

ECaccess Gateway, Tools and ectrans

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ECaccess - Concepts

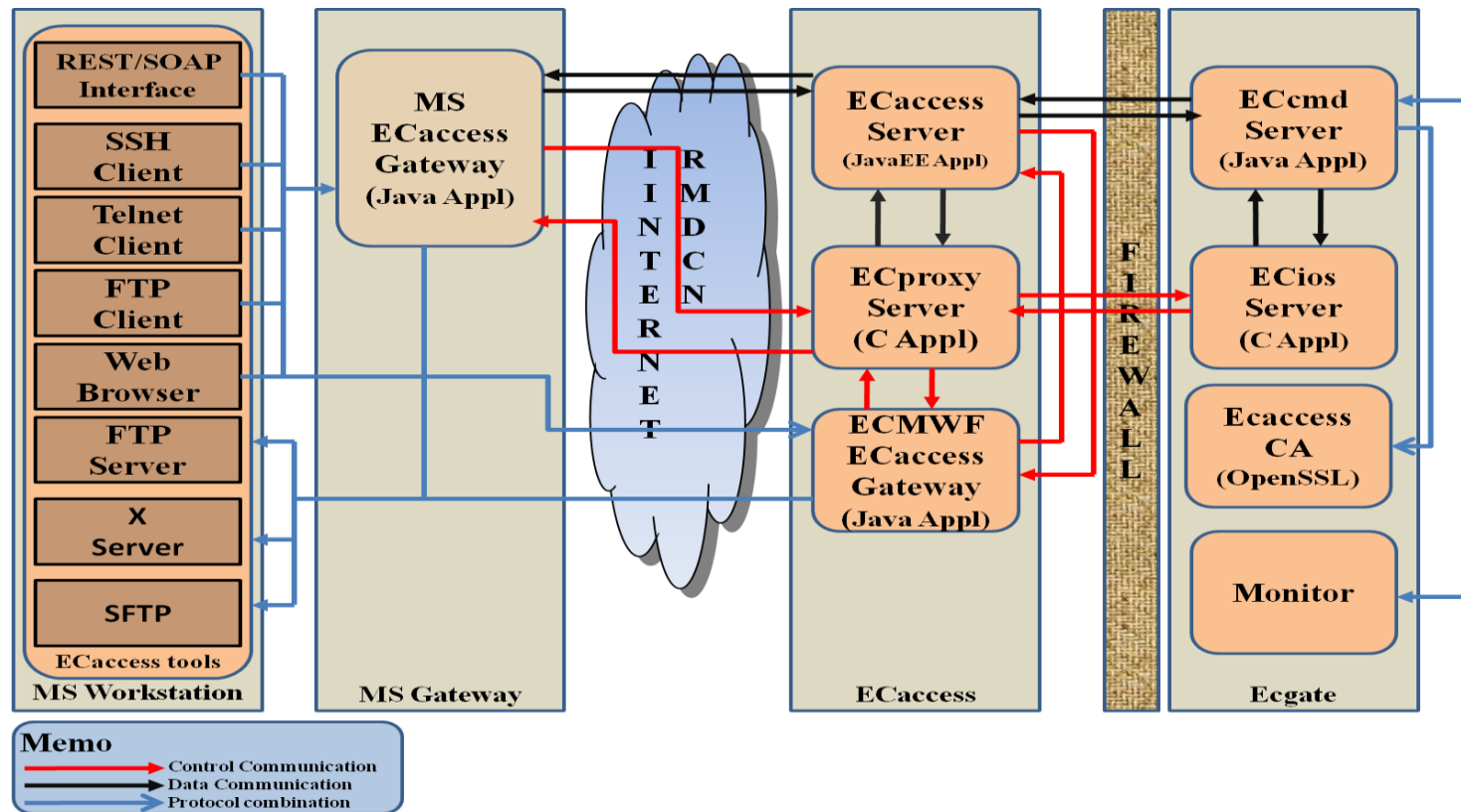
- ECaccess provides a portal to access ECMWF archiving and computing facilities.
- Strict authentication via ActivIdentity tokens and X509 certificates.
- Data integrity/confidentiality guaranteed by SSL

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 tears
 - 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 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 gateway if installed.
- Internet ECaccess gateways available at most NMSs and at several other sites (over 43 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).
- See command ‘`ecaccess-gateway-list`’.

ECaccess Web Toolkit

- These tools must be installed at your end on each platform for which access to ECMWF services is required.
- Two versions available at the moment
 - Version 4 (Web Toolkit) has been available for more than 3 years
 - Version 3 (Ectools) no longer available but still supported.
 - Version 4 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
- ECaccess Web Toolkit are also available on ECMWF computers.

