



Install and Upgrade Patch Deployment Guide FP11

Version: 2020.3.1

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Preface

Revision History

Revision	Description	Date
v1.0	Patch Deployment Guide for 2020.3.0 FP11	December 2022

About this Guide

The document describes the steps to install the latest patch for 2020.3.0 FP11

Audience

The document is intended for the internal users and the customers of AppViewX to support the patch installation.

Text Conventions

The following text conventions are used in this document:

Convention	Description
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
<code>codeblock</code>	Indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Chapter 1: Prerequisites

The prerequisites are as follows:

1. Stop all the components and take a VM snapshot of all the nodes using the commands below.

```
cd <appviewx_installer_location>/appviewx_kubernetes/scripts
```

```
./appviewx.sh --stop --all
```

2. Start all the components once the VM snapshots are taken for all the nodes using the commands below.

```
cd <appviewx_installer_location>/appviewx_kubernetes/scripts
```

```
./appviewx.sh --start --all
```



Note: The above two steps will have a significant downtime; ensure customer awareness before execution.

3. Ensure that the node password do not contain special characters such as single quote ('), double quote ("), and back slash (\).
4. (*Recommended step*) Proceed with the NTP or Chrony setup during the plugin upgrade. This setup is included in the plugin upgrade. Ensure to get the NTP server details prior to the upgrade. Ignore if already in place.
5. Keep the existing "mtu" value by executing the command:

```
kubectl edit cm calico-config -n kube-system
```

6. Note the CA certificate path if **ENABLE_CUSTOM_CERTS=TRUE**.
7. Get details of the user id and user group (enter the command `id` to get the details).

```
[appviewx@pe-apvx-31-19 ~]$ id
uid=1000(appviewx) gid=1001(appviewx) groups=1001(appviewx),10(wheel),994(docker) context=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023
```

8. Check details regarding the time synchronization enablement (NTP/Chrony).
9. If the external backup server is enabled to push backups of Mongo and Vault, keep the details of external backup server's IP address, port, user, and path. Ignore if not enabled.
10. Keep the CLI node password ready.
11. If ELK is enabled, keep the elastic user password ready.

Chapter 2: Expectations and Recommendations

Expectations

This patch deployment process involves

- Plugins and addons upgrade
- Kubernetes infra upgrade



Note: Application upgrade to version 2022.1.0 FP1 is mandatory before applying FP2 .

Recommendations

1. The new option included from 2020.3.0 FP7 patch to enable/disable support for managing legacy endpoints works only with the deprecated TLS v1.0 or v1.1.
2. Make the decision on choosing the option `ENABLE_LOWER_TLS_OPTION` as **Yes** or **No** before you apply any new patch on top of existing patch.
3. To disable support for TLS v1.0 and TLS v1.1 as security standards, provide the response as **NO**.
4. If a customer wants to change **ENABLE_LOWER_TLS** to **YES** or **NO** after completion of the existing patch. Follow the steps mentioned in the [Frequently Asked Questions \(FAQ\)](#) section.
5. In case load balancer is used for ingress gateway service, provide the URL of the Load Balancer service and port
 - a. `INGRESS_LB_URL=<Input the LB Service URL>`

Example: abc.123xyz.com
 - b. `INGRESS_LB_PORT=<Input the LB PORT NUMBER>`

Chapter 3: Plugins and Addons Upgrade

Follow the steps below to add the plugins and addons.

1. Log in to the [release portal](#) and download the FP11 patch files
 - **appViewX_2020.3.FP11.tar.gz**
 - **appviewx_addons_2020.3.FP11.tar.gz**
 - Download the latest dated script file (**tar.gz**) from release portal, for example - **scripts_FP11_(latest date).tar.gz**
2. Move all the downloaded files to the node where the installation is initiated.
3. Open the terminal window with valid credentials and validate the “md5sum” value of the downloaded files.
4. To know the status of the pods, execute the command

```
kubectl get pods -A
```

If a pod is in a state other than “*Running*” or the two containers associated with the pod (0/2 or 1/2) are not up and running, take note of it.

