Control Functionality

Q: How are non-QSC devices, such as screens and projectors, connected to the control aspect?
A: Any third-party device that offers a publically available API for remote control can be controlled by Q-SYS via IP, RS232, GPIO or any other control protocol using the appropriate interfaces.

Q: Can you speak to using Q-SYS to control a video switcher. We currently use Crestron control and switchers. Can Q-SYS control a Crestron video switcher?
A: Technically speaking anything that has a standard control API can be controlled by Q-SYS. Crestron does not publish an API for their DigitalMedia devices but if you are familiar with these products then it should be reasonably straightforward to figure out the control protocol.

Q: What do you mean when you say that Q-SYS has “integrated” control?
A: Since the Q-SYS has consolidated audio, video and control into a single platform, it eliminates so much of the tedious work in connecting the audio DSP with the control processor. In a traditional hardware-based control scenario, a control programmer would have 50 to 80 individual integration parameters for each meeting space - between the dedicated control processor and the audio DSP, camera and third-party devices. The control processor-to-audio DSP integration alone can represents as much as 50% of a systems programmer’s time. The same can be said about integrating conference cameras or touch screens. You no longer have to build these controls because the Q-SYS Platform offers a native PTZ-IP conference camera whose controls can be added to a native Q-SYS touch screen controller within minutes.

Q: Can Q-SYS control HDBase-T devices?
A: As long as the device in question has a control API, Q-SYS should be able to control it.

Q: How do I control multiple devices with only RS232/ RS422 with one Q-SYS Core processor or do I need additional devices?
A: Currently you will need to add a third-party device to get additional serial ports beyond the one on the Q-SYS Core or I/O peripheral devices.

Q: Can I use Q-SYS to control Global Cache within Q-SYS? Is there a plug-in available?
A: This will be available in a future release of Q-SYS Designer Software.

Q: Is there a document outlining all the properties of all components and touch screen GUI elements that are scriptable from Lua?
A: The current list of scriptable elements can be found in the Q-SYS Designer Software help file. Additional features will also be added and documented this way.

Q: How do I get feedback on the devices that I am controlling?
A: In the webinar, the Command Button component was featured, which is a simple method to transmit one-way commands to a third-party device. Using any of the Lua-based scripting components, Q-SYS can handle full, two-way communications via serial or TCP / UDP.
**Q:** Can you send commands remotely? For example, turning an integrated projector on/off and playing a video from a media server at a specific time?

**A:** Yes, commands can be scheduled using current features built into Q-SYS Administrator. We are exploring additional methods for gaining remote access to the Core processor, but for now VPN and User Control Interface (UCI) Viewer is likely your best method for remote access.

**Q:** Does Q-SYS have an integrated room booking system?

**A:** Currently Q-SYS does not offer any user interface control types tailored towards room booking, but that is an area we are investigating.

**Q:** How does Q-SYS Control scale with a growing corporate installation that wants to start small?

**A:** From single rooms to complex enterprise deployments, Q-SYS full-featured software-based control accommodates changing business requirements without the need for additional dedicated control hardware or having to “rip-and-replace” your entire AV platform. The Q-SYS Platform is based on software functionality, not hardware, so as demands of the AV system expand and new functionalities are needed, these needs can be address at the software layer with a simple firmware push, rather than bolting on new hardware.

For example, if you wanted to add control functionality to a new room, you could do so at the software level without adding dedicated control hardware to that room. Furthermore, if you need to scale the central processing capabilities of the system, you can do so by merely upgrading to a more capable Core processors without needing to “rip and replace” the entire platform or start over on the design file.

**Q:** Is there an API to Q-SYS that allows an integrator to create their own third-party controls from a webpage or application?

**A:** Yes, we have an API for external control in the Q-SYS Designer help file as well as the online version of the help file. Q-SYS also offers a full HTTP API for integration with web applications.

**Q:** Can Q-SYS control video distribution systems?

**A:** Yes, Q-SYS can control anything with a control API.

**Q:** How do you handle a keypad to dial SIP for a video system, but also enter DTMF for adding a Skype meeting from the same call?

**A:** Currently we do not offer an alphanumeric keyboard on the user control interface, but the user can add any required SIP credentials to the contacts list (or sync that from MS Exchange) so that the SIP contacts are available to select from a list. The numeric keyboard with DTMF is available as standard on the Q-SYS Softphone Controller component.

**Q:** Which Q-SYS control devices are not IP compatible and require RS232 or IR for control?

**A:** We can support IP, serial and GPIO natively. Additional devices, like Global Cache, can be used to expand into IR.

**Q:** Can you password protect scripting blocks that might contain proprietary coding credentials built into a script block?