Getting a certificate

```
{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 ECtools.

ECaccess File Management

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

ECaccess Job Management

- With the ECaccess Web Toolkit, you can submit shell scripts and batch command files to the batch systems on ecgate and the HPCs

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

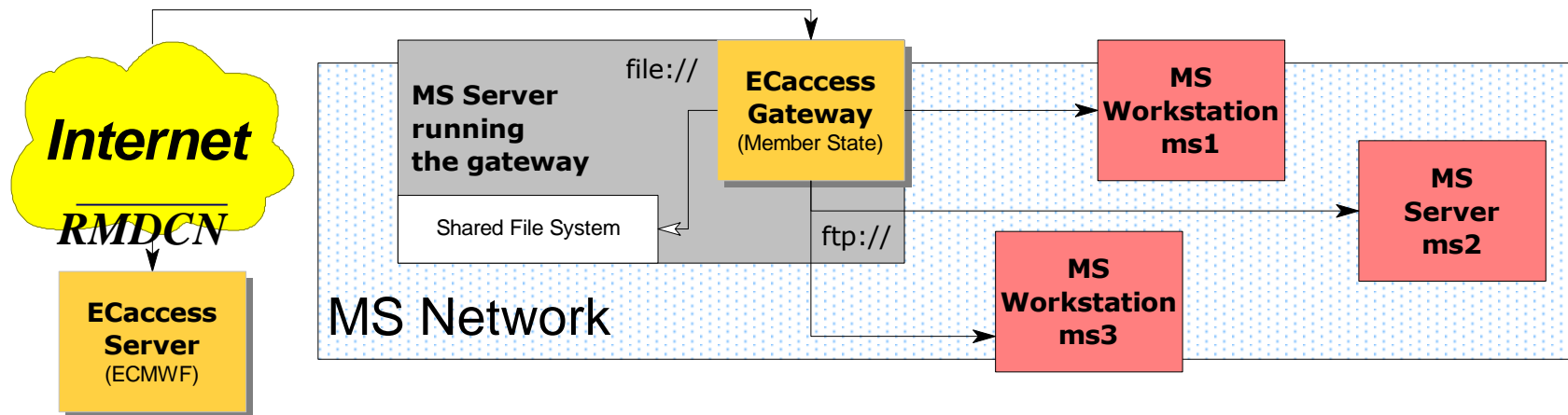
- If you submit a shell script, you will have to use the option “-noDirectives” which will add some default batch directives.

Data transfers - ectrans

- Unattended file transfers
- Automatic retrial on failure
- Synchronous or asynchronous
- Downloads or uploads
- Secured transfers using sftp, ftps (or ftp).
- 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
cca/ccb:**

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

Association and Transfer Management

<code>ecaccess-association-delete</code>	Delete Association
<code>ecaccess-association-get</code>	Get the Association Descriptive File
<code>ecaccess-association-list</code>	List your ECtrans associations
<code>ecaccess-association-protocol</code>	List the supported ECtrans Protocol
<code>ecaccess-association-put</code>	Update/Create an Association
<code>ecaccess-ectrans-delete</code>	Delete ECtrans
<code>ecaccess-ectrans-list</code>	List all ECtrans transfers
<code>ecaccess-ectrans-request</code>	Request a new ECtrans transfer
<code>ecaccess-ectrans-restart</code>	Restart an existing ECtrans transfer

ectrans – Association Maintenance

- Ectrans associations can be generated with
 - Web Toolkit: `ecaccess-association-put`
 - ECaccess gateway web interface
- Creation and use of an association template using the WebToolkit.

```
{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

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

List of Ectrans associations
No Ectrans associations.
Total: 0

List of Ectrans destinations

Name	Module	Active
genericFile	file	true
genericFtp	ftp	true
genericSftp	sftp	true

Total: 3

Add associaton

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

Access

- **Ectrans setup**
- Set certificate
- Log on usl

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.

