

Ecaccess

Gateway, Tools and ectrans

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ECaccess - Concepts

- **ECaccess provides a portal to access ECMWF archiving and computing facilities.**
- **Strict authentication via ActivIdentity tokens and X509 certificates.**
- **Data integrity/confidentiality guaranteed by SSL**

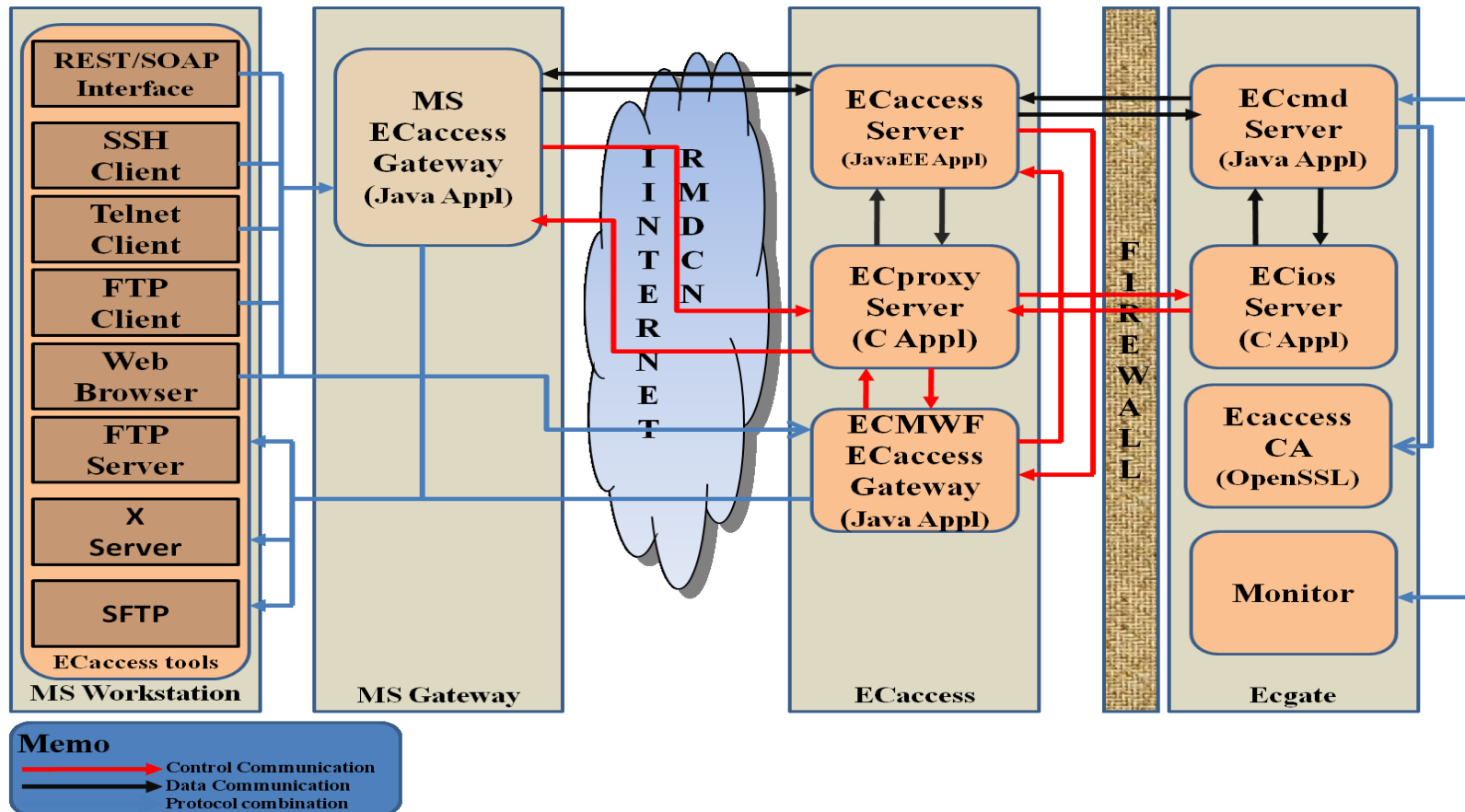
ECaccess - Concepts

- **ECaccess provides:**
 - **File and job management in batch or interactive mode through an extended FTP/SFTP server**
 - **File and job management through a Web browser**
 - **A secure ssh access to ECMWF**
 - **A secure X11 access to ECMWF**
 - **Various services via the web.**
- **All this via Internet or RMDCN.**