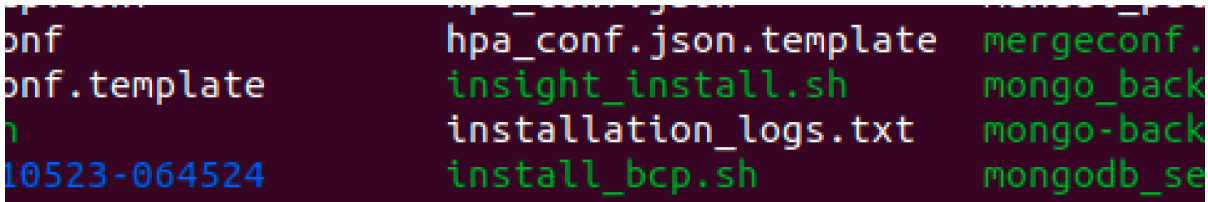
5. Copy the files from downloaded scripts directory to the `<INSTALLER_PATH>/appviewx_kubernetes/scripts` directory
 - Command to replace files (confirmations required)

```
cp -r <Download_Directory>/scripts/* <INSTALLER_PATH>/appviewx_kubernetes/scripts/.
```

- Command to replace files (confirmations ignored)

```
rsync -av <Download_Directory>/scripts/* <INSTALLER_PATH>/appviewx_kubernetes/scripts/.
```

6. Check and replace the **hpa_conf.json.template** file that is present in the scripts directory.



Note: If you have a **hpa_conf.json** file in scripts directory ignore the below steps and move on to Step 9.

- a. Copy the content from `<hpa_conf.json.template>` file to `<hpa_conf.json>` by executing the command:

```
cp hpa_conf.json.template hpa_conf.json
```

- b. If there are customized values that need to be set for the keys in the **hpa_conf.json** file, configure them accordingly.

```

1 {
2   "deploymentfiles": {
3     "avx_platform_queue": {
4       "xms": "1g",
5       "xmx": "3g"
6     },
7     "avx_vendors": {
8       "xms": "1g",
9       "xmx": "2g"
10    },
11    "avx_subsystems": {
12      "xms": "1g",
13      "xmx": "3g"
14    }
15  },
16  "autoscalereplica": [
17    "avx_vendors",
18    "avx_subsystems"
19  ],
20  "hpafiles": {
21    "avx_subsystems_sync": {
22      "cputhreshold": "200",
23      "maxreplica": "3"
24    },
25    "avx_platform_core": {
26      "cputhreshold": "200",
27      "maxreplica": "3"
28    },
29    "avx_vendors": {}
30  },
31  },
32  "plugins_sync_memory_with_xmx": [
33    "avx_vendors",
34    "avx_subsystems_sync",
35  ]
36 }

```

NORMAL hpa_conf.json
"hpa_conf.json" 39L, 805C

- c. By default, if the customer does not create the **hpa_conf.json** file before patch, the file will be created using the **hpa_conf.json.template** file.

7. Configure the datacenter latency optimization



Note: Data centers (greater than 50ms). If not applicable, move on to Step 9. This step is applicable only for deployment with high latency between datacenters.

The **OPTIMISE_ROUTING_FOR_LATENCY=TRUE** and **PREFERRED_DEFAULT_DC=<preferred datacenter>** option can be added to the `appviewx.conf` file (this needs to be added manually before the patch) and can be set to true for deployments/setups where there is a high latency (>50ms) between the data centers/nodes. This will switch the ATI-gateway routing strategy to optimize for latency. The default value for this is *false* unless specified as *true*.

The option to enable routing strategy of the gateway and other components where there is high latency(>50ms) is shown below.

```
# Option to enable local routing incase the latency between the DCs are high
OPTIMISE_ROUTING_FOR_LATENCY=FALSE
PREFERRED_DEFAULT_DC=absecon
```

8. The absolute path of the downloaded patch files should be kept ready and a decision on TLS version support should be made, before executing the command `apply_patch.sh`

- Make a note of the downloaded absolute file path for plugins and add-on tar files
- Enable TLSv1.0 and TLSv1.1 (Yes/No)
 - It is recommended to select "NO."
 - Select "YES" only if it is required for the customer.



Note:

- Transport Layer Security (TLS) such as Secure Sockets Layer (SSL), is an encryption protocol intended to keep data secure when being transferred over a network. As of today, only TLS 1.2 and TLS 1.3 are recommended, whereas all other protocol versions have been formally deprecated in 2018 by Apple, Google, Microsoft and Mozilla.
- AppViewX recommends to choose "NO" to defaults hardened. This will enable TLS 1.2 and above as per global security standards.
- Reference links:
 - <https://csrc.nist.gov/publications/detail/sp/800-52/rev-2/final>
 - https://www.sec.gov/oit/announcement/tls1_and_tls1_1_to_be_disabled
- Who can opt for "Enable TLSv1.0 and TLSv1.1=YES"?
Customers who use legacy version endpoints to support deprecated TLS version and in the process of migration.

9. Navigate to the `<INSTALLER_PATH>/appviewx_kubernetes/scripts` directory and execute the command

```
./apply_patch.sh
```

By default, the patch script works at interactive mode and the following questions will be asked during the process:

- **Do you wish to cleanup the existing scripts backup ("yes"/"no"):**

For pre-FP10 to FP10 patch answer “No”, since there will be no scripts backup. Answer “Yes/No” to remove/keep the existing scripts backups (applicable for hotfixes on top of FP10 and future FPs)

- **Do you wish to backup of the scripts ("yes"(recommended)/"no"):**

It is recommend to answer “Yes” (the process will take a few minutes depending on the size of the scripts directory).

