

# Agenda

## F5 BIG-IQ License Manager Introduction and Demo

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F5 BIG-IQ LM Introduction

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F5 BIG-IQ LM Demo

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Q&A

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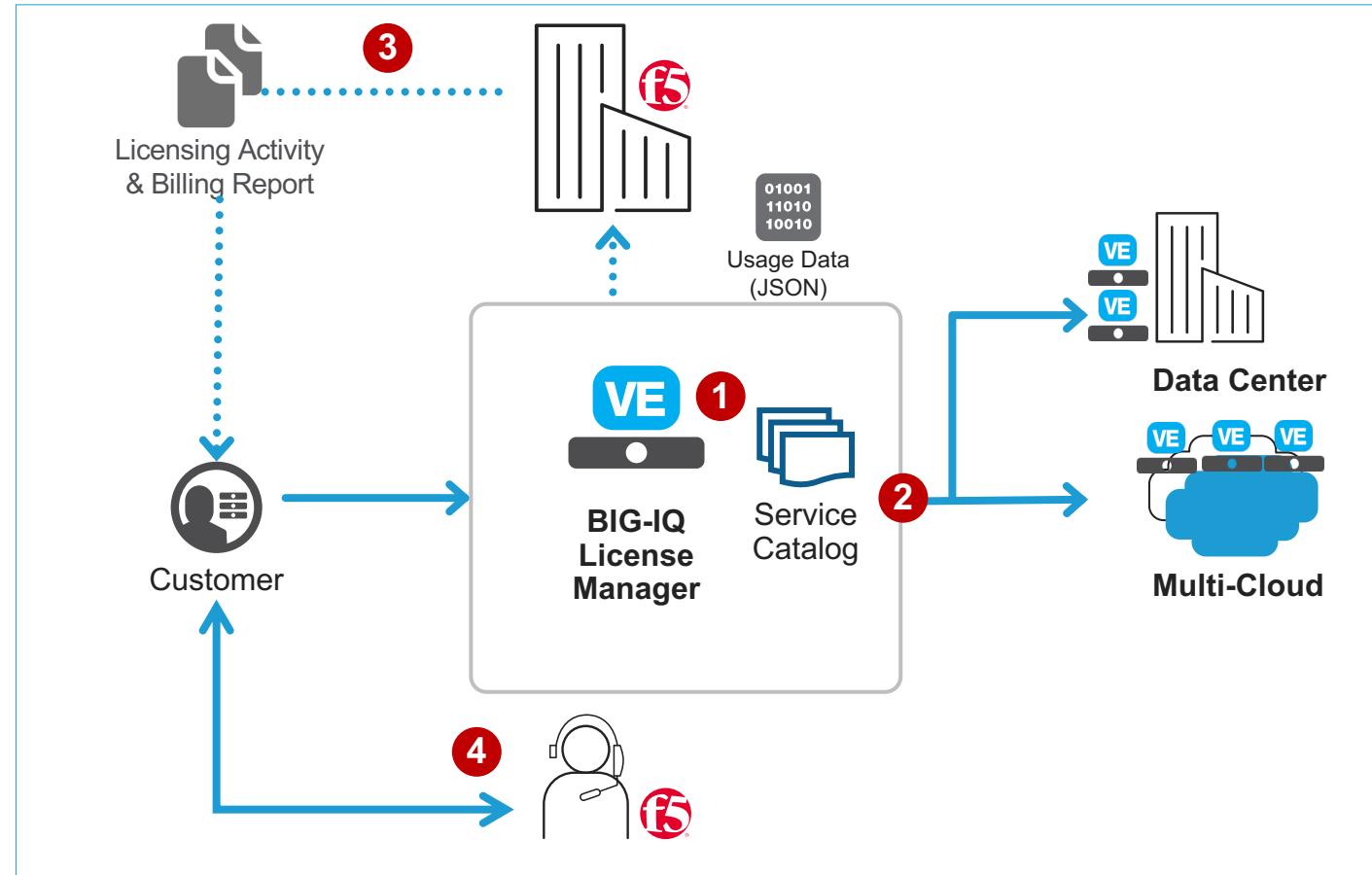


# F5 ELA: Deployment

## BIG-IP VE

### Implementation Details

- 1 All VE offerings populated on F5 BIG-IQ License Manager via Services Catalog, available for immediate deployment
- 2 Spin up licenses on-demand through BIG-IQ LM self-service. Easy Check-in/Check-out mobility to any environment. (BYOL)
- 3 Quarterly Licensing Activity Report & Run-Rate Report for visibility & budget control.
- 4 ELA VEs automatically covered with 24x7 F5 Premium support & software upgrades



