FEWS 2024.02 Installation Procedure

Contents

1 Introduction

This document describes the procedure to update the existing client-server and stand-alone systems from the NWS2023.02 FEWS release to the NWS2024.02 FEWS release at all RFCs.

Note: This procedure cannot be used to set up an initial client-server system.

Please verify that the procedures described in each section have been completed successfully before proceeding to the next section. Instructions for verification will be provided.

Any commands to be typed in will be displayed in a monospace font within a block.

```
$ ls -l /awips/chps_share/fews
```

Note: Logs for each script can be found here:

`/awips/chps_share/install/CHPS-25.1.1/installScripts/logs`

2 Unpack the distribution

In this section, the contents of this directory will be copied to the /chps_share directory, and from there parts will be copied to other locations.

1. Log on to `chps9`.

   ```
   user@chps9]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
   ```

2. Untar the package :

   ```
   user@chps9]$ sudo –u fews ./fews_extract.sh
   ```

3 Update of the Stand Alone application for testing purposes

Please Note: This is a generic procedure to update a Stand Alone version with the latest Delft-FEWS binaries. Exact paths will depend on the individual installations, only relative paths are given here.

The Stand Alone version is the only version where new binaries may be installed by an ordinary user and not the super user.

Create a test application with the new binaries

At an `LX workstation` as user *fews*

1. Backup the current FEWS binaries.

```
user@lx]$ cd /awips/chps_share/sa/fews
user@lx]$ sudo –u fews mv bin bin.202302 (if any)
```

2. Create a symlink to the latest FEWS binaries in the release package.

```
user@lx]$ sudo –u fews ln -s /awips/chps_share/install/CHPS-
25.1.1/*202402*MC*OC*/delft_fews_binaries/bin bin
```

3. If not available in the `fews` directory, copy a functional `??rfc_sa` application into this directory.

```
user@lx]$ sudo –u fews cp -dR /path/to/??rfc_sa .
```

4. Create a symlink to the latest FEWS patch.jar.

```
user@lx]$ cd ??rfc_sa
user@lx]$ sudo –u fews rm –rf *patch.jar
user@lx]$ sudo –u fews ln -s /awips/chps_share/install/CHPS-
25.1.1/*202402*MC*OC*/delft_fews_binaries/patch_placeholder/patch.jar .
```

5. Launch the SA.

```
user@lx]$ cd ../
user@lx]$ sudo –u fews ./launch_client.sh ??rfc_sa
```

Open the Stand alone application

Open the Stand Alone application and verify the following:

1. Use the menu **Help → About** and confirm that the build number is **510271505** (or higher). This proves the correct build is used.
2. Test functionality as you see fit. Run segments etc.

4 Update Dev-Test systems (chps7|8|9)

4.1 Stop all CHPS services

1. Shutdown your CHPS services on the FSS (chps9) server and check status. Log on to *chps9*.

```
user@chps9]$ sudo systemctl stop chps.target
user@chps9]$ sudo systemctl status chps\*
```

2. Shutdown your CHPS services on the MC (chps7) server and check status. Log on to *chps7*.

```
user@chps7]$ sudo systemctl stop chps.target
user@chps7]$ sudo systemctl status chps\*
```

4.2 Update the Database (DevTest-chps8)

Note: If your RFC was part of FEWS 2024 beta testing and has run this step already during beta testing please don't run this step. Skip to updating MasterController 4.3.

1. Log on to *chps8*. Verify nightly database backups.

```
user@chps8]$ sudo -u fews ls –l /awips/chps_backup/chps_pgdumps/
```

2. Navigate to the install directory as user *fews*.

```
user@chps8]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

3. Run the script to update Database (follow prompt instructions):

```
user@chps8]$ sudo -u fews ./fews_DB.sh
```

Note: Some Errors are expected.

4.3 Update the MasterController (DevTest-chps7)

1. Log on to *chps7*.

