



Using OCENS WeatherNet over FleetBroadband

Global Weather and
Ocean Data

Version 01

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1 Overview

OCENS WeatherNet provides fast and convenient access through Inmarsat mini-M, Fleet, BGAN, and Fleet Broadband connections to the world's widest selection of weather and ocean data. Available content includes weather and ocean charts, satellite imagery, text forecasts, ice, buoy and radar information and the largest library of GRIB'ded Binary (GRIB) data anywhere. Content is continuously updated and even the most remote regions of the world's land and ocean regions are covered by the service. Consequently, WeatherNet's features and content choices make it a truly unique means of obtaining access to the latest weather information anywhere your voyage carries you.

2 Background

WeatherNet is a tool for mariners to use to rapidly download weather information no matter where they are (or where they want to be) in the world. While doing so it also strives to keep the costs of such transfer as low as possible for the end-user. Therefore, its design includes two key components: an extremely robust and geographically pervasive content library and a transfer engine capable of expediting content retrieval through any kind of data pipe.

2.1 Content

No other source of weather and ocean data provides as complete a set of content as does WeatherNet. Although WeatherNet consists of three major categories of data—GRIB, chart/imagery and text information—the diversity of information found within any of these primary libraries is profound. Almost any form of weather or ocean data one can imagine is available in WeatherNet in the GRIB format (GRIB is ideal for transfer over satellite connections and the data upon which optimal routing software relies). Although the library does indeed contain arguably the world's largest collection of GRIB data, classical weather information is not overlooked and a complete set of weather charts, satellite imagery and text information is available. Moreover, site specific forecasts are included within WeatherNet which return a complete set of weather and meteorological information for any latitude/longitude position on earth. Just some of the GRIB and classical data available in WeatherNet are presented below:

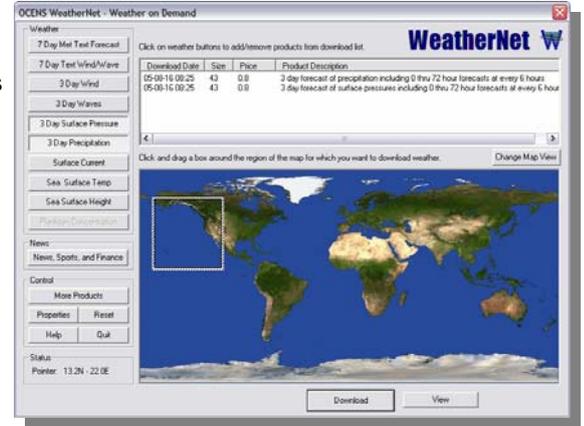
GRIB Weather	GRIB Ocean	Classical Weather & Ocean
Wind speed and direction	Sea surface temperature	Weather charts
Wave height, speed and direction	Sea surface height	Ocean charts
Surface pressure	Ocean currents	Text forecasts
Precipitation	Salinity	Satellite imagery

GRIB data is offered at multiple levels of spatial and temporal resolution, is updated several times per day and is available for the entire globe. Likewise, classical data covering every ocean region can be found in WeatherNet and is continuously being updated.

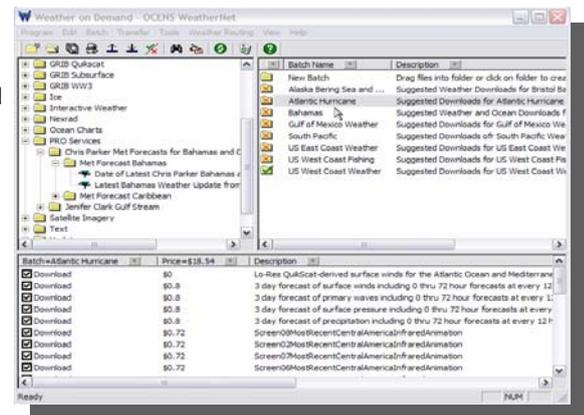
2.2 Content Selection

WeatherNet content can be chosen via two primary interfaces.

