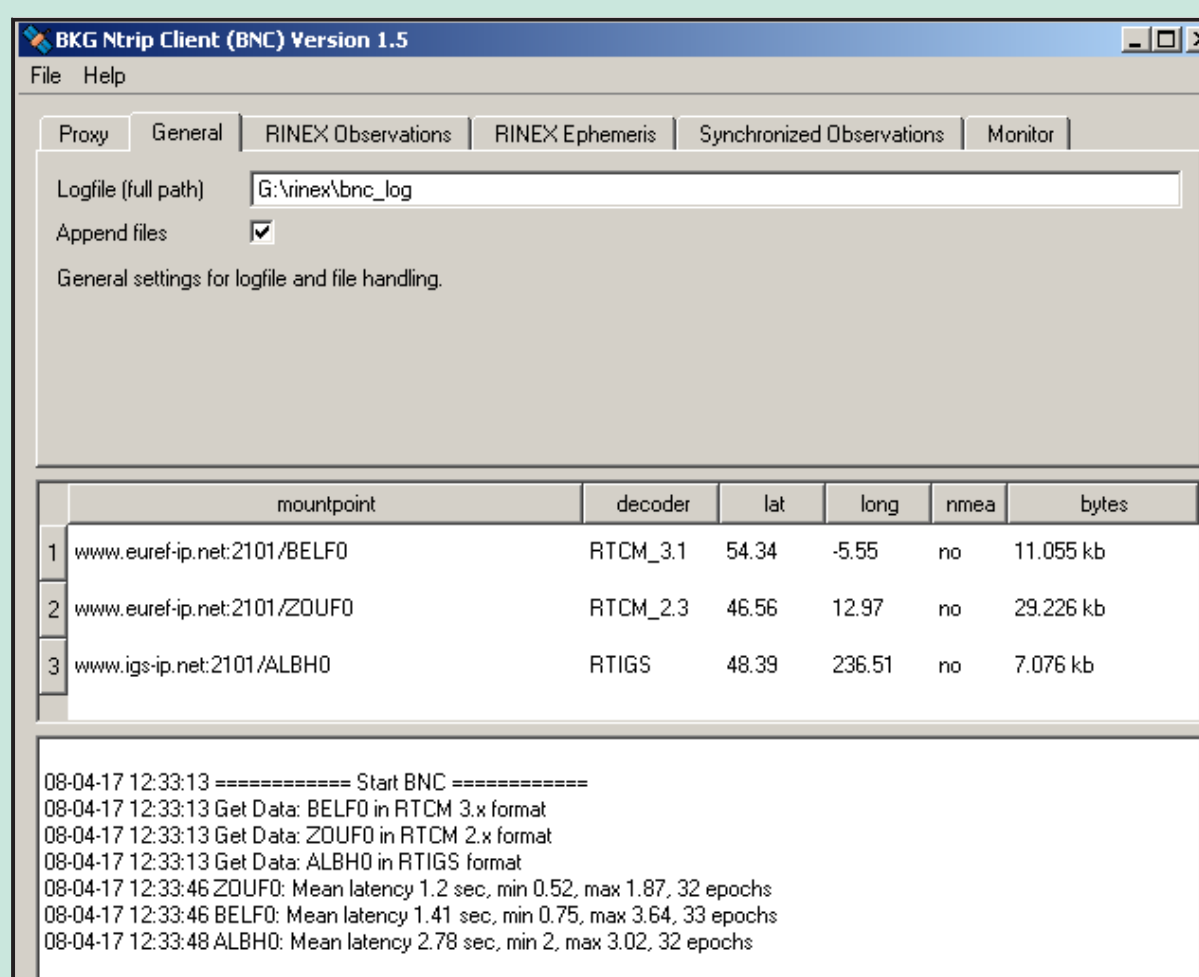
