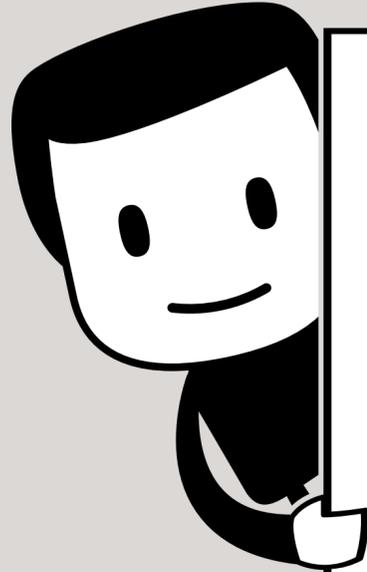


Interactive Troubleshooting Guide:
**Q-SYS™ SOFTPHONE
REGISTRATION
FAILURES**



Make sure you are using **Adobe Acrobat Reader** for PC, MAC, or Tablet (in single page mode) to view this document. Using a browser-based or default tablet based PDF reader may produce unexpected results.



Please choose a Softphone issue to begin your troubleshooting adventure!

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU

Troubleshooting Steps:

Use the following instructions to troubleshoot this scenario.

Check [**Softphone LAN assignment**](#) in Q-SYS Administrator:

Is assignment correct?

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Check physical connection to VOIP infrastructure.

Are connection/data leds present on NIC switch?

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Check [Q-SYS LAN connection](#) of Softphone in Q-SYS Configurator.

Is the IP address correct?

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct assignment in Q-SYS Administrator.

Status OK?

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct physical connection problems: Status OK?

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct IP address: Status OK?

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

The interface should be valid now. Please find a new status message.

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



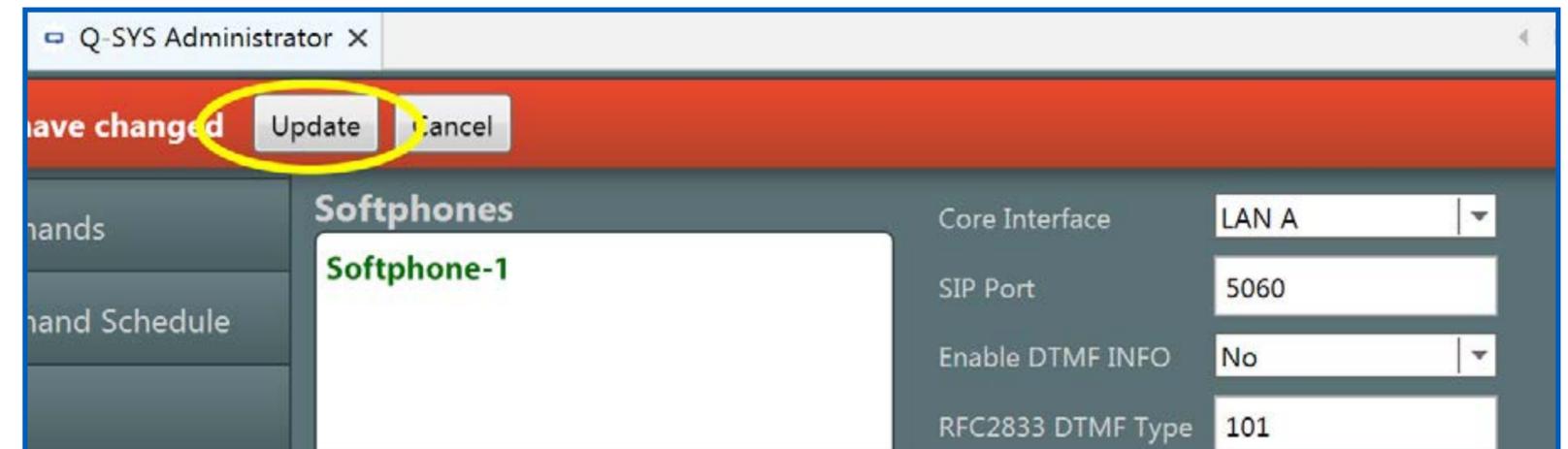
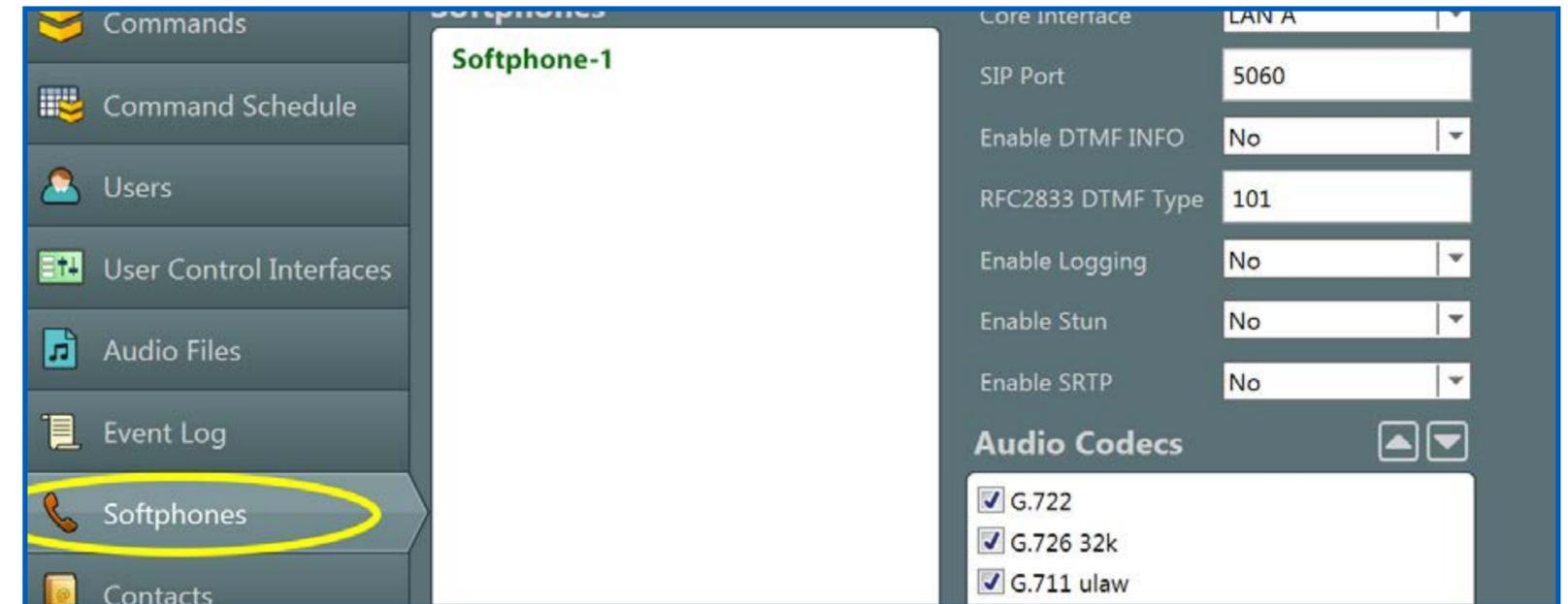
Congratulations!

