



NeSI

New Zealand eScience
Infrastructure

NeSI

Data Transfer Node (DTN) Service

End User Guide for Globus Access

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1.1 Service Support

Team/Personnel	Knowledge/Process/Action
User	<ul style="list-style-type: none">Contact P & F Service Desk if assistance is required
P & F Service Desk	<ul style="list-style-type: none">Impart information below to Users as necessaryLodge a Service Request with NeSI Support if necessary

Globus is a connected set of services for research data management. The intuitive User Interface on the [Globus transfer service](#) enables Users to;

- Transfer large to/from an Institutional Data Storage - i.e. Data Transfer Node or 'Globus Connect Server'
- Transfer large amounts of data to/from a Workstation - 'Globus Connect Personal'
- Optionally transfers can be encrypted

Note; The transfer protocol used is GridFTP which provides a more reliable and high-performance file transfer (compared to protocols such as SCP or rsync) and enables the transmission of very large files. GridFTP also addresses the problem of incompatibility between storage and access systems. (For advantages of [GridFTP](#))

1.2 Accessing Endpoints via Globus

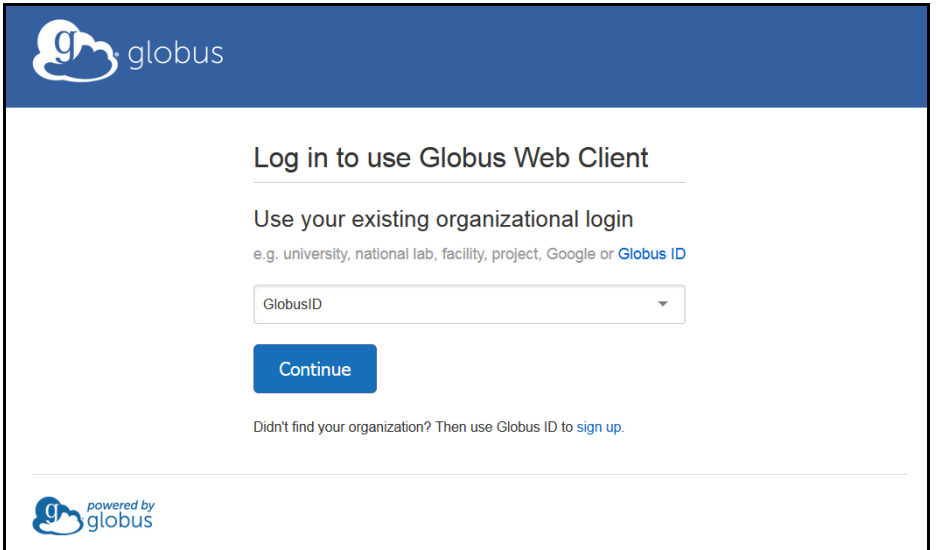
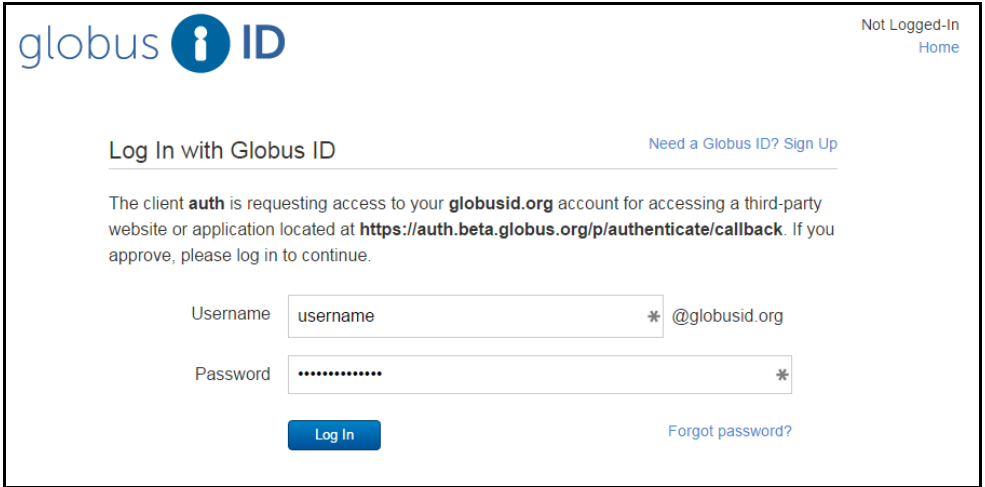
Globus migrated the website authentication process after 13 February 2016 and the following changes happened;