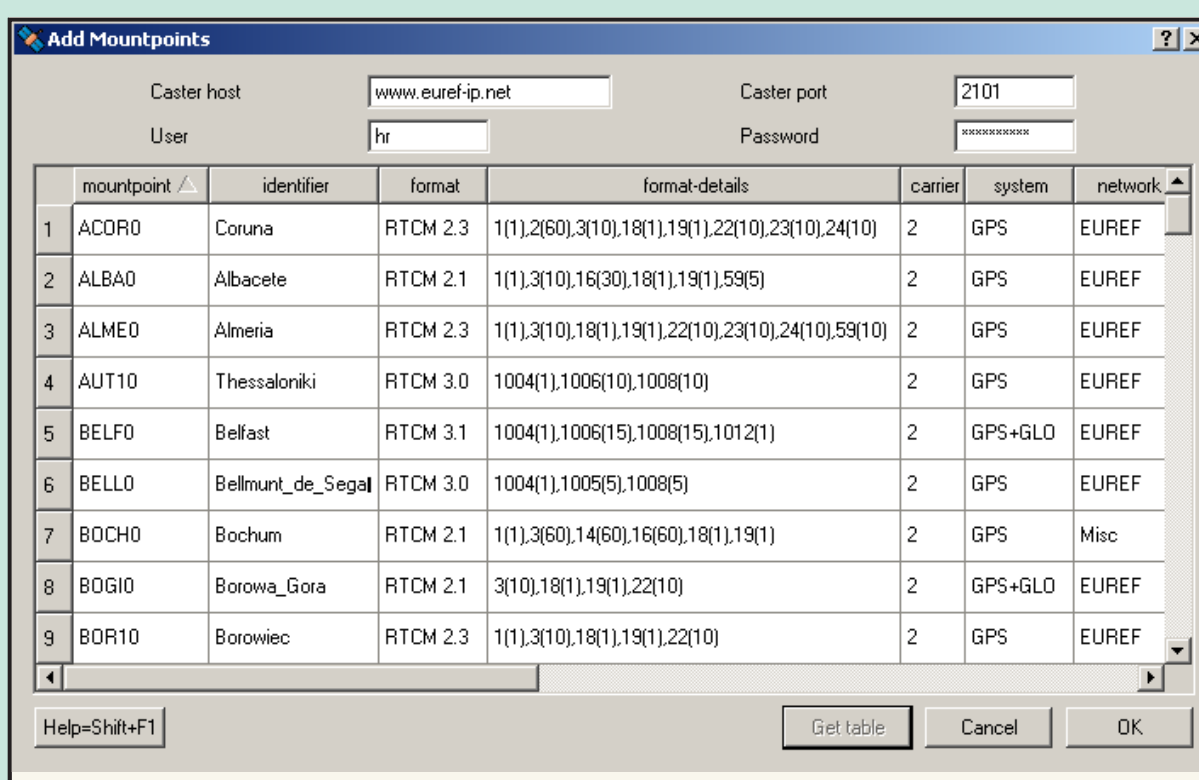