# Communication between BIG-IQ LM and BIG-IP

- TCP port 443 by default
- Could be customized/changed

... / ... / ... / License Assignments \*

Managed Device Properties

License	F5-BIG-MSP-AFM-1G								
Unit of Measure	Yearly								
Chargeback Tag	hostname-01								
Managed Devices	Select... + -								
Unmanaged Devices	<table><thead><tr><th>Device Address</th><th>Port</th><th>Username</th><th>Password</th></tr></thead><tbody><tr><td>10.1.1.10</td><td>443</td><td></td><td></td></tr></tbody></table> <p>+ -</p>	Device Address	Port	Username	Password	10.1.1.10	443		
Device Address	Port	Username	Password						
10.1.1.10	443								

# Communication to Internet

Host name	IP address range (network address/mask bits)	Service/port	Service
activate.f5.com	104.219.104.0/21	HTTPS / 443	BIG-IP license activation BIG-IQ license activation BIG-IP Automatic Update Check BIG-IP Automatic Phone Home
api.f5.com	104.219.104.0/21	HTTPS / 443	BIG-IP Automatic Phone Home Uploads to BIG-IP iHealth BIG-IQ license usage reporting
ihealth-api.f5.com <sup>1</sup>	104.219.104.0/21	HTTPS / 443	Uploads to BIG-IP iHealth

# RBAC roles on BIG-IQ LM

## LICENSES MANAGER & REVIEWER ROLES

<input type="checkbox"/>	gw-lm	license manager	Local
<input type="checkbox"/>	gw-lv	license-viewer	Local

<input type="checkbox"/>	Name	Description
<input type="checkbox"/>	License Manager	Perform all tasks related to BIG-IP licensing.

<input type="checkbox"/>	Name	Description
<input type="checkbox"/>	License Viewer	Only view objects related to BIG-IP licensing.

# RBAC roles on BIG-IQ LM

## LICENSES MANAGER ROLE

The screenshot shows the BIG-IQ License Management interface. The left sidebar navigation includes 'Devices', 'System', 'BIG-IP DEVICES', 'BIG-IP DEVICE SILOS', 'DEVICE GROUPS', 'LICENSE MANAGEMENT', 'Licenses', 'Assignments', and 'Reports'. The 'Reports' item is highlighted. The main content area is titled '... / Schedule Utility Billing Report' and contains the following properties:

Properties	
Schedule Status	<input type="checkbox"/> Enable <input checked="" type="radio"/> Automatically submit report to F5 <input type="radio"/> Manually submit report to F5 (Please contact F5 Support for assistance.)
Submission Method	
Day/Time	Day of the Month: <input type="text" value="1"/> Start time: <input type="text" value="0"/> hour : <input type="text" value="0"/> minute (Australian Eastern Standard Time)
Obfuscate Data	<input type="radio"/> Yes <input checked="" type="radio"/> No
Email Notification	<input type="checkbox"/> Enable

# RBAC roles on BIG-IQ LM

## LICENSES REVIEWER ROLES – REVIEW ONLY

The screenshot shows the BIG-IQ License Management interface. The left sidebar has a tree view with nodes like 'BIG-IP I', 'BIG-IP I', 'DEVICE', 'LICENS', 'Licen', 'Assig', 'Repo', 'LICEN', 'DEVIC', 'BIG-IP DEVICES', 'BIG-IP DEVICE SILOS', 'DEVICE GROUPS', 'LICENSE MANAGEMENT', 'Licenses', 'Assignments', and 'Reports'. The 'Reports' node is highlighted. The main content area is titled 'License Reports' and contains a table with two rows:

<input type="checkbox"/> License Name	Pool Type	Report Type	Start Time	End Time ▾
<input type="checkbox"/> loadv1-pool	CLPv2	Utility Billing	Jan 01, 1970 10:00:00(A...)	Aug 01, 2022 17:00:00(A...)
<input type="checkbox"/> loadv10-pool	CLPv2	Utility Billing	Jan 01, 1970 10:00:00(A...)	Aug 01, 2022 17:00:00(A...)

# Usage reporting

# Run-rate Report

## PREVIEWS ANNUAL ADJUSTMENT

Delivered monthly. Account Manager will follow up in month 12 to review final utilization.

Subsequent year's trending annual commitment based upon previous quarter's Run Rates

Billing Term Year-to-date Monthly Run Rate comparison

ILLUSTRATIVE



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Chersey,  
Surrey KT16 8AP  
United Kingdom  
(+44) 0 1932 582 000 Voice  
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emeainfo@f5.com

Date Report Run	11-Feb-2019
Bill to Customer Name	Willieg Customer X
Bill To/Ship To Address	5558 Tech Drive Annual Payable Clearwater, FL 33758 United States
End Customer	End Customer Z

Monthly Run Rates	
December 2018	\$333,617.00
January 2019	\$405,551.00
January 2019	\$415,447.00

