

Console Consolidation System Overview

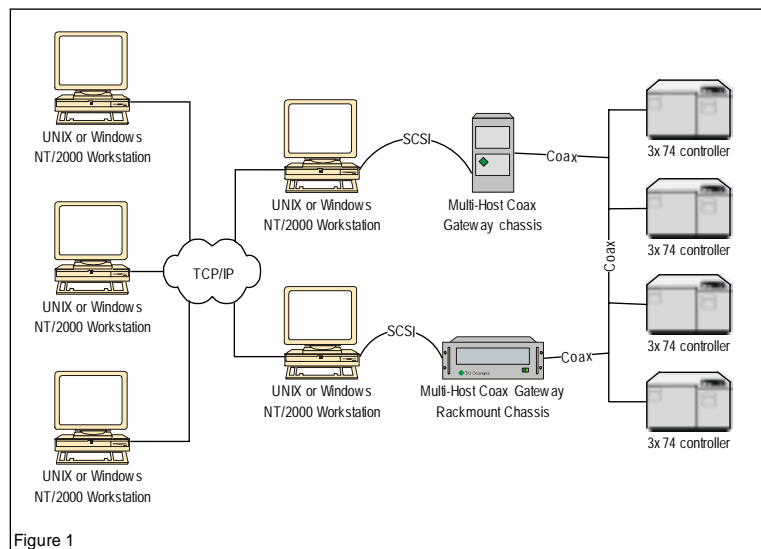
The Console Consolidation System makes consolidating mainframe consoles onto both UNIX and Windows workstations easier and more affordable than ever before. Console Consolidation System (CCS) software and hardware is uniquely equipped to move mainframe consoles from dumb terminals to desktop workstations, consolidating console sessions onto operator's UNIX workstations or PCs anywhere on your TCP/IP network.

The Console Consolidation System allows multiple operators to access and work in consoles simultaneously. CCS provides a method for monitoring who is accessing a particular console, and it allows a console window to be defined as read/write or read only, making it possible to have console images which are strictly used for monitoring, and other consoles images which are used to enter commands. Console consolidation software allows console sessions to be moved from workstation to workstation with ease, and even allows mainframe consoles to be displayed on more than one workstation at any one time.

The Console Consolidation System includes a Perl or C/C++ API programming language, to provide control over the console sessions. Each mainframe console session can be displayed in a standard 3270 CCS client window, or it can be controlled using the CCS API.

Console Consolidation Software

The Console Consolidation System provides a means for displaying multiple im-



ages of a single mainframe console anywhere on a TCP/IP network (figure 1). It provides a method for monitoring who is accessing a particular console, sophisticated authentication software to ensure only authorized users are granted access to mainframe consoles, an API to interface with CCS monitoring software and the ability to define a console window to be read/write

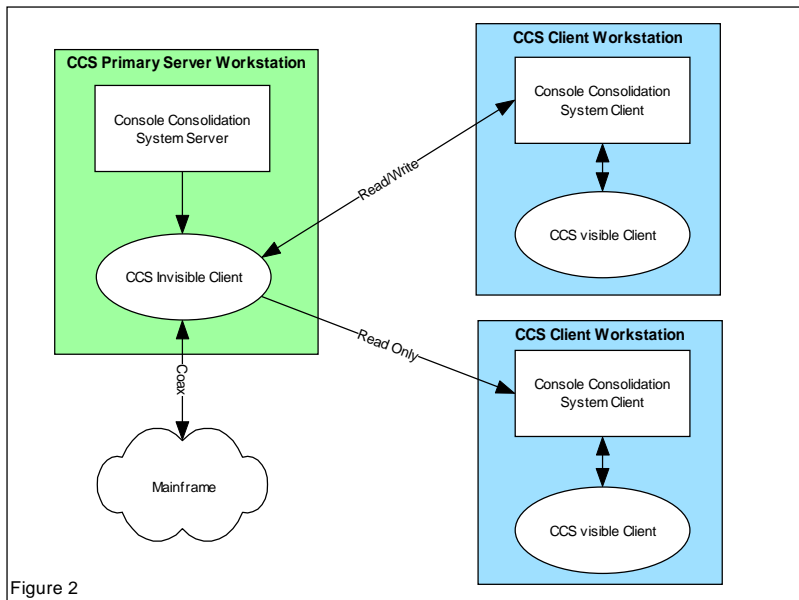


Figure 2

or read only, making it possible to have console images which are strictly used for monitoring, and other consoles images which are used to enter commands.