The graphical or **Basic Mode** provides two sets of ten (10) content buttons on the WeatherNet main pages alongside of a large world map. These buttons represent a set of products handpicked by OCENS to best respond to the weather information needed by the majority of our customers. The buttons present on these main pages can be changed by the customer switching to one of eight WeatherNet 'Personalities' which reflect different geographic or topical interests such as Tuna Fishing or Pacific Ocean Racing. Regardless of the Personality selected, users simply click on the mix of buttons of interest to them and then draw a box on the world map describing their region of interest.



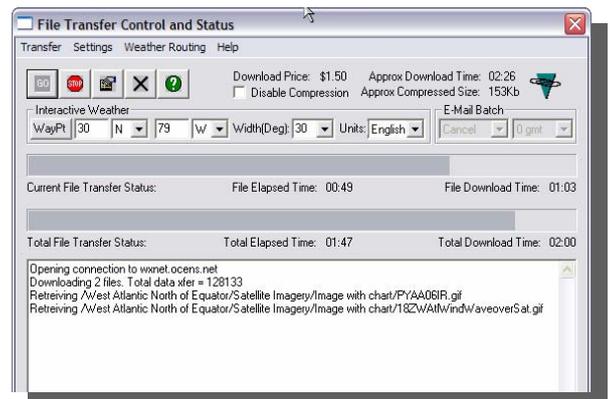
The **More Products** mode offers access to the entire WeatherNet library of some 20,000 products. It permits the user to customize their weather download to match exactly their needs and interests. Users create 'batches' or folders into which they drag the product or products they need for their voyage. Any mixture of data, be it classical or GRIB, high or low spatial resolution, single or multi-day forecasts, can be included in a single batch. Once chosen, customers choose the area for which they would like to receive information by drawing on the associated world map.



2.3 Transfer Engine

The WeatherNet transfer paradigm is one where the user controls content retrieval and satellite airtime usage in a "pull-to-me" framework. Users first select the content and geographic region of interest to them while 'offline'. When they then ask WeatherNet to retrieve the information by clicking on the service's Download button, WeatherNet queries the available connections and applies a lowest cost routing algorithm to its choice of the preferred connection for this transfer. If wifi connections are available, these will be used as the first choice of retrieval. If not, WeatherNet will auto-connect through the available Inmarsat equipment to OCENS' WeatherNet servers where the data is warehoused.

Content servers validate username information attached to each request and immediately return requested information to the end-user in a highly pre-compressed form. Once the content has been deposited on the customer's computer, the connection to the content server and the Internet is terminated. The appropriate software for the viewing and analysis of the acquired data is then auto-launched by WeatherNet.



Tutorials and on-line videos which offer further assistance with content selection, retrieval and viewing are available at http://support.ocens.com/weathernet_download.htm

3 Target Users

WeatherNet's primary users are offshore mariners including commercial fishing vessels, cruising sail and power boaters, ocean racers and workboats. However, because of its coverage, content and timeliness, WeatherNet is being accessed increasingly by inshore users, sports fishers and many land mobile customers.

4 Benefits to Users

- Largest library of weather and ocean content
- Full mix of GRIB and classical information
- Content continuously updated and refreshed
- User controls exchange of information in one quick transaction
- Permits flexible on-demand delivery
- Makes available data otherwise INACCESSIBLE to wireless users
- Makes available data otherwise UNKNOWN to wired or wireless users
- Pay-as-you-go approach enables 'ownership' of purchase decision
- NO monthly minimum eliminates hesitation and encourages activations
- Simple activation, installation and setup process
- Accessible, real-person, product support
- Powerful affiliated software programs

5 Step by Step Setup

5.1 Installing WeatherNet

WeatherNet can be downloaded from <http://support.ocens.net> and installed on XP and later Windows operating systems. WeatherNet for the Mac OS can be downloaded from <http://www.macwx.com/>. After download, double-click on the WeatherNet installer to auto-start the installation wizard.

During installation, you will be asked to enter an existing username and password, create a new account or access the service's three-day demo. If you are a current WeatherNet user and are just installing a new version or onto a new computer, choose the first option and enter your WeatherNet username and password. Should you just be interested in trialing WeatherNet, follow the demo pathway. The WeatherNet 3-day demo provides full-access to the entire WeatherNet content library for the trial period (if running the demo, we encourage you to run the 3-day trials also available for WeatherNet's affiliated viewing software, GRIB Explorer and MetMapper, see section 8).

