

ECMWF Product Distribution System - ECPDS

Users Guide

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Europäisches Zentrum für mittelfristige Wettervorhersage
Centre européen pour les prévisions météorologiques à moyen terme

ECMWF Product Distribution System - ECPDS: Users Guide

by ECPDS Team

ECPDS is a general purpose data transmission system developed, deployed, and configured at ECMWF to deliver meteorological products to Member States, cooperating Member States, and other authorised sites.

Users are allowed to monitor transfers of data to their destination and to manage the queue of disseminated products.

This documents describes the functionality of the web interface.





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Introduction

Additional information

Sites that request to receive dissemination products via ECaccess™ can find additional information on the ECaccess Users Guide .

Feedback

Feedback regarding technical problems, suggestions and documentation issues is welcome.

Please email your comments to the maintainer of this document

<ecpds@ecmwf.int>

Client requirements

ECPDS is a web based application. The front end has successfully been tested on the following browsers:

- Mozilla 1.5 under Linux
- Internet Explorer IE-6.0.2800

The look and feel may vary slightly from browser to browser, however, functionality should remain identical.

ECPDS is not supported on Netscape version 4.X.





Overview

This chapter provides instructions to access the system and a basic navigation overview.

Login

Access to ECPDS is supported both via the RMDCN network and via the Internet with the following URLs:

- RMDCN: <https://msaccess.ecmwf.int:9443>
- Internet: <https://ecaccess.ecmwf.int:9443>

Authentication is required for login into the system. The following two methods are supported:

- X.509 certificate.
For more information on the use of X.509 certificates and to request a certificate please visit the ECMWF Certificate Authority pages [<http://w3cert.ecmwf.int>].
- User ID and SecurID passcode
Access will be granted for the duration of the session.

For login problems please contact the Calldesk at ECMWF ([<cjdk@ecmwf.int>](mailto:cjdk@ecmwf.int)).

Users may log out of the system at any time by clicking on Left_navigation_menu -> "log out".

Navigation

The top of the screen is reserved for quick navigation through the ECMWF web site.

Immediately below this area there is a navigation area which shows the current page within the ECPDS application and provides a quick link to go back to previous pages and menus.

The left panel navigation area provides links into specific ECPDS areas.

The centre of the page is reserved for the main application areas. These areas are:

- Destinations
Provides a list of destinations ordered alphabetically by country.
Clicking on the destination code links to a page with details such as policy, action to take in case the target file already exists, notification options etc. The next chapter provides more details on Destination attributes.
- Host Data
The Host Data page is accessible by clicking on the host names located at the bottom of the Destinations page.
Provides details of the configuration including login, transmission protocol to use for data transfers etc. It also provides a list of data transfers scheduled for that given host. The next chapter provides more details on remote Hosts attributes.
- Data Transfers
Provides information and status scheduled and already transferred files.
Several actions can be performed on queued files like changing priorities, retransmit data, etc.





Components

There is a close relation between Remote Hosts, Destinations, Data Streams and Dissemination Streams. This chapter gives an overview of the relation between these components and provides information on their main attributes.

Hosts

A Remote Host is a server usually located at the user site that runs an ftp or ssh daemon and will accept incoming file transfers from ECMWF. ECPDS keeps information about the remote hosts to which data is going to be transferred.

Remote host entries are configured by an administrator at ECMWF. User sites can request modifications to the host entries configured for their destinations by sending an email to <dissemination@ecmwf.int>

The main host attributes that can be configured into ECPDS are:

- Name - Name used locally by ECPDS to identify this host
- Host - Fully Qualified Domain Name (FQDN) resolvable by DNS on the Internet. If an FQDN name is not available for this host then use the host IP address.
- Transfer Method - States the transfer mechanism that will be used by ECPDS to transfer files to this host. Available options are
 - Generic EAccess - Transfer via EAccess gateway.
 - Generic ftp - Standard Ftp.
 - Generic Sftp - SSH Secure Ftp.
- Owner - ECPDS account of the person or group of persons that are responsible for the administration of this host.
- Login - User ID or login name to be used by the defined transfer method to push data/transfer files to this host (ie ftp login). This field can be left empty when the transfer method does not require a login.
- Password - Password to be used by the defined transfer method (ie ftp password). This field can be left empty when a password is not required.
- Max Connections - Maximum number of parallel file transfers allowed.
- Connections - Number of connections (successful or not) made to this host.
- Retry Count - Number of times a given file transfer will be retried to this host before moving on to the backup host if configured.
- Retry frequency - Time in milliseconds to wait between a transfer failure and a retry attempt.
- Comment - Free format text comment or description of the host.
- Dir - Target directories where dissemination products will be sent. Directories are specified using one or more entry lines and may contain variable names as well as conditional statements. Variable names will be replaced at execution time by its value. Conditional statements can be used to query the related metadata of the product for separating different groups of products into different directories.
- Data - This field provides specific options to be interpreted by the transfer method used, the most common use of this attribute is to indicate to ftp whether to use passive or active mode, transfer to temporary target name and rename at end of transfer etc. Please refer to Appendix A for more information on the different options available.
- Check - Option to enable automatic transfer checks by sending a small test file at regular intervals. Transfer checks are never activated when other scheduled data transfers are in progress.