# The BKG Ntrip Client (BNC)



The purpose of BNC is to (a) retrieve real-time GNSS data streams available through NTRIP transport protocol, (b) generate high-rate RINEX Observation and Navigation files to support near real-time GNSS post-processing applications, and/or (c) generate ephemeris and synchronized observations epoch by epoch through an IP port to support real-time GNSS engines, and/or (d) monitor the performance of a network of real-time GNSS reference stations to generate advisory notes.

BNC has been written under GNU General Public License (GPL). Binaries for BNC are available for Windows, 32-bit Linux, 64-bit Linux, Solaris, and Mac.

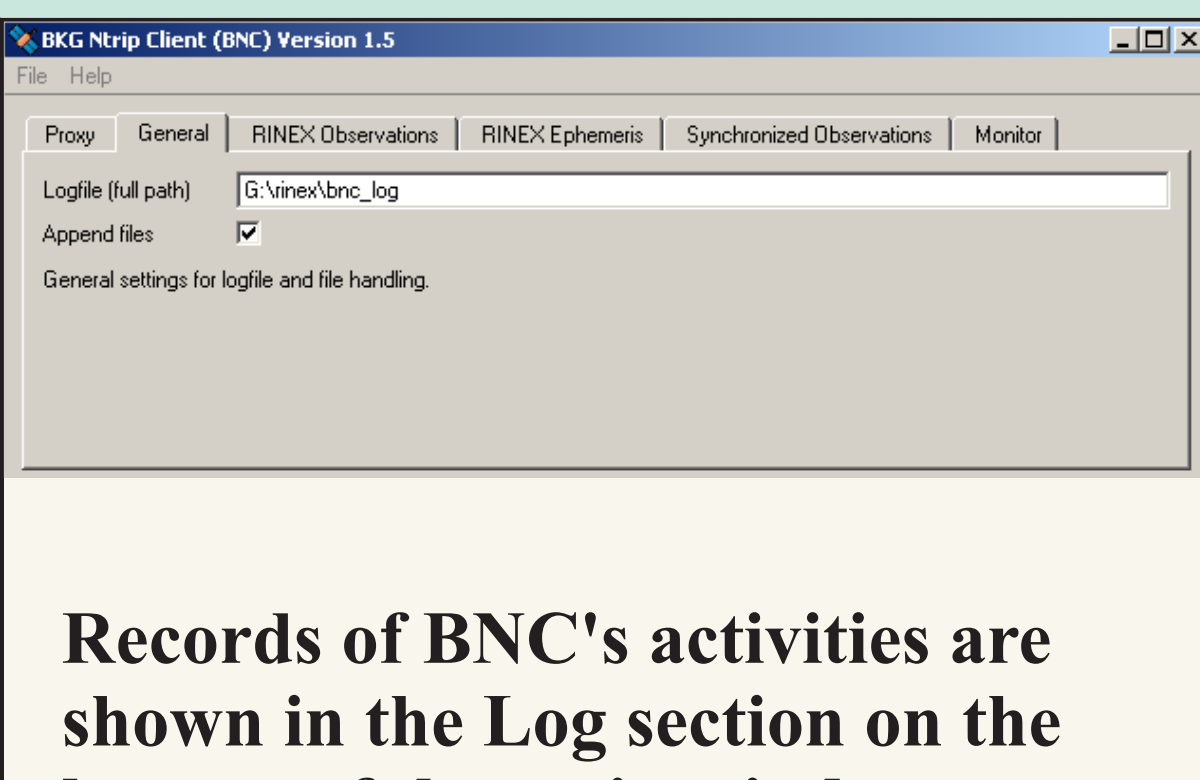


Streams selected for retrieval are listed under the 'Mountpoints' section on BNC's main window. Use the 'Get Table' button to download the source-table from the NTRIP broadcaster.

Enter the NTRIP broadcaster host IP and port number. Enter a valid 'User' ID and 'Password' for access to protected streams.

Select your streams line by line, use +Shift and +Ctrl when necessary. Hit 'OK' to return to the main window. If you wish you can click on 'Add Mountpoints' and repeat the process again to retrieve mountpoints from different casters.

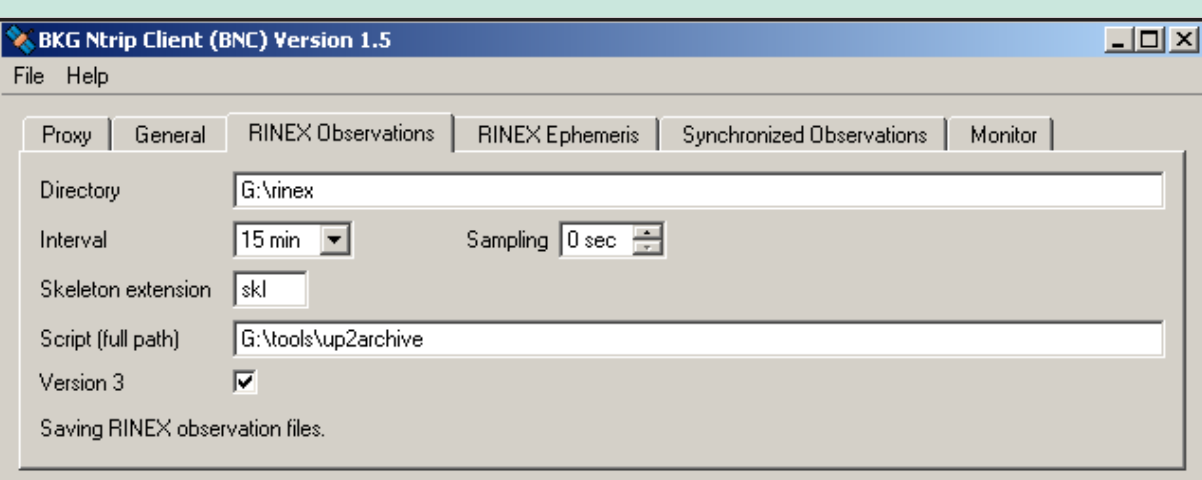
BNC automatically allocates one of its internal decoders to a stream based on the stream's 'format' and 'format-details' as given in the source-table.



Records of BNC's activities are shown in the Log section on the bottom of the main window. These logs can be saved into a file when a valid path is specified in the 'Log (full path)' field.

