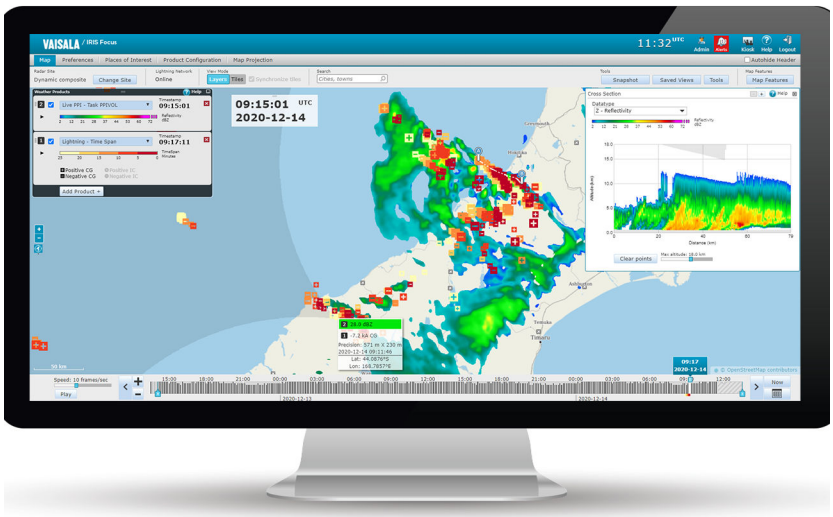
M211904EN-M

RESTRICTED

Release Notes

IRIS Focus

Version 6.1



VAISALA

PUBLISHED BY

Vaisala Oyj
Vanha Nurmijärventie 21, FI-01670 Vantaa, Finland
P.O. Box 26, FI-00421 Helsinki, Finland
+358 9 8949 1

Visit our Internet pages at www.vaisala.com.

Table of contents

1. About this document

1.1 Version information

This document provides information on IRIS Focus releases.

Table 1 Document versions (English)

Document code	Date	Description
M211904EN-M	July 2021	For IRIS Focus 6.1
M211904EN-L	April 2021	For IRIS Focus 6.0
M211904EN-K	September 2020	For IRIS Focus 5.3

1.2 Related documents

Table 2 Related documents

Document code	Name
M211850EN	*IRIS Focus Administrator Guide*
M211849EN	*IRIS Focus User Guide*
M212545EN	*IRIS Focus Lightning Administrator Guide*
M212544EN	*IRIS Focus Lightning User Guide*
M211904EN	*IRIS Focus Release Notes*
M211315EN	*IRIS and RDA Software Installation Guide*

1.3 Trademarks

2. IRIS Focus 6.1 release notes

2.1 Release notices

Vaisala is pleased to announce the release of IRIS Focus 6.1.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 6.1

You can upgrade to IRIS Focus 6.1 from IRIS Focus 5.0 or a later versions. If you have an earlier version of IRIS Focus, you must upgrade through previous versions to IRIS Focus 5.0 before you can upgrade to IRIS Focus 6.1.

When upgrading to 6.1, the maps and the terrain file will stay installed.

When you upgrade from IRIS Focus 5.x to 6.1, the data in Data Manager is not deleted.

The upgrade script takes a back-up of the webapp/config database and the config directory. If you need to back up other files, do a manual back-up.
For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.

Table 3 System requirements

CentOS	IRIS Analysis/IRIS Radar	Total Lightning Processor (TLP)
IRIS Focus 6.1 has been tested with CentOS 7.4 and 7.6. IRIS Focus is also expected to work with other versions of CentOS 7.x.	The radar data visualization features of IRIS Focus 6.1 require IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.	The lightning data visualization features of IRIS Focus require TLP v. 1.2.7 on the same network, or, alternatively, a subscription to a LINET service.

2.2 Updates and fixes

New features

- *Shape and GeoTIFF format export*
  The image export functionality has been extended to support georeferenced image formats geoTIFF (.geotiff) and shapefile (.shp). For more information, see User instructions for new features (page 6).

- *LINET data on IRIS Focus*
  It is now possible to visualize third-party lightning data from LINET on IRIS Focus. For more information, see User instructions for new features (page 6).

Fixes

- 7764, 7159: SHEAR alerts shall be triggered correctly for Lidar and Radar data
- 8039: Radar selector issue when a a user who is not a `focus-radar` user selects a pre-generated composite radar site
- 8050: Alert icons disappear when a WMS layer is on top of a radar layer
- 8080: Intermittent reticule latitude lines missing
- 8083: Lightning data paints many old dots when making a big jump forward
- 8261, 8257: Issues with weather events and alerts when animating and looking back in time

Additions and corrections to the documentation

- *IRIS Focus 6.0 Administrator Guide* chapter *5.4 Installing IRIS Focus from a USB stick* shows the `-cow` parameter in the installation command example. The parameter `<root application URL>` in the installation command corresponds to the hostname. If the hostname changes, you also need to change the `security.cors.origin.whitelist` parameter value in the *`vsoweb-override.ini`* file, and restart the application.
- Addition to *IRIS Focus 6.0 Administrator Guide*:
  To update any entry in the *`vsoweb-override.ini`* file, use the command:

  ```
  configure-vsoweb-ini
  ```

  With this command, you can change the following settings:
  `radar.enabled = true/false`
  `lightning.enabled = true/false`
  `iris.socket.server.host`
  `security.cors.origin.whitelist`
  Example:

  ```
  $/usr/vaisala/radarsw/configuration/bin/configure-vsoweb-ini --radar false
  --lightning true --cors-origin-whitelist localhost --iris_host
  iris_server.mydomain.com
  ```

- Correction to *IRIS Focus 6.0 Administrator Guide*, chapter *5.9.1 Setting or changing the socket server*. The correct procedure is:
  a. Update the *vsoweb-override.ini* file with the following command:

```
/usr/vaisala/radarsw/configuration/bin/configure-vsoweb-ini -i
<socket_server_host_name>
```

  b. Type the following command:

```
rsw-basemap-site-setup --socket-server <socket_server_host_name>
```

  c. Stop and restart the IRIS Focus web application service (between the stop and start commands, wait until the process has stopped):

```
systemctl stop vaisala-radarsw-webapp
systemctl start vaisala-radarsw-webapp
```

2.3 User instructions for new features

2.3.1 Exporting images as .shp files

Use this procedure to export images as shape files (.shp). The output is a zip file containing all the files for the shape file.

1. In the IRIS Focus **Map** view, set-up the view you want to save.
   For example, you can save the settings for:
   - **Weather Products**
   - Map tools such as the cross-section and tracking tools
   - Zoom level
2. Select **Saved Views > Save**.
3. Name the view and select **Save**.
   The new view is added to the **Saved Views** list for your future use.
4. Configure your web server to access the IRIS Focus image export service:

```
@Request: POST <server-name>/focus-webapp/api/v2/image-export/shp
@Produces: "application/octet-stream"
```

   The image is exported as a zip file.

5. Configure the following parameters:

Parameter	Description
`username`	A valid IRIS Focus username. For security reasons and for smooth user experience, Vaisala recommends that you configure a specific user for exporting images. If you are using the username of an active user, and that user is logged when a scheduled export takes place, the user will get logged out, because a user cannot be logged in from two machines at the same time.
`password`	IRIS Focus password for the user.
`time`	Time, in ISO-8601 format: `2021-06-18T17:55:23.000Z`
`savedViewName`	The name of the saved view you created.
`savedViewUser`	Optional value. Used if you configure a specific user for exporting images (recommended).

6. Instead of steps 4 and 5, you can run the export from the command line by creating a script and setting-up a **cron** job. For example:

   a. Create a Python script for the image export such as the following:

```
#!/usr/bin/python3
# -*- coding: utf-8 -*-
```

```
from requests_futures.sessions import FuturesSession
import datetime
```

```
APP_URL = "your_url_here"
IMAGE_EXPORT_LOC = "/focus-webapp/api/v2/image-export/shp"
FILE_PATH = "path_to_image_shp_folder"
USERNAME = "username_here"
PASSWORD = "password_here"
TIME = datetime.datetime.utcnow().isoformat()
VIEW = "view_name_here"
```

```
def main():
    session = FuturesSession()
    req_params = {"username": USERNAME, "password": PASSWORD,
        "time":TIME, "savedViewName": VIEW}
    future_one = session.post(APP_URL + IMAGE_EXPORT_LOC,
        params=req_params)
    # wait for the request to complete, if it hasn't already
    res = future_one.result()
    print('{0} response status: {1}'.format(TIME, res.status_code))
    if res.status_code == 200:
        with open(FILE_PATH, 'wb') as f:
                f.write(res.content)
```

```
if __name__ == '__main__':
    main()
```

   Although the example **image-export.py** script saves only one snapshot, you can edit it to loop a set number of times and get multiple snapshots at a time.

   b. Type **crontab -e** in the terminal and add, for example, the following line to the *crontab* file (add your own paths and arguments).

```
*/15 * * * * /usr/bin/python3
        /path/to/script/image-export.py >> /path/to/log/export.log 2>&1
```

This executes the **image-export.py** script every 15 minutes and saves a single snapshot as a PNG file to the server.