You should now be ready to make a test call.

Check / Correct Softphone LAN Assignment in Q-SYS Administrator

While connected to the system with Q-SYS Designer Software, open Q-SYS Administrator and choose the Softphones tab to the left.

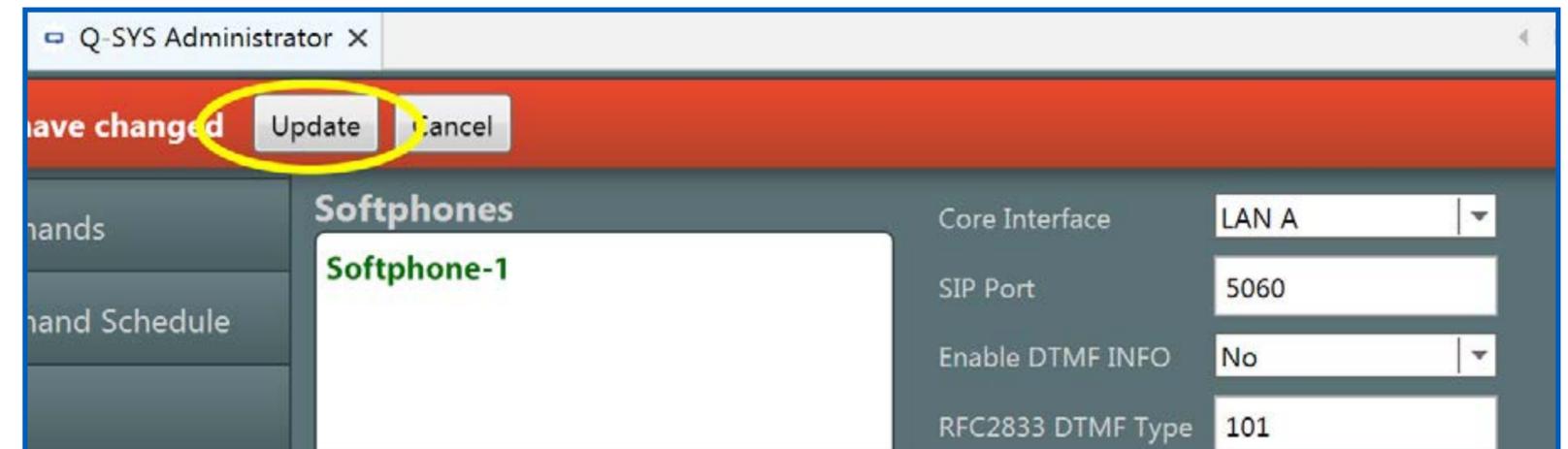
The Core Interface setting determines which of the network interfaces of the Core shall be used for Softphone call negotiation and audio. If the VoIP network must be isolated from the Core control and Q-LAN traffic, using the LAN B (for Core 110f) or AUX port (Core 500i, Core 1100, Core 3100) is recommended. To change this setting, click on the down arrow next to the setting and choose the appropriate option. Make sure to click on the Update button in the resulting red banner to the top of the dialog.



Check / Correct Softphone LAN Assignment in Q-SYS Administrator

While connected to the system with Q-SYS Designer Software, open Q-SYS Administrator and choose the Softphones tab to the left.

The Core Interface setting determines which of the network interfaces of the Core shall be used for Softphone call negotiation and audio. If the VoIP network must be isolated from the Core control and Q-LAN traffic, using the LAN B (for Core 110f) or AUX port (Core 500i, Core 1100, Core 3100) is recommended. To change this setting, click on the down arrow next to the setting and choose the appropriate option. Make sure to click on the Update button in the resulting red banner to the top of the dialog.



“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU

Troubleshooting Steps:

Use the following instructions to troubleshoot this scenario.

Check [Softphone LAN assignment](#) in Q-SYS Administrator:

Is assignment correct?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Confirm [IP Address of Proxy](#) with VOIP Admin and confirm settings in Q-SYS administrator:

Is assignment correct?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Check [Softphone LAN assignment](#) in Q-SYS Configurator:

Is assignment correct?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Confirm [TCP/UDP transport](#) with VOIP Admin and check setting in Q-SYS Administrator:

Is assignment correct?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU

Troubleshooting Steps:

Correct assignment in Q-SYS Administrator:

Status OK?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct proxy IP in Q-SYS Administrator:

Status OK?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct IP Address: Status OK?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct SIP transport: Status OK?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Confirm [SIP Port settings](#) with VOIP admin and check in Q-SYS Administrator:

Is assignment correct?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct SIP port number: Status OK?

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Gather [**sip.txt and PCAP capture information**](#) from Q-SYS Core and contact Q-SYS Technical Support.

