

Mainframe Console Consolidation

CCA-3074 Features

- Support for up to 96 Host LPARs (64 through FICON and 32 through ESCON)
- Up to 1536 Console Sessions (256 per FICON or ESCON Interface)
- Console Availability Even When IP Network is Down
- Replaces up to 96, 3174/3274 Controllers.
- Rack Mountable High Availability Platform
- One to Four FICON Interfaces and One or Two ESCON Interfaces
- Coax Device Support Optional
- Direct Attach Storage Tek Silo/LMU Support Through Optional Coax Interface
- Configurable Hot Console Sessions Feature
- Share a Console Session Between Multiple Users
- Remote Management Through a Browser Connection
- Configurable Email Alerts
- SSL-Encrypted Sessions and Management
- Client Connectivity log

Operator Console Evolution

From the beginning of modern IBM mainframe processing, 3270 operator consoles have been used as input/output devices for managing the operating system. Initially these consoles attached to IBM coax controllers connected through Bus and Tag channel connections. Traditionally each coax controller was capable of communicating with one mainframe. To provide redundancy, two such controllers were used to provide primary and alternate consoles to each mainframe. Telex was there providing a console connectivity alternative to IBM as early as the late 1970's.

Over the decades mainframe processing has evolved into CPUs capable of supporting multiple logical processing partitions (LPARs), each with its own operating system. IBM channels have also evolved from the large copper Bus and Tag channels, to ESCON fiber optic channels, and now to FICON fiber optic channels. Switching technology in the form of ESCON and FICON directors were introduced to provide connectivity between multiple mainframes and the peripherals that needed to be attached to them. One thing however, has not changed. 3270 consoles are still needed to manage each operating system, and redundant consoles are needed for mission critical environments.

Console controllers too have evolved. Telex, later evolving into Memorex Telex continued to offer feature rich console controllers throughout the 1980's and into the 1990's. During the 1990's, controllers capable of connecting multiple bus and tag channels and increased numbers of coax devices were introduced, such as the Memorex Telex 1174-15X capable of attaching up to 8 channels. Later as ESCON channels became commonplace, ESCON controllers were introduced capable of connecting to the ESCON directors and EMIF channels to provide consoles to dozens of LPARs through a single platform. Visara, formerly part of Memorex Telex continued the 1174 product line and introduced the SCON-2XL product lines to provide console solutions throughout the 1990's and 2000's.

Desktops that connect to console controllers have evolved as well. The once predominant coax terminal has been largely replaced by TN3270 clients running on PCs or thin clients. Modern 3270 console controllers such as the latest product from Visara, the CCA-3074 can support hundreds of TN3270 clients communicating with dozens of LPARs. TN3270 clients offer a more flexible form of connectivity of 3270 sessions by utilizing the IP networks that are everywhere. Connectivity through IP networks however is not infallible. Networks can, and do go down. If all of

your OS consoles are dependent upon your IP network, what do you do when the network is down?

The Visara CCA-3074 Solution

The CCA-3074 console consolidation appliance is an enterprise class high availability solution. Both FICON and ESCON channel attachments are available allowing connectivity to nearly every mainframe environment. Over 1500 consoles for up to 96 LPARs can be provided through a single platform. Client desktops supporting TN3270 sessions are supported as well the older coax devices. Dynamic reconfiguration and redundant hardware within the platform assure a high reliability. The CCA-3074 comes in a convenient 3U platform that can be rack mounted.



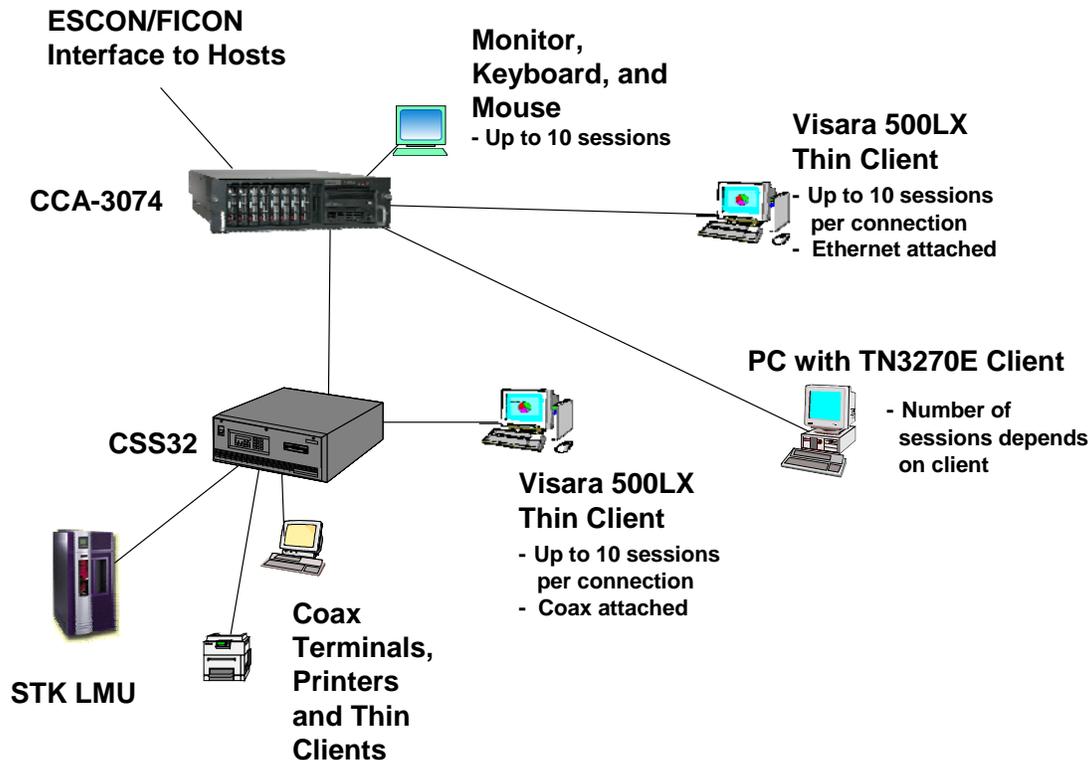
Console Availability When the Network is Down