- **Enter the absolute path of the scripts tar package downloaded from the Appviewx Release Portal (Press Enter to leave it blank):**

In case of a manual sync, press Enter without any answer.

10. To change the default values of newly added **appviewx.conf** parameters (**ISTIO_SECRET_TTL**), provide the valid input as per the instructions.

```
Checking for newly introduced conf parameters..
=====
Please provide the appropriate input for ISTIO_SECRET_TTL
# Configure the istio secret TTL value. The value should always be in minutes
Default value for the parameter is : 8640m
Please enter the value to alter the default value according to the above instruction. Kindly press enter to use default value : █
```

11. Enter the addon absolute path.

```
Enter the absolute path of Addon tar package downloaded from the AppViewX Release Portal (Press enter to leave it blank): /home/ap
pviewx/2316fp11/appviewx_kubernetes_addons_2020.3.0_FP11.tar.gz█
```

12. Enter the plugin absolute path.

```
Enter the absolute path of Plugins tar package downloaded from the AppViewX Release Portal (Press enter to leave it blank): /home/
appviewx/2316fp11/appviewx_plugins_2020.3.0_FP11.tar.gz█
```

13. The patching process continues.

```

Removing backup from /home/appviewx/appviewx_kubernetes/scripts/addon_backup_*
Removing backup from /home/appviewx/appviewx_kubernetes/scripts/./backups/addon_backup_*
Creating folder: /home/appviewx/appviewx_kubernetes/scripts/./backups/addon_backup_20221128-181712
Taking Addons backup
Addon backup completed
Extracting the addons package..
Successfully extracted package to: /home/appviewx/appviewx_kubernetes/scripts/patch/appviewx_addons
AVX base image is copied
namespace/absecon not labeled
namespace/avx not labeled
namespace/avx-jobs not labeled
namespace/external-system not labeled
appviewx-nwpolicy Installation...
NAME: appviewx-nwpolicy
LAST DEPLOYED: Mon Nov 28 18:20:49 2022
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
Resyncing the addons package to the local node
Starting addons sync..
Syncing addons vw to host: $(hostname -i)
Syncing addons properties to host: $(hostname -i)
Syncing addons lib to host: $(hostname -i)
Synced Addons and vw and properties across. Successfully completed. Exiting now.
Extracting the package..
Successfully extracted package to: /home/appviewx/appviewx_kubernetes/scripts/patch/appviewx_plugins
ENABLED_PLUGINS
-----
appviewx_dependencies
avx_commons
avx_crontab
avx_config_server
avx_platform_core
avx_platform_queue
avx_platform_gateway
avx_platform_web
avx_subsystems
avx_vendors
avx_subsystems_sync
avx_platform_report_generator
avx_visual_page_builder
avx_platform_logforwarding

```

Verify the list of enabled plugins and their respective data center. After the verification, provide the appropriate input to continue the deployment or exit the process.

```

Resyncing the addons package to the local node
Starting addons sync..
Syncing addons vw to host: $(hostname -i)
Syncing addons properties to host: $(hostname -i)
Syncing addons lib to host: $(hostname -i)
Synced Addons and vw and properties across. Successfully completed. Exiting now.
Extracting the package..
Successfully extracted package to: /home/appviewx/appviewx_kubernetes/scripts/patch/appviewx_plugins
ENABLED_PLUGINS
-----
appviewx_dependencies
avx_commons
avx_crontab
avx_config_server
avx_platform_core
avx_platform_queue
avx_platform_gateway
avx_platform_web
avx_subsystems
avx_vendors
avx_subsystems_sync
avx_platform_report_generator
avx_visual_page_builder
avx_platform_logforwarding
avx_vendor_cert_network_discovery
-----
ENABLED_PLUGINS AND NAMESPACES
-----
avx_commons - absecon
avx_crontab - avx
avx_config_server - absecon
avx_platform_core - absecon
avx_platform_queue - absecon
avx_platform_gateway - absecon
avx_platform_web - absecon
avx_subsystems - absecon
avx_vendors - absecon
avx_subsystems_sync - absecon
avx_platform_report_generator - absecon
avx_visual_page_builder - absecon
avx_platform_logforwarding - absecon
avx_vendor_cert_network_discovery - absecon
-----
Do you wish to continue (Yes/No)?