- Check Frequency - Specifies the time interval in seconds between transfer checks.
- Check Filename - File name to be used for transfer checks. Warning, If a sweeper process at destination exists, it may wrongly pick up this test file as a genuine data file. To ensure that this does not happen consult the documentation of the sweeper process. In general, well behaved sweeper processes do not pick up files with the extension .tmp as per the WMO recommended procedure.
- Mail on Success - Notify by email successful transfers.
- Mail on Error - Notify by email transfers with errors
- Notify Once - Send only one e-mail notification.
- User email - Alternative email address to be used for notifications. By default notifications are sent to the owner of the destination.
- Active - Indicates if the host is enabled or disabled.

All of the above parameters are documented for completeness and to give an overview of the system configuration, however please note that not all of the parameters above may be available on the Host information web page.

Destinations

A Destination is a reference to a user site and may be linked to several hosts within the site. On occasions more than one destination Identifier may refer to the same user site, this is done for the convenience of separating different sets of products to be delivered over separate networks.

The main attributes that can be configured for each destination are:

- Name - Used locally by ECPDS.
- Comment - Free text format comment normally providing a description of the destination
- On host failure - Action to take in case of transfer failure. This can be one of the following
 - Next and Stay - Retry transfer towards the next host on the list and keep transferring to that host until another failure occurs or until reset manually.
 - Next and Retry - Retry transfer towards the next host on the list and go back to the primary host for the following transfers.
- If target exists - Action to take in case target file already exists at the remote host. It can be one of the following
 - Overwrite - Replace existing file at remote host with the new file to be transferred.
 - Resume - Assumes the existing file is an incomplete file product of a previous transfer failure and attempts to restart the transfer from that point.
- Delete from spool - Indicates when to delete files from the spool area. It can be one of the following.
 - On success - Delete file from the spool area after a successful transfer.
 - On expiration - Keep file on spool area until expiration date.
- Country - Location of user site.
- ECuser - Owner of this destination.
- Max connections - Maximum number of parallel connections allowed for this destination.
- Retry count - Maximum number of failures allowed for this destination before it is put on hold. A destina-



tion put on hold will need manual intervention by an operator to become active again. A value of -1 will disable this limit.

- Retry frequency - Time to wait between failed transfer attempt cycles to this destination. One failed transfer attempt cycle indicates that all hosts configured for the destination have been tried and all have failed.
- Max start - Maximum number of times to retry the transmission of a single file before requeuing it. A value of -1 will disable this limit.
- Max requeue - Maximum number of times a single file can be requeued. A value of -1 will disable this limit.
- Max Pending - Maximum number of transfers allowed to be simultaneously in WAIT state.
- Start frequency - Time to wait before attempting to resend a file.
- Reset frequency - In case of the primary host destination failing and transfers continuing OK to a backup host, this value indicates the time in milliseconds to wait between attempts to restart transferring to the primary host.
- Restart If Dirty - When ticked, if any change is made to the configuration the Destination will be gracefully restarted automatically in order for the changes to take effect.
- User email - Alternative address for email notifications. By default notifications are sent to the owner (ECuser) of the destination.
- Mail on - When ticked, an email will sent to above address on
 - Start - At the start of every file transfer.
 - End - At the end of every file transfer.
 - Error - When a transfer failure occurs.
- Active - When ticked, the destination is enabled.
- Destination Hosts - List of remote hosts configured for this destination
- Aliases - Products will also be transferred to the hosts configured on this list.

All of the above parameters are documented for completeness and to give an overview of the system configuration, however please note that not all of the parameters above may be available on the Destination web page.

Data Streams

A Data Stream code relates the file to be transferred to a set of meteorological products. The following table maps the main products disseminated from ECMWF with its abbreviation and the one letter code that is part of the filename.