The CCA-3074 hardware supports up to 10 physical Ethernet ports. Two are included as part of the base hardware. Two quad Ethernet interface cards may be added for the other eight. Each of these 10 Ethernet connections may be used as a network connection, as a connection to a coax subsystem (CSS32), or to a single Ethernet client. Clients connected directly to one of these ports or through a coax subsystem will be available even when the network is down. Additionally, up to 10 console sessions are supported by attaching a monitor, keyboard, and mouse to the CCA-3074.

Using the Visara 500Lx thin clients to attach directly to one of the Ethernet ports allows up to ten simultaneous console sessions through that port. Other client platforms are dependent upon their feature set.

A single CSS32 coax subsystem can support even more sessions through a single Ethernet port.

Using a combination of directly attached TN3270 clients or CSS32-attached coax clients, hundreds of console sessions can be supported.



Security

The CCA-3074 offers a number of options to keep your sessions secure. Among these are:

- Directly attached TN3270 client connections
- SSL encryption between the TN3270 client and the CCA-3074
- Use of User ID and Password
- Use of non-standard TCP ports for client connections
- Pegged client IP address usage
- Use of configured subnet filter (allow only users from a specified subnet to connect)
- Directly attached CSS32 coax connections
- Connections from internal TN3270 client emulator

Configuration and Management

Configuration and management of the CCA-3074 is through a secure browser connection (HTTPS). Browser connections can be through a network connection, through a directly attached monitor, keyboard, and mouse, or through directly attached PC or thin client. Multiple configuration files can be created and stored allowing for the development of new configurations or configuration changes prior to a maintenance window. The ability to keep multiple configurations also allows you to back out a configuration change easily if it does not achieve the necessary goals.

Status panels display easy to interpret green, red, or yellow status allowing status to be quickly checked even from across the room. Multiple consoles may be attached at the same time to allow

distribution of management responsibility across multiple operators, or to allow viewing of multiple status windows simultaneously.

Configurable email alerts can be used to inform necessary support personnel if attention is required to a failed subsystem such as a fan or power supply.

Reliability

The CCA-3074 runs on a hardened Enterprise class server platform. The following redundant hot swappable hardware ensures high availability of the system.

- Multiple Fans – five fans provide sufficient cooling even if one or more were to fail.
- Dual Power Supplies – each capable of being independently wired into its power source, allowing for the use of dual mains. Each power supply is fully capable of supporting the entire system by itself.
- Mirrored RAID Hard Drives – provides for the failure of one drive without affecting the operation of the platform.

In addition to hardware reliability, the CCA-3074 also supports the use of restore points. A restore point allows you to save a snapshot of the server software and configuration, which can be restored at a later date if needed, in case the current software and configuration gets changed accidentally or due to some other unfortunate incident. Restore points are automatically created whenever a code update is performed.

Console Session Access Options

Clients connecting to the CCA-3074 can be assigned sessions in a number of ways.

Statically Assigned Console Sessions – Console sessions can be assigned to a user based on the client's IP address or the TCP port to which they connect. Password protection can be configured to further ensure that only the desired user gets access to the session.

Pooled Sessions – Pooled sessions are more often used for non-console situations such as TSO sessions, where the specific session that a user is assigned is not as important as having access to a particular application. If multiple console sessions are available that provide the same access, then these too can be pooled. Pooled sessions can be accessed based on the IP address of the client or the address that they connect to, a specific TCP port that they connect to, or by way of a configured request from the client. Pooled sessions can also be assigned based on the user's subnet (such as a group of programmers).

Select Session from a Menu – Menus can be presented to a client at connection time to allow the client to select their session from a list of available pooled sessions. Menu access can be made generally available to groups of users, or specifically assigned through configuration of the client's IP address.

