

ECMWF products

Data Services Team

ECMWF

Data.Services@ecmwf.int



Data Services plays a key role in the distribution of ECMWF Meteorological products to external stakeholders worldwide. Part of Data Services' role is to help them customise products for their specific needs and enable them to use ECMWF's vast archive.

The challenges of providing these data and services include

- offering users easy and powerful interfaces to tailor their requests
- dealing with an increasing number of users
- transferring large amounts of data via the Internet

The future of Data Services at ECMWF will include new self-service (web) interfaces for end users, possible new uses of cloud services and reviews of our current licensing models.

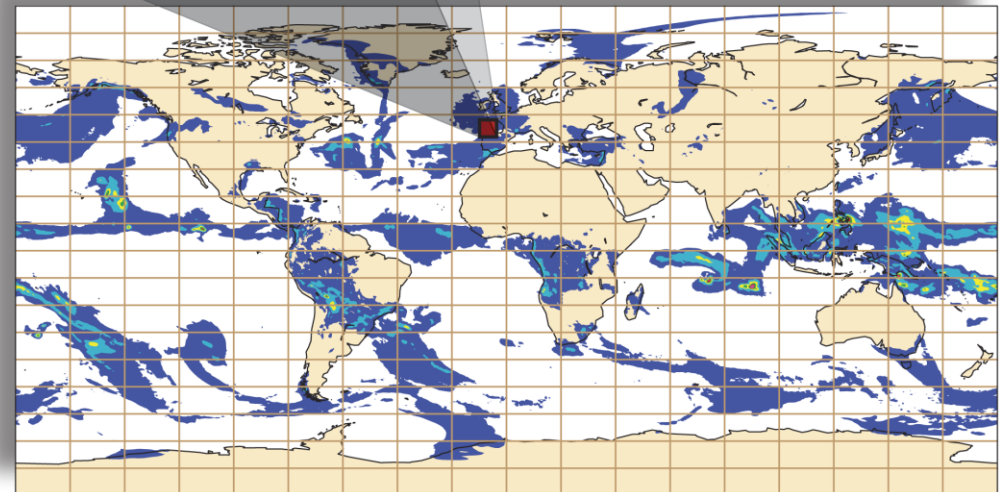
What are ECMWF products?

ECMWF products are output of numerical weather prediction (NWP) models that run on high performance computers

Each field represents a predicted value of:

- One parameter
- One date
- One time
- One step
- One level
- One forecasting system

7.2	9.9	3.6	0.4	8.3	0.2	0.5	0.1	9.1	6.7
0.3	8.8	1.8	0.5	0.3	0.1	2.7	0.1	7.9	6.9
7.1	9.2	3.6	0.4	8.3	0.2	6.5	3.3	5.5	5.3
2.2	1.1	1.7	0.7	3.5	2.4	0.8	1.9	9.0	6.7
5.1	0.9	1.9	8.9	5.9	0.4	1.5	2.0	7.7	0.7
6.2	0.4	1.4	9.8	9.9	7.7	0.9	3.2	7.2	4.8
8.1	1.4	4.4	0.4	0.3	7.2	3.5	3.4	1.1	9.7
7.0	3.6	4.9	0.7	6.8	1.2	0.1	2.2	6.6	6.0
0.2	7.7	3.6	3.1	8.6	0.5	9.5	0.8	5.6	5.0
3.2	7.2	3.1	0.4	0.9	0.3	0.7	0.4	0.2	0.0



What are ECMWF products?

