

Uploading files of Meteorological Bulletins to WIS through HTTPS File Uploading Service of GISC Tokyo

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Goal

Participants learn skills to be able to upload files of Meteorological Bulletins to WIS through GISC Tokyo's HTTPS File Uploading Service as a backup of primary line.

WIS-Competency 3 : Manage the data flow

Outline

Lecture

- What is the service?
- what users need to do to start to use it

Exercise

- upload files
- check transmission for the upload

What is the service?

What users can do

Utilities available at the WIS Portal

Main use of the service

Preparation at users

What is the procedure?

Current use of the service

What users can do

Users can upload files to GISC Tokyo through WIS Portal using HTTPS PUT (recommended) or HTTPS POST request via the Internet as a backup of primary line.

- GISC Tokyo provides uploaded files as part of GISC Tokyo's cache service
- GISC Tokyo provides uploaded files to GTS for global and regional exchange, when required.

Main use of the service

This mechanism is mainly used for:

- backup uploading of files by NCs and DCPCs whose principal GISC has a backup agreement with GISC Tokyo
- backup uploading of files by NCs and DCPCs who bilaterally agree with GISC Tokyo

What is the procedure?

- Provide JMA with a list of bulletin headings to be uploaded.
- Send several sample files in ZIP format to GISC Tokyo through email for format check.

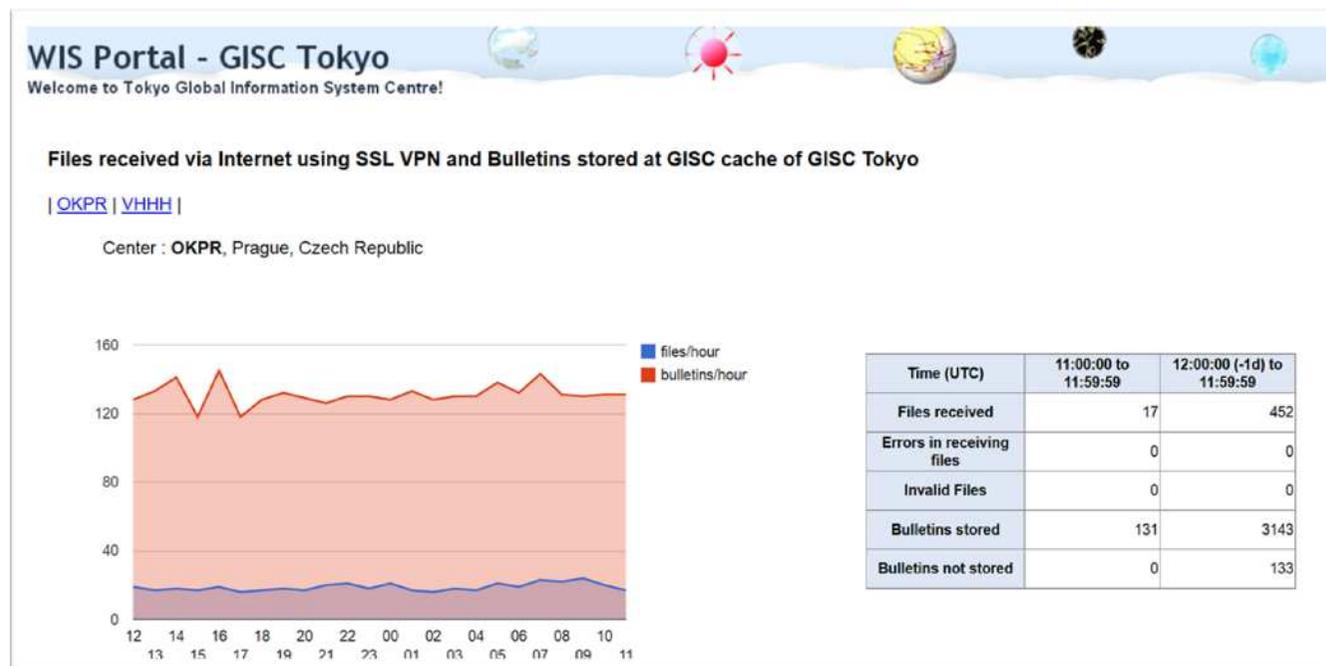
What is the procedure?

