Introducing the New Globus CLI (alpha)

Stephen Rosen

April 20, 2016
Why a new CLI?

What is this for? Isn’t there already a CLI?
Why a new CLI?

What is this for? Isn’t there already a CLI? The old CLI works well enough for today’s needs, but it is limited. We’re reaching those limits, and we need to move in a new direction.
Limitations of the Old CLI

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- Commands are all piped over SSH, clunky shell ergonomics
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- Open Source, and built on the Open Source SDK
- Translates down into API calls – clear transition path
- Improved scripting support
- Better authentication model
- Uniform interface to all of Globus
Getting Started

How do you get it?

**Installation**
It’s a python package, so install with

```
$ pip install globus-cli
```
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$ pip install globus-cli
```

You now have the globus command at your disposal. Feel free to

```
$ globus --help
```
We are working on our long term solution for API keys and developer credentials, but the pieces aren’t all in place yet. For now, you can get tokens from tokens.globus.org
Authentication

We are working on our long term solution for API keys and developer credentials, but the pieces aren’t all in place yet. For now, you can get tokens from tokens.globus.org. If you ever forget, you can always remind yourself with

```
$ globus login
```

which prints login help.
tokens.globus.org tokens are only good for 2 days, so don’t try to build anything on this stuff (yet)!
Remember, the CLI is still in alpha.
You have the CLI installed, and you have credentials. Make sure it’s all setup right by firing a command at each of our services.
First Commands (Globus Auth)

```
$ globus auth get-identities \n   --usernames 'go@globusid.org' 'sirosen@xsede.org' | cut -d'|' -f1,2,3

<table>
<thead>
<tr>
<th>ID</th>
<th>Full Name</th>
<th>Username</th>
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</thead>
<tbody>
<tr>
<td>508e5ef6-cb9b-11e5-abe1-431ce3f42be1</td>
<td>Stephen Isaac Rosen</td>
<td><a href="mailto:sirosen@xsede.org">sirosen@xsede.org</a></td>
</tr>
<tr>
<td>c699d42e-d274-11e5-bf75-1fc5bf53bb24</td>
<td><a href="http://www.globus.org">www.globus.org</a></td>
<td><a href="mailto:go@globusid.org">go@globusid.org</a></td>
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```

Hey, lookit that! It's `cut` friendly! We'll need the ID for `go@globusid.org` later – we could
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Hey, lookit that! It’s cut friendly!

We’ll need the ID for go@globusid.org later — we could

```bash
$ globus ... | grep 'go@globusid.org' | cut -d'|' -f1
```

and store it in a variable, but there is a better way.
What if you want something machine-parseable?

All Globus CLI commands support JSON formatted output.

```
$ globus auth get - identities -- format JSON -- usernames
'sirosen@xsede.org'
{
  "identities": [
    {
      "username": "sirosen@xsede.org",
      "status": "used",
      "name": "Stephen Isaac Rosen",
      "id": "508e5ef6-cb9b-11e5-abe1-431ce3f42be1",
      "identity_provider": "36007761-2cf2-4e74-a068-7473afc1d054",
      "organization": "Globus",
      "email": "sirosen@uchicago.edu"
    }
  
```
What if you want something machine-parseable?
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All Globus CLI commands support JSON formatted output.

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$ globus auth get-identities --format JSON --usernames 'siroen@xsede.org'
{
  "identities": [ 
    {
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      "email": "siroen@uchicago.edu"
    }
  ]
}
```
How can we talk to the Transfer API with this?
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Use `globus transfer`, rather than `globus auth`
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Use `globus transfer`, rather than `globus auth`.
Let’s search for the Tutorial Endpoints (you may know them as “go#ep1” and “go#ep2”)

$ globus transfer endpoint search \ 
  --filter-owner-id 'c699d42e-d274-11e5-bf75-1fc5bf53bb24' \
  --filter-fulltext 'Tutorial' | cut -d'|' -f2,3

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<tr>
<td>cf9bcaa5-6d04-11e5-ba46-22000b92c6ec</td>
<td>Globus S3 Tutorial Endpoint</td>
</tr>
<tr>
<td>ddb59aef-6d04-11e5-ba46-22000b92c6ec</td>
<td>Globus Tutorial Endpoint 1</td>
</tr>
<tr>
<td>ddb59af0-6d04-11e5-ba46-22000b92c6ec</td>
<td>Globus Tutorial Endpoint 2</td>
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That UUID is the Identity ID for go@globusid.org
First Globus Transfer Command (cont.)