```

14. Provide answers to the prompts for security updates and backups as mentioned below.

- a. To install the security updates, enter the values (recommended 'yes') and continue.

```
Do you wish to continue to install the security updates ? (Yes(recommended)/No)?Yes
```

- b. MongoDB and Vault backup can be taken before deploying the newer version for rollback.

```
Do you wish to take DB backup (Yes/No)?Yes
```

- c. Old Existing DB Backups can be cleaned.

```
Do you wish to remove Existing DB backup (Yes/No) - Default (No): ?No
```

- d. Old Existing plugin backup can be cleaned up.

```
Do you wish to remove Existing plugin backup (Yes/No) - Default (Yes): ?Yes
```

15. After successful deployment, the following message will be displayed along with the manual restore commands for rollback. **Kindly wait for a few minutes for the backend process to complete.**

```
Apply complete! Resources: 783 added, 0 changed, 0 destroyed.
deployment.apps/avx-crontab patched (no change)
deployment.apps/avx-crontab scaled
warning: Immediate deletion does not wait for confirmation that the running resource has been terminated. The resource may continue to run on the cluster indefinitely.
pod "avx-crontab-57f66f597b-c6bxr" force deleted
deployment.apps/avx-crontab scaled
mongo-routerdb-0          2/2    Terminating    0        63m
mongo-routerdb-1          2/2    Terminating    0        63m
mongo-routerdb-2          2/2    Terminating    0        63m
statefulset.apps/vault patched (no change)
pe-apvx-31-25.lab.appviewx.net master
pe-apvx-31-26.lab.appviewx.net master
pe-apvx-31-27.lab.appviewx.net master
pe-apvx-31-19.lab.appviewx.net montreal
pe-apvx-31-20.lab.appviewx.net montreal
pe-apvx-31-21.lab.appviewx.net montreal
pe-apvx-31-22.lab.appviewx.net toronto
pe-apvx-31-23.lab.appviewx.net toronto
pe-apvx-31-24.lab.appviewx.net toronto
OPTIMIZE ROUTING FOR LATENCY is not enabled in the appviewx.conf(Note: applicable only for the High latency environments)...ignoring..
Patch Process Completed and Plugins are Upgraded.
cmd to execute ./syncconf.sh /home/appviewx/appviewx/ /home/appviewx/avx_binaries/FP10/AppViewX_2020.3.FP10.tar.gz
```

16. To setup NTP or Chrony sever, provide the appropriate input. Enter "no" if the NTP/Chrony is already configured. This will retain the existing NTP/Chrony configurations.

```
Do you want to configure the NTP/Chrony?[Yes|No](Recommended 'Yes' and 'No' if already configured):
```

17. Once the setup is completed, you will be prompted to initiate the kube infra upgrade as shown below.

```
Important Note: FP11 patch contains resources for upgrading the infra
Run infra_upgrade/upgrade.sh to start patching the infra after all the pods are up and running (2/2)
Use command: cd infra_upgrade && ./upgrade.sh
```

18. In case of any failure during the patch deployment, an automated rollback can be initiated by executing the below commands shown in the image below.

```
Please use following commands to restore:
Restore Plugins:
1. rm -rf ../yaml/appviewx_plugins && mv /home/appviewx/installer/appviewx_kubernetes/scripts/../../backups/backup_20220726-154931/appviewx_plugins ../yaml/
Restore Database:
1. ./mongo_restore.sh /home/appviewx/installer/appviewx_kubernetes/scripts/../../appviewx_kubernetes/mongo_backup/mongo_backup_Tue_Jul_26_15_52_10_IST_2022.tar.gz
2. ./vault_restore.sh -p /home/appviewx/installer/appviewx_kubernetes/scripts/../../appviewx_kubernetes/vault_backup/vault_backup_Tue_Jul_26_15_52_24_IST_2022
```



Note: Edit the backup files as required.

19. Trigger the Gateway restart once all plugins have been patched. Step “a” is required and step “b” is applicable only if **avx_platform_gateway_external** plugin is enabled/ up & running

a. Once the patch process is completed execute the command below:

```
kubectl delete pods -n avx $(kubectl get pods -n avx | grep "gateway" | awk '{print $1}') --force
```

b. If external gateway plugin is enabled, the following commands can be executed:

- To verify if the external gateway is running:

```
kubectl get pods -A | grep avx_platform_gateway_external
```

- If Yes (running), execute the below command. If No, ignore the command below.

```
kubectl delete pods -n external-system $(kubectl get pods -n external-system | grep "gateway" | awk '{print $1}') --force
```



Note: At least one input for Plugins and Addons upgrade must be given to proceed with the patch process. Both inputs can be given at the same time as well.