If you follow the new account installation pathway, the wizard will query you for a six to sixteen digit alphanumeric for your username and password. It will also ask for contact and credit card

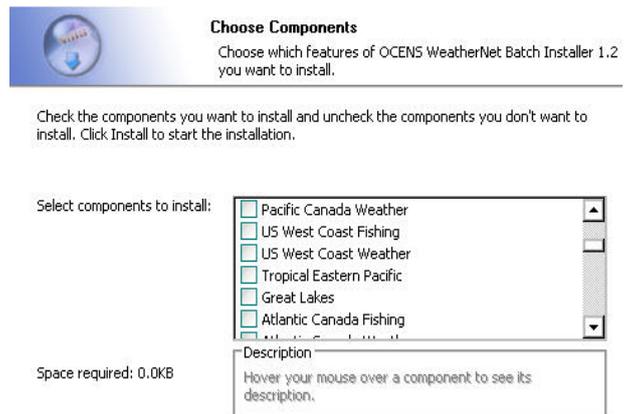
information. Once this information is entered and verified by the WeatherNet server, a WeatherNet account is automatically created for you. Generally, new users are up and running WeatherNet within fifteen minutes of installation.

The registration wizard will also ask you to choose your WeatherNet Personality preference. The eight different WeatherNet personalities allow you to 'customize' the page 1 and page 2 **Basic Mode** buttons to better address your geographic or topical interests. The selected Personality will



launch and identify itself once you have completed the registration process and re-started WeatherNet. You can switch between Personalities by selecting from the **Basic Mode** screen the More Products button and then choosing Change Basic Mode Personality from the subsequent Program menu.

Also available within the Registration Wizard are a number of preconfigured weather 'batches' that can be used if you will be running WeatherNet from its **More Products** mode. These batches are again organized with a geographical and topical focus. They contain a mixture of GRIB and classical products selected by OCENS as suggested starting points for weather or ocean data retrieval for the subject locations or areas of interests. One or more batches can be selected. Batches from this list also can be accessed at a later time by selecting 'Install Sample Batches and Weather Files' from the Batch menu within **More Products** mode.



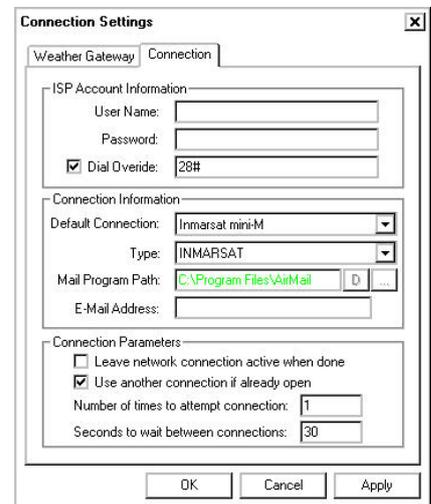
5.2 Setting Up WeatherNet with Inmarsat Equipment

WeatherNet will communicate through Inmarsat mini-M, Fleet, and Fleet Broadband/BGAN services. Communication parameters are maintained within WeatherNet under the Connection tab in the Connection Settings dialog (accessed via the Settings button from the WeatherNet Basic Mode main page or from the Program/Settings menu in the More Products mode).

5.3 Setting up WeatherNet with mini-M systems

- a. Create a standard 9600 bps modem on your computer using the Windows Add Modem wizard;
- b. Find this 9600 baud modem in your computer's Control Panel/Phone and Modem Options
- c. Highlight the modem name, click on Properties and then Advanced Properties and enter the extra initialization string AT+WS45=0 in the extra initialization command line located there.
- d. Enter Control Panel/Network Connections and click on 'Create a new connection'
 - 1) Follow the path 'Connect to a network at my workplace'.
 - 2) Choose Dial-Up Connection.
 - 3) Select the 9600 baud modem you created above.
 - 4) Enter Inmarsat mini-m as the name of the connection.

