



Cisco UCS Director Tech Module

F5 BigIP

Version: 1.0

October 2016

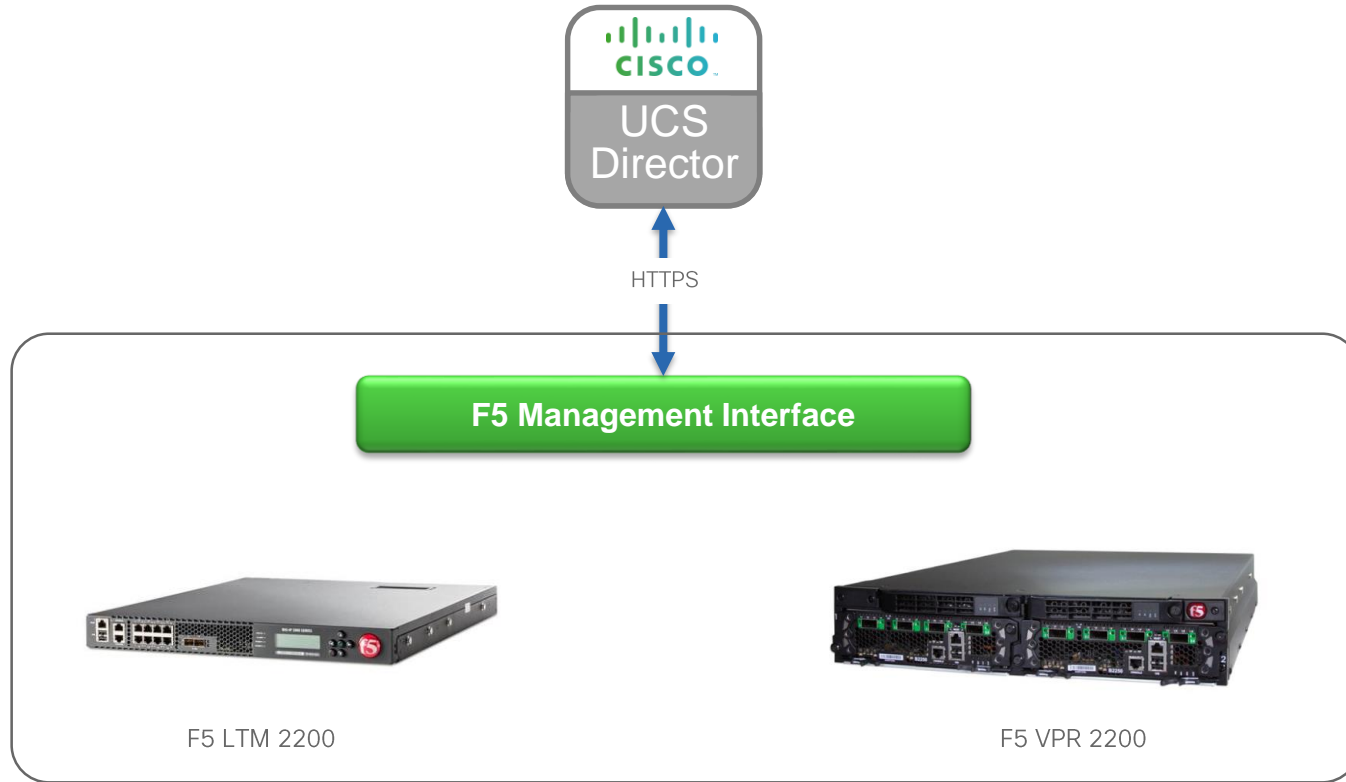
Agenda

- Overview & Architecture
- Hardware & Software Compatibility
- Licensing
- Orchestration Capabilities
- Reports
- Example Use-Cases



