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Important changes are listed in **Document revision history** at the end of this document.

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What is the Weather add-on?

The Weather add-on retrieves current weather conditions and weather forecasts from a data source, such as AccuWeather®, National Weather Service®, or Environment Canada. It can also retrieve Air Quality Index (AQI) data from AccuWeather. This information can be displayed on a graphic page or read from a control program for use in control logic.

Free weather services

Weather data from the National Weather Service and Environment Canada is free to use and does not require an add-on license. These services provide data for current weather conditions and 7-day daily forecasts.

Paid weather service

Weather and air quality data from AccuWeather requires the purchase of an add-on license. AccuWeather provides data for current weather conditions, daily forecasts for up to 10 days, hourly forecasts for up to 120 hours, and current air quality conditions.

See the table below for features and license requirements.

Feature	Available data sources	License required?
Weather – current	National Weather Service	No
	Environment Canada	No
	AccuWeather	Yes
Weather – daily	National Weather Service	No
	Environment Canada	No
	AccuWeather	Yes
Weather – hourly	AccuWeather	Yes
Air quality – current	AccuWeather	Yes

Prerequisites

- The i-Vu® v8.5 or later application with the latest cumulative patch applied
- The latest weather_carrier.zip which includes weather.addon and the Weather .equipment and .view files for AccuWeather, National Weather Service, and/or Environment Canada weather services
- An Operator must have the **Engineer System** privilege
- To use data from AccuWeather, you must purchase and install an add-on license

See the *Installing an Add-on User Guide* for the following:

- Installing an add-on
- Applying a license
- Running an add-on
- Upgrading an add-on

NOTE If upgrading from an older version of the add-on, clear your browser's cache before accessing the webpage for the new add-on.

To verify your add-on license status

To use data from the AccuWeather weather service, you must purchase and install a license. Older versions of Weather add-on licenses are not supported in v8.5. Once installed, you can check the license status, license expiration date, and enabled features in the licensing window in the top left corner of the Weather add-on interface.

If the license status is **Unlicensed** or **Expired**, you must purchase a license for full access to weather data from AccuWeather. However, you do not need an active license to access data from the National Weather Service or Environment Canada.

NOTE If your license has expired or you are upgrading from an older version of the add-on, you will continue to receive current and daily weather data from AccuWeather, but it will refresh at 4-hour intervals rather than whenever new data is available. You will not receive hourly or air quality data until you purchase a new license.

To generate a license expiration alarm

You can set an alarm to notify you before your license expires. Check **Generate alarms _ days before license expiration** and enter the number of days (15–45) before the license expires you want to be notified. Then click **Apply**.

Setting up the Weather add-on

We recommend that you configure this on a laptop or desktop computer. If necessary, ensure you have configured a proxy before proceeding.

To set up a proxy

If your site has a proxy set up, you must configure proxy settings in the Weather add-on to access weather service data.

In the add-on interface, check **Use proxy** and enter the **Host** name and **Port** number. Click **Apply**.

If the proxy requires authentication, or to use automatic proxy settings, configure settings in the ProxyConfig add-on. Once configured, ProxyConfig add-on settings override those in the Weather add-on. See the *ProxyConfig User Guide*.

To set up a weather service



WARNING If you switch from one weather service to another, all configurations and locations that you added during setup will be lost.

- 1 If you did not connect to the add-on through the **Main Page** link in the i-Vu® interface on the **Add-on** tab, you can use the following method to access the setup page:

In a web browser, type the address of your i-Vu® system followed by `/weather`.

NOTE `/weather` is case sensitive.

- 2 In the **Weather Service** field, select the desired service, then click **Apply**. Configure the settings for the weather service.

NOTE To enable the AccuWeather weather service, you must install a valid Weather add-on license.

a) **National Weather Service**

- **Refresh rate**—enter how frequently you need updated information. The minimum rate is 5 minutes.
- **Units**—select **US customary** (Imperial) or **Metric**.

b) **Environment Canada**

- **Refresh rate**—enter how frequently you need updated information. The minimum rate is 5 minutes.
- **Language**—select **English** or **French**.