- 5) Enter 28# as the phone number to dial (unless Vizada is your airtime provider in which case you should enter 67# as the phone number to dial)
- e. Launch WeatherNet, click on Settings and then the Connection tab.
- f. If your airtime provider is—
 - 1) Stratos: Enter under the ISP account information the username/password combination provided to you by Stratos when you registered for their data service. Check the dial override box and enter 28# as the dial override number;
 - 2) Vizada: Enter under the ISP account information, a username of Inmarsat and a password of Inmarsat. Check the dial override box and enter 67# as the dial override number;
 - 3) All other providers: ISP account username and password fields may be left blank. Check the dial override box and enter 28# as the dial override number.
- g. Select the 9600 baud modem as the Default Connection
- h. Select Inmarsat as the Type setting
- i. Within Connection Parameters, select 'Use another connection if already open'. This will search for and use Wi-Fi or network connections if they are available.
- j. Confirm that your OCENS WeatherNet username and password are present under the Weather Gateway tab of the Connection Settings dialog.
- k. Select OK to save your settings



5.4 Setting up WeatherNet with Fleet systems

Modem setup is hardware specific on Fleet Systems and requires that you follow instructions describing data transfer settings provided in the equipment manual. For example, a Nera Fleet 33 would be installed as a 115200 bps modem with the Windows Add Modem wizard.

To have WeatherNet place a MPDS Data call through the Fleet equipment,

- a. Launch WeatherNet and click on the Settings button and then the Connection tab.
- b. Check the dial override box and enter **94# as the dial override number.
- c. Select the modem you have created for your equipment as the Default Connection.
- d. Select Inmarsat as the Type setting.
- e. Within Connection Parameters, select 'Use another connection if already open'. This will search for and use WiFi or network connections if they are available.
- f. Confirm that your OCENS WeatherNet username and password are present under the Weather Gateway tab of the Connection Settings dialog.
- g. Select OK to save your settings

5.5 Setting up WeatherNet with Fleet Broadband and BGAN systems

Inmarsat BGAN and Fleet Broadband systems are treated as Network Connections by WeatherNet. Establish the Broadband connection with LaunchPad and select Network Connection as your Default Connection under WeatherNet's Connection settings (Launch WeatherNet/click on the Settings button/select the Connection tab)

6 Retrieving Files with WeatherNet

You are ready to begin using WeatherNet once you have registered for the service (either for an active account or a 3-day demo), entered your WeatherNet username/password into the Weather Gateway dialogue (either automatically via the Registration Wizard or manually by launching WeatherNet, clicking on the Settings button and the Weather Gateway tab) and selected the default connection appropriate for your Inmarsat equipment (WeatherNet/Settings/Connection tab).

At this point, determine if you will be using WeatherNet in Basic Mode (section 2.2.1) or More Products mode (section 2.2.2).

6.1 If in Basic Mode

- a. Click on the button or content buttons on page 1 and/or page 2 of the active Basic Mode personality to select the weather or ocean products you want to retrieve.
- b. Move your cursor to the on-screen map.
- c. Locate with your cursor the top left (northwest) corner of the geographic area of interest to you.
- d. Press, hold and drag your cursor to the lower right (southeast) corner of the geographic area of interest to you. This sequence boxes in your area of interest and defines for WeatherNet the region for which you want to receive data. Don't be concerned about drawing a box that precisely matches a specific location, e.g. the Bahamas. Instead, draw a box that encompasses that region and the surrounding area (e.g. the southwest Atlantic and northern Caribbean) so that the weather data retrieved provides a perspective on conditions emerging in the region around you as well as those prevailing on top of your location. Later you will be able to zoom in on your specific location with your viewing software such as GRIB Explorer).
- e. Release the cursor.
- f. Press the Download button at the base of the world map to launch the File Transfer screen.
- g. Press the Go button to start your weather retrieval.
- h. At this point, WeatherNet will auto-dial through the Inmarsat connection specified in its Default Connection, pass your account name to the WeatherNet servers, retrieve to your computer the data you have requested and terminate the session upon completion.