ECaccess - Architecture

- Multiple tiers

→ ECaccess Client, ECaccess Gateway, ECaccess Server, ECaccess ecgate



ECaccess - Architecture

- **ECaccess client**
 - Standard FTP, SFTP, SSH, HTTP/S or NX clients
 - Standard X Server (not needed for NX) and FTP Server
 - ECaccess tools - new (4.0.0) and old versions (3.3.0)
- **ECaccess gateway**
 - Entry point for all ECaccess users
 - Verifies ECaccess users authentication (certificates or passcodes)
 - Implements FTP/SFTP and HTTP/S protocols
 - Secure tunnels through firewalls to ECaccess Server
 - Either local ECaccess gateway installed at your site **OR**
 - Gateways located at ECMWF: ecaccess.ecmwf.int for Internet and msaccess.ecmwf.int for RMDCN

ECaccess – Architecture

- **ECaccess Server**

- Located at ECMWF: ecaccess.ecmwf.int or msaccess.ecmwf.int
- Entry point for all ECaccess gateways
- Keeps track of users activity

- **ECaccess ecgate**

- Runs the ECaccess Certificate Authority (CA)
- Provides job management through LoadLeveler (c2a), SLURM (ecgate) or PBS (cca)
- Provides access to home, scratch, ECFS and host filesystems
- Keeps job input, output and error files
- Manages spool for unattended file transfers

ECaccess – local (MS) gateways

- **Use local ECaccess gateways if installed**
- **Internet ECaccess gateways available at most NMSs and at several other sites (44 gateways in total)**
- **11 ECaccess Gateways available over RMDCN**
- **If local ECaccess gateway is not available, then use ECMWF gateways ecaccess.ecmwf.int (Internet) or msaccess.ecmwf.int (RMDCN)**

ECtools - EAccess tools

- **These tools must be installed at your end on each platform for which access to ECMWF services are required.**
- **Two versions available at the moment**
 - **Version 4.0.0 has been available for 2 year**
 - **Version 3.3.0 will disappear**
 - **Version 4.0.0 of the tools requires version 4.0.0 of gateway to be installed**
 - **Check with your administrator**
 - **You can use ECMWF gateways in the meantime**
- **ECtools are also available on ECMWF computers.**

ECtools - eccert Command

```
{mshost}$ eaccess-certificate-create
Please enter your user-id: tr?
Your passcode: *****

{mshost}$ eaccess-certificate-list
submitJob          168h      Mar 11 11:25      job submission
getJobList         168h      Mar 11 11:25      job list
deleteJob          168h      Mar 11 11:25      delete a job
...
```

- Certificate valid for 7 days, but this can be extended for special requirements.
- Certificate only needed for file, job and transfer management, NOT required for unattended transfers (see later - ectrans).
- Certificate not needed for ECMWF local use of ETools.

ECtools File Management

ecaccess-file-chmod	Change ECaccess File Mode Bits
ecaccess-file-copy	Copy an ECaccess File
ecaccess-file-delete	Remove an ECaccess File
ecaccess-file-dir	List ECaccess Directory Contents
ecaccess-file-get	Download an ECaccess File
ecaccess-file-mget	Download Multiple ECaccess Files at once
ecaccess-file-mkdir	Make a Directory on the ECaccess File System
ecaccess-file-modtime	Show the Last Modification Time of an ECaccess File
ecaccess-file-move	Move or Rename ECaccess Files
ecaccess-file-mput	Upload Multiple Local Files at once
ecaccess-file-put	Upload a File on the ECaccess File System
ecaccess-file-rmdir	Remove a Directory on the ECaccess File System
ecaccess-file-size	Show the Size of an ECaccess File

ECtools Job Management

- With ETools you can submit shell scripts and LoadLeveler command files to the LoadLeveler queues of ecgate and the supercomputer.

ecaccess-job-delete	Delete an ECaccess Job
ecaccess-job-get	Download a Job Output/Input/Error File
ecaccess-job-list	List all ECaccess Jobs
ecaccess-job-restart	Restart an ECaccess Job
ecaccess-job-submit	Submit a new ECaccess Job
ecaccess-queue-list	List available queues

