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Table of contents

1.	About this document	5
1.1	Version information.....	5
1.2	Related documents.....	5
1.3	Trademarks.....	5
2.	IRIS Focus 7.1 release notes	6
2.1	Release notices.....	6
2.2	Updates and fixes.....	6
2.3	Known issues.....	8
2.4	Corrections and additions to the documentation.....	8
2.5	Migrating from IRIS Focus 6.x to IRIS Focus 7.1.....	9
2.6	Installation and configuration command options.....	11
3.	Backing up the data	13
3.1	Making a manual back-up.....	13
3.2	Restoring from backup.....	13
4.	IRIS Focus 7.0 release notes	16
4.1	Release notices.....	16
4.2	Updates and fixes.....	16
4.3	Security notes.....	17
4.4	Known issues.....	17
4.5	Corrections to the documentation.....	18
4.5.1	Installing IRIS Focus from a USB stick.....	18
4.6	Installation and configuration command options.....	21
5.	IRIS Focus 6.1 release notes	23
5.1	Release notices.....	23
5.2	Updates and fixes.....	23
5.3	User instructions for new features.....	25
5.3.1	Exporting images as .shp files.....	25
5.3.2	Exporting images as .geotiff files.....	28
5.4	Known issues.....	29
5.5	Upgrading IRIS Focus 6.0 to IRIS Focus 6.x.x.....	29
5.5.1	Running the upgrade.....	29
5.5.2	Updating user roles.....	31
5.6	Installation and configuration command options.....	31
6.	IRIS Focus 6.0 release notes	33
6.1	Release notices.....	33
6.2	Updates and fixes.....	33
6.3	Known issues.....	35
6.4	Upgrading IRIS Focus 6.0 to IRIS Focus 6.x.x.....	36
6.4.1	License.....	36
6.4.2	Running the upgrade.....	36
6.4.3	Updating user roles.....	37
6.5	Installation and configuration command options.....	38
	Technical support	41
	Warranty	41
	Recycling	41

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-P	November 2022	For IRIS Focus 7.1
M211904EN-N	August 2022	For IRIS Focus 7.0
M211904EN-M	July 2021	For IRIS Focus 6.1
M211904EN-L	April 2021	For IRIS Focus 6.0

1.2 Related documents

Table 2 Related documents

Document code	Name
M211850EN	<i>IRIS Focus Administrator Guide</i>
M211849EN	<i>IRIS Focus User Guide</i>
M212545EN	<i>IRIS Focus Lightning Administrator Guide</i>
M212544EN	<i>IRIS Focus Lightning User Guide</i>
M211315EN	<i>IRIS and RDA Software Installation Guide (M211315EN)</i>

1.3 Trademarks

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Chrome™ is a trademark of Google Inc.

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2. IRIS Focus 7.1 release notes

2.1 Release notices

Vaisala is pleased to announce the release of IRIS Focus 7.1.

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

Migration to IRIS Focus 7.1

You can migrate to IRIS Focus 7.1 from IRIS Focus 6.x releases. If you have an earlier version of IRIS Focus, you must upgrade through previous versions to IRIS Focus 6.0 before you can migrate to IRIS Focus 7.1. For migration instructions, see [Migrating from IRIS Focus 6.x to IRIS Focus 7.1 \(page 9\)](#).



You need to determine or set the fully qualified domain name (FQDN) of the IRIS Focus server before installing the software. See chapter *Verify or override the FQDN of your server* in *IRIS Focus Administrator Guide*.

Table 3 System requirements

AlmaLinux	IRIS Analysis/IRIS Radar	Total Lightning Processor (TLP)
IRIS Focus 7.1 requires AlmaLinux 8.4.	The radar data visualization features of IRIS Focus 7.1 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.

2.2 Updates and fixes

New features

- *Lightning Threat Zone*
This release introduces the new Lightning Threat Zone (LTZ) product. The user can see a forecast of the progress of lightning zones, and see alerts when the Lightning Threat Zone reaches critical areas.
- *Storm Intensity*
The Storm Intensity product layer is now available.