- Users start transmission in the testing phase. Upon confirmation of GISC Tokyo, users start file uploading, and migrate to operational phase.
- URL, username and password for a testing server and an operational server will be informed to a contact person.

Utilities available at WIS Portal

24 hour Graphical Monitor

<http://www.wis-jma.go.jp/iwgmonitor/iwgmonitor.jsp>



Utilities available at WIS Portal

Help Desk

kyo
ystem Centre!

WMO format Metadata **Help Desk** News

- Ticket System
- User Guide
- Documentation Materials

al Information System Centre!

orological Agency(JMA) in its capacity as a GISC (Global
ion System (WIS).

capacity as a GISC and a DCPC

Project

最近のプロジェクト

- Metadata (2013/08/02 00:15:06)
Metadata Service
- **File Upload (2013/08/01 09:29:37)**
File Upload mainly for GISC backup
- Archive Data Requests (2012/08/0...)
This is a project for accumulating e...
from GISC Tokyo users and how w...
used for tracking status.
- DAR (2011/04/14 11:42:20)
Issues related on facilities of ad-ho...
metadata search (SRU). and metac...

Create New Ticket

File Upload

概要 活動 チケット **新しいチケット** 設

概要

File Upload mainly for GISC backup

チケットトラッキング

- Support: 0件未完了 / 全0件

全てのチケットを見る

Preparation at users

Prepare files to be uploaded, according to the file format, file naming convention and extension, which is so called WMO FTP Format and defined in the Manual on GTS with several local rules.

- Some message switching systems support the WMO FTP Format.
- The format is described in a document available at WIS Portal (http://www.wis-jma.go.jp/cms/wp-content/uploads/2013/07/GISC-Tokyo_file-uploading_file-format.pdf).

Preparation at users

Prepare a file uploading tool.

- Some message switching systems now support HTTPS PUT/POST.
- Command line tools can be used as well.
- Mechanism to ingest meteorological bulletins in WIS with HTTPS is described in “SPECIFICATION OF WEB INGEST OF METEOROLOGICAL BULLETINS IN WIS” (http://www.wis-jma.go.jp/cms/wp-content/uploads/2014/01/Specification-of-Web-Ingest-in-WIS_20131224.pdf).

Preparation at users

Internet connection is required.

- There are no requirement for network device and Internet provider at your side.

Current use of the service

Operational Phase

- RTH Prague
- NC Hong Kong, China

Testing Phase (continuous transmission to testing server)

- RTH Rome
- RTH Vienna

Preparation Phase (Format Check, manual transmission)

- NC Switzerland
- RTH Sofia

What users need to do to start to use it?

users need to do to
start to use

Contact GISC Tokyo about the possibility of using
this service at wis-jma@met.kishou.go.jp

Lecture

- What is the service?
- what users need to do to start to use it

Exercise

upload files

- upload sample files

check transmission for the upload

- log of transmission
- 24hr Graphical Monitor
- GISC Cache

Files to be uploaded

Filename : CCCCNNNNNNNNN.b

Here, CCCC is location indicator of transmitting center, and NNNNNNNN is a eight digit sequence number, such as 00000001 and 00000002.

Location indicators of participants' countries

Bangladesh: VGDC

Cambodia: VDPP

Laos: VLIV

Myanmar: VBRR

Philippines: RPMM

Sri Lanka: VCCC

Thailand: VTBB

Viet Nam: VNNN

Qatar: OTBD

File Uploading Tool : cURL



What is curl?

curl is a command line tool and library for transferring data with URL syntax, supporting DICT, FILE, FTP, FTPS, Gopher, HTTP, HTTPS, IMAP, IMAPS, LDAP, LDAPS, POP3, POP3S, RTMP, RTSP, SCP, SFTP, SMTP, SMTPS, Telnet and TFTP. curl supports SSL certificates, HTTP POST, HTTP PUT, FTP uploading, HTTP form based upload, proxies, HTTP/2, cookies, user+password authentication (Basic, Digest, NTLM, Negotiate, kerberos...), file transfer resume, proxy tunneling and more.