Trending Usage Adjustment <sup>a</sup>	
Annual Usage Commitment	\$348,753.00
Trending Annual Growth	\$47,545.00
Trending Real Year Annual Usage Commitment	\$556,455.00

<sup>a</sup>Actual/Annual Circuit calculation done in the final quarter of an Annual Term



	SV on HW	Virtual SV	Total
August 2018	40,000	42,311	82,311
September 2018	300,000	56,655	356,655
October 2018	350,000	24,828	374,828
November 2018	300,000	33,817	339,817
December 2018	300,000	103,631	403,631
January 2019	300,000	115,448	415,448

# activity report

# ILLUSTRATIVE

## USAGE MONITORING

# Tracks usage against commitment

Confirms usage including BIG-IP VE/CE, NGINX, and SW on HW

Allows for control and dispute of any reporting discrepancies in your reviews

<b>F5 Networks, Inc.</b>	<b>F5 Networks Singapore Pte Ltd</b>	<b>F5 Networks Ltd.</b>				
Corporate Headquarters	Asian Office	Europe/Middle-East/Africa				
401 Union Avenue West Seattle, WA 98119 (206) 272-5565 Voice (888) 888GIFUP Toll-Free (206) 272-5566 Fax info@f5.com	5 Tampines Boulevard #03-01/02 Suntec Tower Five Singapore 038965 (+65) 6533 6103 Voice (+65) 6533 6106 Fax apacinfo@f5.com	Charter Gate West 43-47 London Street Charteray Surrey KT16 8AP United Kingdom (+44) 0 1922 582 500 Voice (+44) 0 1922 582 201 Fax emeainfo@f5.com				
<b>Role Report Box</b>	<b>1st-Feb-2019</b>	<b>Reporting Period</b>				
<b>BILL To Customer Name</b>	<b>Billing Customer X</b>	<b>Mar 2019 - Jun 2019</b>				
<b>End Customer</b>	<b>Billing Customer Z</b>					
<b>Monthly Run Rate Product Detail</b>						
<b>Virtual Software</b>						
	<b>PS-9IG-MSP-BY-1Q</b>	<b>PS-9IG-MSP-BY-1Q-IFI</b>	<b>PS-9IG-MSP-BY-2M-IFI</b>	<b>PS-9IG-MSP-LTM-2M</b>	<b>Monthly Quantity</b>	<b>Total Price</b>
	<b>Overall Unit Price: \$4,837.55</b>	<b>Overall Unit Price: \$4,837.55</b>	<b>Overall Unit Price: \$4,837.55</b>	<b>Overall Unit Price: \$4,837.55</b>		
	<b>Quantity</b>	<b>Monthly Quantity</b>	<b>Total Price</b>	<b>Quantity</b>	<b>Monthly Quantity</b>	<b>Total Price</b>
Rep-2019	2	\$4837.55	\$4837.55			
Sep-2019						
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# BIG-IQ LM DEMO- Option1: Send DO Declaration to BIG-IP

## USE AUTOMATION TOOL TO AUTOMATE THE PROCESS

The screenshot shows a Postman interface for a POST request to `https://{{f5vm02}}/mgmt/shared/declarative-onboarding/`. The request body is a JSON object representing a Device configuration:

```
POST https://{{f5vm02}}/mgmt/shared/declarative-onboarding/
Params Auth Headers (12) Body Pre-req. Tests Settings
raw JSON Cookies Beautify
1 {
  "schemaVersion": "1.0.0",
  "class": "Device",
  "async": true,
  "label": "License BIG-IP via BIG-IQ utility license when BIG-IP is reachable from BIG-IQ",
  "Common": {
    "class": "Tenant",
    "hostname": "bigip-f5vm02.example",
    "myLicense": {
      "class": "License",
      "licenseType": "licensePool",
      "bigIqHost": "10.1.1.5",
      "bigIqUsername": "admin",
      "bigIqPassword": "*****",
      "licensePool": "loadv10-pool",
      "skuKeyword1": "MSP",
      "skuKeyword2": "AWF25M",
      "unitOfMeasure": "yearly",
      "reachable": true,
      "bigIpUsername": "admin",
      "bigIpPassword": "*****"
    }
  }
}
```

The response status is 202 Accepted, with a response time of 41.06 s and a size of 2.67 KB. The response body is also a JSON object:

```
Body Cookies (2) Headers (19) Test Results
Pretty Raw Preview Visualize JSON Save Response
1 {
  "id": "2d1aae1a-e075-410a-bafb-d09593777f33",
  "selfLink": "https://localhost/mgmt/shared/declarative-onboarding/task/2d1aae1a-e075-410a-bafb-d09593777f33",
  "result": {
    "class": "Result",
    "code": 200,
    "status": "OK",
    "message": "success"
  },
  "declaration": {
    "schemaVersion": "1.0.0",
    "class": "Device",
    "async": true,
    "label": "License BIG-IP via BIG-IQ utility license when BIG-IP is reachable from BIG-IQ",
    "Common": {
      "class": "Tenant",
      "hostname": "bigip-f5vm01.example",
      "myLicense": {
        "class": "License",
        "licenseType": "licensePool",
        "bigIqHost": "10.1.1.5",
        "bigIqUsername": "admin",
        "bigIqPassword": "*****"
      }
    }
  }
}
```