Sets of fields are expressed in meteorological terms (MARS requests)

```
STREAM = DA,  
TIME   = 00/12,  
LEVT   = SFC,  
TYPE   = FC,  
STEP   = 0/3/6/12,  
PARAM  = 10U/10V
```

Availability of ECMWF Products

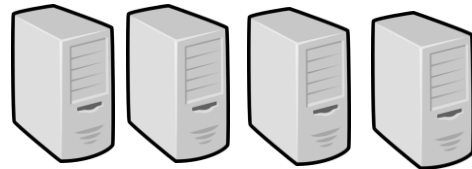
- **Via the dissemination system**
- In MARS (Meteorological Archival Retrieval System)
- On the Web
- Via dedicated data servers or FTP

Dissemination system is driven by a set of user defined requirements

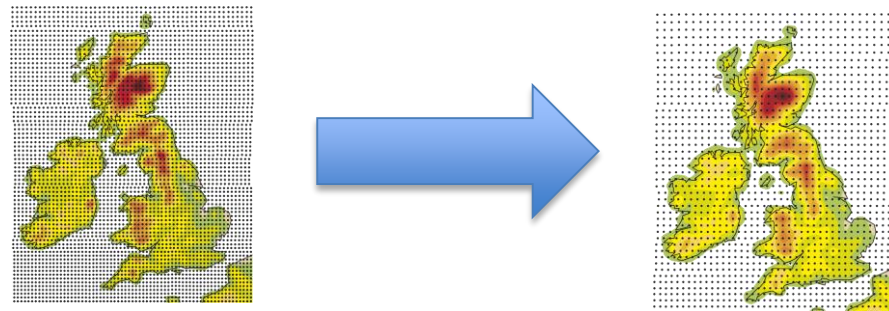
List of requested products

```
STREAM = DA,  
TIME = 00/12,  
LEVT = SFC,  
TYPE = FC,  
STEP = 0/3/6/12,  
PARAM = 10U/10V
```

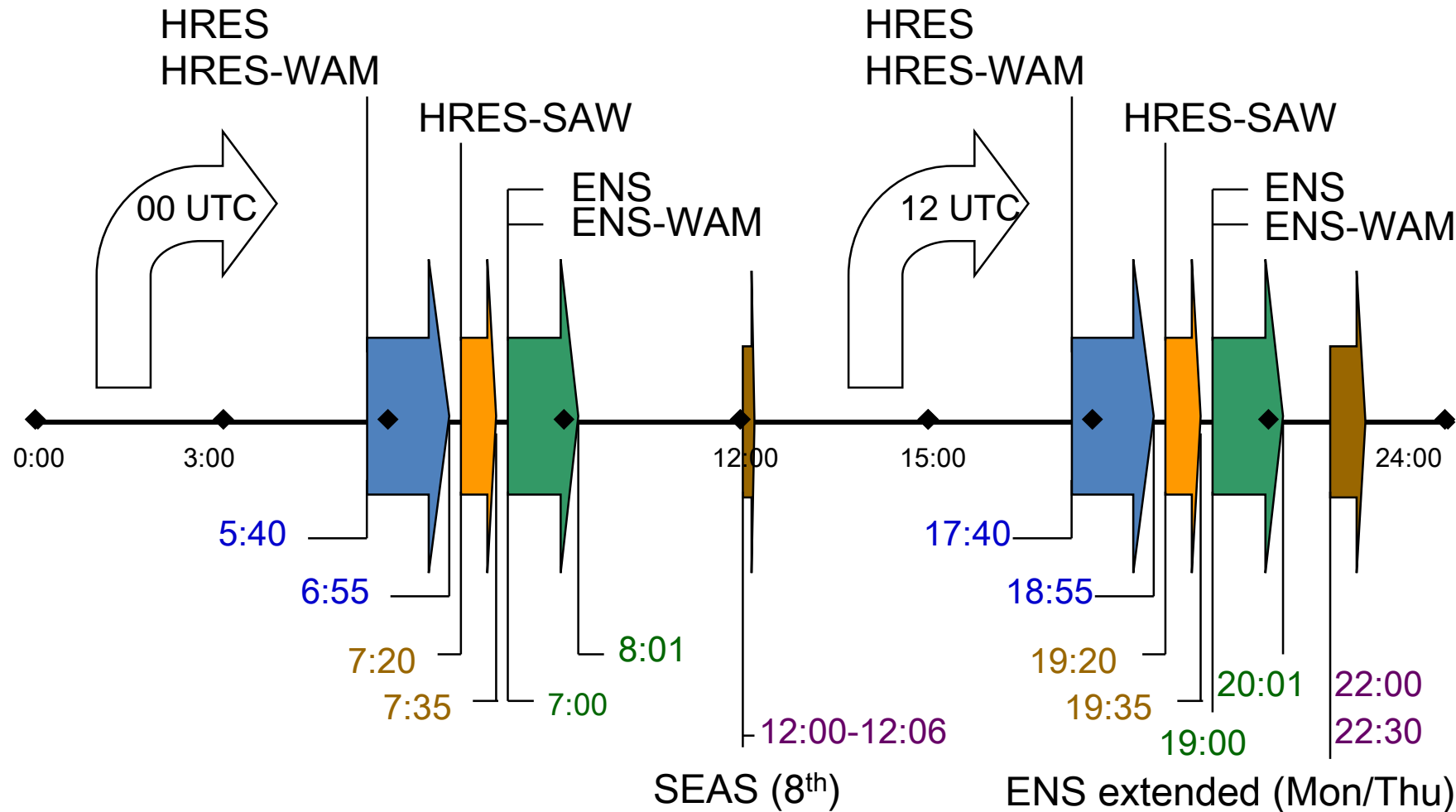
Destinations (target machines,...)