Who makes curl?

curl is free and [open software](#) that compiles and runs under a wide variety of operating systems. curl exists thanks to [thousands of contributors](#).

What's curl used for?

curl is used in command lines or scripts to transfer data. It is also used in cars, television sets, routers, printers, audio equipment, mobile phones, tablets, settop boxes, media players and is the internet transfer backbone for thousands of software applications totally affecting more than *one billion users*.

What's the latest curl?

The most recent stable version is **7.39.0**, released on 5th of November 2014. Currently, 74 of the [listed archives](#) are of the latest version.



Source: <http://curl.haxx.se/>

Daemon program : `httpsputd.sh`

`httpsputd.sh` : works as a daemon program, and operates continuous transmissions.

- It is written in bourne shell, and can be run on Linux/Unix Systems.
- Checks a certain directory every 30 seconds.
- If it find a file of WMO FTP Format in the directory, it uploads the file to the endpoint URL and delete it.

Daemon program : `httpsputd.sh`

`httpsputd.sh` : works as a daemon program, and operates continuous transmissions.

- Outputs its process to a log file.
- In case of timeout, it repeats transmission for a certain time.
- If an fatal error is detected, it stops.
- Uses `cURL` as a file uploading tool.

Daemon program : httpsputd.sh

httpsputd.sh : works as a daemon program, and operates continuous transmissions.

Usge:

- Start : sh httpsputd.sh start
- Stop : sh httpsputd.sh stop
- Restart : sh httpsputd.sh restart

Cygwin

Cygwin

Get that [Linux](#) feeling - on Windows

What...

...is it?

Cygwin is:

- a large collection of GNU and Open Source tools which provide functionality similar to a [Linux distribution](#) on Windows.
- a DLL (cygwin1.dll) which provides substantial POSIX API functionality.

...isn't it?

Cygwin is not:

- a way to run native Linux apps on Windows. You must rebuild your application *from source* if you want it to run on Windows.
- a way to magically make native Windows apps aware of UNIX® functionality like signals, ptys, etc. Again, you need to build your apps *from source* if you want to take advantage of Cygwin functionality.

