

Automate Application Provisioning User Guide



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Chapter 1: AppViewX Overview

Application-oriented companies can only accomplish true business agility through the automation of delivery infrastructure. At AppViewX, we believe that in order to power faster and more compliant application provisioning, Network Operations groups need to work smarter, not harder. Our platform offers a solid foundation to start your automation journey. It enables complete change-management automation by integrating with leading technology providers and defining workflows for all stages of application provisioning on ADC: validation, approval, implementation, and roll-back. To get started, you can download Free AppViewX, which comes with a series of preloaded automation templates.

Chapter 2: AppViewX Automation Templates

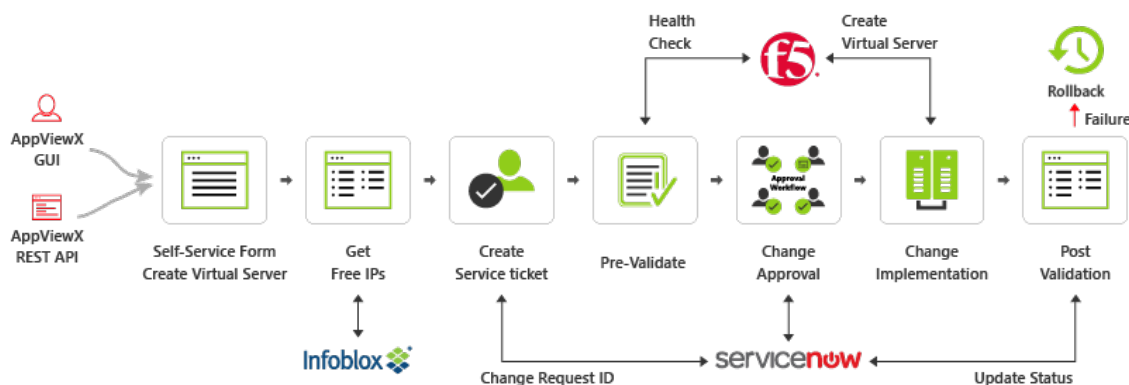
AppViewX comes with three automation templates to help you get started:

- Create Virtual Server
- Modify Virtual Server
- Delete Virtual Server

Each of these is discussed in detail in the sections below.

Create Virtual Server Template

The *Create Virtual Server* automation template creates a virtual server and associates it with profiles, monitors, pool, and pool members in F5 LTM using Infoblox and ServiceNow integration. It uses a simple, self-service based approach to gather application-provisioning requirements and generate vendor-specific configurations or REST APIs. This self-service template filters F5 ADC devices based on the user's access permissions, defined by Role Based Access Control (RBAC). The platform integrates with IPAM systems like Infoblox, which allows users to reserve a free IP address from the available address pools and create DNS binding for the new virtual server in Infoblox. The template also includes an option to create or bind existing profiles and monitors to the virtual server and allows users to create change request tickets in ITSM systems like ServiceNow for approvals and tracking. The service request change ID is associated with the work order and is updated based on the implementation status.

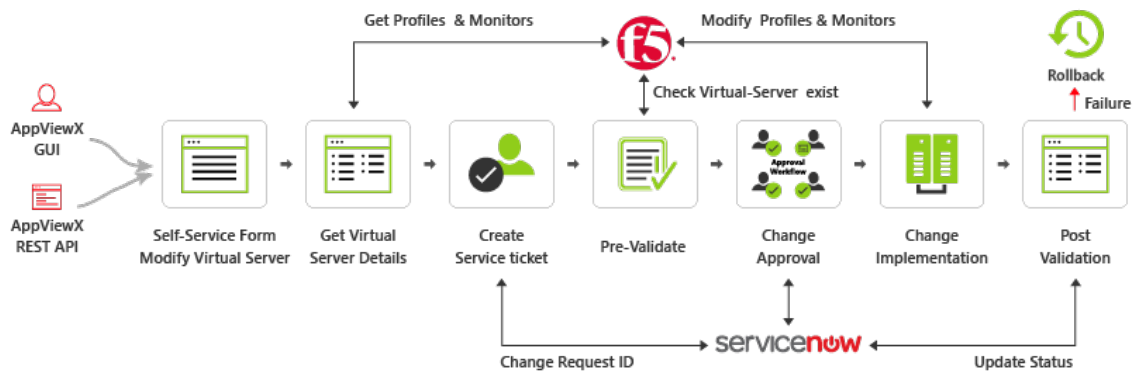


The work order pre-validates ADC device performance metrics (CPU and memory utilization) and confirms that the new virtual server and associated objects are not present. On successful pre-validation, the configuration changes are reviewed through a two-level approval process: first by ServiceNow, then by AppViewX. After approval is received, the configuration changes are implemented on the ADC device. A post-validation script ensures the virtual server and the associated objects are created successfully. In case of failure, all changes implemented within the work order can be rolled back easily.

Modify Virtual Server Template

With the *Modify Virtual Server* automation template, users can add or delete iRules, profiles, monitors, and pool members on an existing virtual server. Like the Create Virtual Server template, this template filters F5 ADC devices based on the user's access permissions, defined by Role Based

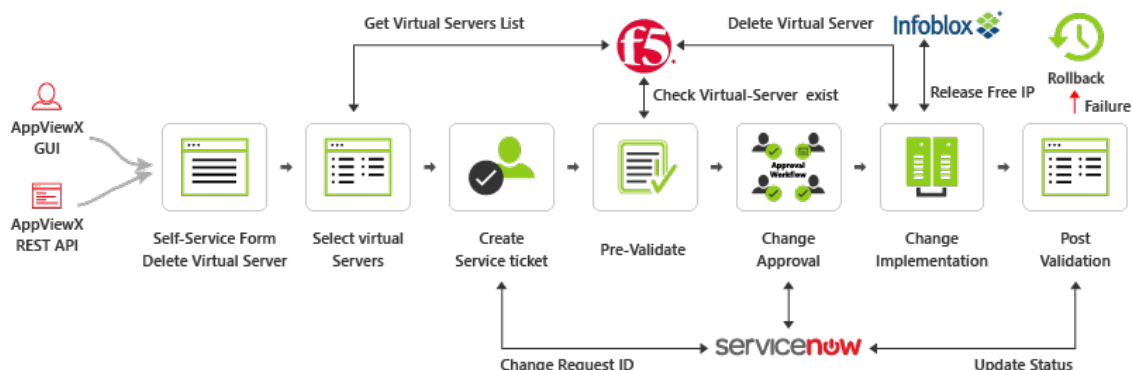
Access Control (RBAC), and displays the list of virtual servers available on the selected ADC device. When a virtual server is selected, object details like iRules, profiles, monitors, and pool members are displayed in the template fields. The template also provides an option to modify the association of these virtual server objects and allows users to create change request tickets in ITSM systems like ServiceNow for approvals and tracking. The service request change ID is associated with a work order and is updated based on the implementation status.



