



Ansible F5 Agility 2021 Workshop

Overview

We make every effort to ensure the lab guide has step by step instructions to complete the tasks, however some topics are not covered in depth due to a lack of time. Throughout the labs we hope to share features, elements, good and bad practices to using Ansible Tower for Automation.

You will be required to modify some files during the course of this workshop. You will not be required to write your own playbooks. The playbooks used are open source and thus free to use and modify. That being said, writing playbooks and running them in a test environment is the best way to learn.

Outline

- Part 1: Getting setup
 - Fork Git Repo
 - Connect to Ansible Tower
 - Run a job to spin up your student F5 in AWS
 - Review the Ansible playbooks
 - Connecting to your student F5
- Part 2: Tower lab 1 (Imperative)
 - Connect to Ansible Tower
 - Explore Ansible Tower
 - Create a project
 - Create an inventory
 - Create job templates
 - Create a workflow
 - Add rescue logic to a workflow
- Part 3: Tower lab 2 – AS3 (Declarative)
 - Overview of AS3 Ansible Components
 - Create job templates

Note: Assume the output shown in the examples below will be different to yours.



The Brightest Minds in the Business | www.siriuscom.com



Part 1: Getting setup

Overview

- Fork the lab github repository to your own repository so you can edit and modify.

Fork the Sirius ansible networking GitHub repository

Step 1

Login in to Github at <https://github.com>

Step 2

Go to <https://github.com/mysidlabs/f5-agility-2021-tower-labs>

Step 3

Click on the Fork button in upper right.

mysidlabs / f5-agility-2021-tower-labs · Private

Watch 2 · Star 0 · Fork 0

Code Issues Pull requests Actions Projects Security Insights Settings

main · 1 branch · 0 tags

Ionibble init · 38e8d21 14 minutes ago · 83 commits

Lab1 · init · 1 hour ago

Lab2 · init · 1 hour ago

F5 Agility 2021 - Tower lab ... · Add files via upload · 17 minutes ago

About

No description, website, or topics provided.

Releases

No releases published · Create a new release

Commented [NHI]: fork red box out of place part 1

Note: Once forked you can modify all files within GitHub



The Brightest Minds in the Business | www.siriuscom.com



Connecting to Ansible Tower

Step 1

Open your web browser (Chrome or Firefox)

Step 2

Put the address of the lab Ansible Tower

<https://tower.mysidlabs.com>

Step 3

Login with your student ID and password provided in the chat window

The screenshot shows a login interface for the Red Hat Ansible Automation Platform. At the top left is the Red Hat logo and text. A red warning message '⚠ You have been logged out. Please sign in.' is displayed. Below it are two input fields: 'USERNAME' with the value 'siduser208' and 'PASSWORD' with a masked value. At the bottom right is a green 'SIGN IN' button.

Step 4

Navigate to Templates and click the rocket ship icon next to "Student F5 Lab Self Setup"



The Brightest Minds in the Business | www.siriuscom.com



≡ VIEWS

- Dashboard
- Jobs
- Schedules
- My View

RESOURCES

- Templates
- Credentials
- Projects
- Inventories
- Inventory Scripts

ACCESS

- Organizations
- Users
- Teams

TEMPLATES

TEMPLATES (1)

SEARCH KEY

CLEAR ALL

Compact Expanded Name Ascending ▾

Student F5 lab Self Setup Job Template

ITEMS 1 - 1



The Brightest Minds in the Business | www.siriuscom.com



Step 5

Enter your student ID number provided in chat and click next. Your student ID will be different than the below screenshot.

STUDENT F5 LAB SELF SETUP

OTHER PROMPTS SURVEY PREVIEW

* WHAT IS YOUR STUDENT ID?

Student ID #. ie 101

208

CANCEL NEXT

Step 6

Click Launch

STUDENT F5 LAB SELF SETUP

OTHER PROMPTS SURVEY PREVIEW

JOB TYPE Playbook Run

CREDENTIAL aws-api

INVENTORY localhost-inventory

VERBOSITY 0 (Normal)

SHOW CHANGES OFF

EXTRA VARIABLES

```
1 ---
2 student_id: 208
3
```

CANCEL LAUNCH



The Brightest Minds in the Business | www.siriuscom.com



Step 7

Wait for a minute or so for the job to run, validate it was successful

A TOWER

JOBS / 9293 - Student F5 lab Self Setup

DETAILS

| | |
|-----------------|---|
| STATUS | Successful |
| STARTED | 4/8/2021 10:41:57 AM |
| FINISHED | 4/8/2021 10:42:21 AM |
| JOB TEMPLATE | Student F5 lab Self Setup |
| JOB TYPE | Run |
| LAUNCHED BY | siduser208 |
| INVENTORY | localhost-inventory |
| PROJECT | Network-Infrastructure-Labs-Setup |
| REVISION | f39111a |
| PLAYBOOK | f5-lab-setup/student_self_setup.yml |
| CREDENTIAL | aws-api |
| ENVIRONMENT | /var/lib/awx/venv/ansible |
| EXECUTION NODE | 172.31.12.133 |
| INSTANCE GROUP | tower |
| EXTRA VARIABLES | YAML JSON |

SEARCH

```
calhost
6
7 TASK [Provision and launch instances] *** 10:41:59
*****
8 [WARNING]: Instances i-084b8dd98c1d1ba73 to
ok too long to reach state OK.
9 Waiter InstanceStatusOk failed: Max attemp
ts exceeded
10
11 changed: [localhost]
12
13 TASK [Create DNS Record for F5 Public IP Address] *****
14 changed: [localhost]
15
16 PLAY RECAP *****
17 localhost : ok=3    changed=
2 unreachable=0   failed=0   skipped=0
rescued=0   ignored=0
18
```



The Brightest Minds in the Business | www.siriuscom.com



Review the Ansible Playbooks

Step 1

Open your web browser (Chrome or Firefox)

Step 2

Go to <https://github.com/mysidlabs/f5-agility-2021-tower-labs> or your forked version of this repo. Review the folder structure. Go to setup > deploy-student-instance.yml to review the code used to spin up the student F5's in AWS.