“Registration Failed” Scenarios:

SERVICE UNAVAILABLE

Softphone has contacted the proxy server, but the server cannot accommodate the request.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



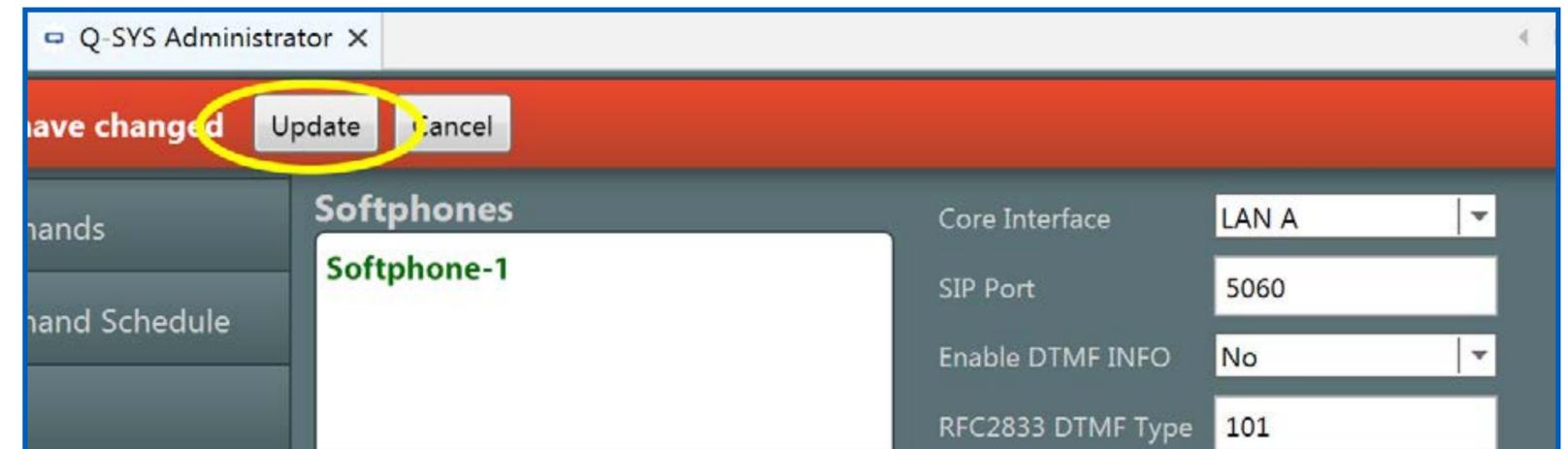
Congratulations!

You should now be ready to make a test call.

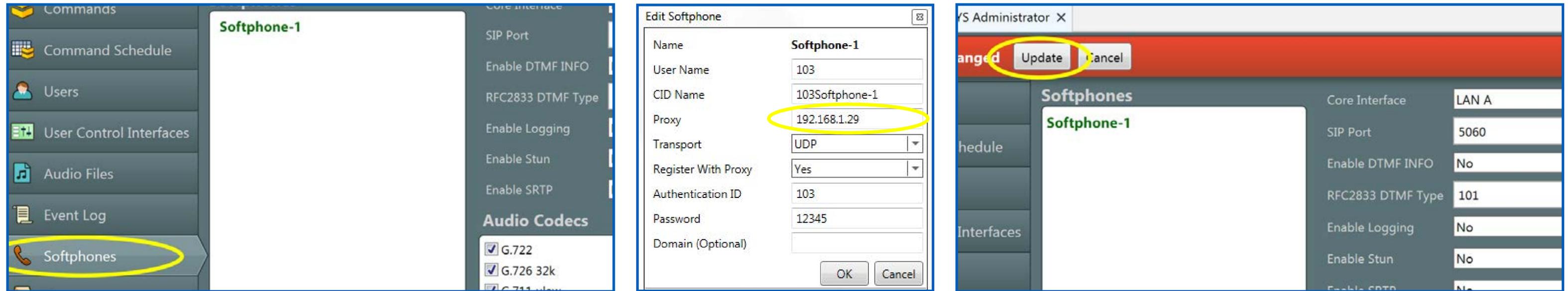
Check / Correct Softphone LAN Assignment in Q-SYS Administrator

While connected to the system with Q-SYS Designer Software, open Q-SYS Administrator and choose the Softphones tab to the left.

The Core Interface setting determines which of the network interfaces of the Core shall be used for Softphone call negotiation and audio. If the VoIP network must be isolated from the Core control and Q-LAN traffic, using the LAN B (for Core 110f) or AUX port (Core 500i, Core 1100, Core 3100) is recommended. To change this setting, click on the down arrow next to the setting and choose the appropriate option. Make sure to click on the Update button in the resulting red banner to the top of the dialog.



Confirm/Correct IP Address of Proxy Server in Q-SYS Administrator



While connected to the system with Q-SYS Designer Software, open Q-SYS Administrator and choose the Softphones tab to the left.

Double-click on the Softphone entry in the left-hand pane of the dialog. The proxy IP address is found in the 'Proxy' field in the resulting dialog.