The work order that is generated confirms the existence of the virtual server and its associated objects before any changes are made. On successful pre-validation, the configuration changes are reviewed through a two-level approval process: first by ServiceNow, then by AppViewX. After approval is received, the configuration changes are implemented on the ADC device. A post-validation script ensures the virtual server and the associated objects are modified successfully. In case of failure, all changes implemented within the work order can be rolled back easily.

Delete Virtual Server Template

Multiple virtual servers and the associated objects like profiles and monitors can be deleted using the *Delete Virtual Server* automation template. Like the Create and Modify templates, this template filters available F5 ADC devices based on a user's access permissions, defined by Role Based Access Control (RBAC), and displays the list of virtual servers available on the selected ADC device. It provides an option to release the virtual server IP address and delete the DNS records in a IPAM system, such as Infoblox. The template can also integrate with ITSM systems such as ServiceNow for approvals and governance. When the form is submitted, a change request is created and the service request change ID is associated with the work order. This is updated based on the implementation status.



The first step in the work order is a pre-validation check to see if the virtual server exists. If the server does exist, the configurations needed to delete the virtual server and its associated profiles and monitors are reviewed through a two-level approval process: first by ServiceNow and then by AppViewX. After approval is granted, the virtual server and its unused dependent objects, like profiles and monitors, are deleted. A series of post-validation scripts ensure that the virtual server is deleted and any orphan objects are removed. In case of failure, all changes implemented within the work order can be rolled back easily.

Chapter 3: Prerequisites

To run the application provisioning automation templates in your environment, the following prerequisites must be met:

- Free AppViewX is downloaded and installed.
- An F5 LTM device is added to AppViewX as a managed device.
- An Infoblox device is added to AppViewX (optional).
- ServiceNow is registered to AppViewX (optional).
- Multiple server nodes are running the application.

Chapter 4: Compatible Software Versions

The application provisioning automation templates have been validated for the following software versions:

- AppViewX – Free AppViewX version and AVX 11.4.3
- ServiceNow – Geneva version
- Infoblox – version 7.2.X
- F5 LTM – version 10.X, 11.X, or 12.X

Chapter 5: Application Provisioning Tasks

Within the AppViewX Provisioning module, you can perform a wide range of tasks, details of which are provided in this section.

Log In to AppViewX

Log in to the AppViewX web interface. The standard format for a login URL is:


`http://hostname:portnumber.`

The hostname and port number are configured during deployment, with the default port number set to 5004 and the default web credentials set to `admin/admin`.

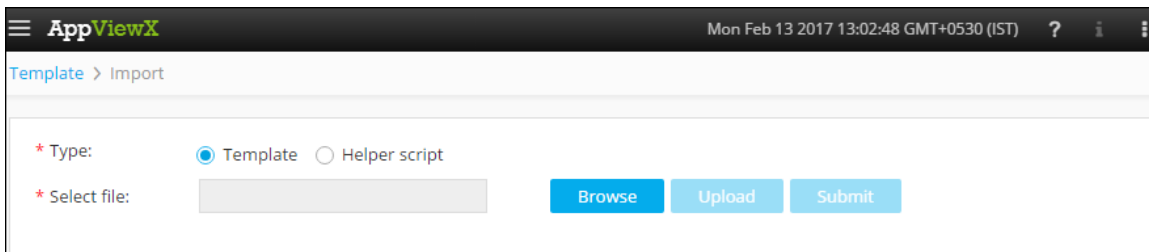
Note: It is recommended that you access AppViewX using Internet Explorer, Firefox, or Google Chrome.

Import Templates and Helper Scripts

Note: Free AppViewX comes preloaded with application provisioning automation templates and helper scripts. You will only need to use the following import instructions when newer versions of the templates and helper scripts become available.

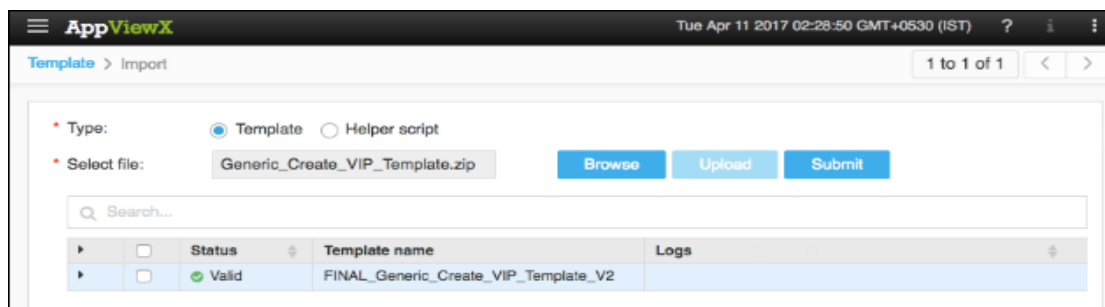
1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Provisioning > Templates**.
2. Click the  (**Import**) button in the Command bar in the top-right corner of the screen.

The following screen appears.

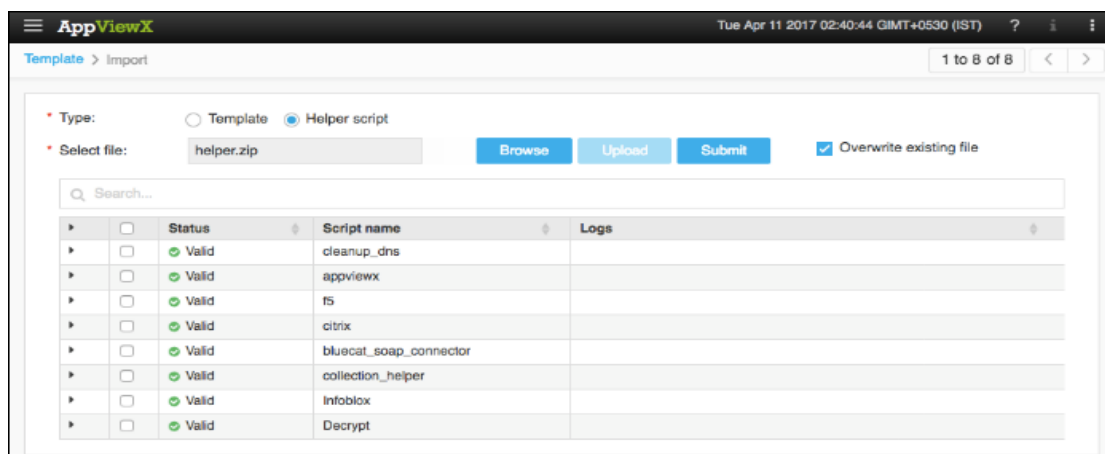



The screenshot shows the AppViewX web interface. The top header bar is dark with the AppViewX logo on the left and the date/time 'Mon Feb 13 2017 13:02:48 GMT+0530 (IST)' on the right. Below the header, there is a breadcrumb trail 'Template > Import'. The main content area has a form with two radio buttons: 'Template' (selected) and 'Helper script'. Below this is a 'Select file:' label followed by a text input field. To the right of the input field are three buttons: 'Browse' (blue), 'Upload' (light blue), and 'Submit' (light blue).