Tip: Cloud Init is your friend

<https://clouddocs.f5.com/cloud/public/v1/shared/cloudinit.html#cloudconfig-tmosdecl>



Connecting to your F5

Step 1

Open your web browser (Chrome or Firefox)

Step 2

Put the address of your F5 in the address bar including the port number 8443. **NOTE: Your student F5 will have a different number!**

<https://siduser155.f5.mysidlabs.com:8443>



The Brightest Minds in the Business | www.siriuscom.com



Step 3

Proceed through the warnings regarding the SSL certificate not being valid

Note: Some browsers will not allow you to connect/bypass the security warning due to settings and the fact that the SSL certificate is a self-signed certificate and cannot be validated. You may have to change browsers in order to bypass the security warning.

Step 4

Record the F5 Private IP address

The screenshot shows the F5 BIG-IP Configuration Utility login interface. On the left, there is a sidebar with fields for Hostname (ip-172-31-13-240.us-east-2.compute.internal), IP Address (172.31.13.240), Username, and Password. A 'Log in' button is at the bottom. The main panel displays a welcome message: "Welcome to the BIG-IP Configuration Utility. Log in with your username and password using the fields on the left." The IP Address field is highlighted with a red border.

Step 5

Login into the F5 BigIP

Username: admin

Password: Mys1dlabspw!

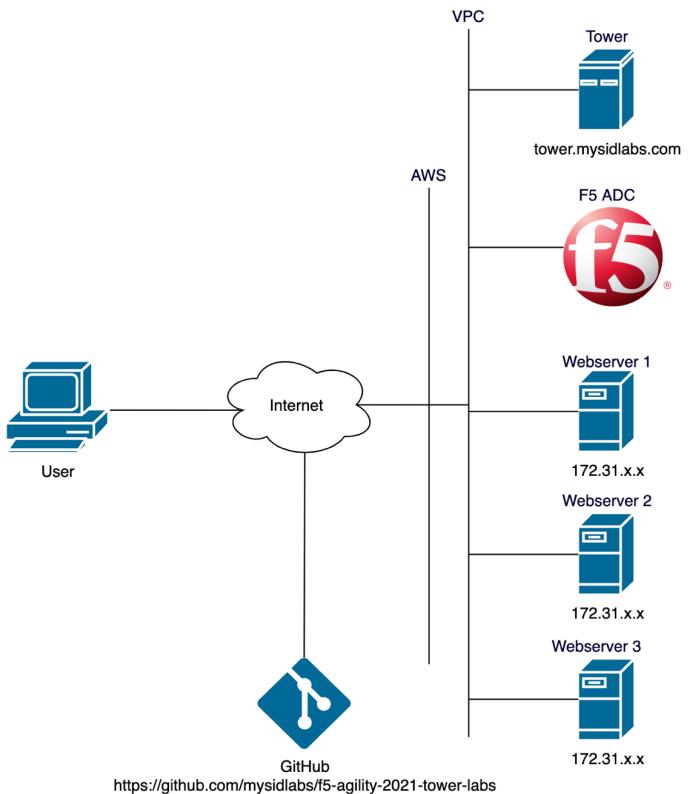
Part 2: Basic F5 labs

Topology

The topology is simple for the sake of learning some ansible basics. The diagram below is an example, the XXX in the hostname is your Student ID. If you are student 199 then the hostname for the F5 would be siduser199.f5.mysidlabs.com.



The Brightest Minds in the Business | www.siriuscom.com



The Brightest Minds in the Business | www.siriuscom.com

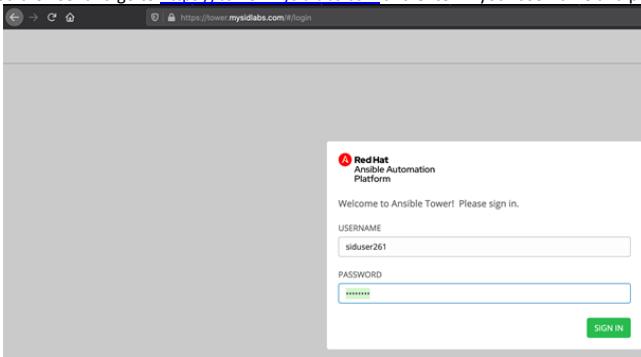


Part 2: Tower lab 1

Explore Ansible Tower

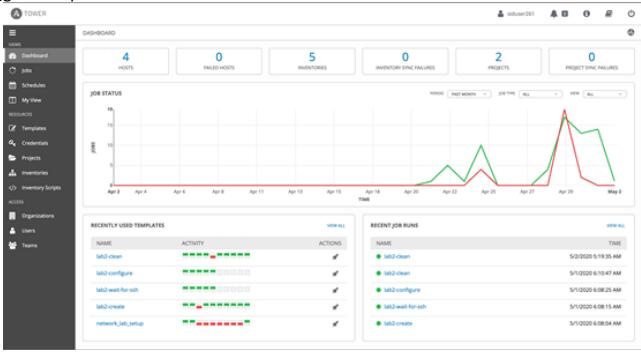
Step 1:

Open web browser and go to <https://tower.mysidlabs.com> and enter in your username and password.



Step 2:

Once logged in explore the interface



Step 3:

Click on the "i" information button on the top right of the user interface.



The Brightest Minds in the Business | www.siriuscom.com



You will get something similar to the following:

```
< Tower 3.7.0 >
-----
\  ^__^
 \  (oo)\_____
    (__)\       )\/\
        ||----w |
        ||     ||
```



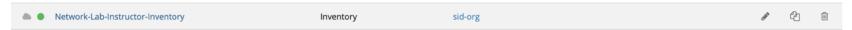
Ansible 2.9.1
Copyright © 2019 Red Hat, Inc.
Visit Ansible.com for more information.