2.3.2 Exporting images as .geotiff files

You can also export images as geoTIFF files.

The procedure is otherwise similar to Exporting images as .shp files (page 6), but to configure your web server to access the IRIS Focus image export service, use the following command:

```
@Request: POST <server-name>/focus-webapp/api/v2/image-export/geotiff
@Produces: "image/tiff"
```

The image is exported as a ***.tiff*** file.

2.3.3 Viewing LINET data on IRIS Focus

The **vaisala-ingest-linet** service parses lightning data records from the files that appear in the ***incoming*** directory, and pushes them to the Kafka data broker. After processing, the service removes the lightning data files.

The service leans towards logging an error and terminating when an error occurs.

Service flow

To use the service, you must have a subscription for LINET CSV data files.

1. Take care that a copy of the file or symbolic link is created for each LINET CSV file in the */var/lib/ingest-linet/incoming* directory owned by the **ingest-linet** user as the CSV files arrive.
2. The **vaisala-ingest-linet** service reads the lightning data from the LINET CSV files as they appear, and then removes the file or the symbolic link.
3. The **vaisala-ingest-linet** service publishes the lightning data to a topic on the Kafka data broker.
4. The **vaisala-iris-lightning-ws** service reads the lightning data from Kafka, and publishes the solutions to IRIS Focus running on a browser.

The files that appear in the ***incoming*** directory must have permissions set so that the service can read and delete the files (owned by the **ingest-linet** user account).

2.3.3.1 Installing the LINET service

Installing vaisala-ingest-linet service

The `vaisala-ingest-linet` package is normally installed automatically during the IRIS Focus installation or upgrade. You can verify that the package is installed by using the following command:

```
rpm -qi vaisala-ingest-linet
```

If the package is missing from your system, you can locate the RPM on your installation media, and install it manually using the following command:

```
yum install vaisala-ingest-linet*.rpm
```

To enable and start the service, use the following command:

```
systemctl enable --now vaisala-ingest-linet
```

To check the status of the service, use the following command:

```
systemctl status vaisala-ingest-linet
```

To monitor the log messages from the service, use the following command:

```
journalctl -u vaisala-ingest-linet -f
```

Using `monit` for monitoring and restart

On a typical IRIS Focus installation, the **`monit`** service is used to monitor and restart system services related to IRIS Focus. A **`monit`** configuration file has been included for the **`vaisala-ingest-linet`** service. This configuration file is not automatically installed.

If you want **`monit`** to monitor and restart the **`vaisala-ingest-linet`** service in the case that a problem is detected, copy the sample monit configuration file to the */etc/monit.d* directory, and then restart the monit service using the following commands:

```
cp /usr/share/vaisala-ingest-linet/vaisala-ingest-linet.monit /etc/monit.d/
systemctl restart monit
```

2.3.3.2 Simulating the LINET service

You can run the `linet-simu` command on the IRIS Focus system to simulate incoming LINET CSV files when evaluating this service. All the files must to be owned by the **ingest-linet** user so that it is possible to read and delete the files after processing.

To run the simulator, log in to the **ingest-linet** user account, and run the following command:

```
su - ingest-linet
/usr/share/vaisala-ingest-linet/linet-simu --lat 18.2 --lon -77.25
```

Type `--help` to see the command options.

After you have finished the simulation, the simulated data will remain in the Kafka data broker and appear in the IRIS Focus interface until the data ages out. To clear out the lingering data in the Kafka data broker, so that only new, real data is visible, do the following:

1. Stop the simulator so that no new data files will come into the system.
2. Remove any lingering files in the */var/lib/ingest-linet/incoming* directory with the following command:

   ```
   rm -f /var/lib/ingest-linet/incoming/*
   ```

   It is probable that there are no lingering files at this point.
3. Stop the services that use the Kafka data broker:

   ```
   systemctl stop vaisala-iris-lightning-ws
   systemctl stop vaisala-ingest-linet
   ```

4. Delete the lightning topic (listing topics before and after can be useful):

   ```
   /opt/kafka/bin/kafka-topics.sh --list --bootstrap-server localhost:9092
   ```

   ```
   /opt/kafka/bin/kafka-topics.sh --delete --topic stream.lightning.locations
   --bootstrap-server localhost:9092
   ```

   ```
   /opt/kafka/bin/kafka-topics.sh --list --bootstrap-server localhost:9092
   ```

5. Start the services that use the Kafka data broker:

```
systemctl start vaisala-iris-lightning-ws
systemctl start vaisala-ingest-linet
```

At this point, the lightning data buffers should be clean, and if the users reload their browsers, they should no longer see any of the simulated data. Next, you can start up the processes that bring real lightning data files into the */var/lib/ingest-linet/incoming* directory.

2.3.3.3 Configurable parameters for LINET service

The default parameter settings should work for typical IRIS Focus installations. These options can be overridden by adding command line options to the `INGEST_OPTS` variable found in the *ingest-linet-env-override.conf* file located in the */etc/vaisala/lightning/linet* directory.

Application-specific parameters

The following parameters are specific to this service:

--kafka.properties=/etc/vaisala/lightning/linet/kafka.properties
: Location of the Kafka configuration file. Often this file contains a single line indicating how to connect to the Kafka data broker.

```
bootstrap.servers = localhost:9092
```

There are numerous Kafka options that can be specified depending on the circumstances. You can find more information in related literature and online.

--lightning.topic=stream.lightning.locations
: The Kafka topic to publish lightning events to is set from this command line option. Any topic names set in the *kafka.properties* file will be ignored.

--realtime.spacing=false
: When this setting is set to `false`, the LINET service periodically finds a new file, reads the lightning records from the file, and then publishes all of the events at the same time. This results in a burst of new lightning events appearing simultaneously in the user interface. It will appear as if all of the lightning that occurred in the last minute occurred right now, but the user sees the lightning data as soon as possible.
If you change this option to `true`, the service will insert pauses between lightning events to give a more realistic feel to how the lightning occurred. The viewing experience will be more pleasant, but the user will not see the lightning data as soon as possible. Note that if this parameter is set to `true`, and the service notices that it is lagging behind (more than one file to playback), it will ignore the option until it catches up. This can happen if you stop and then later restart the service.

--linet.incoming=/var/lib/ingest-linet/incoming
The directory to look for LINET CSV data files to process.

CAUTION! These files are removed after processing. Do NOT store the original copies you receive here (unless you do not want to keep your originals). Instead, create a hard or symbolic link to the original files, so that the service only removes the link and not the original file.

--incoming.matcher=regex:.*\.csv$
The `java.nio.file.PathMatcher` pattern used to match file names in the incoming directory. The default pattern matches any file name ending in "`.csv`". Files not matching this pattern will be ignored. However, it is not recommended to store other files in the `incoming` directory, as this service will continually need to ignore them. The exception to this rule is a situation where you want time to create a new data file and do not want to risk the service trying to process it too soon. In this case, after you have completed the creation of the file, you can rename it for processing and removal.

--time.unique=true
The LINET data only has the time information to the nearest second. This makes it possible for lightning events to have identical times, which can cause issues with some downstream applications, including IRIS Focus, that expect nanosecond resolution and unique time stamps. When `time.unique` is set to `true`, microsecond(s) are added to separate lightning events with identical times to guarantee that the time stamp can be used as a unique key.

It is critical that this option is set to `true` for IRIS Focus.
Changing this option to `false` will cause IRIS Focus to ignore events that have identical time stamps.

2.4 Known issues

For troubleshooting information, see *IRIS Focus Administrator Guide*.

- IRIS Focus WMS feature currently works with WMS version 1.1.1.
- Currently, the alerting functionality is limited to single radar sites only. Alerts are not generated for composite sites.
- 5408: Tile view does not work in kiosk mode.
- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.

