

# Welcome to the “Scenario\_Builder” Tool

The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying `http://yardbirds.ccr.buffalo.edu/datagrid/Scenario_Builder.php`. The page header features the CCR logo and the text "Center for Computational Research GRID PORTAL" and "High Performance Grid Computing".

The main content area is titled "Welcome to the Scenario Builder - a tool for generating and visualizing scenarios for data grid testing." Below this title are two buttons: "Generator" and "Visualizer". A 3D ball-and-stick molecular model is displayed in the background.

The text below the buttons reads: "Select 'generate' to create new scenarios and elements, or choose 'visualize' to view scenarios and elements that already exist."

A left-hand navigation menu includes the following items:

- Expand All Collapse All
- PORTAL LOGOUT
- User Tools
  - » Manage Account
- Grid General Info
  - » About ACCDC Grid
  - » Computational Grid
  - » Data Grid
  - » Publications
  - » Technical Papers
  - » Presentations
- » Contact Us
- » Grid Account Request
- » Grid Account Support
- » Events
- » News
- Projects
- Resources
- Education/Outreach
- Staff Only
- CCR HOME

The footer of the page features a stylized "GRID" logo on the left and the text "Advanced Center for Computational Research Data Center" on the right.

# Select Generator : Choose a scenario or create a new one

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://yardbirds.ccr.buffalo.edu/datagrid/new\_data\_grid\_generator.php

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Expand All Collapse All PORTAL LOGOUT

User Tools

- > Manage Account
- > Grid General Info
- > About ACDC Grid
- > Computational Grid
- > Data Grid
- > Publications
- > Technical Papers
- > Presentations
- > Contact Us
- > Grid Account Request
- > Grid Account Support
- > Events
- > News
- Projects
- Resources
- Education / Outreach
- Staff Only
- CCR HOME

Welcome to the Data Grid Generator

Operation generate

Scenarios to choose from

- new
- delete
- DELETE ALL
- db1
- db2
- db3
- db4
- db5

Select a scenario from scenarios to delete a previously existing scenario. Select 'visualize' from the 'Operation' menu at any time to visualize the different virtual scenarios that you have created.

Select 'new' from the list to create a new scenario, select 'delete' to delete a previously existing scenario, select 'DELETE ALL' to remove all scenarios.

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GRID

This application allows you to create, edit, and delete scenarios of virtual data grids. Here you can choose from any of the existing scenarios in the scenario table to work in. If you select “new”, you can create a new scenario to insert into the table and work from. “Delete” and “DELETE ALL” remove one scenario or all scenarios, respectively. At any point in this application you may choose “visualize” under the “Operation” menu to switch to the Scenario Visualizer.

# Enter the name of the new scenario

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=new](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=new)

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Please enter the name of the new scenario to create.

Operation

Scenarios to choose from

Name

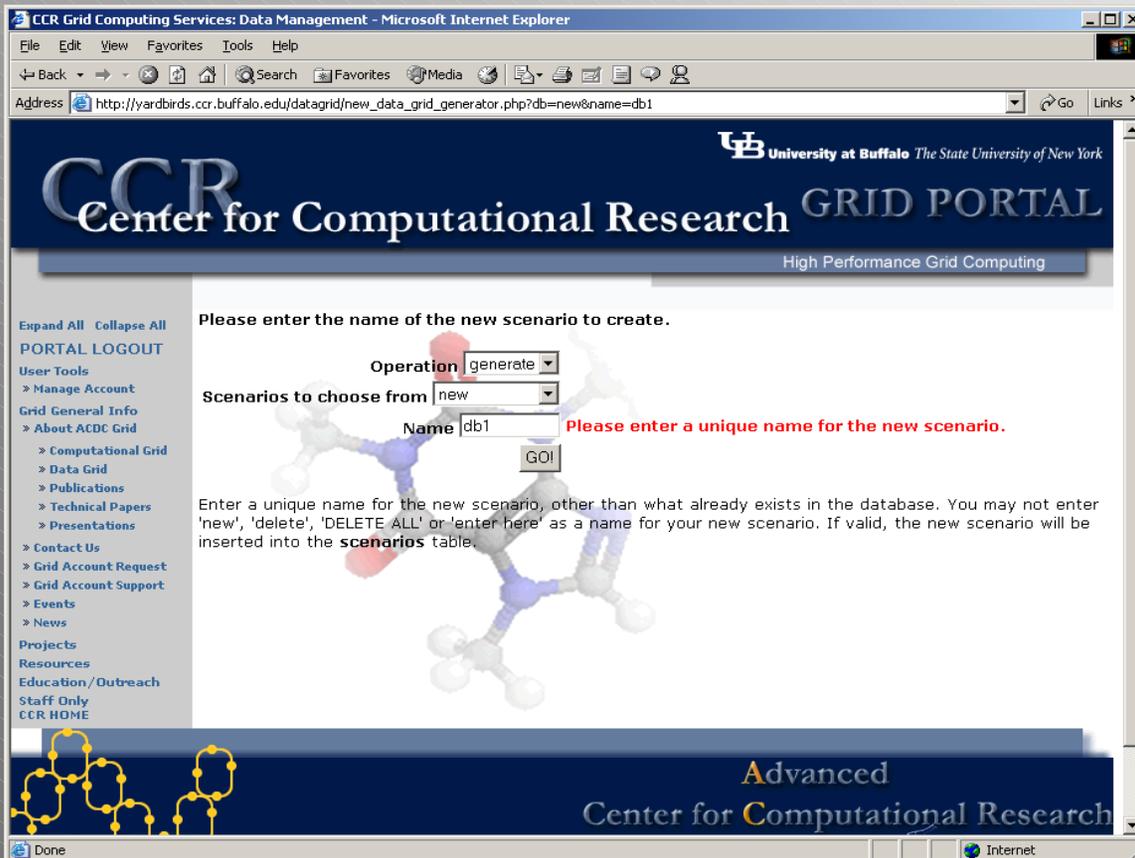
Enter a unique name for the new scenario, other than what already exists in the database. You may not enter 'new', 'delete', 'DELETE ALL' or 'enter here' as a name for your new scenario. If valid, the new scenario will be inserted into the scenarios table.

Expand All Collapse All  
PORTAL LOGOUT  
User Tools  
> Manage Account  
Grid General Info  
> About ACDC Grid  
> Computational Grid  
> Data Grid  
> Publications  
> Technical Papers  
> Presentations  
> Contact Us  
> Grid Account Request  
> Grid Account Support  
> Events  
> News  
Projects  
Resources  
Education / Outreach  
Staff Only  
CCR HOME

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Data  
Center

I have chosen to create a new scenario and am prompted to enter the name in the text box. I cannot enter the name of another existing scenario, or the words “new”, “enter here”, “delete”, or “DELETE ALL”.

# Illegal input handling



Here I have entered “db1” as the name of the new scenario, which is not allowed because a scenario named “db1” already exists. I am bounced back to the same page and asked to try again.

# New scenario created

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=new&name=db6](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=new&name=db6)

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CCR Center for Computational Research GRID PORTAL High Performance Grid Computing

Expand All Collapse All PORTAL LOGOUT

User Tools  
Manage Account

Grid General Info  
About ACDC Grid  
Computational Grid  
Data Grid  
Publications  
Technical Papers  
Presentations

Contact Us  
Grid Account Request  
Grid Account Support  
Events  
News

Projects  
Resources  
Education / Outreach  
Staff Only  
CCR HOME

Creating new scenario

loading database...done  
Information inserted  
**db6 created.**

Operation generate

Scenarios to choose from new

new  
delete  
DELETE ALL  
db1  
db2  
db3  
db4  
db5  
db6

Created new scenario in scenario table with name you entered. You may now choose your new scenario to work from, choose another from the list for a new name of a scenario to be created.

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I have entered a legal name for my new scenario and it is inserted into the “scenarios” table. Now I can begin with any scenario from the list, including the one I have just created.

# Choose and element to create

Now I have chosen to work in the scenario that I just made. I now have the option of creating new users, groups, directories or files. At any point I can choose to create a new scenario or change or delete the one I am working in. If I change which type of element I am creating at any time I will be sent to the appropriate page without navigating back to it. Note the display over the drop-down menus. This shows the numbers of groups, users, directories, files, and total file size of the selected scenario, taken from “scenarios” in phpmyadmin.

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://yardbirds.ccr.buffalo.edu/datagrid/new\_data\_grid\_generator.php?db=db6

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## CCR Center for Computational Research GRID PORTAL

High Performance Grid Computing

Expand All Collapse All  
PORTAL LOGOUT  
User Tools  
    > Manage Account  
Grid General Info  
    > About ACDC Grid  
        > Computational Grid  
        > Data Grid  
        > Publications  
        > Technical Papers  
        > Presentations  
    > Contact Us  
    > Grid Account Request  
    > Grid Account Support  
    > Events  
    > News  
Projects  
Resources  
Education/Outreach  
Staff Only  
CCR HOME

Choose an element to create.

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	0	0	0	0

Operation generate

Scenarios to choose from db6

Elements to generate users

- users
- directories
- files
- groups

Users : create new users for t  
Directories : create new directories for virtual users  
Files : create new files for the virtual users  
Groups : create new groups for the files to be created

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GRID

Done Internet

# No users to create directories for

I have attempted to create new directories. Since I have just created this scenario, I cannot choose to create new directories or files because there are no users to create them for. At this point I have to choose to create new users or groups.

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=2](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=2)

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Expand All Collapse All  
PORTAL LOGOUT  
User Tools  
» Manage Account  
Grid General Info  
» About ACDC Grid  
» Computational Grid  
» Data Grid  
» Publications  
» Technical Papers  
» Presentations  
» Contact Us  
» Grid Account Request  
» Grid Account Support  
» Events  
» News  
Projects  
Resources  
Education/Outreach  
Staff Only  
CCR HOME

Please select a user to create directories for and the number to create.

