February 25, 2021

Subject: System Controller Recommended Network Setup Procedures

Affected Products: Nyquist E7000 Release 6.0.0 Upgrade / C4000 Release 3.0.0 Upgrade

Dealer Action: Please follow the following Procedures when upgrading a System Controller

to the latest Nyquist Software Release.

Please Note it is very important to review and change network configuration settings as suggested in these guidelines BEFORE performing the software update to C4000 3.0.0 or E7000 6.0.0.

Recommended Network Setup

The purpose of this document is to provide a recommended network setup on the Nyquist System Controller ONLY. By strictly following this guideline, customers can ensure a robust network and a successful software update to major releases (specifically E7000 release 5.0.0 to E7000 release 6.0.0 or C4000 release 2.0.0 to C4000 release 3.0.0).

Before going into the details, following are some basic rules that need to be clearly understood.

- A System Controller has two Ethernet ports (Port A and Port B). Nyquist software ALWAYS runs on Port-A of the System Controller. This includes Intercom Calls, multicast Audio Distribution, multicast Zone Paging, multicast All-Call Paging, multicast Emergency All-Call Paging, Alarms, Tones, Announcements and Scheduled-Events. Therefore, Port-A MUST always be configured and connected with a VALID IP address.

Network Port A   **Network Port B**
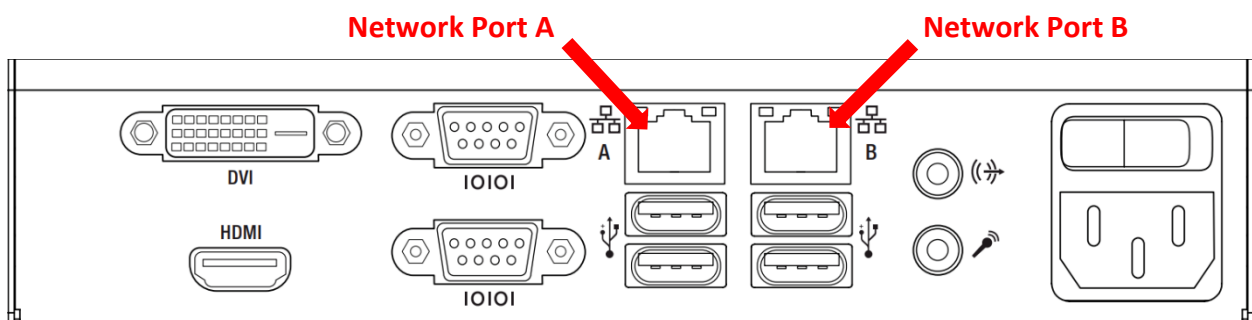
- Reserved IP addresses (**Do not use**): IP networks set aside certain combinations for housekeeping and testing such as the extreme values of IP addresses - 0.0.0.0 and 255.255.255.255. Another IP address 127.0.0.1 is a call loopback or localhost. Because these IP addresses have special meanings, such IP addresses would be INVALID to use. Please refer to "RFC1918 for IP Address Allocation for Private Internets".
- If both Port-A and Port-B are used, then make sure Port-A and Port-B are on different IP subnets.

Below are some common configurations setup via the Nyquist 'Setup Network Wizard':

1. Internet connection via Port-B

- ## Static IP Addresses on both Port-A and Port-B.
  a. Required fields for Port-A: A VALID IP Address and Subnet Mask.

  1. Is Port A a Static IP Address or provided via a DHCP Server?

  Static IP Address ▾

  What is the IP Address for Port A?

  | 172 | 31 | 11 | 20 |

  What is the Subnet Mask for Port A?

  | 255 | 255 | 255 | 0 |

  What is the Gateway for Port A?

  | | | | |

  Gateway is blank for Port-A

  b. Required fields for Port-B: A VALID IP Address, Subnet Mask AND Gateway

  2. Is Port B a Static IP Address, provided via a DHCP Server, or Not Used?

  Static IP Address ▾

  What is the IP Address for Port B?

  | 10 | 10 | 10 | 20 |

  What is the Subnet Mask for Port B?

  | 255 | 255 | 255 | 0 |

  What is the Gateway for Port B?

  | 10 | 10 | 10 | 254 |

  c. Required field for DNS Servers: A VALID DNS IP Address

3. DNS Servers: ℹ️

8.8.8.8

NOTE: Never use 0.0.0.0 as an IP address for the DNS Server field, and never enter only a SPACE or SPACES into the DNS Server field.

