



# Application Upgrade Guide FP1

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Version: 2022.1.0

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# Preface

## Revision History

Revision	Description	Date
v1.0	Application Upgrade Guide for Release 2022.1.0 FP1	September, 2022

## About this Guide

The document describes the steps for Kubernetes upgrade in Appviewx from any of the legacy versions (20220.3.0FP10, 2021.0.0FP3, 2022.1.0) to 2022.1.0 FP1

## Audience

The document is intended for the internal users and the customers of AppViewX to support the application upgrade.

## Text Conventions

The following text conventions are used in this document:

Convention	Description
<b>boldface</b>	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

- Note the following file locations Location of the old installer file -
  - old installer file, for example - `/home/appviewx/FP10/appviewx_kubernetes`
  - installed location, for example - `/home/appviewx/appviewx_cluster`
- Location to save the new installer file - `/home/appviewx/appviewx/Application_upgrade`
- Execute each command below and save the outputs for further reference

```
kubectl get nodes --show-labels
```

```
kubectl get hpa
```

- Keep a backup of the iControl jar files available at location - `/home/appviewx/appviewx/appviewx_dependencies/external_libs/iControl-13.1.0.jar` for iControl to be done after the upgrade.
- Check for any other custom changes that may have been done specifically for the customer.
- Add the plugins listed below in the `appviewx.conf` file of the old installer (previous version) in case they are not present.
  - `avx_pkiaas_cert_ocsp_generator`
  - `avx_pkiaas_cert_ocsp_server`
  - `avx_platform_hsm`

# Chapter 2: Steps to Upgrade Appviewx from 2020.3.1FP10 to 2022.1.0FP1

The steps to upgrade AppViewX from 2020.3.1 FP10 to 2022.1.0 FP1 are as follows:

1. Log in to the [release portal](#) and download the installer file – **appviewx\_kubernetes\_2022.1.0.tar.gz**
2. Create a new folder in the **home/appviewx** file location.

**Example:** **home/appviewx/Application\_upgrade**

```
[redacted ~]$ pwd
/home/appviewx
[redacted ~]$ mkdir Application_upgrade
[redacted ~]$ cd Application_upgrade
[redacted Application_upgrade]$ pwd
/home/appviewx/Application_upgrade
[redacted Application_upgrade]$
```

3. Copy the installer file **appviewx\_kubernetes\_2022.1.0.tar.gz** into the new folder location **home/appviewx/Application\_upgrade**
4. Untar the installer file using the command below:

```
tar -xf appviewx_kubernetes_2022.1.0.tar.gz
```

After the command is executed, the **appviewx\_kubernetes** folder is created: **home/appviewx/ApplicationUpgrade/appviewx\_kubernetes**

5. Download the add-ons file - **appviewx\_kubernetes\_addons\_2022.1.0.tar.gz**
6. Copy the **appviewx\_kubernetes\_addons\_2022.1.0.tar.gz** file to the **appviewx\_kubernetes** folder using the command:

```
cp appviewx_kubernetes_addons_2022.1.0.tar.gz appviewx_kubernetes/
```



**Note:** If the cluster is a SaaS Provisioning one, then copy the two additional artifacts mentioned below:

- **appviewx\_kubernetes\_saas\_2022.1.0.tar.gz**
- **appviewx\_saas\_multitenant\_installer.tar.gz**

The above two artifacts are meant for AppViewX users only.

7. Navigate to the **scripts** directory in the **appviewx\_kubernetes** folder (**home/appviewx/ApplicationUpgrade/appviewx\_kubernetes**) using the command:

```
cd /home/appviewx/ApplicationUpgrade/appviewx_kubernetes/scripts
```

The **scripts** folder contains the **appviewx.conf.template** file.

8. Update the conf parameters in the appviewx.conf file as mentioned in the Install and Upgrade Maintenance guide after copying the appviewx.conf.template file as appviewx.conf

To copy, use the command:

```
cp appviewx.conf.template appviewx.conf
```

OR

Skip the above step to use the conf merge feature as part of step 11(b).



**Note:** For the complete list of the appviewx.conf file parameters refer the *Configuring the appviewx.conf File to Install Appviewx* section in the **Install and Upgrade Maintenance Guide**.