- 5704: Different radars in a composite can have the same task name but different sweeps. The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 6953: Timeline needs to be clicked twice to get a product after panning.
- 6974: Two WMS layers with same layer name causes the application not to respond.
- 7472: When using the Hayford-Gauss projection, there are inconsistencies in map behavior at the edge of the map.
- 8188: If the **`user`** role has been deleted, the upgrade from 5.3 to 6.x fails.
- 8268: monit trying to restart dm too soon after system reboot.
  Data Manager intermittently fails to restart after system reboot. Please contact Vaisala technical support.
- "Anonymous" entries in the user table occur if someone attempts to access IRIS Focus using a bad URL. If you see a lot of these in your table with external IP addresses, it may indicate that the server is under attack.

2.5 Upgrading IRIS Focus 6.0 to IRIS Focus 6.x.x

The following instructions assume that you are upgrading from IRIS Focus 5.0 or a later version to IRIS Focus 6.x.x.

You can upgrade to IRIS Focus 6.x.x from IRIS Focus 5.0. If you have an earlier version of IRIS Focus, you must upgrade through previous versions to IRIS Focus 5.0 before you can upgrade to IRIS Focus 6.x.x.

2.5.1 Running the upgrade

To view installation command line options, run: **`./rsw-upgrade -h`**

If you have your license key on a USB drive, make sure it is inserted in the server before starting the upgrade procedure.

In the following instructions, **`x.x`** means the Iris Focus version and patch number.

1. Log in as **`root`**.
2. Backup the system configuration.
   For instructions, see *IRIS Focus Administrator Guide*.
3. Insert the upgrade USB stick.

4. Copy the file *Vaisala_IRIS_installer-6.x.x.tar* from the USB stick to the server's hard disk drive, for example, to the */root* directory.
5. Change to the */root* directory and extract the *.tar* file:

   ```
   tar -xvf Vaisala_IRIS_installer-6.x.x.tar
   ```

   where **x.x** is the Iris Focus version and patch number.
6. Change to the directory created in the earlier step:

   ```
   cd Vaisala-IRIS-Focus-v6.x.x
   ```

7. Run the upgrade script:
   - **Online upgrade:**

     ```
     ./rsw-upgrade --online --license /mnt/usb/license-6.x.x.txt
     ```

   - **Offline upgrade:**

     ```
     ./rsw-upgrade --offline --license /mnt/usb/license-6.x.x.txt
     ```

8. Verify the upgrade by running: **rpm -qa | grep vaisala**
   Check that the **rpm** name is the correct version and patch number.

If you have a Total Lightning Processor (TLP) system that you will be connecting to your IRIS Focus server, see connection instructions in *M212545EN IRIS Focus Lightning Administrator Guide*.
After connecting the TLP system, add the **focus-lightning** role to each existing user account that you want to have access to the lightning products. See section Updating user roles (page 15).

2.5.2 Updating user roles

After the upgrade, depending on your system, you may need to update the user roles for the users.

If there are a lot of users in the system, you can easily update all the existing user accounts with the following instructions:

- If you have had only weather radars in the system, and you are now adding a lightning network: Update all the existing user accounts that currently have the **focus-radar** role to also have the **focus-lightning** role. Use this command (as **root**):

```
rsw-db-tool users-to-all-focus-roles
```

- If you only have a lightning network in the system: Give all the users the **focus-lightning** role. Use this command (as **root**):

```
rsw-db-tool users-to-ltg-role
```

- If you only have weather radars in the system: You should not need to manually update roles. All **focus** users are automatically updated to **focus-radar** users by the upgrade script. If this does not happen, run this command:

```
rsw-db-tool users-to-radar-role
```

2.6 Installation command options

Table 4 Installation command options

Option	Description
--admin-password	Assign a non-default admin password
--admin-user	Assign a non-default admin user
-c --config-dir	Configuration directory
-cow	The `cors-origin-whitelist (-cow)` switch determines the value of the `Access-Control-Allow-Origin` header. It must have the same value as the root application URL. In the installation command, `<root application URL>` corresponds to the hostname. The default value is the installation machine name. If the hostname changes, you also need to change the `security.cors.origin.whitelist` parameter value in the *`vsoweb-override.ini`* file, and restart the application.

Option	Description
--deactivate-admin	Deactivate the admin account after running this script. Not needed for standard installations.
-d --dry-run	List the steps that will be run (without running them)
-g --geoserver-config-url	GeoServer configuration endpoint (default: http://localhost:34180/geoserver)
-gis-db-dump	Location of map files
-h	Show help information
--lightning	Allow configuration for lightning provider
--no-prompt	Fails (exits) on error without user confirmation
--nowcast-only	Only install Nowcast on this host
--offline	Disable online CentOS base repository and require a local CentOS base repository
--online	Allow online CentOS base repository
--pg-data-dir	Use an alternative Postgres data directory location
--radar	Allow configuration for radar provider
-s	Socket server host
--skip-geoserver-installation	Do not install map server
--skip-geoserver-site-configuration	
--skip-os-version-check	Force the installation on a CentOS version other than directly supported
--skip-terrain	Do not install terrain detail to the map server
--terrain-dir	Location of terrain files
--tlp TLP_ADDRESS	Address of the Total Lightning Processor
--wms -w	Basemap WMS address (default: /wms)

Table 5 Post-installation command options

Option[1)]	Description
radar.enabled = true	Allow configuration for radar provider
lightning.enabled = true	Allow configuration for lightning provider

1) These can be changed in vsoweb-override.ini config file

3. Backing up the data

3.1 Making a manual back-up

1. Log in as **root**.
2. Run: **/usr/vaisala/radarsw/backup/bin/do-backups**
3. Check that new files are created in the following directories:

```
/srv/vaisala/radarsw/backup/configuration/radarsw-configuration-
<timestamp>.tar.gz
```

```
/srv/vaisala/radarsw/backup/database/database-wx-<timestamp>.gz
```

```
/srv/vaisala/radarsw/backup/database/database-vsp-<timestamp>.gz
```

Each backup file includes a timestamp in the format:

```
radarsw-configuration-2019-09-05T06-48-26.tar.gz
```

3.2 Restoring from backup

1. Log in as **root**.
2. Stop the Monit service:

```
systemctl stop monit.service
```

3. Stop the IRIS Focus web application:

```
systemctl stop vaisala-radarsw-webapp.service
```

4. (Optional) Run the backup script:
   /usr/vaisala/radarsw/backup/bin/do-backups
   a. Copy the current configuration files to a remote host.
   b. Copy the resulting configuration file to your own machine: */srv/vaisala/radarsw/backup/configuration/radarsw-configuration-2019-10-12T09-42-18.tar.gz*
5. Copy the current database passwords from */etc/vaisala/radarsw/configuration/vsoweb-override.ini*.
   Save them in a text file.

```
[DATASOURCE]
datasource.password = xsGzN3ZK6kMqvaH6dzJQqAg1KwTMLnJL

[VSP_DATASOURCE]
datasource.password = AgbBWtR0XqDh64DgklkK6XqLXsnQP08U
```

6. Copy the current Data Manager password from */etc/vaisala/radarsw/data-manager/data-manager-override.properties*.

```
/etc/vaisala/radarsw/data-manager/data-manager-override.properties
spring.datasource.password = bFKNUQ5fvFMfmsU3vWP3CEYJHVTuOJ2Z
```

   Save it in a text file.
7. Drop the current database with the `rsw-db-tool` utility:

```
rsw-db-tool drop-db
```

8. Recreate an empty database:

```
rsw-db-tool create-db
```

9. Switch to the database user account `postgres`:

```
su - postgres
```

10. Copy your backup files back to the Focus server and restore the database contents by reading the file contents into thestandard output stream and inserting them in the IRIS Focus databases:

```
gzip --decompress --to-stdout /radarsw-database-vsp-2019-10-12T07-54-50.gz
| psql vsp_v1
gzip --decompress --to-stdout /radarsw-database-wx-2019-10-12T07-54-50.gz
| psql wxdb2
```

11. Exit the postgres user shell:

```
exit
```

12. Start the IRIS Focus web application:

```
systemctl start vaisala-radarsw-webapp.service
```

13. Start the Monit service:

```
systemctl start monit.service
```

4. IRIS Focus 6.0 release notes

4.1 Release notices

Vaisala is pleased to announce the release of IRIS Focus 6.0.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 6.0

You can upgrade to IRIS Focus 6.0 from IRIS Focus 5.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 5.0 before you can upgrade to IRIS Focus 6.0.

When upgrading to 6.0, the maps and the terrain file will stay installed.

When you upgrade from IRIS Focus 5.x to 6.0, the data in Data Manager is not deleted.