Step 4:

Click on the Inventories Tab on the left side of the page



Click on Network-Lab-Instructor-Inventory



You will see the following

INVENTORIES / Network-Lab-Instructor-Inventory

Network-Lab-Instructor-Inventory

DETAILS PERMISSIONS GROUPS HOSTS SOURCES COMPLETED JOBS

* NAME: Network-Lab-Instructor-Inventory DESCRIPTION: * ORGANIZATION: sid-org

INSIGHTS CREDENTIAL: INSTANCE GROUPS: EXPAND

VARIABLES: YAML JSON

```
1 ->
2 ansible_network_os: ios
3 ansible_connection: network_cli
```

CANCEL SAVE



The Brightest Minds in the Business | www.siriuscom.com



Step 5:

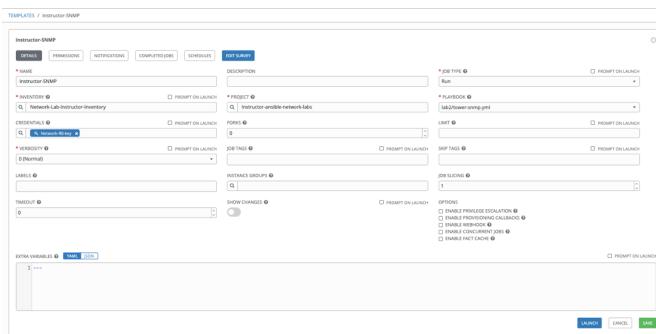
Click on the Projects Tab on the left side of the page. Note that projects point to your source code repository where your playbooks exist.



Click on any of the available project. Below I selected Instructor-ansible-network-labs as an example, but it may not exist when you do this.



You will see the following



Step 6:

Click on the Credentials Tab on the left side of the page

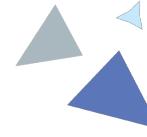


Type network in the search field and click on the magnifying glass icon



Click on network-lab-key





You will see the following

The screenshot shows a configuration form for a 'network-lab-key'. The 'DETAILS' tab is selected. The 'NAME' field contains 'network-lab-key'. The 'DESCRIPTION' field is empty. The 'ORGANIZATION' dropdown is set to 'sis-org'. Under 'CREDENTIAL TYPE', 'Machine' is selected. In the 'TYPE DETAILS' section, 'USERNAME' is set to 'ec2-user' and 'PASSWORD' is empty. There is a checkbox for 'Prompt on launch'. Below this is an 'SSH PRIVATE KEY' section with an 'ENCRYPTED' checkbox. A note says 'SIGNED SSH CERTIFICATE HINT: Drag and drop private file on the field below.' An empty file input field follows. At the bottom, there are fields for 'PRIVATE KEY PASSPHRASE' and 'PRIVILEGE ESCALATION METHOD' (set to 'Run'), and 'PRIVILEGE ESCALATION USERNAME' (set to 'sisUser-admin'). Below these are fields for 'PRIVILEGE ESCALATION PASSWORD' and 'PRIVATE KEY PASSPHRASE'. At the bottom right are 'CANCEL' and 'SAVE' buttons.

Step 7:

Click on the Templates Tab on the left side of the page



Click on any of the available templates. Below I selected Instructor-SNMP as an example, but it may not exist when you do this.



You will see the following

The screenshot shows a configuration form for the 'Instructor-SNMP' template. The 'DETAILS' tab is selected. The 'NAME' field contains 'Instructor-SNMP'. The 'DESCRIPTION' field is empty. Under 'JOB TYPES', 'Run' is selected. The 'PRIVILEGE ESCALATION' dropdown is set to 'sisUser-admin'. In the 'JOBSITE' section, 'Instructor-SNMP' is selected. The 'TIMEOUT' dropdown is set to 'Normal'. The 'SHOW CHANGES' button is checked. At the bottom are 'PROMPT ON LAUNCH' checkboxes for 'ENABLE PRIVILEGE ESCALATION', 'ENABLE PROVISIONING CALLBACKS', 'ENABLE CONSOLE LOGS', and 'ENABLE FILE CACHE'. At the very bottom are 'CREATE', 'DELETE', and 'SAVE' buttons.



The Brightest Minds in the Business | www.siriuscom.com

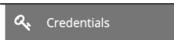


Lab 1.1: Create an Ansible Tower job template

Step 1:

Create a Credential

Click on Credentials section using the left navigation bar.



Click on the green plus button on the right-hand side to create a new Credential



Fill out the following fields as follows, and click SAVE

| | |
|-----------------|--------------------------------|
| Name | <<siduserID>>.f5.mysidlabs.com |
| Credential Type | Network |
| Username | admin |
| Password | Mys1dlabspw! |

NEW CREDENTIAL

DETAILS PERMISSIONS

* NAME siduser155.f5.mysidlabs.com DESCRIPTION ORGANIZATION SELECT AN ORGANIZATION

* CREDENTIAL TYPE Network

TYPE DETAILS

USERNAME admin PASSWORD

SSH PRIVATE KEY Hint: Drag and drop private file on the field below.

PRIVATE KEY PASSPHRASE OPTIONS AUTHORIZE PASSWORD

SOURCE CANCEL SAVE

Step 2:

Create a Project

Click on Projects section using the left navigation bar.



The Brightest Minds in the Business | www.siriuscom.com



Projects

Click on the green plus button on the right-hand side



Fill out the following fields as follows, and click SAVE

| | |
|--|---|
| Name | <<siduserID>>.f5.mysidlabs.com |
| Organization | sid-org |
| SCM Type | git |
| SCM URL | <a href="https://github.com/<>your-github-user/>/f5-agility-2021-tower-labs">https://github.com/<>your-github-user/>/f5-agility-2021-tower-labs |
| Clean/Delete on Update/ Update Revision on Launch | Checked |

NEW PROJECT

DETAILS PERMISSIONS JOB TEMPLATES SCHEDULES

| | | |
|---|--|---|
| * NAME <input type="text" value="siduser155.f5.mysidlabs.com"/> | DESCRIPTION <input type="text" value=""/> | * ORGANIZATION <input type="text" value="sid-org"/> |
| * SCM TYPE <input type="text" value="Git"/> | SCM BRANCH/TAG/COMMIT <input type="text" value=""/> | SCM REFSPEC <input type="text" value=""/> |
| SOURCE DETAILS * SCM URL <input type="text" value="https://github.com/ionibble/ansible-f5-labs"/> | SCM UPDATE OPTIONS <input checked="" type="checkbox"/> CLEAN <input checked="" type="checkbox"/> DELETE ON UPDATE <input checked="" type="checkbox"/> UPDATE REVISION ON LAUNCH <input type="checkbox"/> ALLOW BRANCH OVERRIDE | CACHE TIMEOUT (SECONDS) <input type="text" value="0"/> |
| SCM CREDENTIAL <input type="text" value=""/> | | CANCEL SAVE |



The Brightest Minds in the Business | www.siriuscom.com



Step 3:

Create an Inventory

Click on Inventories section using the left navigation bar.