Post-processing (interpolation)



Products are pushed to the end users according to a specific schedule



Availability of ECMWF Products

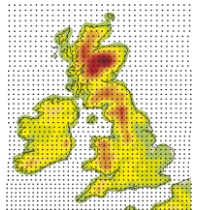
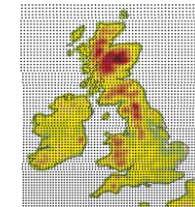
- Via the dissemination system
- **In MARS (Meteorological Archival Retrieval System)**
- On the Web
- Via dedicated data servers or FTP

MARS: Meteorological Archival Retrieval System

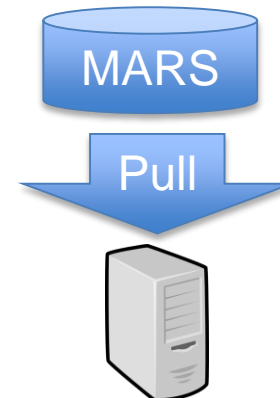
- More than 30 years of data
- Data in GRIB and BUFR format according to WMO standards
- Retrievals expressed in meteorological terms (MARS requests)

```
STREAM = DA,  
TIME   = 00/12,  
LEVT   = SFC,  
TYPE   = FC,  
STEP   = 0/3/6/12,  
PARAM  = 10U/10V
```

- Post-processing facilities
 - Interpolation between various data representation
 - Interpolation on coarser grids
 - Sub-area extractions



- Data can be pulled to the client machine







Availability of ECMWF Products

- Via the dissemination system
- In MARS (Meteorological Archival Retrieval System)
- **On the Web**
- Via dedicated data servers or FTP

Web products

- The current WEB Catalogue
 - A fixed set of products
 - A consistent view of all ECMWF graphical products
 - A consistent navigation
- ecCharts
 - A fully interactive web based way of visualising the ECMWF products