The upgrade script takes a back-up of the webapp/config database and the config directory. If you need to back up other files, do a manual back-up.
For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.

Table 6 System requirements

CentOS	IRIS Analysis/IRIS Radar	Total Lightning Processor (TLP)
IRIS Focus 6.0 has been tested with CentOS 7.4 and 7.6. IRIS Focus is also expected to work with other versions of CentOS 7.x.	The radar data visualization features of IRIS Focus 6.0 require IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.	The lightning data visualization features of IRIS Focus require TLP v. 1.2.7 on the same network.

4.2 Updates and fixes

New features

- *Real-time lighting data visualization*
  IRIS Focus now enables the visualization of lightning data from a **Total Lightning Processor**. The data can be visualized as a product layer, which can be shown on top of a weather radar product layer. A separate license is required for visualizing lightning data from the Vaisala precision lightning sensor network.

- *On-demand lightning TimeSpan product generation*
  The new **TimeSpan** lightning product enables the user to visualize the evolution of recent lightning events. The TimeSpan product shows lightning events as color-coded areas that change over time. The timeline histogram shows information about strikes up to 7 days in the past at rates as high as 100,000 events per day. When viewing in real time, the product shows new lightning events as they occur.
- *Lightning network health visualization*
  IRIS Focus enables the user to visualize the performance of the lightning sensor network. The **Network Health** product uses a color-coded grid representation of the performance estimate generated by the Total Lightning Processor (TLP). This is an advanced feature that works with a separate license.
- *Lightning cursor tool*
  IRIS Focus enables the user to view details of the lightning data and the network health information with the cursor tool. The tool includes the location of the strike, with accuracy represented by the error ellipse.

Updates

- *Weather pane layers*
  The ordering of the weather layers has been improved. Now the layer number 1 is on the top. When the user adds a new layer, the layer is added on top, and the existing layers move down in the list.
- *New user roles*
  The `Focus` user role has been replaced with two separate user roles: `Focus Weather Radar User` for users who want to view weather radar data, and `Focus Lightning User` for users who want to view lightning data. The current `Focus` users will be automatically upgraded to `Focus Weather Radar User` roles.
- *Nowcasting on a separate server*
  IRIS Focus Nowcasting feature can now be run in a separate server for improving performance. For detailed instructions, see chapter *Installing nowcasting as a separate service* in *IRIS Focus Administrator Guide*.
- *Licensing: License required for adding more radars*
  The new licenses are issued with a defined number of radar sites. If the network contains more radars than the number of the radar sites in the license, the user can define which radars are shown in the application by editing the [LICENSING] section in the *`vsoweb-override.ini`* file. If the customer has an active service contract, the new license will be updated according to the existing number of sites connected to the application.
- *Licensing: License required for visualizing external WMS layers*
  A license is required for visualizing external WMS layers in the application. If the customer has an active service contract, the new license will be updated to include this license.

- *Installation:*
  The `cors-origin-whitelist` (`-cow`) switch has been added to the installation script for determining the value of the "`Access-Control-Allow-Origin`" header. It must have the same value as the root application URL. The value defaults to the installation machine name.
  Installation command :

```
/srv/Vaisala-IRIS-Focus-v6.x.x/rsw-installer --offline --gisdb dump
vaisala-iris-maps-v2 --terrain-dir vaisala-iris-terrain-v2 -radar -s
<hostname or IP of IRIS Analysis socket server> -cow <root application URL>
```

Fixes

- 7695: Smoothing knob misbehavior when changing datatypes
- 7294, 6920: User-defined color scales revert to default without user interaction
- 7727, 7980: Tools and alerts shall not need to have an on-demand product as a driving product
- 7702: LOG,CSR,PMI, and XCORV data types shall display properly
- 7753, 7159: Alerts using IRIS Analysis products (VIL, SHEAR, RAINN) shall be triggered
- 7852: Cross Section Tool image blank
- 7899: When switching tasks quickly, an error was prompted
- 8041: Alert icons shall show regardless of the layer order

4.3 Known issues

For troubleshooting information, see *IRIS Focus Administrator Guide*.

- IRIS Focus WMS feature currently works with WMS version 1.1.1.
- Currently, the alerting functionality is limited to single radar sites only. Alerts are not generated for composite sites.
- 5408: Tile view does not work in kiosk mode.
- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.
- 5704: Different radars in a composite can have the same task name but different sweeps. The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 6953: Timeline needs to be clicked twice to get a product after panning.
- 6974: Two WMS layers with same layer name causes the application not to respond.
- 7472: When using the Hayford-Gauss projection, there are inconsistencies in map behavior at the edge of the map.

- "Anonymous" entries in the user table occur if someone attempts to access IRIS Focus using a bad URL. If you see a lot of these in your table with external IP addresses, it may indicate that the server is under attack.

4.4 Upgrading IRIS Focus 6.0 to IRIS Focus 6.x.x

The following instructions assume that you are upgrading from IRIS Focus 5.0 or a later version to IRIS Focus 6.x.x.

You can upgrade to IRIS Focus 6.x.x from IRIS Focus 5.0. If you have an earlier version of IRIS Focus, you must upgrade through previous versions to IRIS Focus 5.0 before you can upgrade to IRIS Focus 6.x.x.

4.4.1 License

This upgrade requires a new license. The upgrade instructions include a step for identifying the Lock ID that you need for getting the new license.

If you have a contract agreement with Vaisala, you should receive your upgrade license via email. If you have not received the license, please contact Vaisala technical support at helpdesk@vaisala.com. In other cases, please contact your Vaisala Sales representative to get a new license.

CAUTION! It is possible to upgrade your system without a valid license with the command `./rsw-upgrade --online --skip-license`, but it is not recommended. Upgrading without a valid license will cause your system to stop or run in a degraded state until you receive and install a valid license file.

4.4.2 Running the upgrade

To view installation command line options, run: `./rsw-upgrade -h`

If you have your license key on a USB drive, make sure it is inserted in the server before starting the upgrade procedure.

In the following instructions, `x.x` means the Iris Focus version and patch number.

1. Log in as `root`.

2. Backup the system configuration.
   For instructions, see *IRIS Focus Administrator Guide*.
3. Insert the upgrade USB stick.
4. Copy the file *`Vaisala_IRIS_installer-6.x.x.tar`* from the USB stick to the server's hard disk drive, for example, to the *`/root`* directory.
5. Change to the *`/root`* directory and extract the *`.tar`* file:

   ```
   tar -xvf Vaisala_IRIS_installer-6.x.x.tar
   ```

   where **`x.x`** is the Iris Focus version and patch number.
6. Change to the directory created in the earlier step:

   ```
   cd Vaisala-IRIS-Focus-v6.x.x
   ```

7. Run the upgrade script:
   - **Online upgrade:**

     ```
     ./rsw-upgrade --online --license /mnt/usb/license-6.x.x.txt
     ```

   - **Offline upgrade:**

     ```
     ./rsw-upgrade --offline --license /mnt/usb/license-6.x.x.txt
     ```

8. Verify the upgrade by running: **`rpm -qa | grep vaisala`**
   Check that the **`rpm`** name is the correct version and patch number.

If you have a Total Lightning Processor (TLP) system that you will be connecting to your IRIS Focus server, see connection instructions in *M212545EN IRIS Focus Lightning Administrator Guide*.
After connecting the TLP system, add the **focus-lightning** role to each existing user account that you want to have access to the lightning products. See section Updating user roles (page 15).

4.4.3 Updating user roles

After the upgrade, depending on your system, you may need to update the user roles for the users.

If there are a lot of users in the system, you can easily update all the existing user accounts with the following instructions:

- If you have had only weather radars in the system, and you are now adding a lightning network: Update all the existing user accounts that currently have the **focus-radar** role to also have the **focus-lightning** role. Use this command (as **root**):

```
rsw-db-tool users-to-all-focus-roles
```

- If you only have a lightning network in the system: Give all the users the **focus-lightning** role. Use this command (as **root**):

```
rsw-db-tool users-to-ltg-role
```

- If you only have weather radars in the system: You should not need to manually update roles. All **focus** users are automatically updated to **focus-radar** users by the upgrade script. If this does not happen, run this command:

```
rsw-db-tool users-to-radar-role
```

4.5 Installation command options

Table 7 Installation command options

Option	Description
--admin-password	Assign a non-default admin password
--admin-user	Assign a non-default admin user
-c --config-dir	Configuration directory
-cow	The `cors-origin-whitelist (-cow)` switch determines the value of the `Access-Control-Allow-Origin` header. It must have the same value as the root application URL. In the installation command, `<root application URL>` corresponds to the hostname. The default value is the installation machine name. If the hostname changes, you also need to change the `security.cors.origin.whitelist` parameter value in the *`vsoweb-override.ini`* file, and restart the application.