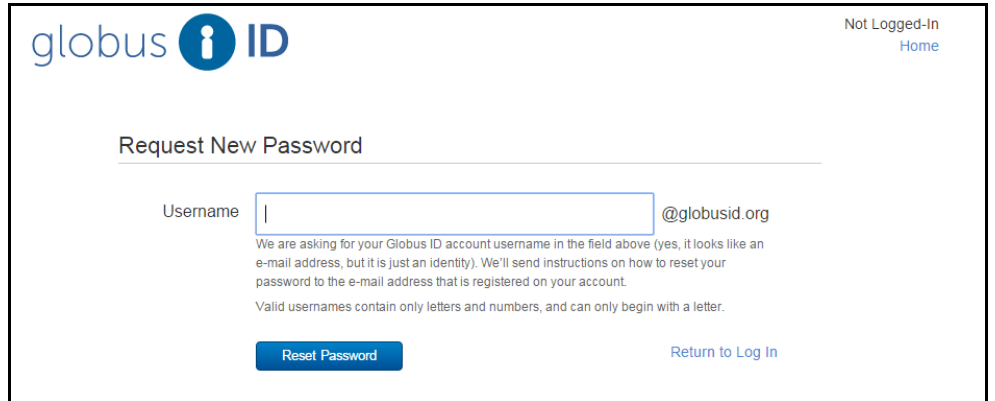
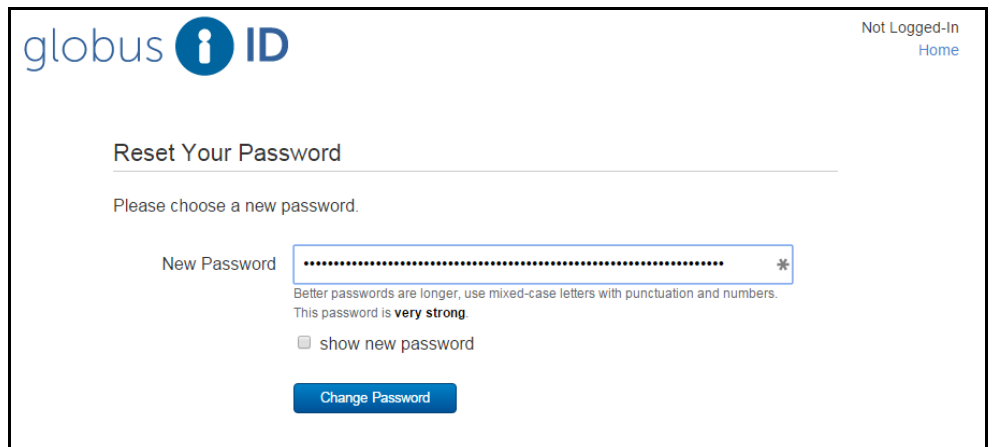
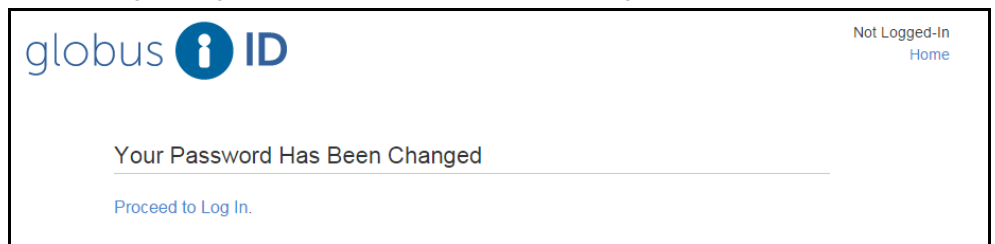
- All existing Globus user's usernames migrated to a <username>@globusid.org GlobusID account.
- All Globus users will be requested to link the automatically created GlobusID to an Identity (Google, Tuakiri, SSH key, etc).
- New user accounts will need to create an GlobusID account via <https://www.globusid.org> website and link an email to that account first.





If you have an account created before 13 February 2016 and have not yet converted to a GlobusID account, follow the steps on section 1.2.1, "If you don't have GlobusID account" below. Otherwise follow the steps on section 1.2.2, "If you don't have GlobusID account".

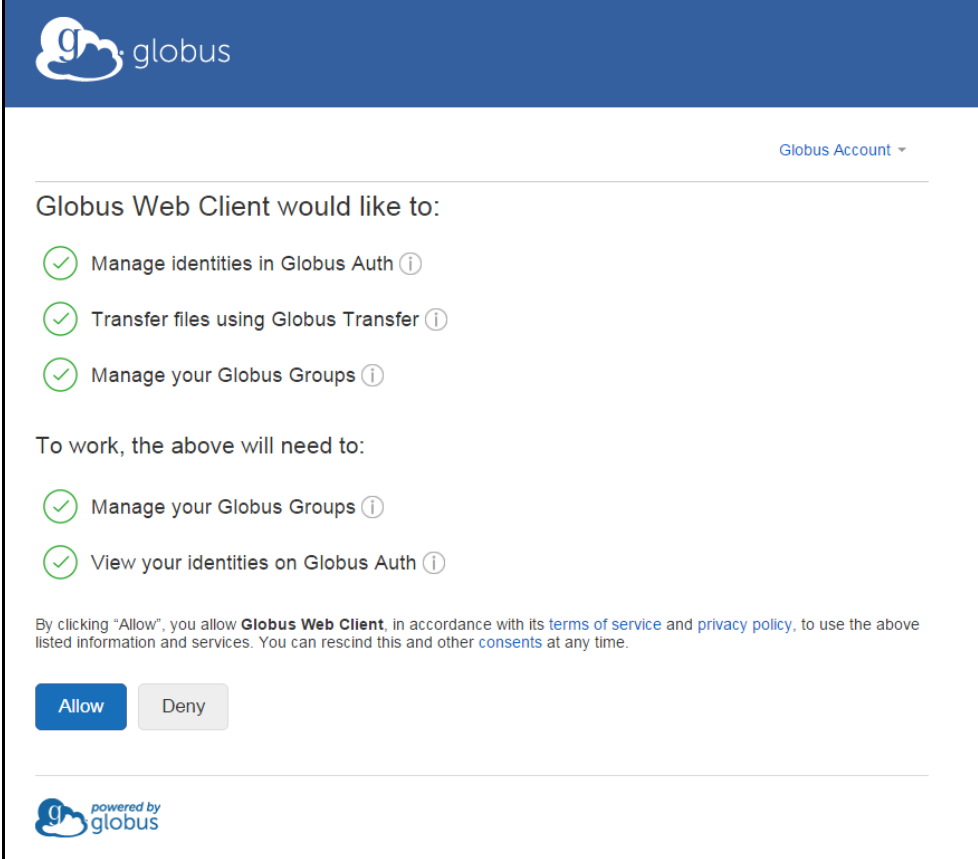
1.2.1. If you have an existing globus.org username

Follow the next steps;

Process Step	Detail
1	<p>To login to an existing Globus Account;</p> <ul style="list-style-type: none"> Go to https://www.globus.org Click 'Log In' Type "GlobusID" at the combo box and click 'Continue':  <p>Note: This will forward you to another page for login credentials. If you allow cookies these will be cached on the next time you try to login. Remember to clean cookies if you use a shared computer.</p>
2	<p>Over GlobusID Log In page use the same username and password that was used to login into globus.org or a previous created GlobusID:</p>  <ul style="list-style-type: none"> Clicking 'Log In' takes you to step 5 for a "first time" authorization (will not show if already accepted) If the GlobusID used above was never linked to globus.org account before or is a brand new GlobusID, you may be asked to link your GlobusID. Proceed to step 4. <p>Note #1: The picture above refers to an auth.beta.globus.org link used only for documentation reasons.</p>