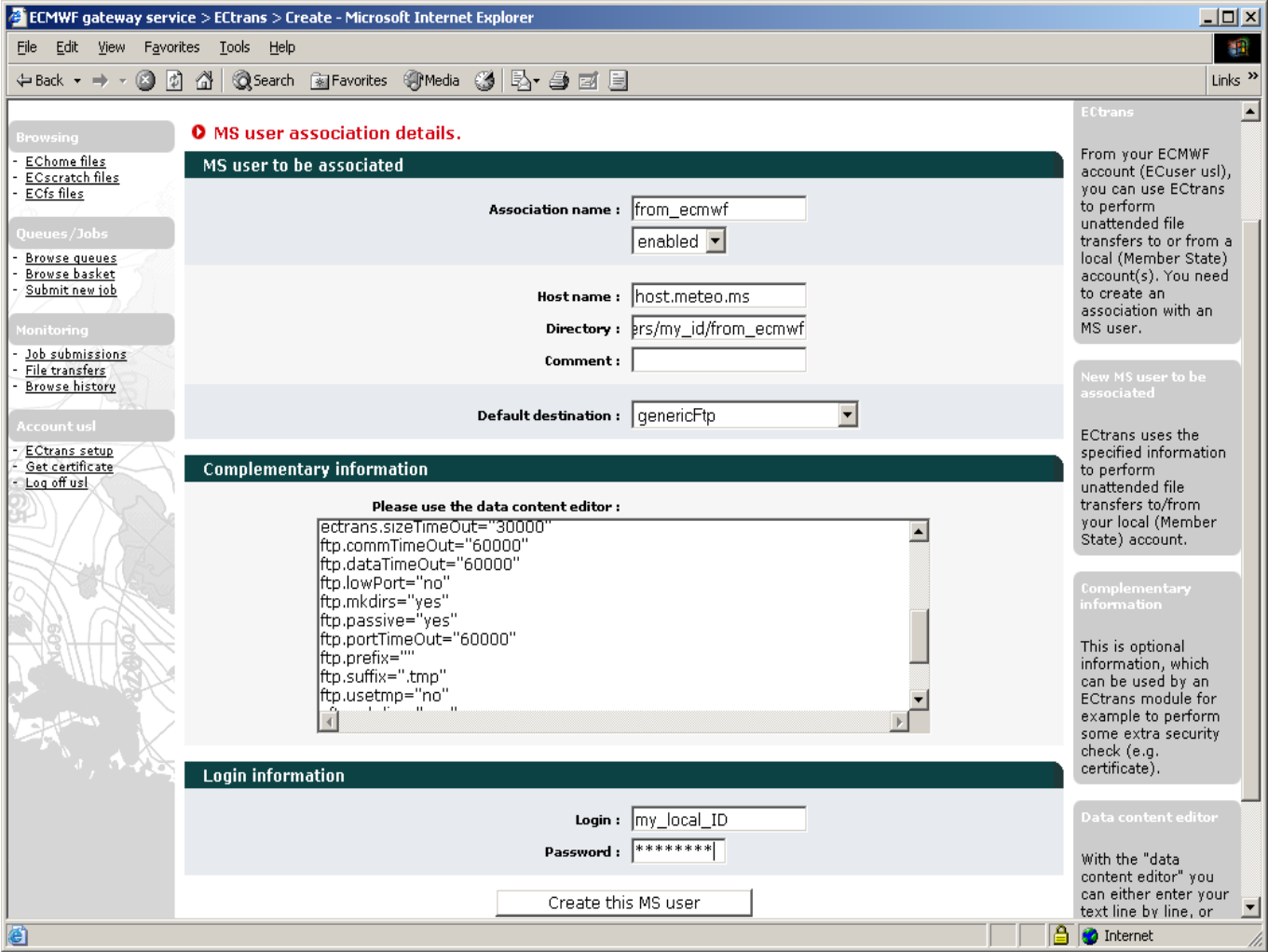
Access methods

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

ectrans – Association Maintenance via the web



ectrans – Association Maintenance via the web

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

<input type="checkbox"/>	Name	Comment	Enabled
<input type="checkbox"/>	from_ectmwf	-	true

Total: 1

<input type="checkbox"/>	Name	Module	Active
<input type="checkbox"/>	genericSftp	sftp	true
<input type="checkbox"/>	genericFtp	ftp	true
<input type="checkbox"/>	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

ectrans – Association Maintenance via the web

The screenshot shows a web browser window titled "ECMWF gateway service > Ectrans > DestinationDetails - Microsoft Internet Explorer". The page content includes a navigation menu on the left, a main content area with a red warning icon and text, and two summary boxes on the right.

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 Maintenance via the web

ECMWF gateway service > ECtrans > DoGrant

Association(s) you have selected.

Grant an ECMWF user

<input type="checkbox"/>	Association	User	Full name
List of ECtrans associations			
<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)

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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).

- 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: <UID>  
  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.

ECaccess Web Toolkit Transfer Management

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

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


ECaccess Transfer Management

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

{mshost/echohost}$ ecaccess-ectrans-list 389
  Copyid: 389
  MS user: <UID>
  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
```

ECaccess 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://software.ecmwf.int/wiki/display/ECAC/ECaccess+Home>
 - User's manual
 - ectrans association details
 - ECaccess Web Toolkit/gateway distribution
 - Administrator's manual
 - ECaccess gateway registration Centre (only relevant for gateway administrators).