Net.Time software / firmware release notes

1. Software 2.0.X

Date	19/09/2024
Software version	2.0.1
Firmware versions	NTi-0073

Improvements included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	Adds compatibility with the new RIC-56 which offers different kinds of sinusoidal and square wave frequency outputs and at the same time IRIG-B, 1PPS and DCF77 outputs.	
2	Adds compatibility with the new RIC-152, which includes two extra electrical / optical Ethernet outputs and other additional frequency, time and alert outputs.	
3	Support of new and extended packet services in units equipped with four ports through the RIC-152.	
4	Syslog, network management and SNMP are now configurable from the web GUI. PSUs are now dynamic images in the layout represented in the web GUI.	
5	NTP authentication can now be configured from the web GUI	
6	Adds compatibility with the NETTIME-EVENTS-MIB that provides reliable reporting of events through an SNMP interface.	
7	Miscellaneous improvements in the log message format which now provides support for parametrizable values.	
8	Includes display filters for log messages. Log messages can be also filtered when they are reported through the Syslog protocol or the SYSLOG-MSG-MIB.	
9	New events are now logged by Net.Time, including events related to user activity or faults in the management port.	
10	Increased resolution in inaccuracy estimates for Power and Utility PTP profiles.	
11	Performance measured in NTP client ports is now propagated to synchronization outputs.	

Date	19/02/2025
Software version	2.1.7
Firmware versions	NTi-0075 / NTiS-0075

Improvements included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	Supports new oscillator: High Quality OCXO.	
2	Adds basic file management to the Web GUI.	
3	Supports SNMP GETBULK requests.	
4	Supports new ATSL-SYSTEM-MIB.	

Most relevant bug corrections included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	Syslog messages can now travel through gateways in routed networks	
2	PTP is now working normally in RIC-152 Ethernet ports	
3	Fixes miscellaneous bugs related with the NTP server and client implementations.	

2. Software 1.6.X

Date	20/03/2024
Software version	1.6.1
Firmware versions	NTi-006F

Improvements included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	Support of multi-band GNSS receivers (ZED, LEA-F9T), which provides more accurate and reliable operation.	•
2	Built in jamming and spoofing detection for GNSS receivers.	• Spoofing detection and dual-band jamming detection requires multi-band GNSS receiver.
3	Support Indian Regional Navigation Satellite System (IRNSS) / Navigation with Indian Constellation (NavIC).	• Requires multi-band GNSS receiver
4	New interfaces added to the mainframe, *clk05*, which provides frequency outputs, and *pcm03*, which adds a new T1 or E1 clock reference output to the unit.	• Requires support of frequency reference outputs in the unit.
5	New "minimum CN0" and "minimum elevation" settings for the GNSS receiver, which enables users to block reception from certain satellites.	
6	Improvement in PTP accuracy field which now displays degradation paths depending on the current oscillator model (OCXO or Rubidium).	
7	New commands to control the *clockClass* delivered to PTP clients in IEEE 1588v2 time distribution applications.	
8	New firmware implementation of the NTP protocol that now offers a throughput or approximately 500000 transactions per second.	
9	Symmetric key MD5 authentication for NTP.	
10	NTP client available in the *protocol translator* packet service.	• Requires both the protocol translator and the NTP options installed in the unit.
11	Ability to define arbitrary users in the system and to assign a role to them (*viewer*, *controller* or *administrator*).	
12	Ability to enable or disable user accounts or to lock the accounts in certain situations.	
13	Configurable welcome banner for SSH, Telnet and console sessions.	
14	The system now reports the date and time of the last login and number of failed login attempts before the current session for SSH, Telnet and console session.	
15	Configurable timeout in console, web and SSH/Telnet sessions.	
16	Ability to restrict the networks and host where the unit can be managed.	
17	Support of AAA servers based on RADIUS and TACACS+ protocols.	

#	Description	Remarks
18	Security profiles providing custom authentication and session control policies.	
19	Recording of command history for each individual user. Ability to display the command history from any user by system administrators.	
20	General improvements in the message logging mechanism.	
21	The system now supports a custom product and brand name.This new feature allows product re-branding.	
22	The alarm LED now displays historic alarms using the yellow colour.	
23	Miscellaneous improvements and new functions available in the web GUI	

Date	16/04/2024
Software version	1.6.4
Firmware versions	NTi-0070

Bug corrections included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	Fixes the SyncE issue related with incorrect SSM mappings for some QL values.	
2	Includes a new firmware with several improvements related with reliability of the NTP server function.	
3	The installation program now does not allow upgrading from software releases older than 1.6.1.	

3. Software 1.4.X

Date	1/02/2023
Software version	1.4.1
Firmware versions	NTi-0066

Improvements included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	ITU-T G.8265.1 PTP profile for frequency distribution in packet-switched networks (master mode).	• Requires the PTP telecom profiles software option.
2	ITU-T G.8275.1 PTP profile for time distribution with full support from the network (master and slave modes).	• Requires the PTP telecom profiles software option.
3	ITU-T G.8275.2 PTP profile fir time distribution with partial support from the network (master and slave modes).	• Requires the PTP telecom profiles software option.
4	SNMPv2c agent with the "community"-based security model and the SNMPv3 agent with support of *User Security Mode*.	
5	*Trap* and *Inform* generation for SNMPv2c and SNMPv3 agents.	
6	Implements miscellaneous SNMP MIBs, including MIBs to retrieve port information, generate log messages and manage the PTP and PRP services.	
7	Synchronous Ethernet inputs and outputs including ESMC generation and decoding and holdover to Synchronous Ethernet from time interfaces.	• Requires the SyncE software option.

