



# Grid Support Services Tools

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# Search & Browse for Log Files

Range-  
specific  
data  
retrieval

Task:

Given any chronologically organized log file, retrieve all pertinent information in a specified date range.

# Search & Browse for Log Files

Task:

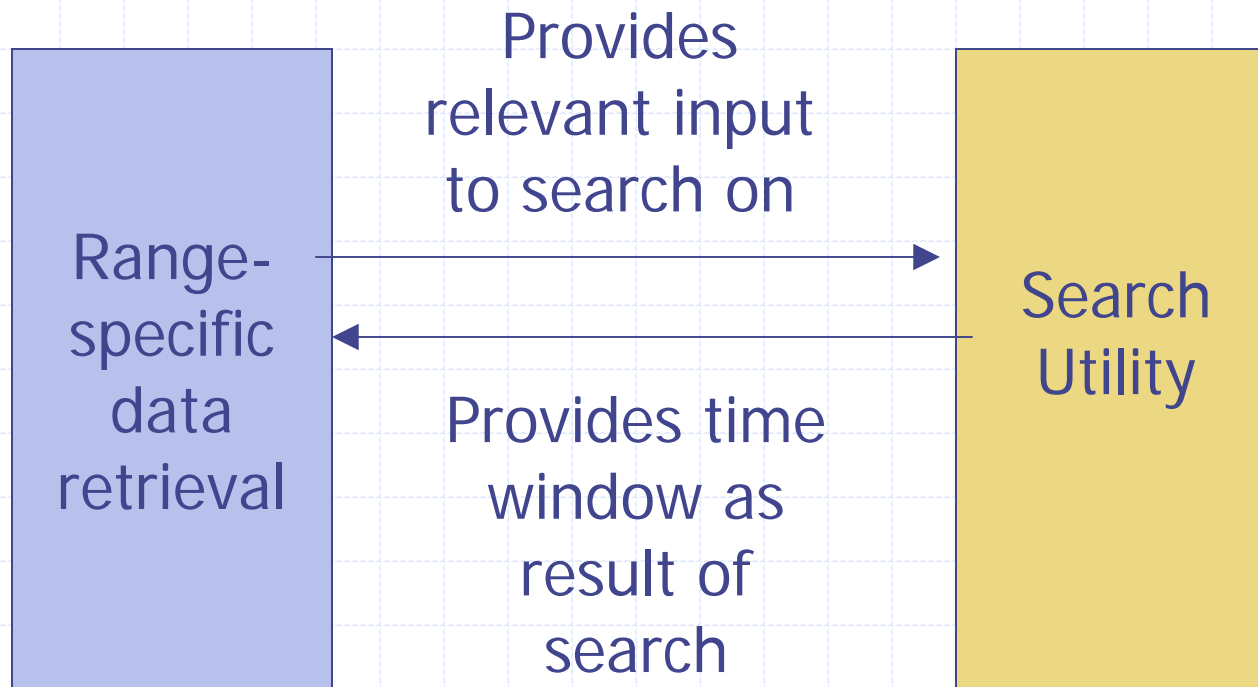
Given some properties of a job (Globus ID, PBS ID, username, time, status, etc.), determine other properties of the job.



Search  
Utility

# Search & Browse for Log Files

## Support Services and Tools Requirements, 5.2



# Log file range retrieval

- ◆ “grep” information from a log of any format
  - Command line utility
  - Preset and user-defined date templates describe format
  - Additional flags control information retrieved
  - Regular expressions strengthen search
- ◆ Implemented in perl
  - regular expressions “on the fly”
- ◆ Output for human browsing or further processing

# Range retrieval illustration

Show sample output here

# Job information search utility

- ◆ Search for PBS or Globus ID(s) given user name and approximate time of submission
  - Store and rank search results
- ◆ Parse ID from job handle or gram log file
- ◆ Construct a timeline for a known ID
- ◆ Infer PBS ID from Globus ID, or vice versa
- ◆ Construct time window for a job to facilitate retrieval of relevant resource history