20. Perform additional validations post the patching process as mentioned below:

a. To check pod status and wait until all the pods are in running state, execute the command

```
kubectl get pods -A
```

b. To check whether the date and time of the nodes are in sync, execute the command below from the **scripts directory**.

```
./appviewx.sh --run-on-all "timedatectl"
```

21. The patching logs are saved in **<Installer_path>appviewx_kubernetes/logs**

Chapter 4: Kubernetes Infra Upgrade

1. Check whether all the pods are up and running (all the pods must be in 2/2 running state, execute the below command.

```
kubectl get pods -A
```

2. Navigate to <INSTALLER_PATH>/appviewx_kubernetes/scripts/ infra_upgrade directory.
3. Execute the command.

```
./upgrade.sh
```

- a. Script will take the user input to confirm the upgrade if some pods are not in running state. If it is a Prometheus pod, it can be ignored and you can type “yes” to continue the upgrade. If you see some other pods which are not in running state, please fix those issues before continuing the upgrade.
- b. Users will be asked for the Appviewx Sudo user password of all the nodes. Ensure that valid passwords are entered.
- c. If ELK is enabled, an elastic user password must be entered if requested.
- d. If INSIGHT is enabled, the user must provide input (yes/no) to take a backup of the statistical data.

```
The existing Statistical data will be lost as part of the upgrade. Please take a backup of it if required. Do you want continue? : yes/no
```

4. After the patch upgrade is complete, as indicated below, execute the command again.

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
absecon	avx-commons-79668dfd77-dk6wt	0/1	Pending	0	61s
absecon	avx-config-server-84fcbd79fc-kkcwv	0/1	Pending	0	61s
absecon	avx-platform-core-75455b85db-qbz1m	0/1	Pending	0	61s
absecon	avx-platform-logforwarding-5bb9765b9-rr2w7	0/1	Pending	0	61s
absecon	avx-platform-queue-554ff49f9c-j6rvz	0/1	Pending	0	61s
absecon	avx-platform-report-generator-7848bbb85c-b7kql	0/1	Pending	0	61s
absecon	avx-subsystems-59d5c69568-9gmk6	0/1	Pending	0	61s
absecon	avx-subsystems-59d5c69568-zzskx	0/1	Pending	0	61s
absecon	avx-subsystems-sync-7fb7657bdb-wxdv9	0/1	Pending	0	61s
absecon	avx-vendor-cert-network-discovery-59b4f85549-6l4x7	0/1	Pending	0	61s
absecon	avx-vendors-5f6dd74c74-9rrff	0/1	Pending	0	61s
absecon	avx-vendors-5f6dd74c74-rjt9q	0/1	Pending	0	60s
absecon	avx-visual-page-builder-5f8c7c76f5-8gs4x	0/1	Pending	0	60s
avx	avx-crontab-58f797459b-ss2pb	0/1	Pending	0	2m1s
avx	avx-platform-gateway-5cdf58456b-j49sm	0/1	Pending	0	2m1s
avx	avx-platform-web-5cd7cd74cf-fdgxz	0/1	Pending	0	2m1s
avx	logs-daemon-ksqt2	1/1	Running	0	2m1s
avx	mongodb-0	0/1	Pending	0	2m1s
avx	prune-pod-tfd67	1/1	Running	0	2m1s
avx	vault-0	0/1	Pending	0	2m1s
avx	istio-operator-74878bd954-6mrnn	0/1	Pending	0	2m32s
kube-system	calico-kube-controllers-7f5756d847-vz89g	0/1	Pending	0	3m3s
kube-system	calico-node-ncc86	1/1	Running	0	3m3s
kube-system	coredns-64897985d-p8jvq	0/1	Pending	0	3m3s
kube-system	coredns-64897985d-xmm2c	0/1	Pending	0	3m3s
kube-system	coredns-78fcd69978-q918k	0/1	Pending	0	3m3s
kube-system	etcd-pe-adc-node39.lab.appviewx.net	1/1	Running	0	108s
kube-system	kube-apiserver-pe-adc-node39.lab.appviewx.net	1/1	Running	2 (8m53s ago)	100s
kube-system	kube-controller-manager-pe-adc-node39.lab.appviewx.net	1/1	Running	0	106s
kube-system	kube-metrics-adapter-75766454d7-djtnk	0/1	Pending	0	3m3s
kube-system	kube-proxy-gs99v	1/1	Running	0	3m2s
kube-system	kube-scheduler-pe-adc-node39.lab.appviewx.net	1/1	Running	0	106s
kube-system	metrics-server-744449fb87-n5vb7	0/1	Pending	0	3m2s
kube-system	node-local-dns-cfp8d	1/1	Running	0	3m2s
kubernetes-dashboard	dashboard-metrics-scraper-54c4fb4dd9-8sgdh	0/1	Pending	0	25m
kubernetes-dashboard	dashboard-metrics-scraper-59b9bf966d-nj8w7	0/1	Pending	0	20m
kubernetes-dashboard	kubernetes-dashboard-67bd54c588-89tc4	0/1	Pending	0	25m
kubernetes-dashboard	kubernetes-dashboard-69d54dd848-gm4gr	0/1	Pending	0	20m