Source : <https://www.cygwin.com/>

Cases

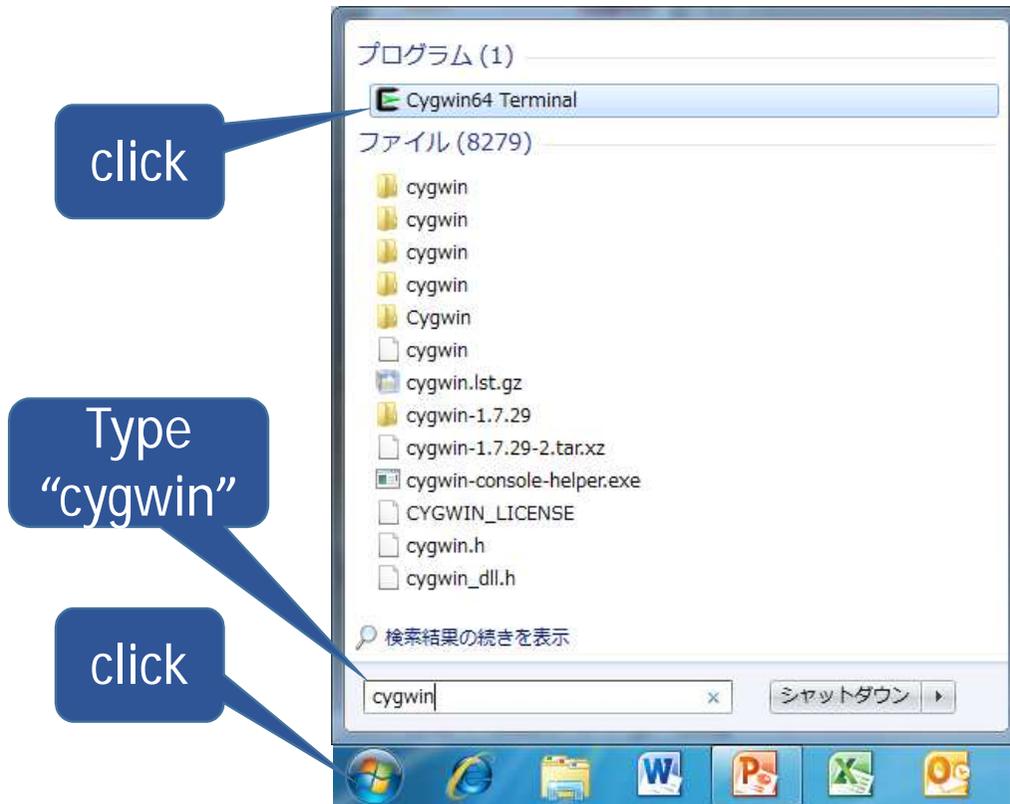
Case 1 : Interactive Upload

Case 2 : Error case

Case 3 : Upload by the daemon program, `httpspu`td.sh

Case 1 : Interactive Upload

Start Cygwin



Change font size

Larger : [Ctr] + [+]

Smaller : [Ctr] + [-]

Case 1 : Interactive Upload

Change current directory to work directory

Work directory : /cygdrive/c/wisworkshop/interactive

```
> cd /cygdrive/c/wisworkshop/interactive
```

```
> pwd
```

```
/cygdrive/c/wisworkshop/interactive
```

Case 1 : Interactive Upload

List files in the work directory

```
> ls
```

Case 1 : Interactive Upload

View contents of file

```
> cat -e filename
```

Please change filename to the one which you use.

Control Characters:

^A : SOH

^M : CR

^C : ETX

\$: LF

Case 1 : Interactive Upload

Check curl install

```
> curl
```

```
curl: try 'curl --help' or 'curl --manual' for more information
```

Case 1 : Interactive Upload

Practice file upload

```
> curl -s -i -T filename -u user:password https://endpointURL/
```

The URL “https://endpointURL” is used as an example purpose only. This URL must be different in actual practice.

-s : tells curl not to show progress meter or error message.

-i : have curl include HTTP header in the out.

-T : transfer the specified local file to the remote URL.

If this is used on an HTTP(S) server, the PUT method will be used.

-u : specify the user name and password to use for server authentication.

Case 1 : Interactive Upload

HTTP/1.1 201 Created

Status-Line

Date: Wed, 12 Nov 2014 01:50:01 GMT

Headers

Vary: Accept-Encoding

Content-Type: text/plain; charset=UTF-8

Content-Length: 52

Connection: Keep-alive

https://endpointURL/filename

Response body

Case 1 : Interactive Upload

Check GISC cache

<http://www.wis-jma.go.jp/data/browse>



The screenshot shows the WIS Portal - GISC Tokyo website. The header includes the title "WIS Portal - GISC Tokyo" and the subtitle "Welcome to Tokyo Global Information System Centre!". A navigation menu contains links for Home, About WIS, Warning, KML, WMO format, Metadata, Help Desk, and News. A "Next" button with a right-pointing arrow is visible. A data entry box contains the following information:

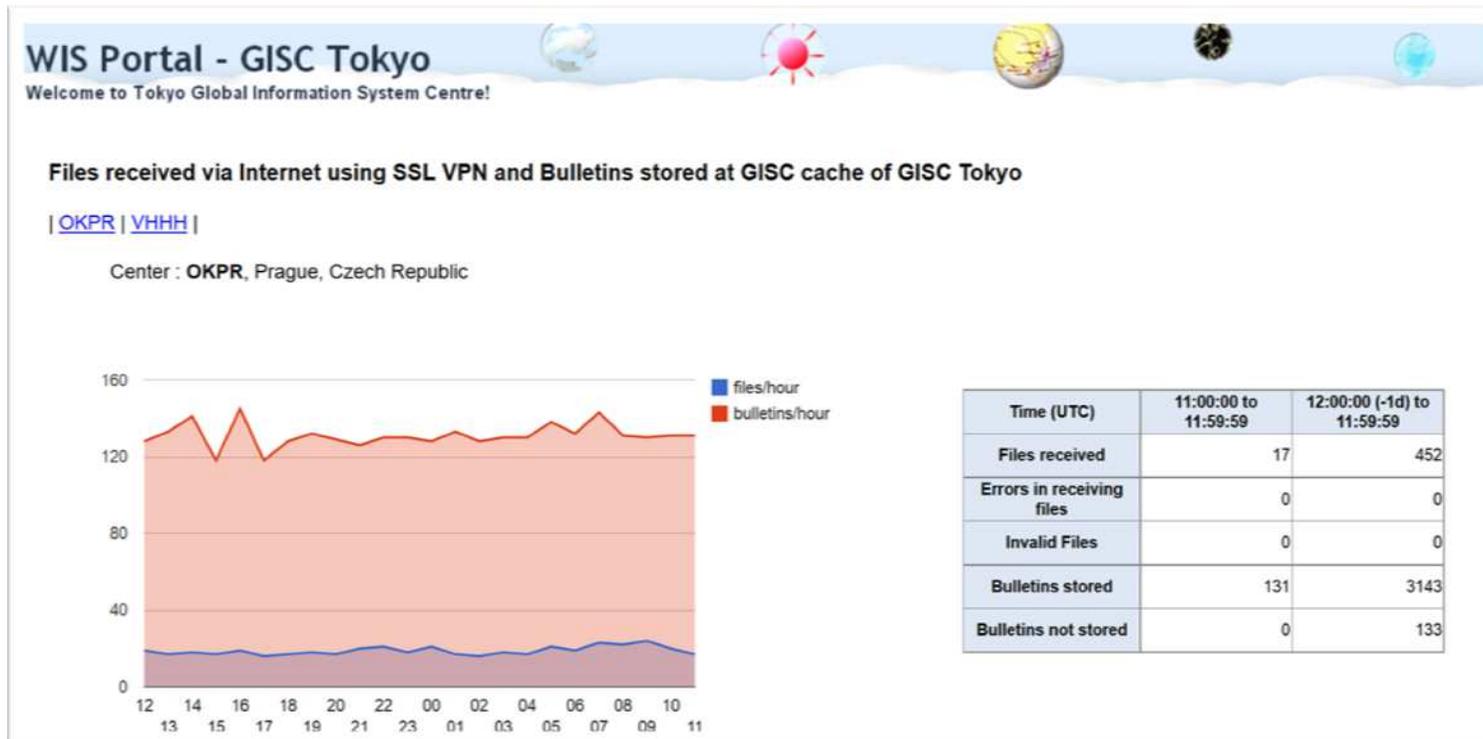
Access[**Closed**] Type[**BUFR**] Category[**Upper air**] Subcategory[**PILOT**] Region[**Europe**] Location[**Poland**]
Indicator[**SOWR**] ReferenceTime[**2014-11-09T07:43:00Z**]
2014-11-09T07:50:35Z
| [IUPD43](#) | [IUPD45](#) |

Headline

Case 1 : Interactive Upload

Check the 24 hour Graphical Monitoring page

<http://www.wis-jma.go.jp/iwgmonitor/iwgmonitor.jsp>



Case 2 : Error case

Wrong URL

Cygwin Tip :
You can call previous commands
by the up arrow key.

```
> curl -s -i -T filename -u user:password https://wrong_endpointURL/
```

The URL “https://wrong_endpointURL” is used as an example purpose only. This URL must be different in actual practice.

```
HTTP/1.1 405 Method Not Allowed
Date: Wed, 12 Nov 2014 01:08:38 GMT
Content-Type: text/html; charset=utf-8
Vary: Accept-Encoding
Content-Length: 1112
Connection: Keep-alive
```

Case 3 : Upload by a daemon program

Change current directory to work directory :

```
Work directory : /cygdrive/c/wisworkshop/httpspud
```

```
> cd /cygdrive/c/wisworkshop/httpspud
```

```
> pwd
```

```
/cygdrive/c/wisworkshop/httpspud
```