- *VHF support*
IRIS Focus now supports viewing VHF (very high frequency) lightning data. This brings performance improvements for the TimeSpan product:
 - The use of WebGL has been introduced to improve both the rate and quantity of lightning events that can be displayed on the screen.
 - The client side cache has been increased to hold over 350,000 events.
The client side cache has been optimized to perform best when you use IRIS Focus to view recent data keeping 350,000+ of the most recent events on hand. Due to this optimization choice, you may notice a slight delay at initial login or when transitioning from viewing old data back to "Now" time, as these events require the cache to be initially loaded.
 - A hard limit count of 25,000 events is imposed when viewing and updating real-time data. This is to prevent your browser from crashing during high data rates while viewing historical data. When viewing historical data with large time spans, the hard limit is increased to 350,000+ events (client side cache). Note that it will take several seconds for the browser to fetch and render 350,000+ events.
 - When viewing "Now" data, an animated ring normally appears around each new lightning event to help indicate where new lightning is occurring. This animation will automatically be disabled when large amounts of data need to be plotted in real-time. This saves system resources, allowing your browser to keep up with the data.
- *Dark mode*
IRIS Focus now features a dark mode option. Users can select the dark mode in the Map Features panel. Administrators can also add custom dark layers; the software will automatically request them when the dark mode is selected, if the layer name ends with "_dark"

Updates

- *Areas of interest with different alert severities are now highlighted in different colors when alerts are triggered*
When an alert is triggered in an area on interest, the area changes color: an area with info severity turns blue, an area with warning severity turns yellow, and an area with alarm severity turns red.
- *More functionalities in the IRIS Focus Light view*
More functionalities are now available for users in IRIS Focus Light view. For example, users can see alerts on the map.
- *Presets menu for the animation timeline*
You can now view an animation for a preset time period by selecting the time period in the **Presets** menu next to the timeline.
- *Enabling/disabling clear notifications removed from the Admin view*
In the **Admin** area, the **Enable clear notifications** checkboxes were removed. Clear notifications are always enabled in the system. Users can select whether to receive them or not.

Fixes

- 8798: **BASE** event uses **height** in the <>= comparison. The unit should be km, not dBz as shown.

2.3 Known issues



For troubleshooting information, see *IRIS Focus Administrator Guide (M211850EN)*.

- IRIS Focus WMS feature works with WMS version 1.1.1 servers. Older or newer versions of WMS servers are not supported and may be incompatible.
- Currently, the alerting functionality is limited to single radar sites only. Alerts are not generated for composite sites.
- 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.
- 6974: Two WMS layers with same layer name causes the application not to respond.
- 8801: In the Spanish UI, there is a layout issue in the alert notification editor that causes the last input field to disappear underneath the buttons. As a workaround, temporarily switch to the English UI to edit the field.
- 8825: Place of interest: Alerts Enabled toggle doesn't persist. When configuring areas of interest, the option 'Enable alerts for this place' may not show the correct state (Enabled / Disabled). To verify the correct state, check whether the area of interest is shown on the main map. If the toggle state is Disabled, the area is not shown.
- "Anonymous" entries in the user table can occur.

2.4 Corrections and additions to the documentation

- Addition to the installation instructions:
If you receive a pre-installed server delivery from Vaisala, you need to set the fully qualified domain name (FQDN) of IRIS Focus as it will be known on your network. For example, if the final name is **focus.customer.com**, run the following command:

```
rsw-change-fqdn enable --fqdn focus.customer.com
```

- Addition to chapter *SSH connection for Data Manager in IRIS Focus Administrator Guide (M211850EN)*: Do the following before the first step:
For an SSH connection between the IRIS Focus server and another server (for example, IRIS Analysis server), use the EdDSA (ed25519) scheme. If your server does not already have a file called `/root/.ssh/id_ed25519.pub`, create it with the following command:

```
ssh-keygen -t ed25519 -C "unique name to identify this key."
```

- Correction to chapter *Verify or override the FQDN of your server in IRIS Focus Administrator Guide (M211850EN)*: There is an extra line `{code:sh}` in the second command example. This line should not be included. The correct command is:

```
export HOST_FQDN=my-iris-focus.company.com
```

2.5 Migrating from IRIS Focus 6.x to IRIS Focus 7.1

If you have had an earlier version of IRIS Focus than 7.0, you need migrate your configuration from the earlier release to 7.1. To do this, you need to first create an archive file, then install IRIS Focus 7.1, and then migrate the archive to your system.



The following instructions assume that you are upgrading from IRIS Focus 6.0 or a later version to IRIS Focus 7.1. If you have an earlier version of IRIS Focus than IRIS Focus 6.0, upgrade first to IRIS Focus 6.0, and then migrate to IRIS Focus 7.1.