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	0	0	0	0

Operation: generate  
Scenarios to choose from: db6  
Elements to generate: directories  
**Please create new users first**  
GO!

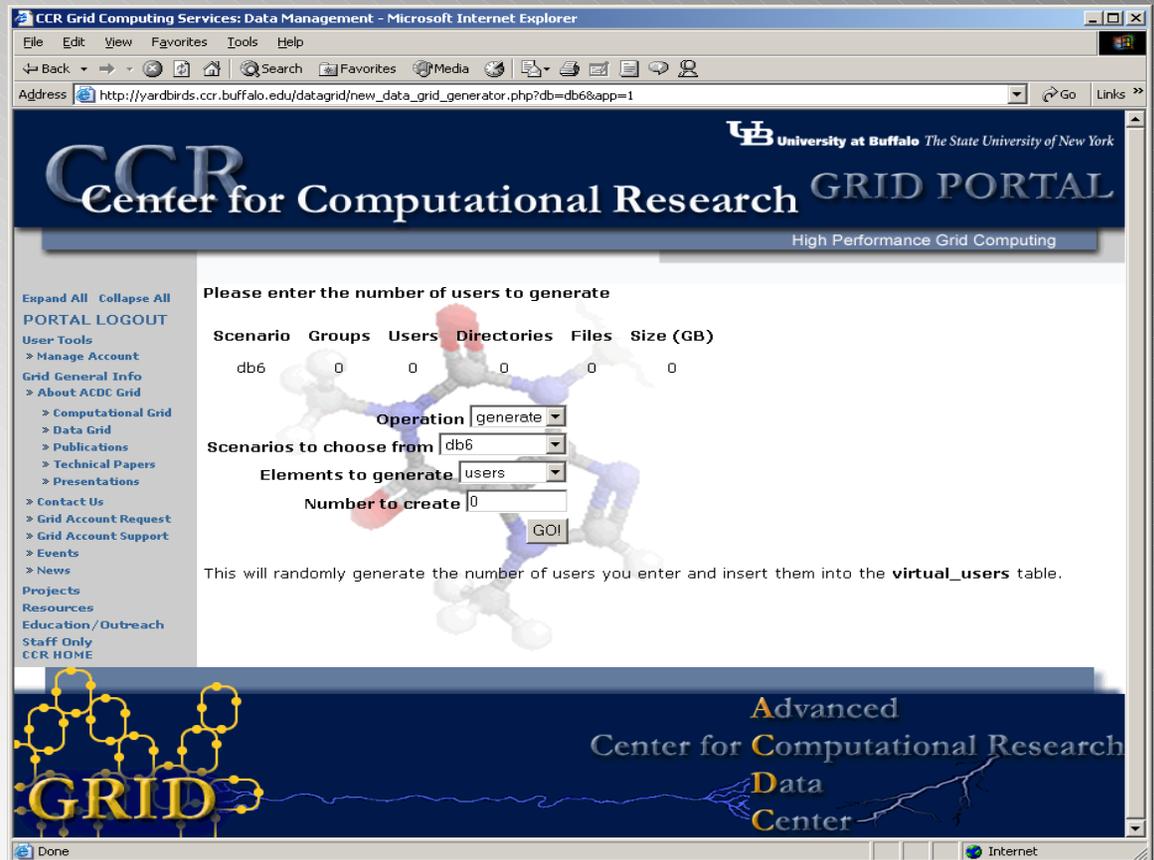
This will create the specified number of directories for the specified user and insert them into the `directory_management` table.

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# Create new users

I have selected “users” from the elements dropdown for the scenario I am working in.

I did not have to navigate back, changing items in the menus automatically sends me to the user creation page.



The screenshot shows a web browser window titled "CCR Grid Computing Services: Data Management - Microsoft Internet Explorer". The address bar shows the URL: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=1](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=1). The page header features the CCR logo and "Center for Computational Research GRID PORTAL" with the tagline "High Performance Grid Computing".

The main content area is titled "Please enter the number of users to generate". It contains a table with the following data:

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	0	0	0	0

Below the table, there are several form elements:

- Operation:** A dropdown menu with "generate" selected.
- Scenarios to choose from:** A dropdown menu with "db6" selected.
- Elements to generate:** A dropdown menu with "users" selected.
- Number to create:** A text input field with "0" entered.
- GO!** A button to submit the form.

Below the form, a message states: "This will randomly generate the number of users you enter and insert them into the **virtual\_users** table."

The footer of the page features the "GRID" logo and the text "Advanced Center for Computational Research Data Center".

# Illegal input handling (II)

I am sent back to this page until I enter a positive number less than 5000 (more than 5000 takes a very long time to process).

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=1&createNum=-100](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=1&createNum=-100)

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Expand All Collapse All  
PORTAL LOGOUT  
User Tools  
    > Manage Account  
Grid General Info  
    > About ACDC Grid  
        > Computational Grid  
        > Data Grid  
        > Publications  
        > Technical Papers  
        > Presentations  
    > Contact Us  
    > Grid Account Request  
    > Grid Account Support  
    > Events  
    > News  
Projects  
Resources  
Education/Outreach  
Staff Only  
CCR HOME

Please enter the number of users to generate

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	0	0	0	0

Operation: generate  
Scenarios to choose from: db6  
Elements to generate: users  
Number to create: -100 **Please enter a valid number of users**  
GO!

This will randomly generate the number of users you enter and insert them into the `virtual_users` table.

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Data Center

Done Internet

# New users created

I have entered a legal input and the 8 new users have been created and inserted into the “virtual\_users” table. The names are generated based on surnames from classic television shows (and some from the 90’s as well), plus 1 or 2 initials at the front and 0, 1, or 2 digits appended to the end. I am also told how long the generation took and the number of repeats detected in the table and within this generation.

The screenshot shows a web browser window titled "CCR Grid Computing Services: Data Management - Microsoft Internet Explorer". The address bar shows the URL: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=1&createNum=8](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=1&createNum=8). The page header includes the CCR logo and "Center for Computational Research GRID PORTAL" with the tagline "High Performance Grid Computing".

The main content area is titled "Generating users" and contains a form with the following fields:

- Operation: generate
- Scenarios to choose from: db6
- Elements to generate: users
- Number to create: 8
- GO!

Below the form, the following statistics are displayed:

- Total time for generation = 0 seconds
- Number of repeats from the database : 0
- Number of repeats from this generation : 0

A table lists the generated users:

User #	User	Scenario
1	ovsnow	db6
2	khartley36	db6
3	hclavin81	db6
4	tsanford2	db6
5	symunster	db6
6	misnow	db6
7	phunnicutt	db6
8	mshunnicutt2	db6

Below the table, there is a section for "Description of table fields:".

The sidebar on the left contains navigation links:

- Expand All Collapse All
- PORTAL LOGOUT
- User Tools
  - Manage Account
- Grid General Info
  - About ACDC Grid
  - Computational Grid
  - Data Grid
  - Publications
  - Technical Papers
  - Presentations
- Contact Us
  - Grid Account Request
  - Grid Account Support
  - Events
  - News
- Projects
  - Resources
  - Education/Outreach
  - Staff Only
  - CCR HOME

# Extra Information

At the bottom of the page created after elements are generated there is further information. I am shown a description of the table fields along with an update of the numbers of elements in the current scenario and a description of the way the elements were generated.

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=1&createNum=8](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=1&createNum=8)

User #	User	Scenario
1	ovsnow	db6
2	khartley36	db6
3	hclavin81	db6
4	tsanford2	db6
5	symunster	db6
6	misnow	db6
7	phunnicutt	db6
8	mshunnicutt2	db6

Description of table fields:

**User #** : The number of the user that was created.  
**User** : The name of the random user that was created.  
**Scenario** : The scenario that the user belongs to.

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	8	0	0	0

This generates random user names to insert into **virtual\_users**. The names are randomly selected and based on the surnames of characters from classic television shows (and some from more recent times), and some number of initials on the front of the name and some number of digits appended to the name. The format of the randomly selected name is in one of 6 randomly selected formats :

- initial + surname
- initial + initial + surname
- initial + surname + digit (1-9)
- initial + initial + surname + digit (1-9)
- initial + surname + digit (1-9) + digit (0-9)
- initial + initial + surname + digit (1-9) + digit (0-9)

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# Create new directories

The screenshot shows a web browser window titled "CCR Grid Computing Services: Data Management - Microsoft Internet Explorer". The address bar shows the URL: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=2](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=2). The page header features the CCR logo and "Center for Computational Research GRID PORTAL" with the tagline "High Performance Grid Computing".

The main content area displays a table with the following data:

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	8	0	0	0

Below the table, there is a form with the following fields and options:

- Operation: generate (dropdown menu)
- Scenarios to choose from: db6 (dropdown menu)
- Elements to generate: directories (dropdown menu)
- User: mshunnicut2 (dropdown menu)
- Number to create: 0 (text input field)
- GO! (button)

A note below the form states: "This will create the specified number of directories for the specified user and insert them into the **directory\_management** table."

The footer of the page includes the text "Advanced Center for Computational Research Data Center" and a logo for "GRID".

I have chosen to create new directories now and have been given the option to enter the user to create the directories for and the number of directories to create. The users in the drop down menu are users associated with the current scenario in the “virtual\_users table”. (Note – the display above the menus was updated with the number of users in the current scenario)

# Illegal input handling (III)

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=2&user=mshunnicut2&createNum=50000](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=2&user=mshunnicut2&createNum=50000)

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Please select a user to create directories for and the number to create.

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	10	8	18	40	2.02

Operation: generate

Scenarios to choose from: db6

Elements to generate: directories

User: mshunnicut2

Number to create: 50000 **Please enter a valid number of directories**

GO!

This will create the specified number of directories for the specified user and insert them into the **directory\_management** table.

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I have entered invalid input for the number of directories to create. It must be a positive number and less than 5000 (more than 5000 takes a very long time to process).