Pods have been successfully started and are running
/home/appviewx/appviewx_kubernetes/scripts/infra_upgrade

The Infra upgrade has been successfully completed.
[appviewx@pe-adc-node39 infra_upgrade]\$

```
kubectl get pods -A
```

If the upgrade is successful, all the pods in the custom data centers should be up and running.

absecon	avx-commons-777bbc89df-7k4dd	2/2	Running	0	17m
absecon	avx-config-server-7866494b64-mzbz6	2/2	Running	0	16m
absecon	avx-pkiaas-cert-ocsp-generator-85b5c55589-9pqs8	2/2	Running	0	17m
absecon	avx-pkiaas-cert-ocsp-server-64cfc774b7-c9q6p	2/2	Running	0	17m
absecon	avx-platform-core-84ccc6cd8f-5jnkz	2/2	Running	0	15m
absecon	avx-platform-hsm-5f5bd5694d-cfwqv	2/2	Running	0	16m
absecon	avx-platform-logforwarding-6b97ff7484-hz6m4	2/2	Running	0	17m
absecon	avx-platform-queue-555d796fc4-4q7zx	2/2	Running	0	15m
absecon	avx-platform-report-generator-775fc97d5-6v4hc	2/2	Running	0	17m
absecon	avx-subsystems-58fb95df4-p9ntv	2/2	Running	0	7m48s
absecon	avx-subsystems-58fb95df4-qf5c5	2/2	Running	0	7m48s
absecon	avx-subsystems-sync-8559bff8f7-zpnnn	2/2	Running	0	17m
absecon	avx-vendor-cert-network-discovery-547f58d57b-sxcvh	2/2	Running	0	17m
absecon	avx-vendors-99ddb6f5b-wr5pk	2/2	Running	0	17m
absecon	avx-visual-page-builder-795d8cdd65-cnfk8	2/2	Running	0	17m
avx-jobs	mongoutil-mongoseed-qrkj7	0/1	Completed	0	23m
avx	avx-config-server-22.1.3.0-db-migration-9tzcc	0/1	Completed	0	17m
avx	avx-crontab-6c984f79d7-xcl9b	2/2	Running	0	17m
avx	avx-platform-core-22.1.3.0-db-migration-jjk6s	0/1	Completed	0	17m
avx	avx-platform-gateway-79c57b6d4-2hqhg	2/2	Running	0	6m24s
avx	avx-platform-hsm-22.1.3.0-db-migration-kn5cg	0/1	Completed	0	17m
avx	avx-platform-queue-22.1.3.0-db-migration-pm5xh	0/1	Completed	0	17m
avx	avx-platform-web-5bb575f48b-kvcjm	2/2	Running	0	17m
avx	avx-subsystems-22.1.3.0-db-migration-4ggnv	0/1	Completed	0	17m
avx	logs-daemon-wkq92	2/2	Running	0	21m
avx	mongodb-0	2/2	Running	0	25m
avx	prune-pod-s7k6l	2/2	Running	0	17m
avx	redis-0	4/4	Running	0	25m
avx	vault-0	2/2	Running	0	21m
default	cryptutilencrypt-bg2n7	0/1	Completed	0	20m
istio-operator	istio-operator-6998666877-zv9vb	1/1	Running	0	27m
istio-system	istio-ingressgateway-7c4f64c6c7-lzpb8	1/1	Running	0	27m
istio-system	istiod-7986766864-nrx5n	1/1	Running	0	27m
istio-system	prometheus-9448b786d-2wjjh	1/1	Running	0	26m
kube-system	calico-kube-controllers-fc78bd587-8bkq8	1/1	Running	0	31m
kube-system	calico-node-6mntz	1/1	Running	0	31m
kube-system	coredns-64897985d-dk7gp	1/1	Running	0	33m
kube-system	coredns-64897985d-qwhjt	1/1	Running	0	33m
kube-system	etcd-pe-adc-node39.lab.appviewx.net	1/1	Running	2	33m
kube-system	kube-apiserver-pe-adc-node39.lab.appviewx.net	1/1	Running	2	33m
kube-system	kube-controller-manager-pe-adc-node39.lab.appviewx.net	1/1	Running	2	33m
kube-system	kube-metrics-adapter-68c598c7d5-lvpg4	1/1	Running	0	26m
kube-system	kube-proxy-wx4qt	1/1	Running	0	33m
kube-system	kube-scheduler-pe-adc-node39.lab.appviewx.net	1/1	Running	2	33m
kube-system	metrics-server-5c85b4d56f-kg7ws	1/1	Running	0	26m

If a pod is not in the running state but its predecessor (this can be derived from the age of the pod) is up and running, the latest plugin has failed to deploy. Reach out to AppViewX's support team if this is the case.