```
user@chps7]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

2. Run the script to update MC (follow prompt instructions):

```
user@chps7]$ sudo -u fews ./fews_MC.sh
```

4.4 Start Tomcat service on MasterController (DevTest-chps7)

1. Start chps-tomcat services on *chps7* :

```
user@chps7]$ sudo systemctl start chps-tomcat
```

2. Check status of services, you should expect to see tomcat.

```
user@chps7]$ sudo systemctl status chps-tomcat
```

3. Webservices will not be started at this point. Only the AI is started. The Webservice needs the FSS to start first before starting it, we will start the Webservice at a later step below.

4.5 Upload base build and patch.jar through Admin Interface

1. On a LX workstation open a Firefox browser, navigate to: $YOURSERVERNAME$:8443/fewsadmin_xxxmc0#.

2. Log in to the Admin Interface.

3. Upload the base build zip file. Admin Interface ->Software Management -> Upload Basebuild. After selecting the file click Open then click Upload on the AI.

```
/awips/chps_share/install/CHPS-25.1.1/*202402_MC*OC*/basebuild/fews*202402*bin.zip
```

4. Under Admin Interface ->Software Management -> Upload Patch upload the patch.jar. After selecting the file click Open then click Upload on the AI.

```
/awips/chps_share/install/CHPS-
25.1.1/*202402_MC*OC*/delft_fews_binaries/patch_placeholder/patch.jar
```

4.6 Start CHPS MasterController services on MasterController (DevTest-chps7)

1. Start chps-mastercontroller service on *chps7* :

```
user@chps7]$ sudo systemctl start chps.target
```

2. Check status of services, you should expect to see tomcat and mastercontroller.

```
user@chps7]$ sudo systemctl status chps\*
```

Note: If you notice the MC service is not starting, it could be due to SELinux. Run the following commands:

```
user@chps7]$ sudo semanage fcontext -a -t bin_t '/awips/chps_local/fews/bin(/.*)?'; sudo
restorecon -Rv /awips/chps_local/fews/bin
```

4.7 Upload RootConfig files through ConfigManager

Note:
If your RFC was part of FEWS beta testing and has run this step already during beta testing please don't run this step. Skip to updating Forecast Shell Servers 4.8.

1. On a LX workstation navigate to a Configuration Manager home directory.
2. Update bin link to point to latest FEWS bin.

```
user@lx]$ cd /path/to/CM/
user@lx]$ sudo –u fews rm –rf bin
user@lx]$ sudo –u fews ln -s /awips/chps_share/install/CHPS-
25.1.1/*202402*MC*OC*/delft_fews_binaries/bin bin
```

3. Launch CM and upload the configuration.

```
user@lx]$ ./<mc-id>_launch_CM.sh ??rfc_cm
```

4.8 Update the Forecast Shell Servers (DevTest-chps9)

1. Log on to *chps9*.

```
user@chps9]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

2. Run the script to update FSS (follow prompt instructions):

```
user@chps9]$ sudo -u fews ./fews_FSS.sh
```

Note: You can update OHD-CORE (Section 4) and ResSim (Section 4) now.

4.9 Start CHPS services on Forecast shell servers (DevTest-chps9)

1. Start chps services on *chps9*:

```
user@chps9]$ sudo systemctl start chps.target
```

2. Check status of services, you should expect to see FSS launcher:

```
user@chps9]$ sudo systemctl status chps\*
```

Note: If you notice the FSS service is not starting, it could be due to SELinux. Run the following commands:

```
user@chps9]$ sudo semanage fcontext -a -t bin_t '/awips/chps_local/fews/bin(/.*)?'; sudo
restorecon -Rv /awips/chps_local/fews/bin
```

3. Acknowledge previously failed FSS in the AI. System Status > Forecasting Shell Servers. Select failed FSS and click on the Acknowledge failed FSSs button.

Note: If you see java heap space error preventing the FSS from starting increase the Xmx setting in the FSS clientConfig.xml. After updating, upload the file through the CM and restart the FSS service.

4.10 Start Tomcat Webservices

1. Log on to chps7. Deploy the Webservice XML File. Where XXX is the RFC Site ID like rha.

```
user@chps7]$ sudo -u fews cp /awips/chps_local/tomcat/fews/fewswebservice_XXXmc02.xml
/awips/chps_local/tomcat/conf/Catalina/localhost/
```

2. Restart Tomcat to get Webservice to run.