# Search: Implementation

## ◆ Perl

- Module for each search and parse action
- Call from perl or command line

## ◆ Runs on resource

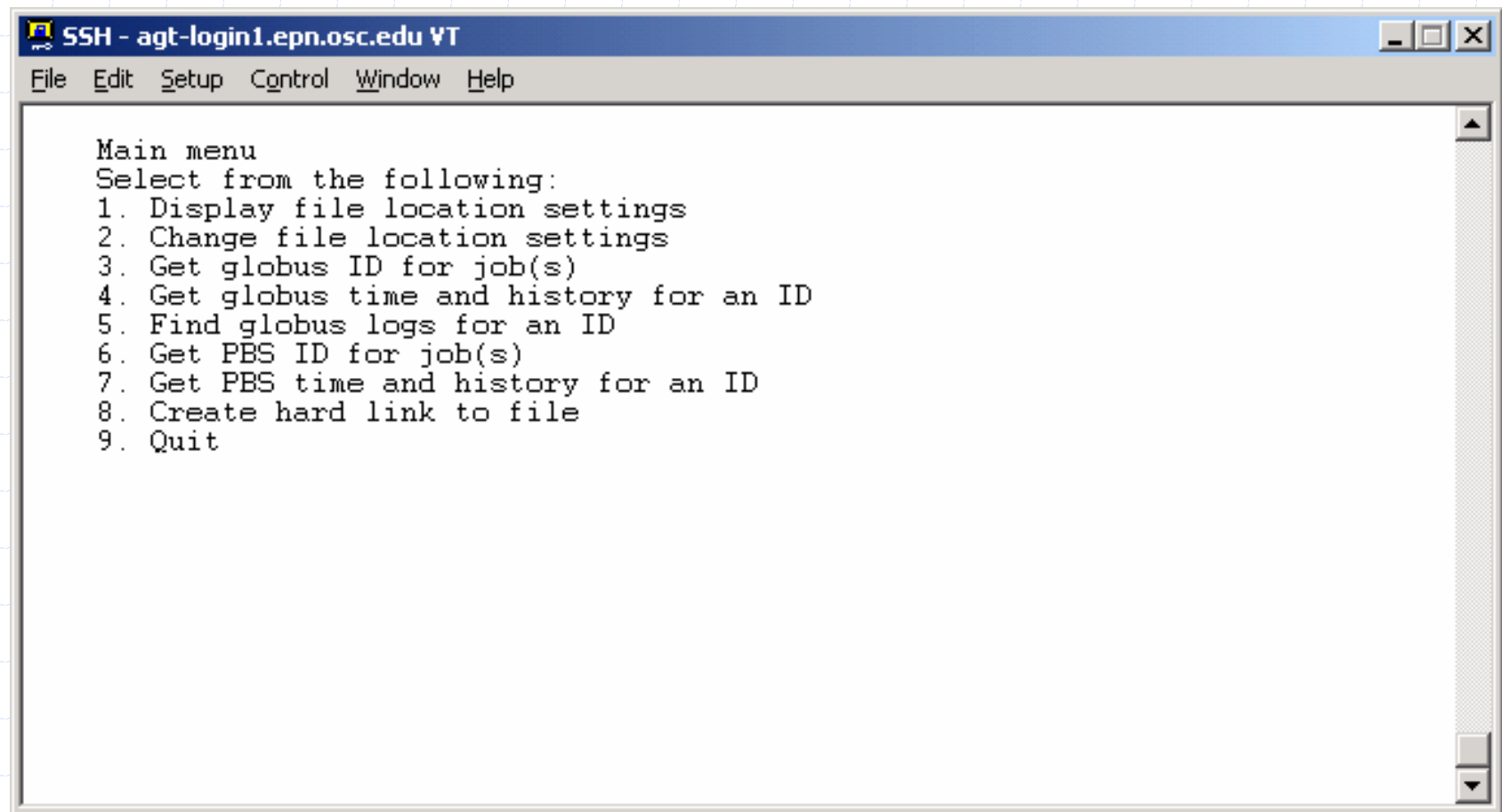
- Central interface can retrieve information from scripts run on each resource and return results