Web product catalogue

ECMWF About Forecasts Computing Research Learning  Fabio Venuti   

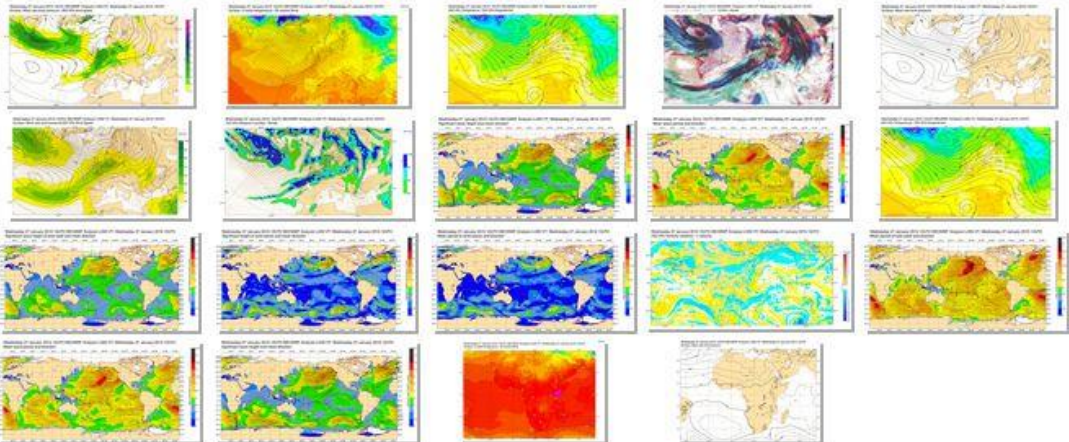
Charts catalogue

Forecasts homepage
Charts
Datasets
Quality of our forecasts
Documentation and support
Accessing forecasts

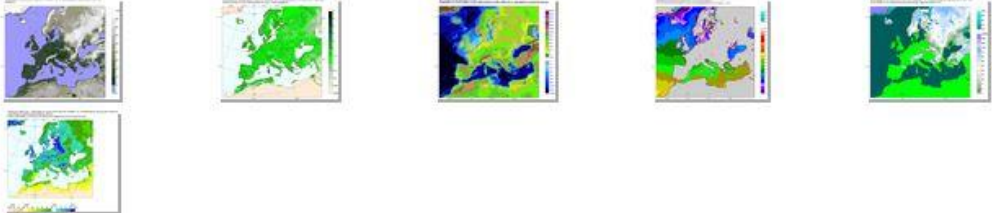
Filter charts

- ▶ Range
- ▶ Type
- ▶ Component
- ▶ Product type
- ▶ Parameters

High resolution forecast



Surface parameters



Analysis increments

ecCharts: forecaster application

The screenshot displays the ECMWF Forecaster Tool web application in a Mozilla Firefox browser window. The browser's address bar shows the URL `http://wrep.ecmwf.int/forecaster/`. The application's navigation menu includes **Products**, **Projections** (which is highlighted), **Views**, **Save**, **Data availability**, and **Alpha test**. A **Sign in** button is located in the top right corner.

The main content area features a large meteorological map of the tropical region, overlaid with a grid and color-coded data. Above the map, there is a **Filter:** input field and a row of four map thumbnails labeled **Global**, **North hemisphere**, **South hemisphere**, and **Europe**. To the right of these thumbnails is a link that says **Add More Projections...**.

An **ECMWF Projections** dialog box is open in the center-right of the screen. It contains a **Filter:** input field and a list of projection options, each with a small thumbnail and two buttons: **Add to projection list** and **Apply to map**. The visible options are:

- East tropics 35S/0 (Lower left), 35N/180E (Upper right) in cylindrical projection**
- Tropics west**
West tropics 35S/180W (Lower left), 35N/0 (Upper right) in cylindrical projection
- Continents and Oceans**
 - Africa**
Africa 40S/45W (Lower left), 40N/75E (Upper right) in cylindrical projection
 - Asia**
Asia 0/55E (Lower left), 80N/175E (Upper right) in cylindrical projection

At the bottom of the dialog box, there is a checkbox labeled **Hide Projections you already have** which is currently checked. Below the dialog box, a timeline navigation bar shows dates from **Wed 12** to **Fri 21**, with **BT: Wed 12 May, 00Z** and **VT: Wed 12** selected. The bottom of the browser window shows the Windows taskbar with the start button, several open windows, and the system tray displaying the time as 16:13.