# New directories created

The screenshot shows a web browser window titled "CCR Grid Computing Services: Data Management - Microsoft Internet Explorer". The address bar shows the URL: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=2&user=mshunnicutt2&createNum=10](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=2&user=mshunnicutt2&createNum=10). The page header includes the University at Buffalo logo and the text "Center for Computational Research GRID PORTAL High Performance Grid Computing".

The main content area is titled "Generating directories" and contains a form with the following fields:

- Operation: generate
- Scenarios to choose from: db6
- Elements to generate: directories
- User: mshunnicutt2
- Number to create: 10

A "GO!" button is located below the form. Below the form, the text reads: "Loading existing directory info... No directories found for user...attempting to create a root directory... root created... done. Loading records."

Below the text, the following statistics are displayed:

- Total time for generation = 0 seconds
- Number of repeats from the database : 0
- Number of repeats from this generation : 0

A table with 4 columns is shown below the statistics:

Directory #	Directory path_name	Owner	Scenario
1	/Agent/	mshunnicutt2	db6
2	/Agent/Oracle/	mshunnicutt2	db6
3	/Agent/Oracle/Rabbit/	mshunnicutt2	db6
4	/Agent/Oracle/Cypher/	mshunnicutt2	db6
5	/Trinity/	mshunnicutt2	db6

Ten new directories have been created for the given user and inserted into the “directory\_management” table. If the user has no directories a root is automatically inserted before the user-specified directories are created (making 11 total in this case). The names generated are based on names from The Matrix.

# Create new files (Illegal input handling IV)

I have chosen to create new files now but there is an error – I cannot create new files for this scenario until I have created users and groups to assign them to (in this case we have no groups). The users in the drop down are users associated with the current scenario in the “virtual\_users” table. Note – the display above the menus was updated with the new number of directories in the scenario.

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: http://yardbirds.ccr.buffalo.edu/datagrid/new\_data\_grid\_generator.php?db=db6&app=3

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Expand All Collapse All PORTAL LOGOUT

User Tools

- > Manage Account

Grid General Info

- > About ACDC Grid
- > Computational Grid
- > Data Grid
- > Publications
- > Technical Papers
- > Presentations

Contact Us

- > Grid Account Request
- > Grid Account Support
- > Events
- > News

Projects

Resources

Education/Outreach

Staff Only

CCR HOME

Please select a user to create files for, the number to create and the resource id of the entries

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	8	11	0	0

Operation: generate

Scenarios to choose from: db6

Elements to generate: files

Please create new groups first

GO!

This will create the specified number of files for the specified user and resource id and insert them into the file\_management2 table.

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GRID

# Create new groups

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=4](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=4)

CCR Center for Computational Research GRID PORTAL High Performance Grid Computing

Expand All Collapse All PORTAL LOGOUT

User Tools

- > Manage Account

Grid General Info

- > About ACDC Grid
- > Computational Grid
- > Data Grid
- > Publications
- > Technical Papers
- > Presentations

> Contact Us

- > Grid Account Request
- > Grid Account Support
- > Events
- > News

Projects

- Resources
- Education / Outreach
- Staff Only
- CCR HOME

Please enter the number of groups to generate.

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	0	8	11	0	0

Operation

Scenarios to choose from

Elements to generate

Number to create

This will create the specified number of randomly generated group names and insert them into the `virtual_groups` table.

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I have chosen to create new groups. I must only enter the number of groups to create – the process does not rely on any information other than the number and the scenario to create them for. Again, I must enter a positive value less than 5000 or I will be bounced back to this page with an error.

# New groups created

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=4&createNum=10](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=4&createNum=10)

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High Performance Grid Computing

Expand All Collapse All  
PORTAL LOGOUT  
User Tools  
> Manage Account  
Grid General Info  
> About ACDC Grid  
> Computational Grid  
> Data Grid  
> Publications  
> Technical Papers  
> Presentations  
> Contact Us  
> Grid Account Request  
> Grid Account Support  
> Events  
> News  
Projects  
Resources  
Education / Outreach  
Staff Only  
CCR HOME

**Generating groups**

Operation: generate  
Scenarios to choose from: db6  
Elements to generate: groups  
Number to create: 10  
GO!

Total time for generation = 0 seconds  
Number of repeats from the database : 0  
Number of repeats from this generation : 0

Group #	Group name	Scenario
1	vh1618	db6
2	cspan35	db6
3	cnn92	db6
4	nbc8	db6
5	cbs271	db6
6	tlc85	db6
7	fox14	db6
8	cspan8	db6
9	nbc32	db6
10	abc14	db6

The specified number of new groups were created and inserted into the “virtual\_groups” table. The names of the groups are based on television stations with either 1, 2, or 3 digits on the end.

# Back to files

Here I may enter the user to create files for, the number of files to create and the resource id for the files (taken from “grid\_user/resources”). For the number to create, as before, I must enter a positive number less than 5000. Note – the display above the menus was updated with the new number of groups.

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=3](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=3)

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## CCR Center for Computational Research GRID PORTAL

High Performance Grid Computing

Expand All Collapse All  
PORTAL LOGOUT  
User Tools  
» Manage Account  
Grid General Info  
» About ACDC Grid  
» Computational Grid  
» Data Grid  
» Publications  
» Technical Papers  
» Presentations  
» Contact Us  
» Grid Account Request  
» Grid Account Support  
» Events  
» News  
Projects  
Resources  
Education/Outreach  
Staff Only  
CCR HOME

Please select a user to create files for, the number to create and the resource id of the entries

Scenario	Groups	Users	Directories	Files	Size (GB)
db6	10	8	11	0	0

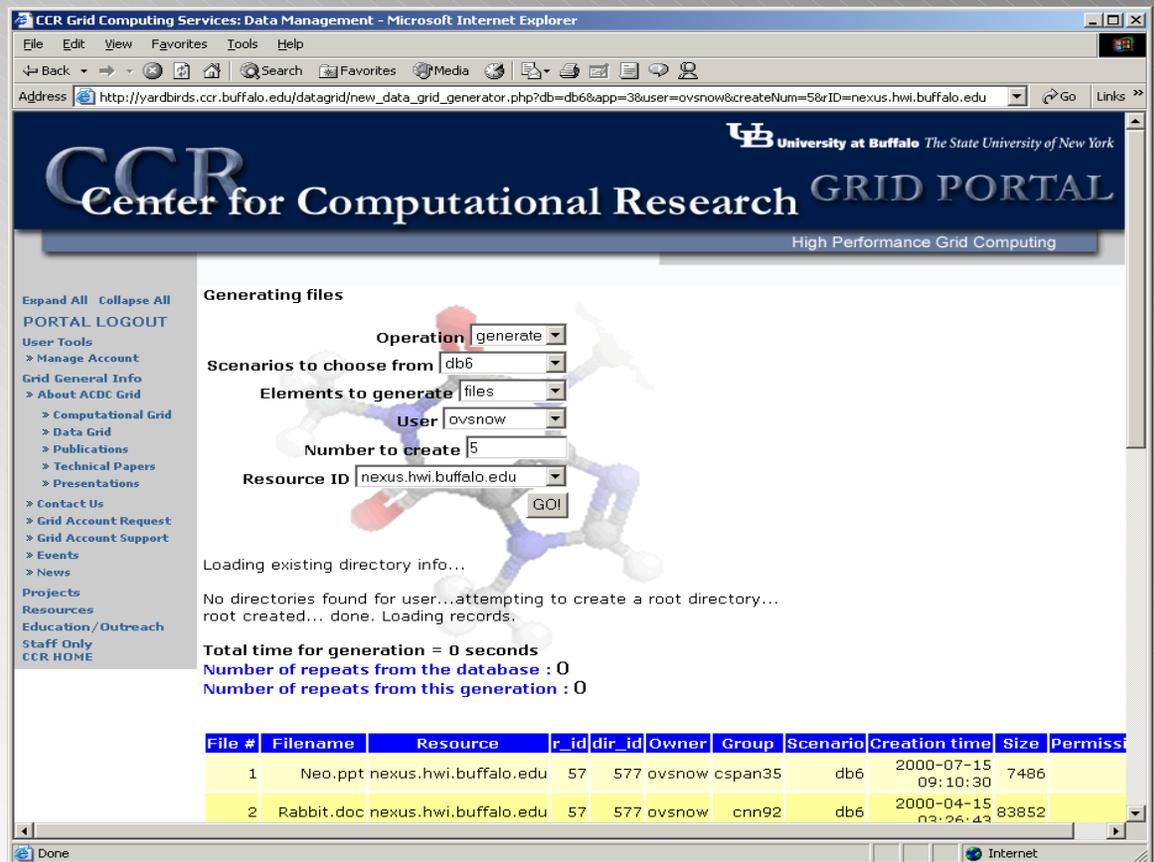
Operation: generate  
Scenarios to choose from: db6  
Elements to generate: files  
User: mshunnicut2  
Number to create: 0  
Resource ID: young.ccr.buffalo.edu  
GO!

This will create the specified number of files for the specified user and resource id and insert them into the file\_management2 table.

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# New files created

The new files have been created for the given user and inserted into the “file\_management2” table. If the user has no directories, a root is created and the files are stored in it, otherwise the directories to store the files in are chosen at random. The names of the files are also based on The Matrix and random attributes are chosen for the files and stored with them.



The screenshot shows a web browser window titled "CCR Grid Computing Services: Data Management - Microsoft Internet Explorer". The address bar shows the URL: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=db6&app=3&user=ovsnow&createNum=5&ID=nexus.hwi.buffalo.edu](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=db6&app=3&user=ovsnow&createNum=5&ID=nexus.hwi.buffalo.edu). The page header includes the CCR logo and "Center for Computational Research GRID PORTAL" with the tagline "High Performance Grid Computing".

