



1 Notification

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This change to existing arrangements to take effect midnight 27 April 2022 Australian Eastern time (UTC 14:00 hrs Wednesday 27 April 2022).

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2 Accessing Ginan Products and Streams

Geoscience Australia is now releasing regularly scheduled precise geodetic product files and a continuously running RTCM correction stream. These are all in beta-prototype form, and not for operational use - testing only.

Ginan is the core piece of software that is used to produce these data products. It processes observational data from highly precise GNSS receivers in continuously operating reference stations (CORS) located around the world. Processing this with other model and reference data allows Ginan to create precise orbital ephemerides of GNSS satellites, corrections to clocks, positions of the stations and a real-time correction stream that updates the GNSS satellite orbits and clocks broadcast by the satellites.

Ginan on GitHub: <https://github.com/GeoscienceAustralia/ginan>

2.1 Accessing Geodetic Products

You can access geodetic file-based products without any log-on credentials.

Currently these files can be accessed via either SFTP or S3. Steps to use each method are provided below.

2.1.1 SFTP

In your console, type the following to log on anonymously:

```
$ sftp anonymous@sftp.data.gnss.ga.gov.au
```

You will be notified that authenticity can't be established and asked to add it to continue. Type yes. The RSA key fingerprint will be added to your list of known hosts. This should look something like that below:

```
The authenticity of host 'sftp.data.gnss.ga.gov.au (IP)' can't be established.  
RSA key fingerprint is SHA256:xxxxxxx.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added host 'sftp.data.gnss.ga.gov.au (IP)' (RSA) to the list  
of known hosts.
```

You will be asked to provide your email address as a password.

This is optional and any passphrase you provide will allow access. We do ask you provide your email address so that we can notify you of any updates or changes.

The above should look something like this:

```
For public access please login as user 'anonymous' with your email address as the password.
```

```
anonymous@sftp.data.gnss.ga.gov.au's password:
```

```
Connected to sftp.data.gnss.ga.gov.au.
```

Once in, you will be in the sftp terminal and you can navigate as in a linux terminal, e.g.

```
sftp> ls
products      restricted  rinex      site-logs
```

This allows you to explore all the file products that we provide.

To download, use the get command:

```
get <remote-path-to-file> <local-path-to-place-file>
```

e.g., to copy the ultra-rapid orbit file for 1800 UTC, day-of-year 117 and year 2022, we can use the following:

```
get products/2022/2207/GAG0EXPULT_20221171800_01D_15M_ORB.sp3.gz .
```

The product directory follows the following general structure:

```
products/YEAR/GPS_WEEK/FILE_NAME.file_type.gz
```

2.1.2 AWS

Assuming you have the AWS CLI installed, you can also access the AWS s3 bucket where our products are stored by using the following command:

```
aws --no-sign-request s3 ls s3://ga-gnss-products-v1/public/
```

This will list the year directories available. As a public facing directory, the --no-sign-request flag allows anyone to access it.

The AWS CLI includes commands for copying and syncing files and directories, respectively. These are cp and sync

For example, if we require the ultra-rapid orbit file for 1200 UTC, day-of-year 78 and year 2022, we can use the following:

```
aws --no-sign-request s3 cp s3://ga-gnss-products-v1/public/2022/2207/GAG0EXPULT_20221171800_01D_15M_ORB.sp3.gz .
```

This will copy the file to your current local working directory.

Replace the "." above with the path you would like the file to end up:

```
aws --no-sign-request s3 cp s3://ga-gnss-products-v1/public/2022/2207/GAG0EXPULT_20221171800_01D_15M_ORB.sp3.gz
/path/to/download/to/
```

To copy out every file from a given directory, use the sync command:

```
aws --no-sign-request s3 sync s3://ga-gnss-products-v1/public/2022/2207/  
/path/to/download/to/
```

2.2 Accessing Real-Time Correction Stream

To access the real-time corrections stream provided by GA, you will first need to register an account at <https://gnss.ga.gov.au/stream>

This is the same account needed to access the real-time GNSS data streams from Continuously Operating Reference Stations (CORS) provided by GA.

If you have already created an account before, you do not need to make a new one.

To create a new account press "Register for an account" button near the top of the page.

This will take you to the registration page where you will be asked to fill in the form details.

After completing the form, click Submit.

Please ensure all fields are filled and you do not choose an existing username.

If you cannot click the submit button (greyed out) then choose another username or reset your password at the "reset it here" link at the bottom of the page.

After hitting submit, an email will be sent to the email address you provided.

Confirming receipt via the link in the email will finalise the process of registration.

You will now be able to access the stream.

To test the stream and that your user credentials were successfully created, you can access the binary stream via curl:

```
$ curl -H "Ntrip-Version: NTRIP/2.0" -is --output -  
https://ntrip.data.gnss.ga.gov.au/SSRA00GAA0 -u <username>
```

You will be asked to provide your password:

```
Enter host password for user '<username>':
```

Once entered, you will be connected and should see a HTTP 200 response,

```
HTTP/1.1 200 OK  
Connection: close  
Content-Type: gnss/data  
Date: Thu, 17 Mar 2022 23:59:11 GMT  
Transfer-Encoding: chunked
```

followed by the stream. This should look something like this:

```
#####:0###,b  
A(##@` X,##  
##p##<@` X ,##  
,## Q#####\@` 0 X
```

This verifies you have successfully connected to the stream and your user credentials are valid.

You may now connect using your preferred NTRIP client to read in the stream such as RTKlib, BKG Ntrip Client (BNC), etc.

The mountpoint SSRA00GAA0 currently transmits 1059 and 1060 RTCM3 messages. In future 1265 messages will be included as well.