

Nyquist C4000 Server Software 7.0.1.535 and Firmware 5.0.228 Release Notes

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If you are updating a Nyquist System Controller that is currently running C4000 Release 6.0.0, follow the instructions in the section entitled "**Updating Nyquist System Controller from Release 6.0.0**".

If you are updating a Nyquist System Controller that is currently running a Release prior to C4000 Release 6.0.0, you must first update the Nyquist System Controller to C4000 Release 6.0.0 before proceeding with this software update. The only releases that can be updated to 6.0.0 are C4000 Releases 3.0.0, 4.0.0, and 5.0.0. If you are currently running C4000 Release 3.0.0, 4.0.0 or 5.0.0, you must first update your System Controller to the C4000 6.0.0 release; please follow the instructions found in the release notes for C4000 6.0.0.

If you are updating an existing Nyquist system installed on a custom server (not a Nyquist System Controller), follow the instructions in the section entitled "**Updating a Custom Server to Release 7.0.1**".

If you are adding appliance types that were not available with an earlier software release, you must perform a System Update before adding the new appliances.

WARNING! If the Automatic Failover feature is currently running on your Nyquist server, you must first disable Automatic Failover before you proceed with this Nyquist System Update. The Automatic Failover (AF) feature can be disabled by pressing the "Disable" button on the Automatic Failover page of both the primary and secondary servers. After you disable AF, the primary server will be configured to use the Master IP address as its IP address, while the secondary server will continue to be configured to use the secondary IP Address. You **MUST** disable Automatic Failover **BEFORE** applying this Nyquist system update.

WARNING! Regarding Nyquist Appliance Firmware Update (PLEASE READ)

During the final stage of the update process, Nyquist appliance firmware will be updated to a new version that is compatible with this release. Once Nyquist appliances have been updated to the new firmware associated with this release, the Nyquist appliance firmware should not be manually downgraded to a previous version of firmware because previous versions of Nyquist firmware are not compatible with this Nyquist server release.

Updating Nyquist System Controller from Releases 6.0.0

For Nyquist System Controllers, the update process will take approximately two hours to complete; please allocate at least two hours to perform the update. During the update process, a simple text display will be presented that describes the steps being taken to update the system. The System Controller will reboot several times during the update process.

Before beginning the upgrade process, ensure that your Network settings are properly configured.

Check for proper Internet site access by pressing "Check Internet Site Access" under the System Parameters page. **NOTE:** If any of the Internet Site Access Statuses come back with a FAILED status, don't continue with the installation. Talk with your network administrator to resolve the failure prior to continuing with the installation.

To upgrade a Nyquist System Controller to this new release, follow these steps:

1. Log into the Nyquist server using the Nyquist Web Interface. Use an account that has access to System Parameters, System Backup/Restore, Product License, and System Update pages.
2. Create a System Backup via the System Backup/Restore page.
3. Export the System Backup and save it.
4. Display the Product License page and write down the installed License Activation Key (LAK). The current LAK will remain active after the update.
5. On the Systems Parameters page, select System Update.
6. Upload the new Nyquist server software using the Upload button found on the System Update page.

Note: If you have Automatic Software Download enabled, the new release may already be listed and available on the System Update page.

7. Press the "Run Update" button associated with this release.

8. When the update dialog indicates that the update is complete. Press "OK" and then refresh the page until the "Update Status" page displays.
9. Periodically press the reload page button to keep the status page up to date.
10. During the upgrade process, if you see a "connection refused" page, it may stay that way for a few minutes before the status page resumes displaying normally.
11. After the status update displays, "Restoring System backup and upgrading data to C4000 7.0.1", press the reload page button until the Web interface dashboard is displayed, ignoring any error messages that may be displayed before the dashboard displays. Note: The web interface may display without first displaying the "Restoring System backup and upgrading data to C4000 7.0.1" message.
12. Once the system backup has been restored and updated, the update to Debian 12 and new Nyquist release is finished.
13. Verify that your Nyquist License Activation Key is still activated by viewing the Product License page.

Updating a Custom Server to Release 7.0.1

To upgrade a Custom Nyquist Server (not a Nyquist System Controller) to this new release, follow these steps:

1. Log into the Nyquist server using the Nyquist Web Interface. Use an account that has access to System Parameters, System Backup/Restore, Product License, and System Update pages.
2. Create a System Backup via the System Backup/Restore page.
3. Export the System Backup and save it for later use.
4. Display the Product License page, write down the installed License Activation Key (LAK) for later use, then press the "Release License" button to release the LAK.
5. Install Debian 12.7 (or higher revision like 12.10) on the existing server (which will wipe out the existing Nyquist system and configuration).
6. Ensure that the NetworkManager software is installed on your server, using the following commands:

```
# which nmcli
```

If the above command does not return '/usr/bin/nmcli', then execute the following command as the root user to install the NetworkManager package:

```
# apt-get install network-manager
```

7. Properly configure the network interfaces using NetworkManager (via nmcli commands).

Verify network connectivity to the Internet.