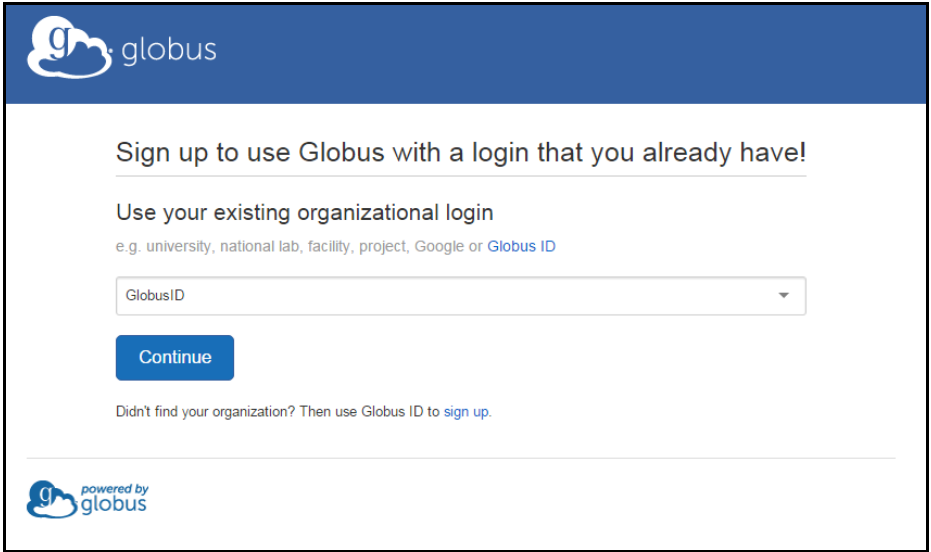
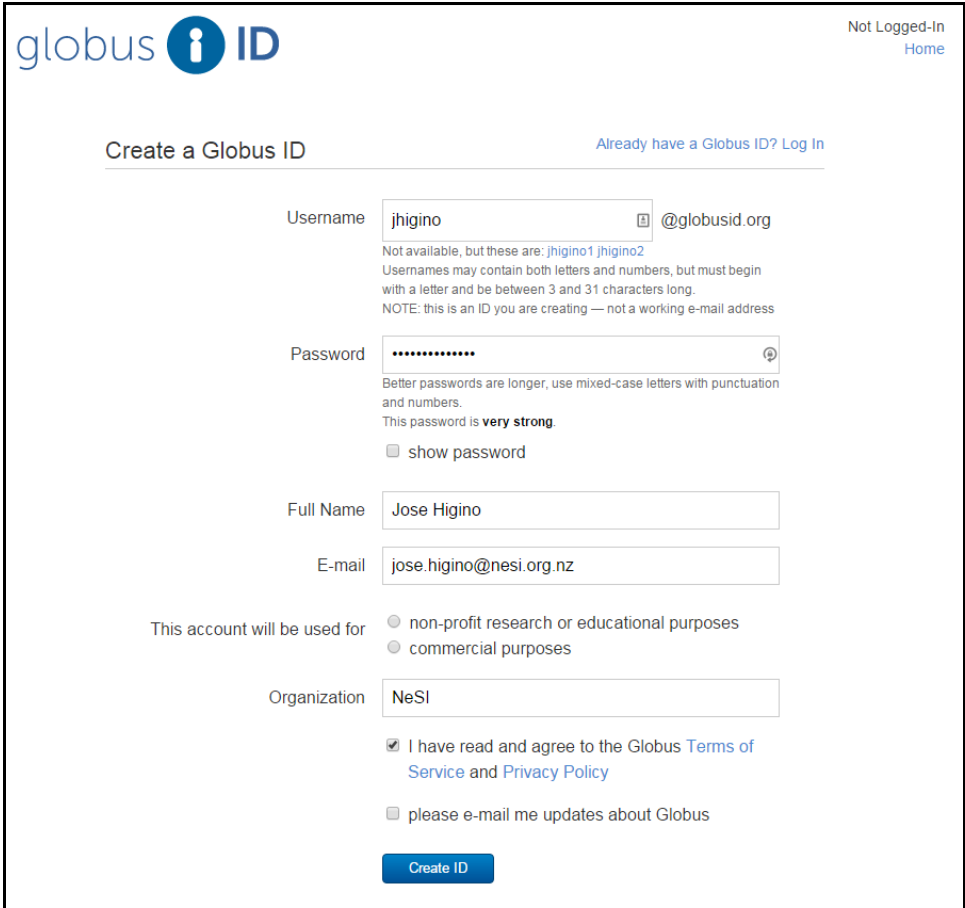
	<p>Note #2: If you forgot your password, you can click over ‘Forgot password?’ link and proceed to step 3.</p> <p>Note #3: If you do not remember your previous globus.org username, please contact Globus through support email (support@globus.org) and confirm the email address you remember registering the user.</p>
3 (optional)	<p>If you clicked on ‘Forgot password?’ link a new page will show up asking you for the username you forgot the password:</p> <div data-bbox="496 416 1495 815" data-label="Form">  </div> <p>At this webpage type your username and click over “Reset Password” button. This will send a request conformation to the email address linked with you GlobusID account and once you click on it, you will be able to set your new password:</p> <div data-bbox="496 947 1495 1391" data-label="Form">  </div> <p>After clicking ‘Change Password’ button a confirmation page will appear:</p> <div data-bbox="496 1469 1495 1711" data-label="Form">  </div> <p>You may now proceed with a normal login (step 2).</p>
4 (needed once)	<p>You may be asked to link the GlobusID to the existing Globus.org username account (or as an alternative to create a new one using your GlobusID):</p>