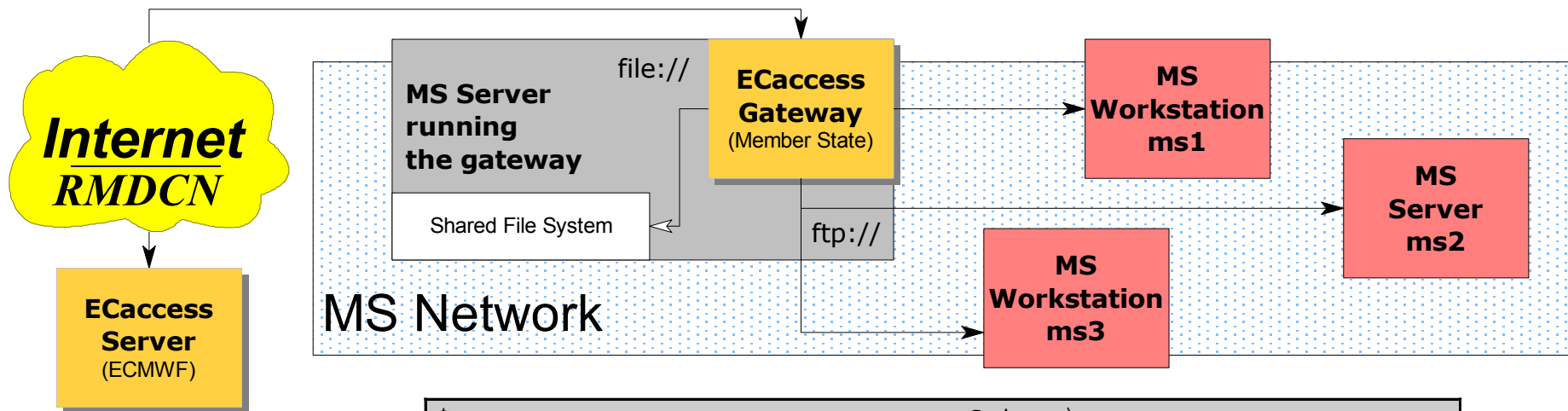
- If you submit a shell script you will have to use the option “**–noDirectives**” which will add default LoadLeveler directives

Data transfers from ECMWF - ectrans

- Unattended file transfers
- Automatic retrieval on failure
- Synchronous or asynchronous
- Downloads or uploads
- Secured transfers using ftp or sftp
- Ectrans associations can be set up for various destinations
- Association name is unique on each gateway
- Association has to be created on the particular gateway in use
- Email notification
- Transfers are always initiated from ECMWF

ECtrans Command

- It is preferable to use your local ECaccess gateway (if available). Alternatively use the gateway at ECMWF.



ecgate or
c2a:

```
$ ectrans -gateway ecaccess.ecmwf.int \  
-remote association[@protocol] \  
-source [location/]filename \  
[-target [location/]filename]
```

ECtools Association and Transfer Management

ecaccess-association-delete

Delete Association

ecaccess-association-get

Get the Association Descriptive File

ecaccess-association-list

List your ECtrans associations

ecaccess-association-protocol

List the supported ECtrans Protocol

ecaccess-association-put

Update/Create an Association

ecaccess-ectrans-delete

Delete ECtrans

ecaccess-ectrans-list

List all ECtrans transfers

ecaccess-ectrans-request

Request a new ECtrans transfer

ecaccess-ectrans-restart

Restart an existing ECtrans transfer

ECtrans – Association Maintenance

- ECtrans associations can be generated with
 - New ETools: `ecaccess-association-put`
 - ECaccess gateway web interface
- Creation and use of an association template using new ETools:

```
{mshost}$ ecaccess-association-get -template assoc  
assoc.txt  
  
{mshost}$ $EDITOR assoc.txt          # EDIT your template  
  
{mshost}$ ecaccess-association-put -password assoc.txt
```


ECtrans – Association Web Maintenance

ECMWF gateway service > ECtrans > Setup - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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ECMWF gateway service > ECtrans > Setup

▶ Your ECMWF account.

Dominique Lucas,x2386

Login : usl
User id : 1107
Group id : 1212
Home directory : /home/us/usl

▶ Your ECtrans configuration.