8. Copy the Nyquist release tar file to the server's /tmp folder.

9. While logged into the Linux server as user root, extract the Nyquist C4000 7.0.1 release by using the following commands:

```
# cd /
```

```
# tar xvPf /tmp/Nyquist-c4000-7.0.1.535.tar.gz
```

10. While logged into the Linux server as user root, install Nyquist C4000 7.0.1 by using the following commands:

```
# cd /
```

```
# /opt/bogen/install_nyquist_c4000_deb12
```

11. During installation, when prompted for a License Activation Key, use the License Activation Key that was released from the old Nyquist installation in step 4.

12. During installation, an "Enable AppArmor support" message popup, select "No" to disable the AppArmor support.

13. During installation, an EULA message will display, hit "Space" to advance to the next page. Hit "q" to quit. Type "Yes" to accept the EULA.

14. After installation is complete, restore the System backup that was created in steps 2 and 3 via the Nyquist Web Interface.

Tasks to perform after successful Nyquist system update

If you are updating an existing Nyquist C4000 system, you must update the permissions for each appropriate User Role for each of this release's new features. In addition, to allow stations to execute Routines via the Dashboard or Admin Phone using DTMF, you must update the related CoS Configuration(s) to enable Routines.

To set permissions for new features:

1. On the Admin Web UI, select Roles.
2. Select the Permissions icon for the role that you want to assign permissions.
3. Make the desired changes.
4. Select Save.

This release requires proper installation of a Trusted Root Certificate supplied by Nyquist. If the Root Certificate is not installed you will not be able to use certain dashboard features (e.g., All-Call Page, Intercom calling). Nyquist Appliance web interfaces also require the Trusted Root Certificate.

To install the Trusted Root Certificate, follow these instructions:

1. Select "System Parameters" on the Nyquist web interface.
2. Press the "Edit" button.
3. Scroll down the page until you see the "Generate Server Certificate" button.
4. Press the "Generate Server Certificate" button.
5. Press the "Download Bogen CA Certificate" button.

The required root certificate will be saved to your PC, most likely in the Downloads folder.

6. Find the downloaded certificate and install it by following the instructions provided in the Nyquist System Administrator Guide section labeled "Installing Certificate Authority on Windows System" or "Installing Certificate Authority on Mac System" (in Appendix A).
7. Close the web browser that you are using to access the Nyquist web interface.

8. Restart the browser and access the Nyquist web interface.

Enable Secure SIP and Secure RTP for Nyquist Appliances:

1. Select "System Parameters" on the Nyquist web interface.
2. Under "Nyquist Appliance VoIP Security, press the "Enable Security" button.

*****IMPORTANT*****

To enhance security, this release requires a "Nyquist Control Password" that is used to secure communication between the Nyquist server and Nyquist appliances. A default password has already been set, but we highly recommend that you change the password to increase security.

Nyquist appliances that continue to use the default web interface password will not be able to change the "Nyquist Control Password" via the appliance web interface.

After the Nyquist system has been successfully upgraded and all Nyquist appliances have been upgraded to the new firmware release associated with this Nyquist server upgrade, follow the steps below to configure the "Nyquist Control Password":

1. Ensure that the Nyquist appliance web interface passwords for all Nyquist appliances have been changed from the default value.
2. Ensure that you have installed the Trusted Root Certificate; steps are outlined above.
3. Select "System Parameters" on the Nyquist web interface.
4. Press the "Edit" button.
5. Scroll down the page until you see "Nyquist Control Password".
6. Enter a new password into the "Nyquist Control Password" field. The password must include 20 alphanumeric upper and lowercase characters, no special characters.
7. Press the "Save Password" button.
8. Press the "Update Nyquist Devices" button.
9. Press the "Show Saved Password" button and copy the password for use in subsequent steps below.

On each Nyquist appliance, perform the following steps:

1. Access the Nyquist appliance web interface.
2. Ensure that the web interface password is not using the default password (bogen).
3. Press "Configuration Settings" to access the "Configuration Settings" page.
4. Enter the Nyquist Control Password into the "Nyquist Control Password" field.
5. Press the "Save Password" button.

Note: If you intend to use the Nyquist Check-in feature, we highly recommend that, after you follow the steps above for setting the Nyquist Control Password, you fully test the Check-in feature to ensure that each station can properly check-in during the check-in process.