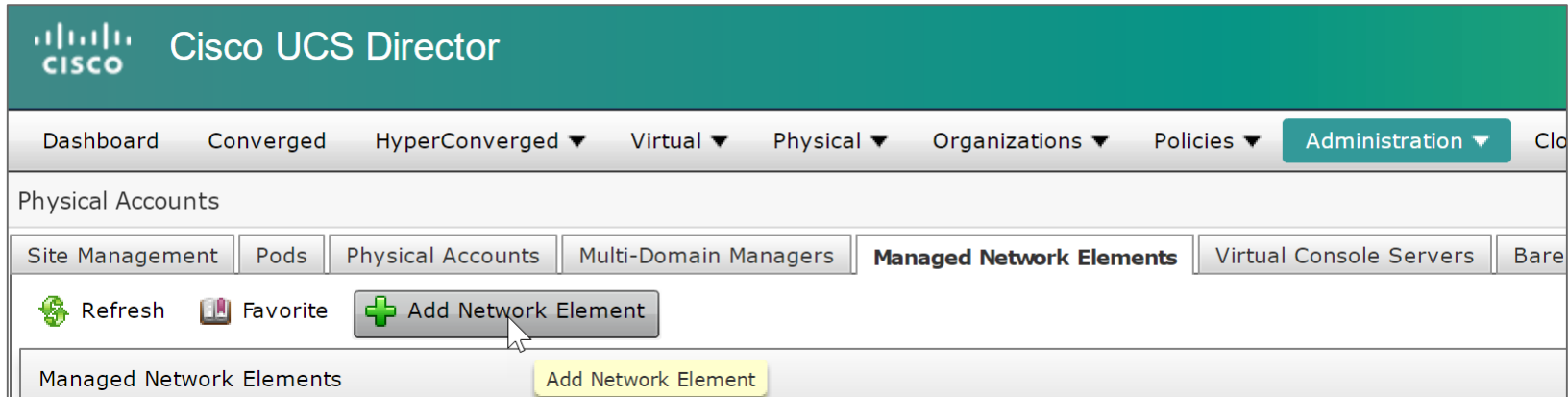
Architecture & Overview

UCS Director – F5 Integration Architecture



Adding an F5 Account

- Navigate to **Administration** → **Physical Accounts**, choose the **Managed Network Elements** tab and click **Add Network Element**



The screenshot displays the Cisco UCS Director web interface. At the top, the Cisco logo and 'Cisco UCS Director' are visible. Below this is a navigation bar with tabs for Dashboard, Converged, HyperConverged, Virtual, Physical, Organizations, Policies, Administration, and Close. The 'Administration' tab is selected. Underneath, the 'Physical Accounts' section is active, with sub-tabs for Site Management, Pods, Physical Accounts, Multi-Domain Managers, Managed Network Elements, Virtual Console Servers, and Bare. The 'Managed Network Elements' sub-tab is selected and highlighted. In this sub-tab, there are three buttons: Refresh, Favorite, and Add Network Element. The 'Add Network Element' button is highlighted with a yellow background and a mouse cursor is pointing at it. Below the sub-tab, there is a header 'Managed Network Elements' and a yellow 'Add Network Element' button.