The main content area is titled "Generating files" and contains a form with the following fields:

- Operation: generate
- Scenarios to choose from: db6
- Elements to generate: files
- User: ovsnow
- Number to create: 5
- Resource ID: nexus.hwi.buffalo.edu

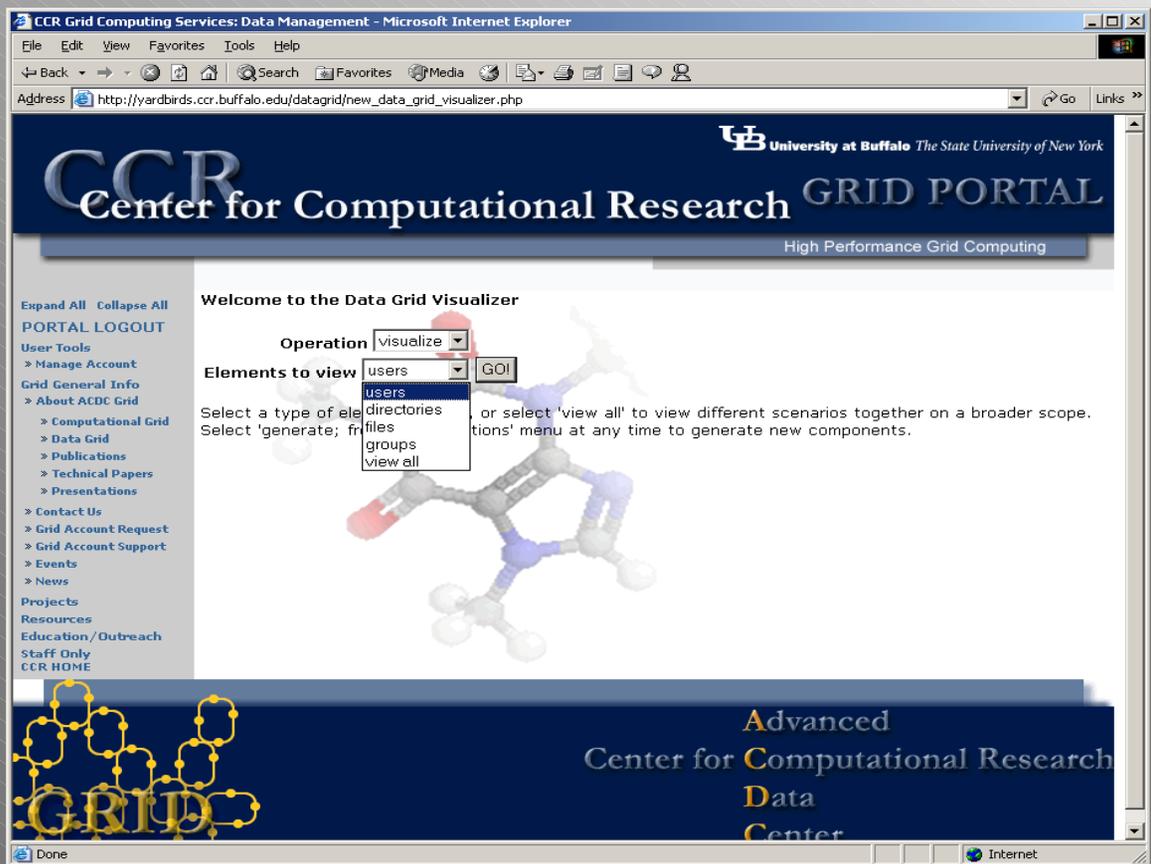
A "GO!" button is located below the form. Below the form, the text reads: "Loading existing directory info... No directories found for user...attempting to create a root directory... root created... done. Loading records."

The results section shows the following statistics:

- Total time for generation = 0 seconds
- Number of repeats from the database : 0
- Number of repeats from this generation : 0

File #	Filename	Resource	r_id	dir_id	Owner	Group	Scenario	Creation time	Size	Permissi
1	Neo.ppt	nexus.hwi.buffalo.edu	57	577	ovsnow	cspan35	db6	2000-07-15 09:10:30	7486	
2	Rabbit.doc	nexus.hwi.buffalo.edu	57	577	ovsnow	cnn92	db6	2000-04-15 03:26:43	83852	

# Jump to Scenario Visualizer



Now I wish to view the aspects of the scenario I just created. I select “visualize” from the “Operation” menu after generating my files and select an element to view. (choosing an element allows me to view aspects of it, and “view all” explores all elements together). At any point in this application I may choose “generate” from the “Operation” menu to return to the Scenario Generator.

# View All Elements

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_visualizer.php?element=5](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_visualizer.php?element=5)

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Please select the scenario you would like the view with the selected element (or select 'all' to view all scenarios together).

Operation: visualize

Elements to view: view all

Visualization Scope: all

GO!

These are the categories main focus or choose 'all'

db1  
db2  
db3  
db4  
db5  
db6

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I have chosen to view all elements and now must choose a scope. I can pick an individual scenario to view or I may choose “all” to view all scenarios comparatively. Currently there are no graphs to “view all” per scenario, so I choose “all” as my scope.

# Choose a graph

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_visualizer.php?element=5&scope=all](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_visualizer.php?element=5&scope=all)

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Please select the graph you wish to view for all scenarios

Operation visualize

Elements to view view all

Visualization Scope all

Graph to view view all GO!

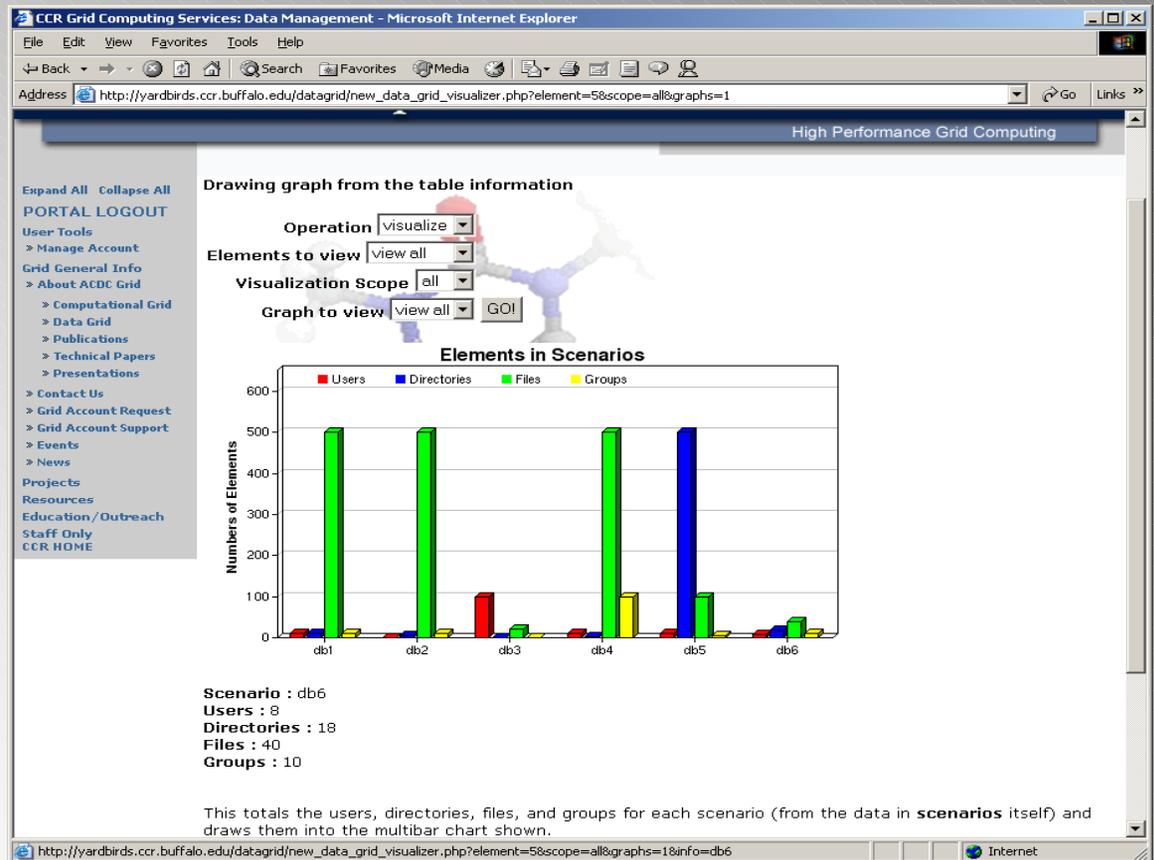
These are the different available visualization tools for the scenarios. Select one to view the given information about the scenarios that currently exist.

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At this point I must choose a graph to view. All elements and scopes have some number of choices of graphs that show pertinent information about the element and scenario in question. Here there is only one choice – “view all”. I can change the element, scope, or graph choice at any time by changing the choices in the menus; no backward navigation is required.