At its heart the Console Consolidation System is a client/server application. A console consolidation server running on a UNIX or Windows workstation maintains a connection to a mainframe console session. This server passes the console session's information to one or more console consolidation clients running anywhere on a TCP/IP network; a green screen application. Each console consolidation server is configured using a configuration tool.

A console consolidation server configuration table is used to specify which X-Direct or Win-Direct coax card and which mainframe console session on that card the console consolidation server will be attached to. The server configuration file also sets a TCP/IP port the server will listen on for console consolidation clients to call in on. An authentication method, either an authentication program or a user/password file, is defined so only authorized users are granted access to consoles.

A Monitor configuration table allows you to send information to a Console Consolidation Monitor on a TCP/IP network. The console consolidation monitor provides information about the state of each console session and console session image. All console consolidation servers can point to the same monitor giving an administrator an overall picture of mainframe console use, or each console consolidation server can have it's own monitor.

Running the Console Consolidation Software

The CCS server is run on a UNIX or Windows workstation (figure 2). This server starts a terminal emulation client, which can be either visible or invisible. The CCS client then establishes a DFT or CUT mode connection through the CCS server. CCS servers run on a UNIX or Windows NT/2000 workstation which is attached to a Multi-Host Coax Gateway. The coax gateway attaches to coax ports on a standard 3x74 host controller. Once the CCS server is running the mainframe console session is varied active.

Console consolidation clients can now be run on the same workstation or on other PCs or UNIX workstations on a TCP/IP network. When the CCS client is run, it starts up a 3270 terminal emulator. This 3270 client can be visible interactive client, or an invisible client controlled by the CCS API software.

One or more console consolidation clients can run against each CCS

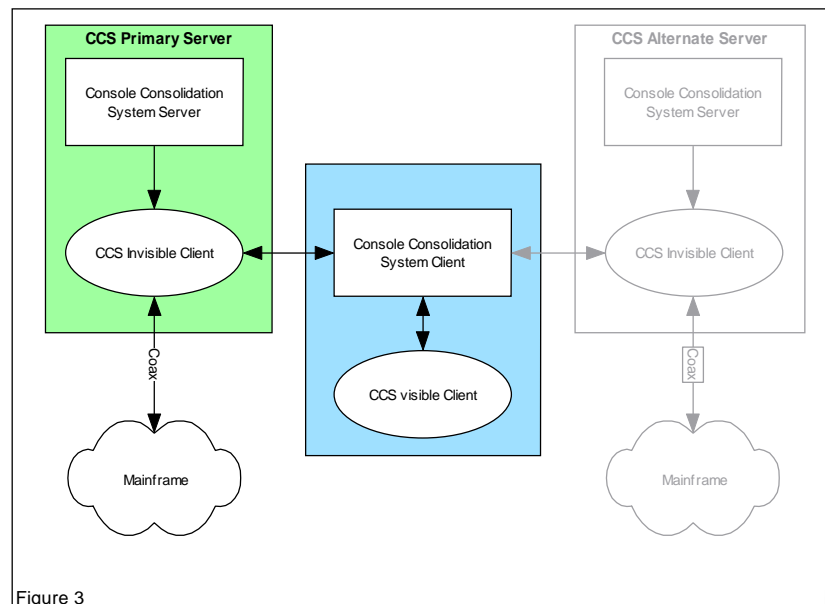


Figure 3

server session, allowing one or more operators to work with a console session. Each console consolidation client can be configured as a read/write session or as a read only session. This allows some operators to use interactive sessions, while others monitor sessions.

A “failover” option in the console consolidation client allows the client to switch to a backup CCS server if its primary server goes down for any reason (figure 3). The CCS Monitor is updated to reflect that the console consolidation client has switched to the backup server if this occurs.