Availability of ECMWF Products

- Via the dissemination system
- In MARS (Meteorological Archival Retrieval System)
- On the Web
- **Via dedicated data servers or FTP**

ECMWF dedicated data servers

Index of ftp://wmo@data-portal.ecmwf.int/20160314000000/

Up to higher level directory

Name	Size	Last Modified
A_HHXAS0ECED140000_C_ECMF_20160314000000_0h_es_gh_500hPa_global_Op5deg...	67 KB	14/03/16 00:00:00
A_HHXAS0ECED140000_C_ECMF_20160314000000_0h_em_gh_500hPa_global_Op5deg...	137 KB	14/03/16 00:00:00
A_HHXAS0ECMF140000_C_ECMF_20160314000000_an_gh_500hPa_global_Op5deg_grib...	138 KB	14/03/16 00:00:00
A_HHXE50ECED140000_C_ECMF_20160314000000_24h_es_gh_500hPa_global_Op5deg...	67 KB	14/03/16 00:00:00
A_HHXE50ECED140000_C_ECMF_20160314000000_24h_em_gh_500hPa_global_Op5deg...	101 KB	14/03/16 (
A_HHXE50ECMF140000_C_ECMF_20160314000000_24h_gh_500hPa_global_Op5deg_gri...	136 KB	14/03/16 (
A_HHXI50ECED140000_C_ECMF_20160314000000_48h_es_gh_500hPa_global_Op5deg...	71 KB	14/03/16 (
A_HHXI50ECED140000_C_ECMF_20160314000000_48h_em_gh_500hPa_global_Op5deg...	95 KB	14/03/16 (
A_HHXI50ECMF140000_C_ECMF_20160314000000_48h_gh_500hPa_global_Op5deg_gri...	137 KB	14/03/16 (
A_HHXK50ECED140000_C_ECMF_20160314000000_72h_es_gh_500hPa_global_Op5deg...	73 KB	14/03/16 (
A_HHXK50ECED140000_C_ECMF_20160314000000_72h_em_gh_500hPa_global_Op5de...	90 KB	14/03/16 (
A_HHXK50ECMF140000_C_ECMF_20160314000000_72h_gh_500hPa_global_Op5deg_gri...	137 KB	14/03/16 (
A_HHXM50ECED140000_C_ECMF_20160314000000_96h_es_gh_500hPa_global_Op5de...	72 KB	14/03/16 (
A_HHXM50ECED140000_C_ECMF_20160314000000_96h_em_gh_500hPa_global_Op5de...	86 KB	14/03/16 (
A_HHXM50ECMF140000_C_ECMF_20160314000000_96h_gh_500hPa_global_Op5deg_gri...	136 KB	14/03/16 (
A_HHXO50ECED140000_C_ECMF_20160314000000_120h_es_gh_500hPa_global_Op5de...	74 KB	14/03/16 (
A_HHXO50ECED140000_C_ECMF_20160314000000_120h_em_gh_500hPa_global_Op5de...	83 KB	14/03/16 (
A_HHXO50ECMF140000_C_ECMF_20160314000000_120h_gh_500hPa_global_Op5deg...	136 KB	14/03/16 (
A_HHXQ50ECED140000_C_ECMF_20160314000000_144h_es_gh_500hPa_global_Op5de...	74 KB	14/03/16 (
A_HHXQ50ECED140000_C_ECMF_20160314000000_144h_em_gh_500hPa_global_Op5d...	81 KB	14/03/16 (
A_HHXQ50ECMF140000_C_ECMF_20160314000000_144h_gh_500hPa_global_Op5deg...	138 KB	14/03/16 (
A_HHXS50ECED140000_C_ECMF_20160314000000_168h_es_gh_500hPa_global_Op5de...	75 KB	14/03/16 (
A_HHXS50ECED140000_C_ECMF_20160314000000_168h_em_gh_500hPa_global_Op5d...	81 KB	14/03/16 (
A_HHXS50ECMF140000_C_ECMF_20160314000000_168h_gh_500hPa_global_Op5deg...	138 KB	14/03/16 (
A_HHXT50ECED140000_C_ECMF_20160314000000_240h_es_gh_500hPa_global_Op5de...	76 KB	14/03/16 (
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A_HHXW50ECMF140000_C_ECMF_20160314000000_192h_gh_500hPa_global_Op5deg...	139 KB	14/03/16 (
A_HHXY50ECED140000_C_ECMF_20160314000000_216h_es_gh_500hPa_global_Op5de...	76 KB	14/03/16 (
A_HHXY50ECED140000_C_ECMF_20160314000000_216h_em_gh_500hPa_global_Op5d...	80 KB	14/03/16 (
A_HHXY50ECMF140000_C_ECMF_20160314000000_216h_gh_500hPa_global_Op5deg...	139 KB	14/03/16 (
A_HPXAR9ECED140000_C_ECMF_20160314000000_0h_es_msl_global_Op5deg_grib2_bin	86 KB	14/03/16 (



