AppViewX

Create Virtual Server Workflow

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Trademarks

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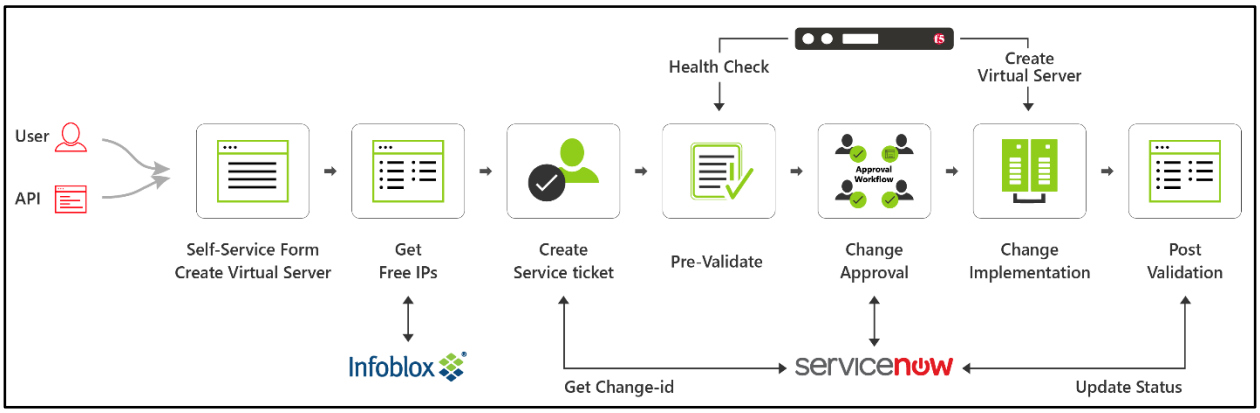
AppViewX Overview

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 rollback. To get started, you can download Free AppViewX, which comes with a series of preloaded application automation provisioning workflows.

Create Virtual Server Workflow

The *Create Virtual Server* workflow 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 workflow 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 workflow 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.

Prerequisites

To run this workflow in your environment, the following prerequisites must be met:

- Free AppViewX, AVX 12.1.0, or AVX 12.2.0 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.

Compatible Software Versions

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

- AppViewX – Free AppViewX version, AVX 12.1.0, and AVX 12.2.0
- ServiceNow – Geneva version and Eureka version

- Infoblox – version 7.2.X
- F5 LTM – version 10.X, 11.X, or 12.X

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`.

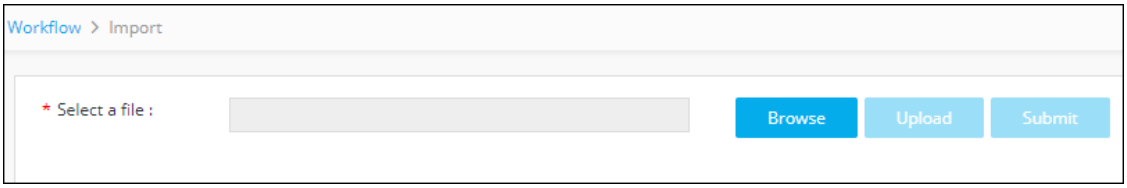
The hostname and port number are configured during deployment, with the default port number set to 5004 and the default web credentials set to `admin/AppViewX@123`.

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

Import Visual Workflows

Note: Free AppViewX comes preloaded with visual workflows. You will only need to use the following import instructions when newer versions of the workflows become available.

1. Click the (Menu) button.
2. Navigate to **Workflow > Configurator**.
3. Click the (**Import**) button in the Command bar.