Option	Description
--deactivate-admin	Deactivate the admin account after running this script. Not needed for standard installations.
-d --dry-run	List the steps that will be run (without running them)
-g --geoserver-config-url	GeoServer configuration endpoint (default: http://localhost:34180/geoserver)
-gis-db-dump	Location of map files
-h	Show help information
--lightning	Allow configuration for lightning provider
--no-prompt	Fails (exits) on error without user confirmation
--nowcast-only	Only install Nowcast on this host
--offline	Disable online CentOS base repository and require a local CentOS base repository
--online	Allow online CentOS base repository
--pg-data-dir	Use an alternative Postgres data directory location
--radar	Allow configuration for radar provider
-s	Socket server host
--skip-geoserver-installation	Do not install map server
--skip-geoserver-site-configuration	
--skip-os-version-check	Force the installation on a CentOS version other than directly supported
--skip-terrain	Do not install terrain detail to the map server
--terrain-dir	Location of terrain files
--tlp TLP_ADDRESS	Address of the Total Lightning Processor
--wms -w	Basemap WMS address (default: /wms)

Table 8 Post-installation command options

Option[1)]	Description
radar.enabled = true	Allow configuration for radar provider
lightning.enabled = true	Allow configuration for lightning provider

5. IRIS Focus 5.3 release notes

5.1 Release notices

Vaisala is pleased to announce the release of IRIS Focus 5.3.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 5.3

You can upgrade to IRIS Focus 5.3 from IRIS Focus 4.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 4.0 before you can upgrade to IRIS Focus 5.3.

When upgrading to 5.3, the maps will stay installed.

CAUTION! When you upgrade from IRIS Focus 4.0 to 5.3, the data in Data Manager is deleted. The MVF and composite definitions are also no longer available after the upgrade.

When you upgrade from IRIS Focus 5.0/5.1/5.2 to 5.3 , the data in Data Manager is not deleted.

Vaisala recommends you back-up your system configuration before upgrading. For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.

Table 9 System requirements

CentOS	IRIS Analysis/IRIS Radar
IRIS Focus 5.3 has been tested with CentOS 7.4 and 7.6. IRIS Focus is also expected to work with other versions of CentOS 7.x.	IRIS Focus 5.3 requires IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.

5.2 Updates and fixes

New features

- *Selection of map projection*
  IRIS Focus now enables the poweruser to set the map projection in which all the users will see the data displayed. Currently, the following projections are supported: azimuthal equidistant, Web Mercator, and Hayford-Gauss.

IRIS Focus 5.3 includes the addition of the EPSG:27493 map projection. This map projection is optional and can be configured by the poweruser. Because of its location and limited range, we only recommend using this projection if you have a very specific need.

Updates

- Security: Adjustments were made to the HTTP headers produced by the web server to increase security and remove ambiguity.
- License logging: Logging message improvement for versioning.

Fixes

- 7403: Cross-Section and Max panels faulty color ray when there was a NOT_SCANNED value in the data
- 7409: When upgrading IRIS Focus to the 5.2 release over a 5.1.2 or 5.1.3 patch, the upgrade fails on the version check, as it does not properly check the version number retrieved from the patch file.

5.3 Known issues

For troubleshooting information, see *IRIS Focus Administrator Guide*.

- 5408: Tile view does not work in kiosk mode.
- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.
- 5704: Different radars in a composite can have the same task name but different sweeps. The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 6953: Timeline needs to be clicked twice to get a product after panning.
- 6974: Two WMS layers with same layer name causes the application not to respond.
- 7472: When using the Hayford-Gauss projection, there are inconsistencies in map behavior at the edge of the map.

5.4 Upgrading IRIS Focus 4.0 or later to IRIS Focus 5.3

The following instructions assume that you are upgrading from IRIS Focus 4.0 or a later version to IRIS Focus 5.3.

You can upgrade to IRIS Focus 5.3 from IRIS Focus 4.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 4.0 before you can upgrade to IRIS Focus 5.3.

CAUTION! When you upgrade from IRIS Focus 4.0 to 5.3, the data in Data Manager is deleted. The MVF and composite definitions are also no longer available after the upgrade.

When you upgrade to IRIS Focus 5.3 from version that is later than 4.0, the data in Data Manager is not deleted.

Vaisala recommends you back-up your system configuration before upgrading. For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.

CAUTION! The addition of the EPSG:27493 map projection in IRIS Focus 5.3 includes several modifications to the configuration files and the tile caching for the "vaisala" map layers in the GeoServer running on IRIS Focus. For most installations, this enhancement is fully automatic when you run the **`rsw-upgrade`** script. However, if you have configured IRIS Focus 5.3 to use an EXTERNAL GeoServer for its map tiles, AND you want to use the EPSG:27493 map projection, you need to edit the configuration files and tile caching on your custom GeoServer, so that it can render tiles in the EPSG:27493 projection. If you do not edit these configuration files, the map will not render properly or at all when IRIS Focus is configured by the poweruser to use the EPSG:27493 map projection.

After upgrading from IRIS Focus 4.0 to 5.3, you need to re-create your areas of interest.

5.4.1 License

This upgrade requires a new license. The upgrade instructions include a step for identifying the Lock ID that you need for getting the new license.

If you have a contract agreement with Vaisala, you should receive your upgrade license via email. If you have not received the license, please contact Vaisala technical support at helpdesk@vaisala.com. In other cases, please contact your Vaisala Sales representative to get a new license.

CAUTION! It is possible to upgrade your system without a valid license with the command `./rsw-upgrade --online --skip-license`, but it is not recommended. Upgrading without a valid license will cause your system to stop or run in a degraded state until you receive and install a valid license file.

5.4.2 Running the upgrade

To view installation command line options, run: **`./rsw-upgrade -h`**

If you have your license key on a USB drive, make sure it is inserted in the server before starting the upgrade procedure.

In the following instructions, `x.x` means the Iris Focus version and patch number.

1. Log in as **`root`**.
2. Backup the system configuration.
   For instructions, see *IRIS Focus Administrator Guide*.
3. Insert the upgrade USB stick.
4. Copy the file *`Vaisala_IRIS_installer-6.x.x.tar`* from the USB stick to the server's hard disk drive, for example, to the */root* directory.
5. Change to the */root* directory and extract the *`.tar`* file:

   ```
   tar -xvf Vaisala_IRIS_installer-6.x.x.tar
   ```

   where `x.x` is the Iris Focus version and patch number.
6. Change to the directory created in the earlier step:

   ```
   cd Vaisala-IRIS-Focus-v6.x.x
   ```

7. Run the upgrade script:
   - **Online upgrade:**

     ```
     ./rsw-upgrade --online --license /mnt/usb/license-6.x.x.txt
     ```

   - **Offline upgrade:**

     ```
     ./rsw-upgrade --offline --license /mnt/usb/license-6.x.x.txt
     ```

8. Verify the upgrade by running: **`rpm -qa | grep vaisala`**
   Check that the `rpm` name is the correct version and patch number.

If you have a Total Lightning Processor (TLP) system that you will be connecting to your IRIS Focus server, see connection instructions in *M212545EN IRIS Focus Lightning Administrator Guide*.
After connecting the TLP system, add the **focus-lightning** role to each existing user account that you want to have access to the lightning products. See section Updating user roles (page 15).

6. IRIS Focus 5.2 release notes

6.1 Release notices

Vaisala is pleased to announce the release of IRIS Focus 5.2.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 5.2

You can upgrade to IRIS Focus 5.2 from IRIS Focus 4.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 4.0 before you can upgrade to IRIS Focus 5.2. After upgrading from IRIS Focus 4.0 to 5.2, you need to re-create your areas of interest.

Upgrading to IRIS Focus 5.2 requires a new license. If you have a contract agreement with Vaisala, you will receive your upgrade license via email. If you have not received the license, please contact Vaisala technical support at helpdesk@vaisala.com. In other cases, please contact your Vaisala Sales representative to get a new license.

CAUTION! When you upgrade from IRIS Focus 4.0 to 5.2, the data in Data Manager is deleted. The MVF and composite definitions are also no longer available after the upgrade. Vaisala recommends you back-up your system configuration before upgrading. For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.

When you upgrade from IRIS Focus 5.0/5.1 to 5.2 , the data in Data Manager is not deleted.