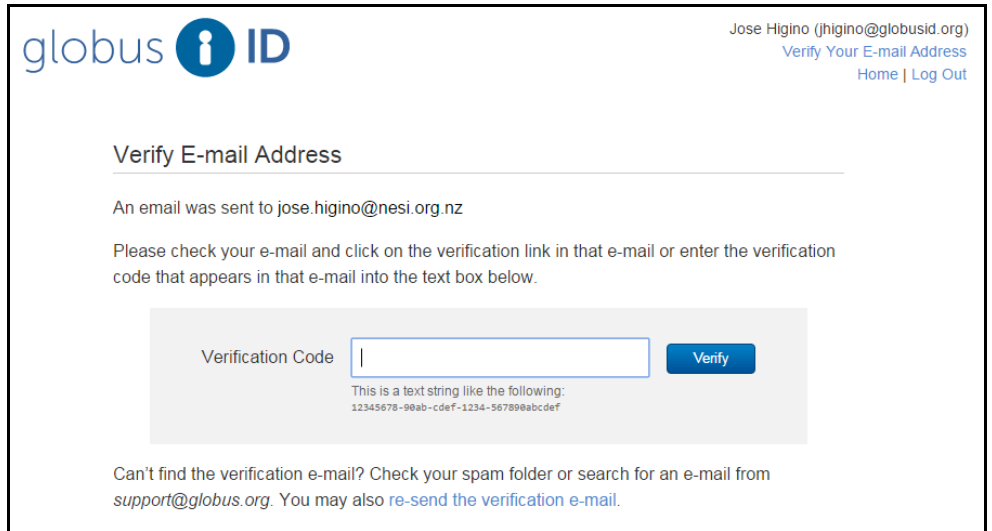
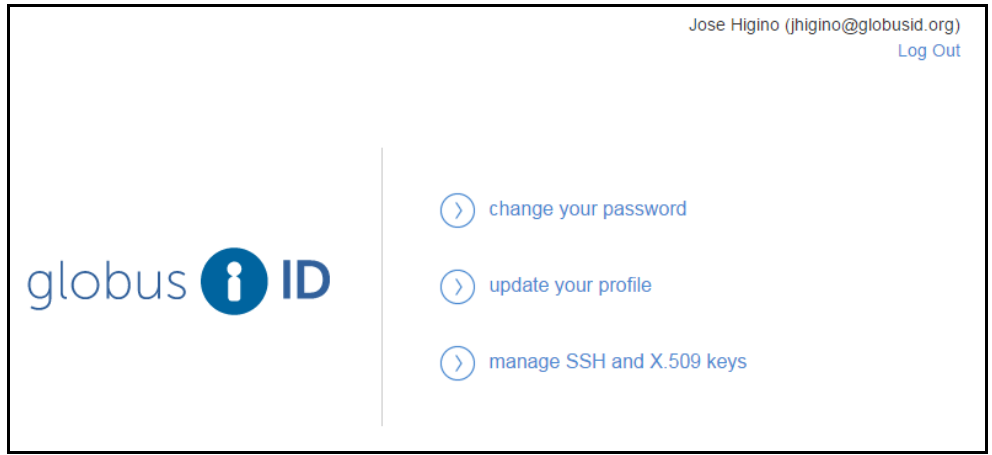
	<div data-bbox="502 192 1485 667">  <h3>Is this your first time using Globus?</h3> <p>If you have an account already, you can link this identity to your existing account. Otherwise, you can create a new account.</p> <div> Link to an existing account Create new account </div>  </div> <ul style="list-style-type: none"> Clicking 'Link to an existing account' will request to link your GlobusID username to an existing Globus Identity you had already on globus.org (under GlobusID or other Identity type). Clicking 'Create new account' will setup a new globus.org account. <p>When you click over 'Link to an existing account', a new page will appear asking for the Identity Provider Organization in which you wish to link to:</p> <div data-bbox="502 938 1485 1467">  <h3>Log into your primary identity.</h3> <p>In order to confirm this new link, please log into your primary identity.</p> <div>Look up your organization</div> <div>Continue</div> <p>Didn't find your organization? Then use Globus ID to sign up.</p>  </div> <ul style="list-style-type: none"> Typing your organization and clicking 'Continue' will bring you to a login page of that Identity Provider <p><i>Note: After linking the account, globus.org will use that Identity or the defined one as Primary in your Globus account profile, as the default Identity of you globus.org account. The next time you log into Globus it will assume that Identity automatically (and will not ask for this link process).</i></p>
5 (needed once)	<p>You may be asked to consent the authorization for several items of your Globus account (will be valid until you decide to reject it). Click in 'Allow' to proceed:</p>

	 <p>Globus Web Client would like to:</p> <ul style="list-style-type: none"> ✓ Manage identities in Globus Auth ✓ Transfer files using Globus Transfer ✓ Manage your Globus Groups <p>To work, the above will need to:</p> <ul style="list-style-type: none"> ✓ Manage your Globus Groups ✓ View your identities on Globus Auth <p>By clicking "Allow", you allow Globus Web Client, in accordance with its terms of service and privacy policy, to use the above listed information and services. You can rescind this and other consents at any time.</p> <p><input type="button" value="Allow"/> <input type="button" value="Deny"/></p> <p>powered by globus</p>
6	<p>After your account is linked and you allow Globus Web Client to use your details, you will be forwarded to the transfer's page and you can proceed as before.</p>

1.2.2. If you don't have GlobusID account

Follow the next steps;

Process Step	Detail
1	<p>If it is your first time logging into Globus, you will need to create a GlobusID Account;</p> <ul style="list-style-type: none"> Go to https://www.globus.org Click 'Sign Up', wait for a new page to load (as bellow) and then 'sign up' link: 
2	<p>Over GlobusID webpage you will be asked for details of your account:</p> 

