Automation Best Practices with the GSLB Tool

- BRINGING MULTI-CLUSTER TO OCP WITH GSLB AUTOMATION
- OCP MIGRATION DEMO

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<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Value</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1996</td>
<td>F5 founded; NASDAQ-listed 1999</td>
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<td></td>
<td>$1.3B</td>
<td>Cash and investments (Q419)</td>
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<tr>
<td>2019</td>
<td>FY19 revenue</td>
<td>$2.2B</td>
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<td></td>
<td>5,325</td>
<td>Employees (Q419)</td>
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<td></td>
<td>&gt;25k</td>
<td>Customers in 175 countries</td>
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<td></td>
<td>#1</td>
<td>Market segment position in application delivery controllers</td>
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<td></td>
<td>$2.2B</td>
<td>Leader in The Forrester Wave: Web Application Firewalls, Q2 2018</td>
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<tr>
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<td>336</td>
<td>U.S. and international patents</td>
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1 For a complete reconciliation of GAAP to non-GAAP measures, please see F5’s most recent quarterly earnings press release.
2 IDC Quarterly Ethernet Switch Tracker, ADC Segment, 2019Q2 Historical Release.
Our Partnership: 3 Key Integrations

Red Hat Product

F5 Integration

F5 Container Ingress Services (CIS) & NGINX

F5 Collections on Ansible Automation Hub
The F5\Ansible GSLB Tool
Anatomy of a basic OCP cluster

THE NEED FOR GSLB

Enterprise DNS - existing service -

Authoritative

*.ocp.company.com

OPENSHIFT

- No GSLB
- No healthchecks and/or no external probes
- No IP intelligence (customer region aware)
- Not API enabled (no automation)

Not suitable for multi-cluster
Adding flexibility to OpenShift clusters

Enter multi-cluster OCP with F5 CloudServices

No appliances to manage - SaaS
Direct traffic to the nearest application instance
Route traffic for GDPR compliance
Split load across compute instances
Built-in DDoS protection
Fully configurable via APIs
gslb-tool is an automation tool that **glues** the OpenShift and GSLB APIs. Minimizes operation errors. Allows swift application rollout across clusters. Manages all Routes of a given project at once, like RedHat’s migration tools.
Openshift multi-cluster automation

Enquire Routes

API

gslb-tool

Publishes into GSLB

API

CloudServices

OR

BIG-IP

DNS
**gslb-tool overview**

**project-** commands operates on a project/namespace, retrieve the L7 routes from the OpenShift/K8s API and only performs uncommitted operations.

**gslb-** commands operates on the GIT repository and in the GSLB API, making active the desired state.
Ansible playbooks anatomy

GSLB-TOOL IS 100% BUILT USING ANSIBLE – SAMPLE COMMAND

project-retrieve.yaml

- hosts: localhost
gather_facts: no

vars_files:
- "vars/credentials.yaml"
- "vars/setup.yaml"
- "vars/gslbState.desired.yaml"

module_defaults:
group/k8s:
  host: "{{apiEndpoint[dRouter]}}"

roles:
- gslb-tool-init-project-folder
- gslb-tool-eliminate-project
- "k8s-retrieve-routes-{{resourceType[dRouter]}}"
- "gslb-tool-add-retrieved-routes-{{resourceType[dRouter]}}"
Main Ansible roles

MULTIPLE INPUT AND BACKEND SUPPORT

k8s-retrieve-routes-{{resourceType}}

{{backend}}-login
{{backend}}-prepare-config
{{backend}}-publish

Single POST declarative Interfaces

Heavily relies in json_query filter

Also relies in the jq utility to build the GSLB declaration
Ansible playbooks anatomy

GSLB-TOOL MAIN CONFIGURATION

vars/setup.yml

GSLB_ZONE: gslb
BASE_DOMAIN: f5bddemos.io
backend: bigip

apiEndpoint:
  onprem: "https://openshift.onprem.f5bddemos.io:8443"
  aws: "https://openshift.aws.f5bddemos.io:6443"

resourceType:
  onprem: "Route"
  aws: "Route"

publicAddress:
  onprem:
    default: "12.202.13.146"
  aws:
    az1: "13.48.200.85"
    az2: "13.49.95.110"
OpenShift migration
F5 CLOUDSERVICES INFRASTRUCTURE INTEGRATION

Migrations would not be performed in a single pass.
Instead, these steps would be performed on a per-project basis, like the CAM migration tool.

0. Deploy new OCP cluster
1. CPMA
2. CAM
3. Provision GSLB SaaS with just a credit card
4. *ocp.company.com
5. Test DNS GSLB and applications
6. Change authoritative DNS for zone ocp.company.com
Q & A and Next Steps

Demo Video:  https://www.youtube.com/watch?v=TiAMINSBPns

Git Hub Repo:  https://github.com/f5devcentral/f5-bd-gslb-tool/

The F5 Red Hat Partnership:  www.f5.com/redhat

The F5 Ansible Partnership:  www.f5.com/ansible