Table 10 System requirements

CentOS	IRIS Analysis/IRIS Radar
IRIS Focus 5.2 has been tested with CentOS 7.4 and 7.6. IRIS Focus is also expected to work with other versions of CentOS 7.x.	IRIS Focus 5.2 requires IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.

6.2 Updates and fixes

New features

- *Housekeeping service for alerts*
  IRIS Focus now has the capability to clean the alerts database and to trigger a technical alert when the alerts database load is approaching the configured limit. The user can select the limit that triggers the alert. The default is 90% of maximum database usage. The database size limit is set automatically depending on the partition/disk size reported by the operating system during the install, but can be changed by the user. The user can also configure the clean-up target. The clean-up target tells how many of the latest alerts will be kept in the database. By default, this feature is ON. The user can change the settings in the *vsoweb-override.ini* file.
  If the user wants to save the old alerts, a manual backup of the database is recommended. Alternatively, more disk space can be added to the server, and a new minimum number of entries set.
- *Partial hybrid scans*
  The user can now select whether or not to visualize partial hybrid scans. The user can decide whether the displayed product at a specific time will contain all the hybrid scans or not. By default, the user will see partial hybrid volume scans. To visualize only complete volume scans, the user needs to set the use.partial.hybrid.times parameter to **False** in the **[HYBRID_PRODUCT_TIMES]** section of the *vsoweb-override.ini* file.

Updates

- IRIS Focus licensing: The major and minor versions of the software will need a new license
- Timeline: The button for showing the present time is now called **Now**.

- User roles:
  - The admin role no longer includes the ability to manage product configuration.
  - The poweruser role now includes the ability to manage product configuration through the **Product Configuration** panels.

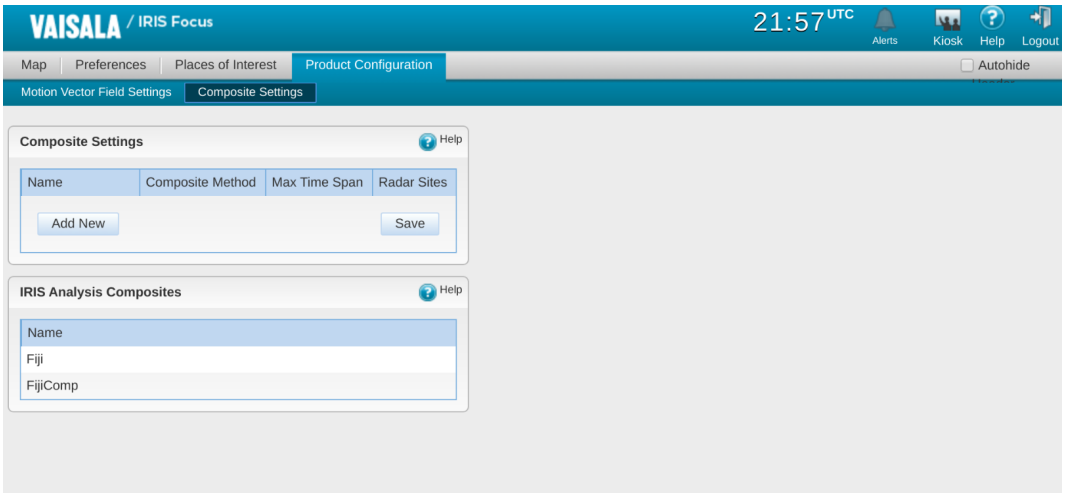


Figure 1 Product configuration

If you have a user with the admin role, and you want this user to be able to manage product configuration, edit the user account information to give the user both the admin role and the poweruser role.

Fixes

- 7398: Events and alerts not filtered for user.
- 7397: Timeline scrolling issue if mouse pointer drifts off the timeline before the button is released.
- 7396: Timeline shifts after some time when right knob is moved to the left.
- 7349: Ruler tool shift-click second point broken.
- 7146: Correct handling of hybrid tasks by IRIS Focus Data Manager.
- 6950: Timeline moves when animation is set in the past.
- 6824: Timeline resizes automatically.
- 6680: A delay has been added for stopping or restarting the `vaisala-radarsw-webapp` service. This makes the restart operation more consistent. However, if the `monit` service is running when the restart is issued, it is possible that `monit` attempts to start the `vaisala-radarsw-webapp` during the restart. This can trigger an error message. If you receive an error message about the restart being canceled, you can use the following status command to verify that the service did actually start:

```
systemctl status vaisala-radarsw-webapp
```

- 7220: Improvements for Data Manager logging.

6.3 Known issues

For troubleshooting information, see *IRIS Focus Administrator Guide*.

- 5408: Tile view does not work in kiosk mode.
- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.
- 5704: Different radars in a composite can have the same task name but different sweeps.
  The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 6864: Nowcast: Timeline hatched area doesn't sync up with advected products.
- 6953: Timeline needs to be clicked twice to get a product after panning.
- 6974: Two WMS layers with same layer name causes the application not to respond.
- 7409: When upgrading IRIS Focus to the 5.2 release over a 5.1.2 or 5.1.3 patch, the upgrade fails on the version check as it doesn't properly check the version number retrieved from the patch file. Add the --skip-version-check flag to the upgrade command to avoid the issue.

6.4 Upgrading IRIS Focus 4.0 or later to IRIS Focus 5.3

The following instructions assume that you are upgrading from IRIS Focus 4.0 or a later version to IRIS Focus 5.3.

You can upgrade to IRIS Focus 5.3 from IRIS Focus 4.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 4.0 before you can upgrade to IRIS Focus 5.3.

CAUTION! When you upgrade from IRIS Focus 4.0 to 5.3, the data in Data Manager is deleted. The MVF and composite definitions are also no longer available after the upgrade.

When you upgrade to IRIS Focus 5.3 from version that is later than 4.0, the data in Data Manager is not deleted.

Vaisala recommends you back-up your system configuration before upgrading. For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.

CAUTION! The addition of the EPSG:27493 map projection in IRIS Focus 5.3 includes several modifications to the configuration files and the tile caching for the "vaisala" map layers in the GeoServer running on IRIS Focus. For most installations, this enhancement is fully automatic when you run the **`rsw-upgrade`** script. However, if you have configured IRIS Focus 5.3 to use an EXTERNAL GeoServer for its map tiles, AND you want to use the EPSG:27493 map projection, you need to edit the configuration files and tile caching on your custom GeoServer, so that it can render tiles in the EPSG:27493 projection. If you do not edit these configuration files, the map will not render properly or at all when IRIS Focus is configured by the poweruser to use the EPSG:27493 map projection.

After upgrading from IRIS Focus 4.0 to 5.3, you need to re-create your areas of interest.

6.4.1 License

This upgrade requires a new license. The upgrade instructions include a step for identifying the Lock ID that you need for getting the new license.

If you have a contract agreement with Vaisala, you should receive your upgrade license via email. If you have not received the license, please contact Vaisala technical support at helpdesk@vaisala.com. In other cases, please contact your Vaisala Sales representative to get a new license.

CAUTION! It is possible to upgrade your system without a valid license with the command **`./rsw-upgrade --online --skip-license`**, but it is not recommended. Upgrading without a valid license will cause your system to stop or run in a degraded state until you receive and install a valid license file.

6.4.2 Running the upgrade

To view installation command line options, run: **`./rsw-upgrade -h`**

If you have your license key on a USB drive, make sure it is inserted in the server before starting the upgrade procedure.

In the following instructions, **x.x** means the Iris Focus version and patch number.

1. Log in as **root**.
2. Backup the system configuration.
   For instructions, see *IRIS Focus Administrator Guide*.
3. Insert the upgrade USB stick.
4. Copy the file *Vaisala_IRIS_installer-6.x.x.tar* from the USB stick to the server's hard disk drive, for example, to the */root* directory.
5. Change to the */root* directory and extract the *.tar* file:

   ```
   tar -xvf Vaisala_IRIS_installer-6.x.x.tar
   ```

   where **x.x** is the Iris Focus version and patch number.
6. Change to the directory created in the earlier step:

   ```
   cd Vaisala-IRIS-Focus-v6.x.x
   ```

7. Run the upgrade script:
   - **Online upgrade:**

     ```
     ./rsw-upgrade --online --license /mnt/usb/license-6.x.x.txt
     ```

   - **Offline upgrade:**

     ```
     ./rsw-upgrade --offline --license /mnt/usb/license-6.x.x.txt
     ```

8. Verify the upgrade by running: **rpm -qa | grep vaisala**
   Check that the **rpm** name is the correct version and patch number.