To view installation command line options, run: **rsw-migrate-install --help**

1. Log in to the server as **root**.
2. Back up the system configuration.
3. Insert the migration USB stick to the server, and mount it.

4. Under the deployment folder, run the migrate script in the backup mode:

```
./rsw-migrate-install --backup
```

The migration script collects all required configuration files, settings, and data base schema to be migrated to IRIS Focus 7.1. The archive file will have a timestamp in its name.

The location of the archive file is: */srv/vaisala/radarsw/iris_focus_migrate_<TIMESTAMP>.tar.gz*.

5. Copy the archive file to the USB stick:

```
cp /srv/vaisala/radarsw/iris_focus_migrate_<TIMESTAMP>.tar.gz /mnt/usb
```

6. Install IRIS Focus 7.1.
7. Login in as **root** to the freshly installed IRIS Focus 7.1.
8. Check that all IRIS Focus services are stopped.
9. Insert the migration USB stick, and mount it.
10. Copy the archive file from the USB stick:

```
cp /mnt/usb/iris_focus_migrate_TIMESTAMP.tar.gz. /tmp
```

11. Run the migration script in the restore mode:

```
./rsw-migrate-install -restore-archive /tmp/  
iris_focus_upgrade_<TIMESTAMP>.tar.gz
```


12. If there was a socket server configured in IRIS Focus 6.1, you can run the migration script to configure radar sites:

```
./rsw-migrate-install -restore-archive /tmp/  
iris_focus_migrate_<TIMESTAMP>.tar.gz -s <SOCKET_SERVER>
```

13. You have now completed the migration process. Note that it may take a few minutes for the system to become available after the migration.

2.6 Installation and configuration 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	<p>The <code>cors-origin-whitelist</code> (<code>-cow</code>) switch determines the value of the <code>Access-Control-Allow-Origin</code> header. It must have the same value as the root application URL. In the installation command, <code><root application URL></code> corresponds to the hostname. The default value is the installation machine name.</p> <div style="border: 1px solid gray; padding: 10px; background-color: #f0f0f0;"> <p> If the hostname changes, you also need to change the <code>security.cors.origin.whitelist</code> parameter value in the <code>vsoweb-override.ini</code> file, and restart the application.</p> </div>
--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 or --help	Show help information
--lightning	Allow configuration for lightning provider
--no-prompt	Fails (exits) on error without user confirmation
--offline	Disable online AlmaLinux base repository and require a local AlmaLinux base repository
--online	Allow online AlmaLinux 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	

Option	Description
--skip-os-version-check	Force the installation on a AlmaLinux 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)

3. Backing up the data

3.1 Making a manual back-up

- ▶ 1. Log in to the server 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 to the server 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. Stop all services which might access the database.

```
kubectl delete -f /etc/vaisala/focus/k8s/vaisala-focus.yaml
```

5. (Optional) Run the backup script:

```
/usr/vaisala/radarsw/backup/bin/do-backups
```

Database backups for the wx and vsp databases will be in */srv/vaisala/radarsw/backup/database*. Move a copy to a remote host if reinstalling or otherwise reimaging the machine.

6. Drop the current database with the `rsw-db-tool` utility:

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

7. Drop the current database with the `rsw-vsp-db-tool` utility:

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

8. Recreate an empty wx database:

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

9. Recreate an empty vsp database:

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

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

```
gzip --decompress --to-stdout /radarsw-database-vsp-2019-10-12T07-54-50.gz  
| psql -d vsp_v1 -U vsp_user -h localhost  
gzip --decompress --to-stdout /radarsw-database-wx-2019-10-12T07-54-50.gz  
| psql -d wxdb2 -U wxuser -h localhost
```

11. Restart services which might use database.

```
kubectl apply -f /etc/vaisala/focus/k8s/vaisala-focus.yaml
```

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 7.0 release notes

4.1 Release notices

Vaisala is pleased to announce the release of IRIS Focus 7.0.

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

Upgrade to IRIS Focus 7.0

You can upgrade to IRIS Focus 7.0 from IRIS Focus 6.0 or a later versions. If you have an earlier version of IRIS Focus, you must upgrade through previous versions to IRIS Focus 6.0 before you can upgrade to IRIS Focus 7.0.