	<ul style="list-style-type: none"> Clicking 'Create ID' takes you either directly to the bellow page or to GlobusID default user page, where you can click 'Verify Your E-mail Address' (top right corner). You will receive an email with a verification link. Alternatively, the 'Verify Your E-mail Address' page you can paste the "Verification Code" provided by email. <div data-bbox="497 356 1493 884">  </div> <p>After you successfully verify, you will end on a page like this:</p> <div data-bbox="497 929 1493 1382">  </div>
3	<p>At this point you have now a GlobusID and you should be able to access glosbus.org NeSI endpoints and execute transfers on the authorized ones. You may be asked to link it to an already created Globus account (like in step 4 of section 1.2.1, "If you have an <u>existing globus.org username</u>") or to create a new one.</p> <p>There are currently two NeSI DTNs subject to change soon (with the implementation of the new NeSI cluster). We will let you if any of the bellow information changes:</p> <ul style="list-style-type: none"> 'nesi#fitzroy_niwa' (will be converted to a new endpoint in 2018) 'nesi#pan_auckland' (will be decommissioned in 2018) <p>For the 'nesi#fitzroy_niwa' endpoint please follow the instructions at 1.3 "Mapping NeSI user to Tuakiri Identity" section and then continue towards 1.4 "Activating Globus Endpoints".</p> <p>For the 'nesi#pan_auckland' or any other endpoint you need to contact us through NeSI support portal or at support@nesi.org.nz for specific instruction to that endpoint.</p> <p><i>Note: You can also manually manage more identities through the 'manage SSH and X.509 keys' link to initiate transfers from other endpoints.</i></p>

1.3 Mapping NeSI user to Tuakiri Identity

After creating your Globus account, you will need to map your NeSI user to the desired endpoint on the cluster you already have access. Follow the steps bellow to map it to your Tuakiri user Identity that will be used later to activate that endpoint.

Follow the next steps to map your access to NIWA/NeSI DTN;

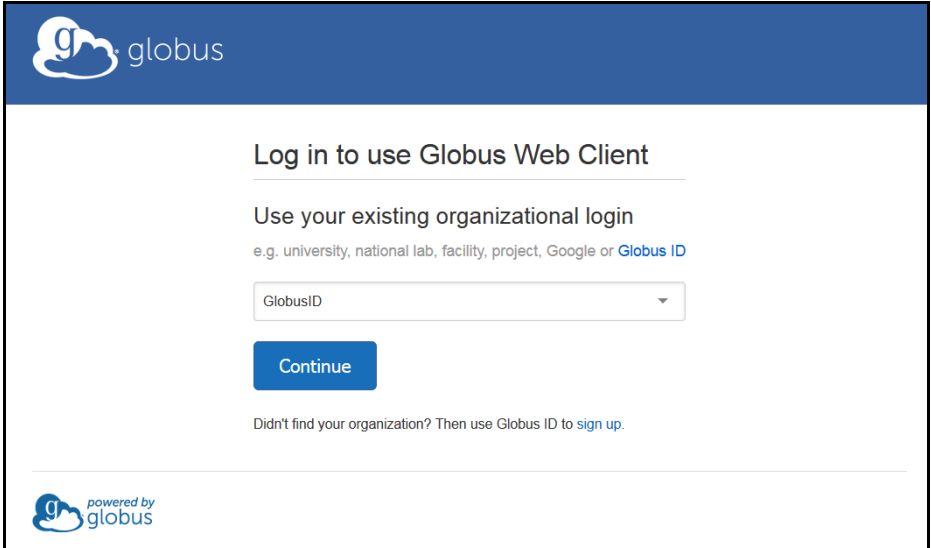
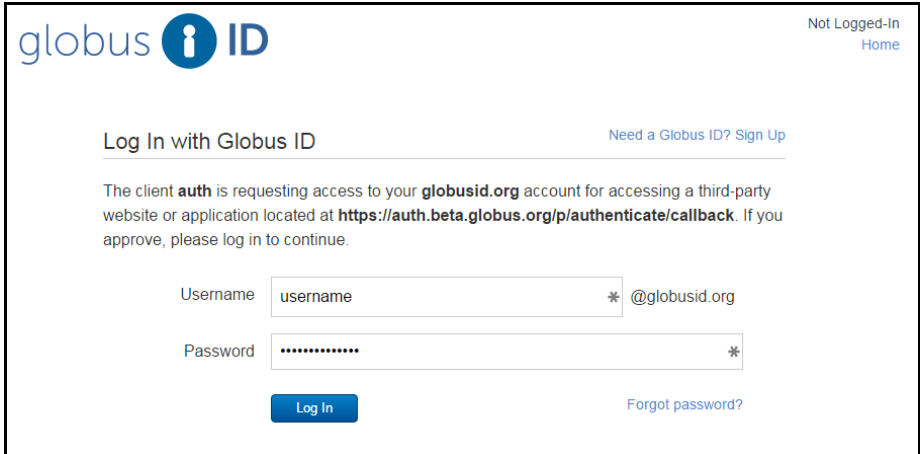
1	If you don't have already an account at NeSI, ask for one through support@nesi.org.nz specifying that the account is to access NIWA/NeSI DTN. Provide means of direct contact (email or phone). You may require having an active project on the cluster.
2	Once your account creation is complete, you may want to test it by accessing the cluster through SSH for example. You should have been given documentation on how to do this. If you still need additional help, please contact support@nesi.org.nz .
3	<p>Access the following link and choose your authentication option: https://dtm-wlg.niwa.nesi.org.nz/register/ (this will link your authentication option on Tuakiri to you NeSI account).</p> <p>A webpage with "Welcome to the NIWA Research DTN authentication and mapping tool" title should appear, asking you to choose which authentication model to map your NeSI account:</p> <div style="border: 1px solid black; padding: 10px;"> <p>Welcome to the NIWA Research DTN authentication and mapping tool</p> <p>This tool allows you to map your grid identity to a local account on the NIWA Research.</p> <p>You need to authenticate to this site with the same authentication mechanism as you would be using when transferring files to/from the NIWA Research. (If using Globus.org to transfer files, this means which mechanism you use to activate the Globus.org endpoint).</p> <ul style="list-style-type: none"> • If you are using a Tuakiri login (via the NeSI MyProxyPlus server), please login here with your Tuakiri login. • If you are using an X509 certificate (such as one issued by ASGCCA or QuoVadis), please first make sure your certificate is loaded in your browser and then login here with your certificate. <p>This tool requires that in addition to the authentication above (to link to your grid identity), you also have a login username and password for your account at the NIWA Research.</p> </div> <p>1) (RECOMMENDED) If you are using a Tuakiri login (via the NeSI MyProxyPlus server), please login here with your Tuakiri login:</p> <p>a) After following up with the above link and authenticate via Tuakiri, a new page will appear with the title "Welcome to the NIWA Research Auth Tool - Tuakiri login".</p> <div style="border: 1px solid black; padding: 10px;"> <p>Welcome to the NIWA Research Auth Tool - Tuakiri login</p> <p>Your Distinguished Name (DN) is: /DC=nz/DC=org/DC=nesi/DC=myproxyplus/O=NIWA - The National Institute of Water and Atmospheric Research Ltd./CN=Jose Higinio GHc0p8YrvWu9nr5xh9e5AFWur_c</p> <p>Please enter your username and password for the NIWA Research.</p> <div style="margin-bottom: 10px;"> <input type="text"/> * </div> <div style="margin-bottom: 10px;"> <input type="password"/> * </div> <div style="text-align: center;"> <input type="button" value="Submit"/> </div> </div> <p>b) In this page you will be able to verify your Tuakiri Identity ("Distinguished Name (DN)") and authorize the mapping to your NIWA HPCF account. The entered credentials should match the ones you used to connect into fitzroy.nesi.org.nz.</p> <p>2) (Advanced users) If you are using an X509 certificate (such as one issued by ASGCCA or QuoVadis), please first make sure your certificate is loaded in your browser and then login here with your certificate.</p>
4	You are now able to activate the mapped endpoint using your Tuakiri credentials. Please follow up with the steps at section 1.4 of this document, "Activating Globus Endpoints".