Access methods associated with ECMWF user usl

Name	Comment	Enabled
List of ECtrans associations		
No ECtrans associations.		
Total: 0		
List of ECtrans destinations		
	▶ genericFile	file true
	▶ genericFtp	ftp true
	▶ genericSftp	sftp true
Total: 3		

Add associaton

ECtrans
From your ECMWF account (ECuser usl), you can use ECtrans to perform unattended file transfers to or from (one of) your local (Member State) account(s). You need to create associations with these MSusers.

Access methods
The access method needs to be specified in the "-remote" option of the "ectrans" command in the format association@destination where "association" specifies the ECtrans association and "destination" specifies the ECtrans destination.

Managing ECtrans associations
Click the expand button to the left of an ECtrans

Done Internet

ECtrans – Association Web Maintenance

The screenshot shows a Microsoft Internet Explorer browser window displaying the 'ECtrans - Create' page. The browser's address bar shows 'ECMWF gateway service > ECtrans > Create'. The page is titled 'MS user association details.' and contains several sections:

- MS user to be associated:** This section contains form fields for:
 - Association name:
 - Enabled: enabled
 - Host name:
 - Directory:
 - Comment:
 - Default destination:
- Complementary information:** This section includes a text area with the instruction 'Please use the data content editor:' and a list of configuration parameters:

```
ectrans.sizeTimeOut="30000"  
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="no"
```
- Login information:** This section contains:
 - Login:
 - Password:
 -

On the right side of the page, there are three informational panels:

- ECtrans:** From your ECMWF account (ECuser us!), you can use ECtrans to perform unattended file transfers to or from a local (Member State) account(s). You need to create an association with an MS user.
- New MS user to be associated:** ECtrans uses the specified information to perform unattended file transfers to/from your local (Member State) account.
- Complementary information:** This is optional information, which can be used by an ECtrans module for example to perform some extra security check (e.g. certificate).
- Data content editor:** With the "data content editor" you can either enter your text line by line, or

The left sidebar contains navigation links under categories: Browsing (EChome files, ECscratch files, ECfs files), Queues/Jobs (Browse queues, Browse basket, Submit new job), Monitoring (Job submissions, File transfers, Browse history), and Account us! (ECtrans setup, Get certificate, Log off us!).

ECtrans – Association Web Maintenance

ECMWF gateway service > ECtrans > Setup - Microsoft Internet Explorer

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Links »

ECMWF gateway service > ECtrans > Setup

Browsing

- EChome files
- ECscratch files
- ECfs files

Queues /Jobs

- Browse queues
- Browse basket
- Submit new job

Monitoring

- Job submissions
- File transfers
- Browse history

Account usl

- ECtrans setup
- Get certificate
- Log off usl

Your ECMWF account.

Dominique Lucas,x2386

Login : usl
 User id : 1107
 Group id : 1212
 Home directory : /home/us/usl

Your ECtrans configuration.

Access methods associated with ECMWF user usl

<input type="checkbox"/>	Name	Comment	Enabled
List of ECtrans associations			
	<input type="checkbox"/> from_ecmwf	-	true
Total: 1			

	Name	Module	Active
List of ECtrans destinations			
	genericSftp	sftp	true
	genericFtp	ftp	true
	genericFile	file	true
Total: 3			

Add associaton Grant association(s) Delete association(s)

ECtrans

From your ECMWF account (ECuser usl), you can use ECtrans to perform unattended file transfers to or from (one of) your local (Member State) account(s). You need to create associations with these MSusers.

Access methods

The access method needs to be specified in the "-remote" option of the "ectrans" command in the format association@destination where "association" specifies the ECtrans association and "destination" specifies the ECtrans destination.

Managing ECtrans associations

Click the expand button to the left of an ECtrans association entry to

Done Internet

ECtrans – Association Web Maintenance

ECMWF gateway service > ECtrans > DestinationDetails - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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ECMWF gateway service > ECtrans > DestinationDetails

► The genericFtp ECtrans destination and your authorized MS users.

ECtrans destination details

Destination name : genericFtp
 ECtrans module name : ftp
 Comment : Generic FTP access from the gateway

Parameter name	Source	Comment
List of parameters		
target	ectrans at ECMWF	-target [location/]target-filename
msuser[login]	gateway database	MS user login
msuser[passwd]	gateway database	MS user password
msuser[dir]	gateway database	MS user directory
msuser[host]	gateway database	MS user host name
Total: 5		

Active destination : true
 Restrict access : false
 Resolve path : true

Authorized MS users

Name	Comment	Enabled
List of MS users		
from_ecmwf	-	true
Total: 1		

List of parameters
 ECtrans uses the listed parameters and the "ftp" ECtrans module, with which the "genericFtp" destination is associated, to access your local (Member State) account.