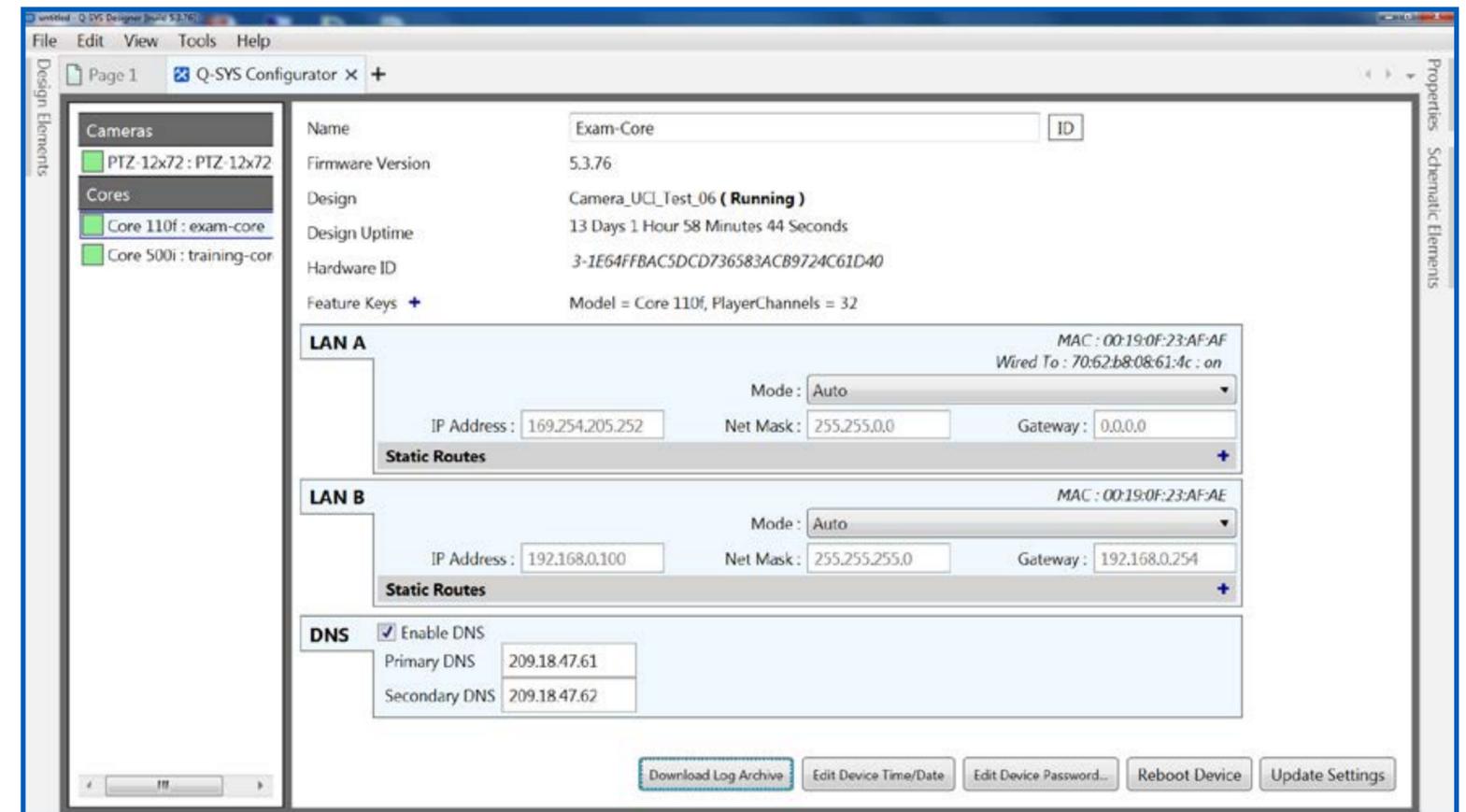
Note that if the Proxy address is a hostname, DNS must be enabled and have at least one valid DNS server entry. To edit the proxy address, type the new address in the 'Proxy' field and click 'OK'.

Make sure to click on the Update button in the resulting red banner to the top of the dialog.

Check / Correct Q-LAN Connection of Softphone in Q-SYS Configurator

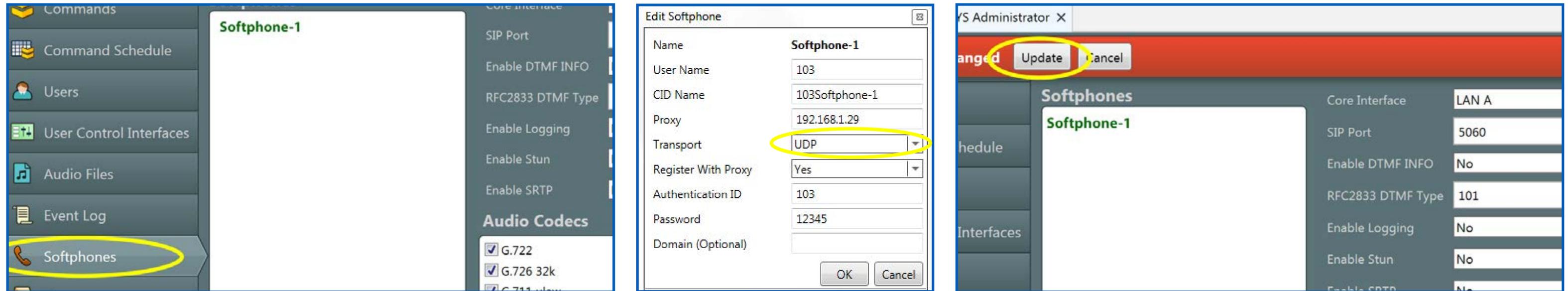
In Q-SYS Designer Software (connected or disconnected from the Core), open Q-SYS Configurator. Choose the Core in the list to the left.

The mode and current IP address of each interface will be shown in the dialog. Check the connection (LAN A or LAN B) to which the Softphone is bound to confirm that it has the correct settings for the VoIP network. If the address shows as 'link local' (169.254.xxx.xxx), this would imply the DHCP server is not assigning an address to the Core interface.



To change the IP address of an interface, first choose the correct mode: If assigned by DHCP, choose 'Auto', if manually assigned, choose "Static". If using the static mode, type the address, subnet mask and gateway in the correct fields. Note that DNS servers are always set manually. If DNS is required, check the 'Enable DNS' box and add the addresses. When finished, hit the 'Update Settings' button to the bottom right of the Q-SYS Configurator dialog.

Confirm/Correct TCP/UDP SIP Transport in Q-SYS Administrator



While connected to the system with Q-SYS Designer, open Q-SYS Administrator and choose the Softphones tab to the left.

Double-click on the Softphone entry in the left-hand pane of the dialog. The SIP transport is found in the 'Transport' field in the resulting dialog.

To edit the transport, click the down arrow to the right of the 'Transport' field and choose the appropriate type. Click 'OK'.

Make sure to click on the Update button in the resulting red banner to the top of the dialog.

