Scripted deployment of Globus Server using Ansible

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Context!

• XSEDE Campus Bridging:
  • Making science more accessible (probably what a lot of us here are doing!)
  • Building local clusters with XSEDE-like environments (my sub-section of CB)
  • Providing software toolkits and system administration guidance for resource-constrained institutions
What is Ansible?

- Ansible is one flavor of “Configuration Management”
- Ideally “idempotent” (not in practice!)
- No daemons running on managed hosts
- Extremely simple to “install” (runs from source!)
- Runs via ssh
Installing Globus Server by hand

• This takes a few minutes, particularly including configuration (Less if you know what you're doing, of course...)
• Add repo, rpm / dpkg install; globus-connect-server setup, configure, globus-connect-server
• This is very easy!
• (And the documentation online is correct!)
...So why Ansible?

- Ansible makes it **fast** - one line setup for all hosts!
- Forces you to back up your configuration
- Repeatability!
- Easy to combine the globus-server installation with firewall and user setup
How easy it becomes:

- `ansible-playbook globus_playbook.yml`:

```
Enter your Globus Online Username:: jecoulte
Enter your Globus Online Password::

PLAY [headnode] *******************************************************
*****
TASK [setup] *******************************************************
*****
ok: [localhost]

TASK [template] ******************************************************
*****
changed: [localhost]

TASK [expect] *******************************************************
*****
changed: [localhost]

PLAY RECAP *******************************************************
*****
localhost : ok=8   changed=2   unreachable=0   failed=0
```
Inside the “playbook”

- hosts: headnode
  gather_facts: yes
  tasks:
    - name: get globus repo rpm
    - name: get globus gpg key
      rpm_key: state=present key=http://toolkit.globus.org/ftppub/globus-connect-server/RPM-GPG-KEY-Globus
    - name: install globus repo
      yum: name=/tmp/globus-repo.rpm state=present
    - name: install globus-connect-server rpm
      yum: name=globus-connect-server state=present enablerepo=base
Inside the “playbook”

```yaml
- hosts: headnode
  gather_facts: yes
  tasks:
    - template: src=conf_files/globus-connect-server.conf dest=/etc/globus-connect-server.conf
      expect:
        command: globus-connect-server-setup
        responses:
          (?i)Globus Username: "{{ globus_username }}"
          (?i)Globus Password: "{{ globus_passwd }}"
  vars_prompt:
    - name: globus_username
      prompt: "Enter your Globus Online Username:"
      private: no
    - name: globus_passwd
      prompt: "Enter your Globus Online Password:"
      private: yes
  vars:
    globus_endpoint_name: "{{ globus_username }}#{{ ansible_hostname }}"
```
Template Config File:

Example piece of globus-connect-server.conf:

```
; Name of the endpoint. Can be either user#name or name, but if the former,
; the user must match [Globus] User above
; The special value %(<short_host>)s will substitute the non-qualified
; portion of an ec2 instance's public hostname, falling back to the
; non-qualified hostname portion of the machine's nodename
Name = {{ globus_endpoint_name }}
```

From the playbook: (globus_username taken at prompt)

```
vars:
  globus_endpoint_name: "{{ globus_username }}#{{ ansible_hostname }}"
```
Questions?

Please contact me at: jecoulte@iu.edu if you have any more questions, comments, or are interested in any sort of collaboration!