



Ntrip Modernization and Professional Ntrip Caster

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- This is a workshop!
- Please ask whenever you want!



- 1 Ntrip and Ntrip 2
- 2 Ntrip 2 and SSL/TLS
- 3 Internet protocol version 6
- 4 Server software.rtcn-ntrip.org
- 5 Trouble shooting Ntrip setup

Ntrip



- HTTP based protocol for GNSS data transmission
- Like a web server, but for data streams
- Established system for correction data transmission
- Supported by many end-user devices



Updates:

- Error fixes in HTTP protocol usage
- Backwards compatible

New features:

- Plain UDP protocol
- RTSP - UDP protocol
- Sourcetable filtering

Every client should use bug-fixed Ntrip2 communication!



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Features of SSL for Ntrip



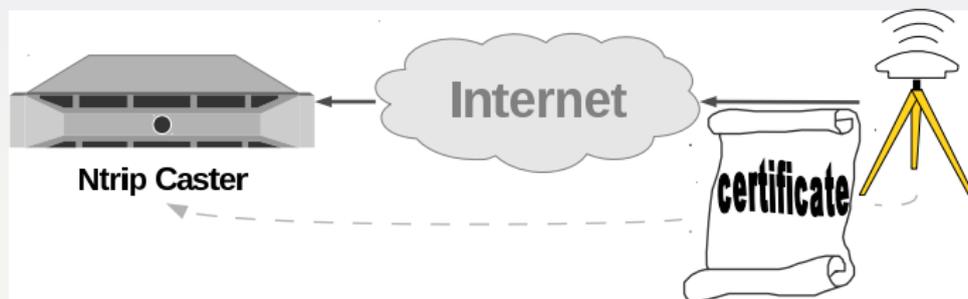
- Encryption of transferred data (including username and password)
- Authentication of server or data provider
- Authentication of user
- Authentication of user equipment
- Communication privacy
- SSL is established Internet standard

Server authentication



- Server sends certificate
- Client is able to determine if server is the correct one
- Same mechanism as for online banking
- Required for safety of life applications

Client authentication



- Client sends certificate
- Server is able to determine if client has permissions
- Certificates can even replace username and password
- Individual certificates stored in hardware can identify receiver

BKG Ntrip servers



- BKG Ntrip servers (EUREF, IGS, ...) offer SSL
- Professional Caster has no direct SSL support
- Testable in web-browser: `https://igs-ip.net/`
- Self-signed certificates!
 - Browser warning
 - Security exception or Certificate installation
 - Certificates downloadable at
`http://software.rtcn-ntrip.org/`



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Why IPv6



- Since 2011 no new IP addresses available
- Switching to new protocol necessary
- Standard since 1998
- 2^{128} instead of 2^{32} addresses
- Other improvements in protocol design

Dual stack



- Until transition is complete, both protocols used in parallel
- Server address ntrip.dgpsonline.eu
 - IPv4: 85.10.201.227
 - IPv6: 2a01:4f8:62:4182::4
- In Asia some networks are using IPv6 only
- After 10-20 years probably only IPv6 will be used

Who cares?



Contra:

- No real enforcement for implementation
- Address shortness not yet important in Europe and America
- IPv4 works well

Pro:

- Mobile internet increases IPv6 demand
- Providers starts to deploy IPv6 to end-users
- On servers side dual stack installations are increasing
- Software updates mainly in a few network functions

Hard and software should be changed now before real demand.
IPv6 will come for sure.



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BKG open source software



New Ticket - RTCM-Ntrip - Mozilla Firefox

Das | Bearbeiten | Ansicht | Chronik | Lesezeichen | Extras | Hilfe

New Ticket - RTCM-Ntrip

https://software.rtcn-ntrip.org/newticket

Google

 Search

logged in as stoeker | Logout | Preferences | Help/Guide | About Trac

Wiki | Timeline | ChangeLog | Browse Source | View Tickets | **New Ticket** | Search | Admin

Ihre Einstellungen wurden gespeichert.

Create New Ticket

Properties

Summary:

Reporter: stoeker

Description: You may use [WikiFormatting](#) here.

Type: Priority:

Component: Version:

Keywords: Cc:

Owner:

I have files to attach to this ticket

Note: See [TracTickets](#) for help on using Tickets.

 Powered by Trac 0.12.2 by Edgewall Software. Visit the Trac open source project at <http://trac.edgewall.org/>



BKG open source software



- <http://software.rtcn-ntrip.org/>
- Software repository for open source software
 - BNC
 - ntripserver
 - ntripclient
 - rtcn3torinex
- Bug tracker to report bugs
- Wiki to collect related information

BKG open source software repository



- Always most recent software
- RTCM encoder/decoder bug-fixes
 - RTCM SSR (State space - clock & orbit corrections)
 - RTCM MSM (Multiple signal messages)
- Bug fixes and error reports welcome



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Finding the component



- Internet connection failure
- Server error (wrong name, IP, port)
- Permissions: Username or password wrong
- Data stream not available
- Wrong data format (CMR, RTCM, RTCM3, ...)

The last page



- Take a look at our developments.
- <http://www.alberding.eu/> (currently updated)

Use our software!