3. To import a template, complete the following sub-steps
 - a. Select the **Template** radio button.
 - b. Click **Browse**.
 - c. Select the template file you want to import.
 - d. Click **Upload** to import the file and view its contents.



- e. In the table at the bottom of the Import page, select the check box beside the unzipped template file.
 - f. Click **Submit** to deploy the templates into your AppViewX environment.
4. To import a helper script, complete the following sub-steps:
- a. Select the **Helper Script** radio button.
 - b. Click **Browse** and select the helper script zip file you want to import.
 - c. Click **Upload** to import the file and view its contents.



- d. In the table at the bottom of the Import page, select the check boxes beside each of the helper scripts.
 - e. Click **Submit** to deploy them into your AppViewX environment.
5. Navigate to **Provisioning > Template**.
- The newly imported templates are disabled by default.
6. Select the check box beside the template name, then click the  (**Enable**) button in the Command bar.
 7. Navigate to **Template > Settings > Configuration** and select the **Sequential device execution** check box.

The screenshot shows the AppViewX interface with the 'Settings' tab selected. The left sidebar has 'Configuration' selected under 'Request roles'. The main content area is divided into 'Email configuration' and 'Implementation settings'.

Email configuration:

- Notification:** A toggle switch is turned on.
- Create:** Checkboxes for 'Creator' and 'Review group' are present. An 'Enter email address' input field is to the right.
- Review:** Checkboxes for 'Creator' and 'Submit group' are present. An 'Enter email address' input field is to the right.
- Submit:** Checkboxes for 'Creator' and 'Submit group' are present. An 'Enter email address' input field is to the right.
- Reject:** Checkboxes for 'Creator | Reviewer' and 'Creator group | Reviewer group' are present. An 'Enter email address' input field is to the right.


Implementation settings:

- Sequential device execution:** A checkbox that is checked, highlighted with a red box.
- Enable request scenario:** A toggle switch is turned on.
- Request scenario limit:** A text input field containing the value '1'.

At the bottom, there are three buttons: 'Save', 'Save & enable', and 'Cancel'.

8. Click the **Save & enable** button.

Add an ADC Device: F5 LTM

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Inventory > Device**.
2. On the *Device* screen, click the **ADC** tab if it is not already visible.
3. Click the  (**Add**) button in the Command bar.
4. On the *Add* screen that opens, click to select **F5** as the ADC vendor.

AppViewX Thu Apr 13 2017 00:53:09 GMT+0530 (IST)

Device :: ADC > Add

Device details Device group

Vendors

- A10
- AVI
- Akamai
- Brocade
- Cisco
- Citrix
- F5**
- Radware

General information

* Modules ☒ LTM ☐ GTM ☐ vCMP Host

* IP address 192.168.40.153

* Device name SFO_F5_ADC_R23

Data center San Francisco

Cert sync ☒ Managed ☐ Monitored ☐ Ignored

AppViewX group sync ☒

Credentials

* Credential type Manual entry

* User name admin

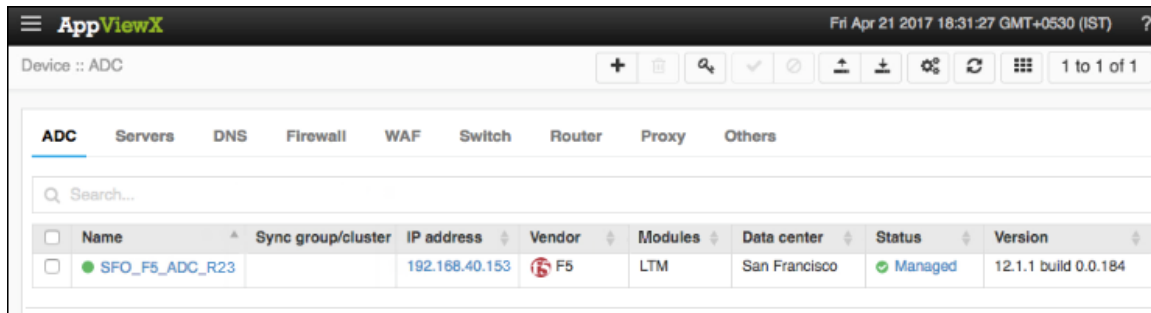
* Password

Secondary device information

Secondary / Failover / Sync group ☒ Auto detect ☐ Manual entry

Save Cancel

5. Select the module to be managed on the ADC device.
6. Create a **Device name** that is specific to AppViewX and that will identify the device in the AppViewX inventory.
7. Enter the **management IP address** of the device.
8. (Optional) Specify a **Data center location** if you want to have the option later to filter devices based on their location.
9. In the **Cert sync** field, select the radio button for the kind of synchronization relationship you want to establish between SSL certificates on the ADC device and AppViewX: **Managed**, **Monitored**, or **Ignored**.
10. (Optional) Select the **AppViewX group sync** check box if you need AppViewX to sync the configuration changes from an active to standby F5 ADC device. This is required in older F5 versions like v10. The latest versions of F5 sync automatically.
11. Select a **Credential type** from the drop-down menu.
12. Enter the **User name** and **Password** that are associated with the credentials.
Note: The user you enter in the **User name** field must have advanced shell access.
13. Select **Auto detect** to automatically detect and add secondary or failover devices or sync groups to the ADC device inventory.
14. Click **Save** to save the new ADC device on the ADC tab.




The screenshot shows the AppViewX web interface. At the top, there's a header with the AppViewX logo and a timestamp 'Fri Apr 21 2017 18:31:27 GMT+0530 (IST)'. Below the header, there's a navigation bar with tabs: ADC, Servers, DNS, Firewall, WAF, Switch, Router, Proxy, and Others. The 'ADC' tab is selected. Below the navigation bar, there's a search bar and a table of devices. The table has columns: Name, Sync group/cluster, IP address, Vendor, Modules, Data center, Status, and Version. One device is listed: SFO_F5_ADC_R23, with IP address 192.168.40.153, Vendor F5, Modules LTM, Data center San Francisco, Status Managed, and Version 12.1.1 build 0.0.184.

Name	Sync group/cluster	IP address	Vendor	Modules	Data center	Status	Version
SFO_F5_ADC_R23		192.168.40.153	F5	LTM	San Francisco	Managed	12.1.1 build 0.0.184

The device will display one of the following statuses:

- **In Progress** – Device configuration fetch is in progress.
- **Managed** - Device configurations are fetched and parsed successfully. This is the status a successfully added ADC device should have.
- **Unresolved** – Unable to communicate with device, due to invalid login credentials.
- **Failed** – Device configuration fetch failed, due to unsupported version.

Add an IPAM Device: Infoblox

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Inventory > Device**.
2. Click the **DNS** tab.
3. Click the  (**Add**) button in the Command bar.
4. On the *Add* page that appears, click to select **Infoblox** and enter the device's IP address and advanced shell access credentials.