Confirm/Correct SIP Port Settings in Q-SYS Administrator

Core Interface LAN A

SIP Port 5060

Enable DTMF INFO No

RFC2833 DTMF Type 101

Enable Logging No

Enable Stun No

Enable SRTP No

Audio Codecs

- G.722
- G.726 32k
- G.711 ulaw
- G.711 alaw
- G.726 32k (AAL2)

Logged on as : C

The standard port setting for UDP and TCP SIP communication is 5060, which is the default configuration of the Softphone when created in Designer. If the VoIP system to be integrated with requires a non-standard port configuration, it should be included in the information you receive from the VoIP administrator. In Q-SYS Administrator the SIP listening port can be changed independently of the SIP transmit port. In most cases, it will be adequate to change both to the number given by the VoIP administrator. To change the port assignments, open Q-SYS Administrator and choose the Softphones tab to the left.

The SIP listening port is found in the 'SIP Port' field to the right. To change the SIP transmit port, double-click on the Softphone entry to the left of the dialog.

Double-click on the Softphone entry in the left-hand pane of the dialog. The proxy IP address is found in the 'Proxy' field in the resulting dialog.

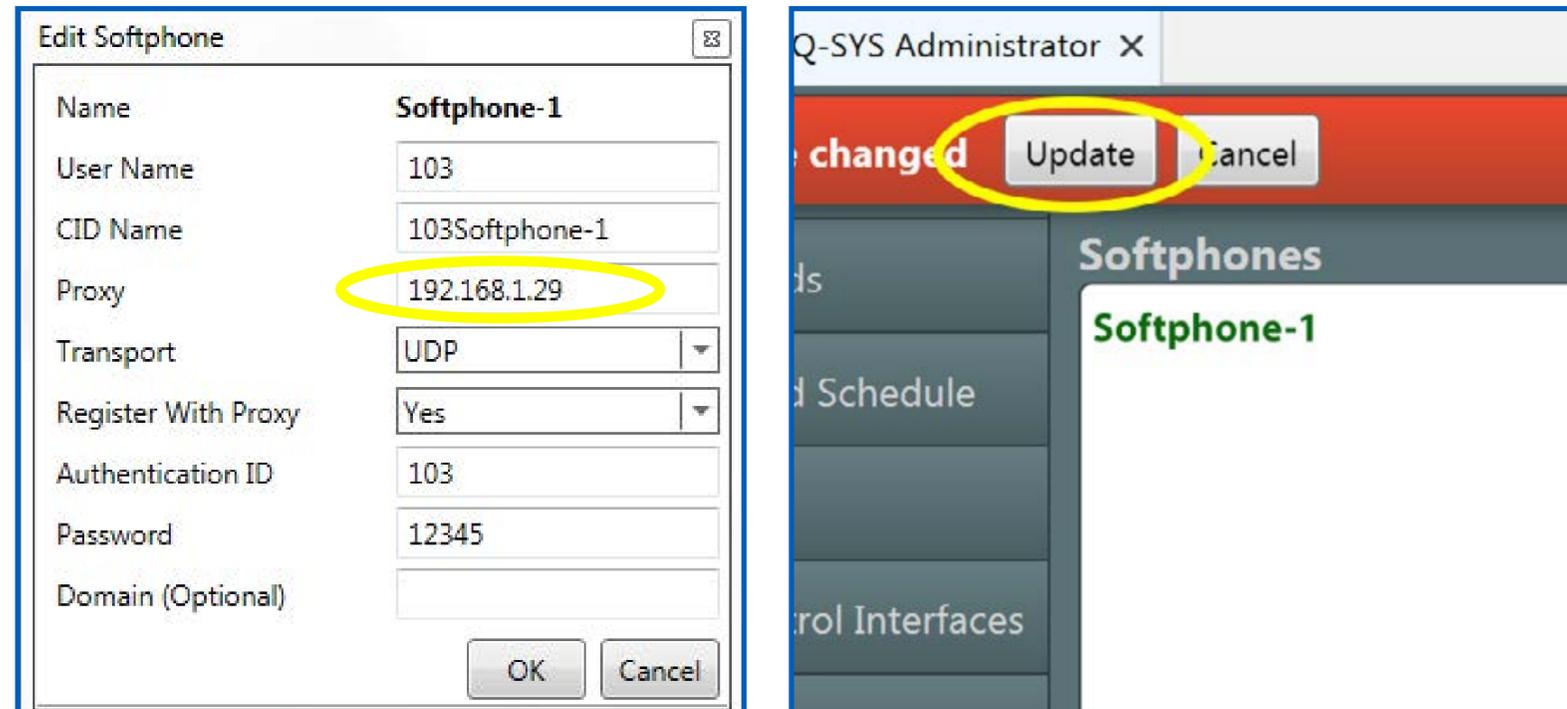
Note that if the Proxy address is a hostname, DNS must be enabled and have at least one valid DNS server entry. To edit the proxy address, type the new address in the 'Proxy' field and click 'OK'.

Confirm/Correct SIP Port Settings in Q-SYS Administrator (continued)

The transmit port number is appended to the proxy address or hostname after a ':' with no spaces. In this example, the SIP transmit port of 4625 is appended to the proxy address to be '192.168.1.29:4625'

Once changed, click 'OK'.

Make sure to click on the Update button in the resulting red banner to the top of the dialog.



“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

[START OF THIS SCENARIO](#)

[MAIN MENU](#)

Troubleshooting Steps:

Use the following instructions to troubleshoot this scenario.

Check [Softphone LAN assignment](#) in Q-SYS Administrator:

Is assignment correct?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

[START OF THIS SCENARIO](#)

[MAIN MENU](#)



Troubleshooting Steps:

Confirm [IP Address of proxy](#) with VOIP admin and confirm settings in Q-SYS Administrator:

Is assignment correct?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Check [Softphone LAN assignment](#) in Q-SYS Configurator:

Is assignment correct?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU

Troubleshooting Steps:

Check Q-SYS LAN connection default Gateway/DNS Address information (if proxy on another subnet).

