal	376	REAL
anInt	377	INTEGER
MeasurementDate	378	DATE
MeasurementTime	379	TIME

[Query this table](#)

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rgmasrv.ct.infn.it:8443



R-GMA Browser Home Page - Mozilla Firefox

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JobMonitor

JobStatusRaw

NetworkCE

NetworkFileTransferThroughput

NetworkICMPPacketLoss

NetworkOneWayIPDV

NetworkRTT

NetworkSE

NetworkTCPThroughput

NetworkUDPPacketLoss

NetworkUDPThroughput

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Service

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Site

SiteInfo

T1

UseCasePP

bossJobExOutMessage

bossJobExOutStandardInfo

gmnHeader

gmnTrace

userCasePP

userTable

SELECT

userId  
aString  
aReal  
anInt  
MeasurementDate

FROM userTable

WHERE

Query

Description of table

Type of query:

History  Latest  Continuous  Continuous & old

Queries wait for 5 seconds

Use Mediator

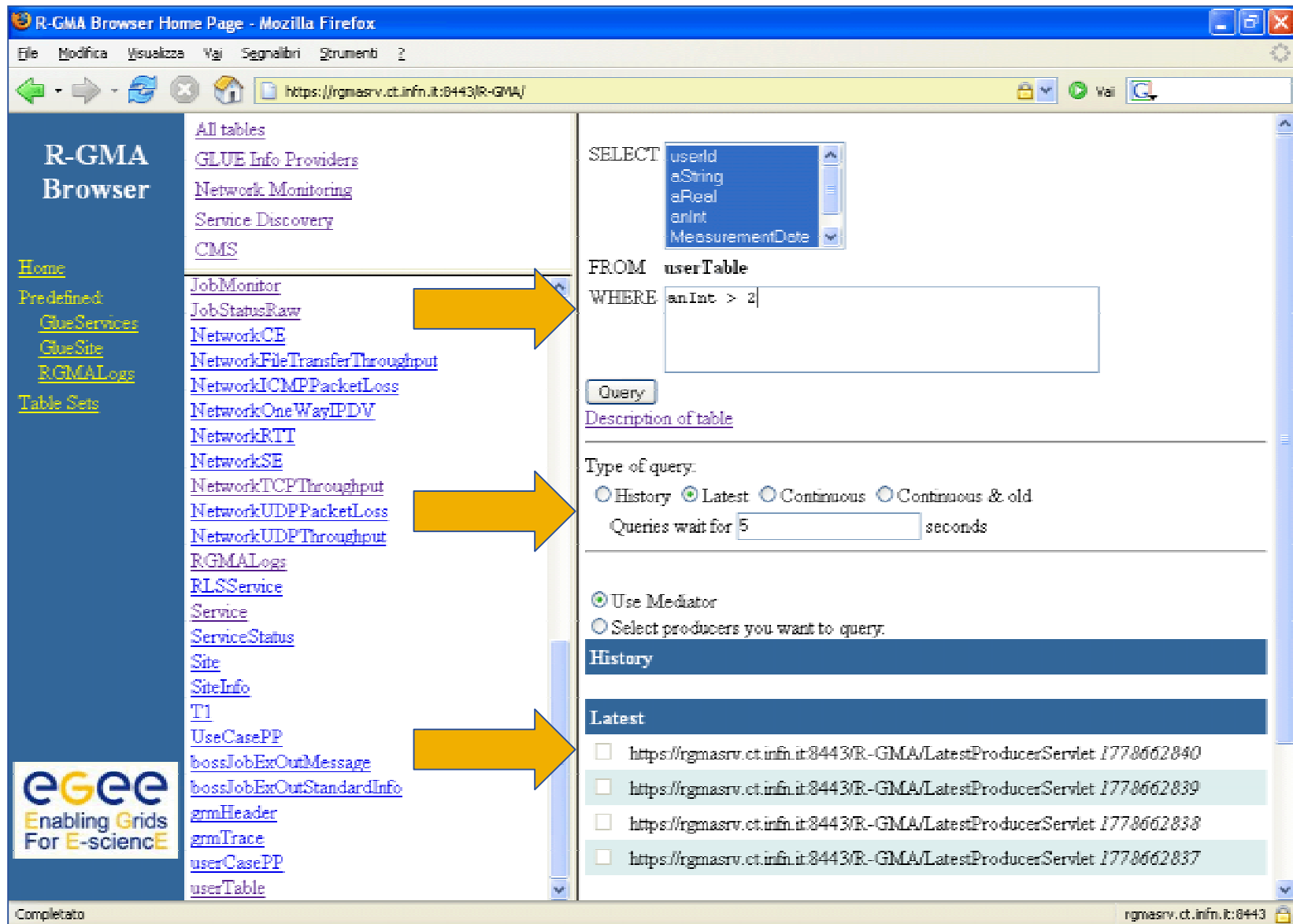
Select producers you want to query.