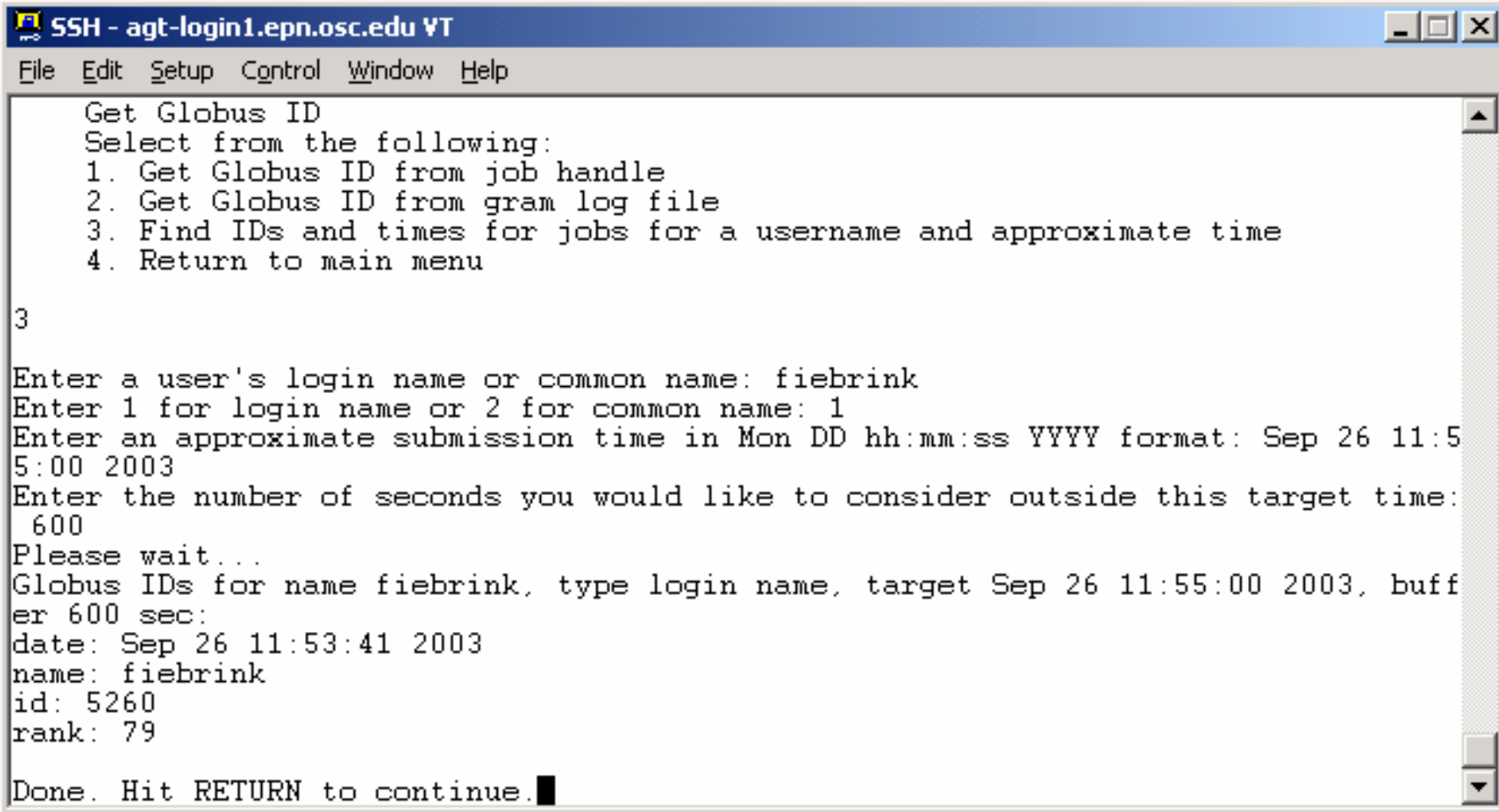
## ◆ Specific to Globus/PBS

- Relies on their conventions and peculiarities
- Necessitated by lack of uniformity, standards
- Common to Cluster Ohio, Alliance Grid Testbed, TeraGrid