Is Gateway/DNS correct?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct assignment in Q-SYS Administrator:

Status OK?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct proxy IP in Q-SYS Administrator:

Status OK?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct IP Address:

Status OK?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct Gateway/DNS Address: Status OK?

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

[START OF THIS SCENARIO](#)

[MAIN MENU](#)



Troubleshooting Steps:

Gather [sip.txt and PCAP capture information](#) from Q-SYS Core and contact Q-SYS Technical Support.

“Registration Failed” Scenarios:

REQUEST TIMEOUT

Softphone has contacted the proxy server but the server has not responded.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



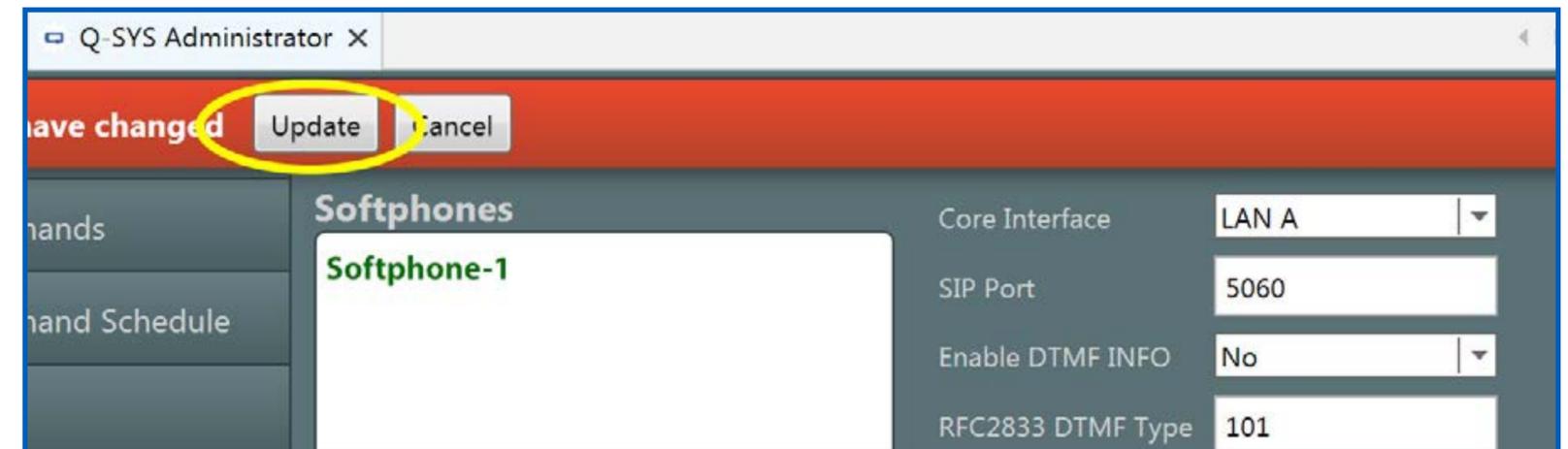
Congratulations!

You should now be ready to make a test call.

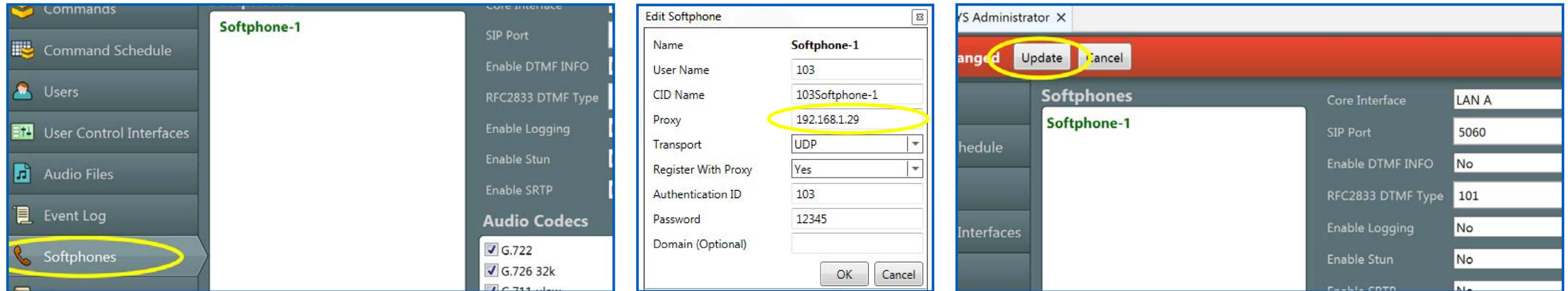
Check / Correct Softphone LAN Assignment in Q-SYS Administrator

While connected to the system with Q-SYS Designer Software, open Q-SYS Administrator and choose the Softphones tab to the left.

The Core Interface setting determines which of the network interfaces of the Core shall be used for Softphone call negotiation and audio. If the VoIP network must be isolated from the Core control and Q-LAN traffic, using the LAN B (for Core 110f) or AUX port (Core 500i, Core 1100, Core 3100) is recommended. To change this setting, click on the down arrow next to the setting and choose the appropriate option. Make sure to click on the Update button in the resulting red banner to the top of the dialog.



Confirm/Correct IP Address of Proxy Server in Q-SYS Administrator



While connected to the system with Q-SYS Designer Software, open Q-SYS Administrator and choose the Softphones tab to the left.

Double-click on the Softphone entry in the left-hand pane of the dialog. The proxy IP address is found in the 'Proxy' field in the resulting dialog.