AppViewX Thu Apr 13 2017 01:19:57 GMT+0530 (IST)

Device :: DNS > Add

Device details

Vendors

- B BIND
- Infoblox
- QIP

General information

* Grid master: Infoblox

* IP address: 192.168.40.23

Data center: San Francisco

Credentials

* Credential type: Manual entry

* User name: admin

* Password:

Secondary device information

Grid master candidate: ☐

Save Cancel

5. Click the **Save** button.

The device status on the DNS tab changes to **Available** to indicate the successful addition of Infoblox.

AppViewX Fri Apr 21 2017 05:21:07 GMT+0530 (IST)

Device :: DNS

ADC Servers **DNS** Firewall WAF Switch Router Proxy Others

Search...

	Name	IP address	Vendor	Data center	Object count	Version	Status
<input type="checkbox"/>	Infoblox_SFO	192.168.40.223	Infoblox	San Francisco		6.10	Available

Register an ITSM Device: ServiceNow

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Settings**.
2. On the Settings page that opens, click **Ticketing** in the column on the left.

AppViewX

Fri Apr 21 2017 18:36:38 GMT+0530 (IST)

Settings :: Ticketing

Authentication

Certificate

Provisioning

Ticketing

Device

Log forwarding

iHealth report

General Vendor configuration

Enable ticketing ☐

General settings

Enable polling ☐

Polling interval (mins) 5

Approve mode Override

Device / CI validation ☒

Timezone GMT

Implementation mode Stop

Log / Configuration settings

Select configuration type None selected

Consolidated logs ☐

Select log type None selected

Auto close ☐

Save Reset


3. Click the **General** tab, then click to select **Enable ticketing**.
4. Click **Save**.
5. On the **Vendor configuration** tab, choose **ServiceNow** from the **Type** drop-down menu, then enter the ServiceNow web URL and credentials.

The screenshot shows the AppViewX web interface. The top bar displays the AppViewX logo and the date/time: Fri Apr 21 2017 18:46:45 GMT+0530 (IST). The main header is 'Settings :: Ticketing'. On the left, a sidebar lists various settings: Authentication, Certificate, Provisioning, Ticketing (highlighted), Device, Log forwarding, and iHealth report. The main content area is titled 'General Vendor configuration'. It contains fields for 'Type' (set to 'ServiceNow'), 'URL' (set to 'https://ven01189.service-now.com/'), 'Username' (set to 'admin'), and 'Password' (masked with dots). Below these is a 'Configuration command' section with a large text area containing a single line of code: '1 {'. At the bottom right of the configuration area are 'Save' and 'Reset' buttons.

6. Click the **Save** button.
7. The F5 LTM device you are configuring should be present in the ServiceNow LB Hardware inventory. You can check this by opening ServiceNow and clicking to open the Load Balancers > LB Hardware section shown below. The device name used in the ServiceNow inventory and AppViewX ADC device inventory should be the same.

The screenshot shows the ServiceNow Service Automation interface. The top bar includes the ServiceNow logo, 'Service Automation', a search bar, and a 'Logout' button. The main header is 'Welcome: System Administrator'. The left sidebar contains a 'Configuration' menu with 'Load Balancers' highlighted by a red box. Below 'Load Balancers' are 'LB Hardware' and 'LB Applications'. The main content area is titled 'Load Balancer - 112.40'. It contains a form with fields for 'Name' (SFO_F5_ADC_R23), 'Company', 'Asset tag', 'Manufacturer', 'Asset', 'IP Address' (192.168.40.153), and 'Host name'. There are also fields for 'Serial number', 'Model ID', and 'Assigned to'. At the top of the form are 'Update' and 'Delete' buttons.

Create a Virtual Server

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Provisioning > Request**.
2. Click the  (**Add**) button in the Command bar.
3. Choose the **Create_Virtual_Server** template in the **Template Name** drop-down list.


Note: If the template is not available it is either not enabled or the import failed. Check the template status under **Provisioning > Template**.

The screenshot shows the 'AppViewX' interface with a 'Create' form. The form has the following fields and buttons:

- Template name:** A dropdown menu with 'Create Virtual Server' selected.
- Requestor name:** A text input field with 'admin' entered.
- Description:** A text input field with 'Create intranet' entered.
- Get F5 LTM Device List:** A blue button.
- F5 LTM Device:** A dropdown menu with '192.163.40.154' selected.
- App Name (FQDN):** A text input field with 'intranet2.appviewx.com' entered, followed by a help icon (?)
- IPAM Integration:** Radio buttons for 'No' and 'Yes' (selected).
- Get Infoblox Devices:** A blue button.
- Infoblox Device:** A dropdown menu with '192.168.50.12' selected.
- Subnet:** A dropdown menu with '10.164.73.0/24' selected, followed by a 'Fetch' icon.
- Reserve Free IP:** A blue button.
- Virtual Server IP:** A text input field with '192.168.41.4' entered.
- Virtual Server Port:** An empty text input field.
- Unreserve Free IP:** A blue button.
- Bottom buttons:** 'Save draft', 'Submit', and 'Cancel'.

4. Enter a **description** for the provisioning request.
5. Click the **Get F5 LTM Device List** button to fetch the list of managed F5 LTM devices.
6. In the **F5 LTM Device** field, select the device on which the virtual server is to be created.
7. Enter a valid virtual server name in the **App Name** field. The name should be suffixed with a valid DNS domain name.

Note: The parent domain specified in the App Name (FQDN) must be present in Infoblox to fetch the free IP address. If the domain is not present, the user will receive a warning message indicating failure to fetch the free IP address. Create the domain under the default DNS view in Infoblox.

8. If **IPAM integration** is required, select the **Yes** radio button. The self-service form fields are updated automatically based on the selection.
 - a. Click the **Get Infoblox Devices** button to fetch the available list of Infoblox devices.
 - b. Select the **Infoblox Device** from the drop-down list, which will assign the free IP address.
 - c. Retrieve the list of subnets available on the selected Infoblox device by clicking the  (**Fetch**) button and selecting the required subnet.
 - d. Click the **Reserve Free IP** button to reserve a free IP address from the selected subnet. DNS binding is created for the virtual server with this IP addresses on Infoblox.

- e. If the IP address is reserved from an incorrect subnet, click the **Unreserve Free IP** button to delete the DNS binding and release the IP address in Infoblox.
- f. Enter the **Virtual Server Port** number used to access the application.


If IPAM integration is not required, select **No**.

- a. Enter a virtual server IP in the **Virtual Server IP** field.
- b. Enter a virtual server port in the **Virtual Server Port** field.