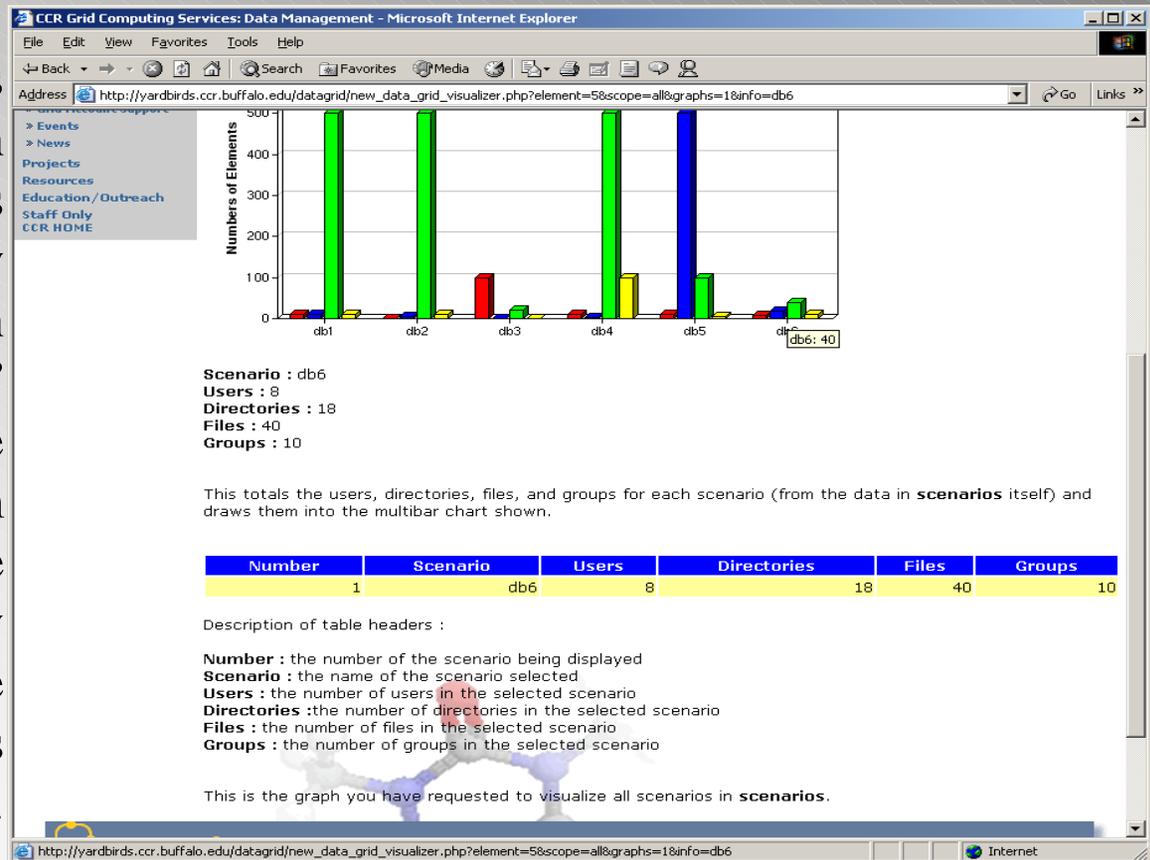
# Viewing all elements of all scenarios together

A graph is created based on the element, scope, and graph choices made. Here the four elements of the scenarios are displayed together. More information is displayed below the graph when the mouse is moved over different regions. Here, when I point to “db6”, the scenario name and numbers of its elements are shown. I am also given a brief description of how the chart was built.



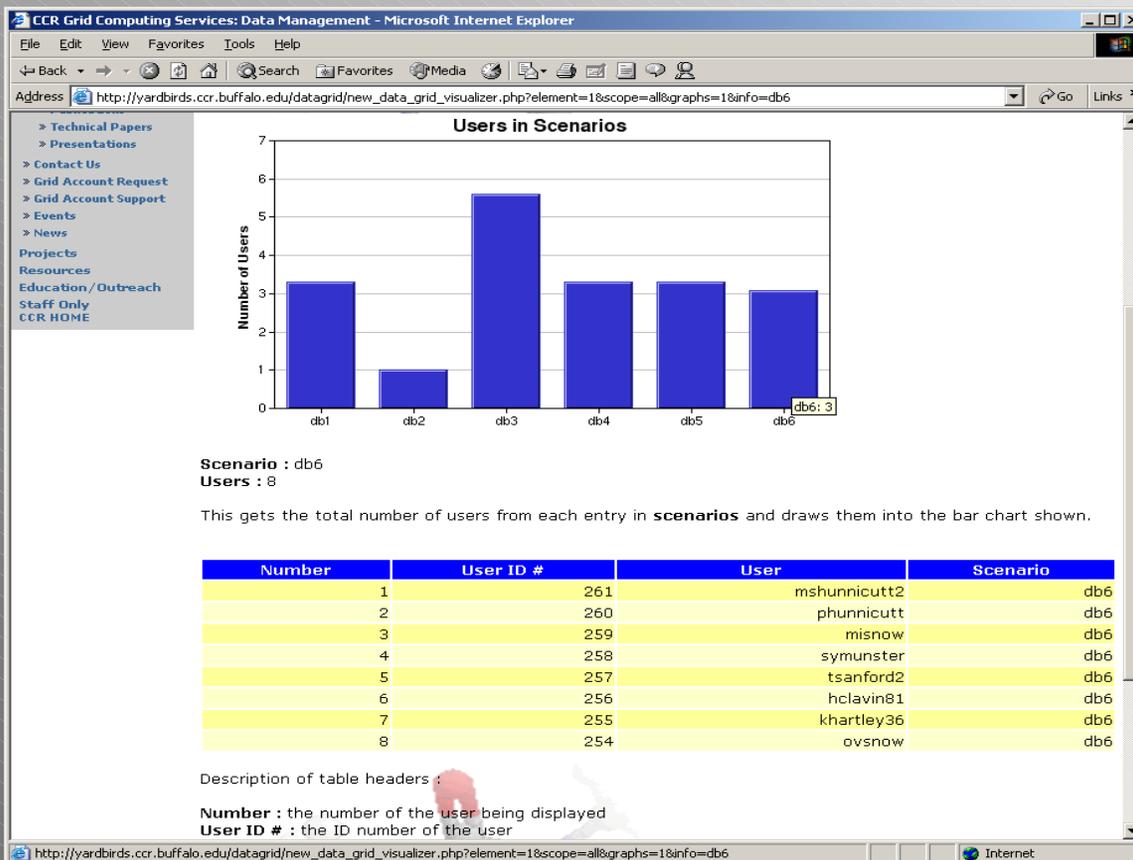
# Clicking the graph – more information

Each graph, when clicked, creates a table of the information used in the graph generation. Here, this graph is built by reading the entry in “scenarios” for the scenario in question, so clicking in the “db6” region of the graph displays the “db6” entry from the table. I am given a description of the table fields as well. Clicking in any other graph region refreshes the table; no extra navigation is required.

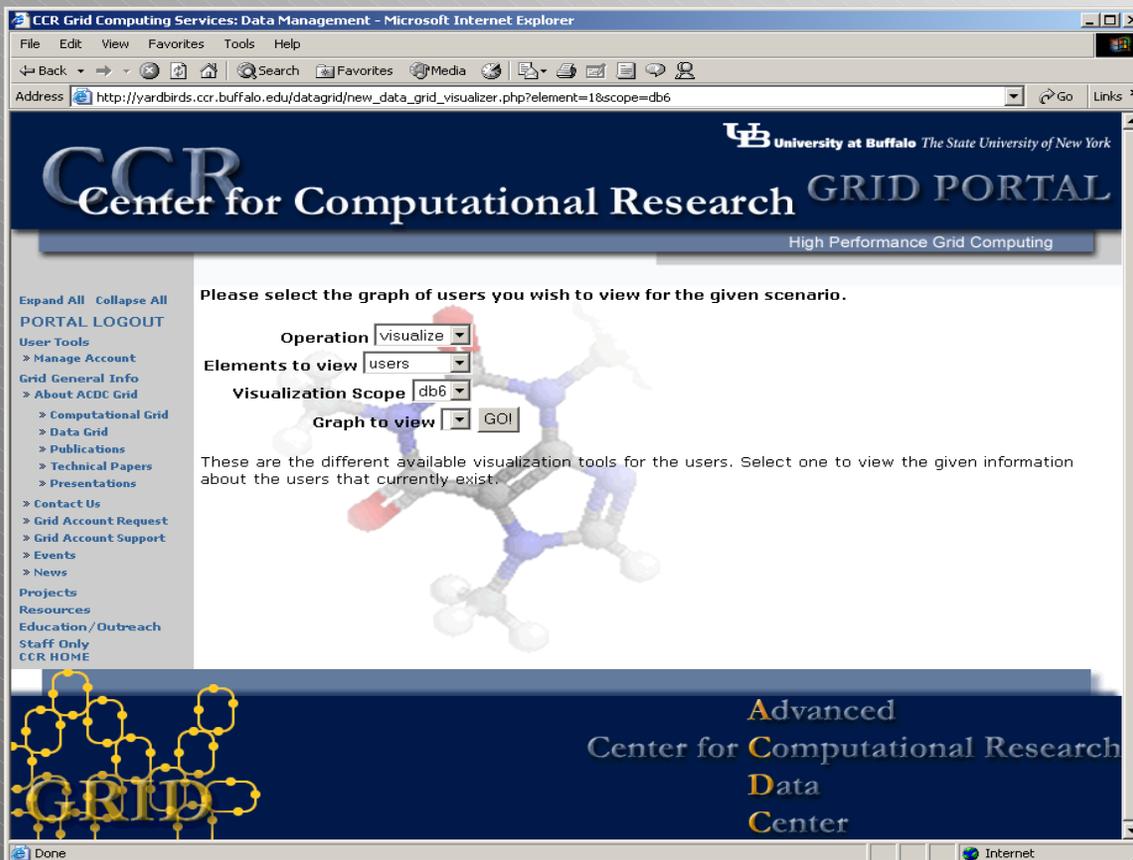


# Users – scope “all”

Now I have chosen to view the users in a scope of “all”, or across all scenarios. Here there is only one graph choice – “all users”. I am shown the total numbers of users for all scenarios. Even though this graph is built by pulling the figures out of the entries in “scenarios” in phpmyadmin, displaying the users with their corresponding information when clicking a region is more useful to the user. There is another element to this graph – db2 has only 1 user though db3 has 100 – this drastic difference would make db2 very difficult to click on because its bar would be very small. The values in the chart are logarithmically scaled to avoid this situation.



# Users – specific scenarios



The screenshot shows a web browser window titled "CCR Grid Computing Services: Data Management - Microsoft Internet Explorer". The address bar shows the URL: `http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_visualizer.php?element=1&scope=db6`. The page header features the CCR logo and "Center for Computational Research GRID PORTAL" with the tagline "High Performance Grid Computing".

The main content area contains the following text and form elements:

Please select the graph of users you wish to view for the given scenario.