If you plan to install NQ-S1810WBC appliances, update the Nyquist event-driven Flasher configuration to the desired settings:

1. Press the "NQ-S1810WBC Flasher Configuration" button available on the "System Parameters" page.
2. By default, the flashers are enabled for the events listed. Make any desired changes, then press "Done".

New Features and Enhancements

- **New Hardware:** Added support for Grandstream GXW4224 24-port FXS VoIP Gateway. This includes support for Secure SIP and Secure RTP, ensuring encrypted voice communication.
- **Scheduled Events:** Now displays matching scheduled audio data on audio start/stop commands, providing better visibility into scheduled audio events.
- **System Parameters:** Users can now specify multiple NTP servers for improved time synchronization, redundancy and reliability.
- **System Parameters:** Added the ability for users to customize Urgent Call and Emergency Call audio files, allowing organizations to use custom announcements.
- **System Parameters:** Added a default Nyquist appliance "Web Password", which enhances security by setting a predefined password for new appliance stations.
- **Tones:** Users can now download any tone they have previously uploaded, making it easier to manage custom tones.
- **Added "Check Internet Site Access" button to the System Update screen,** allowing administrators to verify the server's ability to reach external update sites.
- **Maps:** Added object location data on the map to facilitate object movement during map editing.
- **Routines API v2:** Now supports inbound POST requests containing JSON text, images, and audio files. See "Routines API v2" section of Nyquist System Administrator Guide for details.
- **Routines API v2:** Users can now upload audio files via the API to be played as real-time announcements, improving automation capabilities.
- **Routines API v2:** Users can now upload image files via the API to be displayed on NQ-GA10PV displays, improving automation capabilities.
- **Routines API v2:** Users can now pass variables via the API to dynamically modify field values in supported routine actions, enhancing automation and flexibility. The following routine actions now support variable substitution through the API: Add-Announcement-Audio, Display-Msg, Dash-Text, Email, Log-Text, and Webhook-POST.

- **Routines:** The "Output-Contact-Open / Close" routine action now allows the "IO Controller" and "Output Contacts" fields to be left blank, offering greater flexibility in routine configuration.
- **Routines:** Added an optional password protection feature for DTMF-Executed Routines, allowing administrators to require a 4-digit PIN before execution of routines via phone or the Nyquist web interface.
- **Check-in Display:** On NQ-GA10PV appliances, the check-in status display now includes both the operation start time and elapsed time, shown in the upper-right corner.
- **Station Status:** Improved retrieval and display of appliance IP addresses, ensuring administrators can quickly identify and manage devices.
- **Nyquist Appliance Web UI:** Added Run-Time Appliance Logging Options for troubleshooting: registration, intercom, check-in, multicast, PTT and sound masking.
- **Check-in:** Associate teacher dashboard calls with teacher's speaker for check-in.
- **NQ-S1810WBC:** During startup, the IP address and MAC address are now displayed, helping administrators verify device network settings.
- **NQ-S1810WBC:** Now displays "Registration Failed" if device fails to register with Nyquist sever, making troubleshooting easier.
- **Bridge Device Station Management:** Can now change Day/Night Admin, and Admin Group via Change Setting on All Station.
- **Security/Performance:** The Nyquist server's operating system has been upgraded to Debian 12, improving system security and performance.
- **Security:** Secure SIP (using TLS 1.2) and Secure RTP are now supported for NQ-ZPMS, NQ-T1100/NQ-T2000, HT813 and Nyquist Appliances, enhancing encrypted communication capabilities.
- **Security:** Emergency Announcements are now protected by user roles, restricting access based on administrative permissions.
- **Zone Configuration:** Administrators can now copy (clone) a station list from one zone to another, streamlining setup for similar configurations.
- **Zone Configuration:** Schedules can now be cloned across different sites, allowing for more efficient multi-site management.