NOTES

- Selecting **French** only affects text data displayed in a graphic. It does not change the language of data sent to the controller equipment file.
- Environment Canada uses metric units only.

c) **AccuWeather**

- **Units**—select **US customary** (Imperial) or **Metric**.

NOTE AccuWeather data is refreshed as new data is available. See the **Next update** column for the exact time data will refresh.

- 3 Click **Apply**.

To set up a location

- 1 Test your connection by clicking **Test Connection**. If you are not able to establish a successful connection, see *Troubleshooting the Weather add-on* (page 10).
- 2 To add a weather station, click **Add new location**.
- 3 In the **Database path** field, enter the path to the area or equipment where the weather data will be used in a graphic or control program. See *Setting up a graphic or control program* (page 5) for working with graphics and control programs.

NOTES

- o The **Database path** can be a global reference name. For example, #outside_air_forecast.
 - o To get the path, right-click on the area or equipment in the i-Vu® navigation tree, then select **Copy Path**. Paste that path into the **Database path** field.
 - o The **Database path** field cannot be left blank.
 - o Database paths must be unique.
- 4 Type in the **City** or **Zip Code**.
 - a) **National Weather Service**—enter the **Zip** code, then click **Find station**.
 - b) **Environment Canada**—enter the **City** name, then click **Find city**.
 - c) **AccuWeather**—enter the **City** name or **Zip** code, then click **Find location**.
 - 5 When the list populates, select a station.

NOTE This could take a minute.
 - 6 Click **OK**.
 - 7 Perform steps 2 - 6 for each area and equipment on the i-Vu® navigation tree where weather data will be used.

NOTE If you configure multiple database paths for a single AccuWeather location, only one data retrieval request is made to AccuWeather for that location. Therefore, data retrieval is logged only for the first configured database path.



TIPS

- All locations added during set up are listed at the bottom of the **Setup** page.
- To disconnect and delete a location from the list, click .
- To retrieve weather data and verify it, click **Show Data** on the **Setup** page. Note that to refresh values you must close and reopen the **Show Data** tab.
- To view errors, click the **Diagnostic Logs** tab.

Setting up a graphic or control program

To use a preconfigured graphic and control program

The weather_carrier.zip file contains the .equipment and .view (graphic) files that correspond to each of the weather services and data features. See the table below for a full list of files and their associated weather services and features.

Service	Features	Graphic file	Equipment files
National Weather Service	Weather – current Weather – daily	weather_nws.view	weather_nws.equipment
Environment Canada	Weather – current Weather – daily	weather_canada.view	weather_canada.equipment
AccuWeather	Weather – current Weather – daily	weather_accuweather.view	weather_accuweather.equipment
AccuWeather	Weather – current Weather – daily Weather – hourly	weather_accuweather_hr.view	weather_accuweather.equipment weather_accuweather_hr_day0.equipment weather_accuweather_hr_day1.equipment weather_accuweather_hr_day2.equipment weather_accuweather_hr_day3.equipment weather_accuweather_hr_day4.equipment weather_accuweather_hr_day5.equipment weather_accuweather_hr_next24.equipment
AccuWeather	Weather – current Weather – daily Air quality – current	weather_accuweather_aqi.view	weather_accuweather_aqi.equipment
AccuWeather	Weather – current Weather – daily Weather – hourly Air quality – current	weather_accuweather_hr_aqi.view	weather_accuweather_aqi.equipment weather_accuweather_hr_day0.equipment weather_accuweather_hr_day1.equipment weather_accuweather_hr_day2.equipment weather_accuweather_hr_day3.equipment weather_accuweather_hr_day4.equipment weather_accuweather_hr_day5.equipment weather_accuweather_hr_next24.equipment

NOTES

- Once configured, graphic (.view) files obtain data directly from the add-on, not the equipment.
- Displayed graphics automatically refresh every 5 minutes.