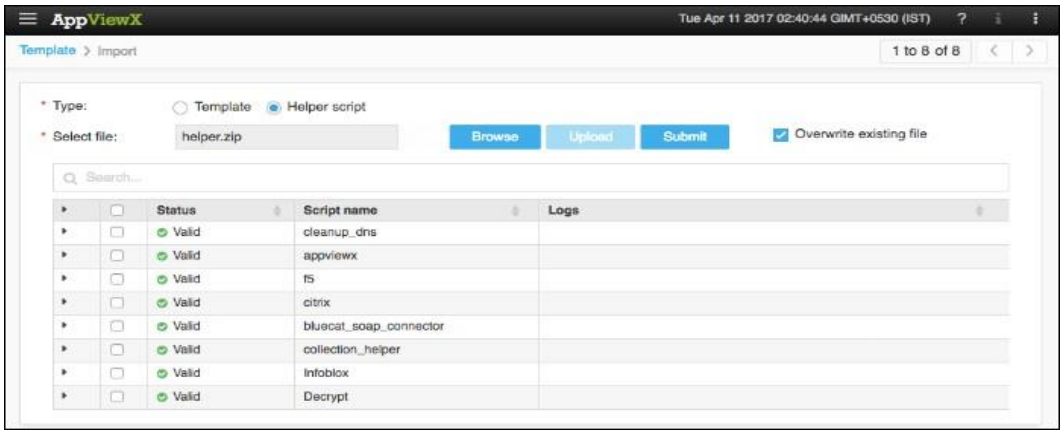
4. To import a workflow, complete the following sub-steps:
    a. Click the **Browse** button.
    b. Select the zip file containing one or more workflows, then click **Upload**.
    c. In the table at the bottom of the *Import* page, select the check box beside the unzipped workflow file.
    d. Click **Submit** to deploy the workflow into your AppViewX environment.

Import Helper Scripts

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

1. In the navigation menu on the left-hand side of the AppViewX screen, navigate to **Provisioning > Template**.
2. Click on the **Helper script** button.
3. To import a helper script, complete the following sub-steps:
    a. Select the **Helper Script** radio button.

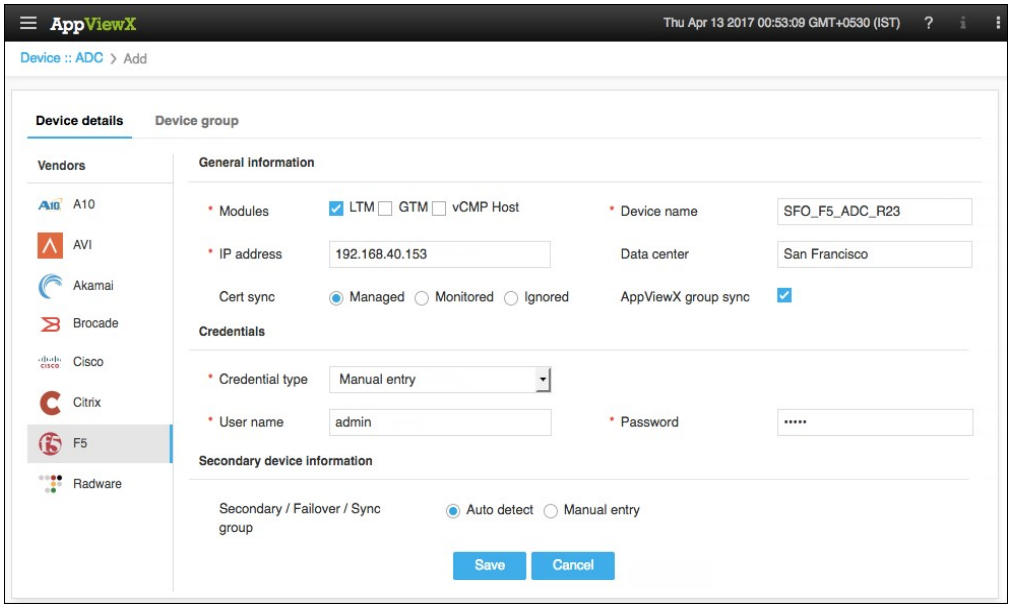
b. Click **Browse** and select the helper script zip file you want to import.
c. Click **Upload** to import the file and view its contents.



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.

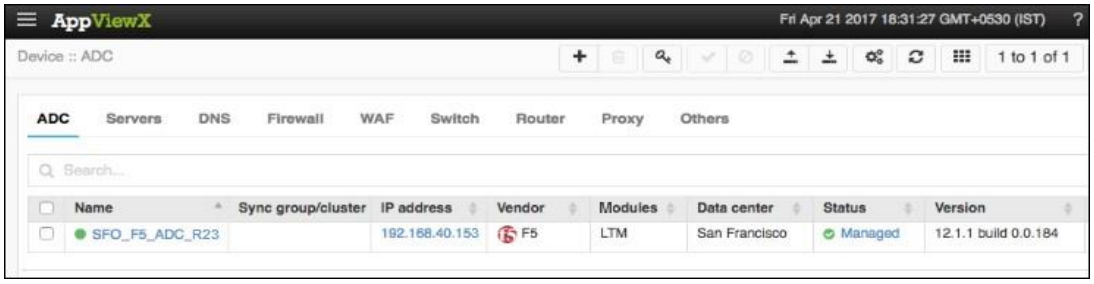
Add an ADC Device: F5 LTM

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.