Adding a F5 Account

- Enter the information about the F5 device to add the account

Add Network Element

Pod *

Device Category

Device IP *

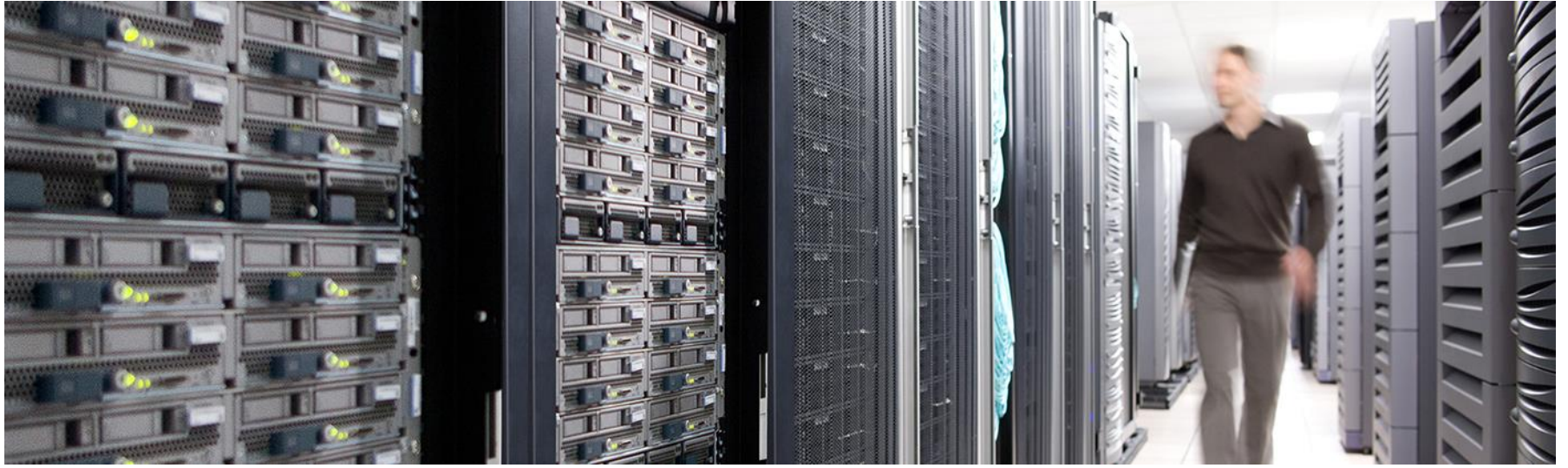
Use Credential Policy

Protocol

Port

Login *

Password *



Hardware & Software Compatibility

IMPORTANT!!

- The following slide featuring support information may be out of date
- **ALWAYS** check the most up to date version of the UCS Director Compatibility Matrix
- The latest Compatibility Matrix and other supporting UCS Director documentation can be found at the following location:

http://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/ucs-director/doc-roadmap/b_UCSDirectorDocRoadmap.html

UCS Director F5 BigIP Support

(as of UCS Director 6.0)

| Supported Models | Supported Software |
|------------------|--|
| Big-IP LTM 2200 | 11.5.1 11.6.0 (4.0.420) 12.0.0 (0.0.606) |
| Big-IP VPR 2200 | 12.0.0 (0.0.606) |



Licensing

Licensing Information

- UCS Director licensing is purchased solely in the form of physical server licenses
- Each physical server license includes a storage device license and a network device license as well.
- UCS Director tracks the number of physical servers, storage and network devices being managed against the number of installed licenses.
- If additional storage and/or network device licenses are required, you can purchase additional physical server licenses

Licensing Information

- Each managed/added F5 account, is counted as a network device license in UCS Director
- **NOTE!:** network device licenses are included in and solely available by purchasing additional physical server licenses for UCS Director

Licensing Examples



Example 1

Network Device X 6_{/50}

Physical Server X 50_{/50}

Storage Device X 8_{/50}

Total Physical Server Licenses Required: **50**

Qty. to be managed

Total licenses available

Example 2

Network Device X 0_{/8}

Physical Server X 0_{/8}

Storage Device X 8_{/8}

Total Physical Server Licenses Required: **8**

Storage Device License Included in Physical Server License

Example 3

Network Device X 10_{/10}

Physical Server X 4_{/10}

Storage Device X 2_{/10}

Total Physical Server Licenses Required: **10**

Network Device License Included in Physical Server License



Orchestration Capabilities

Orchestration Capabilities

- UCS Director provides Orchestration tasks to automate F5 configurations to provision and de-provision the below objects. (as applicable to the platform)
 - Virtual Server
 - Member Pool
 - Application Service
 - Partitions
 - Device Group
 - Traffic Group

Orchestration Capabilities

Virtual Server

- Create F5 Load Balancer Virtual Server
- Delete F5 Load Balancer Virtual Server
- Modify F5 Load Balancer Virtual Server
- Update Traffic Group to Virtual Server Address

Traffic Group

- Create F5 Load Balancer Traffic Group
- Delete F5 Load Balancer Traffic Group
- F5 Load Balancer Force Traffic Group To Standby
- Modify F5 Load Balancer Traffic Group

Partition

- Create F5 Load Balancer Partitions
- Delete F5 Load Balancer Partition

Application Service

- Create F5 Load Balancer Application Service
- Modify F5 Load Balancer Application Service
- Delete F5 Load Balancer Application Service

Device Group

- Create F5 Load Balancer Device Group
- Delete F5 Load Balancer Device Group
- Modify F5 Load Balancer Device Group

Pool

- Add Member to F5 Pool
- Remove Member from F5 Pool
- Create F5 Load Balancer Pool
- Delete F5 Load Balancer Pool



Reports

Tabular Reports and Information

- Application Services
- Application Templates
- Virtual Servers
- Virtual Servers Statistics
- Virtual Address
- Pool
- Pool Statistics
- Node List
- TCP Profiles
- Node Statistics
- UDP Profiles
- Partition
- Device Group
- Traffic Group
- Device Info
- HA Group



