



IEM User Manual

Guide to installing and using the
Iowa Ag Climate Network
Iowa Environmental Mesonet (IEM)
weather application

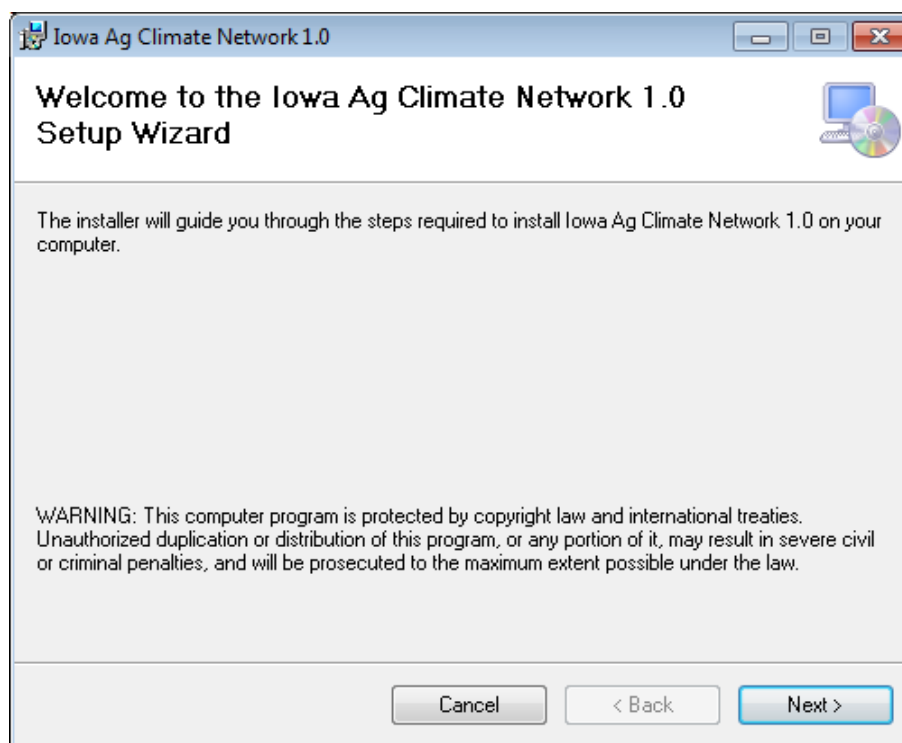
Overview

The IEM weather application works in conjunction with ET Basic software from Gwytech Systems Inc. Its purpose is to retrieve daily evapotranspiration and rainfall data from the Iowa Environmental Mesonet (IEM) so it can be used with ET Basic which in turns tracks moisture losses from evaporation and transpiration as well as gains in soil moisture from rainfall and irrigation. This like all of our weather applications are to be used only with products (hardware and software) by Gwytech Systems Inc or those that are licensed by Gwytech Systems Inc.