Operation: visualize  
Elements to view: users  
Visualization Scope: db6  
Graph to view: GO!

These are the different available visualization tools for the users. Select one to view the given information about the users that currently exist.

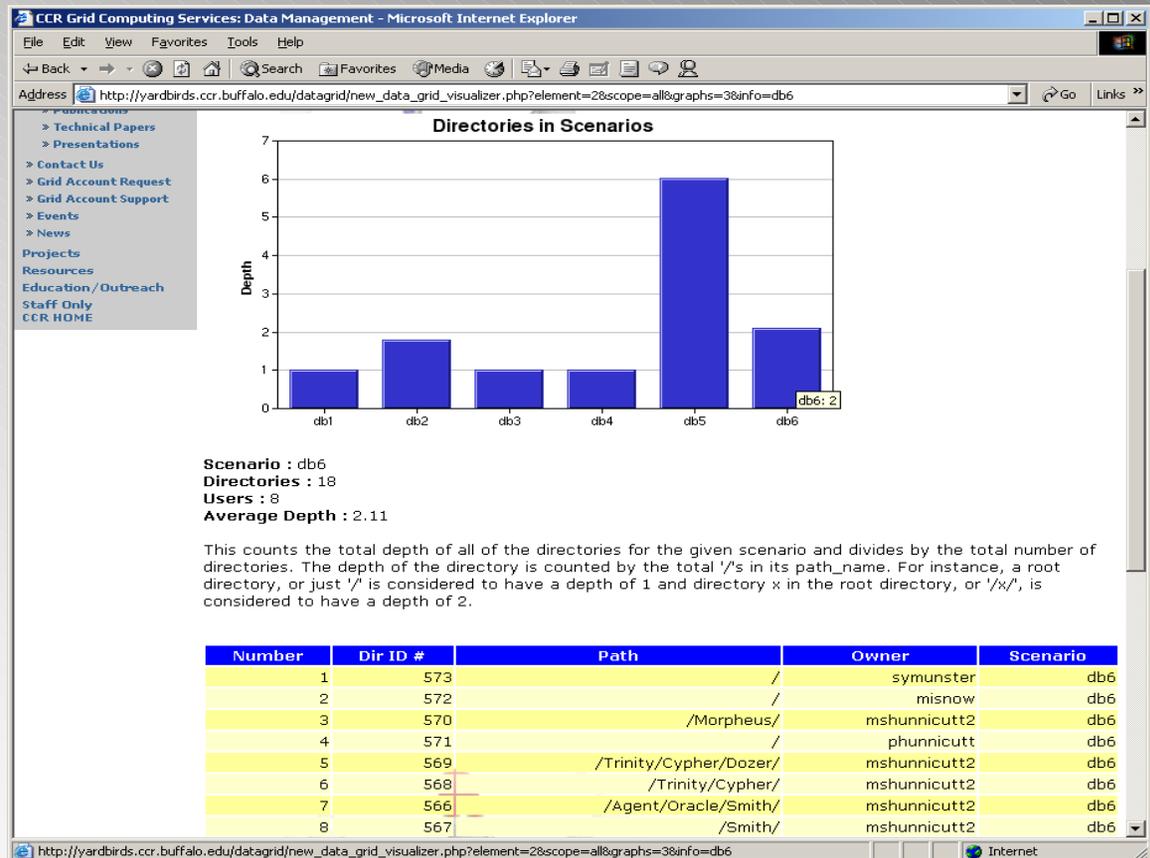
The page also includes a sidebar with navigation links such as "Expand All", "Collapse All", "PORTAL LOGOUT", "User Tools", "Grid General Info", "Computational Grid", "Data Grid", "Publications", "Technical Papers", "Presentations", "Contact Us", "Grid Account Request", "Grid Account Support", "Events", "News", "Projects", "Resources", "Education / Outreach", "Staff Only", and "CCR HOME".

The footer contains the text: "Advanced Center for Computational Research Data Center".

Here there are no choices for viewing users in the scope of a single scenario. This information has not yet been added. More graphs can be added to the code that already exists. There are comments in the source code which indicate how to make such changes.

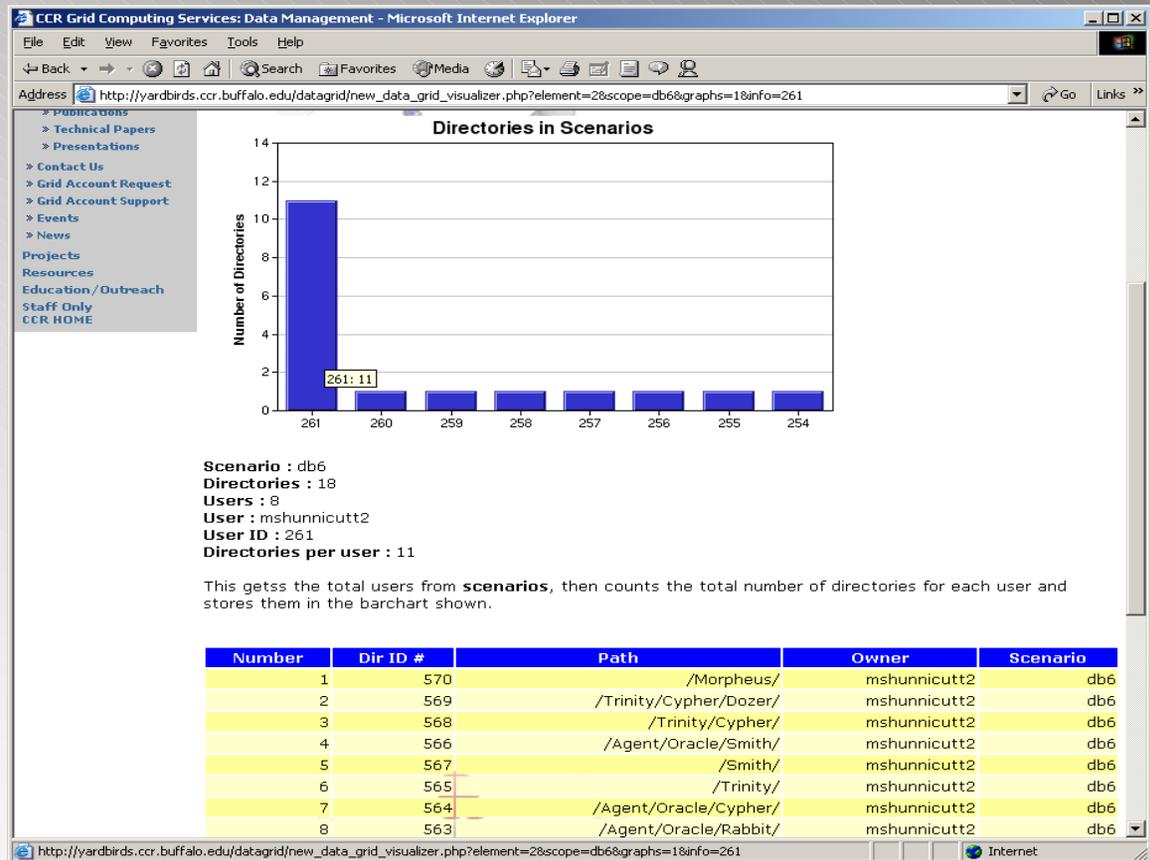
# Directories – scope “all”

Now I have chosen to view the directories with a scope of “all”. There are a few choices of graphs. I chose “Average Directory Depth”, which shows me the average depth of the directories in each scenario. Moving the mouse over the regions displays the exact figures and clicking the regions builds a table of all directories used to arrive at this number.

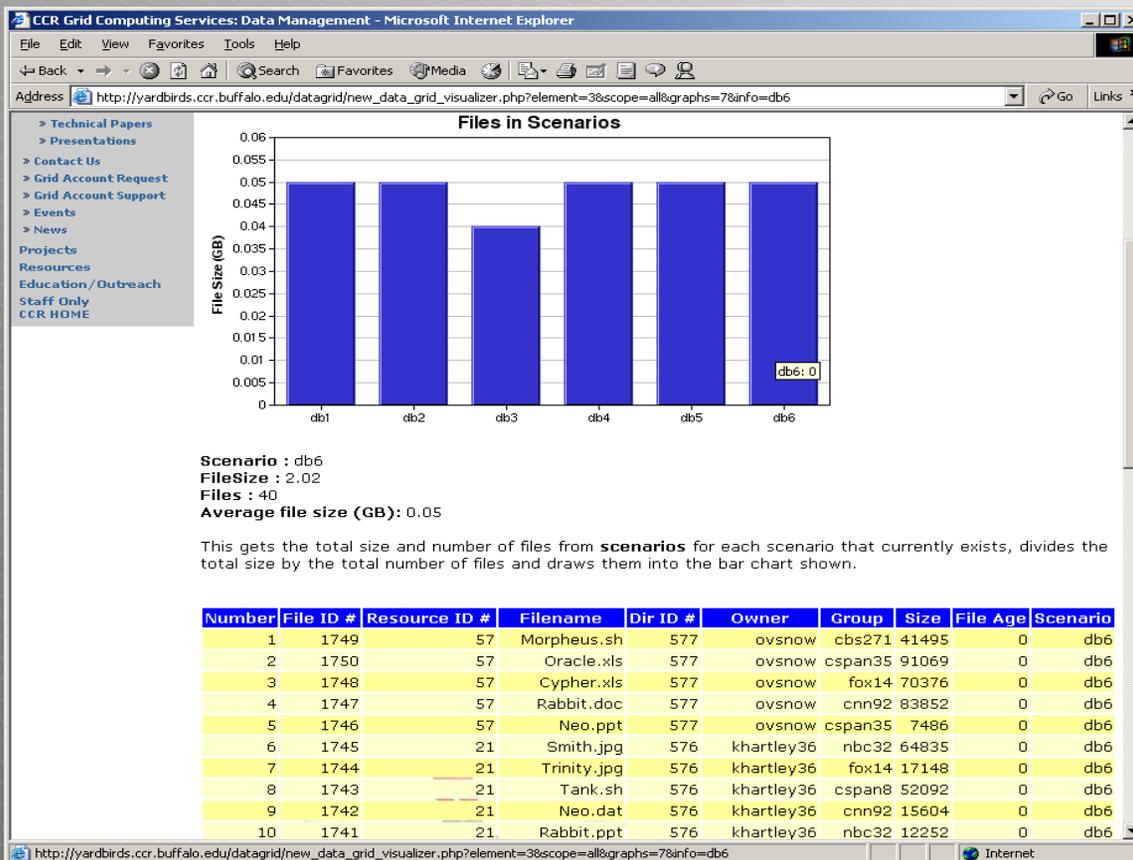


# Directories – specific scenarios

Now I have chosen “db6” as my scope. I chose the graph, “Directories per User”. Here we can see the directories we created during scenario generation – we created 10 directories for user “mshunnicut2” and we can see this reflected in the table. More information is displayed when the mouse is over the region and clicking builds a table of the directories for the user in question.