- In case the upgrade is stopped involuntarily, execute the command below.

```
./resume_upgrade.sh
```

- If the kube API (Kube master Load balancer) is configured, please execute the step mentioned below. Please keep the node CLI password ready.

```
The Infra upgrade has been successfully completed.
Note: Kubernetes external API loadbalancer changes will be reset after the upgrade, Kindly execute "cd ../loadbalancer/ && loadbalancer.sh" to re-apply the changes.
```

- To ensure that the Kubernetes upgraded to v1.24.4 successfully, execute the command

```
kubectl images
```

```
[appviewx@pe-adc-node39 infra_upgrade]$ kubectl version
WARNING: This version information is deprecated and will be replaced with the output from kubectl version --short. Use --output=amljjson to get the full version.
Client Version: version Info{Major:"1", Minor:"24", GitVersion:"v1.24.4", GitCommit:"95ee5ab382d64cfe6c28967f36b53970b8374491", GitTreeState:"clean", BuildDate:"2022-08-17T18:54:23Z", GoVersion:"go1.18.5", Compiler:"gc", Platform:"linux/amd64"}
Kustomize Version: v4.5.4
Server Version: version Info{Major:"1", Minor:"24", GitVersion:"v1.24.4", GitCommit:"95ee5ab382d64cfe6c28967f36b53970b8374491", GitTreeState:"clean", BuildDate:"2022-08-17T18:47:37Z", GoVersion:"go1.18.5", Compiler:"gc", Platform:"linux/amd64"}
[appviewx@pe-adc-node39 infra_upgrade]$
```

- Execute the following command

crictl images

```
[appviewx@pe-adc-node39 infra_upgrade]$ crictl images
IMAGE                                     TAG                                     IMAGE ID                               SIZE
docker.io/calico/cni                     v3.23.2                               a87d3f6f1b8fd                         111MB
docker.io/calico/kube-controllers         v3.23.2                               ec95788d0f725                         56.4MB
docker.io/calico/node                     v3.23.2                               a3447b26d32c7                         77.8MB
docker.io/calico/pod2daemon-flexvol     v3.23.2                               b21e2d7408a79                         8.67MB
docker.io/istio/operator                 1.15.3                               3407986549c80                         71.5MB
docker.io/istio/pilot                    1.15.3                               dfe342e9af95d                         72MB
docker.io/istio/proxyv2                  1.15.3                               f5598a5c8445b                         89.5MB
docker.io/kubernetes/dashboard          v2.5.1                               7fff914c4a615                         73.7MB
docker.io/kubernetes/metrics-scraper    v1.0.8                               115053965e86b                         19.7MB
docker.io/library/avx-base-image        2020.3.0                              483603ab1c6b5                         1.03GB
docker.io/library/mongo                  4.4.17                               af86910c16daa                         173MB
docker.io/library/vault                  1.9.7                                 0560170a2c276                         73.2MB
docker.io/prom/prometheus                v2.36.2                               8c01021bb2f4a                         84.8MB
k8s.gcr.io/coredns/coredns              v1.8.6                                 a4ca41631cc7a                         13.6MB
k8s.gcr.io/dns/k8s-dns-node-cache       1.21.3                                 3e022b3b08a31                         42.5MB
k8s.gcr.io/etcd                          3.5.3-0                                aebe758cef4cd                         102MB
k8s.gcr.io/kube-apiserver                v1.24.4                                6cab9d1bed1be                         33.8MB
k8s.gcr.io/kube-controller-manager      v1.24.4                                1f99cb6da9a82                         31MB
k8s.gcr.io/kube-proxy                    v1.24.4                                7a53d1e08ef58                         39.5MB
k8s.gcr.io/kube-scheduler                v1.24.4                                03fa22539f1c                          15.5MB
k8s.gcr.io/metrics-server/metrics-server v0.6.1                                 e57a417f15d36                         28.1MB
k8s.gcr.io/pause                          3.7                                    221177c6082a8                         311kB
registry.opensource.zalan.do/teapot/kube-metrics-adapter v0.1.17                               f4e0f5df91d97                         16.9MB
```

9. Infra upgrade logs will be available under `<Installer_path>/appviewx_kubernetes/scripts/infra_upgrade` and the logs file is a hidden file.

Chapter 5: Frequently Asked Questions (FAQ)

How to disable/enable TLS configuration?