Click on the green plus button on the right-hand side and click Inventory to create a new inventory



Fill out the following fields and click SAVE

| | |
|--------------|--------------------------------|
| Name | <<siduserID>>.f5.mysidlabs.com |
| Organization | sid-org |

NEW INVENTORY

DETAILS PERMISSIONS GROUPS HOSTS SOURCES COMPLETED JOBS

* NAME: siduser155.f5.mysidlabs.com DESCRIPTION: * ORGANIZATION: sid-org

INSIGHTS CREDENTIAL: INSTANCE GROUPS: Q: sid-org

VARIABLES: 1 --- EXPAND

CANCEL SAVE



The Brightest Minds in the Business | www.siriuscom.com



Click on the Sources tab, click the green plus button

The screenshot shows a software interface with a header 'siduser155.f5.mysidlabs.com'. Below the header are five tabs: DETAILS, PERMISSIONS, GROUPS, HOSTS, and SOURCES. The SOURCES tab is highlighted with a red border. Below the tabs is a large text area containing the placeholder 'PLEASE ADD ITEMS TO THIS LIST'. In the bottom right corner of this area, there is a small green square button with a white plus sign, which is also highlighted with a red box.

Fill out the following fields and click SAVE

| | |
|----------------------------|---|
| Name | <<siduserID>>.f5.mysidlabs.com |
| Source | Amazon EC2 |
| Credentials | aws-api |
| Regions | US East Ohio |
| Instance Filters | tag:Name=F5-Lab-<<siduserID>> ex: tag:Name=F5-Lab-siduser155 |
| Only Group By | Tags |
| Overwrite/Update on Launch | Checked |



The Brightest Minds in the Business | www.siriuscom.com



CREATE SOURCE

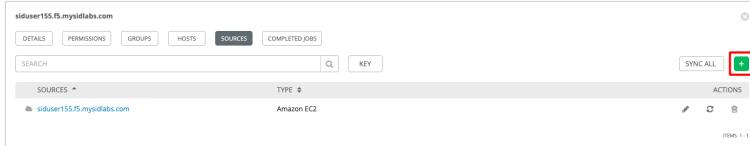
DETAILS **SCHEDULES**

| | | |
|---------------------------------------|-------------|--|
| * NAME siduser155.f5.mysidlabs.com | DESCRIPTION | * SOURCE Amazon EC2 |
| CREDENTIAL aws-api | | REGIONS US East (Ohio) |
| ONLY GROUP BY Tags | | INSTANCE FILTERS tag:Name=F5-Lab-siduser155 |
| CACHE TIMEOUT (SECONDS) 0 | | UPDATE OPTIONS <input checked="" type="checkbox"/> OVERWRITE <input type="checkbox"/> OVERWRITE VARIABLES <input type="checkbox"/> UPDATE ON LAUNCH |
| SOURCE VARIABLES YAML JSON | | |
| 1 *** | | |
| | | SAVE |

Click on the Sources link at the top left

[INVENTORIES / siduser155.f5.mysidlabs.com / SOURCES](#) / siduser155.f5.mysidlabs.com

Click on the green plus button on the right-hand side to add another source



Fill out the following fields and click SAVE

| | |
|------------------|---------------------------------|
| Name | <<siduserID>>.web.mysidlabs.com |
| Source | Amazon EC2 |
| Credentials | aws-api |
| Regions | US East Ohio |
| Instance Filters | tag:Name=F5-Lab-Web* |



The Brightest Minds in the Business | www.siriuscom.com

| | |
|----------------------------|---------|
| Only Group By | Tags |
| Overwrite/Update on Launch | Checked |

Click on Sources > Sync All

You should have green clouds next to your sources once sync is complete

Click on the <<siduserID>>.f5.mysidlabs.com link at the top left

<INVENTORIES / siduser155.f5.mysidlabs.com / SOURCES / siduser155.f5.mysidlabs.com>



The Brightest Minds in the Business | www.siriuscom.com



Click on Hosts and verify you have 4 hosts

| HOSTS | DESCRIPTION | RELATED GROUPS | ACTIONS |
|--|-------------|--|---------|
| <input type="checkbox"/> 18.189.26.22 | imported | aws_ec2 ✖ ec2 ✖ tag_Name ✖ tag_mySidLab.com ✖ tag_Name_F5_Lab_Web1 ✖ VIEW MORE | |
| <input type="checkbox"/> 3.133.107.65 | imported | aws_ec2 ✖ ec2 ✖ tag_Name ✖ tag_Name_F5_Lab_sidus er208 ✖ tag_lb ✖ VIEW MORE | |
| <input type="checkbox"/> 3.142.230.207 | imported | aws_ec2 ✖ ec2 ✖ tag_Name ✖ tag_mySidLab.com ✖ tag_Name_F5_Lab_Web3 ✖ VIEW MORE | |
| <input type="checkbox"/> 3.16.214.234 | imported | aws_ec2 ✖ ec2 ✖ tag_Name ✖ tag_mySidLab.com ✖ tag_Name_F5_Lab_Web2 ✖ VIEW MORE | |

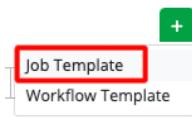
Step 4:

Create a Job Template

Click on Inventories section using the left navigation bar.