Home Chart dashboard Contact

About Forecasts Computing Research Learning

Navigation

Home

Public Datasets

Job list

See also...

Access Public Datasets

General FAQ

WebAPI FAQ

Accessing forecasts

GRIB decoder

Public Datasets

Access to these datasets is provided free of charge. Terms and conditions

Global Reanalyses

- ERA5 test (Jan 2016 - Feb 2016) **NEW**
- CERA-20C (Jan 1901 - Dec 2010) **NEW**
- ERA-20C (Jan 1900 - Dec 2010)
- ERA-Interim (Jan 1979 - present)
- ERA-Interim/LAND (Jan 1979 - Dec 2010)
- ERA-20CM (Jan 1900 - Dec 2010) **Final**
- ERA-20CM (Jan 1900 - Dec 2010) **Experimental**
- ERA-40 (Sep 1957 - Aug 2002)
- ERA-15 (Jan 1979 - Dec 1993)

Observation Feedback

- ERA-20C (Jan 1900 - Dec 2010)
- ISPD v2.2
- ICoads v2.5.1 with interpolated NOAA 20CR feedback

Multi-model

- S2S
- TIGGE
- TIGGE LAM

Atmospheric composition

- MACC Reanalysis
- CAMS Near-real-time
- CAMS Global Fire Assimilation System
- MACC GHG flux inversions
- CAMS GHG flux inversions

Copernicus Emergency Management Services

- GEFF Reanalysis (Fire) **NEW**

Miscellaneous

- DEMETER Project
- ENSEMBLES project



Data Services Challenges

Improve existing tools & offering new powerful interfaces to deal with the increasing number of users

- **Manage Dissemination**
 - Manage dissemination
 - View requirements & submit change requests
 - Future developments
- Jira Service Desk for Customer requests management
 - Quotes & Contracts
 - Questions & support
 - Change requests

Manage Dissemination via ECPDS

ECMWF ECM: ECMWF
 ECPDS Home > Transmission > Destinations > ECM: ECMWF

Transmission

Data Transfers Destinations

Member state Notify to diss_admin@ecmwf.int

Status Idle Last Transfer None Last Error None Started None Monitor no Filter None Parallel None Acquisition no Enabled yes

Dissem_Str	All (2150)	CA (48)	CR (1)	E1 (1250)	E2 (830)	EC (3)	EE (3)	EG (2)
	EU (1)	GR (5)	T1 (1)	T3 (1)	T4 (1)	T5 (2)	TD (1)	TE (1)
Data_Str	All (2150)	00-GENFO (160)	00-GOPER (176)	00-GSCDA (94)	06-GSCDA (185)	00-GSCEF (218)	06-GSCEF (218)	00-GSCWE (218)
	06-GSCWE (218)	00-GSCWV (92)	06-GSCWV (183)	00-GWAEF (87)	00-GWAVE (115)	00-MWAVE (186)		
Status	All (2150)	StandBy (2150)						
Date	All	Fri_17	Thu_16	Wed_15	Tue_14	Mon_13	Sun_12	Sat_11
File Name								

2,150 items found, displaying 1 to 25. [First/Prev] 1, 2, 3, 4, 5, 6, 7, 8 [Next/Last]