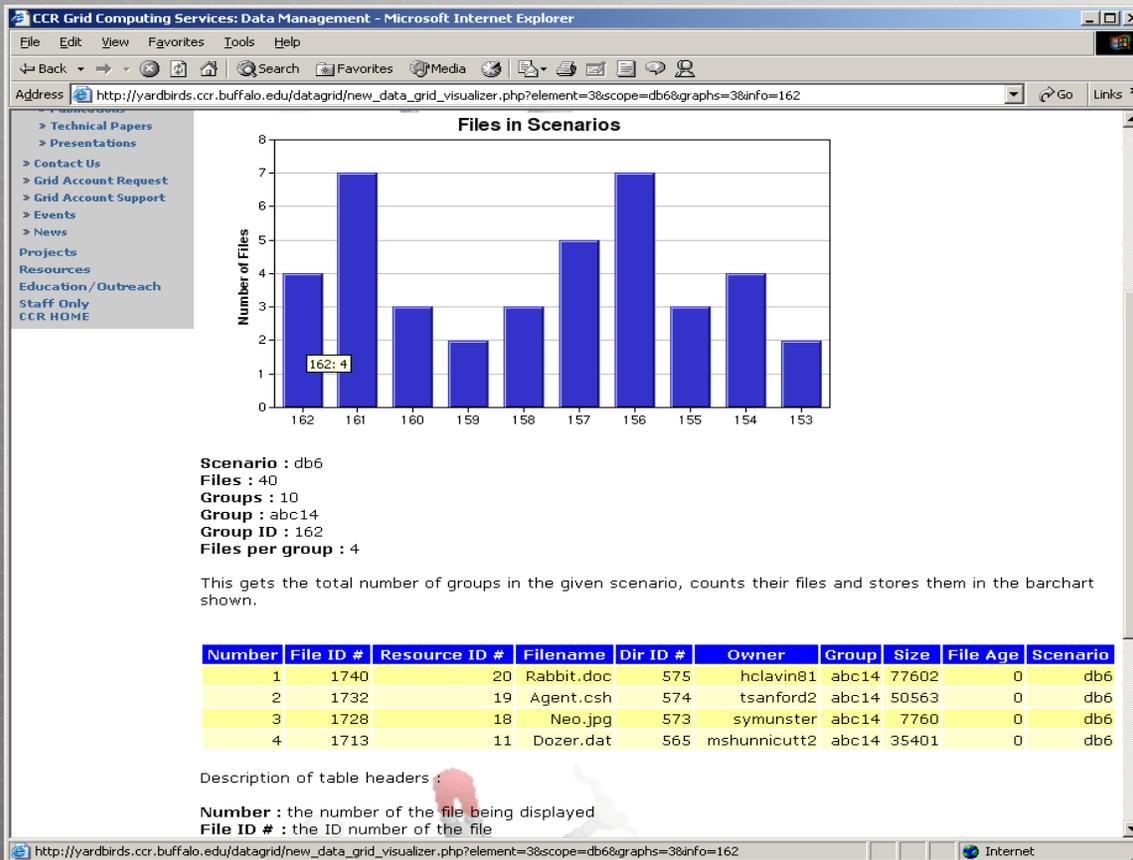


# Files – scope “all”



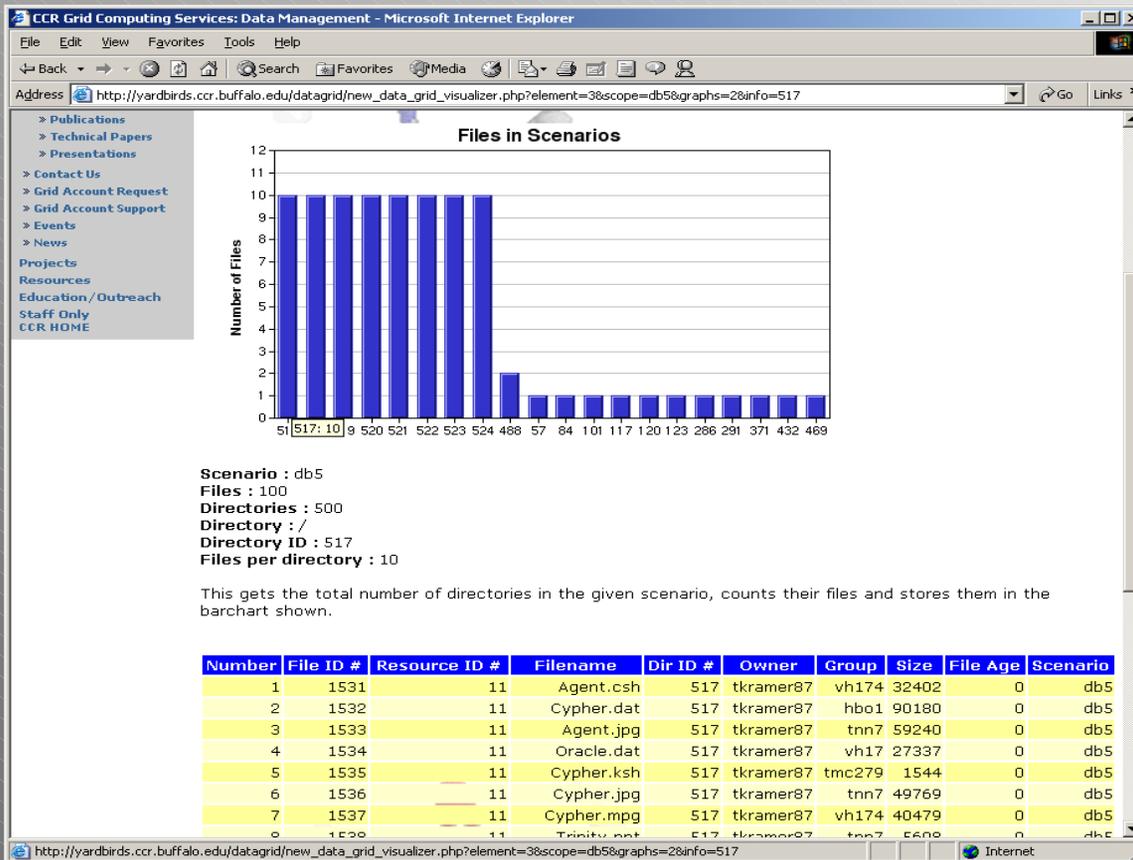
Here I have chosen to view files over all scenarios. There are many choices of applicable graphs; here I picked “average file size” which finds the average sizes of all files across all scenarios. Moving the mouse over regions prints the exact average (up to two significant figures), and clicking on “db6” shows all files that were counted in the average (i.e. all files in “db6”).

# Files – specific scenarios



Now I have chosen to see “files per group” on “db6”. The groups are shown by their group ID’s and the exact number of files is displayed when the mouse is moved over specific regions. When clicked, the files in the scenario with the selected group are shown in the table.

