



**globus online**

# **Globus Online: A Hosted Data Transfer Solution**

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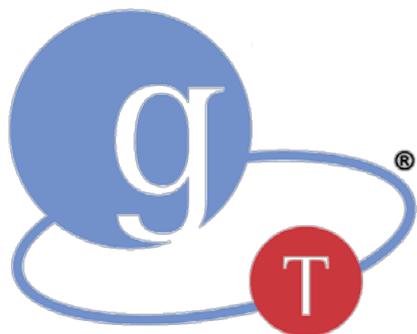
Computation Institute

Argonne National Laboratory & University of Chicago



## Globus Toolkit

Build the Grid



Components for building  
custom grid solutions

[globustoolkit.org](http://globustoolkit.org)

## Globus Online

Use the Grid



Reliable file transfer  
Software-as-a-Service

[globusonline.org](http://globusonline.org)



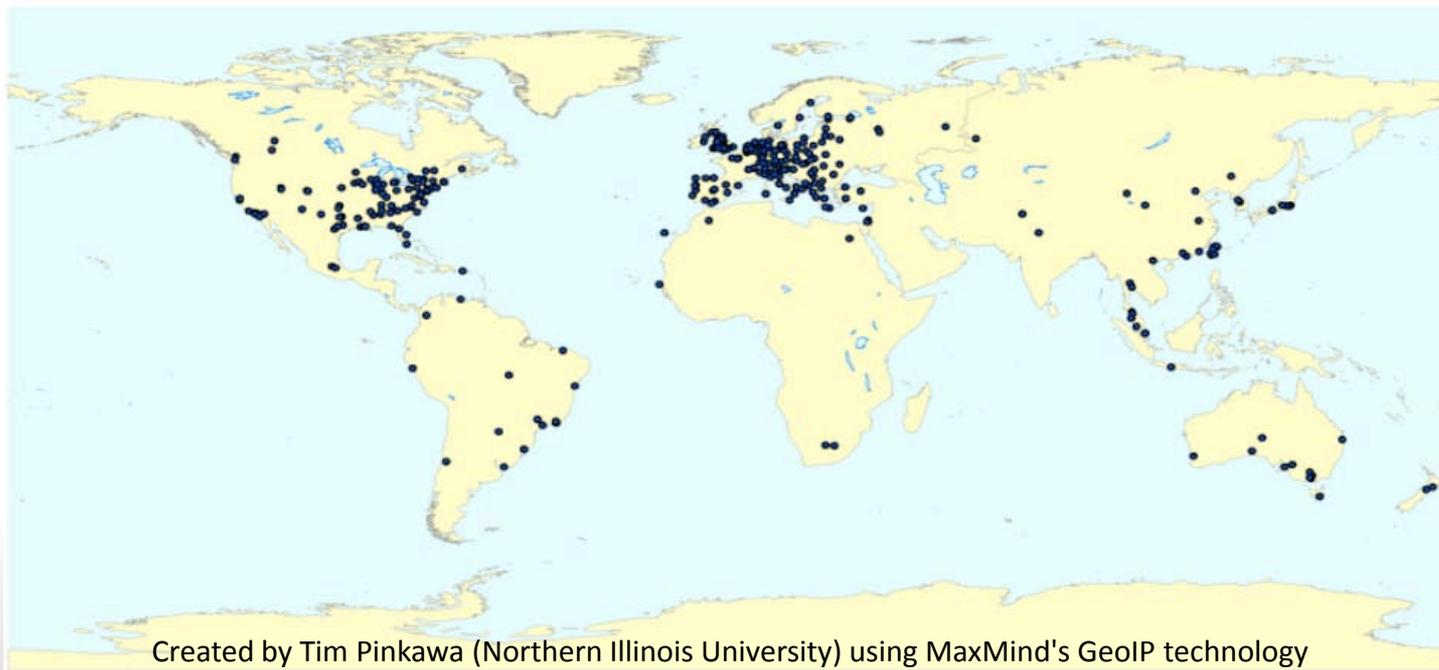
# GridFTP

- **Protocol:**

- High-performance, secure data transfer protocol optimized for high-bandwidth wide-area networks

- **Implementation:**

- Globus Toolkit GridFTP provides a fast, secure, extensible, standard and robust



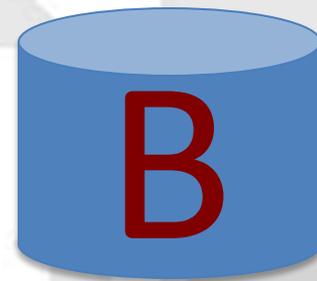
Created by Tim Pinkawa (Northern Illinois University) using MaxMind's GeoIP technology



# Data Movement Challenges



Discover endpoints, determine available protocols, negotiate firewalls, configure software, manage space, determine required credentials, configure protocols, detect and respond to failures, determine expected performance, determine actual performance, identify diagnose and correct network misconfigurations, integrate with file systems, ...