CAUTION Due to the large size of the preconfigured graphics, we do not recommend that you store them in the controller. Go to the **System Options** (or **System Settings**) > **General** tab > **Download** section and verify that "Include graphics in Open programmable controller download" is unchecked.

Notes on control programs

Due to the large quantity of microblocks contained within each control program, the following provisions have been made to the provided control programs:

- The Network Visible property has been disabled for all BACnet Analog Value Status microblocks in order to maximize the control program execution rate.
- The Enable Trend Log property has been disabled for all Analog Trend microblocks in order to minimize control module memory allocations.

Multiple control programs may be combined to create a single control program, but be aware that the Suppress Logic Page property of the control program may require enabling in order to save the control program file in Snap. Likewise, data points that are not being used may be deleted from the control program.

For hourly control programs

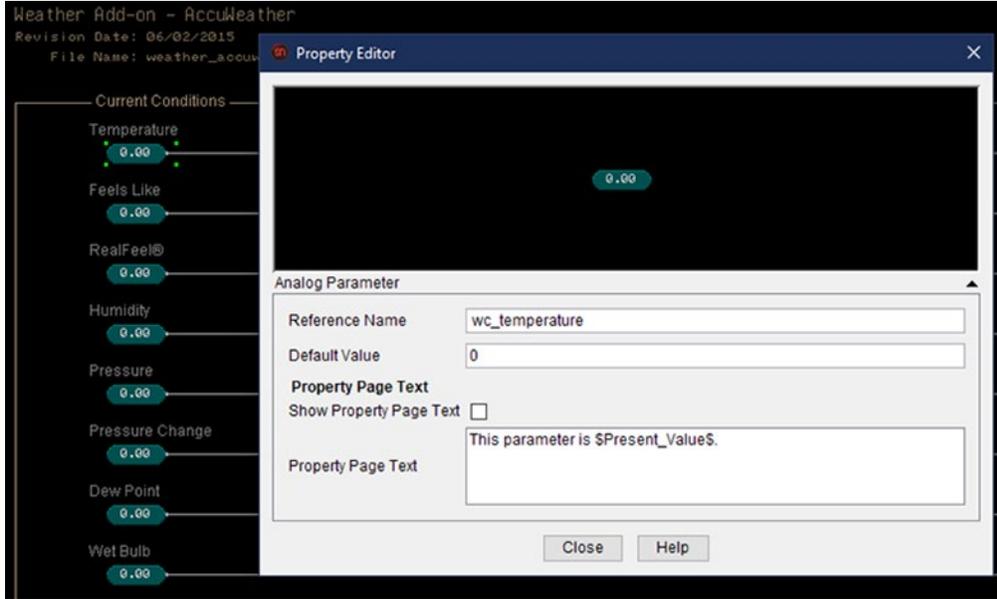
- The weather_accuweather_hr_next24.equipment file contains data that is already present in the day0 and day1 files, but it is in a 24-hour format.
- The first and last day may have incomplete data based on when the data was retrieved.
- Data for hours in the past is not available.
- Data beyond the 120 hour period is not available.

To make a custom graphic or control program

To use weather data in a custom graphic or control program, you need the name of each data field from your data source. To get field names, go to the Weather **Setup** page, and click the **Show Data** button beside the appropriate graphic or control program location.