When upgrading to 7.0, the maps and the terrain file will stay installed.



When you upgrade from IRIS Focus 6.x to 7.0, the data in Data Manager is 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 (M211850EN)*.

Table 5 System requirements

AlmaLinux	IRIS Analysis/IRIS Radar	Total Lightning Processor (TLP)
IRIS Focus 7.0 requires AlmaLinux 8.4.	The radar data visualization features of IRIS Focus 7.0 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

- *Alerts for lightning*

The user can now monitor and receive alerts for areas of interest that are based on lightning alert criteria

- *Alerts for combined lightning and weather radar data*
The user can now be alerted by events that combine both weather radar data and information from a lightning network.
- *Alert notifications*
You can now receive several types of notifications for alerts. You can choose whether to hear asound notification when an alert is triggered, and receive notifications by email or SMS.
- *Alert severities*
IRIS Focus can now generate alerts that have different level of severity. The level depends on the severity criterion assigned to the area of interest. The options are: Information,Warning, and Alarm.
- *Alert history*
The new alert history page shows detailed information about active and past alerts.
- *Lightning animation*
Lightning events are now highlighted with an animation: when viewing the TimeSpan product, and a new lightning event occurs, the user can now visualize an animated circle around the lightning icon.

Updates

- *New look and feel for places of interest and alert settings*
Users should expect a new Vaisala look and feel within this latest version, including an improved approach for creating areas of interest

Fixes

- 7472: When using the Hayford-Gauss projection, there are inconsistencies in map behavior at the edge of the map.

4.3 Security notes

- *CVE-2021-44228 (log4j)*
In December of 2021, a critical vulnerability known as CVE-2021-44228 was found in a log4j package. For IRIS Focus 7.0, we have removed the vulnerable log4j package (log4j-core) from our builds, and replaced it with an alternative package.
The third party zipkin service included in the IRIS Focus 7.0 installation still includes the log4j-core package. However, we have verified that we are running the latest version of zipkin (2.23.16) and that the log4j-core package included with zipkin is version 2.17.1 and, thus, includes the fix for vulnerability CVE-2021-44228.

4.4 Known issues



For troubleshooting information, see *IRIS Focus Administrator Guide (M211850EN)*.

- IRIS Focus WMS feature works with WMS version 1.1.1 servers. Older or newer versions of WMS servers are not supported and may be incompatible.
- 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.
- 6974: Two WMS layers with same layer name causes the application not to respond.
- 8188: If the **user** role has been deleted, the upgrade from 5.3 to 6.x fails.
- 8580: Audio access permissions at initial page load. Some web browsers by default block sounds on web pages until the user interacts with the page. Thus, in some cases, the web page may not play the alert notification sounds in IRIS Focus. This may occur, for example, if the user automatically logs into IRIS Focus by clicking the browser reload button while logged in. When the user has logged into IRIS Focus through the normal login, this issue should not occur. To make sure users hear the sound notifications right away when alerts are triggered, enable the web browser to play sounds by default.
- 8798: **BASE** event uses **height** in the $<=>$ comparison. The unit should be km, not dBz as shown.
- 8801: In the Spanish UI, there is a layout issue in the alert notification editor that causes the last input field to disappear underneath the buttons. As a workaround, temporarily switch to the English UI to edit the field.
- 8825: Place of interest: Alerts Enabled toggle doesn't persist. When configuring areas of interest, the option 'Enable alerts for this place' may not show the correct state (Enabled / Disabled). To verify the correct state, check whether the area of interest is shown on the main map. If the toggle state is Disabled, the area is not shown.
- "Anonymous" entries in the user table can occur.

4.5 Corrections to the documentation

- Correction to *IRIS Focus 7.0 Administrator Guide* and *IRIS Focus 7.0 Lightning Administrator Guide*, chapter *Restoring from backup*: for the correct procedure, see [Restoring from backup \(page 13\)](#) in this document.
- Correction to *IRIS Focus 7.0 Administrator Guide* and *IRIS Focus 7.0 Lightning Administrator Guide*, chapter *Installing IRIS Focus from a USB stick*: for the correct procedure, see [Installing IRIS Focus from a USB stick \(page 18\)](#) in this document.

4.5.1 Installing IRIS Focus from a USB stick

In these instructions, x.x is the number of the version/patch.