```bash
$ globus transfer endpoint search \
   --filter-owner-id 'c699d42e-d274-11e5-bf75-1fc5bf53bb24' \ 
   --filter-fulltext 'Tutorial' | cut -d'|' -f2,3
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That UUID is the Identity ID for go@globusid.org

Little bit of a lie here – I trimmed whitespace in the above by piping to sed `-e 's/~\s*///g' -e 's/\s*$//g'`
It isn’t pleasant for interactive use to have to lookup the ID of a username before using it. Wouldn’t it be nice if the CLI translated those for you?
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It can!

```
$ globus transfer endpoint search \n   --filter-owner-id 'go@globusid.org' \n   --filter-fulltext 'Tutorial' | cut -d'|' -f2,3 | \n   sed -e 's/^[^\s\*]\s*/\s*/g' -e 's/\s\*/g' \n
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Translating Identities

It isn’t pleasant for interactive use to have to lookup the ID of a username before using it. Wouldn’t it be nice if the CLI translated those for you?

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```
$ globus transfer endpoint search \  
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Wherever the CLI takes an Identity ID, it can also take (and implicitly translate) an Identity Username.
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Error Handling

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Simple rules (at least for now):

- If it succeeds, exit with status 0
- If it fails, exit with status 1
- If arguments are bad, exit with status 2
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So far so good. But what about seeing what caused the error?
We want to show you the error that we got back from the API because that is the Truth. Any error translation we do client-side risks having an old CLI version + a new API version disagree about what an error means.
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So, we try to show you what went wrong in a human-friendly format:

```
$ globus transfer endpoint search --filter-owner-id go@globusid.org
Globus CLI Error: A Transfer API Error Occurred.
HTTP status: 400
request_id: h0khd4VRK
code: BadRequest
message: fulltext filter is required for scope 'all'
$ echo $? 1
```
$ globus transfer endpoint search --filter-owner-id go@globusid.org
Globus CLI Error: A Transfer API Error Occurred.
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This is just pretty formatting of an API error. We try to be consistent in naming commandline arguments similarly to server-side parameters, so these should always make some kind of sense.
Detailed Error Info (cont.)

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```

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Check out the help on the endpoint search command, and it should provide some guidance:

```
$ globus transfer endpoint search --help
```
$ globus list-commands

Globus CLI Commands
=======================

  globus list-commands
     Show a short description for all Globus CLI commands. For detailed help text, run the specific command you want to know more about with the `--help` option

  globus login
     Get authentication credentials for the Globus CLI. Necessary before any Globus CLI commands which require authentication will work

== AUTH ==
Interact with Globus Auth API. Inspect Tokens, Identities, and Identity Sets, consent to service terms, revoke and manage Consents, and manage OAuth Clients

  globus auth get-identities
     Inspect Globus Auth Identities

  globus auth token-introspect
     Inspect Globus Auth Tokens

== TRANSFER ==
Interact with Globus Transfer API. Transfer, Delete, List, and Rename files on Endpoints, manage your Endpoints and Shares, and monitor your ongoing Transfer Tasks
Supported Features

▶ Globus Auth View Identities
▶ Transfer async Tasks, ls, mkdir, and rename
▶ Transfer Bookmark Management
▶ Transfer Endpoint Management + Search
▶ Transfer Task Management
▶ Transfer Endpoint Role + ACL Management
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More Info

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Be a Mensch! Give Us Your Feedback and Contributions!

- Open GitHub issues and Pull Requests (https://github.com/globus/globus-cli/issues)
- Help us determine good CLI behaviors on the Developer mailing list: developer-discuss@globus.org