Click on the green plus button on the right-hand side and click Job Template to create a new inventory



Fill out the following fields and click SAVE

| | |
|-----------|--------------------------------|
| Name | <<siduserID>>-create-nodes |
| Job Type | Run |
| Inventory | <<siduserID>>.f5.mysidlabs.com |



The Brightest Minds in the Business | www.siriuscom.com

| | |
|-------------|---|
| Project | <<siduserID>>.f5.mysidlabs.com |
| Playbook | 1.1-create-nodes.yml |
| Credentials | Select Credential Type: Network <<siduserID>>.f5.mysidlabs.com |

NEW JOB TEMPLATE

DETAILS PERMISSIONS COMPLETED JOBS SCHEDULES ADD SURVEY

| | | |
|--|---|---------------------------------------|
| * NAME: siduser208-create-nodes | DESCRIPTION: | * JOB TYPE: Run |
| * INVENTORY: siduser208.f5.mysidlabs.com | * PROJECT: siduser208.f5.mysidlabs.com | * PLAYBOOK: Lab1/1.1-create-nodes.yml |
| CREDENTIALS: siduser208-f5-credentials | FORKS: 0 | LIMIT: |
| * VERBOSITY: 0 (Normal) | JOB TAGS: | SKIP TAGS: |
| LABELS: | INSTANCE GROUPS: | JOB SLICING: 1 |
| TIMEOUT: 0 | SHOW CHANGES: <input checked="" type="checkbox"/> | OPTIONS: |
| <input type="checkbox"/> ENABLE PRIVILEGE ESCALATION <input type="checkbox"/> ENABLE PROVISIONING CALLBACKS <input type="checkbox"/> ENABLE WEBHOOK <input type="checkbox"/> ENABLE CONCURRENT JOBS <input type="checkbox"/> ENABLE FACT CACHE | | |

Click Save

Step 5:

Create a Job Template

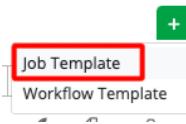
Click on Inventories section using the left navigation bar.



Click on the green plus button on the right-hand side and click Job Template to create a new inventory



The Brightest Minds in the Business | www.siriuscom.com



Fill out the following fields and click SAVE

| | |
|-------------|---|
| Name | <<siduserID>>-create-pool |
| Job Type | Run |
| Inventory | <<siduserID>>.f5.mysidlabs.com |
| Project | <<siduserID>>.f5.mysidlabs.com |
| Playbook | 1.2-create-pool-add-mem.yml |
| Credentials | Select Credential Type: Network <<siduserID>>.f5.mysidlabs.com |

NEW JOB TEMPLATE

DETAILS PERMISSIONS COMPLETED JOBS SCHEDULES ADD SURVEY

* NAME: siduser209-create-pool DESCRIPTION: * JOB TYPE: Run PROMPT ON LAUNCH

* INVENTORY: siduser209.f5.mysidlabs.com PROMPT ON LAUNCH * PROJECT: siduser209.f5.mysidlabs.com * PLAYBOOK: Lab1/1.2-create-pool-add-mem.yml

CREDENTIALS: siduser209.f5.mysidlabs.com PROMPT ON LAUNCH FORKS: 0 LIMIT: PROMPT ON LAUNCH

* VERBOSITY: 0 (Normal) PROMPT ON LAUNCH JOB TAGS: PROMPT ON LAUNCH SKIP TAGS: PROMPT ON LAUNCH

LABELS: INSTANCE GROUPS: SHOW CHANGES: PROMPT ON LAUNCH JOB SLICING: 1 PROMPT ON LAUNCH

OPTIONS: ENABLE PRIVILEGE ESCALATION ENABLE PROVISIONING CALLBACKS ENABLE WEBHOOK ENABLE CONCURRENT JOBS ENABLE FACT CACHE

PROMPT ON LAUNCH

EXTRA VARIABLES: YAML JSON



The Brightest Minds in the Business | www.siriuscom.com



Click Save

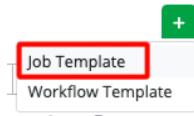
Step 6:

Create a Job Template

Click on Inventories section using the left navigation bar.



Click on the green plus button on the right-hand side and click Job Template to create a new inventory



Fill out the following fields and click SAVE

| | |
|-------------|---|
| Name | <<siduserID>>-create-vip |
| Job Type | Run |
| Inventory | <<siduserID>>.f5.mysidlabs.com |
| Project | <<siduserID>>.f5.mysidlabs.com |
| Playbook | 1.3-create-vip.yml |
| Credentials | Select Credential Type: Network <<siduserID>>.f5.mysidlabs.com |



The Brightest Minds in the Business | www.siriuscom.com

siduser208-create-vip

DETAILS PERMISSIONS NOTIFICATIONS COMPLETED JOBS SCHEDULES ADD SURVEY

* NAME: siduser208-create-vip

DESCRIPTION:

* INVENTORY: siduser208.f5.mysidlabs.com

PROMPT ON LAUNCH:

* PROJECT: siduser208.f5.mysidlabs.com

PROMPT ON LAUNCH:

* PLAYBOOK: Lab1/1.3-create-vip.yml

JOB TYPE: Run

PROMPT ON LAUNCH:

CREDENTIALS: siduser208-f5-credentials

PROMPT ON LAUNCH:

FORKS: 0

LIMIT:

PROMPT ON LAUNCH:

VERBOSITY: 0 (Normal)

PROMPT ON LAUNCH:

JOB TAGS:

PROMPT ON LAUNCH:

SKIP TAGS:

PROMPT ON LAUNCH:

LABELS:

INSTANCE GROUPS: 1

JOB Slicing: 1

PROMPT ON LAUNCH:

TIMEOUT: 0

SHOW CHANGES:

PROMPT ON LAUNCH:

OPTIONS:

- ENABLE PRIVILEGE ESCALATION
- ENABLE PROVISIONING CALLBACKS
- ENABLE WEBHOOK
- ENABLE CONCURRENT JOBS
- ENABLE FACT CACHE



The Brightest Minds in the Business | www.siriuscom.com



Step 7:

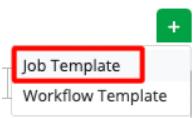
Create a template for cleanup

Create a Job Template

Click on Inventories section using the left navigation bar.