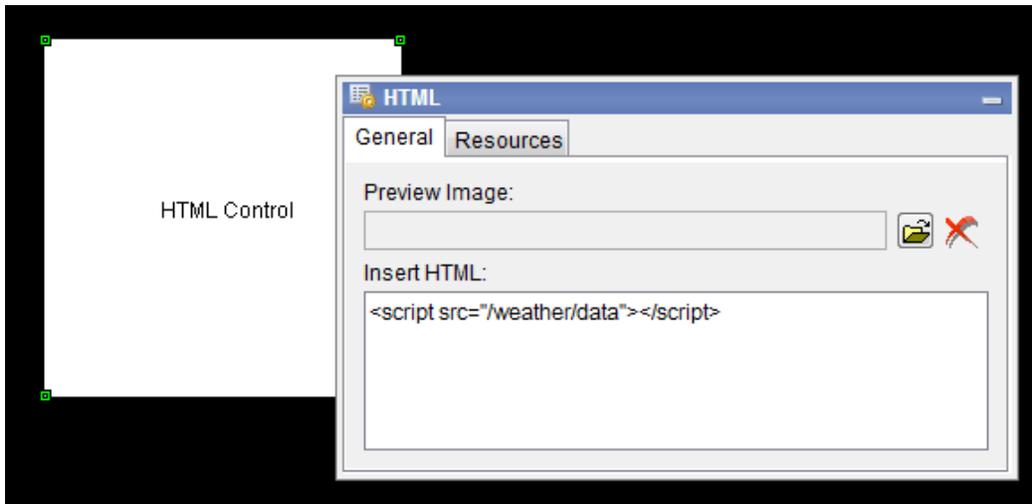
To make a custom control program

To use weather data in a control program, add an Analog Parameter or BACnet Analog Value Parameter microblock and enter the weather data field name as the **Reference Name**. Only weather data fields with numeric values (not text) can be used in a control program.



To make a custom graphic

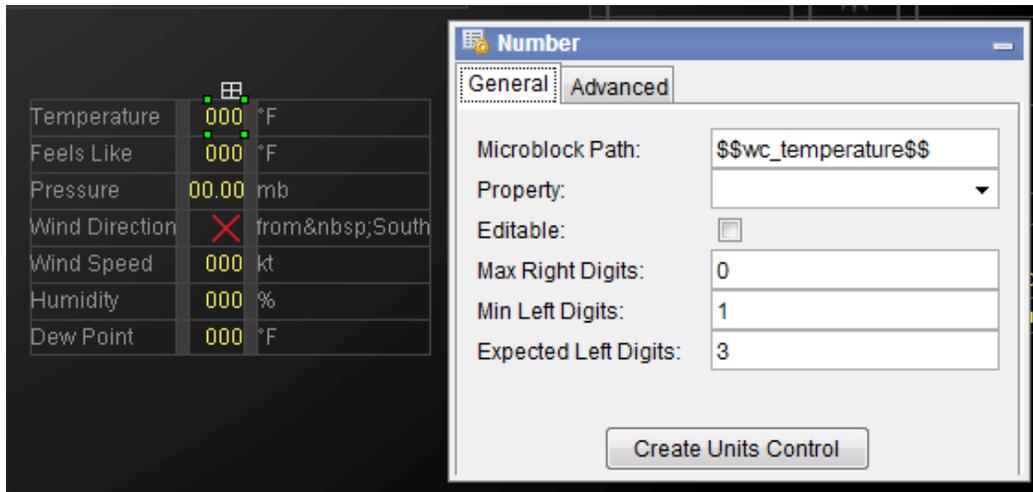
To use the weather data in a graphic, you must place an HTML control in the graphic (.view) file before you add any other controls. In the **Insert HTML** field, type `<script src="/weather/data"></script>` as shown below.



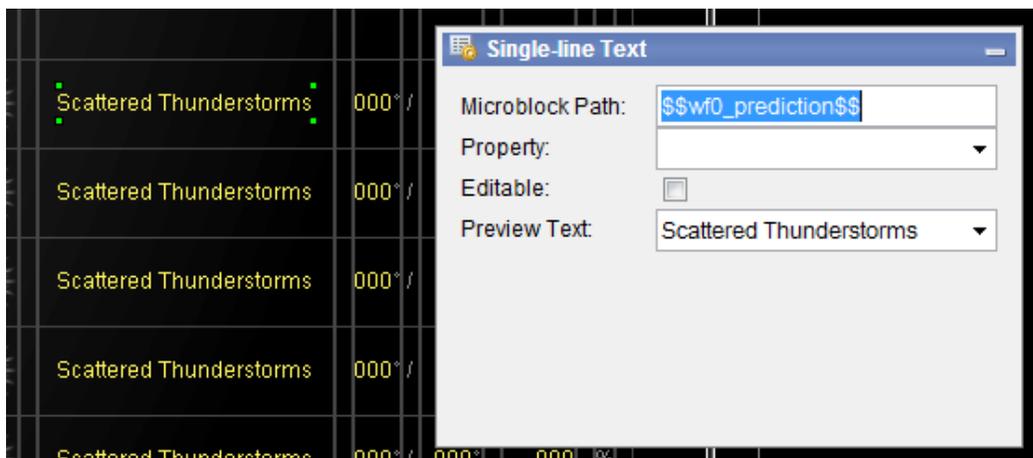
To display a field in a graphic, use a Number or Single-line Text control. In the **Microblock Path** field, enter the weather data field name (found using the **Show Data** button) surrounded by "\$\$" as shown below. Delete anything in the **Property** field. See examples below.