```
user@chps7]$ sudo systemctl restart chps-tomcat
```

4.11 Update the Operator Client for testing purposes

Update binaries

1. On an LX workstation.

```
user@lx]$ cd /awips/chps_share/oc/
```

2. Change directory to user directory for the testing user. We are using user *fews* as an example.

```
user@lx]$ cd fews
```

3. If `bin` is a directory, remove it so the test user can use the new binaries.

```
user@lx]$ sudo -u fews rm -rf bin
user@lx]$ sudo -u fews ln -s /awips/chps_share/install/CHPS-
25.1.1/*202402_MC*_OC*/delft_fews_binaries/bin bin
```

4. Launch the OC:

```
user@lx]$ cd ../
user@lx]$ ./launch_client.sh ??rfc_oc
```

Open the Operator Client test application and conduct some testing

Open the Operator Client application and verify the following:

1. Login to the Master controller and confirm that the synchronization to the OC works fine. Note: if a single Master Controller is configured, the OC will automatically login.

2. Use the menu "`Help`" → "`About`" and confirm that the build number is **510271505** (or higher). This proves the correct build and patch is being used.

3. Open a web-browser and login at the Admin Interface.

4. Create a Manual Forecast to test the OC → FSS communications. Submit the forecast.

5. Once completed, confirm that it properly executed and returned the results to your OC.

5 Update Operational Primary systems (chps1|2|3)

5.1 Prepare operational primary system for upgrade.

Wait until all of your Operations have completed for the day before beginning the CHPS-25.1.1 upgrade for your Operational systems. Stop all synchronization between **RP1, RP2** and **NWCO** in preparation for upgrading RP1. Note: Synchronization cannot occur between a system using different releases of FEWS. Therefore, after one Operational system has been upgraded to the latest FEWS release and the other is still on the previous FEWS release, forecasts and states cannot be synchronized. This will have to wait until both systems are updated to the latest FEWS.

5.2 Stop all CHPS services

1. Shutdown your CHPS services on the FSS (chps3) server and check status. Log on to *chps3*.

```
user@chps3]$ sudo systemctl stop chps.target
user@chps3]$ sudo systemctl status chps\*
```

2. Shutdown your CHPS services on the MC (chps1) server and check status. Log on to *chps1*.

```
user@chps1]$ sudo systemctl stop chps.target
user@chps1]$ sudo systemctl status chps\*
```

5.3 Update the Database (OpsPrimary -chps2)

1. Log on to *chps2*. Verify nightly database backups.

```
user@chps2]$ sudo -u fews ls –l /awips/chps_backup/chps_pgdumps/
```

2. Navigate to the install directory.

```
user@chps2]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

3. Run the script to update Database (follow prompt instructions):

```
user@chps2]$ sudo -u fews ./fews_DB.sh
```

Note: Some Errors are expected.

5.4 Update the MasterController (OpsPrimary-chps1)

1. Log on to *chps1*.

```
user@chps1]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

2. Run the script to update MC (follow prompt instructions):

```
user@chps1]$ sudo -u fews ./fews_MC.sh
```

5.5 Start Tomcat service on MasterController (OpsPrimary-chps1)

1. Remain on *chps1.* Start chps-tomcat services :

```
user@chps1]$ sudo systemctl start chps-tomcat
```

2. Check status of services, you should expect to see tomcat.

```
user@chps1]$ sudo systemctl status chps-tomcat
```

3. Webservices will not be started at this point. Only the AI is started. The Webservice needs the FSS to start first before starting it, we will start the Webservice at a later step below.

5.6 Upload base build and patch.jar through Admin Interface

1. On a LX workstation open a Firefox browser, navigate to: $YOURSERVERNAME$:8443/fewsadmin_xxxmc0#.

2. Log in to the Admin Interface.

3. Upload the base build zip file. Admin Interface ->Software Management -> Upload Basebuild. After selecting the file click Open then click Upload on the AI.