Current selection: All/All/All/2017-02-17/* Current date 2017-02-17 14:52:47

S	Host	Sched. Time	Start Time	Finish Time	Target	TS	%	Mbits/s	Status	Prior	Actions	Select
✓	[not-transferred]	17 Feb 14:04:00	[n/a]	[n/a]	E1X02170600022306001	144	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:04:00	[n/a]	[n/a]	E2X02170600022306001	144	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:04:00	[n/a]	[n/a]	E1G02170600022306001	144	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:04:00	[n/a]	[n/a]	E2G02170600022306001	144	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:30	[n/a]	[n/a]	E1X02170600022303001	141	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:30	[n/a]	[n/a]	E2X02170600022303001	141	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:30	[n/a]	[n/a]	E1G02170600022303001	141	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:30	[n/a]	[n/a]	E2G02170600022303001	141	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:00	[n/a]	[n/a]	E1G02170600022300001	138	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:00	[n/a]	[n/a]	E2G02170600022300001	138	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:00	[n/a]	[n/a]	E1X02170600022300001	138	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:03:00	[n/a]	[n/a]	E2X02170600022300001	138	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:30	[n/a]	[n/a]	E1G02170600022221001	135	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:30	[n/a]	[n/a]	E2G02170600022221001	135	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:30	[n/a]	[n/a]	E1X02170600022221001	135	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:30	[n/a]	[n/a]	E2X02170600022221001	135	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:00	[n/a]	[n/a]	E1G02170600022218001	132	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:00	[n/a]	[n/a]	E2G02170600022218001	132	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:00	[n/a]	[n/a]	E1X02170600022218001	132	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:02:00	[n/a]	[n/a]	E2X02170600022218001	132	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:01:30	[n/a]	[n/a]	E1G02170600022215001	129	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:01:30	[n/a]	[n/a]	E2G02170600022215001	129	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:01:30	[n/a]	[n/a]	E1X02170600022215001	129	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:01:30	[n/a]	[n/a]	E2X02170600022215001	129	0	[n/a]	StandBy	50		
✓	[not-transferred]	17 Feb 14:01:00	[n/a]	[n/a]	E1G02170600022212001	126	0	[n/a]	StandBy	50		

A/ N/R 2150

Dissemination Host(s)

Name	Priority	Actions
ECM-LAN-Host1	0	

Advanced users can currently

- re-send files
- view their network configuration
- diagnose network issues

View requirements and submit change requests

ECMWF Data Services: China Meteorological Administration

China Data Services 2 meta data file(s)

contact.xml (text/xml) - Last Modification: Wed Mar 02 15:52:37 UTC 2016

Organization Web Page: <http://www.cma.gov.cn/en/>

Grid Number

Main Operational Contact

Name	Telephone	Fax	Email
Wang Li	+86-10-68406275	+86-10-64173235	liwang@cma.gov.cn

MailGroup

Name	Email
op_system	op_system@cma.gov.cn

Documentations

metatranschange - METAPPS System Change 2010135

operProcedure - http://www.cma.gov.cn/en/publication/ops_get_page1_501

requirements.txt (text/plain) - Last Modification: Wed Nov 02 14:45:18 UTC 2016

C1	C2	C3	C4	C5	C6	C7	C8	C9	T1	T2	T3
----	----	----	----	----	----	----	----	----	----	----	----

Stream C1 (XN/CMA/C1)

```
#Set I (high priority)
#Section 1 I-i-a: Single level parameters (Forecast)
stream = oper,
type = fc,
grid = 0.125/0.125,
area = 90/0/-90/359.875,
time = 00/12,
```

Validate Send

Stream C2 (XN/CMA/C2)

```
grid = 0.25/0.25,
area = 90/0/-90/359.75,
time = 00/12,
levtype = sfc,
domain = g,
step = 3/to/72/by/3,
param = MWD/SHWW/MWP/SWH
```

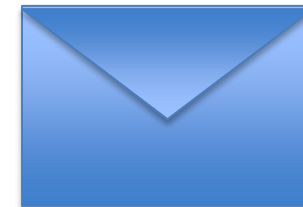
Validate Send

Stream C3 (XN/CMA/C3)

```
time = 00/12,
levtype = sfc,
```

Advanced users can also

- validate requirement
- send their proposed changes to Data Services



Future developments

Key points of the new Product Requirement Web Application (PRWA)

- Plug into the new Catalogue Database
- Self-service approach
- Validation of requirements
- Volume calculation
- Advance text editing capabilities

In the future this will be extended to allow novice users to specify their requirements.