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.
13. **Note:** The user you enter in the **User name** field must have advanced shell access.
14. Select **Auto detect** to automatically detect and add secondary or failover devices or sync groups to the ADC device inventory.
15. Click **Save** to save the new ADC device on the ADC tab.

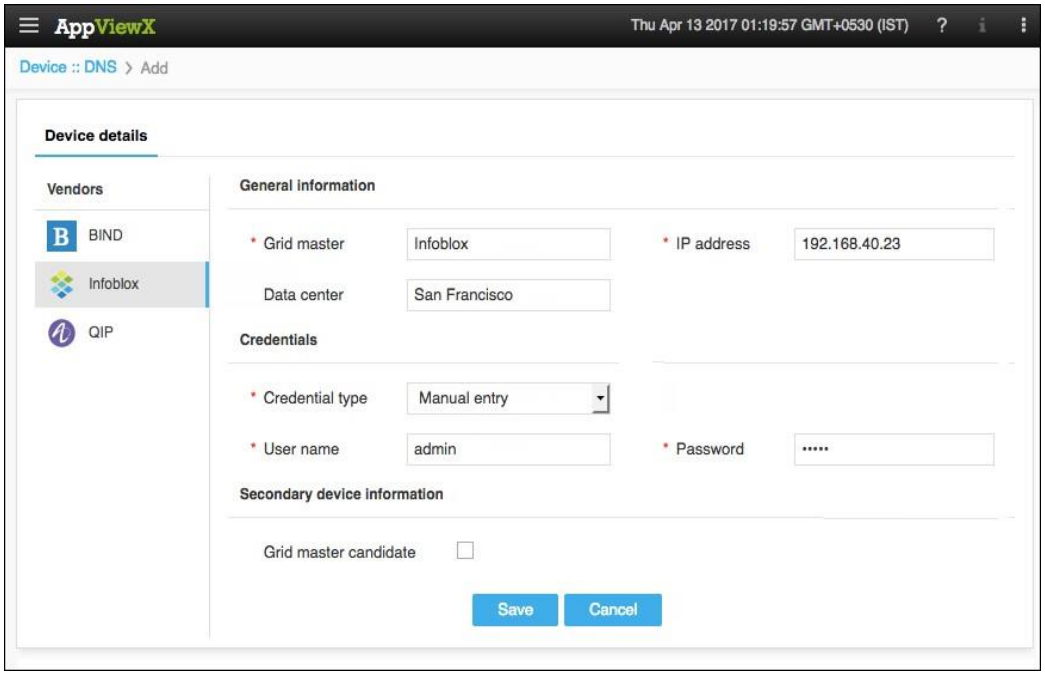


The device will display one of the following statuses:

- **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.

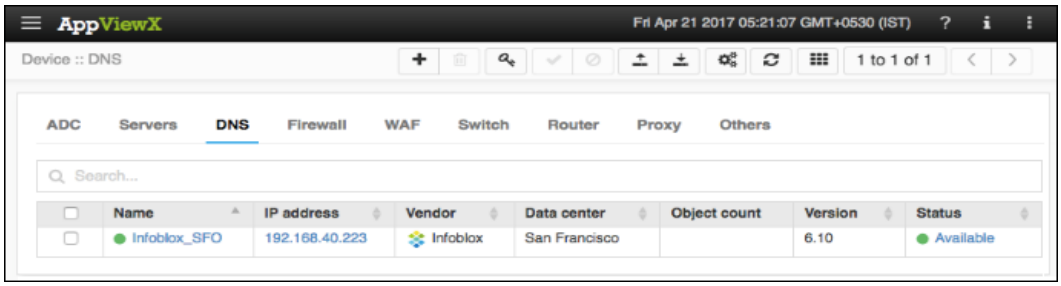
Add an IPAM Device: Infoblox

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.