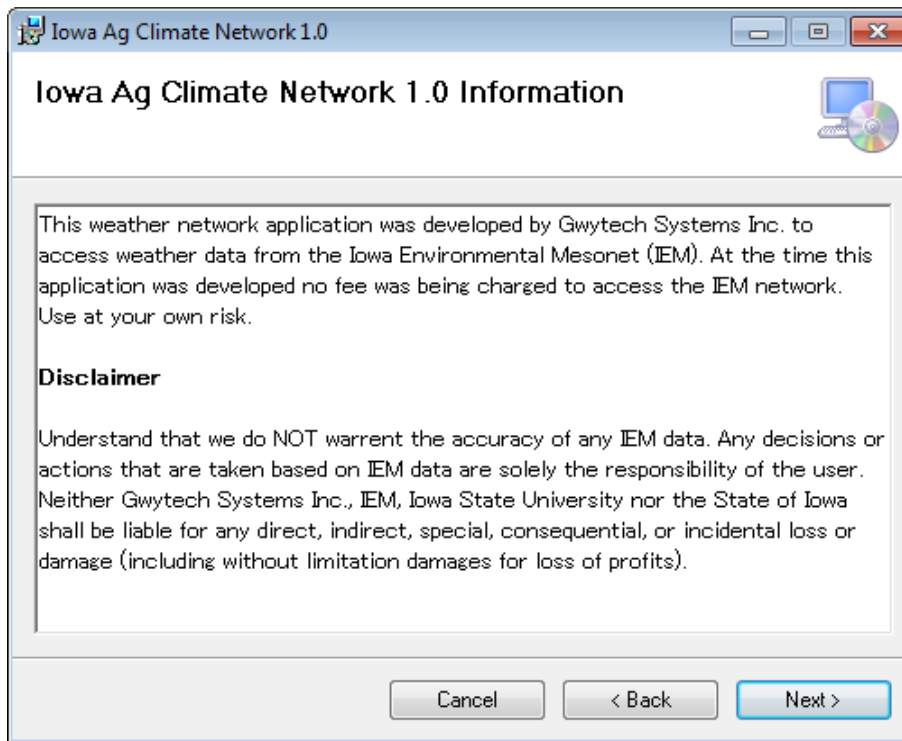
Installation

It is assumed that the ET Basic software has already been installed on your computer. Below are shown the steps necessary to install this weather application once it has been downloaded from our website at <http://www.gwytech.com/downloads.aspx>

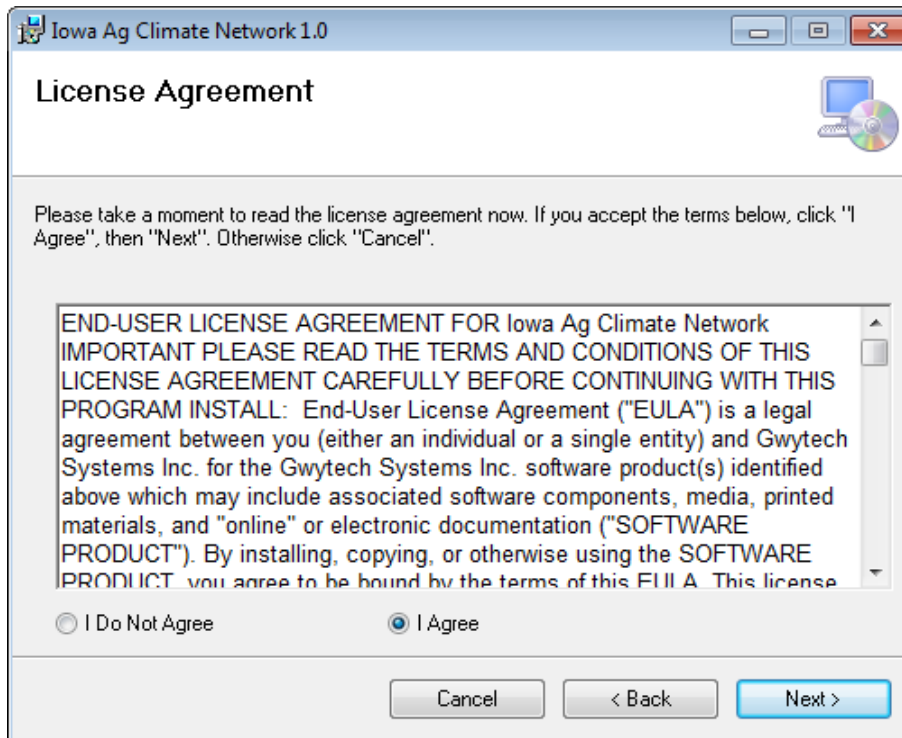
Find the location that this weather application was downloaded to then double click on it to open up the compressed folder. Inside the folder you will find the Iowa Ag Climate Network.msi file. Double click it to start the installation process. You may need to give this application elevated permissions in order to install it on your computer.