Authorized MS users
 All the MS users granted access through the genericFtp ECtrans destination are listed here.

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ECtrans – Association Web Maintenance

ECMWF gateway service > ECtrans > DoGrant - Microsoft Internet Explorer

File Edit View Favorites Tools Help

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Links >>

ECMWF gateway service > ECtrans > DoGrant

Association(s) you have selected.

Grant an ECMWF user

Association User Full name

List of ECtrans associations

<input type="checkbox"/>	Association	User	Full name
<input type="checkbox"/>	from_ecmwf	usl	Dominique Lucas,x2386
<input type="checkbox"/>	-	usc	Carsten Maass,x2389 room224
<input type="checkbox"/>	-	usd	Paul Dando
<input type="checkbox"/>	-	usu	Umberto Modigliani, x2382
<input type="checkbox"/>	-	usp	Pam Prior,x2384
<input type="checkbox"/>	-	usj	John Greenaway,x2385

Total: 6

ECMWF user name :

Grant association(s)
Once granted to an ECMWF user, an association can be used by this user in order to perform unattended transfers (on your behalf).

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Internet

- MS associations are specific to each ECaccess gateway!!!

ECtrans Command – at ECMWF

```
{echost}$ ectrans -help
usage: ectrans [-gateway name] -remote association[@protocol] \
               [-get|-put] -source [ec:|ectmp:]filename [args ...]
  -gateway {arg} - access gateway name (default (**):
ecaccess.ecmwf.int)
  -remote {arg} - association and optional transfer protocol
(default (**): *none*)
  -source {arg} - source file name
  -target {arg} - target file name (default: same as -source)
  -mailto {arg} - target email address (default: current user)
  -put - interactive/synchronous transfer (no spool)
  -get - interactive/synchronous pull (rather than
push) file
  -onsuccess - mail sent on successful transfer
  -onfailure - mail sent when transfer has failed
  -onretry - mail sent when transfer is retried
  -verbose - verbose mode on
```

ECtrans Command – at ECMWF

```
{ecgate}$ ectrans -gateway ecaccess.ecmwf.int \  
                  -remote from_ecmwf@genericFtp \  
                  -source ./data.grib \  
                  -target data.grib \  
                  -verbose  
  
echost: ecaccess.ecmwf.int  
ecport: 644  
ecuser: usl  
source: ./data.grib  
target: data.grib  
keep   : false  
option: reject  
File to upload (585 bytes)  
10129250216245
```

- Users have to maintain associations on the particular gateway used, via the new ETools or via the web interface.
- ectrans is available for transfers in both directions.

ECtools Transfer Management

- You can also request an ectrans transfer from your site using the ETools
 - In this case the transfer will still be initiated from ECMWF!

```
{mshost}$ ecaccess-ectrans-request -overwrite -onFailure  
-onRetry tr?_assoc ec:testfile.txt
```


ETools Transfer Management

```
{mshost/echohost}$ eaccess-ectrans-list
389      STOP      tr00_test  teaccess.ecmwf.int   Mar 09 18:29
387      DONE      tr00_test  teaccess.ecmwf.int   Mar 09 14:39

{mshost/echohost}$ eaccess-ectrans-list 389
  Copyid: 389
  MS user: tr00_test
  Hostname: teaccess.ecmwf.int
  Status: STOP
Last error: Target file already exist
  Schedule: Mar 09 18:29
  Source: /wshome/ectrain/tr00/testfile
  Target: testfile
  File size: 11
```

- Target file does already exist!

ECtools Transfer Management

- Either remove target file from destination and restart **OR**
- Restart and overwrite target file **OR**
- Specify different target file name **OR**
- Delete transfer

```
{mshost/echohost}$ ecaccess-ectrans-restart 389
```

```
{mshost/echohost}$ ecaccess-ectrans-restart -overwrite 389
```

```
{mshost/echohost}$ ecaccess-ectrans-restart -target NEW_NAME 389
```

```
{mshost/echohost}$ ecaccess-ectrans-delete 389
```

ECaccess Pointers

- <http://www.ecmwf.int/services/ecaccess>
 - User's manual
 - Administrator's manual
 - Registration centre (for local ECaccess gateways)