Setting up a graphic or control program

Use Number Controls to display numeric data.



Use Single-line Text Controls to display string data.



Understanding Air Quality Index (AQI)

NOTE Air quality data is only available with the purchase of an add-on license.

An Air Quality Index (AQI) is a numerical value that represents the amount of pollution in the air. A higher AQI indicates a higher number of air pollutants. The AccuWeather AQI is determined by the pollutant that measures the highest in a given measurement. For example, if the most prevalent pollutant has a reading of 50, the overall AQI will be 50—even when there are also other pollutants with lower readings detected. This is shown as the **Dominant Pollutant** in the weather graphic.

The AQI correlates to one of several different categories of health risk. See the table below.

AQI	Description
0–19	Excellent —The air quality is ideal for most individuals; enjoy your normal outdoor activities.
20–49	Fair —The air quality is generally acceptable for most individuals. However, sensitive groups may experience minor to moderate symptoms from long-term exposure.
50–99	Poor —The air has reached a high level of pollution and is unhealthy for sensitive groups. Reduce time spent outside if you are feeling symptoms such as difficulty breathing or throat irritation.
100–149	Unhealthy —Health effects can be immediately felt by sensitive groups. Healthy individuals may experience difficulty breathing and throat irritation with prolonged exposure. Limit outdoor activity.
150–249	Very unhealthy —Health effects will be immediately felt by sensitive groups and should avoid outdoor activity. Healthy individuals are likely to experience difficulty breathing and throat irritation; consider staying indoors and rescheduling outdoor activities.
250+	Dangerous —Any exposure to the air, even for a few minutes, can lead to serious health effects on everybody. Avoid outdoor activities.

NOTE The AQI is subject to change. You can find the latest information on the AccuWeather website.

Troubleshooting the Weather add-on

Hourly Weather and Daylight Saving Time

AccuWeather reports their times in GMT. The Weather add-on converts the reported times to i-Vu® local time, but doesn't account for Daylight Saving Time changes. When the clocks are set ahead in the spring, data for the 2am hour will be missing on the day of the time change. When the clocks are set back in the fall, the original 2am hour's data will be overwritten by the next 2am hour's data. Special consideration should be taken in your application to account for this.

To determine if the Weather add-on is working correctly

- **Test your connection**

Click **Test connection** to verify that you are able to connect to the weather service server. This may take a minute.

If the connection fails:

- Verify that you are connected to the Internet.
- Check whether a firewall is preventing the server from connecting to the Internet. If so, work with your network administrator to allow access to the following websites:
 - w1.weather.gov (National Weather Service)
 - dd.weather.gc.ca (Environment Canada)
 - api.accuweather.com (AccuWeather)

If using a proxy, verify that your proxy settings are configured correctly. If you are still unable to establish a successful connection, contact Carrier Control Systems Support.

- **Verify the graphic displays current values**

Navigate to the location of your weather graphic. Note that it is normal for the forecast value for the 7th day to sometimes contain a "?". The weather services we use do not always have 7 full days of forecast data.

If your Internet connection is lost while viewing a weather graphic, you may need to refresh the browser page to retrieve the latest data once the internet is back online.