The message log covers the communication status between BNC and the NTRIP broadcaster as well as problems that may occur in the communication link, stream availability, stream delay, stream conversion etc.

When BNC is started, new files are created by default and any existing files with the same name will be overwritten. However, users might want to append existing files following a restart of BNC, a system crash or when BNC crashed. Tick 'Append files' to continue with existing files and keep what has been recorded so far. Note that option 'Append files' affects all types of files created by BNC.



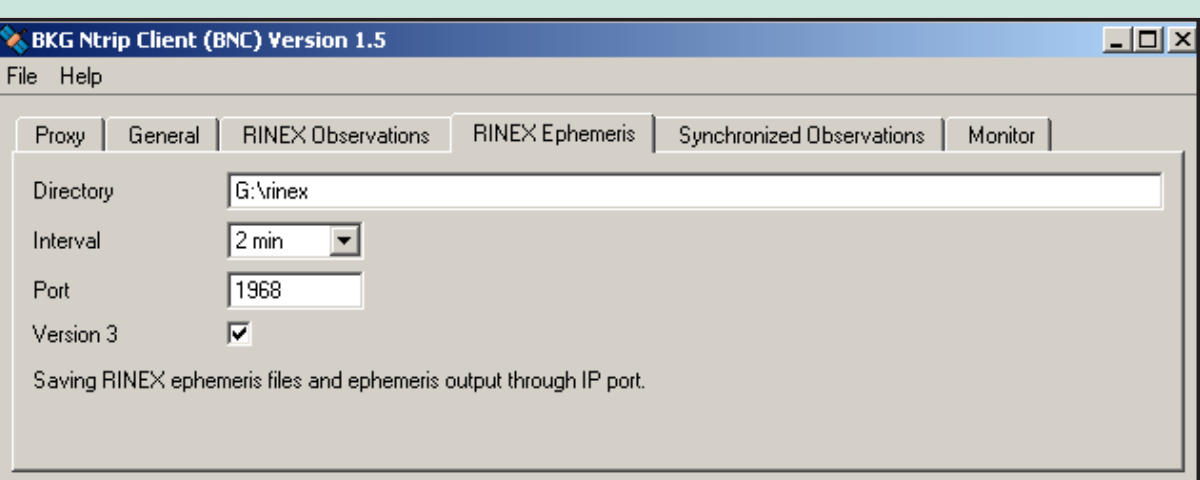
Here you can specify the path to where the RINEX Observation files will be stored. Select the length of the RINEX Observation file generated. Select the RINEX Observation sampling interval in seconds.

Whenever BNC starts generating RINEX Observation files, it first tries to retrieve information needed for RINEX headers from so-called public RINEX header skeleton files which are derived from sitelogs.

Whenever a RINEX Observation file is saved, you might want to compress, copy or upload it immediately via FTP.

BNC allows you to execute a script/batch file to carry out these operations.

The default format for RINEX Observation files is RINEX Version 2.11. Select 'Version 3' if you would like to save observations in RINEX Version 3 format.