#	Description	Remarks
8	Miscellaneous Web GUI improvements including editable fields for most configuration parameters.	
9	UTC time zone, which becomes the default time zone for Net.Time units.	
10	New CLI commands to show and manage unicast PTP leases.	
11	New ePRTC, ePRC and eEEC clock classes.	

Date	21/02/2023
Software version	1.4.3
Firmware versions	NTi-0066

Improvements included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	Adds software support for LCD screens	• This improvement is relevant for Net.Time models equipped with LCD screen (Net.Time Phi and Net.Time Omega)

Date	01/03/2023
Software version	1.4.4
Firmware versions	NTi-0066

Bug corrections included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	Fixes the issue related with LCD panel information reported when the clock reference is different from GNSS.	• This improvement is relevant for Net.Time models equipped with LCD screen (Net.Time Phi and Net.Time Omega)

4. Software 1.2.X

Date	14/03/2022
Software version	1.2.1
Firmware versions	NTi-0061

Improvements included in this software / firmware release are listed in the following table:

#	Description	Remarks
1	New PRP packet service to enable users to enable users to work with the Parallel Redundancy Protocol (PRP) defined in IEC 62439-3.	• Requires *PRP IEC 62439-3* software option.
2	Support of NTP timing distribution over PRP interfaces.	• Requires *PRP IEC 62439-3* and NTP software options.
3	PRP frame statistics including transmitted and received PRP frames with or without RCT trailer and miscellaneous error conditions.	• Requires *PRP IEC 62439-3* software option.
4	Dual PTP master / NTP server mode with the ability to enable one independent master / server instance in each of the available Ethernet ports when Net.Time is configured with the Packet Grandmaster packet service.	• Requires at least one of the available PTP or NTP software options.

#	Description	Remarks
5	New *Protocol Translator* packet service to enable users to configure PTP clock reference inputs and translate them into NTP outputs, PTP outputs with custom profiles or to any other clock reference output supported by Net.Time.	• Requires the *Boundary clock* software option.
6	Miscellaneous improvements in performance reporting in PTP, NTP and other interfaces through the *ClockClass*, *Accuracy*, *SSM* and other protocol fields.	
7	Compatibility with Replaceable Interface Cards (RICs). Users can use RICs to extend the functionality offered in the mainframe. Compatibility with five different RICs is implemented: RIC-50, RIC-52, RIC-54, RIC-82 and RIC-84.	• Requires any of the RIC-50, RIC-52, RIC-54, RIC-82 or RIC-84 modules.
8	Configuration of the pulse generation period in 1PPS outputs. This function enables users to set PPS periods other than 1 second.	
9	Support of alert interfaces that report any alarm generated in the system trough electronic or electro-mechanic relay contacts.	• Requires RIC-54, RIC-82 or RIC-84 modules.
10	Compatibility with DCF77 and Meinberg time codes.	• Requires any of the RIC-50, RIC-52, RIC-54, RIC-82 or RIC-84 modules.
11	Support of ASCII communication outputs supporting transmission of custom time codes in RS-232 or RS-422 / RS-485 communication interfaces without requiring 1PPS generation.	• Requires any of the RIC-50, RIC-52, RIC-54, RIC-82 or RIC-84 modules.
12	Configuration of NMEA messages in ASCII or ToD outputs. Three different options are supported: ZDA, GGA and RMC.	
13	Ability to configure local or UTC time zones in IRIG-B outputs or to decode the correct time zone from an IRIG-B input.	• Requires the IRIG-B software option
14	New port provisioning model to enable users to set the port in provisioned, maintenance or disabled modes.	
15	New port mapping model which provides a more scalable and clear mechanism to associate clock references to ports.	
16	Miscellaneous improvements and bug corrections in the file manager: listing and deletion of log files, startup configuration saving and improvements in configuration file listing	
17	Automatic log file rotation with configuration of the maximum log file size.	
18	Ability to operate in "time holdover" mode when all time references are lost and at least one frequency reference is still available. This mode can keep accurate time in the unit for a much longer time than in ordinary (frequency) holdover mode.	• Requires the "Frequency references" software option
19	Ability to work with time zones. Definition of custom time zones or configuration of predefined time-zones.	
20	Compatibility with Daylight Saving Time (DST) events. Configuration of DST events the custom time-zone. DST notifications in clock reference outputs. DST event decoding in clock reference inputs.	
21	Support of leap second events including notification to clock reference outputs supporting this function. Leap second decoding in clock reference inputs. Support of custom, user configurable leap second events.	
22	Support of HTTPS protocol in the web management interface. Users are now allowed to choose between HTTP or HTTPS.	
23	Mainframe and RIC module management from the web management interface for all the currently available RICs.	
24	Admin-status configuration, port mapping setting and connector selection from the web management interface.	

#	Description	Remarks
25	Support of administrator, controller and viewer accounts from the web management interface	