9. From the `/home/appviewx/ApplicationUpgrade/appviewx_kubernetes/scripts` directory execute the upgrade command below:

```
./upgrade.sh
```

10. Provide the input of the older installer directory and the directory where the application is currently installed.

After entering both inputs, the system checks for newly introduced conf file parameters.

```
[scripts]$ ./upgrade.sh
Enter the AppViewX old installer path: /home/appviewx/FP10/appviewx_kubernetes
Enter the AppViewX installed location: /home/appviewx/appviewx
```

11. Enter Y or N (Yes or No) as mentioned below if prompted to know if the appviewx.conf file is updated.
  - a. Y – Single Node installation and also if the appviewx.conf file parameters are updated
  - b. N – Multi Node installation and also if the appviewx.conf file parameters are not updated

```
Checking for newly introduced conf parameters-----..
Provide the input if appviewx.conf file is updated. Y/N: N
=====
```

After the value is entered, there are prompts for the new conf parameters added along with the default values.

12. Enter the appropriate value to alter the default value OR hit the enter key (*recommended*) to use the default value. An example is shown below.

```

=====
Please provide the appropriate input for SAAS_ENABLED
# Flag to enable SAAS model deployment
#####
# ONLY FOR SAAS INSTALLATION #
#####
Default value for the parameter is : false

Please enter the value to alter the default value according to the above instruction. Kindly press enter to use default value :
=====

```

A series of prompts will be displayed (approximately 30 parameters), hit the enter key each time to choose the default value or enter the desired value.



**Note:** For the complete list of the appviewx.conf file parameters refer the *Configuring the appviewx.conf File to Install Appviewx* section in the **Install and Upgrade Maintenance Guide**.

13. The installation begins and the following operations are carried out during the process.

#### a. Taking backups

```

2022-08-08T17:44:26.039+0000 writing appviewx.usergroup_rbac_12.4 to /appviewx/dependencies/logs/mongo_backup_Mon_Aug_8_23_14_24_IST_2022/ap
pviewx/usergroup_rbac_12.4.bson
2022-08-08T17:44:26.040+0000 done dumping appviewx.sourcecontrol_repository_details (0 documents)
2022-08-08T17:44:26.040+0000 done dumping appviewx.usergroup_rbac_12.4 (0 documents)
*****
*****
Taking backup of DB: appviewxCA
*****
*****
Taking backup of DB: connectedPlatform
*****
*****
Taking backup of DB: imageDetails
*****
*****
Taking backup of DB: templateDB
*****
*****
Taking backup of DB: workFlowDB
*****
*****
Taking backup of DB: workFlowDBEngine
*****
*****
***** Compressing backup *****
mongo backup Mon Aug 8 23 14 24 IST 2022/
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/ln.metadata.json
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/dnsRecords.metadata.json
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/wafrole.metadata.json
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/adc_archive_settings.metadata.json
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/deviceIdentifier.metadata.json
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/certificate_renewReissueHistory.metadata.json

```

```

mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/sourcecontrol_repository_details.bson
mongo backup Mon Aug 8 23 14 24 IST 2022/appviewx/usergroup_rbac_12.4.bson
mongo backup Mon Aug 8 23 14 24 IST 2022.tar.gz 100% 42MB 57.4MB/s 00:00
Copied backup in installer node successfully. Location : /home/appviewx/Application_upgrade/appviewx_kubernetes/mongo_backup/mongo_backup_Mon_A
ug_8_23_14_24_IST_2022.tar.gz

```

#### b. Uninstalling the old version

```

/home/appviewx/Application_upgrade/appviewx_kubernetes/scripts
Vault Backup File: /home/appviewx/Application_upgrade/appviewx_kubernetes/vault_backup/vault_backup_Mon_Aug_8_23_14_40_IST_2022

kubernetes setup is found. Uninstalling the existing setup

Please enter appviewx password of absecon:pe-iu-node30.lab.appviewx.net :

```

```
Apply complete! Resources: 5 added, 0 changed, 0 destroyed.
Kube uninstall is successfull
Please wait while we extract the addons...
/home/appviewx/Application_upgrade/appviewx_kubernetes/scripts
Please enter appviewx password of [REDACTED].appviewx.net :
```



**Note:**

- In case of upgrade failures, resume the upgrade by executing the command:

```
/upgrade.sh
```