# Illustration: Text menu





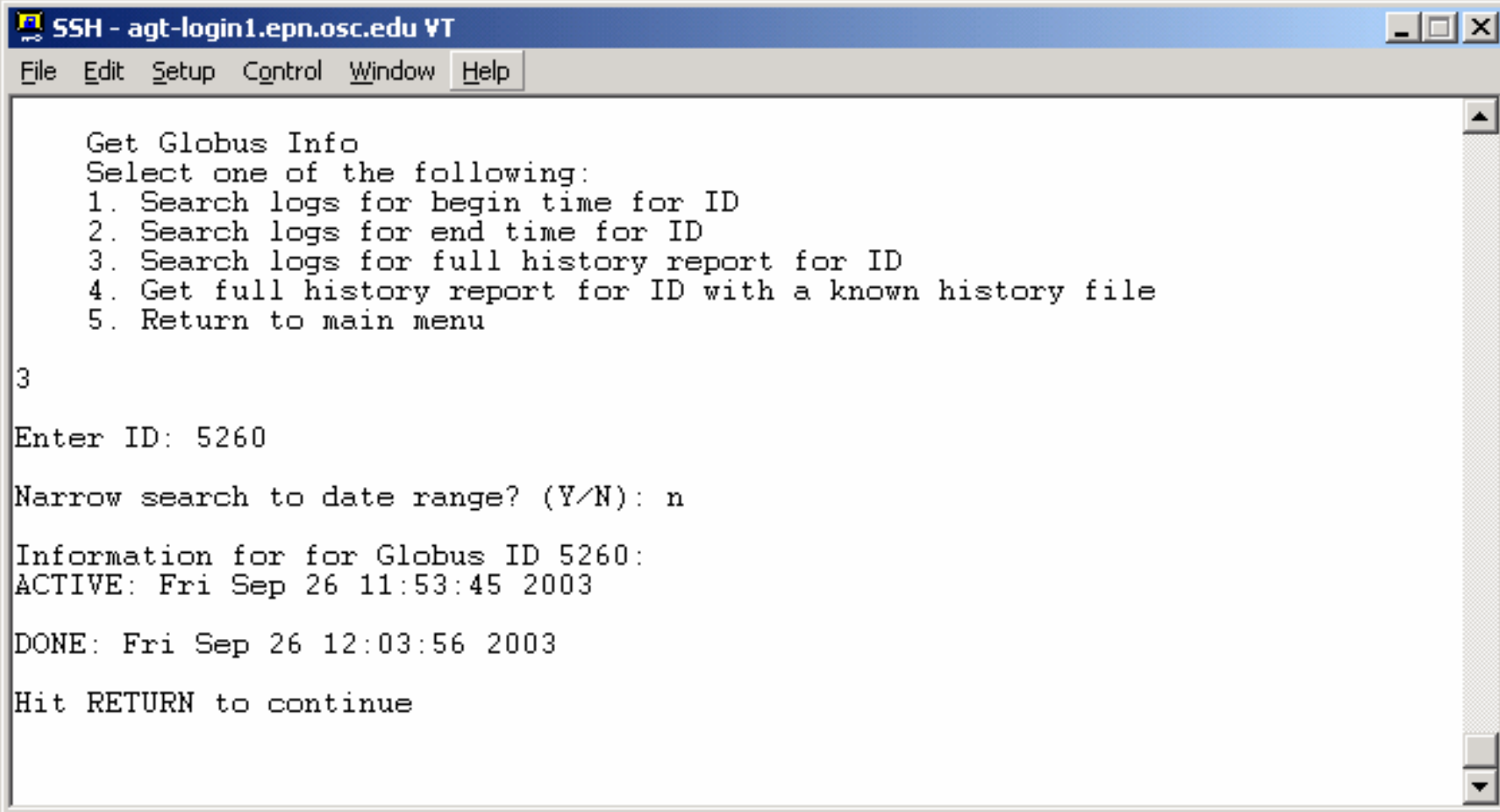
```
SSH - agt-login1.epn.osc.edu VT
File Edit Setup Control Window Help

Get Globus ID
Select from the following:
1. Get Globus ID from job handle
2. Get Globus ID from gram log file
3. Find IDs and times for jobs for a username and approximate time
4. Return to main menu

3

Enter a user's login name or common name: fiebrink
Enter 1 for login name or 2 for common name: 1
Enter an approximate submission time in Mon DD hh:mm:ss YYYY format: Sep 26 11:5
5:00 2003
Enter the number of seconds you would like to consider outside this target time:
600
Please wait...
Globus IDs for name fiebrink, type login name, target Sep 26 11:55:00 2003, buff
er 600 sec:
date: Sep 26 11:53:41 2003
name: fiebrink
id: 5260
rank: 79

Done. Hit RETURN to continue.
```