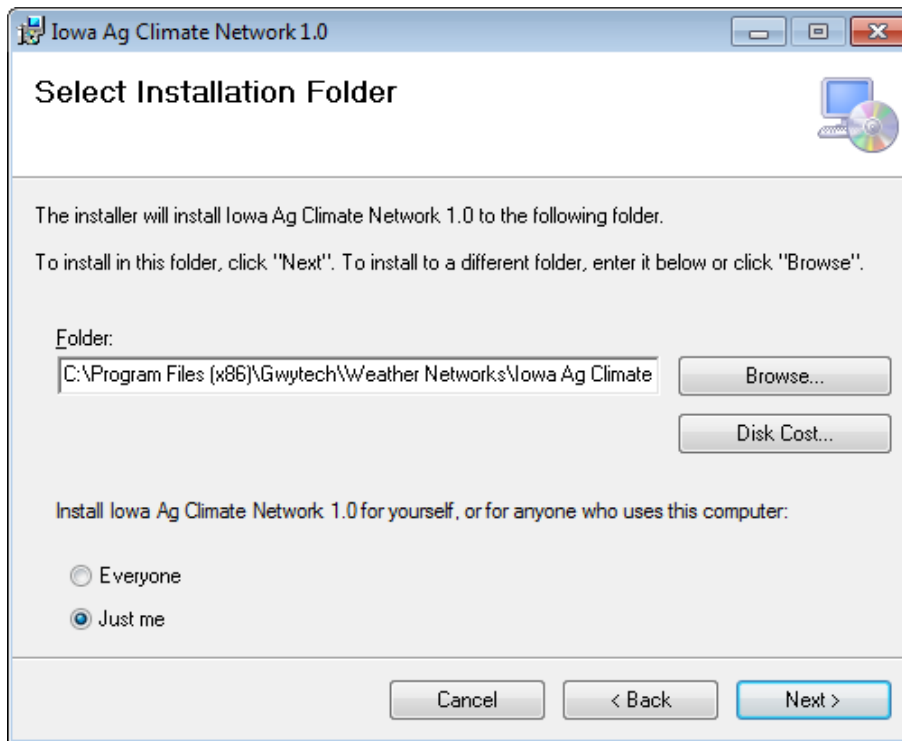
This is the Setup Wizard that needs to be followed in order to install this software.



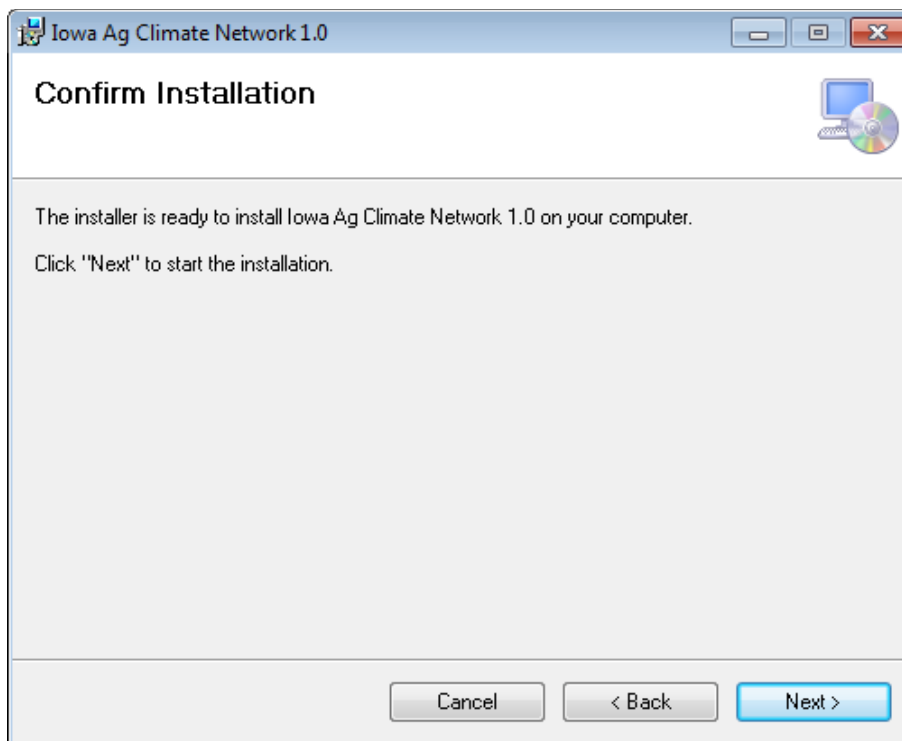
Next screen is some basic information about this weather application. Select Next to continue.