A configuration parameter (**ENABLE_LOWER_TLS**) was added in **appviewx.conf** as part of the apply patch for versions below 2020.3.0FP7. This parameter provides options to either enable or disable TLS (v1.0 or v1.1) communication between AppViewX and devices after the Java upgrade in 2020.3.0FP7.

- To enable: **ENABLE_LOWER_TLS = TRUE** (when we choose **YES** in the interactive session).
- To disable: **ENABLE_LOWER_TLS = FALSE** (when we choose **NO** in the interactive session).
- If a customer wants to change **ENABLE_LOWER_TLS** to **YES** or **NO** after completion of the patch.
 - a. Change the option to True or False in **appviewx.conf** file as per the requirement.
 - b. Perform the `./plugins_install.sh`



Note: Execute the above commands only after the replicaset has been completely deployed i.e. if it has reached the desired number of replicas and the previous replicaset has been completely terminated. It would generally take 10 minutes after the patch for this to complete. To confirm the same please execute command

```
kubectl get rs -n <datacenter>
```

The command needs to be executed for every datacenter. Verify from the output that the desired number of replicas, current number of replicas, and ready number of replicas are all equal for the latest deployed replicaset.

Chapter 6: Debugging Information

Information on debugging details are mentioned below

1. The `<patch_logs.txt>` file can be located at `<INSTALLER_PATH>/appviewx_kubernetes/scripts`
2. If deployment fails with the message: `“scp failed: Upload failed”`, run the commands below:

```
chown -R appviewx:appviewx <installation_path>/plugins
```

```
chown -R appviewx:appviewx <installation_path>/logs
```



Note: The `<installation_path>` is mentioned in the `/appview_kubernetes/scripts/appviewx.conf` file as the parameter `INSTALLATION_PATH`.

3. To check the status of pods use the command below.

```
kubectl get pods -n <namespace>
```

If the plugin upgrade is successful, all the pods will be in the `“Running”` state.

4. If the helm install is triggered instead of helm upgrade, the error message `“Cannot re-use a name that is still in use”` is displayed. This happens due to a timeout issue during the helm chart check. Fix the issue by re-triggering the following command:

```
scripts/plugins_install.sh
```

```
and 20 more similar warnings elsewhere)
Error: Error running command 'helm install --set-string timestamp=2021-08-17T14:59:21Z \
--set-string appviewx.multi=true \
--set common.namespace="{avx}" \
--set appviewx.replicas="2" \
--set appviewx.nodeAffinity="{us,eu}" \
--set appviewx.installation.user=appviewx \
--set appviewx.installation.user.id=1000 \
--set appviewx.appviewx.path=/home/appviewx/appviewx_cluster/ \
avx-platform-web /home/appviewx/appviewx_binaries/appviewx_kubernetes/yaml/appviewx_plugins/avx_platform_web/chart;
: exit status 1. Output: Error: cannot re-use a name that is still in use
```

Chapter 7: Post Patching Steps

Before the FP11 patch has been applied, as long as the group has an associated policy which has OpenTrust CA, the end users can access any profile and request enrollment. But after the patching, the existing configurations will not work since a new field has been added. Implication is that end users will not be able to access any profiles unless policies are configured by privileged users. Once configured end users will be able to access the profiles which are configured in the policy associated to the group.

If any customers have integrated OpenTrust CA with CERT+, follow the steps below:

1. Login to the AppViewX platform with valid credentials.
2. Click on the menu option on the top left and select CERT+
3. From the Cert menu, navigate to CA Policy.
4. Click on the policy name where existing Opentrust CA is configured.
5. Select Opentrust certificate authority.
6. Click the edit button in the existing Opentrust CA record.
7. Select one or more certificate management profiles to be enabled for this policy.
8. Save the CA details and update policy.

Chapter 8: More Information

For the latest, most complete information about known and fixed issues with the AppViewX modules, see the latest revision of the release notes.

To access Software Release Notifications for AppViewX Releases, visit our Help center at <https://help.appviewx.com/home>. You need to log in to your AppViewX account. From the Help center, search by the specific release number or navigate to Release Portal and choose the release, for example, v20.3.0.

Documentation Feedback

We request you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to tech-documentation@appviewx.com

If you are preferred to send feedback through e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable).

Requesting Technical Support

Technical product support is available through AppViewX help support center, request to send an email to help@appviewx.com

Self-Help Online Tools and Resources

For quick and easy problem resolution, AppViewX is designed an online self-service portal called the help support center that provides you with the following features:

- Find help support center: <https://help.appviewx.com/home>
- Find product technical documentation: <https://help.appviewx.com/documentation>
- Find solutions and answer questions using our Knowledge Base: <https://internalkb.appviewx.com/knowledge-base>
- Download the latest versions of software: <https://release.appviewx.com>