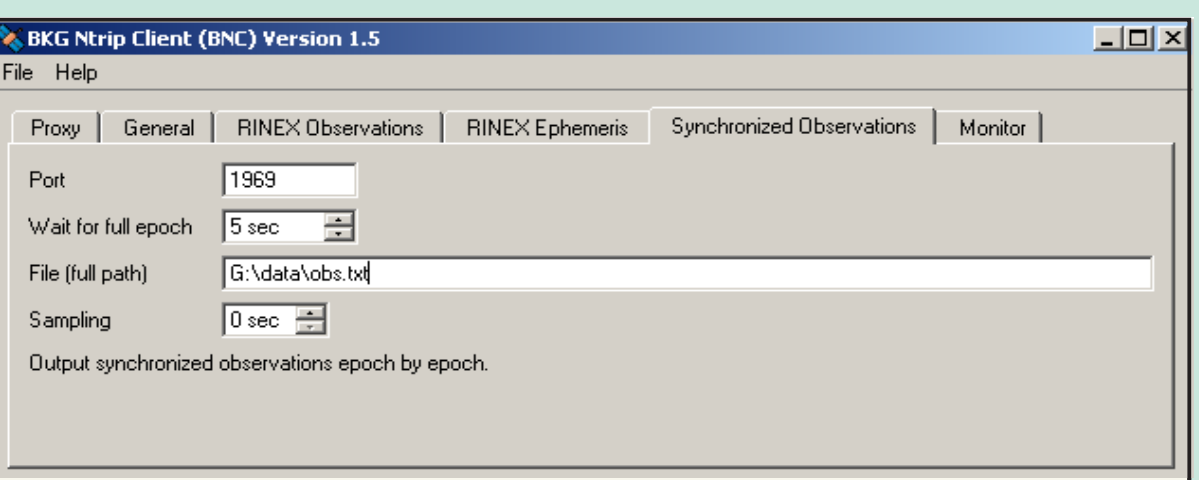


Broadcast ephemeris can be saved as RINEX Navigation files when received via RTCM Version 3.x as message types 1019 (GPS) and 1020 (GLONASS) or via RTIGS records type 300.

Specify the path for saving broadcast ephemeris data as RINEX Navigation files. Select the length of the RINEX Navigation file generated.

BNC can output broadcast ephemeris in RINEX ASCII format on your local through an IP port. Specify an IP port number to activate this function.

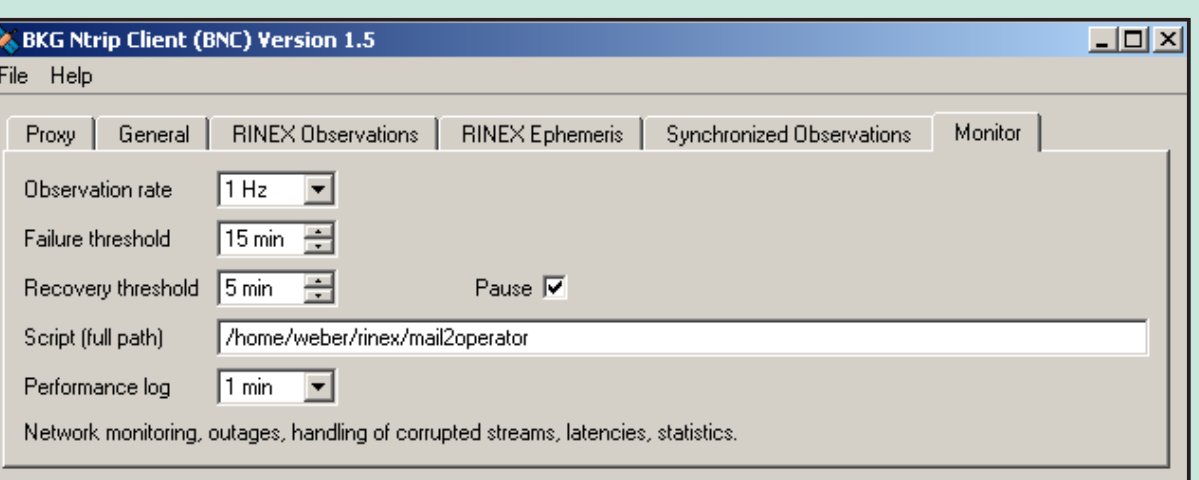
Default format for RINEX Navigation files containing broadcast ephemeris is RINEX Version 2.11. Select 'Version 3' if you want to save the ephemeris in RINEX Version 3 format.



BNC can produce synchronized observations in binary format on your local host through an IP 'Port'. Specify an IP port number here to activate this function.

When feeding a real-time GNSS engine waiting for input epoch by epoch, BNC drops whatever is received later than 'Wait for full epoch' seconds. A value of 3 to 5 seconds could be an appropriate choice for that, depending on the latency of the incoming streams and the delay acceptable for your real-time GNSS product.

Specifies the full path to a 'File' where synchronized observations are saved in plain ASCII format. The default value is an empty option field, meaning that no ASCII output file is created. Select the observation output sampling interval in seconds.



At various times, the incoming stream might become unavailable or corrupted. In such cases, it is important that the BNC operator and/or the stream providers become aware of the situation.

BNC can decide whether a stream has an outage or its content is corrupted. This procedure needs a rough a priori estimate of the expected observation rate.

Failure/recovery events will be reported if no or corrupted data is received continuously for longer than the 'Failure threshold' time or valid observations are again detected continuously throughout the 'Recovery threshold' time span.

BNC can trigger a shell script or a batch file to be executed when one of these events are reported. This script can be used to email an advisory note to network operator or stream providers.

Latencies and statistical information can be recorded in the Log file/section at the end of each 'Performance log' interval.