Case 3 : Upload by a daemon program

View structure of httpspu^td directory

> ls

- dataDir : Directory where httpspu^td.sh checks the WMO files
- httpspu^td.sh : Daemon program for continuous transmission
- logDir : Directory for storing log and housekeeping files
- WMOFTPFormat : Directory which contains WMO Files for uploading in this case

Case 3 : Upload by a daemon program

Run httpspupd.sh

> nohup sh httpspupd.sh start &

Move a sample file to input directory

> cygstart dataDir

> mv WMOFTPFormat/filename dataDir/

Case 3 : Upload by a daemon program

Cehck log

> less logDir/wislog

2014-11-14 18:26:14 [INFO] process starts.

2014-11-14 18:26:15	[INFO]	https://endpointURL/filename	201	130
Date	Message type	URL	Response code	File size
2014-11-14 18:26:16	[INFO]	process ends		

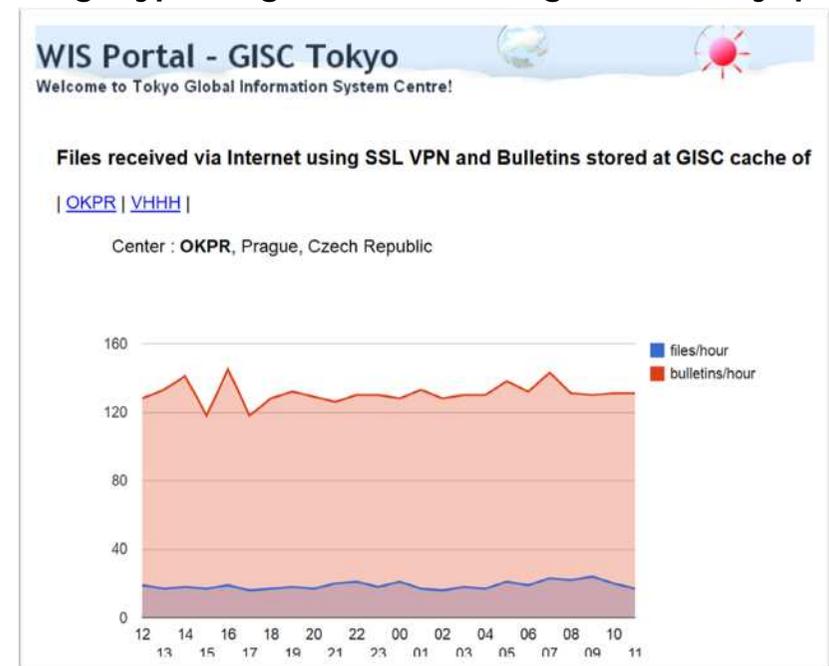
Case 3 : Upload by a daemon program

Check GISC cache and the 24hr graphical monitoring page

<http://www.wis-jma.go.jp/data/browse>

<http://www.wis-jma.go.jp/iwgmonitor/iwgmonitor.jsp>

The screenshot shows the 'WIS Portal - GISC Tokyo' interface. At the top, it says 'Welcome to Tokyo Global Information System Centre!'. Below this is a navigation menu with links: Home, About WIS, Warning, KML, WMO format, Metadata, Help Desk, and News. A 'Next' button is visible. The main content area displays a data entry with the following details: Access[Closed], Type[BUFR], Category[Upper air], Subcategory[PILOT], Region[Europe], Location[Poland], Indicator[SOWR], and ReferenceTime[2014-11-09T07:43:00Z]. Below this, there is a timestamp '2014-11-09T07:50:35Z' and a list of identifiers: | IUPD43 | IUPD45 |. At the bottom, the same data entry details are repeated.



Exercise

upload files

- upload sample files

check transmission for the upload

- log of transmission
- 24hr Graphical Monitor
- GISC Cache

Outline

Lecture

- What is the service?
- what users need to do to start to use it

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**HTTPS File Uploading Service
for your Bulletin transmissions to GISC Tokyo.**

Thank you for your attention.