- In case of Infra upgrade failure, the script will prompt a question to clean the setup as shown below. Enter 'Y' (yes) to proceed with the clean-up.

```
Warning: Quoted type constraints are deprecated
   on ../yaml/appviewx_vault/consul/deploy/chart_deploy.tf line 14, in variable "appviewx_dependent_check":
   14:     type = "list"

Terraform 0.11 and earlier required type constraints to be given in quotes,
but that form is now deprecated and will be removed in a future version of
Terraform. To silence this warning, remove the quotes around "list" and write
list(string) instead to explicitly indicate that the list elements are
strings.

(and 4 more similar warnings elsewhere)

Error: error executing "/tmp/terraform_1469185875.sh": Process exited with status 1

Failed during infra upgrade
Please provide the input if you want to clean the setup (default is N): Y/N y
Cleaning up the setup.
```

**c. Installing the new version and restoring the backups**

## Steps to Upgrade Appviewx from 2020.3.1FP10 to 2022.1.0FP1

```
appviewx@pe-lu-node30:~/Application_upgrade/appviewx_kubernetes/scripts
appviewx@pe-lu-node30:~/Application_upgrade/appviewx_kubernetes/scripts x appviewx@apvx-ganga-tracking-rh-8-1-~/Ganga_Fp1/appviewx_kubernetes/sc...
2022-08-08T18:10:11.521+0000 dropping collection appviewx.firewallStats before restoring
2022-08-08T18:10:11.526+0000 reading metadata for appviewx.firewallStats from /appviewx/dependencies/logs/mongo_backup_Mon_Aug_8_23_14_24_IST_2022/appviewx/firewallStats.metadata.json
2022-08-08T18:10:11.526+0000 creating collection appviewx.firewallStats using options from metadata
2022-08-08T18:10:11.599+0000 restoring appviewx.firewallStats from /appviewx/dependencies/logs/mongo_backup_Mon_Aug_8_23_14_24_IST_2022/appviewx/firewallStats.bson
2022-08-08T18:10:11.602+0000 restoring indexes for collection appviewx.firewallStats from metadata
2022-08-08T18:10:11.635+0000 finished restoring appviewx.adc config creation workorder (0 documents, 0 failures)
2022-08-08T18:10:11.635+0000 reading metadata for appviewx.cert config sync persist status from /appviewx/dependencies/logs/mongo_backup_Mon_Aug_8_23_14_24_IST_2022/appviewx/cert_config_sync_persist_status.metadata.json
2022-08-08T18:10:11.635+0000 creating collection appviewx.cert config sync persist status using options from metadata
2022-08-08T18:10:11.705+0000 restoring appviewx.cert config sync persist status from /appviewx/dependencies/logs/mongo_backup_Mon_Aug_8_23_14_24_IST_2022/appviewx/cert_config_sync_persist_status.bson
2022-08-08T18:10:11.707+0000 restoring indexes for collection appviewx.cert config sync persist status from metadata
2022-08-08T18:10:11.742+0000 finished restoring appviewx.cert inventory application connector (0 documents, 0 failures)
2022-08-08T18:10:11.742+0000 dropping collection appviewx.fw risk history before restoring
2022-08-08T18:10:11.746+0000 reading metadata for appviewx.fw_risk_history from /appviewx/dependencies/logs/mongo_backup_Mon_Aug_8_23_14_24_IST_2022/appviewx/fw_risk_history.metadata.json
2022-08-08T18:10:11.746+0000 creating collection appviewx.fw_risk_history using options from metadata
2022-08-08T18:10:11.814+0000 restoring appviewx.fw_risk_history from /appviewx/dependencies/logs/mongo_backup_Mon_Aug_8_23_14_24_IST_2022/appviewx/fw_risk_history.bson
2022-08-08T18:10:11.817+0000 restoring indexes for collection appviewx.fw_risk_history from metadata
2022-08-08T18:10:11.855+0000 finished restoring appviewx.cert config sync persist status (0 documents, 0 failures)
2022-08-08T18:10:11.947+0000 finished restoring appviewx.fw_risk_history (0 documents, 0 failures)
2022-08-08T18:10:11.953+0000 finished restoring appviewx.adc archives (0 documents, 0 failures)
2022-08-08T18:10:11.994+0000 finished restoring appviewx.firewallStats (0 documents, 0 failures)
2022-08-08T18:10:11.994+0000 16500 document(s) restored successfully. 0 document(s) failed to restore.
Restoring completed
Mongo has been restored successfully
Backup file path is /home/appviewx/Application_upgrade/appviewx_kubernetes/scripts/../../vault_backup/vault_backup_Mon_Aug_8_23_14_40_IST_2022
Vault Restore Script begins
AVX Installation path: /home/appviewx/appviewx/
Success! Data written to: transit/keys/uEynbUXcwM/config
Success! Data deleted (if it existed) at: transit/keys/uEynbUXcwM
Success! Data written to: transit/restore/uEynbUXcwM
configmap/avx-common-config replaced
```

```
oZxWtdsN4xspkKkSj9Q8yVrPyPy3EXNZ-pLcgv10Ien0PKuTAKGh0-gu0rHzI7Mw
=====
Take a backup of following files and remove the files:
/home/appviewx/Application_upgrade/appviewx_kubernetes/scripts/../../infra/.vault_key_for_reference
/home/appviewx/appviewx/../../appviewx_configuration
Installation has been completed
```