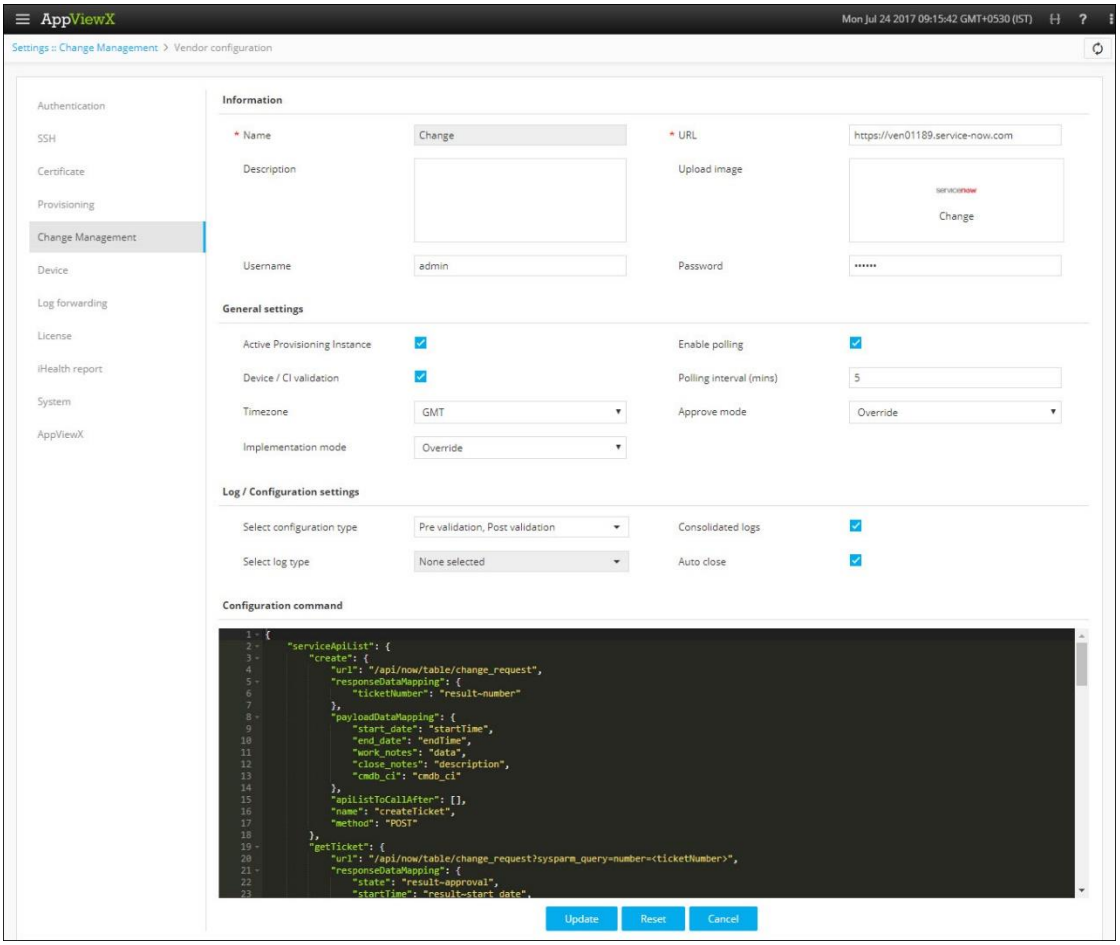
5. Click the **Save** button.

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

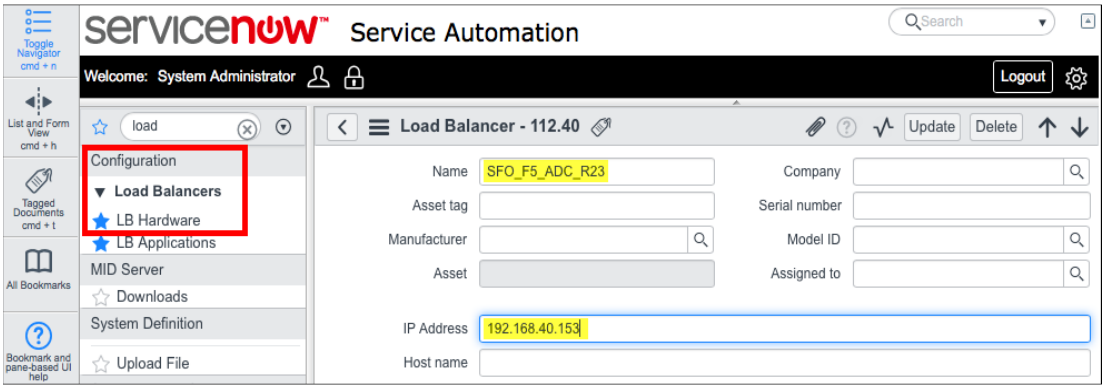


Register an ITSM Device: ServiceNow

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 **Change Management** in the column on the left.
3. Click the **ServiceNow** plug-in.
4. On the *Vendor configuration* screen that opens, enter a valid web URL
5. (Optional) Enter a **Description** of the vendor to help users identify it.
6. Enter the ServiceNow **username** and **password** credentials in the respective fields.
7. Click **Update** to save the changes made in the system.