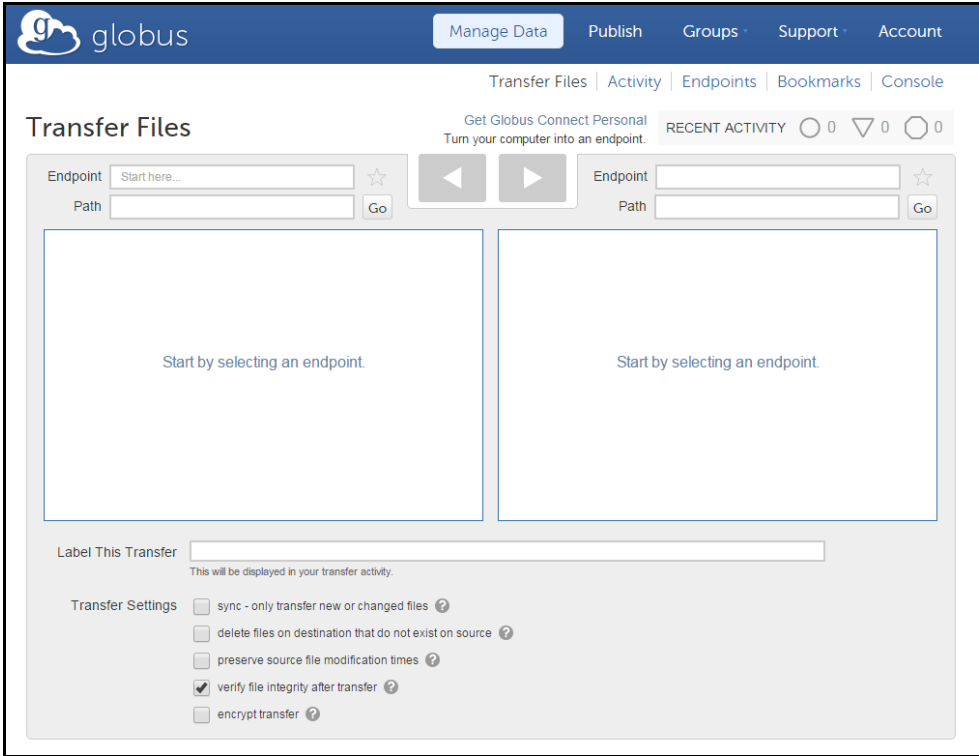
1.4 Activating Globus Endpoints

Before starting a transfer, your Globus account **must activate the endpoints** that will be involved on that transfer (if they were not already activated). Each activation is valid for a week. After the endpoint is activated, you can start any transfers to and from that endpoint until the activation expires. At that point the any running transfers will complete, but new ones will require you to re-activate the involved endpoints.

ATTENTION: If at this stage you have not yet mapped your NeSI account to your Tuakiri Identity you will not be able to activate the endpoint. Please follow the steps at section 1.3 of this document, "Mapping NeSI user to Tuakiri Identity" before proceeding with this step.

To activate a specific endpoint, follow the next steps;

Process Step	Detail
1	<p>Login to your Globus account;</p> <ul style="list-style-type: none">Go to https://www.globus.orgClick 'Log In'Type "GlobusID" at the combo box and click 'Continue':  <p><i>Note: This will forward you to another page for login credentials. If you allow cookies these will be cached on the next time you try to login. Remember to clean cookies if you use a shared computer.</i></p>
2	<p>Enter your GlobusID credentials:</p> 

	<ul style="list-style-type: none"> • If you have already logged with another GlobusID user and you have not logged off or deleted your browser cookies, GlobusID website will automatically authenticate you via the last logged user (and you might not see the above login page). • If you encounter any errors at this stage or you can't authenticate with your username, raise a support ticket either with Globus or NeSI support. <p><i>Note: The picture above refers to an auth.beta.globus.org link used only for documentation reasons.</i></p>
3	<p>After a successful authentication, you will be redirected automatically to the transfers web page:</p>  <p>At this page:</p> <ul style="list-style-type: none"> • Click over 'Endpoint' box (where it says, "Start here...") to select an endpoint • A popup box will appear for you to search or type the name of the endpoint. NeSI endpoints start with "nesi#". • After selecting an endpoint, a 'Continue' button will show up below a text saying for you to "authenticate to access this endpoint". If you had already activated this endpoint within the last 7 days, you will have access until the token expires at which point you can repeat this process.