```
/awips/chps_share/install/CHPS-25.1.1/*202402_MC*OC*/basebuild/fews*202402*bin.zip
```

4. Under Admin Interface ->Software Management -> Upload Patch upload the patch.jar. After selecting the file click Open then click Upload on the AI.

```
/awips/chps_share/install/CHPS-
25.1.1/*202402_MC*OC*/delft_fews_binaries/patch_placeholder/patch.jar
```

5.7 Start CHPS services on MasterController (OpsPrimary-chps1)

1. Start chps services on *chps1* :

```
user@chps1]$ sudo systemctl start chps.target
```

2. Check status of services, you should expect to see tomcat and mastercontroller.

```
user@chps1]$ sudo systemctl status chps\*
```

Note: If you notice the MC service is not starting, it could be due to SELinux. Run the following commands:

```
user@chps1]$ sudo semanage fcontext -a -t bin_t '/awips/chps_local/fews/bin(/.*)?'; sudo
restorecon -Rv /awips/chps_local/fews/bin
```

5.8 Upload RootConfig files for Forecast Shell Servers through ConfigManager

1. On a LX workstation navigate to a Configuration Manager home directory. Delete old patch.jar. Patch uploaded earlier through the AI will be used by FEWS.

```
user@lx]$ mkdir -p /path/to/CM/??rfc_cm
user@lx]$ cd /path/to/CM/??rfc_cm
user@lx]$ rm –rf *patch.jar
```

2. Update bin link to point to latest FEWS bin.

```
user@lx]$ cd /path/to/CM/
user@lx]$ sudo -u fews rm –rf bin
user@lx]$ sudo -u fews ln -s /awips/chps_share/install/CHPS-
25.1.1/*202402*MC*OC*/delft_fews_binaries/bin bin
```

3. Launch CM and upload the configuration.

```
user@lx]$ ./<mc-id>_launch_CM.sh ??rfc_cm
```

5.9 Update the Forecast Shell Servers (OpsPrimary-chps3)

1. Log on to *chps3*.

```
user@chps3]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

2. Run the script to update FSS (follow prompt instructions):

```
user@chps3]$ sudo -u fews ./fews_FSS.sh
```

Note: You can update OHD-CORE (Section 5) and ResSim (Section 5) now.

5.10 Start CHPS services on Forecast shell servers (OpsPrimary-chps3)

1. Start chps services on *chps3*:

```
user@chps3]$ sudo systemctl start chps.target
```

2. Check status of services, you should expect to see FSS launcher:

```
user@chps3]$ sudo systemctl status chps\*
```

Note: If you notice the FSS service is not starting, it could be due to SELinux. Run the following commands:

```
user@chps3]$ sudo semanage fcontext -a -t bin_t '/awips/chps_local/fews/bin(/.*)?'; sudo
restorecon -Rv /awips/chps_local/fews/bin
```

Note: The services are now running, but workflows will most likely, fail until the OHD-CORE is updated.

3. Acknowledge previously failed FSS in the AI. System Status > Forecasting Shell Servers. Select failed FSS and click on the Acknowledge failed FSSs button.

   Note: If you see java heap space error preventing the FSS from starting increase the Xmx setting in the FSS clientConfig.xml. After updating, upload the file through the CM and restart the FSS service.

5.11 Start Tomcat Webservices

1. Log on to chps1. Deploy the Webservice XML File. Where XXX is the RFC Site ID like rha.

```
user@chps1]$ sudo -u fews cp /awips/chps_local/tomcat/fews/fewswebservice_XXXmc00.xml
/awips/chps_local/tomcat/conf/Catalina/localhost/
```

2. Restart Tomcat to get Webservice to run.

```
user@chps7]$ sudo systemctl restart chps-tomcat
```

5.12 Update the Operator Client for testing purposes

Update binaries

1. On an LX workstation.

```
user@lx]$ cd /awips/chps_share/oc/
```

2. Change directory to user directory for the testing user. We are using user *fews* as an example.

```
user@lx]$ cd fews
```

3. If `bin` is a directory, remove it so the test user can use the new binaries.

```
user@lx]$ sudo -u fews rm -rf bin
user@lx]$ sudo -u fews ln -s /awips/chps_share/install/CHPS-
25.1.1/*202402_MC*_OC*/delft_fews_binaries/bin bin
```

4. Launch the OC:

```
user@lx]$ ./launch_client.sh ??rfc_oc
```

Open the Operator Client test application and conduct some testing

Open the Operator Client application and verify the following:

1. Login to the Master controller and confirm that the synchronization to the OC works fine. Note: if a single Master Controller is configured, the OC will automatically login.