**A:** Yes, plug-in encryption will be available in a future release of Q-SYS Designer Software.
Q: Are firmware pushes only executed through the Q-SYS management platform, or is there an open API for performing these updates?
A: Saving the Q-SYS design file to the Q-SYS Core processor is performed using Q-SYS Designer Software.

Q: Can the Q-SYS control design/plug-ins/scripts be updated gracefully without noticeable effecting the control/user perspective?
A: Yes, it is possible to update scripting under the hood without affecting graphical elements.

Q: We are constantly asked to update the control systems of a building a room, section or floor at a time. Can you describe how this can be accomplished with a single Core?
A: All updates are handled at the Core. Currently this is handled in a single Q-SYS design file.

Q: In this time of AV/IT convergence, how does Q-SYS simplify the management of control for an IT administrator?
A: Q-SYS is a standards-based architecture designed to fit seamlessly into an IT existing infrastructure, with agile programming tools that enable an IT team to deliver and support consistent meeting room experiences across your enterprise.

Q-SYS is built on IT standard technologies, uses standard Ethernet switches and can co-exist on standard Layer-3 networks. This is a major cost savings because an installation does not need to have a separate AV infrastructure.

Q-SYS scripting environment is not based in a closed, outdated AV language that are only familiar to AV programmers. Instead, it uses Lua, an open-source lightweight programming language used in countless applications outside of AV, and is widely accessible, document and supported by a community of programmers outside the AV industry. This allows IT teams to more easily troubleshoot and support custom control functionalities in the Q-SYS Platform.

Q: Does Q-SYS support CEC?
A: Since CEC is delivered via video distribution devices, this is not supported at this time. As we add more to our video offerings CEC will be introduced.

Q: How do I integrate devices that require contact closure for control?
A: You can use the on-board GPIO ports for applications like these. You can find technical notes on the GPIO for each Q-SYS Core processor on our site.

Q: Are other scripting language options (Python, JavaScript, etc.) a possible future addition?
A: This is in early stages of discussion. Lua lends itself better for embedded applications, but we are exploring the possibility of adding other languages in the future.

Q: Will QSC provide a plug-in marketplace where developers could possibly sell custom controls/scripts?
A: We are looking at mechanisms to make it easier for third parties to distribute their plug-ins as well as encrypt them.
Q: Are there any Lua resources showing working sample scripts and implementation of Q-SYS specific functions? Will there be more resources in the near future?
A: There are a couple examples included in the Q-SYS Designer help file, though we plan to add more documented examples as well as online and classroom training.

Q: Is there a central place on the QSC website to find third-party control plug-ins?
A: All approved plug-ins will be included in future releases of Q-SYS Designer Software, though some plug-ins may only be hosted at other manufacturers’ websites. All plug-ins are detailed here.

Q: For systems that have multiple RS232 needs, what is the easiest way to add serial control to Q-SYS?
A: Global Cache is a simple option; however, there are a number of manufacturers that have this capability and feature control APIs that can be integrated into Q-SYS.

User Control Interfaces (UCIs) and Touchscreen Controllers

Q: Will QSC provide any user control interface (UCI) templates?
A: Templates have been discussed with the engineering team and will be available in the future.

Q: Are there any non-touch screen controls in development, like simplified wall remotes with tracking volume controls and simple source selection?
A: There have been discussions to add other control point options in the future.

Q: Does your roadmap include more flexible user interface control (UCI) options that enable better looking interfaces?
A: You will start to see additional UCI editing tools released beginning at ISE 2018, with more following around InfoComm 2018.

Q: There currently is an iOS app for user control interfaces (UCIs). Are there plans to develop an Android version of this app?
A: Yes, we are working on transitioning our UCI rendering engine to HTML5 at which point you will be able to use any modern web browser to access Q-SYS UCIs.

Q: Are there any latency in the Q-SYS user control interface (UCI), such as the UCI Viewer or iOS apps?
A: No, the iPad and Windows PC user control interface viewer applications are very fast with a refresh rate of 30 times per second. If latency does occur, network performance is more likely the cause rather than the application.

Q: Is there a plan to allow for POE on the Q-LAN B port on the touch screens? Currently POE is only active on Q-LAN A port. If the Q-LAN A switch goes down, the touch screen goes down as well.
A: The vast majority of touch screen deployments are single cable to LAN-A only. The engineering overhead required to allow POE via both LAN-A and LAN-B (as is the case on the Q-SYS I/O-22) is very time consuming and would balloon the product price up. As a result, it was decided that if redundancy was a requirement, the user should use POE and the DC power input on the TSC touch screens.
Q: Any plans for larger format touch screens?
A: Yes. Stay tuned at ISE 2018.

Q: Can elements within Q-SYS user control interfaces (UCIs) be dynamically driven by the Q-SYS scripting logic? For example will it prompt the user for a login and based on that login, show/hide custom UI elements?
A: Yes, this is possible now, though we are making improvements that will make this easier.