8. (Optional) 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 as shown below. The device name used in the ServiceNow inventory and AppViewX ADC device inventory should be the same.



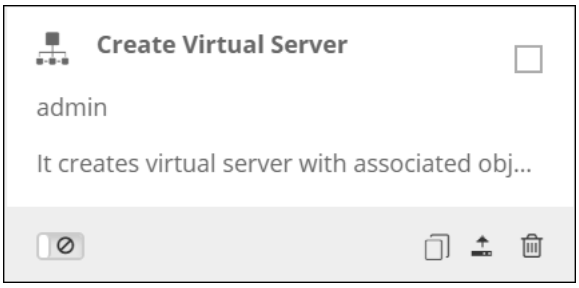
Enable a Workflow

To enable the **Create Virtual Server** workflow, complete the following steps:

1. Click the (**Menu**) button.
2. Navigate to **Workflow** > **Configurator**.
3. The *Workflow* screen opens.

4. Click the (**Select**) button on the Create Virtual Server workflow to enable. If the workflow is already selected, a (**Deselect**) button appears.
5. Click the (Enable) button in the Command bar.

   Note: You can also enable the required workflow from the Card view by clicking the (**Disable**) button.



6. On the *Confirmation* screen that appears, click **Yes**.

Create a Virtual Server Workflow

To submit the Create Virtual Server workflow, complete the following steps:

1. Click the (**Menu**) button.
2. Navigate to **Workflow** > **Request**.

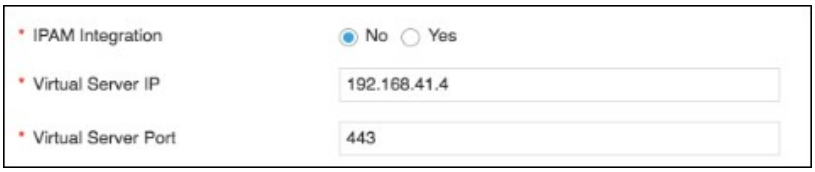
   The *Request* screen opens with **My catalog** tab displayed by default. This screen displays all enabled workflows assigned to a specific user role.
3. Click the (**Run workflow**) button from the Card view of Create Virtual Server workflow.
4. Click the **Get F5 LTM Device List** button to fetch the list of managed F5 LTM devices.
5. In the **F5 LTM Device** field, select the device on which the virtual server is to be created.
6. 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.
7. 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. Enter a virtual server IP in the **Virtual Server IP** field.

f. Enter the **Virtual Server Port** number used to access the application.

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

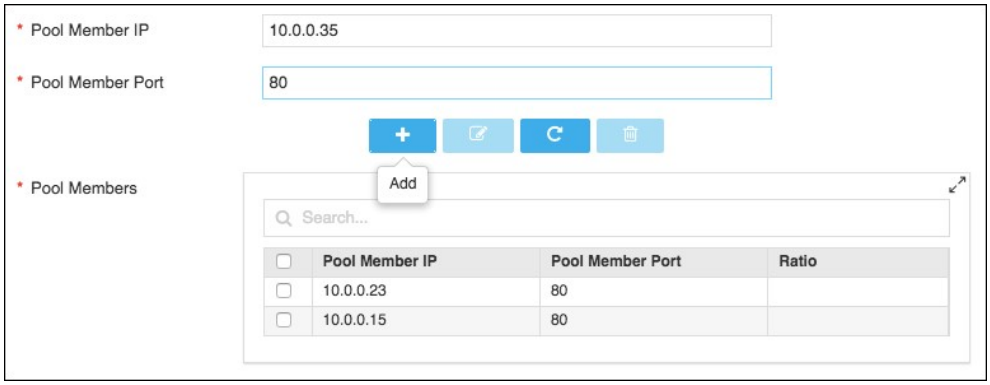
f. Enter a virtual server IP in the **Virtual Server IP** field.
g. Enter a virtual server port in the **Virtual Server Port** field.