The IRIS Focus installation USB contains the following file structure for the main version installation:

```
Focus_install
  vaisala-iris-maps-v2
  vaisala-iris-terrain-v2
  installer
  documentation
```

In the case of a patch release, the USB stick may also include an additional .tar file for the patch.

To install IRIS Focus from the USB stick, you must copy the files to the AlmaLinux server and prepare the files for installation.

- ▶ 1. Reboot the system.
2. Log in to the server as **root**.
3. Insert the USB stick.
If it is already plugged-in, remove and re-insert the stick.
4. In the pop-up dialog, select **Open With Files**.
5. Right-click a blank area and select **Open in Terminal**.
6. In the terminal, type **pwd** and press **ENTER**.
The result is usually `/run/media/root/IRIS`.
7. Copy the *Focus_install* directory to the AlmaLinux server:

```
mkdir /srv/Focus_install
cp -r /run/media/root/IRIS/Focus_install/* /srv/Focus_install
```

8. Change to the `/srv/Focus_install/installer` directory, and join the .tar file parts:

```
cd /srv/Focus_install/installer
cat IRIS_Focus_7_0_Installer_part_* >> IRIS_Focus_7_1_Installer.tar
```

9. To make sure that the file is now correct, run the following two commands and check that you get the same output:

```
md5sum IRIS_Focus_7_1_Installer.tar
cat IRIS_Focus_7_1_Installer.tar.md5
```

10. Extract the installation files into the default release directory:

```
tar -xvf IRIS_Focus_7_1_Installer.tar
```

11. Change to the `/srv/Focus_install/vaisala-iris-terrain-v2` directory:

```
cd /srv/Focus_install/vaisala-iris-terrain-v2
```

- a. Join the file parts:

```
cat vaisala-iris-terrain-v2-part* > vaisala-iris-terrain-v2.zip
```

- b. Unzip the resulting terrain zip file:

```
unzip vaisala-iris-terrain-v2.zip
```

- c. Remove the extra files:

```
rm -rf vaisala-iris-terrain-v2-part*  
rm -rf vaisala-iris-terrain-v2.zip
```

12. Run the IRIS Focus installation scripts:



<root application URL> in the installation command example below 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.

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. The default value is the installation machine name.

```
cd /srv/Focus_install/installer
./rsw-installer --offline --gis-db-dump\
/srv/Focus_install/vaisala-iris-maps-v2 --terrain-dir\
/srv/Focus_install/vaisala-iris-terrain-v2\
--radar -s <hostname or IP of IRIS Analysis socket server>\
--lightning -cow <root application URL>
```


13. Reboot the system with the following command to cleanly bring up the services:

```
reboot
```

4.6 Installation and configuration command options

Table 6 Installation command options

Option	Description
<code>--admin-password</code>	Assign a non-default admin password
<code>--admin-user</code>	Assign a non-default admin user
<code>-c --config-dir</code>	Configuration directory

Option	Description
-cow	<p>The <code>cors-origin-whitelist</code> (<code>-cow</code>) switch determines the value of the <code>Access-Control-Allow-Origin</code> header. It must have the same value as the root application URL. In the installation command, <code><root application URL></code> corresponds to the hostname. The default value is the installation machine name.</p> <div data-bbox="798 528 1359 797" style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;">  <p>If the hostname changes, you also need to change the <code>security.cors.origin.whitelist</code> parameter value in the <code>vsoweb-override.ini</code> file, and restart the application.</p> </div>
--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 or --help	Show help information
--lightning	Allow configuration for lightning provider
--no-prompt	Fails (exits) on error without user confirmation
--offline	Disable online AlmaLinux base repository and require a local AlmaLinux base repository
--online	Allow online AlmaLinux 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 AlmaLinux 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)

5. IRIS Focus 6.1 release notes

5.1 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 (M211850EN)*.

Table 7 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.

5.2 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 \(page 25\)](#).

- *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 \(page 25\)](#).