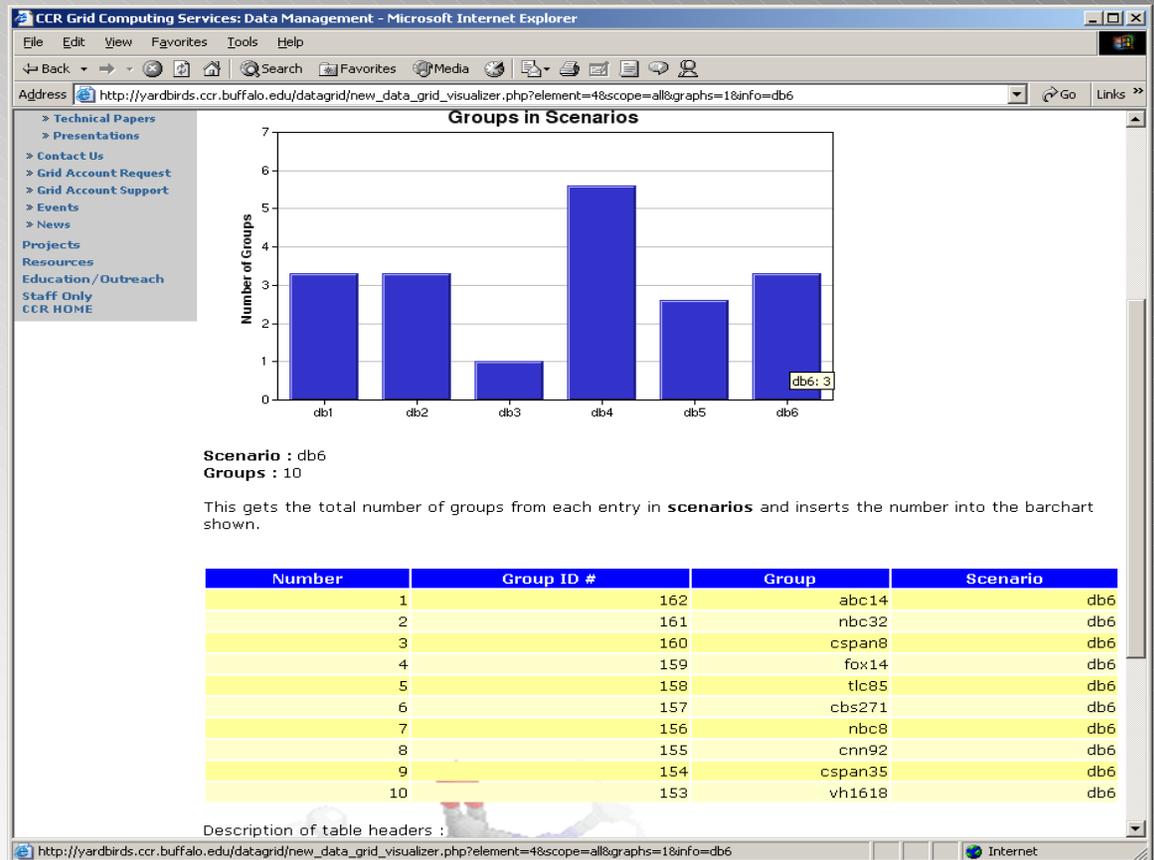
# Formatting the graph



In some cases the information for a graph can be much too big to display. For instance, scenario “db5” has 500 directories, so this graph “files per directory” for “db5” would be difficult to view. In the case when there are more than 20 elements on the x-axis, the data is sorted in descending order by y-value and only the top 20 x-values are displayed.

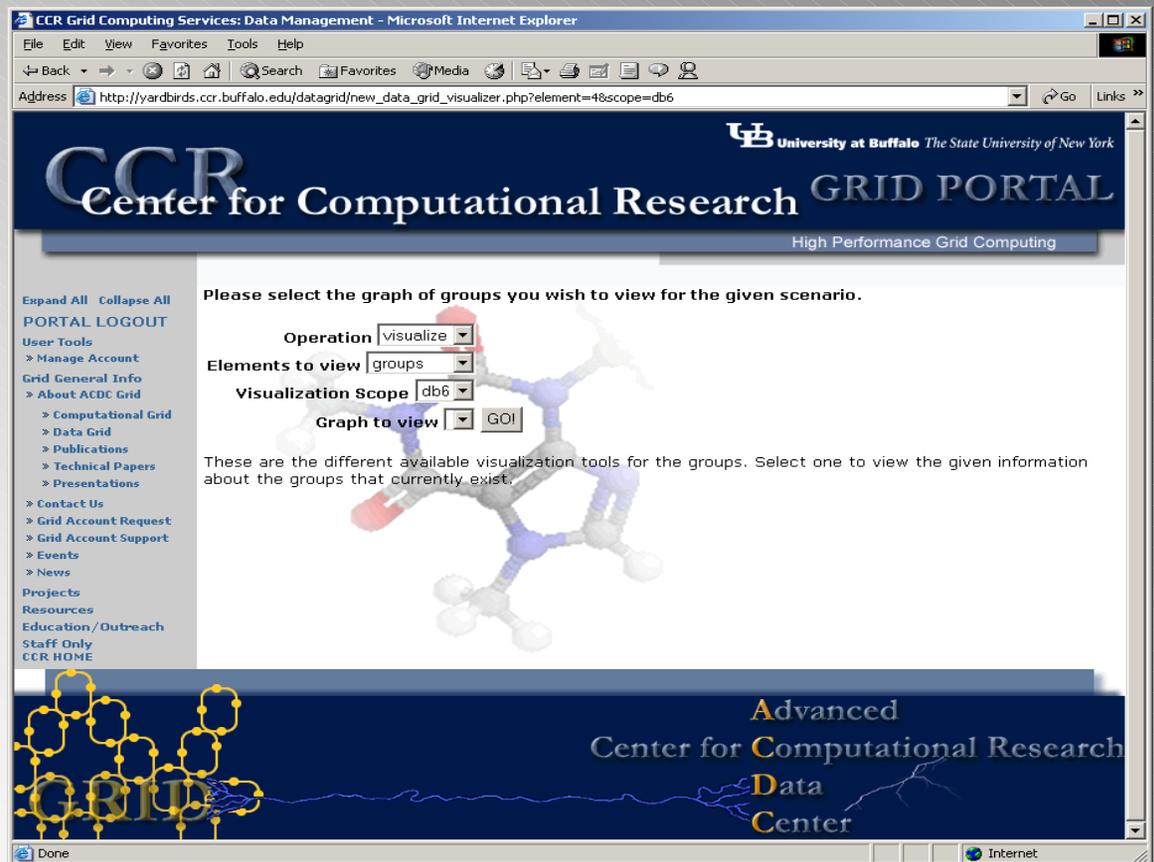
# Groups – scope “all”

This is the only graph available for viewing groups over all scenarios. It shows the numbers of groups in each scenario, with the exact number printed when the mouse enters the region. The table is populated with the names and ID's of the groups in the selected scenario.



# Groups – specific scenarios

There are no graphs available to view for groups over a single scenario. More can be added at any time, as instructions were included in the comments of the source code. When graphs for this element are found necessary they can be added without much more coding.



The screenshot shows a web browser window titled "CCR Grid Computing Services: Data Management - Microsoft Internet Explorer". The address bar shows the URL: [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_visualizer.php?element=4&scope=db6](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_visualizer.php?element=4&scope=db6). The page header includes the University at Buffalo logo and the text "Center for Computational Research GRID PORTAL High Performance Grid Computing".

The main content area displays a form for selecting visualization options:

- Operation: visualize
- Elements to view: groups
- Visualization Scope: db6
- Graph to view: [dropdown menu] GO!

Below the form, there is a 3D molecular model visualization and the text: "These are the different available visualization tools for the groups. Select one to view the given information about the groups that currently exist."

The footer of the page features a logo with the word "GRID" and the text: "Advanced Center for Computational Research Data Center".

# Deleting information

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=delete](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=delete)

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Expand All Collapse All  
PORTAL LOGOUT

User Tools  
» Manage Account

Grid General Info  
» About ACDC Grid  
» Computational Grid  
» Data Grid  
» Publications  
» Technical Papers  
» Presentations

Contact Us  
» Grid Account Request  
» Grid Account Support  
» Events  
» News

Projects  
Resources  
Education / Outreach  
Staff Only  
CCR HOME

Please enter the name of the scenario to delete.

Operation generate

Scenarios to choose from delete

Name enter here

GO!

Enter the name of a scenario in the database. Enter the name exactly as it appears in the dropdown menu, or choose another function or scenario from the dropdown menu to work in.

**WARNING :** entering the name of a scenario in the database will result in its deletion and also the deletion of all associated users, directories, files and groups when you press 'GO!'.

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Done Internet

Back in the generator application, it is possible to delete information from the tables in phpmyadmin. Selecting “DELETE ALL” from menu “Scenarios to choose from” removes all scenarios and all of their corresponding elements by emptying the element tables in phpmyadmin completely after asking if the user is sure. Here we have chosen to delete one specific scenario.

# Entering scenario name

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=delete&name=db7](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=delete&name=db7)

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Expand All Collapse All  
PORTAL LOGOUT

User Tools  
Manage Account

Grid General Info  
About ACDC Grid

- Computational Grid
- Data Grid
- Publications
- Technical Papers
- Presentations

Contact Us  
Grid Account Request  
Grid Account Support  
Events  
News

Projects  
Resources  
Education / Outreach  
Staff Only  
CCR HOME

Please enter the name of the scenario to delete.

Operation generate

Scenarios to choose from  
delete

Name db7

GO!

Please enter the name of an existing scenario to be removed.

Enter the name of a scenario in the database. Enter the name exactly as it appears in the dropdown menu, or choose another function or scenario from the dropdown menu to work in.

**WARNING :** entering the name of a scenario in the database will result in its deletion and also the deletion of all associated users, directories, files and groups when you press 'GO!'.

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Done Internet

It would be very easy for a user to accidentally select the wrong scenario name from a dropdown menu to delete, so as a precaution the user must type the scenario's exact name in order to have it deleted properly. Here I have entered "db7" which does not exist, and an error is generated.

# Deletion complete

CCR Grid Computing Services: Data Management - Microsoft Internet Explorer

Address [http://yardbirds.ccr.buffalo.edu/datagrid/new\\_data\\_grid\\_generator.php?db=delete&name=db6](http://yardbirds.ccr.buffalo.edu/datagrid/new_data_grid_generator.php?db=delete&name=db6)

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Expand All Collapse All  
PORTAL LOGOUT  
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> Grid Account Support  
> Events  
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**Deleting scenario**

loading database...  
Information found...**db6 deleted.**  
Information found...**associated users deleted.**  
Information found...**associated directories deleted.**  
Information found...**associated files deleted.**  
Information found...**associated groups deleted.**  
...done

Operation generate  
Scenarios to choose from delete  
Name db6  
GO!

Deleted scenario in **scenarios**, as well as all associated users, directories, files and groups with the name you entered. Enter the name of another scenario to delete, choose a scenario to work or another function to perform from the dropdown menu.

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A valid scenario name was entered and the scenario and all of its corresponding information was deleted. All applicable phpmyadmin tables were searched and entries with the scenario set to “db6” were removed. The scenario is permanently deleted and the name is now free to be created as a new scenario and populated.

# Things to add

There are a few features that I would like to add to this tool in the future...

- I would like to alphabetize the “users” drop down menu populated for “create new directories” and “create new files”. It is difficult to find specific users when there are many of them.
- I would like to give the user the option of viewing or not viewing the table of newly created elements.
- The user should be able to specify the number of groups to choose from randomly when creating new files. Currently the groups are picked from a large array.
- Modify the logarithmic scaling such that the y-axis labels are scaled properly as well.