2. Use the menu "`Help`" → "`About`" and confirm that the build number is **510271505** (or higher). This proves the correct build and patch is being used.

3. Open a web-browser and login at the Admin Interface.

4. Create a Manual Forecast to test the OC → FSS communications. Submit the forecast.

5. Once completed, confirm that it properly executed and returned the results to your OC.

6 Update Operational Backup systems (chps4|5|6)

6.1 Stop all CHPS services

1. Shutdown your CHPS services on the FSS (chps6) server. Log on to *chps6*.

```
user@chps6]$ sudo systemctl stop chps.target
user@chps6]$ sudo systemctl status chps\*
```

2. Shutdown your CHPS services on the MC (chps4) server. Log on to *chps4*.

```
user@chps4]$ sudo systemctl stop chps.target
user@chps4]$ sudo systemctl status chps\*
```

6.2 Update the Database (OpsBackup-chps5)

1. Log on to *chps5*. Verify nightly database backups.

```
user@chps5]$ sudo -u fews ls –l /awips/chps_backup/chps_pgdumps/
```

2. Navigate to the install directory.

```
user@chps5]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

3. Run the script to update Database (follow prompt instructions):

```
user@chps5]$ sudo -u fews ./fews_DB.sh
```

Note: Some Errors are expected.

6.3 Update the MasterController (OpsBackup-chps4)

1. Log on to *chps4*.

```
user@chps4]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

2. Run the script to update MC (follow prompt instructions):

```
user@chps4]$ sudo -u fews ./fews_MC.sh
```

6.4 Start Tomcat service on MasterController (OpsBackup-chps4)

1. Start chps-tomcat services on *chps4*:

```
root@chps4]$ sudo systemctl start chps-tomcat
```

2. Check status of services, you should expect to see tomcat.

```
root@chps4]$ sudo systemctl status chps-tomcat
```

3. Webservices will not be started at this point. Only the AI is started. The Webservice needs the FSS to start first before starting it, we will start the Webservice at a later step below.

6.5 Upload base build and patch.jar through Admin Interface

1. On a LX workstation open a Firefox browser, navigate to: $YOURSERVERNAME$:8443/fewsadmin_xxxmc0#.

2. Log in to the Admin Interface.

3. Upload the base build zip file. Admin Interface ->Software Management -> Upload Basebuild. After selecting the file click Open then click Upload on the AI.

```
/awips/chps_share/install/CHPS-25.1.1/*202402_MC*OC*/basebuild/fews*202402*bin.zip
```

4. Under Admin Interface ->Software Management -> Upload Config Patch upload the patch.jar. After selecting the file click Open then click Upload on the AI.

```
/awips/chps_share/install/CHPS-
25.1.1/*202402_MC*OC*/delft_fews_binaries/patch_placeholder/patch.jar
```

6.6 Start CHPS services on MasterController (OpsBackup-chps4)

1. Start chps services on *chps4*: :

```
user@chps4]$ sudo systemctl start chps.target
```

2. Check status of services, you should expect to see tomcat and mastercontroller.

```
user@chps4]$ sudo systemctl status chps\*
```

Note: If you notice the MC service is not starting, it could be due to SELinux. Run the following commands:

```
user@chps4]$ sudo semanage fcontext -a -t bin_t '/awips/chps_local/fews/bin(/.*)?'; sudo
restorecon -R /awips/chps_local/fews/bin
```

6.7 Update the Forecast Shell Servers (OpsBackup-chps6)

1. Log on to *chps6*.

```
user@chps6]$ cd /awips/chps_share/install/CHPS-25.1.1/installScripts
```

2. Run the script to update FSS (follow prompt instructions):

```
user@chps6]$ sudo -u fews ./fews_FSS.sh
```

Note: You can update OHD-CORE (Section 5) and ResSim (Section 5) now.