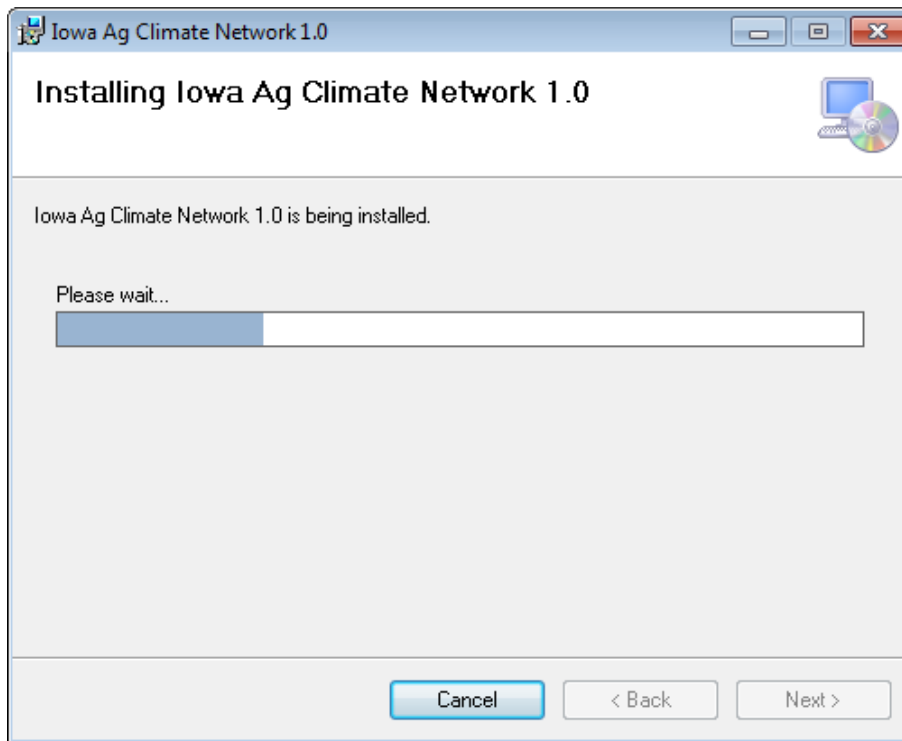
Now the license agreement, select I agree then next to continue.



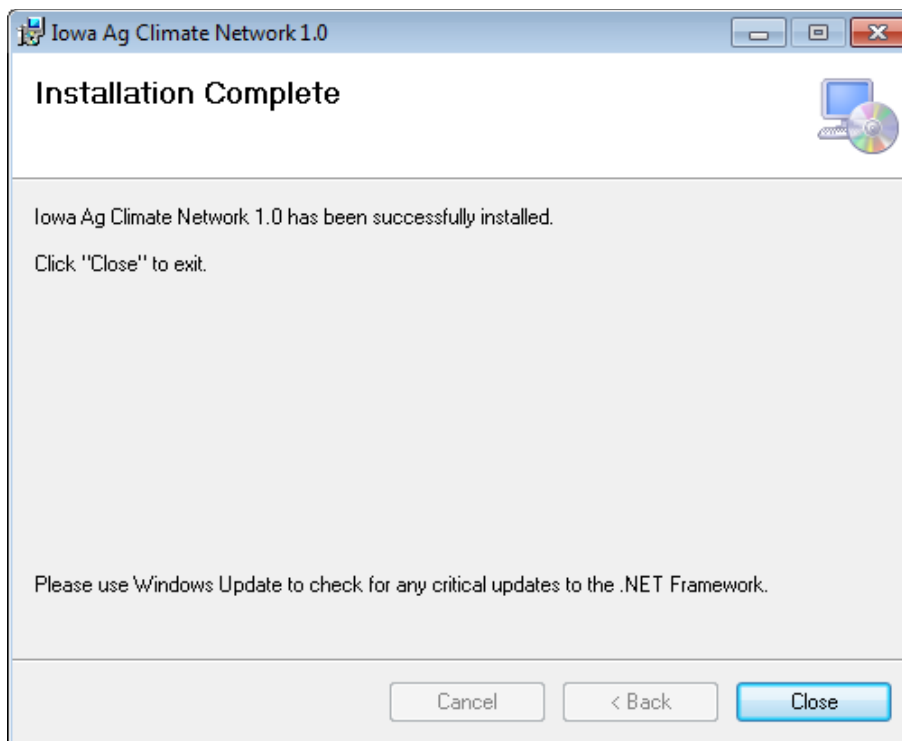
Here you can change the installation directory and disk drive. You should leave the defaults. Its best to allow only one person access to this application. Select Next to continue.