8. 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.
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:

- **Internal (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.
- **Send String** – Query string sent as part of http client request.
- **Receive String** – Response string expected as part of http server response.

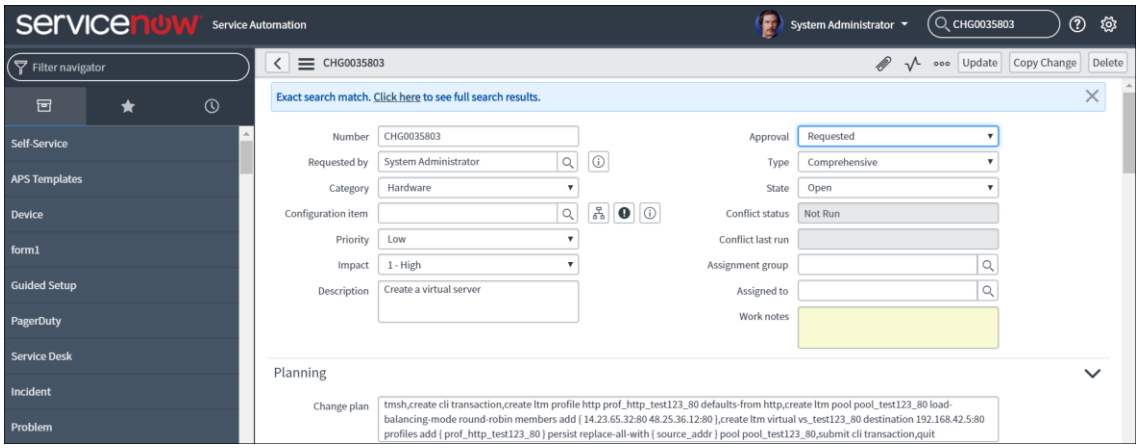
14. Select an existing monitor in the **Associate Existing Monitor** drop-down list to associate it with the created Virtual Server.
15. Select the load-balancing algorithm from the **Load Balancing Method** drop-down list.
16. Add pool members to the table by specifying the **Pool Member IP** and **Pool Member Port** and clicking the + (**Add**) button. Add all pool members who should be associated with the created virtual server.



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.

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 autopopulate 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 selfservice form. The **Change plan** field is populated with the proposed F5 LTM configuration changes, which can be reviewed at any time by the approver.

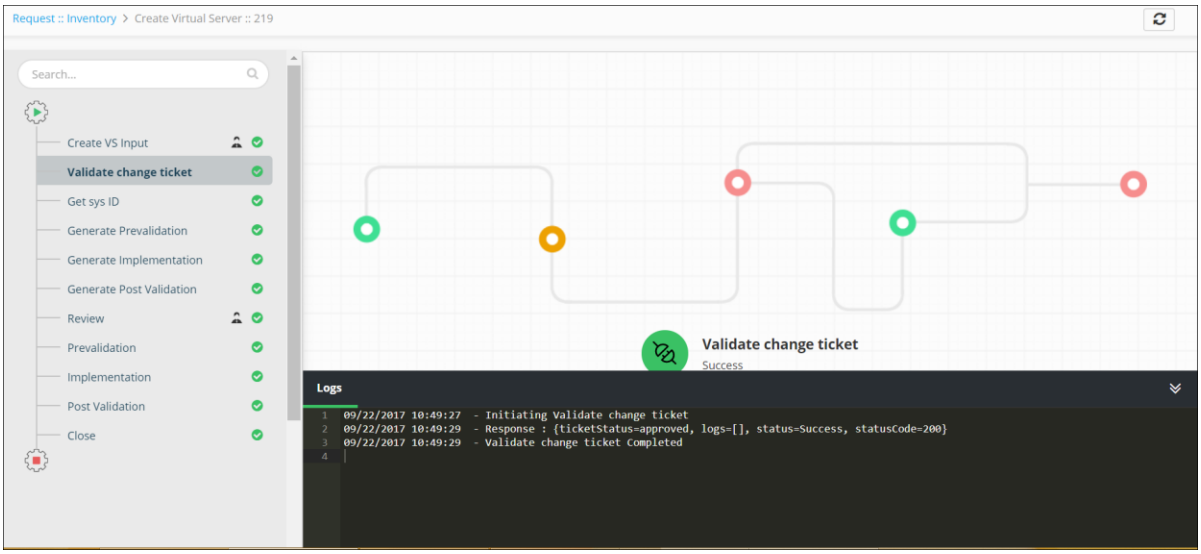


21. Click **Submit** to submit the self-service form and create the work order and associate it with the ServiceNow change request ID (RFC-ID) in the AppViewX system.