Table 1. Data Streams

Product	Abbreviation
Deterministic forecast	OPER
Global Wave	WAVE
Ensemble forecast	ENFO
Wave ensemble forecast	WAEF
Multi-analysis ensemble data	MAED
Short cut-off daily archive (BC, boundary conditions)	SCDA

Data streams are configured by administrators at ECMWF and users are not allowed to modify them nor to cre-



ate new ones. The entries above are provided as an example only and may change at any time.

Dissemination Streams

A Dissemination Stream is a collection of files that meet a specific Dissemination Requirement.

Example 1. Dissemination Stream Example

A Dissemination Stream called G1 for Member State destination MS1 may contain files of Ensemble Forecast for specific requirements of time steps, area and format.

A separate system (not ECPDS) deals with Member State requirements and Generation of Dissemination Products. More information can be found at the ECMWF Dissemination Services web pages. [<http://www.ecmwf.int/services/dissemination>]



Data Transfers

Monitoring

The Data Transfer Status of transferred and queued files can be monitored from the Destinations page. This page is divided in four areas.

Destination Policy Area. This area is located at the top of the central frame.

It provides destination information, a summary of the policy configured for the destination, and the latest date/time for successful data transfer and date/time for the last known transmission error.

The values on these fields are informational only, to modify the policy or any of the destination attributes the user should request the change to ECMWF.

In addition to the policy, a queue status field indicates the current status of the destination queue, which can be one of the following:

- EXEC
The queue is on-line.
- WAIT
The queue is off-line because it has nothing to do. It will automatically become on-line when needed.
- HOLD
The queue is on Hold because of a problem transmitting products to the destination. Probably too many transmission failures.
Manual intervention will be needed to fix the underlying problem and to re-start the queue.
- STOP
The queue has been manually stopped. Files will not be transmitted until the queue is re-started.

A group of icons to the right side of this area allow the user to hold the transmission of files to the destination and to re-start it.

- To Stop transmission of files to a destination click on the stop icon



The system will continue sending the files which are currently being transmitted and will not send any more files after those transfers have been completed. The Queue Status will show STOP.

- To Re-Start a Destination there are two options: Graceful and Immediate. A Graceful re-start will wait until all the current transfers have been completed before proceeding to stop/shutdown the destination and re-starting it. This is done by clicking on the green circular arrow icon.



An Immediate restart will not wait for the current transfers to finish. All current transfers will be immediately cancelled, the destination will be stopped/shutdown, and re-started immediately. This is done by clicking on the orange circular arrow icon.



Data Transfers Area. This area is located immediately below the Destination Policy Area.

It provides a multi-level selection subarea and a data transfer status information subarea.

The multi-level selection subarea allows the user to select which data transfers are to be displayed based on Dissemination Stream, Data Stream, Status, Date, and Filename.



Clicking on a given Dissemination Stream/Data Stream/Status abbreviation changes its font to *bold* and its background colour into a lighter orange to indicate that the information display will show only data transfers for that selection.

Further selection can be made in the same manner by selecting Date and Filename or part of a filename.

For any given selection, the lower level selection layers will only show entries that actually exist within the current displayed data files.

The data transfers information display shows a status summary with the following entries:

- **Host**
Remote host where the file will or has been transferred to. Clicking on it will display a view host page with attributes as described in chapter 2 Components.
- **Scheduled**
Date/time when file has been scheduled to be transferred.
- **Target**
- **Time Step**
- **Percentage**
- **Performance**
- **Status**
Indicates the transmission status for the file. The possible entries are:
 - **DONE**
File has been transmitted successfully.
 - **EXEC**
File is currently being transmitted
 - **FAILED**
An error has occurred and the file could not be transmitted. Clicking on the filename will then provide a Transfer History showing more detail on the errors encountered.
 - **HOLD**
File is on standby.
 - **INIT**
Initialising scheduling of file.
 - **INTR**
The transmission of the file has been interrupted. Destination may have been put on hold.
 - **RETRY**
Transmission of the file failed and will be re-transmitted.
 - **SCHED**
The file has been scheduled, however, the data itself has not being received by ECPDS.
 - **STOP**
Too many failed retransmissions. The file will not be sent until problem is fixed by manual intervention.
 - **WAIT**
The file is in the queue waiting to be transmitted.



- **Priority**
A value between 0 and 99 that indicates transmission priority. The lower the value the higher the priority, as an example, a file with a priority value of 10 will be transferred to destination before a file with a priority value of 50.
- **Actions**
Contains icons to perform actions on a per file basis. The different actions available are explained on section 2 of this chapter.

Clicking on the filename will show details of individual data transfers, including start time, duration, expiry date, and a unique ID that, when possible, should be forwarded to ECMWF when reporting data transfer problems.

