

SCON-20L/22L/25L/28L/3074 Console Concentrator

Planning and Installation Guide

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Read This First

This is the **SCON-20L/22L/25L/28L/3074 Planning and Installation Guide**. Information on the LINCS Operating System can be ordered separately. Please visit our website, www.visara.com, to access all manuals online.

1. From your Internet browser type <http://www.visara.com>
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 - ***SCON-20L/22L/25L/28L/3074 Configuration Manual***
 - ***LINCS Features***
 - ***LINCS Problem Determination***
 - ***LINCS Configuration***
 - ***LINCS Central Control***

Product Safety

The SCON-2XL/3074 Console Concentrator complies with relevant product safety standards, such as the UL and CSA, and TUV-GS Rules and Regulations.

FCC and CDC Regulatory Statements

This equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a Class A computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cable must be used with this equipment. Operation with nonapproved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment. The user may find the following booklet prepared by the Federal Communications Commission helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the U.S. Government Printing Office, Washington DC 20402, Stock No. 004-000-00345-4.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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Chapter 1. Overview

The SCON-20L allows console attachment for up to 16 coax terminals, 16 TN3270 clients, 16 TELNET clients, and provides support for 1-3 LPARS, through one ESCON interface, for a total of 96 sessions.

The SCON-22L allows console attachment for up to 32 coax terminals, 256 TN3270 clients, 256 TELNET clients, and provides support for 1-16 LPARs, through one ESCON interface, for a total of 256 sessions.

The SCON-25L allows console attachment for up to 128 coax terminals, 512 TN3270 clients, 256 TELNET clients, and provides support for 1-32 LPARs, through a pair of ESCON interfaces, for a total of 512 sessions.

The SCON-28L allows console attachment for up to 128 coax terminals, 512 TN3270 clients, 256 TELNET clients, and provides support for 1-128 LPARs, through a pair of ESCON interfaces for a total of 512 sessions.

The SCON-3074 provides console attachment for TN3270 clients for up to 128 sessions and 48 LPARS per ESCON interface (2 ESCON max).

For simpler reading, SCON will be used throughout the remainder of this book to represent the models SCON-20L, SCON-22L, SCON-25L, SCON-28L, and SCON-3074, except as noted. SCON-2XL will be used to refer to the models that support coax (all but the SCON-3074).

In addition to coax terminals, the SCON-2XL models support a variety of desktop attachments that includes:

- Coax Printers
- StorageTek LMUs (Library Management Units)
- Telnet Displays
- LPD/LPR LAN-attached Printers
- TN3270 Clients

The SCON-3074 supports TN3270 clients only.

The purpose of this document is to provide the information necessary to install the SCON in most host environments. There is also a troubleshooting section to try to help diagnose common problems that you may encounter during install.

Although many of the panels in this book may give the appearance that one configuration was used to generate all of the examples and diagrams, this is not necessarily the case. To show various options, some of the panels may show variations of the configuration used to generate most diagrams.

The SCON will fit in a standard 19" rack, but you will need to obtain a Rackmount Kit.

Environmental Parameters

		20L/22L	25L/28L
Dimensions:	Width:	17.5 in (44.5 cm)	17.5 in (44.5 cm)
	Depth:	20 in (51cm)	23.5 in (59.7 cm)
	Height:	8 in (20 cm)	9 in (22.9 cm)
Weight:		50 lb. (22.7 Kg)	51.8 lb (23.5 Kg)
Clearances:	Front:	24 in (61 cm)	24 in (61 cm)
	Rear:	10 - 12 in (25 - 30 cm)	10 - 12 in (25 - 31 cm)
	Top:	0 in (0 cm)	0 in (0 cm)
	Left:	2 in (5 cm)	4 in (10 cm)
	Right:	2 in (5 cm)	4 in (10 cm)
Temperature Range:		50° to 105°F (10° to 40.6°C)	50° to 105°F (10° to 40.6°C)
Relative Humidity:		8% to 80% with no condensation	8% to 80% with no condensation
Heat Output:	Base Unit:	310 BTU/hr	341 BTU/hr (nominal)
	Maximum:	600 BTU/hr	910 BTU/hr (maximum)