If you have a Total Lightning Processor (TLP) system that you will be connecting to your IRIS Focus server, see connection instructions in *M212545EN IRIS Focus Lightning Administrator Guide*.
After connecting the TLP system, add the **focus-lightning** role to each existing user account that you want to have access to the lightning products. See section Updating user roles (page 15).

7. IRIS Focus 5.1.1 Release Notes

7.1 Release Notices

These notes are for the IRIS Focus patch release, 5.1.1. This is a patch for IRIS Focus 5.1. For more information on IRIS Focus 5.1, see the IRIS Focus 5.1 Release Notes, IRIS Focus Administrator Guide, and IRIS Focus User Guide.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 5.1.1

You can upgrade to IRIS Focus 5.1.1 from IRIS Focus 4.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 4.0 before you can upgrade to IRIS Focus 5.1.1.

CAUTION! When you upgrade from IRIS Focus 4.0 (or 4.0.1) to 5.1.1, the data in Data Manager is deleted. The MVF and composite definitions are also no longer available after the upgrade. Vaisala recommends you back-up your system configuration before upgrading.
For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.
When you upgrade from IRIS Focus 5.0/5.1 to 5.1.1, the data in Data Manager is not deleted.

Table 11 System Requirements

CentOS	IRIS Analysis/IRIS Radar
IRIS Focus 5.1.1 has been tested with CentOS 7.4 and 7.6. IRIS Focus is also expected to work with other versions of CentOS 7.x.	IRIS Focus 5.1.1 requires IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.

7.2 Fixes

Fixes

- 6957 and 6964: The functionality of events and alerts on hybrid tasks has been improved
- 6965: haproxy logs grow without cleanup
- 6960: Product request latency performance improvement

- 6961: FireEventServiceGwt calls should not be made when alert layer is off and protected area layer is on

7.3 Known Issues

For troubleshooting information, see *IRIS Focus Administrator Guide*.

- 5408: Tile view does not work in kiosk mode.
- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.
- 5704: Different radars in a composite can have the same task name but different sweeps.
  The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 6680: When the restart service of the web application is used, the application sometimes does not have time to change the settings properly. You must add a delay by running the following commands :

  ```
  systemctl stop vaisala-radarsw-webapp
  ```

  Wait approximately 15 seconds and then run:

  ```
  systemctl start vaisala-radarsw-webapp
  ```

- For external WMS layers, the cursor tool functionality does not work on Internet Explorer 11 due to Cross-Origin Resource Sharing (CORS) limitations in that browser.
- 6944: With Internet Explorer, it is not possible to save Areas of Interest with height products.

8. IRIS Focus 5.1. Release Notes

8.1 Release Notices

Vaisala is pleased to announce the release of IRIS Focus 5.1.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 5.1

You can upgrade to IRIS Focus 5.1 from IRIS Focus 4.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 4.0 before you can upgrade to IRIS Focus 5.1.

CAUTION! When you upgrade from IRIS Focus 4.0 (or 4.0.1) to 5.1, the data in Data Manager is deleted. The MVF and composite definitions are also no longer available after the upgrade. Vaisala recommends you back-up your system configuration before upgrading.
For information on adding the historical data to your system after the upgrade, see *IRIS Focus Administrator Guide*.
When you upgrade from IRIS Focus 5.0 to 5.1, the data in Data Manager is not deleted.

Table 12 System Requirements

CentOS	IRIS Analysis/IRIS Radar
IRIS Focus 5.1 has been tested with CentOS 7.4 and 7.6. IRIS Focus is also expected to work with other versions of CentOS 7.x.	IRIS Focus 5.1 requires IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.

8.2 Updates and Fixes

New Features

- *External WMS (Web Map Services) layer support for data visualization*
  You can now visualize data from external sources, such as satellite images and data from external radar networks, together with weather radar products.
- *Easy identification of the alert-triggering radar*
  The alert pane now includes the name of the radar that generated the alert-triggering data.

Updates

- The animation speed is now faster than in earlier releases. The highest possible speed is 25 frames/second. However, the speed may vary depending on the circumstances, such as connection speed and data shown on the screen.
- *IRIS Focus User Guide* now includes a detailed description of events and alerts.

Fixes

- 6802: IRIS Focus shall be able to handle faulty socket server products.
- 6803: Focus light user unknown errors shall be handled.
- 6804: Side panel Max products display delayed when logged as IRIS Focus_light user.
- 6805: Range rings of the previously selected site are shown in the composite view.
- 6807: The Snapshot feature only works with recent data, not when displaying historical data.
- 6476: Criteria: threshold does not accept a negative number.
- 6666: The events and alerts feature provides information in metric units throughout the configuration and display process.
- 6825: Animation speed doesn't fit the animation setting and it is too slow for forecaster use.
- 6876: Multiple alerts pop up even if the area is small.
- 6951: No product updates when timeline not moved.

8.3 Known Issues

For troubleshooting information, see *IRIS Focus Administrator Guide*.

- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.
- 5704: Different radars in a composite can have the same task name but different sweeps.
  The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 5408: Tile view does not work in kiosk mode.

- 6680: When the restart service of the web application is used, the application sometimes does not have time to change the settings properly. You must add a delay by running the following commands :

  ```
  systemctl stop vaisala-radarsw-webapp
  ```

  Wait approximately 15 seconds and then run:

  ```
  systemctl start vaisala-radarsw-webapp
  ```

- For external WMS layers, the cursor tool functionality does not work on Internet Explorer 11 due to Cross-Origin Resource Sharing (CORS) limitations in that browser.
- 6944: With Internet Explorer, it is not possible to save Areas of Interest with height products.

8.4 Upgrading IRIS Focus 4.0 or 5.0 to IRIS Focus 5.1

The following instructions assume that you are upgrading from IRIS Focus 4.0 or a later version to IRIS Focus 5.1.

You can upgrade to IRIS Focus 5.1. from IRIS Focus 4.0 or a later version. If you have an earlier version of IRIS Focus, you must upgrade through each previous version to IRIS Focus 4.0 before you can upgrade to IRIS Focus 5.1.

CAUTION! This procedure deletes the contents of the data manager database. Make sure you back-up the database before you begin. The database will repopulate when you begin to run data after the upgrade.

1. Log in as **`root`**.
2. Backup the system configuration.
   See Making a manual back-up (page 18).
3. Insert the upgrade USB stick.
4. Copy the file *`Vaisala_IRIS_installer-5.1.tar`* from the USB stick to the server's hard disk drive, for example to the */`root`* directory.

5. Change to the */root* directory and extract the *.tar* file:

```
#tar -xvf Vaisala_IRIS_installer-5.1.tar
```

6. Change to the directory created in the earlier step:

```
Vaisala-IRIS-Focus-v5.1-RC1--69
```

7. Run the upgrade script.
Online upgrade:

```
./rsw-upgrade --online
```

Offline upgrade:

```
./rsw-upgrade --offline
```

To view installation command line options, run: **./rsw-upgrade -h**

8. Verify the upgrade by running: **rpm -qa | grep vaisala**
Check that the **rpm** name is version 5.1.

9. IRIS Focus 5.0.1 Release Notes

9.1 Release Notices

These notes are for the IRIS Focus patch release, 5.0.1. This is a patch for IRIS Focus 5.0. For more information on IRIS Focus 5.0, see the IRIS Focus 5.0 Release Notes, *IRIS Focus Administrator Guide*, and *IRIS Focus User Guide*.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 5.0.1

Table 13 System Requirements

CentOS	IRIS Analysis/IRIS Radar
IRIS Focus 5.0.1 has been tested with CentOS 7.4, and is assumed to work with newer versions of the software.	IRIS Focus 5.0.1 requires IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.

9.2 Fixes

- 6216: If the IRIS Analysis machine that works as socket server is set to local time, the IRIS Analysis products are shown in the wrong time in IRIS Focus. Vaisala recommends that you setup the whole network in UTC time.
  For this fix to work properly, you must install a patch for IRIS Analysis software that is installed on the machine that serves the product to IRIS Focus. For the correct patch, see the following table.

  Table 14 IRIS Analysis versions and required sw patches

IRIS Analysis version	Required patch version
IRIS 8.13.6	IRIS/RDA Patch 6
IRIS 8.13.7	IRIS/RDA Patch 9
IRIS 9.0.0	IRIS/RDA Patch 3
- 6382: Data manager is not able to read the IRIS RAW products generated from *`odim_HDF5`* files that do not contain all the required parameters.