Example Use-Cases

Example Use-Cases

Use-Case #1: Configure Partition, Virtual Server and Server Pool

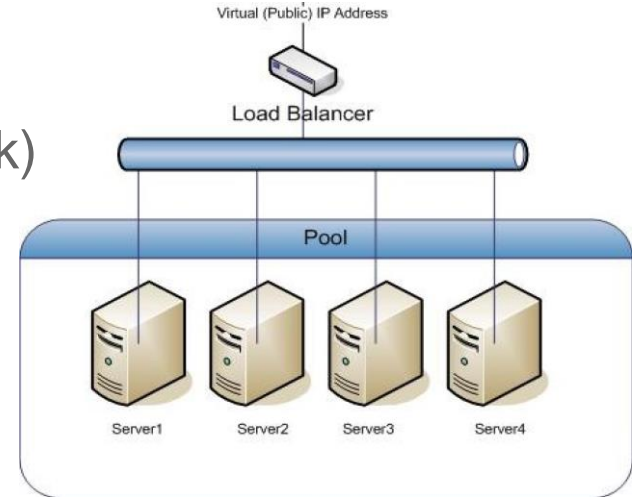
Use-Case #2: Configure Device Group, Traffic Group and update Virtual Server

Use Case # 1

UCSD has all built-in tasks to create a load-balancing setup on F5 BigIP Platforms.

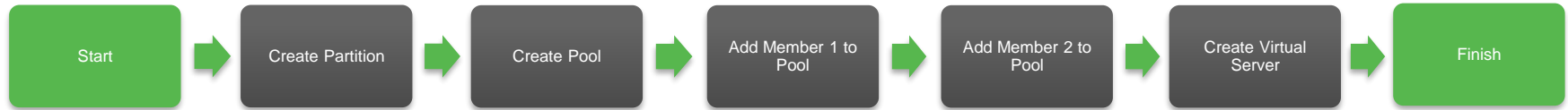
In this usecase:

- UCSD creates partition on F5 (optional task)
- Configures Virtual Server (VIP)
- Creates Server Pool and adds members
- Maps the Pool to Virtual Server



Use Case # 1

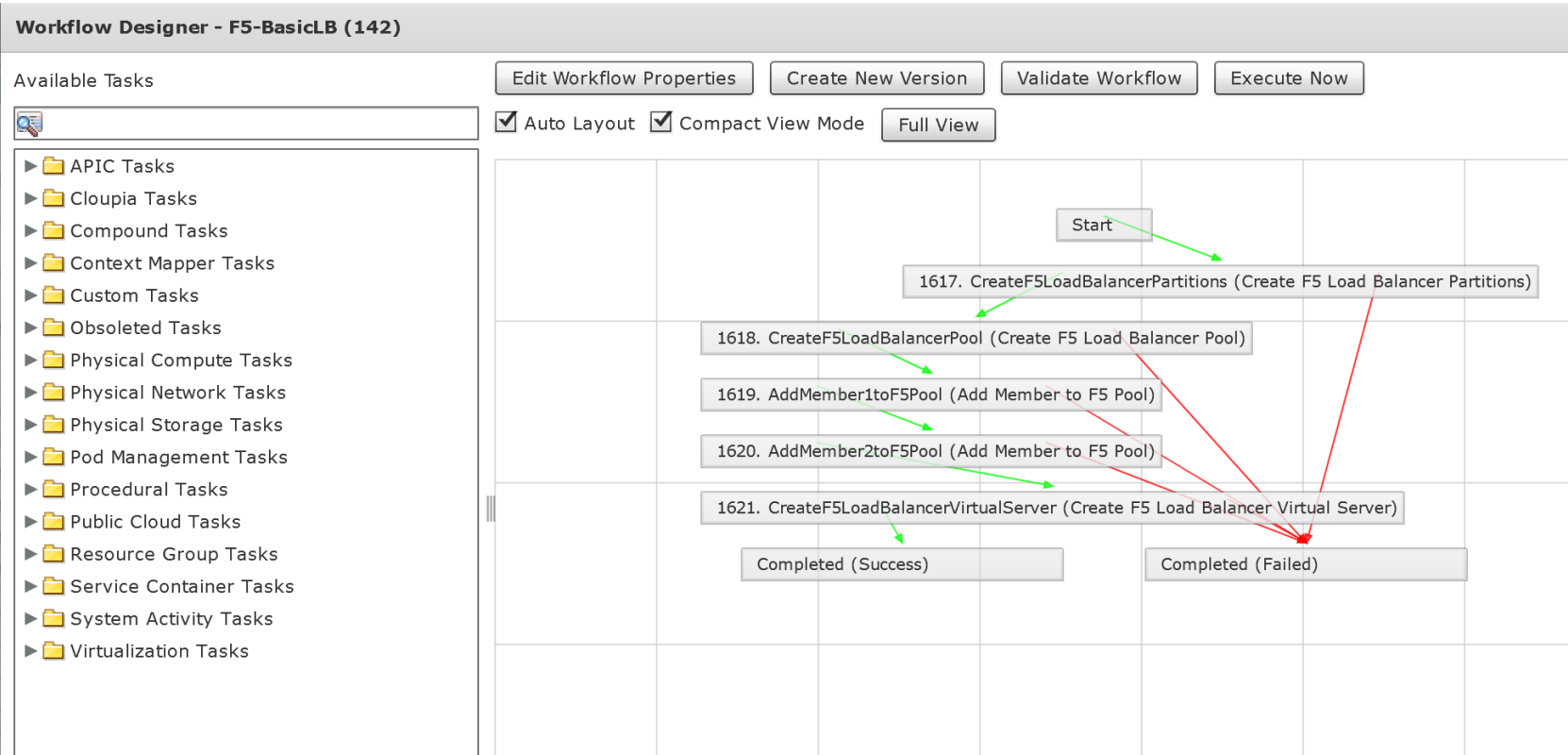
- Flowchart to create Partition and provision Virtual Server and Member Pool on F5 BigIP Platform is as shown below