Multi-Host Coax Gateway

Multi-Host Coax Gateway hardware attaches to a SCSI port of a UNIX or Windows NT/2000 workstation (figure 4). A gateway chassis can contain up to 7 active coax cards and 1 “Hot Switchable” Multi-Host Coax cards. A gateway rackmount chassis can contain up to 14 active coax cards and 2 “Hot Switchable” Multi-Host Coax cards on two SCSI chains. Each Multi-Host Coax card can support 1 CUT mode session or 5 DFT sessions. More gateways can be added to a workstation for additional sessions.

Each coax card is Hot Switchable and can be taken the card out of the SCSI chain without disrupting other SCSI devices on that chain. If a card malfunctions, that card can be switched off line. A spare card, already attached to the SCSI chain, can then be brought online at the SCSI address the malfunctioning card was using. The coax cable that was attached to the malfunctioning card is then swapped to the spare card. The malfunctioning card can be removed at a time when the workstation is brought down for normal maintenance.

The coax cards use the same physical connection to the mainframe as standard 3270 dumb terminals. A coax cable is attached between a coax card and a coax port on a 3x74 controller.



The Console Consolidation System API

Console Consolidation System APIs are written in Perl or C/C++ and can interact with mainframe console sessions. A program written with the API can interface with console sessions or the Console Consolidation monitor. The CCS APIs also provide an easy interface to the Console Consolidation System.

Console Consolidation System Client Software

The Console Consolidation System client software appears when a console consolidation client starts a visible client. The 3270 client software can also be used independently of the console consolidation system. The CCS client provides the look and feel of an IBM 3278/3279 terminal. The client software supports default 4-color and full 8-color modes, as well as the full range of color and highlighting used by IBM applications with the Extended Attribute Byte. The client software contains many features designed to increase productivity and ease operators work loads.

The CCS 3270 client software contains a special console option that optimizes the client for use as a console, when used in conjunction with the CCS servers. The console enhancements are the

result of years of experience with console consolidation in the X-Direct and Win-Direct product lines.

SoftKeys™ and TurboClicks™ allow an operator to send 3270 functions or run macros and API programs at the click of a mouse. SoftKeys is a user created virtual-keypad that appears on the desktop. Buttons can be defined to run macros, GoScripts™, API programs, send 3270 functions, or transfer files to the mainframe. TurboClicks highlight user defined words in the mainframe session. Clicking these highlighted words will run a user defined macro. 3270 functions, like PF keys can also be sent to the host via TurboClicks.

CCS clients contain many features that enable operators and administrators to customize the look and feel of each session. In addition to choosing the font and font size, the color of all items in a session window can be changed as desired. This allows operators to keep track of different sessions by using visual queues. For example, if an operator has 2 console sessions open, one session may have a white background while the other may have a black background, making it easy to distinguish between them.

Customization can be password controlled by a system administrator, or desired options can be taken off the client menus. This could give an administrator full control over the look and feel of the mainframe sessions.

Console Consolidation At A Glance

- Consolidate mainframe console sessions over a TCP/IP network
- Multiple operators can access and work in console sessions simultaneously
- Operator sessions can be defined as read/write or read-only for administrative flexibility
- Perl and C/C++ API provided for easy interface to the Console Consolidation System
- Supports UNIX platform and Windows NT/95/98/2000
- Failover clients and Hot Swappable cards ensure high availability of critical applications
- User Authentication ensures authorized users are granted console access
- CCS Monitors provide console session information for administrative control, anywhere on a TCP/IP network
- CCS Monitor information can be accessed with the CCS API
- Supports CUT and DFT sessions, including hardware and IPL consoles
- Each Multi-Host coax card support up to 5 sessions including consoles, printers, and/or 3270 sessions
- UNIX supports up to 56 active coax cards and 8 hot switchable spares
- Windows NT/2000 supports up to 28 active coax cards and 3 hot switchable spares
- Easy to install, setup and maintain
- The console enhancements are the result of years of experience with console consolidation in the X-Direct and Win-Direct product lines