Click on the green plus button on the right-hand side and click Job Template to create a new inventory



Fill out the following fields and click SAVE

| | |
|-------------|---|
| Name | <<siduserID>>-cleanup |
| Job Type | Run |
| Inventory | <<siduserID>>.f5.mysidlabs.com |
| Project | <<siduserID>>.f5.mysidlabs.com |
| Playbook | 1.4-cleanup.yml |
| Credentials | Select Credential Type: Network <<siduserID>>.f5.mysidlabs.com |



The Brightest Minds in the Business | www.siriuscom.com

siduser208-clean

DETAILS **PERMISSIONS** **NOTIFICATIONS** **COMPLETED JOBS** **SCHEDULES** **EDIT SURVEY**

NAME: siduser208-clean **DESCRIPTION**: **JOB TYPE**: Run

INVENTORY: siduser208.f5.mysidlabs.com **PROJECT**: siduser208.f5.mysidlabs.com **PLAYBOOK**: Lab1/1.4-cleanup.yml

CREDENTIALS: siduser208-f5-credentials **FORKS**: 0 **LIMIT**: 0

VERBOSITY: Normal **JOB TAGS**: **SKIP TAGS**: **JOB SLICING**: 1

LABELS: **INSTANCE GROUPS**: **TIMEOUT**: 0 **SHOW CHANGES**: **OPTIONS**:

- ENABLE PRIVILEGE ESCALATION
- ENABLE PROVISIONING CALLBACKS
- ENABLE WEBHOOK
- ENABLE CONCURRENT JOBS
- ENABLE FACT CACHE

Step 8:

Create a workflow template. Click Templates > Green Plus > Workflow Template



Fill out according to table:

| | |
|--------------|--------------------------------|
| Name | <<siduserID>>-workflow |
| Inventory | <<siduserID>>.f5.mysidlabs.com |
| Organization | Sid-org |



The Brightest Minds in the Business | www.siriuscom.com

siduser208-workflow

DETAILS **PERMISSIONS** **NOTIFICATIONS** **COMPLETED JOBS** **SCHEDULES** **EDIT SURVEY** **WORKFLOW VISUALIZER**

NAME: siduser208-workflow **DESCRIPTION**: **ORGANIZATION**: sid-org

INVENTORY: siduser208.f5.mysidlabs.com **PROMPT ON LAUNCH**: **LIMIT**: **PROMPT ON LAUNCH**: **SCM BRANCH**: **PROMPT ON LAUNCH**

LABELS: **OPTIONS**: ENABLE CONCURRENT JOBS ENABLE WEBHOOK

EXTRA VARIABLES: **YAML** **JSON**

```
1 ---
```

PROMPT ON LAUNCH: **LAUNCH** **CANCEL** **SAVE**

Click Save to bring you to the workflow visualizer. Click start to begin adding to the workflow. When complete it should look like the below:



Step 7.1

Click start and fill out the options on the right pane:

Select Project Sync from the drop down box

Select your project

Click Select



The Brightest Minds in the Business | www.siriuscom.com



ADD A NODE

Project Sync

SEARCH KEY

209 CLEAR ALL

siduser209.f5.mysidlabs.com

ITEMS 1-1

RUN
Always

CONVERGENCE
Any

CANCEL SELECT

Step 7.2

Click start and fill out the options on the right pane:

Select Inventory Sync from the drop down box

Select your 1st inventory

Click Select

Step 7.3

Click start and fill out the options on the right pane:

Select Inventory Sync from the drop down box

Select your 2nd inventory

Click Select

Step 7.4

Click Green Plus and fill out the options on the right pane:

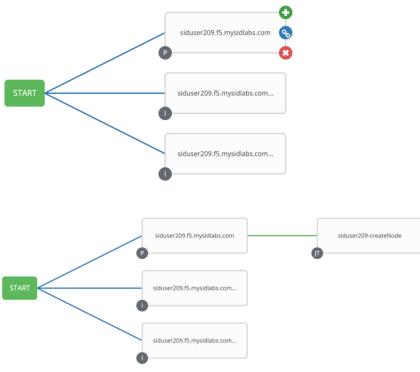
Select Template from the drop down box

Select your create-nodes job template

Click Select



The Brightest Minds in the Business | www.siriuscom.com



Step 7.5

Click Blue chain and link the 2 remaining sync jobs with the create-node job



"On Success" should be selected and click Save

ADD LINK | siduser209.f5.mysidlabs.com-2 → siduser209-createNode

RUN

On Success

Repeat for the last sync job.

Your workflow should now look like this:



The Brightest Minds in the Business | www.siriuscom.com



Step 7.6

Click Green Plus on the create-node and fill out the options on the right pane:

Select Template from the drop down box

Select your create-pool job template

Click Select

Step 7.7

Click Green Plus on the create-pool and fill out the options on the right pane:

Select Template from the drop down box

Select your create-VIP job template

Click Select

Step 7.8

Click Green Plus on the create-VIP and fill out the options on the right pane:

Select Template from the drop down box

Select your cleanup job template

Change the drop down box to Run “on failure”

Click Select



The Brightest Minds in the Business | www.siriuscom.com

Template

SEARCH KEY

209

| <input checked="" type="radio"/> | siduser209-cleanUp |
|----------------------------------|------------------------|
| <input type="radio"/> | siduser209-createNode |
| <input type="radio"/> | siduser209-create-pool |
| <input type="radio"/> | siduser209-createVIP |
| <input type="radio"/> | siduser209-workflow |

Workflow

ITEMS 1 - 5

* RUN

On Failure

* CONVERGENCE

Any

The inventory of this node will not be overridden by the parent workflow inventory.

CANCEL

Repeat for the create-node and create-pool job templates. When done your workflow should look like the below:



Click Save

Step 8:

Create a survey for the workflow

Click add survey and fill out per screen shots below. Note that variable names are case sensitive and use camel case.



The Brightest Minds in the Business | www.siriuscom.com

siduser208-workflow | SURVEY 

EDIT SURVEY PROMPT

* PROMPT
What is the Virtual Server name?

DESCRIPTION
VIP

* ANSWER VARIABLE NAME 
vipName

* ANSWER TYPE 
Text

MINIMUM LENGTH 0 MAXIMUM LENGTH 24

DEFAULT ANSWER

REQUIRED

[CLEAR](#) [UPDATE](#)

PREVIEW

* WHAT IS THE VIRTUAL SERVER NAME?
VIP

* WHAT IS THE POOL NAME
pool

[DELETE SURVEY](#) [CANCEL](#) [SAVE](#)

siduser208-workflow | SURVEY 

EDIT SURVEY PROMPT

* PROMPT
What is the pool name?

DESCRIPTION
pool

* ANSWER VARIABLE NAME 
poolName

* ANSWER TYPE 
Text

MINIMUM LENGTH 0 MAXIMUM LENGTH 24

DEFAULT ANSWER

REQUIRED

[CLEAR](#) [UPDATE](#)

PREVIEW

* WHAT IS THE VIRTUAL SERVER NAME?
VIP

* WHAT IS THE POOL NAME
pool

[DELETE SURVEY](#) [CANCEL](#) [SAVE](#)

Click Save



The Brightest Minds in the Business | www.siriuscom.com



Step 9:

Launch the workflow template, fill out the survey (remember what you name your vip and pool, maybe even write it down).