Allow User to Request Their Session – Optional configuration to allow the user to specify their session is also allowed.

Session Assignment Through Use of a Nickname – Session assignment based on a nickname provided by the client platform is also an option. Through the use of nicknames, client access can be managed by the CCA-3074 administrator, making changes as needed dynamically.

Hot Sessions

Traditionally, console sessions once activated continue to operate until the console is no longer available to receive the messages. Once this occurs, the session to that device is deactivated, and the next console device identified in the console list (if any) is tried. If no consoles in the list are available, the console function is rolled back to the HMC. Console activation occurs automatically if the device is connected when the LPAR comes up, or when activated from another console.

Hot Sessions on the CCA-3074 are sessions where the CCA-3074 will respond to the host as if a device is connected and powered up whether there is an actual device connected or not. This will cause the host to send console update messages indefinitely as long as the CCA-3074 is powered up. The CCA-3074 will respond to the write requests but discard the information whenever there is no device connected. When a user connects to the console session with their client, a Clear AID is automatically generated causing the host to respond to the AID by repainting the screen with the current console information. To respond correctly to a query from the host when a device is not connected, you must configure the desired device characteristics (screen Mod and EAB support).

Shared Sessions

Shared sessions are console sessions where more than one client is allowed to connect to the session at the same time. Console screen updates are sent to all clients that are connected to it, and keyboard input is allowed by all clients connected. The first connecting client determines the characteristics of the device type (screen Mod and EAB support). Other clients connecting to the same session should have similar characteristics to the first device. Shared sessions may be used for the following:

- Remote access to a NIP console
- Remote training
- Remote Problem diagnostics
- Offsite Emergency Access
- Centralized Management of Multiple Remote Sites
- A means to get around the 99 MCS console limitation imposed by the host

Migration Planning

The CCA-3074 was designed to support connectivity similar to that of the Visara SCON series or the IBM 2074 product. This allows the CCA-3074 to be a drop in replacement for the ESCON environment. When replacing older products with a FICON CCA-3074, it can be as simple as reassigning the CNTLUNIT and IODEVICE macros to a new FICON CHPID. When replacing a coax controller with the CCA-3074 you will need to include one or more CCS32 coax subsystems to provide the coax connectivity.

CSS32 Coax Subsystem

The CSS32 Coax Subsystem provides the coax connections for the CCA-3074. Coax devices (displays, printers, and StorageTek LMUs) connect to the coax ports of the CSS32 which in turn converts the data streams to a TN3270 data stream which connects to the CCA-3074. CSS32 Coax Subsystems typically come with a factory default configuration to connect one CSS32 directly to a CCA-3074. The CSS32 can be reconfigured to communicate with multiple CCA-3074s, or to support additional sessions per coax device. You can also attach multiple CSS32

platforms to a single CCA-3074 if needed for larger installations. Given adequate information about what is being replaced, the CSS32 configuration can normally be adjusted in the factory to allow you to install it with a working configuration on site. Configuration on the CCA-3074 allows you to direct host console sessions to the CSS32 as needed.

Visara 500Lx Thin Clients

The Visara 500Lx thin client is ideally suited to work with the CCA-3074 to provide consoles. Options for the 500Lx include 122-key keyboards, coax connectivity, and TN3270 emulation over Ethernet. The 500Lx can support up to ten TN3270 sessions as well as coax connectivity at the same time and can support as many as 20 console sessions concurrently when used with the CCA-3074. Up to four full console sessions can be displayed at one time on the 500Lx, reminiscent of the old IBM 3290 plasma terminal. Unlike the 3290 however, the 500Lx can provide full color support and communicate with different LPARs with each session.

Master Control Center Option

Beginning in 2014, the CCA-3074 can be made to include the Master Control Center (MCC) product. The MCC supports consoles to IBM mainframes, as well as midrange, Unix, Linux, Windows, and other environments interfaced to a single desktop running a browser connection or an X-windows session to the MCC. The MCC provides a structured means to consolidate and access large number of console sessions from one or more desktops and from local or remote locations. The MCC also provides the means to create automated responses to console sessions, and console session activity logs.

Storage Tek Silo/LMU Support

Since the CCA-3074 with CSS32 coax subsystem allows attachment of real coax devices, you can use it to manage older Storage Tek Silos via the coax LMU. The CCA-3074 can interface the LMU up to as many different LPARs as needed. By attaching one of the CSS32 platforms remote from the CCA-3074 it is even possible to support an LMU remote from the channel location.

Remote Management Through Visara's eManager Product

eManager is a remote management tool offered by Visara for the purpose of remotely managing Visara products from a central location.

The CCA-3074 can be accessed and managed using the eManager product, running from a remote Windows PC desktop using encrypted communications. Among the tools provided by eManager are the abilities to backup code and configurations remotely, push new code through a secure connection, pull and analyze logs, traces, dumps and more.

In Conclusion

The Visara CCA-3074 offers the latest in mainframe console connection technology with more reliability than ever before.