Third Party Plug-ins

Q: Can you share the roadmap for third-party manufacturer module development?
A: We cannot share the third party plug-in development roadmap, but we have a large number of plug-ins already in development. We also have documentation and sample code for anyone who would like to develop a Q-SYS Control plug-in.

Q: Are large manufacturers like Cisco currently developing plug-ins for Q-SYS?
A: QSC is currently developing plug-ins for Cisco devices.

Q: Are third party plug-ins managed by the manufacturer or by QSC? Where should you go to find support or customizations on these plug-ins?
A: Development of third party plug-ins is always open to other manufacturers. If they choose to build them, they will be responsible for supporting them.

Q: Is there an available library of all third party plug-ins for control?
A: Both internally developed plug-ins as well as select third party plug-ins will be included in future releases of Q-SYS Designer Software.

Q: Will there be a control module for a Polycom RealPresence Group series codec?
A: Yes, one is in development right now.

Q: Can you edit a third party plug-in?
A: The plug-in file is a Lua script. If the author has not encrypted the script (this is a feature that will be introduced shortly) the script will remain editable.

Networking

Q: What did the LAN design for Q-SYS look like? Switch Make/Models?
A: Q-SYS is network agnostic, meaning the system does not care what network topology, switches (make / model) etc. are used as long as the network meets the minimum performance requirements. QSC currently hosts a list of qualified network switches on the QSC website.

Q: Can Q-SYS Core processors support AES67 with its primary NIC, while supporting Q-LAN on its secondary port?
A: The Q-SYS LAN-A and LAN-B ports can both support Q-LAN and AES67 at the same time on the same network port.
Conferencing

**Q:** When designing a VTC environment, can Q-SYS integrate with dual monitor setup - one for participants and one for collaboration? If so, what devices are required?

**A:** The presentation of the screens is fully dependent on the hardware or software VTC solution being used. Q-SYS can integrate with any of those solutions, and those displays can be controlled by Q-SYS if necessary.

Audio Routing and Processing

**Q:** How can I route the input channels on a CXD-Q amplifier?

**A:** The Q-SYS network-enabled amplifiers are primarily intended to be used with network-based audio sources distributed from the Q-SYS Core. In the Q-SYS Designer Software, you will see the CXD-Q amplifiers have a number of components, one of which is the ‘Amp Output’. Another is the ‘Mic/Line Input’ block. If you wish to route audio from the CXD-Q analog inputs to the amplifier outputs, then simply wire the ‘Mic/Line Input’ connectors to the ‘Amp Output’ block in Q-SYS Designer.

**Q:** Can we use NAS to stream audio instead of incrementing the capacity of the Core?

**A:** Not at this time. Currently all audio files need to be stored on internal media drives on the Q-SYS Core. Depending on the Q-SYS Core processor you choose, there is approximately 2GB of available storage for media (although this can vary). You can purchase media drive upgrades from QSC, up to approximately 600GB SSD. The new Q-SYS Core 5200 Enterprise Core processors ship with a 960GB SSD already installed for media storage and playback.

**Q:** Are there any plans to support HDMI (audio only) with Dolby decoding, SDI audio de-embed, or MADI?

**A:** Yes, QSC is introducing Q-SYS peripheral devices offering this capability for professional cinema.

**Q:** Why were CobraNet I/O cards discontinued?

**A:** There are some critical components necessary for the Q-SYS CobraNet card that are no longer available. As a result, we have no option but to discontinue CobraNet support. We do expect the Q-SYS CobraNet card will be available for approximately the next 18 months; however, once they are gone, we will not be able to replace them.

**Q:** Are there any known issues with AES67 and Q-SYS?

**A:** AES67 support was implemented in Q-SYS nearly 12 months ago and has proven to be very successful. The Q-SYS AES67 implementation offers both SAP discovery / connection management (for simple integration with Dante-based AES67 implementations) as well as ‘Manual Mode’ where the connection details can be entered manually for connection with all other AES67 implementations.

**Q:** Can Q-SYS be used to combine and separate audio/video in multi-configuration ballrooms?

**A:** Yes. In fact, we have a “Room Combining” training video that explains the audio combining and separating. Video can be handled in a similar fashion, through control components.

Video

**Q:** Can I integrate video cameras that are not QSC?

**A:** At this time only QSC Q-SYS PTZ-IP conference cameras are capable of being ingested into the Q-SYS AV-to-USB Bridging solution.
Q: How many 1080p60 video streams can be managed on the network concurrently?
A: Q-SYS PTZ-IP conference cameras max out at 1080p30. Each stream is 33MB total (IP Stream 1 and IP Stream 2), so without any other network traffic on a 1GB link, 30 cameras at full resolution can exist on the same network at the same time.