Manage Data

Publish

Groups

Support

Account

Transfer Files | Activity | Endpoints | Bookmarks | Console

Transfer Files

Get Globus Connect Personal

Turn your computer into an endpoint.

RECENT ACTIVITY

0

0

0

Endpoint

nesi#fllzroy_niwa

☆

Path

Go

Endpoint

☆

Path

Go

Please authenticate to access this endpoint

When you click continue you will be redirected to the endpoint's login page (you will be returned here once you have authenticated).

Continue

Start by selecting an endpoint.

Label This Transfer

This will be displayed in your transfer activity.

Transfer Settings

☐ sync - only transfer new or changed files

☐ delete files on destination that do not exist on source

☐ preserve source file modification times

☒ verify file integrity after transfer

☐ encrypt transfer

copy symlink targets on first tier and ignore the rest

?

4

Tuakiri authentication:

Select your Home 'Organisation'

Click the 'Select' button

REANZ

TUAKIRI

About

Support

Select your Home Organisation

The service 'NeSI MyProxy+ Server' at host 'myproxyplus.nesi.org.nz' you are trying to access requires that you authenticate with your home organisation.

Select from recently used organisations:

NIWA

Clear

Select from the list:

Federation

Tuakiri New Zealand Access Federation

All Sites

Organisation

AgResearch

Ara Institute of Canterbury

AUT University

ESR

Landcare Research

Lincoln University

Massey University

NIWA

Plant and Food Research

Scion

The University of Auckland

The University of Waikato

Tuakiri Virtual Home

University of Canterbury

University of Otago

Victoria University of Wellington

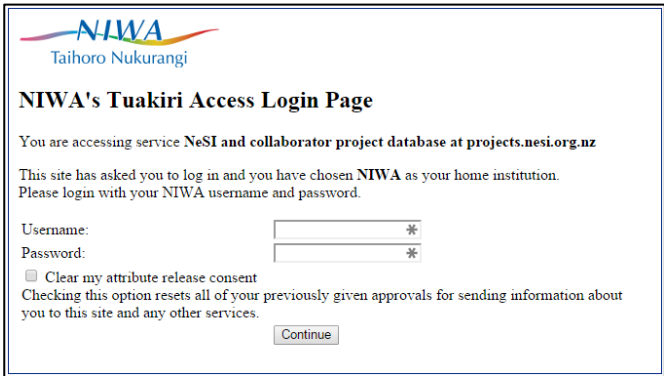
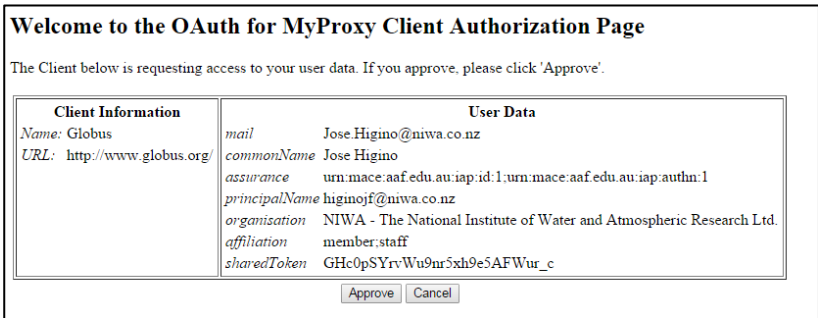
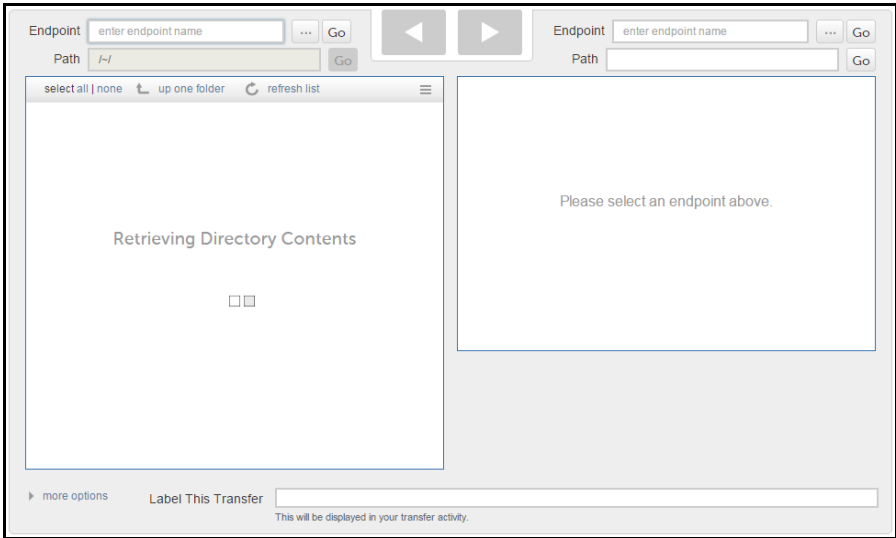
Remember for a month

☐ Redirect me in the future without asking me again.