* IPAM Integration	<input checked="" type="radio"/> No <input type="radio"/> Yes
* Virtual Server IP	192.168.41.4
* Virtual Server Port	443

9. Click the **Get LTM Device Details** button to retrieve virtual server related details from the selected device and populate the form fields, like profiles and monitors.
10. Select **Persistence Profile** from the list of available profiles.
11. Select **Yes** in the **Associate HTTP Profile** field, then select **HTTP Profile** from the available drop-down list.
12. Select **Yes** in the **Create HTTP Monitor** field to associate it with the virtual server.
13. Create a new HTTP monitor with the following field settings:

* Create HTTP Monitor	<input checked="" type="radio"/> Yes <input type="radio"/> No
* Interval(seconds)	14
* Timeout(seconds)	5
* Send String	GET /test/index
Receive String	200 OK

- **Interval (seconds)** – The frequency at which the monitor will check the health of HTTP service on a pool
 - **Timeout (seconds)** – Specify the time to wait for an expected response, before changing the status of pool as down.
 - **Receive String** – Response string expected as part of http server response.
 - **Send String** – Query string sent as part of http client request.
14. Select an existing monitor in the **Associate Existing Monitor** drop-down list to associate it with the created Virtual Server.
 15. Select the load-balancing algorithm from the **Load Balancing Method** drop-down list.
 16. Add pool members to the table by specifying the **Pool Member IP** and **Pool Member Port** and clicking the  (**Add**) button. Add all pool members who should be associated with the

created virtual server.

Pool Member IP: 10.0.0.35

Pool Member Port: 80

Buttons: +, edit, C, trash

Pool Members:

	Pool Member IP	Pool Member Port	Ratio
<input type="checkbox"/>	10.0.0.23	80	
<input type="checkbox"/>	10.0.0.15	80	

17. In the **ITSM Integration** field, select **Yes**. This creates a ServiceNow change request ticket and binds it with the work order to update the ServiceNow status.

ITSM Integration: ☐ No ☒ Yes

Time Zone: Africa/Abidjan

Planned Start Date: 05/12/2017 12:44:41

Planned End Date: 05/12/2017 14:44:47

Create ServiceNow Request

Change Request ID: CHG0032594

18. Select the **Time Zone** of the F5 LTM device that you are configuring.
19. Schedule the maintenance window time and date using the **Planned Start Date** and **Planned End Date** fields. The configuration changes will be implemented during this maintenance window.
20. Click the **Create ServiceNow Request** button to create a new ServiceNow ticket and auto-populate the **Change Request ID** field.

AppViewX then creates the ServiceNow change request and populates the change request fields like **Configuration item**, **Planned start date**, and **Planned end date** from the self-service form. The **Change plan** field is populated with the proposed F5 LTM configuration changes, which can be reviewed at any time by the approver.

ServiceNow Service Automation

Welcome: System Administrator

Change Request - CHG0032310 [Text_search view]

Number: CHG0032310

Requested by: [Search]

Category: Hardware

Configuration item: 41.101

Priority: Low

Impact: 1 - High

Approval: Requested

Type: Comprehensive

State: Work in Progress

Conflict status: Not Run

Conflict last run: [Search]

Assignment group: [Search]

Assigned to: [Search]

Planning

Change plan: tmsh,create cil transaction,create ltm monitor http_mon_http_516 { interval 5 timeout 16 send GET /test/index.html rcv 200 OK },create ltm profile http_prof_http_intra_443 defaults-from http,create ltm pool pool_intra_443 load-balancing-mode round-robin members add { 10.0.0.23:80 10.0.0.35:80 } monitor http_mon_http_intra_443 and tcp_test,create ltm virtual vs_intra_443 destination 192.168.41.243:443 profiles add { http_prof_http_intra_443 } persist replace-all-with { source_addr } pool pool_intra_443,submit cil transaction,quit

Backout plan: [Text Area]

Test plan: [Text Area]

Schedule

Requested by date: [Calendar]

Planned start date: 2017-05-01 06:03:38

Planned end date: 2017-05-01 06:15:44

Work start: [Calendar]

Work end: [Calendar]

21. Click **Submit** to submit the self-service form and create the work order and associate it with the ServiceNow change request ID (RFC-ID) in the AppViewX system.


AppViewX Mon May 01 2017 18:42:54 GMT+0530 (IST)

Request

Search...

Request ID	Template name	Description	Requestor	Created date	RFC ID	Device / CI	Work order details	Status
R247	Create_Virtual_Server	Create intranet virtu...	sunil	05/01/2017 18:40:34	CHG0032310	41.101	279:In Progress	Open

Modify a Virtual Server

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Provisioning > Request**.
 2. Click the  (Add) button in the Command bar.
 3. Select the **Modify Virtual Server** template from the **Template Name** drop-down list.
- Note:** If the template is not available, it is either not enabled or the import failed. Check the template status by navigating to **Provisioning > Template**.

The screenshot shows the 'AppViewX' interface with a header bar displaying the date and time: 'Fri May 12 2017 16:44:35 GMT+0530 (IST)'. The main heading is 'Request > R71 : Modify Request'. The form contains the following fields and buttons:

- Template name:** A dropdown menu with 'Modify Virtual Server' selected.
- Requestor name:** A text input field containing 'testing'.
- Description:** A text input field containing 'Modify intranet'.
- Get F5 LTM Device List:** A blue button.
- F5 LTM Device:** A dropdown menu with '99_24' selected.
- Get Virtual Servers:** A blue button.
- Virtual Server:** A dropdown menu with 'gses312must.co.in_p_443' selected.
- Get Virtual Server Details:** A blue button.
- Persistence Profile:** A dropdown menu with 'ssl' selected.
- HTTP profile:** A dropdown menu with 'http' selected.
- Pool:** A text input field containing 'gses312must.co.in_p_443'.
- Load Balancing Method:** A dropdown menu with 'Round Robin' selected.
- Pool Member IP:** A text input field containing '192.168.10.35'.
- Pool Member Port:** A text input field containing '80'.
- Save draft, Submit, Cancel:** Three blue buttons at the bottom of the form.

4. Enter a **description** for the provisioning request.
5. Click the **Get F5 LTM Device List** button to fetch the list of managed F5 LTM devices.
6. In the **F5 LTM Device** field, select the device that contains the virtual server that is to be modified.
7. Click the **Get Virtual Servers** button to fetch the list of virtual servers from the device.
8. Select a **Virtual Server** from the drop-down list.
9. Click the **Get Virtual Server Details** button to retrieve the virtual server configurations.
10. Select a **Persistence Profile** from the drop-down list.
11. Select an **HTTP Profile** from the drop-down list.
12. (Optional) Edit the **Pool Name** of the virtual server pool.

Pool Name: generic_pool

Load Balancing Method: Round Robin




Pool Member IP: 192.168.10.39

Pool Member Port: 80

Buttons: +, Modify, Refresh, Delete

Pool Members:

	Pool Member IP	Pool Member Port	Ratio
<input type="checkbox"/>	192.168.10.34	80	
<input type="checkbox"/>	192.168.10.57	80	

13. Select a **Load Balancing Method** for the pool members from the drop-down list.
The Pool Members corresponding to the selected virtual server are displayed in the table.
- (Optional) Modify an existing pool member by selecting the check box beside its name and clicking the  (**Modify**) button.
 - (Optional) Delete an existing pool member by selecting the check box beside its name and clicking the  (**Delete**) button.
 - (Optional) Add a new pool member by filling in the Pool Member IP and Pool Member Port fields and clicking the  (**Add**) button.
14. In the **Modify iRules** field, select the **YES** radio button.