- Static IP Address on Port-A and Dynamic IP Address on Port-B.
  a. Required fields for Port-A: A VALID IP Address and Subnet Mask.

1. Is Port A a Static IP Address or provided via a DHCP Server?

Static IP Address ▾

What is the IP Address for Port A?

| 172 | 31 | 11 | 20 |

What is the Subnet Mask for Port A?

| 255 | 255 | 255 | 0 |

What is the Gateway for Port A?

| | | | |

Gateway is left blank for Port-A because your DHCP server is expected to provide a gateway address.

  b. Required fields for Port-B: DHCP Sever

2. Is Port B a Static IP Address, provided via a DHCP Server, or Not Used?

DHCP Server ▾

  c. Required field for DNS Servers: **DNS Servers field is left blank because your DHCP server is expected to provide a list of DNS Servers.**

3. DNS Servers: ℹ️

| |

NOTE: Never use 0.0.0.0 as an IP address for the DNS Server field, and never enter only a SPACE or SPACES into the DNS Server field.

2. Internet connection via Port-A

- Static IP Address on Port-A and Port-B is configured as NOT USED.
  a. Required fields for Port-A: A VALID IP Address, Subnet Mask and Gateway

1. Is Port A a Static IP Address or provided via a DHCP Server?

Static IP Address ▾

What is the IP Address for Port A?

| 172 | 31 | 11 | 20 |

What is the Subnet Mask for Port A?

| 255 | 255 | 255 | 0 |

What is the Gateway for Port A?

| 172 | 31 | 11 | 254 |

b. Required fields for Port-B: NOT USED

2. Is Port B a Static IP Address, provided via a DHCP Server, or Not Used?

Not Used ▾

c. Required field for DNS Servers: A VALID DNS IP Address

3. DNS Servers: ℹ

| 8.8.8.8 |

NOTE: Never use 0.0.0.0 as an IP address for the DNS Server field, and never enter only a SPACE or SPACES into the DNS Server field.

- Dynamic IP Address on Port-A and Port-B is configured as NOT USED.

   a. Required fields for Port-A: DHCP Sever

   1. Is Port A a Static IP Address or provided via a DHCP Server?

   DHCP Server ▾

   b. Required fields for Port-B: NOT USED

   2. Is Port B a Static IP Address, provided via a DHCP Server, or Not Used?

   Not Used ▾

   c. Required field for DNS Servers: **DNS Servers field is left blank because your DHCP server is expected to provide a list of DNS Servers.**

   3. DNS Servers: ℹ

   | |

NOTE: Never use 0.0.0.0 as an IP address for the DNS Server field, and never enter only a SPACE or SPACES into the DNS Server field.

Below are some of the NOT SO COMMON configurations setup via the Nyquist 'Setup Network Wizard':

3. Internet connections via both Port-A and Port-B

- Static IP Addresses on both Port-A and Port-B

NOTE: This configuration is not supported.

- Dynamic IP Addresses on both Port-A and Port-B
  a. Required fields for Port-A: DHCP Sever

    1. Is Port A a Static IP Address or provided via a DHCP Server?

    DHCP Server ▾

  b. Required fields for Port-A: DHCP Sever

    2. Is Port B a Static IP Address, provided via a DHCP Server, or Not Used?

    DHCP Server ▾

  c. Required field for DNS Servers: **DNS Servers field is left blank because your DHCP server is expected to provide a list of DNS Servers.**

    3. DNS Servers: ⓘ

NOTE 1: Never use 0.0.0.0 as an IP address for the DNS Server field, and never enter only a SPACE or SPACES into the DNS Server field.

NOTE 2: We suggest disconnecting any Ethernet cable from Port-B and only use Port-A.

If you have any questions related to this Service Bulletin or need help please contact Bogen's Technical Support team at 1 (800) 999-2809.

Sincerely,

Manny Sierra

Manager, Technical Support