Step 10:

Verifying that the playbook did what you expected. Login to the F5 with your web browser to see what was configured.

Click on the Local Traffic on the left-hand menu

Click on Virtual Servers.

The Virtual Server will be displayed.

This time it will be Green (Available (Enabled) - The virtual server is available)

Check Pools for app_pool that both web servers are set to port 80 for their service_port

If everything looks good from an F5 standpoint, verify the web servers

Go to:

<https://<<siduserId>>.f5.mysidlabs.com/>

Each time you refresh the host will change between web1, web2 and web3.

Step 10:

Cleanup your F5 before running the next lab

Click on templates, search for your user number and select “siduserXXX-clean” job template.

In the extra variables box edit to include your VIP name and pool name like below:

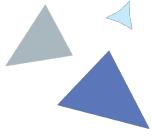
EXTRA VARIABLES ? YAML JSON

```
1 ---
2 vipName: bigBaconClassicCombo
3 poolName: smallFrosty
```

Click save and launch. Validate that your F5 no longer has nodes, pools and vips.



The Brightest Minds in the Business | www.siriuscom.com



The Brightest Minds in the Business | www.siriuscom.com



Part 4: F5 AS3 labs

Lab 2.0: The way better AS3 method

Step 1:

Make sure the BIG-IP configuration is clean!!!

Click on templates, search for your user number and select “siduserXXX-clean” job template.

In the extra variables box edit to include your VIP name and pool name like below:

EXTRA VARIABLES ? YAML JSON

```
1 ---
2 vipName: bigBaconClassicCombo
3 poolName: smallFrosty
```

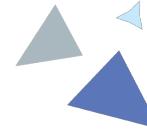
Click save and launch. Validate that your F5 no longer has nodes, pools and vips.

NOTE!!!!

If your AS3 playbook has errors remember what Moss and Roy always do. Did you turn it off and on?
Reboot your F5 > System > Configuration > Device > General



The Brightest Minds in the Business | www.siriuscom.com



System >> Configuration : Device : General

Properties and Operations

| | |
|-----------------------|---|
| Host Name | ip-172-31-11-95.us-east-2.compute.internal |
| Chassis Serial Number | 84302fec-d739-b7ba-07e320cd29ee |
| Version | BIG-IP 16.0.1.1 Build 0.0.6 Point Release 1 |
| CPU Count | 2 |
| Active CPUs | 2 |
| Operations | <input type="button" value="Reboot"/> This will cause the BIG-IP to reboot. <input type="button" value="Force Offline"/> This will force the BIG-IP into an Offline state. |

Properties

| | |
|---------------------|---|
| Network Boot | <input type="checkbox"/> |
| Quiet Boot | <input checked="" type="checkbox"/> Enabled |
| Compatibility Level | LEVEL 0 |

Geolocation

| | |
|------------|---|
| Operations | <input type="button" value="Reload"/> Click to reload the geolocation data files. |
|------------|---|

Step 2:

Validate that your F5 has the AS3 package installed. Navigate to iApps > Package Management LX. You should see 2 packages for AS3 installed.

iApps >> Package Management LX

F5 Apps and Resources

| Name | Version | Build | Package | Tags |
|----------------------|---------|-------|-------------------------------------|--------|
| f5-appsvc | 3.27.0 | 3 | f5-appsvc-3.27.0-noarch | PLUGIN |
| f5-service-discovery | 1.6.0 | 1 | f5-service-discovery-1.6.0-1-noarch | PLUGIN |

Note: AS3 can be downloaded here: <https://github.com/F5Networks/f5-appsvcs-extension/releases>

Step 3:

Before starting we look at the Playbooks, it is important to understand how AS3 works. AS3 requires a JSON template to be sent as an API call to the F5. You do not need to fully understand every parameter or create these templates from scratch.



The Brightest Minds in the Business | www.siriuscom.com



Take some time to review the documentation here: <https://clouddocs.f5.com/products/extensions/f5-appsvcs-extension/latest/refguide/understanding-the-json-schema.html>

Examples are located here: <https://clouddocs.f5.com/products/extensions/f5-appsvcs-extension/latest/userguide/examples.html>

And some really good info here on using AWAF with AS3: <https://clouddocs.f5.com/training/fas-ansible-workshop-101/3.3-as3-asm.html>

Step 4:

Look at the file called 2.1-as3.yml

Review the output and see what information is in the output.

connection: - local tells the Playbook to run locally (rather than SSHing to itself)

uri: - this task is calling the uri module

url: "https://{{ ansible_host }}:8443/mgmt/shared/appsvcs/declare" - webURL (API) for AS3

method: POST - HTTP method of the request, must be uppercase. Module documentation page has list of all options.

body: "{{ lookup('template','j2/ as3_template.j2', split_lines=False) }}" - This passed the template as the body for the API request

status_code: 200 - A valid, numeric, HTTP status code that signifies success of the request. This can be comma separated list of status codes. In this instance we use 200 which means OK, this is a standard response for successful HTTP requests

Look at the file called AS3_template.j2

Look at the file called awaf.xml

Step 5:

Create a new job in Ansible Tower to run the AS3 playbook:

Fill out the following fields and click SAVE

| | |
|-----------|--------------------------------|
| Name | <<siduserID>>-AS3 |
| Job Type | Run |
| Inventory | <<siduserID>>.f5.mysidlabs.com |



The Brightest Minds in the Business | www.siriuscom.com

| | |
|-------------|---|
| Project | <<siduserID>>.f5.mysidlabs.com |
| Playbook | Lab2/2.1-as3.yml |
| Credentials | Select Credential Type: Network <<siduserID>>.f5.mysidlabs.com |