- **NQ-T1100:** Users can now upload a custom wallpaper image to the NQ-T1100 Admin Phone and protect it from being overridden by Nyquist defaults. See "Use Uploaded Wallpaper Image" in the Administrator Guide for details.
- **New COS:** Introduced a Call Speaker Stations setting to allow or prohibit calls to speaker stations.
- **Backup/Restore:** When restoring a system backup, users are now prompted to confirm whether to restore License Activation Keys (LAKs).
- **System Maintenance:** Added a Nyquist Server Reboot Button to the System Parameters page, allowing administrators to perform a soft reboot directly from the web interface.
- **Server Boot Information:** The Nyquist server's IP address information is now displayed on the System Controller's console after boot-up, providing another method to determine the Nyquist server's IP addresses.
- **Routines Management:** Recurring Scheduled Routines can now be enabled or disabled with a single button click.
- **NWS Alerts Configuration:** A new web interface page has been added to make it easier to configure NWS Weather Alerts, improving usability and configuration accuracy.
- **NWS Alerts:** The cached NWS alert county code is now displayed in the "Check Server Status" output, providing better insight into alert coverage when "Auto Find County" is used.
- **NWS Alerts - Location Accuracy:** Alerts can now be received by latitude and longitude, improving geographic precision.
- **NWS Alerts - Display Enhancements:** The system now displays all active alerts for a location on both the Nyquist Dashboard and NQ-T1100 Admin phones, instead of only the first alert.
- **Web UI - DTMF Help:** A Help button has been added to the Nyquist web interface Dial Pad modal window, allowing users to quickly access available DTMF Codes.
- **User Management:** Administrators can now force a User Password Reset upon the next login, improving security.
- **User Management:** Administrators can now select and delete multiple User accounts at once from the Users list.
- **User Management:** The "Password Last Set" field in the Users list can now be sorted by date, making it easier to review password update history.

- **NQ-S1810WBC Display Messages:** Messages that exceed the 64-character limit will now display "..." at the end to indicate truncation.

- **Web UI Navigation:** Added direct links between the Routines and Scheduled Routines pages, making navigation more intuitive.

- **System Parameters:** The "Talkback not supported" audio message played when calling an amplifier station can now be disabled via System Parameters.

- **Dashboard Dial Pad:** Letters have been removed from the Dashboard Dial Pad, simplifying the interface.

- **Dashboard Help:** A Help button has been added to the Dashboard to provide users with relevant instructions on Dashboard features.

- **Automatic Failover:** Changes to NTP servers made on the Primary server will automatically be updated on AF Secondary server when Secondary server switches to master mode.

Resolved the following issues found in previous Nyquist Releases:

[NYQ-6642] Fixed an issue where adding a station to a newly discovered amplifier, some fields are not automatically filled in.

[NYQ-6828] Fixed an issue where Network setup page displays wrong interface IP address.

[NYQ-7126] NQ-S1810WBC: When a message is scrolled on the WBC some of the lines are shifted.

[NYQ-7222] NQ-S1810WBC: Fixed an issue where the clock time drifts behind actual time.

[NYQ-7226] Fixed in issue in User Edit where duplicating User email address results in a Query Exception.

[NYQ-7244] Fixed an issue where Hostname presented to DHCP servers was incorrect for NQ-S1810 and NQ-S1810WBC appliances.

[NYQ-7245] NQ-S1810V2: Fixed an issue on NQ-S1810V2 web interface where name was incorrectly displayed as NQ-S810V3.

[NYQ-7250] - Critical: Fixed an issue where Nyquist status service may fail to start; causing Amplifier Protection notifications to not be received, and Sound Masking setup and status to not operate properly.

[NYQ-7251] - Fixed an issue where syslog log file is empty, and no entries are written to the syslog.

[NYQ-7252] - Fixed an issue where exim4 version number is not displayed on "Check Server Status" report.

[NYQ-7253] Fixed an issue where creating Admin Group with icon results in "Auto Logout Warning" display dialog.

[NYQ-7256] Fixed an issue where Sound Masking on 2-Channel Amplifier configured as bridged does not function correctly.

[NYQ-7258] Fixed an issue where Admin phone can transfer calls between NQ-EDP01 and Nyquist VoIP Speakers that can't hang up the call (non-handset device), resulting in unable to hangup the call.

[NYQ-7259] NQ-S1810WBC: Fixed an issue where the clock time drifts behind actual time when device not registered with Nyquist server.

[NYQ-7292] Fixed an issue where not able to download Nyquist server software patch from SSU server if maintenance license is expired.

[NYQ-7330] Fixed an issue where Network Traffic Capture always reports not enough disk space to start, when manually stopped.

[NYQ-7448] Fixed an issue where Recurring Schedule Routines would automatically be deleted after the end date has been reached.

[NYQ-7463] Fixed an issue where Alert Filter toggle-all button takes two clicks to toggle.

[NYQ-7465] Fixed an issue where not able to dial in to Nyquist from the PBX if Admin PBX Extension is used as an admin extension by the appliance.

[NYQ-7482] Fixed an issue where announcement by event for NWS Alert does not play if "Include Alert Category Codes" and "Include County Code" is set to No.

[NYQ-7508] Fixed an issue where jitter might occur on the pre-announce tone of intercom calls to amplifiers.