Modify iRules: ☐ NO ☒ YES



iRule: _sys_auth_radius




Comments:

Buttons: +, Modify, Refresh, Delete

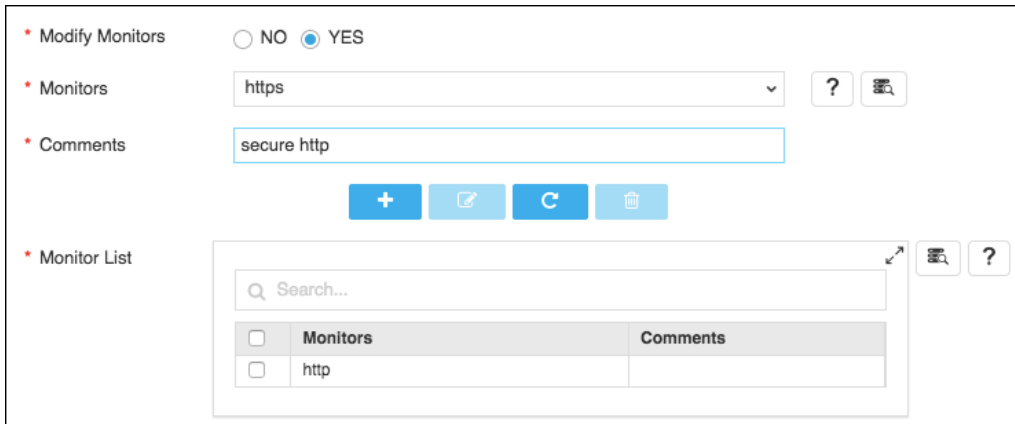
iRule List:

	iRule	Comments
<input type="checkbox"/>	_sys_auth_radius	Radius auth rule


- Click the  (**Fetch**) button at the right side of the **iRule** field to retrieve the list of available iRules for the selected F5 LTM device.
- In the **iRule** field, select an iRule from the drop-down list.
- In the **Comments** field, enter comments related to the iRule.
- Click the  (**Add**) button to associate the iRule with the virtual server.

- e. Click the  (**Fetch**) button under the iRule List field to retrieve the list of iRules already associated with the virtual server.
- f. (Optional) Modify or delete iRules in the **iRule List** using the  (**Modify**) button or the  (**Delete**) button.




15. In the **Modify Monitors** field, select the **YES** radio button.



* Modify Monitors ☐ NO ☒ YES

* Monitors ? 






* Comments

+   

* Monitor List

Search...

<input type="checkbox"/>	Monitors	Comments
<input type="checkbox"/>	http	

- a. Click the  (**Fetch**) button at the right side of the **Monitors** field to retrieve available monitors for the selected F5 LTM device.
 - b. In the **Monitors** field, select a monitor from the drop-down list to associate it with virtual server.
 - c. In the **Comments** field, enter comments related to the monitor.
 - d. Click the  (**Add**) button to associate the monitor with the virtual server.
 - e. Click the  (**Fetch**) button at the right side of the **Monitor List** field to retrieve the list of monitors already associated with the virtual server.
 - f. (Optional) Modify or delete monitors in the **Monitor List** using the  (**Modify**) button or the  (**Delete**) button.
16. In the **ITSM Integration** field, select the **Yes** radio button. This creates a ServiceNow change request ticket and binds it to the work order to update the ServiceNow status.

* ITSM Integration	<input type="radio"/> No <input checked="" type="radio"/> Yes
* Time Zone	Africa/Abidjan ?
* Planned Start Date	05/12/2017 12:44:41
* Planned End Date	05/12/2017 14:44:47
Create ServiceNow Request	
* Change Request ID	CHG0032594

- Select the **Time Zone** of the F5 LTM device that you are configuring.
- Schedule the maintenance window time and date using the **Planned Start Date** and **Planned End Date** fields. The configuration changes will be implemented during this maintenance window.
- Click the **Create ServiceNow Request** button to create a new ServiceNow ticket and auto-populate the **Change Request ID** field.

AppViewX then creates the ServiceNow change request and populates the change request fields like **Configuration item**, **Planned start date**, and **Planned end date** from the self-service form. The **Change plan** field is populated with the proposed F5 LTM configuration changes, which can be reviewed at any time by the approver.

The screenshot shows the ServiceNow interface for a Change Request. The left sidebar contains a navigation menu with categories like Self-Service, APS Templates, Device, PagerDuty, Configuration, Imports, Support, and Service Desk. The main content area displays the details for Change Request CHG0032509. Key fields include:


- Number:** CHG0032509
- Requested by:** [Searchable]
- Category:** Hardware
- Configuration item:** 192.168.41.237
- Priority:** Low
- Impact:** 1 - High
- Approval:** Requested
- Type:** Comprehensive
- State:** Work in Progress
- Conflict status:** Not Run
- Conflict last run:** [Empty]
- Assignment group:** [Searchable]
- Assigned to:** [Searchable]

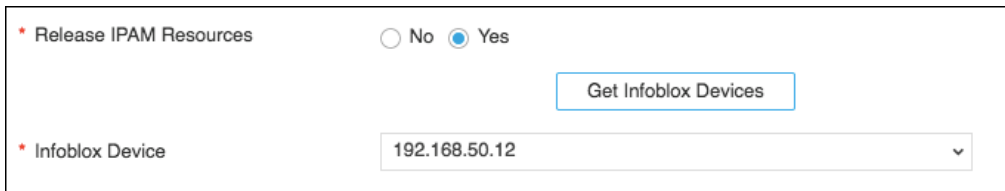
The **Planning** section is expanded, showing the **Change plan** field with the text: "tmsh,modify ltm virtual test_delete_vip disabled ,delete ltm virtual test_delete_vip,delete ltm pool test_delete_pool". Below this are fields for **Backout plan** and **Test plan**.

The **Schedule** section is also expanded, showing fields for **Requested by date**, **Planned start date** (2017-05-10 12:17:09), **Planned end date** (2017-05-11 12:17:15), **Work start**, and **Work end**.