9.3 Known Issues

- 5408: Tile view does not work in kiosk mode.
- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.
- 5704: Different radars in a composite can have the same task name but different sweeps.
  The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 6666: The events and alerts feature provides information in metric units throughout the configuration and display process.
- 6680: When the restart service of the web application is used, the application sometimes does not have time to change the settings properly. You must add a delay by running the following commands :

  ```
  systemctl stop vaisala-radarsw-webapp
  ```

  Wait approximately 15 seconds and then run:

  ```
  systemctl start vaisala-radarsw-webapp
  ```

9.4 Upgrading IRIS Focus 5.0 to IRIS Focus 5.0.1

The following instructions assume you are upgrading from IRIS Focus 5.0 to IRIS Focus 5.0.1.

If you have previous versions of IRIS Focus, you must upgrade through each previous version before you can upgrade to IRIS Focus 5.0.1.

CAUTION! This procedure deletes the contents of the data manager database. Make sure you back-up the database before you begin. The database will repopulate when you begin to run data after the upgrade.

1. Log in as **`root`**.
2. Backup the system configuration.
   See chapter *Making a manual back-up*.
3. Insert the upgrade USB stick.

4. Copy the file *Vaisala_IRIS_installer-5.0.1.tar* from the USB stick to the server's hard disk drive, for example to the */root* directory.
5. Change to the */root* directory and extract the *.tar* file:

```
#tar -xvf Vaisala_IRIS_installer-5.0.1.tar
```

6. Change to the directory created in step **4**:

```
Vaisala-IRIS-Focus-v5.0.1-RC1--69
```

7. Run the upgrade script.
   Online upgrade:

```
./rsw-upgrade --online
```

   Offline upgrade:

```
./rsw-upgrade --offline
```

To view installation command line options, run: **./rsw-upgrade -h**

8. Verify the upgrade by running: **rpm -qa | grep vaisala**
   Check that the **rpm** name is version 5.0.1.

10. IRIS Focus 5.0 Release Notes

10.1 Release Notices

Vaisala is pleased to announce the release of IRIS Focus 5.0.

IRIS Focus supports current Microsoft Edge®, Mozilla Firefox®, and Google Chrome™ browsers.

Upgrade to IRIS Focus 5.0

You can only upgrade IRIS Focus gradually, that is, one version at a time. You can only perform upgrade to IRIS Focus 5.0 from IRIS Focus 4.0. For upgrading instructions, see *IRIS Focus Administrator Guide*.

CAUTION! Vaisala recommends you back-up your system configuration before upgrading.
Information in data manager is not backed-up during the upgrade. This means that after the upgrade, data showed in the previous version of IRIS Focus is no longer available. After some time, new data will be provided from the radars in your network through data manager.
For information on adding historical data to your system, see *IRIS Focus Administrator Guide*.

Table 15 System Requirements

CentOS	IRIS Analysis/IRIS Radar
IRIS Focus 5.0 has been tested with CentOS 7.4, and is assumed to work with newer versions of the software.	IRIS Focus 5.0 requires IRIS Analysis/Radar 8.13.6 or later on the same network. Note that IRIS Analysis must not be visible to the public Internet.

10.2 Updates and Fixes

New Features

- *Weather events and alerts*
  You can now define the weather event criteria for identifying significant weather events and alerts directly in IRIS Focus.
  To receive alerts about significant weather, you can assign one or more sets of event criteria to an area of interest.

- *Areas of interest*
  IRIS Focus 5.0 has further optimized our tools for assigning weather criteria to areas of interest.
  You can create circular and polygon areas of interest.
  After you assign configurable weather event criteria to an area, you will automatically receive alerts when weather events cross into that area. You can manage which areas are active one by one.
- *Pin places of interest*
  You can add pins to the map to indicate points of interest. The pins provide useful reference points and labels.
- *Ruler Tool*
  Select **Tools > Ruler Tool** to measure the distance between two points on the map with two simple clicks of the mouse.
- *Data flow monitoring*
  IRIS Focus administrator can setup data flow alerts for monitoring the data to IRIS Focus. IRIS system provides a way of detecting the frequency of the product arrival.

Updates

- Introduction of the use of the *poweruser* role.
  The specific functions for a user with this role are: creating global areas of interest, and creating event criteria, such as thunderstorm, shear, or lightning.
- For security reasons, the application software now only allows a single log in for each user. A single user can use several sessions in the same browser.
  However, if another user uses the same login from a different IP, the logged user will be logged out.
- The **Cross Section**, **Tracking Tool**, and **Ruler Tool** are now grouped behind the **Tools** button.

Fixes

- Data Manager fixes:
  - 5535/6218 Sector scan and missing rays: Radar product generation does not support missing rays and sector scan are shown in the wrong azimuth angle.
  - 6227/6262/6263/6296/6552 Data manager housekeeping service:
    - Properly deleting unused volume_conf_to_source records
    - Paging to Data Manager's housekeeping service so that 1000 volumes are deleted at a time to avoid spike in heap space
    - Data Manager housekeeping speed improvement
    - Handle exception when data is deleted from the database accidentally
  - 6291/6293 RHI Hybrid RAW file management: RHI RAW data and Hybrid naming is causing errors in the data manager
  - 6290: There shall not exist a ray count dependency in data manager
- Image export:
  - 6143 Unexpected error caused by no available data in the present time
- Alerts
  - 5418 Unique name for Areas of Interest
  - 6580 Just events from the last 48h show on the UI

10.3 Known Issues

For troubleshooting information, see *IRIS Focus Administrator Guide*.

- 5408: Tile view does not work in kiosk mode
- 5660: The user interface uses UTC as the default timezone. If the user changes the timezone in the **Admin** panel, the new timezone is not displayed in the web user interface.
- 5704: Different radars in a composite can have the same task name but different sweeps.
  The composite method uses the sweep ID so it assumes that all the tasks have the same elevations.
- 6216: If the IRIS Analysis machine that works as socket server is set in local time, the IRIS Analysis products are shown in the wrong time in IRIS Focus. Vaisala recommends the user to setup the whole network in UTC time.
- 6382: Data manager is not able to read the IRIS RAW products generated from **`odim_HDF5`** files that do not contain all the required parameters.
- 6666: The events and alerts feature provides information in metric units throughout the configuration and display process.
- 6680: When the restart service of the web application is used, the application sometimes does not have time to change the settings properly. You must add a delay by running the following commands:

  ```
  systemctl stop vaisala-radarsw-webapp
  ```

  Wait approximately 15 seconds and then run:

  ```
  systemctl start vaisala-radarsw-webapp
  ```

- The installation command for IRIS Focus 5.0 is now:
  a. Change to the */Focus_install* directory.
  b. Run the IRIS Focus installation script:

  ```
  /Focus_install/Vaisala-IRIS-Focus-v5.0.0--68/rsw-installer --offline --
  gis-db-dump vaisala-iris-maps-v2 --terrain-dir vaisala-iris-terrain-v2 -
  s <hostname or IP of IRIS Analysis socket server>
  ```

- The instructions in *IRIS Focus Administrator Guide* on making a manual back-up and restoring from a back-up are incomplete. See:
  - Making a manual back-up (page 18)
  - Restoring from backup (page 18)

10.4 Notes on Using IRIS Focus

Viewing Radar Data

- The minimum screen resolution for viewing IRIS Focus is 1400 x 1050.
- In some cases, there may be missing or broken live radar products.
- In some cases, the lightning layer may be empty or missing.
- The image export service screen resolution maximum value is 3000 pixels in both axes.

Browsers

- If you use **Remember Password** in your browser and login in first as a user and then as an admin, you may get an error message when you edit the user settings for other users.
  Despite the error message, your updates are saved in the system.
- Hardware acceleration may cause Firefox to crash with multiple products selected.
  To avoid the problem, in the Firefox menu select **Options > Advanced > Browsing** and uncheck **Use hardware acceleration when available**.

Technical support

Contact Vaisala technical support at helpdesk@vaisala.com. Provide at least the following supporting information as applicable:

- Product name, model, and serial number
- Software/Firmware version
- Name and location of the installation site
- Name and contact information of a technical person who can provide further information on the problem

For more information, see www.vaisala.com/support.

Warranty

For standard warranty terms and conditions, see www.vaisala.com/warranty.

Please observe that any such warranty may not be valid in case of damage due to normal wear and tear, exceptional operating conditions, negligent handling or installation, or unauthorized modifications. Please see the applicable supply contract or Conditions of Sale for details of the warranty for each product.

Recycling

Recycle all applicable material.

Follow the statutory regulations for disposing of the product and packaging.

VAISALA

www.vaisala.com