Select

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5	<ul style="list-style-type: none"> Log in using your home 'Organisation' (e.g. NIWA) credentials and click 'Continue' button  <p>The screenshot shows the NIWA's Tuakiri Access Login Page. It features the NIWA logo and the text 'Taihoro Nukurangi'. Below the header, it states 'NIWA's Tuakiri Access Login Page' and 'You are accessing service NeSI and collaborator project database at projects.nesi.org.nz'. A message indicates that the user has chosen NIWA as their home institution and must log in with their NIWA username and password. There are input fields for 'Username:' and 'Password:', both with asterisks indicating required fields. A checkbox labeled 'Clear my attribute release consent' is present, with a note that checking it resets all previous approvals. A 'Continue' button is at the bottom right.</p>																
6	<ul style="list-style-type: none"> You will be redirected to a MyProxy Client Authorisation web page In this page click "Approve"  <p>The screenshot shows the 'Welcome to the OAuth for MyProxy Client Authorization Page'. It includes a message: 'The Client below is requesting access to your user data. If you approve, please click 'Approve''. Below this is a table with 'Client Information' and 'User Data'.</p> <table border="1"> <thead> <tr> <th>Client Information</th> <th>User Data</th> </tr> </thead> <tbody> <tr> <td>Name: Globus</td> <td>mail Jose.Higino@niwa.co.nz</td> </tr> <tr> <td>URL: http://www.globus.org/</td> <td>commonName Jose Higino</td> </tr> <tr> <td></td> <td>assurance urn:mace:aaf.edu.au:iap:id:1;urn:mace:aaf.edu.au:iap:authn:1</td> </tr> <tr> <td></td> <td>principalName higinof@niwa.co.nz</td> </tr> <tr> <td>organisation NIWA - The National Institute of Water and Atmospheric Research Ltd.</td> <td></td> </tr> <tr> <td>affiliation member;staff</td> <td></td> </tr> <tr> <td>sharedToken GHc0pSYrvWu9nr5xh9e5AFWur_c</td> <td></td> </tr> </tbody> </table> <p>At the bottom right of the table are 'Approve' and 'Cancel' buttons.</p>	Client Information	User Data	Name: Globus	mail Jose.Higino@niwa.co.nz	URL: http://www.globus.org/	commonName Jose Higino		assurance urn:mace:aaf.edu.au:iap:id:1;urn:mace:aaf.edu.au:iap:authn:1		principalName higinof@niwa.co.nz	organisation NIWA - The National Institute of Water and Atmospheric Research Ltd.		affiliation member;staff		sharedToken GHc0pSYrvWu9nr5xh9e5AFWur_c	
Client Information	User Data																
Name: Globus	mail Jose.Higino@niwa.co.nz																
URL: http://www.globus.org/	commonName Jose Higino																
	assurance urn:mace:aaf.edu.au:iap:id:1;urn:mace:aaf.edu.au:iap:authn:1																
	principalName higinof@niwa.co.nz																
organisation NIWA - The National Institute of Water and Atmospheric Research Ltd.																	
affiliation member;staff																	
sharedToken GHc0pSYrvWu9nr5xh9e5AFWur_c																	
7	<p>You will then be redirect to the transfers page again and you will be able to see the selected path contents on the specified endpoint:</p>  <p>The screenshot shows the 'Transfers' page in Globus. It has two main panels. The left panel, titled 'Retrieving Directory Contents', shows a file browser interface with a 'select all none' button, 'up one folder' and 'refresh list' buttons, and a list of files (represented by two small squares). The right panel, titled 'Please select an endpoint above', is currently empty. At the bottom, there are links for 'more options' and 'Label This Transfer', and a note: 'This will be displayed in your transfer activity.'</p> <p>Repeat the process for the other endpoint and then you will be able to transfer files around.</p> <p>Note:</p> <ul style="list-style-type: none"> Endpoints may be; <ul style="list-style-type: none"> The Server Endpoints (use the closer to your data); <ul style="list-style-type: none"> 'nesi#fitzroy_niwa' (will be converted to a new endpoint in 2018) 'nesi#pan_auckland' (will be decommissioned in 2018) A Personal Endpoint (go to next step, 8) Refer to Globus 'how to' step by step screenshots for transferring files: https://www.globus.org/researchers/getting-started 																

To set up a Personal Endpoint starting at the main Dashboard;

The screenshot shows the Globus web interface. At the top is a navigation bar with the Globus logo and links for Manage Data, Publish, Groups, Support, and Account. Below this is a secondary navigation bar with links for Transfer Files, Activity, Endpoints, Bookmarks, and Console. The main heading is 'Manage Endpoints'. Below the heading, there's a sub-header 'Endpoint List' and two buttons: 'add Globus Connect Personal endpoint' and 'add Globus Connect Server endpoint'. A modal window titled 'Add Globus Connect Personal Endpoint' is open. It contains two steps: 'Step 1: Create & Copy Your Globus Connect Personal Setup Key' and 'Step 2: Download & Install Globus Connect Personal'. In Step 1, there's a text input for 'Display Name' with the value 'My Laptop at ABC Labs' and a 'Generate Setup Key' button. In Step 2, there are three buttons for downloading the client: 'for Mac OS X', 'for Linux', and 'for Windows'. At the bottom of the modal, it says 'Once downloaded, run the installer. When prompted, paste in the Setup Key to complete the installation.'

- Go to <https://www.globus.org/xfer/ManageEndpoints#category=admin>
- Click the 'add Globus Connect Personal' link
- Enter an Endpoint name and click on the Generate Setup Key
- Download and Install the 'Globus Connect Personal Endpoint' client
- Follow the instructions at:
 - Windows - <https://www.globus.org/globus-connect-personal/windows>
 - MacOS - <https://www.globus.org/globus-connect-personal/mac-os-x>
 - Linux - <https://support.globus.org/entries/23881557-Globus-Connect-Personal-for-Linux>
- After you install/run the client, don't forget to add a folder to transfer the files with the right permissions.
- For additional information, checkout Globus "How To" documentation at <https://docs.globus.org/how-to/>

*Note: You will need access through ports 2888, 2811 (TCP) and 50000-51000 (UDP) range. Usually these get open automatically via **UPnP** and **NAT-PMP** in most scenarios.*