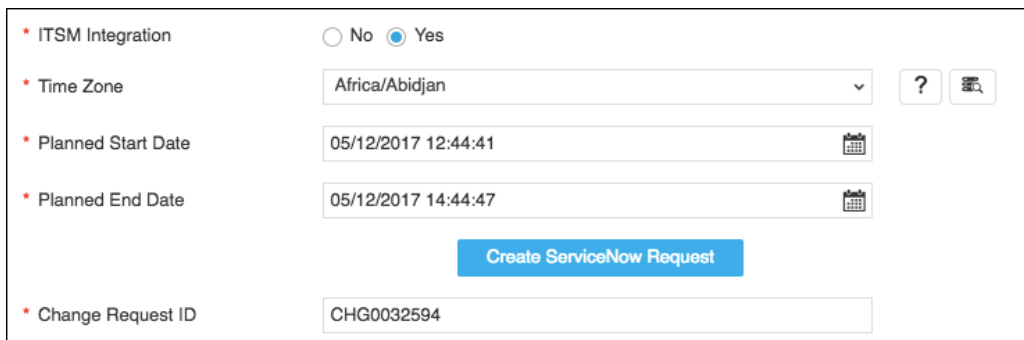
- Click **Submit** to submit the self-service form and create the work order and associate it with the ServiceNow change request ID (RFC-ID) in the AppViewX system.

Delete a Virtual Server

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Provisioning > Request**.
2. Click the  (**Add**) button in the Command bar to create a new service request.
3. Select the **Delete Virtual Server** template from the **Template Name** drop-down list.
Note: If the template is not available it is either not enabled or the import failed. Check the template status under **Provisioning > Template**.
4. Enter a **description** for the provisioning request.
5. Click the **Get F5 LTM Device List** button to fetch the list of managed F5 LTM devices.
6. In the **F5 LTM Device** field, select the device that contains the virtual server that you want to delete.
7. Click the **Get Virtual Servers** button to fetch the list of virtual servers on the device you selected in Step 6.
8. Select one or more virtual servers from the **Virtual Servers List** drop-down list.
9. In the **Release IPAM Resources** field, select the **Yes** radio button. This deletes the server's DNS records and releases the IP address assigned to the virtual server in Infoblox.



10. Click the **Get Infoblox Devices** button.
11. In the **Infoblox Device** field, select the Infoblox device that contains the DNS records you want to delete.
12. In the **ITSM Integration** field, select the **Yes** radio button. This creates a ServiceNow change request ticket and binds it to the work order to update the ServiceNow status.



- a. Select the **Time Zone** of the F5 LTM device that you are configuring.

- b. Schedule the maintenance window time and date using the **Planned Start Date** and **Planned End Date** fields. The configuration changes will be implemented during this maintenance window.
- c. Click the **Create ServiceNow Request** button to create a new ServiceNow ticket and auto-populate the **Change Request ID** field.

AppViewX then creates the ServiceNow change request and populates the change request fields like **Configuration item**, **Planned start date**, and **Planned end date** from the self-service form. The **Change plan** field is populated with the proposed F5 LTM configuration changes, which can be reviewed at any time by the approver.

The screenshot shows the ServiceNow interface for a Change Request. The left sidebar contains navigation links like 'Self-Service', 'APS Templates', 'Device', 'PagerDuty', 'Configuration', 'Imports', 'Support', 'Service Desk', 'Incident', 'Problem', and 'Change'. The main form area is titled 'Change Request - CHG0032509' and includes fields for 'Number', 'Requested by', 'Category', 'Configuration item', 'Priority', 'Impact', 'Approval', 'Type', 'State', 'Conflict status', 'Conflict last run', 'Assignment group', and 'Assigned to'. The 'Planning' section contains a 'Change plan' field with the text 'tmsh,modify ltm virtual test_delete_vip disabled ,delete ltm virtual test_delete_vip,delete ltm pool test_delete_pool'. The 'Schedule' section includes 'Requested by date', 'Planned start date', 'Planned end date', 'Work start', and 'Work end'.

13. Click **Submit** to submit the self-service form and create the work order and associate it with the ServiceNow change request ID (RFC-ID) in the AppViewX system.

The screenshot shows the AppViewX interface with a table of requests. The table has columns for Request ID, Template name, Description, Requestor, Created date, RFC ID, Device / CI, Work order details, and Status. A single request is listed with ID R449, Template name 'Delete Virtual Servers', Description 'Delete intranet', Requestor 'sunil', Created date '05/10/2017 00:10:56', RFC ID, Device / CI '192.168.50.12,1...', Work order details '548:In Progress', and Status 'Open'.

Request ID	Template name	Description	Requestor	Created date	RFC ID	Device / CI	Work order details	Status
R449	Delete Virtual Servers	Delete intranet	sunil	05/10/2017 00:10:56		192.168.50.12,1...	548:In Progress	Open

Review and Approve

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Provisioning > Request**.
2. Locate the submitted request you want to review, then click the **Request ID** number to view a snapshot it.

AppViewX Fri May 12 2017 17:52:38 GMT+0530 (IST)

Request > R57 : Snapshot

Snapshot Work order

* Template name: Create Virtual Server

Requestor name: admin

Description:

Get F5 LTM Device List

* F5 LTM Device: 41.237

* App Name (FQDN): newalink.appviewx.com

* IPAM Integration: ☐ No

* Virtual Server IP: 20.10.40.36

* Virtual Server Port: 443

Get LTM Device Details

* Persistence Profile: source_addr

* Associate HTTP Profile: ☐ No

* Create HTTP Monitor: ☐ No

Cancel

- Click the **Work Order** tab to view the work order details and status for the request.

AppViewX Mon May 01 2017 18:31:58 GMT+0530 (IST)

Request > R247 : Work order

Snapshot **Work order**

Search...

Work order ID	Ref. work order	Description	Created date	Last updated date	RFC	RFC status	Status	Activity log
279		New script name 1	05/01/2017 18:40:48	05/01/2017 18:41:38	CHG0032310	requested	In Progress (Approval L...	View

Note: The current version requires a single-level approval at both ServiceNow and AppViewX. However AppViewX workflow provides the flexibility to customize single-level or multi-level approvals either at ServiceNow or AppViewX only.

- If the RFC status of the work order is “*requested*,” as it is for the request in the image above, approve the change request in ServiceNow first by clicking the **Approval** field and selecting **Approved** from the drop-down list.

servicenow Service Automation

Welcome: System Administrator

Change Request - CHG0032310 [Text_search view]

Number: CHG0032310

Requested by:

Approval: **Approved**

Type: Comprehensive

Copy Change Delete

Back in AppViewX, the work order **RFC status** column changes to **Approved**.

- Click the link in the **Work order ID** column to open the work order details screen
- Click the **Implementation configuration** tab and review the configuration details.

Request > R247 : Work order > 279

Work order detail: New script name 1

* Implementation ☐ Manual ☒ Auto RFC ID CHG0032310

* Scheduled start date 05/01/2017 18:33:38 * Scheduled end date 05/01/2017 18:45:44

Pre validation Implementation configuration Rollback configuration Post validation Cleanup configuration

Implementation configuration

```

1 kdevice>41.101</device>
2 tmsh
3 create cli transaction
4 create ltm monitor http mon_http_intra_443 { interval 5 timeout 16 send 'GET /test/index.html' recv '200 OK' }
5 create ltm profile http_prof_http_intra_443 defaults-from http
6 create ltm pool pool_intra_443 load-balancing-mode round-robin members add { 10.0.0.23:80 10.0.0.35:80 } monitor mon_http_intra_4
7 create ltm virtual vs_intra_443 destination 192.168.41.243:443 profiles add { prof_http_intra_443 } persist replace-all-with { sc
8 submit cli transaction
9 quit
10

```

Pre validation log

* Comments

Pre validation Approve Reject Discard Cancel

7. In the **Comments** field, enter details about the implementation configuration.
8. Approve the work order by clicking the **Approve** button.
9. Back on the *Work order details* screen, click the **View** link in the **Activity log** column to check the work order logs, which provide useful information for understanding the work order flow and for troubleshooting.