This step is just to confirm that you do want to install this weather application. Select Next to continue.



This screen show you the process of the installation. It should not take long unless your firewall is preventing it from installing.

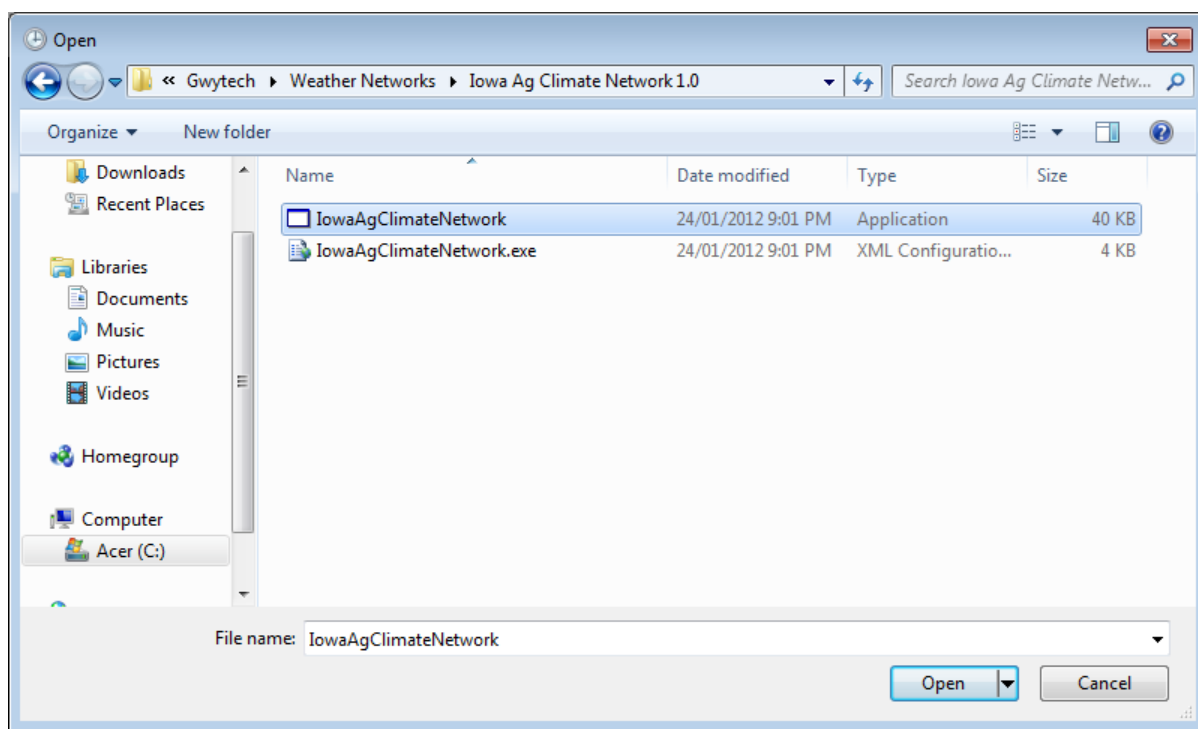


Once the installation has finished this is the screen that you will see.

The weather application will not have an icon on the desktop or be accessible from the start menu. These applications are executed (run) by the ET Basic application as a console application. Their purpose is to retrieve weather data for ET Basic via the Internet. So, you will need to have a Internet connection that is always on.