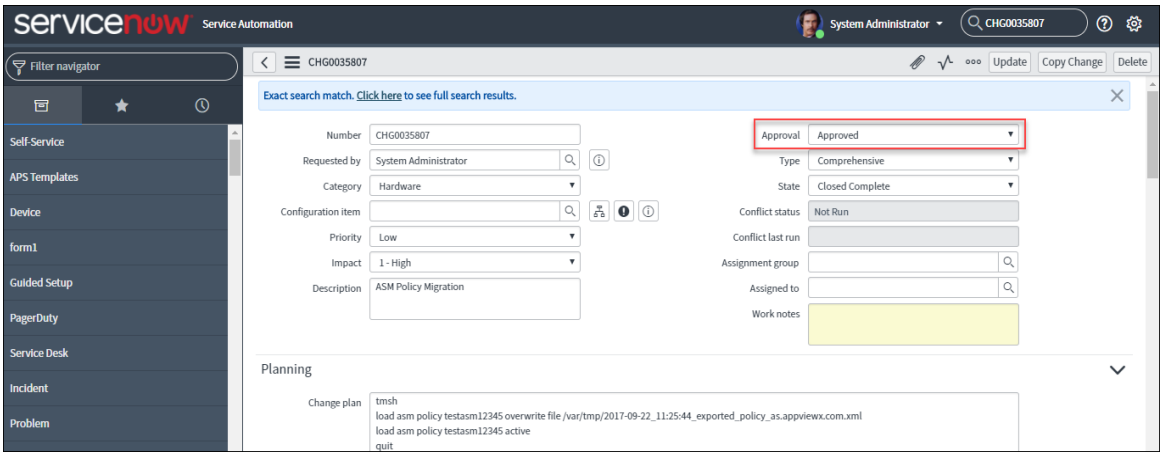
Workorder Flow

Following are the workorder tasks of Create a Virtual Server workflow.

Note: You can click each task to view its details. Wherever applicable, all logs related to the selected task are displayed in the Logs pane at the bottom of the screen.

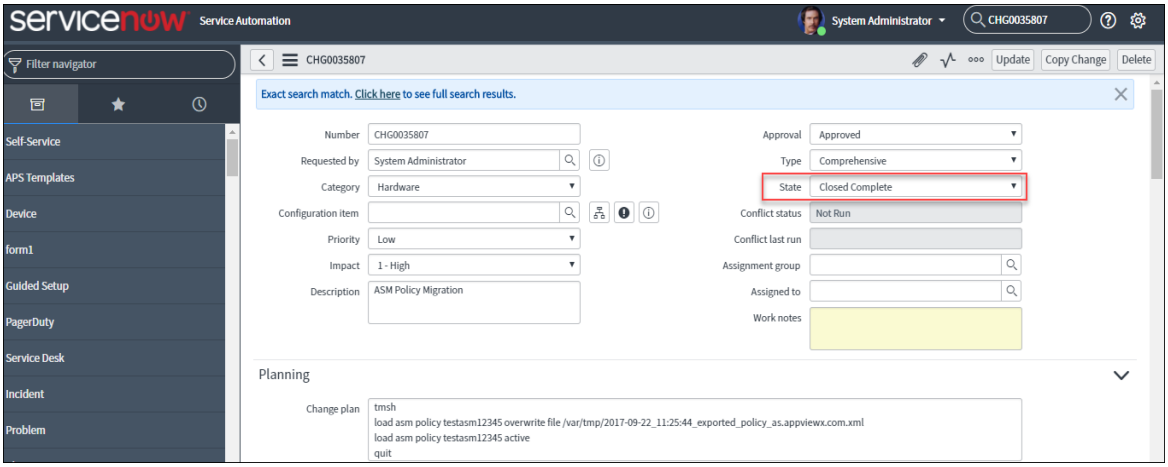


1. **Ticket Validate** – to validate the ticket, you will have to log in to the ITSM tool-ServiceNow and manually approve the ticket.