**Note:** If prompted to set up the NTP or Chrony sever, provide the appropriate input. Enter “no” if the NTP/Chrony is already configured and this will retain the existing NTP/Chrony configurations.



**Note:** In the case of Mongo restore, if the restore operation is stuck or takes more time than usual, then stop the installation process and increase the mongo **wiretigercache** size of the **mongodb** or **mongo-shareddb statefulset**. (The **mongodb** is for single node setup and **mongo-shareddb statefulset** is for multi-node setup). Use the commands below

Single Node:

```
kubectl edit statefulset mongodb -n avx
```

Multi node:

```
kubectl edit statefulset mongo-shareddb -n avx
```

Navigate to **MONGO\_CACHE\_SIZE** key value of the **env** field and increase the cache size value by 1 to 2 GB



```
env:  
- name: MONGO_CACHE_SIZE  
  value: "0.25"  
image: mongo:4.2.18  
imagePullPolicy: Never
```

After making the required changes run command `./upgrade.sh` to resume the upgrade.

**d. Merging the common config map**

```
Merging common config map...  
Merging common config has been completed  
[appviewx@pe-iu-node30 scripts]$
```

## Chapter 3: Steps to Upgrade Appviewx from 2021.0.0FP3 to 2022.1.0FP1

To upgrade from 2021.0.0FP3 to 2022.1.0FP1 follow the steps mentioned in the [section above](#).

## Chapter 4: Steps to Upgrade Appviewx from 2022.1.0 to 2022.1.0FP1

To upgrade from 2022.1.0 to 2022.1.0FP1 follow the steps mentioned in the [section above](#).

# Chapter 5: Post Upgrade Steps

The following actions must be taken to avoid any post-upgrade errors listed below.

## 1. Loss of Mongo replica set priority configurations

During application upgrade, mongod is freshly set up with the latest upgraded versions. The existing replicaset configurations such as replicaset priorities will not be taken ahead and hence have to be re-configured. High latency customers must perform the following step:

- a. Configure the parameters `OPTIMISE_ROUTING_FOR_LATENCY` and `PREFERRED_DEFAULT_DC` in the `appviewx.conf`
- b. Re-trigger the `plugins_install.sh` to change the configurations.

## 2. Missing iControl files after the upgrade process

Post the application upgrade, the **iControl-13.1.0.jar** file must be copied to the location `<installed-location>/appviewx_dependencies/external_libs/iControl-13.1.0.jar`

*Example:*

```
/home/appviewx/appviewx/appviewx_dependencies/external_libs/iControl-13.1.0.jar
```

## 3. Missing custom changes

Add any of the custom changes that may have been done specifically for the customer as noted in the prerequisites.

## 4. External web cert is not upgraded from 2020.3.0 FP10 to 2022.1.0 FP1

To update the external CA web certificate, execute the command below:

```
./appviewx.sh --update-web-cert
```

The following prompts will be displayed:

- Enter the absolute path of external cert file:
- Enter the absolute path of external key file:

Enter both the values to proceed. Once the cert upgrade is completed, restart the gateway and web.

## 5. Recreating insight/elk components

For sites with insight/elk enabled, the components need to be recreated post the upgrade. Refer to the sections below in the ***Install and Upgrade Maintenance Guide*** to recreate the insight/elk components.

- *Monitoring and Maintaining Appviewx > Installing ELK Components*
- *Monitoring and Maintaining Appviewx > Enabling the Insight Module*

# Chapter 6: 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](mailto: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](mailto: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://helpcenter.appviewx.com/techdoc/index?GuideSearch%5Bversion\\_id%5D=38](https://helpcenter.appviewx.com/techdoc/index?GuideSearch%5Bversion_id%5D=38)
- Download the latest versions of software: <https://release.appviewx.com>