Fixes

- 7764, 7159: SHEAR alerts shall be triggered correctly for Lidar and Radar data
- 8039: Radar selector issue when 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
```

5.3 User instructions for new features

5.3.1 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	<p>A valid IRIS Focus username.</p> <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;">  <p>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.</p> </div>
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
from requests.sessions import Session
from datetime import datetime, timedelta

# Change to host name of IRIS Focus if run externally
APP_URL = "https://localhost"

# User account to login with to render image
USERNAME = "image-export"
PASSWORD = "USER_PASSWORD"

# Name of saved view and user account that created the saved view
VIEW = "SAVED_VIEW_NAME"
VIEW_USER = "USER_THAT_SAVED_VIEW"

# You can change these values
OUTPUT_DIR = '.' # Directory to write output file to
FILE_BASE_NAME = "image-export" # Name of file sans extension
SSL_VERIFY = False # Set to True if you have a valid certificate
TYPE = "shp" # Can be "shp" or "geotiff"

# Example of backing up 5 minutes from "now" (no data at time causes
# 404)
TIME = datetime.utcnow() - timedelta(days=0, hours=0, minutes=5)

def main():
    ext = ".tiff"
    if TYPE == "shp":
        ext = ".zip"
    file_path = OUTPUT_DIR + "/" + FILE_BASE_NAME + ext
```

```

session = Session()
time_str = TIME.isoformat()
url = APP_URL + "/focus-webapp/api/v2/image-export/" + TYPE
req_params = {"username": USERNAME, "password": PASSWORD,
              "time": time_str,
              "savedViewName": VIEW, "savedViewUser": VIEW_USER}
res = session.post(url, params=req_params, verify=SSL_VERIFY)
print('{0} response status: {1}'.format(time_str, res.status_code))
if res.status_code == 200:
    with open(file_path, 'wb') as f:
        f.write(res.content)
    print('Created file: {0}'.format(file_path))

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 creates a single ZIP file containing the shape file components.

5.3.2 Exporting images as .geotiff files

You can also export images as geoTIFF files.

The procedure is otherwise similar to [Exporting images as .shp files \(page 25\)](#), 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.

Note that you can use the sample Python script shown in [Exporting images as .shp files \(page 25\)](#) to grab geotiff files by setting the TYPE to "geotiff".

5.4 Known issues



For troubleshooting information, see *IRIS Focus Administrator Guide (M211850EN)*.

- 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.

5.5 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.

5.5.1 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 \(page 31\)](#).

5.5.2 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
```

5.6 Installation and configuration command options

Table 8 Installation command options

Option	Description
--admin-password	Assign a non-default admin password
--admin-user	Assign a non-default admin user

Option	Description
-c --config-dir	Configuration directory
-cow	<p>The <code>cors-origin-whitelist</code> (<code>-cow</code>) switch determines the value of the <code>Access-Control-Allow-Origin</code> header. It must have the same value as the root application URL. In the installation command, <code><root application URL></code> corresponds to the hostname. The default value is the installation machine name.</p> <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p> If the hostname changes, you also need to change the <code>security.cors.origin.whitelist</code> parameter value in the <code>vsoweb-override.ini</code> file, and restart the application.</p> </div>
--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 or --help	Show help information
--lightning	Allow configuration for lightning provider
--no-prompt	Fails (exits) on error without user confirmation
--offline	Disable online AlmaLinux base repository and require a local AlmaLinux base repository
--online	Allow online AlmaLinux 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 AlmaLinux 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)

6. IRIS Focus 6.0 release notes

6.1 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 (M211850EN)*.

Table 9 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.

6.2 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

6.3 Known issues



For troubleshooting information, see *IRIS Focus Administrator Guide (M211850EN)*.

- 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.

6.4 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.

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 \(page 31\)](#).

6.4.3 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
```

6.5 Installation and configuration command options

Table 10 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

Option	Description
-cow	<p>The <code>cors-origin-whitelist</code> (<code>-cow</code>) switch determines the value of the <code>Access-Control-Allow-Origin</code> header. It must have the same value as the root application URL. In the installation command, <code><root application URL></code> corresponds to the hostname. The default value is the installation machine name.</p> <div data-bbox="818 528 1377 797" style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 10px; margin-top: 10px;">  <p>If the hostname changes, you also need to change the <code>security.cors.origin.whitelist</code> parameter value in the <code>vsoweb-override.ini</code> file, and restart the application.</p> </div>
--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 or --help	Show help information
--lightning	Allow configuration for lightning provider
--no-prompt	Fails (exits) on error without user confirmation
--offline	Disable online AlmaLinux base repository and require a local AlmaLinux base repository
--online	Allow online AlmaLinux 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 AlmaLinux 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)

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 according to local regulations.

VAISALA