The screenshot shows the 'Product Reqs Web App' interface. The browser address bar displays 'http://prwa.ecmwf.it/'. The main content area is titled 'PRWA' and shows a breadcrumb path: 'PRWA > Destination A1 > Feed A1:T1'. Below this, it indicates 'Total volumes: 163MB of which sent: 123MB'. A tree view on the left shows 'Destination A1' expanded, with sub-items 'Feed A1:F1', 'Feed A1:T1', and 'Feed A1:T2'. The 'Feed A1:T1' item is selected, and a table of volumes is displayed:

Type	N. Products	Volume
OPER	12345	100MB
INFO	345	2.2MB
FOO	0	0KB
BAR	0	0KB

Below the table, there are buttons for 'Confirm Swap', 'Deny Swap', and 'Cancel Swap Request'. A 'MARS Request' section is visible, with a 'Diff with' dropdown menu. The 'MARS Request' content is displayed in a text editor with tabs for 'Code', 'Beautified', and 'Old Versions'. The text in the editor is:

```
DIS,  
PRIORITY = 10,  
STREAM = DA,  
TYPE = FC,  
TIME = 00/12,  
GRID = 0.1/0.1,  
AREA = 90/0/-90/179.9,  
LEVTYPE = SFC,  
PARAM = 2D,  
TYPE = FC,  
STEP = 3/to/144/by/3  
  
DIS,  
STEP = 150/to/240/by/6
```

At the bottom of the interface, there is a 'Drafts' section with a 'New draft' button.

Data Services Challenges

Improve existing tools & offering new powerful interfaces to deal with the increasing number of users

- Manage Dissemination
 - Manage dissemination
 - View requirements & submit change requests
 - Future developments
- **Jira Service Desk for Customer requests management**
 - Quotes & Contracts
 - Questions & support
 - Change requests

Jira to support Customer requests management

Data Services has been using Jira for few years to manage customer requests.

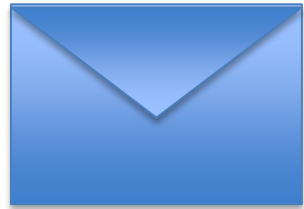
We are now looking into leveraging the **Jira Service Desk (JSD)** and provide more self-service offering capabilities to our customers to deal with

- Quotes & Contracts
- Questions & support
- Product change requests



Current situation: Jira to support Customer requests management

Data Services has been using Jira for a few years to manage the increasing number of requests.



In the aim of managing the customer's requests better, Data Services is moving to JIRA Service Desk.

Jira Service Desk: a customer portal

ECMWF

DataServices Customers

Welcome! You can raise a DataServices Customers request from the options provided.

If you are an Existing customer you will find more options under that category.
Existing customers can report a fault as of type Maximum charge can request change to their Real- time data choosing Existing customers --> Change to real time dissemination data

If you are not yet a customer, you can still request for a Quote or ask questions that brings relevant FAQs.

Catalogue contact points can raise ticket with the Data Services team.

What do you need help with?



General

Existing customers

Special customers



Question

Technical, meteorological or administrative question



Report a fault

Report a network or data issue



Change to an existing licence

Add/remove new products to an existing licence. Renew Licence. Terminate licence



Change to real time dissemination data

For Maximum change customers and CCP only



Knowledge base

ECPDS

Solutions from the knowledge base

Manage your dissemination with ECPDS

<http://www.ecmwf.int/en/forecasts/documentation-and-support/data-delivery/manage-your-data-transmission-ecpds> Use **ECPDS** The ECMWF Product Dissemination System (**ECPDS**) is available at <https://ecaccess.ecmwf.int/9443/do/start...>

Can't find what you need? Raise a request



Change to real time dissemination data

For Maximum change customers and CCP only



Question

Technical, meteorological or administrative question

None of these are what I need

Questions?

Thank you