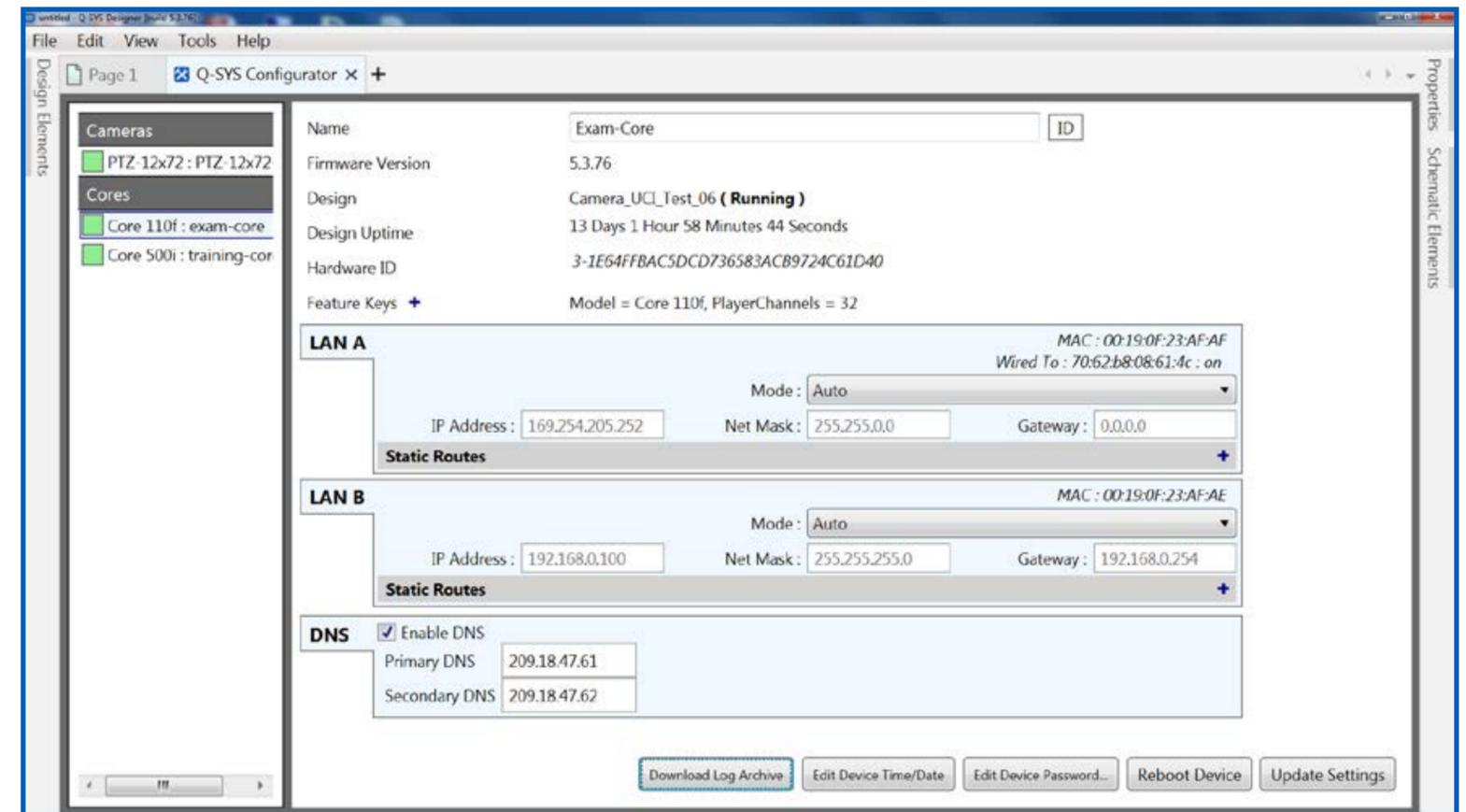
Note that if the Proxy address is a hostname, DNS must be enabled and have at least one valid DNS server entry. To edit the proxy address, type the new address in the 'Proxy' field and click 'OK'.

Make sure to click on the Update button in the resulting red banner to the top of the dialog.

Check / Correct Q-LAN Connection of Softphone in Q-SYS Configurator

In Q-SYS Designer Software (connected or disconnected from the Core), open Q-SYS Configurator. Choose the Core in the list to the left.

The mode and current IP address of each interface will be shown in the dialog. Check the connection (LAN A or LAN B) to which the Softphone is bound to confirm that it has the correct settings for the VoIP network. If the address shows as 'link local' (169.254.xxx.xxx), this would imply the DHCP server is not assigning an address to the Core interface.



To change the IP address of an interface, first choose the correct mode: If assigned by DHCP, choose 'Auto', if manually assigned, choose "Static". If using the static mode, type the address, subnet mask and gateway in the correct fields. Note that DNS servers are always set manually. If DNS is required, check the 'Enable DNS' box and add the addresses. When finished, hit the 'Update Settings' button to the bottom right of the Q-SYS Configurator dialog.

“Registration Failed” Scenarios:

INVALID USERNAME OR PASSWORD

USER UNKNOWN

OPERATION HAS NO MATCHING CHALLENGE

Softphone has successfully contacted proxy but does not recognize digest password.

RETURN TO:

[START OF
THIS SCENARIO](#)

[MAIN MENU](#)

Troubleshooting Steps:

Use the following instructions to troubleshoot this scenario.

Confirm digest [Username & Password](#) with VOIP admin.

Username & Password correct?

“Registration Failed” Scenarios:

INVALID USERNAME OR PASSWORD

USER UNKNOWN

OPERATION HAS NO MATCHING CHALLENGE

Softphone has successfully contacted proxy but does not recognize digest password.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU

Troubleshooting Steps:

Review phone system setup documentation with VOIP Admin, and confirm setup.

“Registration Failed” Scenarios:

**INVALID USERNAME OR
PASSWORD**

USER UNKNOWN

**OPERATION HAS NO
MATCHING CHALLENGE**

Softphone has successfully contacted proxy but does not recognize digest password.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU



Troubleshooting Steps:

Correct credentials in Q-SYS Administrator:

Status OK?

“Registration Failed” Scenarios:

**INVALID USERNAME OR
PASSWORD**

USER UNKNOWN

**OPERATION HAS NO
MATCHING CHALLENGE**

Softphone has successfully contacted proxy but does not recognize digest password.