- Workflow can be downloaded from the UCS Director community site <https://communities.cisco.com/docs/DOC-69985>

Use Case # 1

The actual workflow for this use case is as shown below:



Use Case # 1

Execute the workflow and provide the requested user inputs...

Executing Workflow: F5-BasicLB

Workflow Version:
0 (default version) *

Partition Name: Partition1 *

Server-Pool Name: LBPool *

Virtual Server Name: Virtual-IP Server Name: VIP1 *

Virtual IP Address: 202.2.2.2 *

Virtual IP Port: Port #: 80 *


Submit Close

Use Case # 1

Service Request completion

Workflow Status | Log | Objects Created and Modified | Input/Output

Service Request

Status  Refresh

▼ Overview

| | | | | |
|------------------------|------------------------------|---|--|---------------------|
| Request ID | 27 | 1 | Initiated by admin | 10/11/2016 16:08:02 |
| Request Type | Admin Workflow | 2 | Create F5 Load Balancer Partitions | 10/11/2016 16:08:07 |
| Workflow Name | F5-BasicLB | 3 | Create F5 Load Balancer Pool | 10/11/2016 16:08:09 |
| Workflow Version Label | 0 | 4 | Add Member to F5 Pool | 10/11/2016 16:08:15 |
| Request Time | 10/11/2016 16:07:59 GMT-0700 | 5 | Add Member to F5 Pool | 10/11/2016 16:08:22 |
| Request Status | Complete | 6 | Create F5 Load Balancer Virtual Server Completed action | 10/11/2016 16:08:38 |
| Comments | | 7 | Complete Completed successfully. | 10/11/2016 16:08:41 |

▼ Ownership

| | |
|-----------------|-------|
| Initiating User | admin |
|-----------------|-------|

Current status for the service request.

Use Case # 1

F5 Verification

Hostname: B2150-B1.cisco.com Date: Oct 12, 2016 User: admin
IP Address: 172.31.240.129 Time: 10:18 AM (PDT) Role: Administrator

Cluster Enabled
Slot 4: Active
Sync Failed

Main Help About Local Traffic >> Virtual Servers : Virtual Server List >> VIP1

Properties Resources Statistics

General Properties

| | |
|----------------------------------|---|
| Name | VIP1 |
| Partition / Path | Partition1 |
| Description | Created by UCSD |
| Type | Standard |
| Source Address | 0.0.0.0/0 |
| Destination Address/Mask | 202.2.2.2 |
| Service Port | 80 HTTP |
| Notify Status to Virtual Address | <input checked="" type="checkbox"/> |
| PVA Acceleration | None |
| Availability | <input checked="" type="checkbox"/> Unknown (Enabled) - The children pool member(s) either don't have service |
| Synccookie Status | Off |
| State | Enabled |

Hostname: B2150-B1.cisco.com Date: Oct 12, 2016 User: admin
IP Address: 172.31.240.129 Time: 10:15 AM (PDT) Role: Administrator