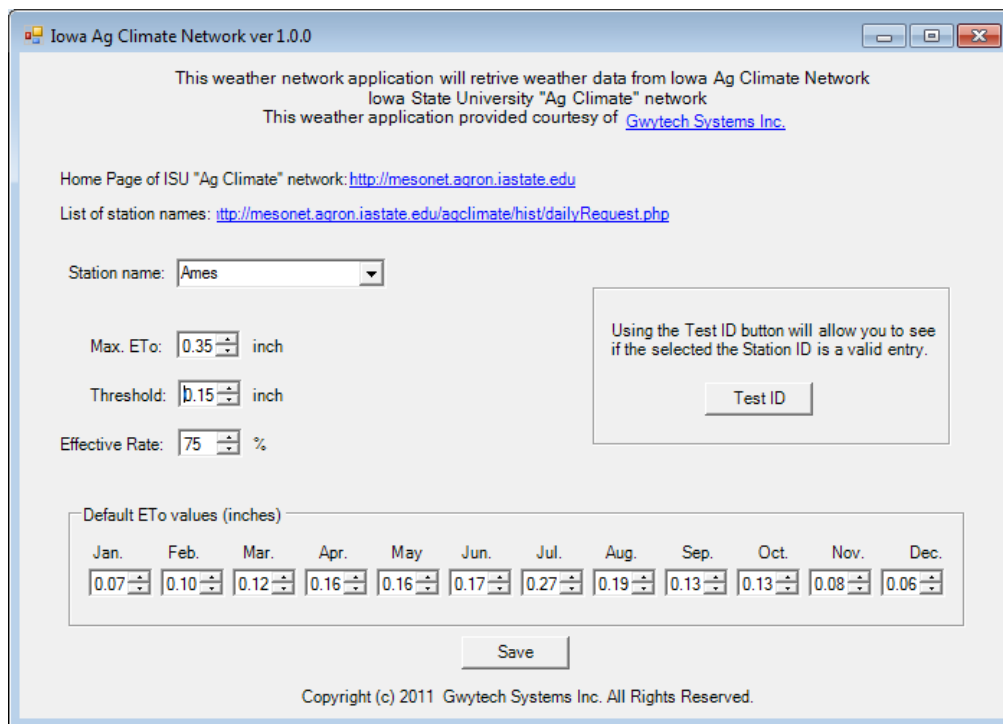
Configure and Using Weather Application

In order to use and configure this weather application it must be loaded from the ET Basic software application. The ET Basic application should have already been installed. Open the ET Basic application. Click the Irrigation Setup button and then the Open File button (see screen below). This brings up a window to allow you to select your weather application. You will need to go to the directory that has the weather application that you just installed. If you left the default settings it will be at Gwytech\Weather Networks\ from here select the name of the weather application you installed. See ET Basic User Manual if you need more information.



Select the name of your weather application (IowaAgClimateNetwork). **Note:** select the Type application not the XML configuration File. Then select Open. Now save setting in the ET Basic application. To configure this weather application click on the Setup Weather Network button. You should see a screen similar to below.

You will need to find the weather station that is closest to your location. This can be found by going to the list of station names. There is a link that you can use on Iowa AgClimate Network weather application that will bring you to the list or go to our website at <http://www.gwytech.com/weather-application.aspx> and scroll down to the weather map of the USA. From here you can find the station that is closest to you and get more information about that station.



Once you have the station name, select it. There is a Max ETo that may need to be adjusted. This sets the maximum amount of evapotranspiration that can be used. Its just a safety measure in case the weather stations send data that is out of range. This should be set to the maximum amount you would ever expect.

There is a threshold and effective rate that are used to calculate effective rainfall. Not all rainfall gets to the root of the plants so there needs to be a minimum value that must be set before the rainfall is considered having any benefit. This minimum is the threshold and unless the rainfall is above this amount then it is assumed that there was no effective rainfall. Now any amount over the threshold is effective rainfall but, only a percentage of this amount is used. Since some rain is runoff and some soaks in past the root zone of the plants not all of the rain is counted. So typically only 75% is used, and its this amount that will be used in the ET Basic software to adjust the moisture levels.

Now if there is a problem with accessing the data from the weather network this Iowa AgClimate Network weather application will use default ETo data instead. These values must be historical data based on previous years.

The last thing to do is Test ID. This will get the latest weather data and display the results for ETo and rainfall from the weather station. This will allow you to see if you entered a valid station name and to make sure the software can access the data.