History

Latest

- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662840
- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662839
- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662838
- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662837

Completato rgmasrv.ct.infn.it:8443



The screenshot shows the R-GMA Browser interface in Mozilla Firefox. The browser title is "R-GMA Browser Home Page - Mozilla Firefox" and the address bar shows "https://rgmasrv.ct.infn.it:8443/R-GMA/".

On the left side, there is a navigation menu with the following items:

- R-GMA Browser
- Home
- Predefined:
  - GlueServices
  - GlueSite
  - RGMALogs
- Table Sets
- EGEE Enabling Grids For E-science

The main content area is divided into two columns. The left column contains a list of tables with blue arrows pointing to the right column:

- All tables
- GLUE Info Providers
- Network Monitoring
- Service Discovery
- CMS
- JobMonitor
- JobStatusRaw
- NetworkCE
- NetworkFileTransferThroughput
- NetworkICMPPacketLoss
- NetworkOneWayIPDV
- NetworkRTT
- NetworkSE
- NetworkTCPThroughput
- NetworkUDPPacketLoss
- NetworkUDPThroughput
- RGMALogs
- RLSService
- Service
- ServiceStatus
- Site
- SiteInfo
- T1
- UseCasePP
- bossJobExOutMessage
- bossJobExOutStandardInfo
- gsmHeader
- gsmTrace
- userCasePP
- userTable

The right column contains a query editor with the following SQL code:

```
SELECT
  userid
  aString
  aReal
  anInt
  MeasurementDate
FROM userTable
WHERE anInt > 2
```

Below the query editor, there is a "Query" button and a "Description of table" section. The "Type of query" section has radio buttons for "History", "Latest" (selected), "Continuous", and "Continuous & old". The "Queries wait for" field is set to 5 seconds. The "Use Mediator" radio button is selected. Below this, there is a "History" section and a "Latest" section with a list of results:

- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662840
- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662839
- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662838
- https://rgmasrv.ct.infn.it:8443/R-GMA/LatestProducerServlet 1778662837

R-GMA Browser Home Page - Mozilla Firefox

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[All tables](#)

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[App/MONIT](#)

- [GAMLAppStart](#)
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- [GlueBatchQueue](#)
- [GlueBatchSystem](#)
- [GlueCE](#)
- [GlueCEAccessControlBase](#)
- [GlueCESEBind](#)
- [GlueCluster](#)
- [GlueHost](#)
- [GlueHostLocalFileSystem](#)
- [GlueHostNetworkAdapter](#)
- [GlueHostPoolAccount](#)
- [GlueHostProcess](#)
- [GlueHostRemoteFileSystem](#)
- [GlueHostRole](#)
- [GlueSA](#)
- [GlueSAAccessControlBase](#)
- [GlueSE](#)
- [GlueSEAccessProtocol](#)
- [GlueSEAccessProtocolSupr](#)
- [GlueSL](#)
- [GlueService](#)
- [GlueServiceAssociation](#)

Query: `SELECT UniqueID, TotalCPUs, Status, MeasurementDate, MeasurementTime FROM GlueCE WHERE TotalCPUs > 2`

UniqueID	TotalCPUs	Status	MeasurementDate	MeasurementTime
glite-ce.ct.infn.it:2119/blah-pbs-short	16	Production	2006-01-25	09:27:22
egge008.cnaf.infn.it:2119/blah-pbs-long	4	Production	2006-01-25	10:01:23
egge008.cnaf.infn.it:2119/blah-pbs-infinite	4	Production	2006-01-25	10:01:23
egge008.cnaf.infn.it:2119/blah-pbs-short	4	Production	2006-01-25	10:01:23
glite-ce.ct.infn.it:2119/blah-pbs-infinite	16	Production	2006-01-25	09:27:22
lxc.de01.pd.infn.it:2119/blah-pbs-long	6	Production	2006-01-25	09:36:15
lxc.de01.pd.infn.it:2119/blah-pbs-short	6	Production	2006-01-25	09:36:15
lxc.de01.pd.infn.it:2119/blah-pbs-infinite	6	Production	2006-01-25	09:36:15
glite-ce.ct.infn.it:2119/blah-pbs-long	16	Production	2006-01-25	09:27:22

Number of rows: 9

Wait for  seconds

- **LCG-2 User Guide**
  - <https://edms.cern.ch/file/454439//LCG-2-UserGuide.html>
- **R-GMA: Relational Grid Monitoring Architecture**
  - <http://www.r-gma.org>
- **R-GMA command line tool**
  - <http://hepunix.rl.ac.uk/egee/jra1-uk/glite-r1/command-line.pdf>
- **R-GMA Browser Home Page**
  - <https://rgmasrv.ct.infn.it:8443/R-GMA/>