SSH - agt-login1.epn.osc.edu VT

File Edit Setup Control Window Help

```
Get Globus Info
Select one of the following:
1. Search logs for begin time for ID
2. Search logs for end time for ID
3. Search logs for full history report for ID
4. Get full history report for ID with a known history file
5. Return to main menu

3

Enter ID: 5260

Narrow search to date range? (Y/N): n

Information for for Globus ID 5260:
ACTIVE: Fri Sep 26 11:53:45 2003

DONE: Fri Sep 26 12:03:56 2003

Hit RETURN to continue
```

```
SSH - agt-login1.epn.osc.edu VT
File Edit Setup Control Window Help

Get PBS ID
Select from the following:
1. Get PBS ID from user's gram log file
2. Get PBS ID from the job manager log file (from running job)
3. Find IDs and times for jobs for a username and approximate begin/end time
s
4. Return to main menu
3

Enter pbs system login name: fiebrink
Enter approximate enqueue time in Mon DD hh:mm:ss YYYY format: Sep 26 12:10:00 2
003
Consider only completed jobs? (Y/N): n
Enter the number of seconds you would like to consider outside the target begin/
end times: 600
Please wait...
PBS IDs for login name fiebrink, begin Sep 26 12:10:00 2003, end , buffer 600 se
c:
dequeue: 09/26/2003 12:18:19
name: fiebrink
enqueue: 09/26/2003 12:11:14
id: 5416
rank: 152165

Done. Press RETURN to continue.
```

```
SSH - agt-login1.epn.osc.edu VT
File Edit Setup Control Window Help

Get PBS Info      Select one of the following:
1. Get enqueue time for ID
2. Get dequeue time for ID
3. Get history for ID
4. Return to main menu

3

Enter PBS ID: 5416
Enter first date in range to search for ID (MM/DD/YYYY): 09/26/2003
Enter last date in range to search for ID (MM/DD/YYYY): 09/26/2003

History of PBS ID 5416 from 09/26/2003 to 09/26/2003:
date: 09/26/2003 12:11:14
message: 0100;PBS_Server;Job;5416.agt-s001.epn.osc.edu;enqueueing into agt_pbs, s
tate 1 hop 1

date: 09/26/2003 12:11:14
message: 0008;PBS_Server;Job;5416.agt-s001.epn.osc.edu;Job Queued at request of
fiebrink@agt-login1.epn.osc.edu, owner = fiebrink@agt-login1.epn.osc.edu, job na
me = STDIN, queue = agt_pbs

date: 09/26/2003 12:18:18
message: 0008;PBS_Server;Job;5416.agt-s001.epn.osc.edu;Job Modified at request o
f root@agt-s001.epn.osc.edu

date: 09/26/2003 12:18:18
message: 0008;PBS_Server;Job;5416.agt-s001.epn.osc.edu;Job Run at request of roo
t@agt-s001.epn.osc.edu

date: 09/26/2003 12:18:19
message: 0010;PBS_Server;Job;5416.agt-s001.epn.osc.edu;Exit_status=0 resources_u
sed.cput=00:00:00 resources_used.mem=0kb resources_used.vmem=0kb resources_used.
walltime=00:00:00

date: 09/26/2003 12:18:19
message: 0100;PBS_Server;Job;5416.agt-s001.epn.osc.edu;dequeueing from agt_pbs, s
tate 5

Hit RETURN to continue
```

# Python GUI

- ◆ Calls command line versions of perl subroutines
- ◆ Rapid information retrieval with cascading input