RETURN TO:

**START OF
THIS SCENARIO**

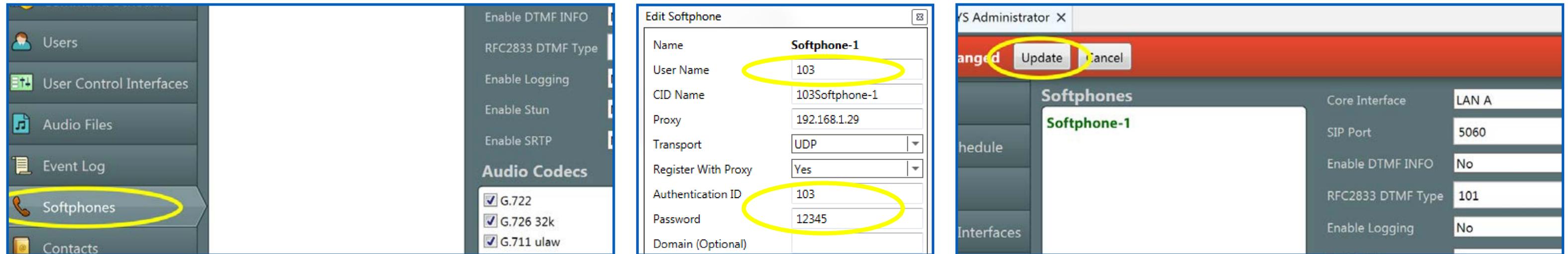
MAIN MENU



Congratulations!

You should now be ready to make a test call.

Confirm/Correct Username and Password in Q-SYS Administrator



While connected to the system with Q-SYS Designer Software, open Q-SYS Administrator and choose the Softphones tab to the left.

Double-click on the Softphone entry in the left-hand pane of the dialog. The SIP credentials can be found in the resulting dialog.

The 'User Name' field is often referred to by VoIP administrators as the 'subscriber number'. When the Softphone attempts to register, it uses this parameter in the contact field. The 'Authentication ID' and 'Password' fields are the digest username and passwords set when the VoIP administrator configures the digest user. To edit these fields, type the correct credentials into the fields and hit 'OK'.

Make sure to click on the Update button in the resulting red banner to the top of the dialog.

Gather SIP.txt and PCAP Capture Information From Q-SYS Core and Consult Q-SYS Technical Support

As outlined in the first steps, the 'Enable Logging' feature was employed to create a log of SIP information to aid in advanced troubleshooting. Having this logging information will speed up resolution when consulting with our Q-SYS Technical Support. To get the SIP log, open an internet browser and type <IP Address of Core>/sip.txt in the internet address field. If the address is valid, the SIP log of the core should load.

Right-click on the loaded page and choose 'save as'. Choose a known file location and name so it can be emailed to support.

A second set of diagnostic information can be gathered by creating a PCAP (wireshark) capture of the interface used for the Softphone. To create this, in the browser go to the address <IP Address of Core>/pcap_capture.html.

Select the appropriate interface in the 'Select LAN' field. Set the 'Packet length' field to 2048 and hit the 'Start' button. Let the capture run for 5 minutes, and then hit the 'Stop' button. Download the capture file ('Download' button) and send this along with the SIP log to Q-SYS support.

```
From: sip:192.168.1.20:4422;transport=tcp;tag=0707070707
To: sip:192.168.1.20:4422;transport=tcp
Call-ID: 20080808-0274-4474-0000-000000000000
CSeq: 88415334 88415334
Contact: sip:192.168.1.20:4422;transport=tcp;gofirstphone=1
Expires: 3000
User-Agent: Q-Sys Softphone-5.1
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, MESSAGE, UPDATE, INFO, REFER, NOTIFY
Supported: timer, presence, path, call-info
Proxy-Authorization: Digest username="192", realm="Q-SysSoftphone", nonce="014010000000"
Content-Length: 0

.....

From: sip:192.168.1.20:4422;transport=tcp;tag=0707070707
To: sip:192.168.1.20:4422;transport=tcp;tag=0707070707
Call-ID: 20080808-0274-4474-0000-000000000000
CSeq: 88415334 88415334
User-Agent: Q-SysSoftphone-5.1
Content-Length: 0

.....

2008-08-08 13:27:09.000000 [ERR] sofia_reg.c:1498 Softphone-5 Registration failed with stat
and 794 bytes to sip:[192.168.1.20]:4422 at [192.16.16.102]:

.....

REGISTER sip:192.168.1.20:4422 SIP/2.0
Via: SIP/2.0/TCP 192.168.1.20:4422;branch=z9hGzlg;method=REGISTER
From: sip:192.168.1.20:4422;transport=tcp;tag=0707070707
To: sip:192.168.1.20:4422;transport=tcp;tag=0707070707
Call-ID: 20080808-0274-4474-0000-000000000000
CSeq: 88415334 88415334
Contact: sip:192.168.1.20:4422;transport=tcp;gofirstphone=1
Expires: 3000
User-Agent: Q-Sys Softphone-5.1
Allow: INVITE, ACK, BYE, CANCEL, OPTIONS, MESSAGE, UPDATE, INFO, REFER, NOTIFY
Supported: timer, presence, path, call-info
Proxy-Authorization: Digest username="192", realm="Q-SysSoftphone", nonce="014010000000"
Content-Length: 0

.....

From: sip:192.168.1.20:4422;transport=tcp;tag=0707070707
To: sip:192.168.1.20:4422;transport=tcp;tag=0707070707
Call-ID: 20080808-0274-4474-0000-000000000000
CSeq: 88415334 88415334
User-Agent: Q-SysSoftphone-5.1
Content-Length: 0

.....

2008-08-08 13:28:08.047100 [ERR] sofia_reg.c:1498 Softphone-5 Registration failed with stat
```

“Registration Failed” Scenarios:

INVALID INTERFACE

LAN connection to which this Softphone is assigned is not plugged in, has no connectivity or is not receiving IP address from DHCP.

RETURN TO:

**START OF
THIS SCENARIO**

MAIN MENU

Troubleshooting Steps:

We're sorry but the problem you are experiencing is outside the scope of this tool.

Please contact Q-SYS Support to troubleshoot this issue.