- **Verify the add-on can retrieve new weather data now**

Navigate to the Weather setup page (<system>/weather) and click the **Show Data** button for a location. This should display a list of retrieved values on the bottom of the page.

- **Verify it has been retrieving data regularly**

Navigate to the location of your weather control program and look at the "Update" trend. This trend records a transition each time the data is updated from the weather station. This historical record can show you intermittent communications problems between the i-Vu® application and the weather service you are using.

If the Weather add-on is not working

- **If the Hourly Weather or Air Quality data is not working**

- Install a valid license for the weather add-on, one that enables the hourly and/or air quality weather features.
- Make sure that AccuWeather is the selected weather service. Only the AccuWeather service provides hourly weather and air quality data.
- If the regional air quality index value on the weather graphic is "0" or "?", regional data may not be available for the specified location. Click **Show Data** on the Weather add-on configuration page to confirm.

- **When reinstalling the add-on or license**

If the add-on interface is not behaving as expected, refresh the page or clear your browser's cache. If the issue persists, disable and then re-enable the Weather add-on from the add-on page in the i-Vu® interface.

- **The weather service is down**

Sometimes, the weather services go down temporarily. They are usually back up within a few hours. To determine if the problem is the weather service and not your network, open a web browser on a different network such as on a mobile device, then try loading the appropriate weather service below. If you cannot load it, the service is down.

If you are using National Weather Service, try loading:

http://w1.weather.gov/xml/current_obs/

1. Select the **State** and click **Find**.
2. From the **Observation Location** list, find the weather station and click **XML**.

If you are using Environment Canada, try loading:

http://dd.weather.gc.ca/citypage_weather/xml/

- **The Internet is down**

If your Internet connection is lost, the Weather add-on continues to attempt to retrieve data at certain intervals depending on which weather data service you are using. These attempts appear as failures in the logs.

- National Weather Service and Environment Canada — attempts made at the configured interval
- AccuWeather — attempts made at 3 minute intervals

- **Retrieve a list of errors**

i-Vu® Express interface	<p>You can find the Weather error log (addon-weather.txt) as part of the application log files.</p> <ol style="list-style-type: none"> 1 Click  and select System Options. 2 Go to the General tab. 3 In the Logs section, select a dated log file and click Download. 4 Check this file if you are having errors. Include any error in a request for support.
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i-Vu® Pro interface	<p>The Weather add-on logs errors to logs/<week>/addon-weather.txt log file.</p> <ol style="list-style-type: none">1 Click  and select System Options.2 Go to System Settings > General tab.3 In the Logs section, select a dated log file and click Download.4 Check this file if you are having errors. Include any error in a request for support.
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- **If the add-on can retrieve new weather data, but the graphic does not work:**

1. Verify that the Location Path specified on the Weather setup page matches the path to your graphic.
2. If the error message appears, clear your browser's cache.

- **If the add-on cannot retrieve new weather data**

Check the log file. If the log entry displays **Schedule update entry successful**, but no data is received, there may not be any data available for the specified location. Click **Show Data** to confirm.

An error like the following indicates a problem with the connection between the i-Vu® server and the weather service:
Error retrieving (weather service url)

Try using Remote Desktop to log in to the server that is running the i-Vu® application. Try using a web browser to manually get weather data from the server.

If you are using National Weather Service, try loading:
http://w1.weather.gov/xml/current_obs/

If you are using Environment Canada, try loading:
http://dd.weather.gc.ca/citypage_weather/xml/

If you cannot load this data in a web browser, the add-on will not be able to load it. If you are connected to the Internet, check whether a firewall is blocking the webpage or whether a proxy is necessary.

If you can get data from the browser, but cannot get it from the add-on, **see if the browser is configured to use a proxy**. If so, you must configure the proxy in the Weather add-on or install and configure the separate ProxyConfig add-on.

Document revision history

Important changes to this document are listed below. Minor changes such as typographical or formatting errors are not listed.

Date	Topic	Change description	Code*

* For internal use only