Hosts. This area is informational only and shows a list of remote hosts at the user site linked to this destination.

Users. This area is informational only and shows the user accounts for this destination

Aliases. This area is informational only and shows hosts that will be used to mirror data sent to this destination. That is, products will be sent to both the primary host of the destination and to the alias host.

Actions on transfers

The following actions can be performed on Data Transfers by using the icons found at the end of each information display line:

- **Increase/Decrease priority.** A value of zero indicates the highest priority and ninety nine the lowest priority. To increase/decrease the priority click on the green up/down arrow.



- **Requeue a file for re-transmission.**
To requeue a file click on the green circular arrow.



- **Stop transmission of an individual file.** This will cause the file to temporarily not be transmitted until re-queued by manual intervention. The file itself will not be deleted from the system.
To Stop a file click on the stop icon.



- **Cancel/Delete a transfer.** This will cause the transfer to be permanently cancelled.
To cancel/delete a transfer select the file by clicking on the document group icon



and click on the cancel icon found at the bottom of the display area.



Group Actions. All of the actions described in the previous section can be applied to a group of files instead of individual files.

To apply an action on a group of files select them individually by clicking on each of the document group icons.



Alternatively, a selection of a group of documents can be made by clicking on the A/N/R symbols located at the bottom right of the display area to select (A)ll, (N)one, or (R)everse the current selection.



Once a selection is made, click on any of the red right arrows located to the right of the display.



A new window will appear containing only the selected files and a bigger version of the action icons (described in the previous section) at the bottom of the display. Click on the appropriate icon to take action on all the files displayed on the window.

To go back to the previous display click on the red left arrow.



Information on file transfers

Clicking on the file name for any given transfer will show a display with the following information:

- ID - The Data Transfer ID uniquely identifies any given transfer attempt of this file to the destination. In case of reporting a problem to ECMWF regarding transfers it is extremely useful to provide this ID in the problem report.
- Transfer Server - ECMWF transfer source host
- Host - User site remote destination host
- Destination - User Site
- Data File - name of file to be transferred
- Earliest - Transfer will not be attempted before this time.
- Latest - Transfer will not be attempted after this time.
- Predicted - File will probably arrive into ECPDS at this time according to statistics of previous days.
- Target Time - File would be expected to arrive into ECPDS at this time according to the Dissemination schedule.
- Start Time - Scheduled time at which file is expected to start transferring.
- Finish Time - Real time at which file did complete the transfer.
- Expiry Date - After this date/time the physical file will be deleted from the spool directory and the related entries in the database will be removed.
- Target - File name and directory path at remote destination host.
- Sent - Bytes sent
- Duration - Transfer time in seconds
- Start Count - Number of attempts to transfer file
- Status - Indicates whether the transfer was completed successfully or if errors prevented the file from being transferred.
- Deleted - Indicates if the physical file has been deleted from the spool (true) or not (false).

Appendix A. Options for transfer methods

The following is a sample list of optional parameters and values that can be configured by an ECMWF administrator for the different transfer methods:

Note

TimeOuts are given in milliseconds.

- ECaccess parameters
 - `ecaccess.destination="genericFtp"`
 - `ecaccess.gateway="ecaccess.ecmwf.int,backup-gateway.ecmwf.int"`
 - `ectrans.closeAsynchronous="yes"`
 - `ectrans.closeTimeOut="30000"`
 - `ectrans.connectTimeOut="30000"`
 - `ectrans.delTimeOut="60000"`
 - `ectrans.getTimeOut="0"`
 - `ectrans.listTimeOut="30000"`
 - `ectrans.mkdirTimeOut="30000"`
 - `ectrans.moveTimeOut="30000"`
 - `ectrans.putTimeOut="0"`
 - `ectrans.retryCount="1"`
 - `ectrans.retryFrequency="1000"`
 - `ectrans.rmdirTimeOut="30000"`
 - `ectrans.sizeTimeOut="30000"`
- FTP parameters
 - `ftp.commTimeOut="60000"`
 - `ftp.dataTimeOut="60000"`
 - `ftp.lowPort="no"`
 - `ftp.mkdirs="yes"`
 - `ftp.passive="yes"`
 - `ftp.portTimeOut="60000"`
 - `ftp.prefix=""`
 - `ftp.suffix=".tmp"`
 - `ftp.usetmp="yes"`



- SFTP parameters
 - `sftp.mkdirs="yes"`
 - `sftp.prefix=""`
 - `sftp.suffix=".tmp"`
 - `sftp.usetmp="yes"`