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Build the Grid



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## Globus Online

Use the Grid

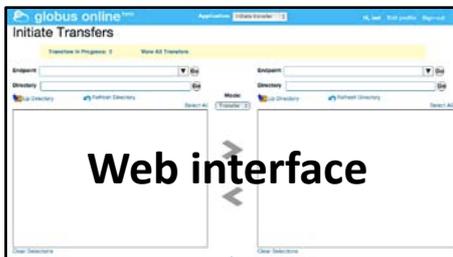


Reliable file transfer  
Software-as-a-Service

[globusonline.org](http://globusonline.org)



# Globus Online highlights



## Command line interface

```
ls alcf#dtn:~  
scp alcf#dtn:~/myfile \  
neresc#dtn:~/myfile
```

## HTTP REST interface

```
POST https://transfer.api.  
globusonline.org/ v0.10/  
transfer <transfer-doc>
```

Fire-and-forget data movement  
Third-party transfers & downloads  
Reliability and fault recovery  
Performance optimization  
Across multiple security domains  
Expert operations and support



GridFTP servers  
FTP servers

High-performance  
data transfer nodes

Globus Connect  
on local computers



# Salient Features

- **Endpoint Management**
  - Public endpoints with logical names
  - Default credential service
- **Transfer Management**
  - Recursive transfers
  - Levels of synchronization
  - Monitoring and notification



# Sign-up and Sign-in

 globus online

Sign in with ...

Globus Online Username & Password

External Identity (Google or MyProxy)

Identity Provider

Google

Sign In

\* You may only sign in using providers that you have associated with your Globus Online account

[Can't access your Globus Online account?](#) | [Create a new Globus Online account](#)

online

Globus Online Username & Password

External Identity (Google or MyProxy)

Username

Password

Sign In

[Can't access your Globus Online account?](#) | [Create a new Globus Online account](#)



# Select Endpoints

## Transfer Files

Transfers In Progress: 0 View Transfers

Get Globus Connect

Endpoint  Go  
Path  Go

Endpoint  Go  
Path  Go

**Activate Endpoint**

Please Enter Your Credentials

\*MyProxy Server

\*Username

\*Passphrase

Server DN

Credential Lifetime (hours)

\* Required

Authenticate Cancel



# Start Transfer

globus online: Transfer Services

https://www.globusonline.org/xfer/initiateXfer

globus online

Go To: Start Transfer

ranantha

Sign Out

Transfer Request Succeeded. Task ID:T\$b3973292-7926-11e0-91c7-123139152864

## Transfer Files

Transfers In Progress: 1

[View Transfers](#)

[Get Globus Connect](#)

Endpoint

Path

All None

Folder	
.globus	Folder
.ssh	Folder
datanode	Folder
.bash_history	18.65kB
.bash_logout	33b
.bash_profile	176b
.bashrc	124b
.viminfo	6.63kB
OpenidRelyingParty-1.1.4.war	17.3MB
application.properties	345b
esg-datanode-1.1.4.jar	30.43kB
esg-saml-1.0.2.jar	64.08kB
log4j.xml	7.68kB
test.txt	12b
test2.txt	12b
test3.txt	12b
test5.txt	0b
test7.txt	0b
thredds.tar	33.01MB
web.xml	24.32kB

Endpoint

Path

All None

Folder	
datazone	Folder
.bash_logout	220b
.bashrc	3.03kB
.profile	675b





# Globus Connect to/from your laptop

**Globus Connect Installation**

Globus Connect allows you to use Globus Online to transfer files to and from your computer. [Need Help? Click Here](#)

**Step One: Choose Your Download**

**Step Two: Get Your Globus Connect Setup Key**

Endpoint Name:

Description:

**Step Three: Finish Globus Connect Setup**

Copy the setup key displayed above. Run Globus Connect and paste the key into the Initial Setup window when prompted. This setup key can only be used once.

[Close](#)

**globus online**

Reliable File Transfer. No IT Required.

Globus Connect.app → Applications

**Initial Setup**

Please type or paste your Globus Connect setup key into the field below and click 'OK' when finished.