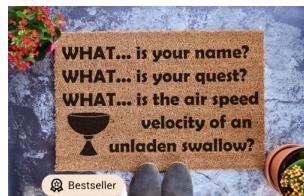


siduser208-AS3

DETAILS PERMISSIONS NOTIFICATIONS COMPLETED JOBS SCHEDULES EDIT SURVEY

| | | |
|--|--|------------------------------|
| * NAME siduser208-AS3 | DESCRIPTION | * JOB TYPE Run |
| * INVENTORY siduser208.f5.mysidlabs.com | * PROJECT siduser208.f5.mysidlabs.com | * PLAYBOOK Lab2.1-as3.yml |
| CREDENTIALS siduser208-f5-credentials | FORKS 0 | LIMIT 0 |
| * VERTIOSITY 0 (Normal) | JOB TAGS | SKIP TAGS |
| LABELS | INSTANCE GROUPS Q | JOB SLICING 1 |
| TIMEOUT 0 | SHOW CHANGES ON | OPTIONS |
| <input type="checkbox"/> ENABLE PRIVILEGE ESCALATION <input type="checkbox"/> ENABLE PROVISIONING CALLBACKS <input type="checkbox"/> ENABLE WEBHOOK <input type="checkbox"/> ENABLE CONCURRENT JOBS <input type="checkbox"/> ENABLE FACT CACHE | | |

Add a survey to the job template



The Brightest Minds in the Business | www.siriuscom.com



Question 1

Prompt: What is the tenant name?

Description: tenant

Answer variable name: tenantName

Answer type: text

Default Answer: workshopExample

Question 2

Prompt: What is the user name?

Description: username

Answer variable name: f5UserName

Answer type: text

Default Answer: admin

Question 3

Prompt: What is the password?

Description: password

Answer variable name: f5Password

Answer type: password

Default Answer: Mys1dlabspw!

The screenshot shows the 'ADD SURVEY PROMPT' section of the Sirius interface. On the left, there are four input fields: 'PROMPT' (containing 'What is the tenant name?'), 'DESCRIPTION' (containing 'tenant'), 'ANSWER VARIABLE NAME' (containing 'tenantName'), and 'ANSWER TYPE' (containing 'text'). Below these is a checked 'REQUIRED' checkbox. On the right, under 'PREVIEW', the three questions are listed:

- * WHAT IS THE TENANT NAME?
tenant
II workshopExample
- * WHAT IS THE USERNAME?
username
II admin
- * WHAT IS THE PASSWORD?
password
II SHOW *****

At the bottom of the preview section are three buttons: 'DELETE SURVEY' (red), 'CANCEL' (grey), and 'SAVE' (green).

Step 6:



The Brightest Minds in the Business | www.siriuscom.com



Launch the job, fill out the survey and then login to the F5 with your web browser to see what was configured.

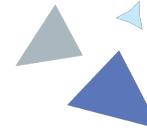
Finally, test and see if you get dancing polar bears.

F5: <https://siduserXXX.f5.mysidlabs.com:8443>

Website: <https://siduserXXX.f5.mysidlabs.com>



The Brightest Minds in the Business | www.siriuscom.com



Step 7:

Copy or clone your siduserXXX-AS3 job from the previous task. Edit the copy to rename and change the playbook. By copying the previous job template you will be able to use the same survey questions.

| | |
|-------------|---|
| Name | <<siduserID>>-AS3-cleanup |
| Job Type | Run |
| Inventory | <<siduserID>>.f5.mysidlabs.com |
| Project | <<siduserID>>.f5.mysidlabs.com |
| Playbook | Lab2/2.2-as3-delete.yml |
| Credentials | Select Credential Type: Network <<siduserID>>.f5.mysidlabs.com |

siduser208-AS3-clean

DETAILS PERMISSIONS NOTIFICATIONS COMPLETED JOBS SCHEDULES EDIT SURVEY

* NAME: siduser208-AS3-clean

* INVENTORY: siduser208.f5.mysidlabs.com

* CREDENTIALS: siduser208-f5-credentials

* VERBOSITY: 0 (Normal)

LABELS:

TIMEOUT: 0

SHOW CHANGES:

PROMPT ON LAUNCH:

DESCRIPTION:

* JOB TYPE: Run

* PROJECT: siduser208.f5.mysidlabs.com

* PLAYBOOK: Lab2/2.2-as3-delete.yml

FORKS: 0

LIMIT:

JOB TAGS:

SKIP TAGS:

JOB SLICING: 1

PROMPT ON LAUNCH:

OPTIONS: ENABLE PRIVILEGE ESCALATION
 ENABLE PROVISIONING CALLBACKS
 ENABLE WEBHOOK
 ENABLE CONCURRENT JOBS
 ENABLE FACT CACHE

PROMPT ON LAUNCH:

EXTRA VARIABLES: YAML JSON



The Brightest Minds in the Business | www.siriuscom.com



Run the job and verify your Big IP configuration is clean

Success - Congratulations.



Appendix A:

Useful resource links and information

Links:

Ansible Best Practices

https://docs.ansible.com/ansible/latest/user_guide/playbooks_best_practices.html

Ansible Network troubleshooting

https://docs.ansible.com/ansible/latest/network/user_guide/network_debug_troubleshooting.html

Ansible cli_command module information

<https://www.ansible.com/blog/deep-dive-on-cli-command-for-network-automation>

Variable precedence



The Brightest Minds in the Business | www.siriuscom.com



https://docs.ansible.com/ansible/latest/user_guide/playbooks_variables.html#variable-precedence-where-should-i-put-a-variable

Additional Notes:

- Remember YAML is very sensitive to correct indentation
- **Hostvars** allow us to access meta-data about our inventory hosts.
- The use of an Ansible role is best practice when there is a well-defined scope with a high possibility of re-use.
- If you copy and paste text for a playbook you may get indentation issues. Ansible provides a simple syntax checker, try ansible-playbook --syntax-check backup.yml to verify. A Best Practice is to use a linter, for example ansible-review. Ansible provides excellent online documentation, which is also available from the command line, for example ansible-doc ios_config. For a full list of modules try ansible-doc -l
- There are multiple ways of implementing a playbook where specific tasks or groups of tasks execute against specific hosts. For example, we could have used 1 playbook for configuring every router in the lab utilizing the "when:" statement to ensure specific tasks are only applied to a specific router. Although this is not necessarily following best practices.
- The use of **handlers** : which can be used in any playbook. A handler is a special way of calling a task whenever an action needs to be taken after a previous task. For example, both installing and configuring an application may require a restart. A handler would be notified by both tasks but would only run once when the playbook finishes.



The Brightest Minds in the Business | www.siriuscom.com