Cluster Enabled
Slot 4: Active
Sync Failed

Main Help About Local Traffic >> Pools : Pool List >> LBPool

Properties Members Statistics

General Properties

| | |
|------------------|---|
| Name | LBPool |
| Partition / Path | Partition1 |
| Description | Created by UCSD |
| Availability | <input checked="" type="checkbox"/> Unknown (Enabled) - The children pool member(s) either don't have service |

Configuration: Basic

Health Monitors

| Active | Available |
|--------|----------------------|
| | /Common gateway_icmp |
| | http |
| | http_head_f5 |
| | https |

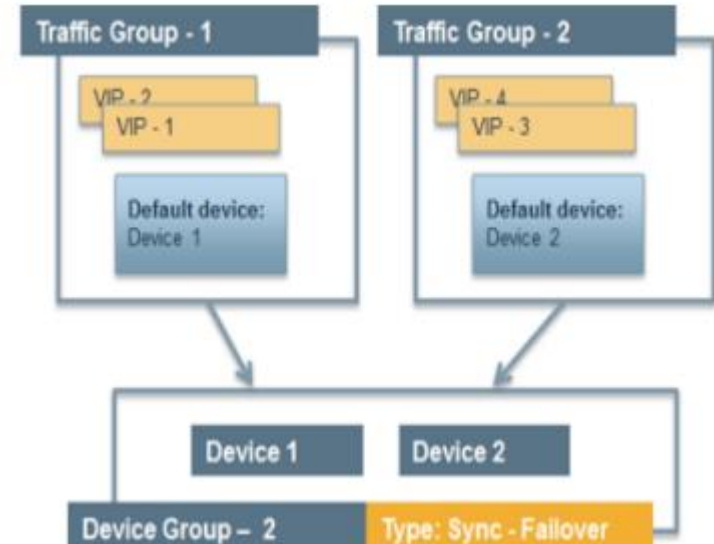
Update Delete

Use Case # 2

UCSD configures Device Group and Traffic Groups on pair of F5 devices which are pre-configured to be in active-active setup

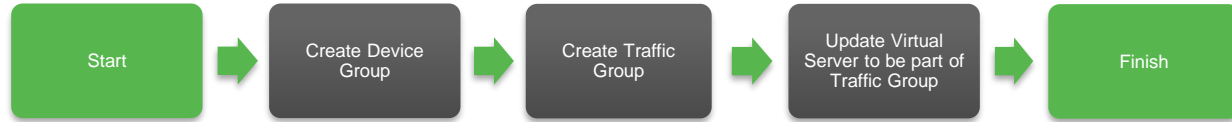
In this usecase:

- UCSD creates Device Group
- Configures Traffic Group
- Updates existing Virtual Server to be part of Traffic Group



Use Case # 2

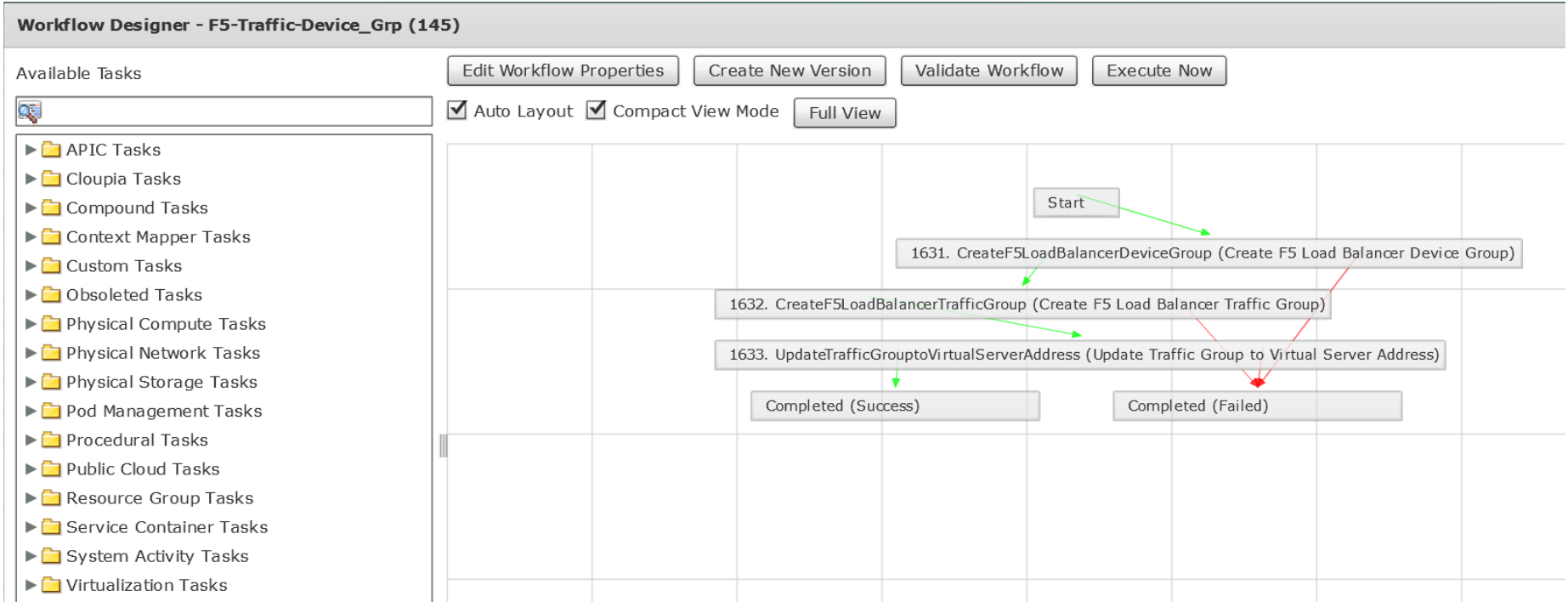
- Flowchart to create Device Group, Traffic Group and updating Virtual Server to be part of Traffic Group is as shown below