Request > R247 : Work order > 279 : log

Search...

Date	Work order ID	User	Work order stage	Log message
05/01/2017 19:48:44	279	sunil	Post Validation	Email sending failed. Mail server down
05/01/2017 19:48:41	279	sunil	Post Validation	Work Order completed.
05/01/2017 19:48:41	279	sunil	Post Validation	Post Validation completed
05/01/2017 19:48:27	279	sunil	Post Validation	Device: 41.101, Command: quit, Output: [admin@F5v10_41:Active] ~ #
05/01/2017 19:48:21	279	sunil	Post Validation	Device: 41.101, Command: list ltm virtual vs_intra_443, Output: ltm vi...
05/01/2017 19:48:21	279	sunil	Post Validation	Device: 41.101, Command: list ltm pool pool_intra_443, Output: ltm p...
05/01/2017 19:48:21	279	sunil	Post Validation	Device: 41.101, Command: list ltm profile prof_http_intra_443, Output...
05/01/2017 19:48:21	279	sunil	Post Validation	Device: 41.101, Command: list ltm monitor http_mon_http_intra_443, ...
05/01/2017 19:48:16	279	sunil	Post Validation	Device: 41.101, Command: tmsh, Output: admin@F5v10_41(Active)(t...
05/01/2017 19:47:51	279	sunil	Post Validation	Post Validation triggered
05/01/2017 19:47:51	279	sunil	Auto Implementation	Email sending failed. Mail server down
05/01/2017 19:47:48	279	sunil	Auto Implementation	Auto Implementation completed
05/01/2017 19:47:34	279	sunil	Auto Implementation	Device: 41.101, Command: quit, Output: [admin@F5v10_41:Active] ~ #
05/01/2017 19:47:24	279	sunil	Auto Implementation	Device: 41.101, Command: submit cli transaction, Output: admin@F5...
05/01/2017 19:47:18	279	sunil	Auto Implementation	Device: 41.101, Command: create ltm virtual vs_intra_443 destination...
05/01/2017 19:47:18	279	sunil	Auto Implementation	Device: 41.101, Command: create ltm pool pool_intra_443 load-balan...
05/01/2017 19:47:18	279	sunil	Auto Implementation	Device: 41.101, Command: create ltm profile http_prof_http_intra_443...
05/01/2017 19:47:18	279	sunil	Auto Implementation	Device: 41.101, Command: create ltm monitor http_mon_http_intra_4...
05/01/2017 19:47:18	279	sunil	Auto Implementation	Device: 41.101, Command: create cli transaction, Output: [batch mode
05/01/2017 19:47:12	279	sunil	Auto Implementation	Device: 41.101, Command: tmsh, Output: admin@F5v10_41(Active)(t...

The work order summary below the logs provides an overview of the workflow and time spent at each stage.

Work order summary	
#279 - [Completed]	
Work order start time	05/01/2017 18:40:48
Work order duration	01 Hour 07 Minutes 53 Seconds
Step 1 - Work Order Initialization - [Completed]	
Duration	05/01/2017 18:40:48 - 05/01/2017 18:40:48
Step 2 - Pre Validation - [Completed]	
Duration	05/01/2017 18:40:48 - 05/01/2017 18:41:38
Step 3 - Approval Level 1 - [Completed]	
Duration	05/01/2017 18:41:38 - 05/01/2017 19:44:07
Step 4 - Pre Validation - [Completed]	
Duration	05/01/2017 19:44:07 - 05/01/2017 19:45:00
Step 5 - Approval Level 2 - [Completed]	
Duration	05/01/2017 19:45:00 - 05/01/2017 19:45:42
Step 6 - Ticket Validation - [Completed]	
Duration	05/01/2017 19:45:42 - 05/01/2017 19:46:45
Step 7 - Auto Implementation - [Completed]	
Duration	05/01/2017 19:46:45 - 05/01/2017 19:47:48

On successful completion of the work order, the ServiceNow change request **State** is updated to **Closed Complete**.

ServiceNow Service Automation

Welcome: System Administrator

Change Request - CHG0032310 [Text_search view]

Number: CHG0032310

Requested by: [Search]

Category: Hardware

Configuration item: 41.101

Priority: Low

Impact: 1 - High

Approval: Approved

Type: Comprehensive

State: Closed Complete


Conflict status: Not Run

Conflict last run: [Search]

Assignment group: [Search]

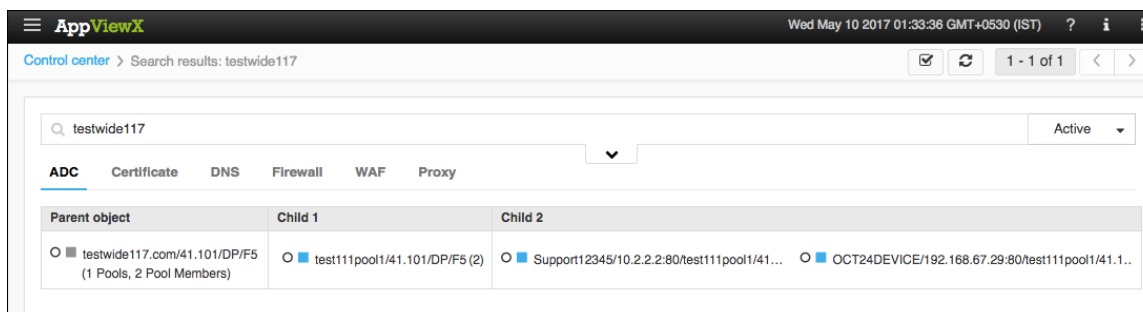
Assigned to: [Search]

Roll Back

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Provisioning > Request**.
2. Locate the submitted request you want to review, then click the **Request ID number** to open the details page.
3. Click the **Work order** tab.
4. Select the check box beside the work order you want to roll back.
5. Click the  (**Rollback**) button in the Command bar to rollback all the configuration changes that were implemented.

Monitor and Manage

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Control center**.
2. In the **Search** field, enter the virtual server name to view a summary of the deployed application, the virtual server, and the associated pool and pool members.



3. Click the virtual server to open a topological view of the application that shows the virtual servers and their objects spread across different geographical locations and data centers.

Note: This view contains action buttons that allow you to modify a few commonly tweaked load-balancing configurations, like the load balancing algorithm and the load distribution ratio.

4. Right-click any object in the topology to perform object-level basic operations on it, like disabling, backing up, restoring, and viewing configurations and logs.