Setup Key:

[Advanced](#)

[Ok](#)

- No privileged account requirement
- Works behind firewalls
- No external host certificate needed
- Single user server



# Monitor

globus online: Transfer Services

https://www.globusonline.org/xfer/manageTasks

WebHome < E...t < CI Wiki Portecle: Home safari HPC in the Cloud: FreeConference BIRN JIRA GO User Services Globus Confluence Adobe Connect BIRN W

globus online

Go To: View Transfers

ranantha

Sign Out

## Transfer Activity

Cancel

1 of 5

View 25 Records

	Status	ID	Task Progress	Username	Completion Time	Request Time
<input type="checkbox"/>		b3973...	0 / 1	ranantha		05/08/2011 03:57 AM
<input type="checkbox"/>		00e84...	1 / 1	ranantha	05/06/2011 10:37 PM	05/06/2011 10:34 PM
<input type="checkbox"/>		23954...	2 / 1 / 3	ranantha	05/07/2011 10:30 PM	05/06/2011 10:29 PM
<input type="checkbox"/>		6a378...				05/06/2011 10:23 PM
<input type="checkbox"/>		d312d...				05/06/2011 10:18 PM
<input type="checkbox"/>		49dae...				05/06/2011 10:15 PM
<input type="checkbox"/>		2f0d1...				05/06/2011 10:00 PM
<input type="checkbox"/>		77c20...				05/05/2011 09:34 PM
<input type="checkbox"/>		30e52...				04/12/2011 11:20 PM
<input type="checkbox"/>		7da09...				04/12/2011 02:45 PM
<input type="checkbox"/>		ff7e0...				04/12/2011 02:34 PM
<input type="checkbox"/>		c4efd...				04/12/2011 02:33 PM
<input type="checkbox"/>		17799...				04/12/2011 01:16 PM
<input type="checkbox"/>		ec1e5...				04/12/2011 01:15 PM
<input type="checkbox"/>		a8fcd...				04/12/2011 03:55 AM
<input type="checkbox"/>		67693...		ranantha	04/12/2011 03:34 AM	04/12/2011 03:53 AM
<input type="checkbox"/>		88dff...	1 / 1	ranantha	04/11/2011 07:04 PM	04/11/2011 07:04 PM

**Transfer Details** ✕

**Task ID:** b3973292-7926-11e0-91c7-123139152864

Status	ACTIVE	Request Time	05/08/2011 03:57 AM
Origin	esg#ncar	Deadline	05/09/2011 03:57 AM
Destination	go#ep1	Completion Time	
User	ranantha	Bytes Transferred	0
Directories	0	Files	1

**Task Statistics**

Pending	1	Succeeded	0
Cancelled	0	Expired	0
Failed	0	Retrying	1

[View Event Log](#)





# ESG Gateway Integration (GO REST API)

Earth System Grid

Home Data Account About Contact Us Logout

### Download Data

**Sub Select File Results**

File Name:

Use \* for a wildcard character.  
Regular Expressions will not work at this time.

**Variables:**

- Sea ice area fraction (sic)
- 10-meter daily max. wind speed incl. gust (spdmax)
- Daily maximum 2-m temperature (tasmx)
- Daily minimum 2-m temperature (tasmin)

**File Download Selection**

narccap.hrm3.hadcm3-current.table1  
27 File(s)

<input checked="" type="checkbox"/>	File	Size	Format	Location	Direct Download
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_1968010100.nc</a>	83.35 MB	NetCDF		
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_1971010100.nc</a>	138.71 MB	NetCDF		
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_1976010100.nc</a>	138.71 MB	NetCDF		
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_1981010100.nc</a>	138.71 MB	NetCDF		
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_1986010100.nc</a>	138.71 MB	NetCDF		
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_1991010100.nc</a>	138.71 MB	NetCDF		
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_1996010100.nc</a>	138.71 MB	NetCDF		
<input checked="" type="checkbox"/>	<a href="#">sic_HRM3_hadcm3_2001010100.nc</a>	138.71 MB	NetCDF		

Earth System Grid

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### Download Selected Data

Please select a download method below.

[Learn more about data download...](#)

**Use Globus Online Transfer**



Transfer data to another server, or download to your machine using the Globus Online hosted transfer service.

[Learn more about GlobusOnline...](#)

**27 Files** **3.44 GB**

ebHome < E...t < CI Wiki Portecle: Home safari HPC in the Cloud: FreeConference BIRN JIRA GO

Transfer: Monitor Transfer **Reliable File Transfer. No IT Requ...**

Earth System Grid

Home Data Account About Contact Us

### Globus Online Transfer: Monitor Transfer

The transfer has been submitted. You can monitor the transfer here:

<https://www.globusonline.org/xfer/eventList?id=990a5988-792e-11e0-b9ed-123139152864>

You will be notified via email by Globus Online of the transfer status, and if any input is needed

Work done by Neill Miller with support from NCAR team and Argonne team



# What's next?

- **Production release with ESG Gateway**
- **Integration with other ESGF tools**
- **GO Transfer Features:**
  - HTTP protocol support
  - GridFTP native installers
- **GO Login Features**
  - Shibboleth Login (InCommon Federation)
  - OAuth based delegation
- **GO for data sharing**



# Thank You

- Demo of Globus Online in the afternoon session
- Try Globus Online: [www.globusonline.org](http://www.globusonline.org)
- GO Support: [support@globusonline.org](mailto:support@globusonline.org)
- Contact: [ranantha@mcs.anl.gov](mailto:ranantha@mcs.anl.gov)