[NYQ-7523] Fixed an issue where I/O controller Input contact logic reverses after Emergency All-Call.

[NYQ-7530] Fixed an issue where DHCP Leases list does not show all leases.

[NYQ-7531] Fixed an issue with Automatic Failover where DHCP leases table out-of-sync on secondary server.

[NYQ-7564] Fixed an issue where Remote Facility Calendar display results in connection failure and not able to display remote facility calendar.

[C4000-1451] - A very brief audio distortion can be heard on MMPA zone-based audio distribution after a PTT interrupts the audio distribution (e.g., with All-Call page). When the PTT call is finished, the brief audio distortion can be heard when the audio distribution resumes.

Known Issues

[NYQ-3527] - When Audio Distribution is playing to a Zone, if a Scheduled Event to the same zone interrupts the Audio Distribution and the scheduled event includes scheduled audio, you will hear about 1 second of the originally playing audio distribution between the scheduled tone and the scheduled audio.

[NYQ-4110] - After a system update, items listed in the web interface navigation bar are sorted in default order, users must re-sort the menu to match desired order.

[NYQ-4595] - Station's DCS displays incorrect LED color when Urgent or Emergency Call is initiated by an I/O controller, the LED displays green instead of amber or red.

[NYQ-5601] - Disabling Paging on a Station, via Station Configuration or Paging Exclusion, causes the station to not receive zone-based audio distribution.

Workaround: If audio distribution to the station is desired, leave paging enabled but do not add the station to any paging zones (the station will still receive All-Call pages).

[NYQ-6375] - HTTPS on the Nyquist appliance becomes unsecure after changing IP address from DHCP to Static IP or vice versa.

Workaround: Reboot appliance.

[NYQ-6433] - On NQ-GA40P3, instead of displaying a NET-IN indicator, the DSP of the GA40P3 displays LINE-IN when streaming network traffic to the GA40P3.

[NYQ-6476] - Appliances operating in Standalone Mode automatically join the 3 default Nyquist multicast groups.

[NYQ-6494] - NQ-GA400P Standalone mode: When playing OPUS multicast to a channel, the OPUS multicast will fade up when an intercom call is terminated on the other channel.

[NYQ-6502] - Tone plays simultaneously with an intercom call on the MMPA. When a tone is played to an MMPA and interrupted by an intercom call to the MMPA, both the tone and the intercom call will play at the same time.

[NYQ-6514] - In Standalone Operation mode of NQ-A4xxx-G1 amplifier, when Prioritize Line Input is enabled, an intercom call to the amplifier interrupts the line-in.

[NYQ-6812] - Appliances with digital call switches (DCS) that place calls during Night CoS hours when Day and Night CoS call-in level do not match, will notice that during Night CoS hours the LED color does not match the type of call placed. The correct type of call is

placed, and the audio announcement is correct, only the LED on the digital call switch is incorrect.

Workaround: For appliances with call switches, ensure that the Station configuration for Day and Night CoS is the same.

[NYQ-6821] - NQ-Axxxx-G1 default route for line-input to line-output are disabled.

Work around: Enable line-input to line-output via router.

[NYQ-6841] - When playing an audio distribution to both channels of an NQ-GA400P, interrupting the zone audio distribution with a call (intercom) to a channel causes both channels to stop playing audio distribution, not just the channel used for the intercom.

[NYQ-6842] - When playing an audio distribution to a station on Channel 1 and intercom call on Channel 2 of the NQ-GA400P, after hanging up the intercom call on channel 2, the audio distribution on channel 1 gets distorted for a second.

[NYQ-6882] - While audio is streaming to an appliance that supports DSP, clicking on the DSP tab of the appliance can cause audio stuttering.

[C4000-1229] - If a Zone is deleted while audio distribution is playing to specific stations, the stations will stop playing the current audio distribution after the Zone is deleted, even if the stations were not part of the Zone.

Workaround: After deleting a Zone, stop the audio distribution and then restart it. Best practice: Do not add or delete Zones while audio distribution is in-use.

[C4000-1255] - On the DSP Graphical Parametric EQ, clicking the Enable button multiple times may cause the EQ graph to show two lines.

Workaround: Disable, then enable the graph.

[C4000-1852] - When a 4-channel Amplifier is in Standalone Mode, line-input audio is intermittently mixed with network audio when Prioritize Line Input is enabled.

[C4000-1933] - Changing from Nyquist Server mode to Standalone operation does not release the multicast groups joined while in server mode.

Workaround: This can be resolved by rebooting the device after switching modes.

[C4000-2112] - Loud pop noise when Sound Masking amplifier is rebooted and starts sound masking upon reboot.