2. **Get Sys ID** – the Sys-ID for the Create a Virtual Server workflow is generated to track the ServiceNow request.
3. **Generate Prevalidation** – the pre-validation commands are generated in order to initiate the pre-validation process
4. **Generate Implementation** – the configuration commands are generated to implement the creation of a virtual server from a source device.
5. **Generate Postvalidation** – the post validation commands are generated in order to initiate the post-validation process

6. **Review** – review of a work order is based on the role assigned to the user (who has an access to approve and implement). After you submit the request form, the configuration changes are reviewed and approved at AppViewX. The configuration changes are implemented on the device only when the approval is received.
7. **Prevalidation** – check the following:
    - A list of virtual servers available in the source and destination device.
    - The performance metrics such as CPU and memory utilization on the destination device are validated.
8. **Implementation** – the configuration commands are implemented the creation of a virtual server from a source device.
9. **Post-Validation** – checks if the virtual server you has been created successfully.
10. **Close** – after the virtual server creation is successful, the status of the ServiceNow ticket will be updated automatically.



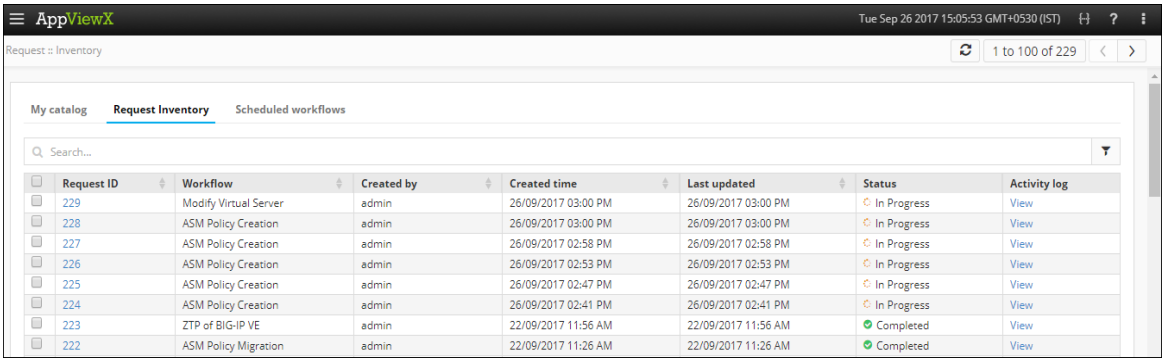
Request Inventory

To go to Request inventory, complete the following steps:

1. Click the (**Menu**) button.
2. Navigate to **Workflow** > **Request**.

   The *Request* screen opens with **My catalog** tab displayed by default.
3. Click the **Request Inventory** tab.

   This displays all workflows that have been triggered. On the **Request Inventory** screen, you can perform the following tasks: Search for a request using the **Search** field. Click the (**Filter**) button to select the options you want to use to sort the requests.



4. Click the **Request ID** of the requested workflow to view the tasks or phases of a request in a tree-view.
5. You can also view the following details of the request that are created: by whom and when the Request was created, Last updated time, Status and the Activity log.
6. Click **View** in the **Activity log** column to display the request in a stage-view. In the **Summary** tab, click the (**Expand**) icon to view the details of each task. Click the **Details** tab to view log messages and other particulars of a request.

Schedule a Workflow

To schedule a workflow, complete the following steps:

1. Click the (**Menu**) button.
2. Navigate to **Workflow** > **Request**.

   The *Request* screen opens with **My catalog** tab displayed by default.
3. Click the (**Schedule workflow**) button on the respective workflow.
4. On the window that opens, select the frequency of the policy migration process: once, hourly, daily, weekly, monthly, or yearly. The remaining fields in the Scheduler region update depending on what you select here.
5. Click **Save**.

Scheduled workflows

Displays all workflows that have been scheduled. To go to the scheduled workflow screen, complete the following steps:

1. Click the  (**Menu**) button.
2. Navigate to **Workflow** > **Request**.
3. The *Request* screen opens with **My catalog** tab displayed by default.
4. Click the **Scheduled workflows** tab.
5. On the Scheduled workflow screen that appears, you can perform the following tasks:
    a. In the **View log** column, click **View** to display the details of a scheduled workflow.
    b. Click the  (Pause) or  (Resume) button to temporarily stop or continue the execution of a workflow.

Troubleshooting

I cannot find the workflow in the Request Catalog

You must enable the workflow from the Configurator section. For more details on how to enable a workflow, refer to the Enable a Workflow section of this guide.