- Install DO on BIG-IP (could auto install DO when spin up a new BIG-IP by provisioning via Terraform in cloud)
- Send DO Declarations to BIG-IP to pull a license from BIG-IQ LM ( it also could be included in Terraform code as part of IaC approach)
- Send DO Declarations to BIG-IP to revoke (or relicense) a license from BIG-IQ LM

```
"id": "2d1aae1a-e075-410a-bafb-d09593777f33",
"selfLink": "https://localhost/mgmt/shared/declarative-onboarding/task/2d1aae1a-e075-410a-bafb-d09593777f33",
"result": {
  "class": "Result",
  "code": 200,
  "status": "OK",
  "message": "success"
},
"declaration": {
  "schemaVersion": "1.0.0",
  "class": "Device",
  "async": true,
  "label": "License BIG-IP via BIG-IQ utility license when BIG-IP is reachable from BIG-IQ",
  "Common": {
    "class": "Tenant",
    "hostname": "bigip-f5vm01.example",
    "myLicense": {
      "class": "License",
      "licenseType": "licensePool",
      "bigIqHost": "10.1.1.5",
      "bigIqUsername": "admin",
      "bigIqPassword": "*****"
    }
  }
}
```

# BIG-IQ LM DEMO- Option2: Send API calls (Not DO) to BIG-IQ LM

## USE AUTOMATION TOOL TO AUTOMATE THE PROCESS

- Send API calls to BIG-IQ LM to push a license from BIG-IQ LM to BIG-IP
- Send API calls to BIG-IQ LM to revoke (or relicense) a license from BIG-IP

BIG-IQ LM Demo / Assign(push) UtilityLicense via BIG-IQ LM (without DO)

POST https://{{big-iq}}/mgmt/cm/device/tasks/licensing/pool/member-management/

Params Authorization Headers (10) Body ● Pre-request Script Tests Settings Cookies Beautify

none  form-data  x-www-form-urlencoded  raw  binary  GraphQL JSON

```
1 {  
2   "licensePoolName": "loadv1-pool",  
3   "command": "assign",  
4   "address": "10.6.1.11",  
5   "skuKeyword1": "LTMAPP",  
6   "skuKeyword2": "1G1",  
7   "unitOfMeasure": "daily",  
8   "user": "admin",  
9   "password": "xxxxxx"  
10 }
```

Body Cookies Headers (10) Test Results

202 Accepted 103 ms 1.04 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {  
2   "licensePoolName": "loadv1-pool",  
3   "command": "assign",  
4   "address": "10.6.1.11",  
5   "user": "admin",  
6   "password": "aLkpgBCZ5ZxdZ47M9Fb19Vwvo0KziZ5vXy8RM36x1U=",  
7   "skuKeyword1": "LTMAPP",  
8   "skuKeyword2": "1G1",  
9   "unitOfMeasure": "daily",  
10  "id": "f1032eff-34eb-4202-8008-e45f6cfe3455",  
11  "status": "STARTED",  
12  "userReference": {  
13    "link": "https://localhost/mgmt/shared/authz/users/admin"  
14  },  
15  "identityReferences": [  
16    {  
17      "link": "https://localhost/mgmt/shared/authz/users/admin"  
18    }  
19  ],  
20  "ownerMachineId": "902df701-3060-427b-b7d9-970b49cf1a7d",  
21  "taskWorkerGeneration": 1,  
22  "generation": 1,  
23  "lastUpdateMicros": 1660110796709171,  
24  "kind": "cm:device:tasks:licensing:pool:member-management:devicelicensingassignmenttaskstate",  
25  "selfLink": "https://localhost/mgmt/cm/device/tasks/licensing/pool/member-management/  
f1032eff-34eb-4202-8008-e45f6cfe3455"  
26 }  
  
1 {  
2   "items": [  
3     {  
4       "id": "aacec074-9be1-4fdc-8342-d2898364fc9",  
5       "kind":  
6         "cm:device:tasks:licensing:pool:member-management:devicelicensingassignmenttaskstate"  
7         ,  
8         "port": 443,  
9         "user": "admin",  
10        "status": "FINISHED",  
11        "address": "10.6.1.11",  
12        "command": "assign",  
13        "selfLink": "https://localhost/mgmt/cm/device/tasks/licensing/pool/member-management/  
aacec074-9be1-4fdc-8342-d2898364fc9",  
14        "username": "admin",  
15     }  
16   ]  
17 }
```