- Workflow can be downloaded from the UCS Director community site <https://communities.cisco.com/docs/DOC-69986>

Use Case # 2

The actual workflow for this use case is as shown below:



Use Case # 2

Execute the workflow and provide the requested user inputs...

Executing Workflow: F5-Traffic-Device_Grp

Workflow Version:

0 (default version) ▾ *

Device Group Name → Device-Grp Name *

Traffic Group Name → Traffic-Grp Name *


Select Virtual Server IP to be mapped → Select Virtual Server 192.168.10.128 *

Use Case # 2

Service Request completion

Workflow Status | Log | Objects Created and Modified | Input/Output

Service Request

Status  Refresh

▼ Overview

| | |
|------------------------|------------------------------|
| Request ID | 30 |
| Request Type | Admin Workflow |
| Workflow Name | F5-Traffic-Device_Grp |
| Workflow Version Label | 0 |
| Request Time | 10/12/2016 10:38:17 GMT-0700 |
| Request Status | In Progress |
| Comments | |

▼ Ownership

| | |
|-----------------|-------|
| Initiating User | admin |
|-----------------|-------|

Current status for the service request.

- 1 **Initiated by admin** 10/12/2016 10:38:18
- 2 **Create F5 Load Balancer Device Group** 10/12/2016 10:38:24
- 3 **Create F5 Load Balancer Traffic Group** 10/12/2016 10:38:28
- 4 **Update Traffic Group to Virtual Server Addr...** 10/12/2016 10:38:31
Completed action
- 5 **Complete** 10/12/2016 10:38:36
Completed successfully.

Use Case # 2

F5 Verification

Hostname: B2150-B1.cisco.com Date: Oct 12, 2016 User: admin
IP Address: 172.31.240.129 Time: 11:41 AM (PDT) Role: Administrator

Cluster Enabled
Slot 4: Active
Sync Failed

Main Help About

Local Traffic » Virtual Servers : Virtual Address List » 192.168.10.128

Statistics
iApps
DNS
Local Traffic

- Network Map
- Virtual Servers
- Policies
- Profiles
- iRules
- Pools
- Nodes
- Monitors
- Traffic Class
- Address Translation

Acceleration

Properties Statistics

General Properties

| | |
|------------------|--|
| Name | 192.168.10.128 |
| Partition / Path | Common |
| Address | 192.168.10.128 |
| Traffic Group | <input type="checkbox"/> Inherit traffic group from current partition / path TrfGrp1 (floating) |
| Availability | <input checked="" type="checkbox"/> |
| State | Enabled |
| Auto Delete | <input checked="" type="checkbox"/> |

Configuration

| | |
|---------------------|---|
| Advertise Route | When any virtual server is available |
| Connection Limit | 0 |
| ARP | <input checked="" type="checkbox"/> Enabled |
| ICMP Echo | Enabled |
| Route Advertisement | <input type="checkbox"/> |

Update Delete



CISCO

TOMORROW starts here.