OSC Grid User Services			
<input type="button" value="Change"/>	Grid Resource	agt-login.epn.osc.edu	<input type="button" value="Get PBS Server Log Entries"/>
	Log Grep Program Path	/apps/vdt/consult/logg.pl	<input type="button" value="Search Maui Scheduler Log"/>
	Job History File Path	/apps/vdt/globus/tmp/job_manager_status	<input type="button" value="Search Globus Gatekeeper Log"/>
		null	
<input type="button" value="Change"/>	Globus Gatekeeper Log	/apps/vdt/globus/var/globus-gatekeeper.log	<input type="button" value="hold"/>
	Job Manager Log Location	/apps/vdt/globus/tmp/job_manager_status	<input type="button" value="hold"/>
	PBS Server Log Path	/var/spool/pbs/server_logs	<input type="button" value="hold"/>
	GRAM Log File		
GET GLOBUS ID <input type="text"/>			
<input type="button" value="From users Gram log File"/>		<input type="button" value="From Globus job handle:"/>	
<input type="button" value="Get"/>	<input checked="" type="radio"/> From local username	<input type="text"/>	Approx. submission time Sep 26 12:33:46 2003
	<input type="radio"/> From grid common name	<input type="text"/>	Time window (sec) 600
FIND GLOBUS LOGS			
<input type="button" value="Find job history &amp; manager logs"/>	<input type="text"/>	Between dates	Start (MM/DD/YY) <input type="text"/>
	<input type="text"/>		End (MM/DD/YY) <input type="text"/>
GET INFORMATION FOR GLOBUS ID			
<input type="button" value="Search for begin time"/>	<input type="button" value="Between Dates (optional)"/>	Start - MM/DD/YY	<input type="text"/>
<input type="button" value="Search for end time"/>		End - MM/DD/YY	<input type="text"/>
<input type="button" value="Search for full report"/>			
<input type="button" value="Get full report from history file"/>			
GET PBS ID <input type="text"/>			
<input type="button" value="From users GRAM log file"/>		<input type="button" value="From job manager log file"/>	
<input type="button" value="Find ID from: username"/>	<input type="text"/>	and approx. starting time	Sep 26 12:33:46 2003
<input checked="" type="radio"/> Search for running jobs			
<input type="radio"/> Search for completed jobs: approx ending time	Sep 26 12:33:46 2003	Time window(sec)	20
Enqueue time for job: <input type="text"/>		Dequeue time for job: <input type="text"/>	
<input type="button" value="Search for enqueue time"/>	<input type="button" value="Between Dates"/>	Start (MM/DD/YYYY)	<input type="text"/>
<input type="button" value="Search for dequeue time"/>		End (MM/DD/YYYY)	<input type="text"/>

OSC Grid User Services			
Change	Grid Resource	agt-login.epn.osc.edu	Get PBS Server Log Entries
	Log Grep Program Path	/apps/vdt/consult/logg.pl	Search Maui Scheduler Log
	Job History File Path	/apps/vdt/globus/tmp/job_manager_status	Search Globus Gatekeeper Log
		null	hold
Change	Globus Gatekeeper Log	/apps/vdt/globus/var/globus-gatekeeper.log	hold
	Job Manager Log Location	/apps/vdt/globus/tmp/job_manager_status	hold
	PBS Server Log Path	/var/spool/pbs/server_logs	hold
	GRAM Log File		hold
GET GLOBUS ID 11116			
From users Gram log File		From Globus job handle:	
Get	<input checked="" type="radio"/> From local username	fiebrink	Approx. submission time Sep 26 12:11:01 2003
	<input type="radio"/> From grid common name		Time window (sec) 600
FIND GLOBUS LOGS			
Find job history & manager logs	/apps/vdt/globus/tmp/job_	Between dates	Start (MM/DD/YY) 09/26/2003
			End (MM/DD/YY) 09/26/2003
GET INFORMATION FOR GLOBUS ID			
Search for begin time	Between Dates (optional)	Start - MM/DD/YY	
Search for end time		End - MM/DD/YY	
Search for full report			
Get full report from history file			
GET PBS ID			
From users GRAM log file:		From job manager log file	
Find ID from:	username	and approx. starting time	Sep 26 12:33:46 2003
<input checked="" type="radio"/>	Search for running jobs		Time window(sec) 20
<input type="radio"/>	Search for completed jobs: approx ending time		Sep 26 12:33:46 2003
Enqueue time for job:		Dequeue time for job:	
Search for enqueue time	Between Dates	Start (MM/DD/YYYY)	09/26/2003
Search for dequeue time		End (MM/DD/YYYY)	09/26/2003



# Deployment requirements

- ◆ “Verbose” logging: globus/job manager configuration
- ◆ Keep log files
- ◆ Standard or published log locations
- ◆ Installation of scripts on grid resources

# Future possibilities

## ◆ Usage

- Quick problem tracing
- Focused human assessment

## ◆ Further development

- Windows implementation
- Java interface
- Incorporation of other job managers