6.8 Start CHPS services on Forecast shell servers (OpsBackup-chps6)

1. Start chps services on *chps6*:

```
user@chps6]$ sudo systemctl start chps.target
```

2. Check status of services, you should expect to see FSS launcher:

```
user@chps6]$ sudo systemctl status chps\*
```

Note: If you notice the FSS service is not starting, it could be due to SELinux. Run the following commands:

```
user@chps6]$ sudo semanage fcontext -a -t bin_t '/awips/chps_local/fews/bin(/.*)?'; sudo
restorecon -Rv /awips/chps_local/fews/bin
```

3. Acknowledge previously failed FSS in the AI, if any. System Status > Forecasting Shell Servers. Select failed FSS and click on the Acknowledge failed FSSs button.

Note: If you see java heap space error preventing the FSS from starting increase the Xmx setting in the FSS clientConfig.xml. After updating, upload the file through the CM and restart the FSS service.

6.9 Start Tomcat Webservices

1. Log on to chps4. Deploy the Webservice XML File. Where XXX is the RFC Site ID like rha.

```
user@chps4]$ sudo -u fews cp /awips/chps_local/tomcat/fews/fewswebservice_rhamc01.xml
/awips/chps_local/tomcat/conf/Catalina/localhost/
```

2. Restart Tomcat to get Webservice to run.

```
user@chps7]$ sudo systemctl restart chps-tomcat
```

6.10 Enable sync on the MC01 AI

1. On the AI, navigate to System Control -> McSynchronization and click “enabled”.
2. Verify the MC-MC synchronization on the System Status page of the AI. (This may take a few minutes).

6.11 Update the Operator Client for testing purposes

Update binaries

1. On an LX workstation.

```
user@lx]$ cd /awips/chps_share/oc/
```

2. Change directory to user directory for the testing user. We are using user *fews* as an example.

```
user@lx]$ cd fews
```

3. If `bin` is a directory, remove it so the test user can use the new binaries.

```
user@lx]$ sudo -u fews rm -rf bin
user@lx]$ sudo -u fews ln -s /awips/chps_share/install/CHPS-
25.1.1/NWS202402_MC*_OC*/delft_fews_binaries/bin bin
```

4. Launch the OC:

```
user@lx]$ cd ../
user@lx]$ ./launch_client.sh ??rfc_oc
```

Open the Operator Client test application and conduct some testing

Open the Operator Client application and verify the following:

1. Login to the Master controller and confirm that the synchronization to the OC works fine. Note: if a single Master Controller is configured, the OC will automatically login.

2. Use the menu "Help" → "About" and confirm that the build number is **510271505** (or higher). This proves the correct build and patch is being used.

3. Open a web-browser and login at the Admin Interface.

4. Create a Manual Forecast to test the OC → FSS communications. Submit the forecast.

5. Once completed, confirm that it properly executed and returned the results to your OC.

7 Enable sync on the MC00 AI

7.1 Start MC-MC Synchronization

1. On the AI, navigate to System Control -> McSynchronization and click "enabled".
2. Verify the MC-MC synchronization on the System Status page of the AI. (This may take a few minutes).
3. You may see MC00 restarted in the logs as it detects change the RootConfig file. The change is the patch that was uploaded to MC01. This is expected and since the patch are the same, it is not an issue.
4. You may see duplicate scheduled tasks after the sync. Please delete the duplicate tasks through the AI.

8 Roll out update to all Operator Client

Once the tests with the Operator Client are satisfying, the FEWS binaries can be rolled out to all OCs. This is composed of a centralized update and a clean-up of local OCs.

8.1 Update of Shared FEWS Binaries

1. Login to any LX workstation.

```
user@lx]$ cd /awips/chps_share/fews
```

2. Move old fews bin and copy new bin.

```
user@lx]$ sudo -u fews mv bin bin.202302
user@lx]$ sudo -u fews cp –r /awips/chps_share/install/CHPS-
25.1.1/*202402_MC*_OC*/delft_fews_binaries/bin .
```