6.2 If in More Products mode

- a. Right click on the batch name(s) in the upper right section of the More Products screen and left click on the word Enable. This will place a green check mark on the subject batch(s) and indicate they are active for download.
- b. Highlight any of the Enabled batches with a single left click on that batch.
- c. Look to the bottom section of the More Products screen and identify the weather/ocean products that are included in the target batch
- d. At its leftmost border, each product definition carries a check mark next to the word Download. To download this product as a part of the target batch, leave the check mark in place. To remove the product from the upcoming download, left click once on the check mark to remove it.
- e. Repeat (b) through (d) for other batches and batch products until you are satisfied with the set of products you will be retrieving.
- f. Select Start Transfer from the Transfer menu at the top of the More Products screen. This will launch the File Transfer engine.
- g. Click on the Map button and repeat Basic Mode steps (b) through (e).
- h. Press the OK button at the base of the map.
- i. Press the Go button to start your weather retrieval.
- j. At this point, WeatherNet will auto-dial through the Inmarsat connection specified in its Default Connection, pass your account name to the WeatherNet servers, retrieve the data you have requested and terminate the session upon completion.
- k. Note that all settings, file selections, and map preferences are preserved from one session to the other. Thus, steps (a) through (h) do not need to be repeated unless you change your geographic area of interest or the set of products you want to download.

6.3 Adding new products to an existing More Products batch

- a. In the upper left corner of the More Products mode, double-click on any of the content Category folders located there (eg Buoy, Ice, Nexrad).
- b. Double-click on any of the Geographic sub-folders that appear underneath the Category folder.
- c. Double-click on any of the Product sub-folders that appear underneath the Geographic folder.
- d. Look through the list of products appearing in the Product sub-folder and identify the product of interest to you.
- e. Left click on this product, hold your cursor down and drag this product to the right until your cursor reaches one of the Batch folders in the upper right corner of the More Products screen.
- f. Hover your cursor over this Batch folder and release the cursor. Your product is now a part of this batch and will appear on the product list for this batch at the base of the More Products screen.
- g. Repeat for additional products.

7 OCENS Software Affiliated with WeatherNet

WeatherNet consists of three major categories of data—GRIB, chart/imagery and text information. None of these data are proprietary and can be viewed by any application otherwise intended for their viewing. However, OCENS also has developed its own software to view these products in a fashion offering some very unique value-add analytical features not commonly found in off the shelf picture or GRIB viewing packages.

OCENS GRIB Explorer

GRIB Explorer (GE) works with all GRIB data found in WeatherNet, including GRIB 2.0 products such as NOAA QuikScat wind files. WeatherNet automatically launches GE upon the completion of any weather download which includes GRIB data. Data are loaded into the GE window and immediately mapped for rapid analysis. Multiple products from the same model (eg wind, wave, surface pressure, etc) are auto-layered to provide the user with a heads-up look at how weather is changing around them from several perspectives. Animation features put the weather in motion in hourly or daily intervals. The 3-D profiling tool lets a user re-orient their physical position to improve their grasp on where and when conditions are changing most rapidly. 2-D horizontal profiling allows customers to inspect the weather along a planned route or look for key temperature breaks pinpointing optimum fishing locations. 2-D vertical profiling takes that route and looks through time to help visualize how conditions in the future.

GE also contains a wide-range of mapping and positioning tools. It can read direct GPS feeds or via positional packets provided from Nobeltec's Admiral or Visual Navigation software. Vessel position from the GPS feed is automatically placed on the displayed GRIB data. Bearing and range information is portrayed from this position to the point of the cursor. A range of zoom and file enhancement tools are also available.

OCENS MetMapper

MetMapper accomplishes for otherwise static weather charts what GRIB Explorer gets done for GRIB data. Whereas other picture viewing software can load and view WeatherNet charts, MetMapper takes these same charts and automatically adds an interactive map layer to them. With this feature, users can now see their vessel position right on the weather chart and receive dynamic feedback on the movement of storms, fronts and other weather features. Bearing and range information relative to vessel position is always available.

WeatherNet auto-launches MetMapper when charts and text are downloaded and if MetMapper is specified as the default viewer for same. MetMapper can display in one screen the weather chart or satellite imagery and the text forecast pertaining to it. So rather than shuttling between your text and picture viewer, MetMapper puts them side-by-side for powerful analytics. WeatherNet also contains customized MetMapper animations that put weather satellite imagery and sequences of weather charts in motion to help the user better visualize changing weather conditions. Annotations, waypoints, and routes can be added to any chart with MetMappers editing tools.

8 Further details and support

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