Q: What products are needed to show several HDMI sources on one or more projectors or screen? How can it be done with Q-SYS?
A: Today it would be done with an AV matrix solution, which could easily be controlled by the Q-SYS control engine.

General Q-SYS Platform Architecture & Processor
Hardware Knowledge
Q: Can Q-SYS operate in parallel with an existing IT network that also runs the venues data network, or does it need a separate network?
A: Q-SYS was designed using IT standard protocols and solutions so that it can easily interface with a converged network environment. Installing Q-SYS on a shared network with other common system services throughout the building is a typical deployment.

Q: How will the Q-SYS Core 5200 processor work with the additional multi-track playback options and a larger hard drive?
A: The Q-SYS Core 5200 processor offers the same multi-track playback (MTP) capabilities as all other Q-SYS Enterprise Cores. Every Q-SYS Core ships with 16-tracks enabled by default. Optional licenses are available to upgrade the playback capacity to 32-tracks, 64-tracks or 128-tracks.

Q: Can you partition a Q-SYS design so that you can work on one room without affecting other spaces?
A: As described during the presentation, it is possible to segregate your design into multiple pages making it simple to build multiple systems and keep them logically separated; however, these currently behave as one large Q-SYS design. We are working to make it more straightforward to manage multiple, separate spaces on a single Q-SYS Core processor.

Q: Can Q-SYS operate on an older CAT5 network or does it demand CAT6e?
A: Q-SYS uses standard IT network technology with 1Gbps connectivity to Q-SYS Cores and peripheral devices. The cable type is irrelevant provided it is capable of meeting the 1Gbps performance requirement.

Q: Can Q-SYS work across multiple networks? In other words, can it be routed?
A: Yes. The entire network stack used within Q-SYS is fully routable including device discovery, clocking audio, video and control distribution. You do not need hardware or software acting as a proxy between subnets.

Q: Can a Q-SYS system achieve full redundancy?
A: The Q-SYS Core processors can be configured as a redundant pair for situations that must have near-zero downtime. The Q-SYS design file is configured for dual redundant Cores with a simple property change. With that, the design file is pushed to both Cores automatically. One Core is ‘Active’, processing all audio, video and control for the system. The ‘Standby’ Core is mirroring all parameter values and changes in the ‘Active’ Core in realtime. If the ‘Active’ Core is removed from the network, the ‘Standby’ Core takes over automatically, typically within 10 seconds or less.
Q: How often does the software need to be updated? Can it be configured once and not touched again?
A: Software updates are optional. Once a system is installed and stable, the only reason to update would be to add a feature or address a bug.

Q: What Core is the best for a system that requires future expansion?
A: The Unified Core processors (Core 110f) offer fixed I/O in a compact, cost-effective processor that makes them very appealing for single room applications, mid-sized meeting rooms with a small number of peripheral huddle rooms. The Integrated Cores (Core 510i) are most appropriate for auditorium, theaters or very large divisible space projects where the system requires a lot of processing / AEC and / or various audio I/O connectivity facilitated by the eight configurable I/O card slots. The Enterprise Core processors (Core 5200) is primarily focused on centralized architectures where processing takes place in the datacenter or main IT server room, with distributed audio, video and control I/O endpoints distributed around the project. All Q-SYS Core processors run the same operating system so offer the same or similar feature set, but the capacity (such as the maximum number of AEC processors per Core) will differ by model.

Q: Can I use the HDMI port on the Q-SYS Core to connect an interactive display (control on USB) to use as a touch screen?
A: That capability is a possibility in the future and on our roadmap.

Q: What is the latency from source to individual destinations with the Q-SYS Platform and what control we have over that?
A: The Q-SYS Platform offers completely deterministic audio latency across the entire system. The analog input to analog output latency is fixed at 3.167ms for all inputs to all outputs. This includes all A/D, D/A conversions, network transport and signal processing. The only change is when AEC is used the output (routed to the far-end only) has a longer latency as is typical with all other audio DSPs. AES3 and network interface cards (CobraNet, AVB and Dante) might offer slightly different end-to-end latency values, but they will be fixed (no drift or variation).

Q: How do I run Q-SYS Designer Software or Q-SYS User Control Interface Viewer on a Mac?
A: Q-SYS Designer Software is a Windows application leveraging many of the underlying Microsoft frameworks available to software developers. It is very simple to run Q-SYS Designer Software on a virtual machine on a Mac using Parallels or VMware, for example. We will not be developing a native version of the Q-SYS Designer Software for Mac. We will have a HTML5 based user control interface rendering engine, which will make it possible to control a Q-SYS system natively from a Mac using any modern web browser.