Power Requirements

		20L/22L	25L/28L
Phases:		1	1
Power:	Base Unit	130 VA	190 VA
	Maximum	240 VA	300 VA
Current Rating:	115 VAC 60 Hz	3.0A	6.0A
	230 VAC 50 Hz	1.4A	3.0A
Voltage (+/-10%, +/- 1 Hz):		100V (at 50/60 Hz) 110V (at 50/60 Hz) 120V (at 60 Hz) 127V (at 60 Hz) 200V (at 50/60 Hz) 208V (at 60 Hz) 220V (at 50/60 Hz) 230V (at 50 Hz) 240V (at 50/60 Hz)	100 (at 50/60 Hz +/- 1 Hz) 110 (at 50/60 Hz +/- 1 Hz) 120 (at 60 Hz +/- 1 Hz) 200 (at 50/60 Hz +/- 1 Hz) 208 (at 60 Hz +/- 1 Hz) 220 (at 50/60 Hz +/- 1 Hz) 230 (at 50 Hz +/- 1 Hz) 240 (at 50/60 Hz +/- 1 Hz)

Chapter 2. Planning for Your Install

Identifying the Environment

First, take a moment to fill out the following worksheet to determine what your environment is, or what you wish to create. Several topic paragraphs are provided to help determine what is needed to satisfy your requirements. Finally, a worksheet at the back of this book may be used to map out your configuration prior to actually attempting to configure the SCON. You may want to create a spreadsheet with a similar layout or make several copies of the worksheet to encompass your entire configuration requirement.

Number of mainframes?	Number:	_____
Number of LPARs?	Number:	_____
EMIF supported on any of the mainframes?	(Yes/No)	_____
ESCON Directors being used?	(Yes/No)	_____
Operating Systems in use? (OS/390, MVS/ESA, VM/ESA, VSE/ESA)		_____
StorageTek LMUs	(Yes/No)	_____
IBM 3290	(Yes/No)	_____
Redundant Console Controllers	(Yes/No)	_____
Number of consoles needed for each LPAR	Number:	_____
Need/desire to use one console for multiple LPARs	(Yes/No)	_____
Need to display multiple LPARs at once on a display	(Yes/No)	_____
Remote Access requirement?	(Yes/No)	_____
Hot Console session requirement	(Yes/No)	_____
Shared session requirement	(Yes/No)	_____

Replacing Existing ESCON 3174 Controllers

Each of your existing 3174 controllers is capable of communicating to only one LPAR, and appearing as only one control unit image (CUI). Each 3174 is therefore utilizing only one CUADD of the 16 CUADD values that can be defined (0-F). It is common to use the same CUADD number for each 3174 (if no CUADD parameter is found in the CNTLUNIT macro of the gen, CUADD=0 is implied). The SCON provides support for multiple CUIs, allowing it to replace multiple 3174s. To support two or more LPARs through the same interface on the SCON using the same CUADD value requires configuration of 'Channel Path Filtering' as the protocol option. To replace multiple 3174s with a single SCON, even if they have ESCON interfaces, you will normally have to make some minor gen changes.

Replacing Existing 2074 Controllers

Depending on the model, your existing 2074s support 32, 64, or 96 TN3270 clients. The SCON-3074 supports as many as 256 sessions (128 per ESCON interface). With session sharing, as many as 512 TN3270 clients can share those 128 sessions. Gen changes need only be made if you need to increase the number of sessions supported or to consolidate two or more existing 2074s.

Replacing Bus and Tag Controllers

Bus and Tag definitions and ESCON definitions are different, so you will always require Gen changes when replacing Bus and Tag controllers with a SCON.

Determining the Need for ESCON Directors

If you have more than two mainframe platforms or have multiple LPARs on a single mainframe that does not support EMIF, you will probably be best served by using ESCON directors. ESCON Directors allow multiple LPARs and multiple mainframes to communicate to a SCON through a single ESCON interface. If ESCON Directors are to be used, consider implementing a redundant ESCON Director to eliminate a single point of failure.

When to Use EMIF

If your mainframe supports EMIF (Enterprise Multiple Imaging Facility) and you are running multiple LPARs, making use of EMIF can greatly reduce the number of ESCON interfaces that are required, and fewer SCONs as well.

StorageTek LMUs Planning

StorageTek LMUs have a requirement to use a single coax connection for each LPAR that you wish to connect the LMU to. Be sure to allow for that in your calculation for the number of coax connections that must be provided by the SCON-2XL.

FICON Usage

The SCON does not have the ability to connect directly to FICON. You may connect indirectly to FICON through a switch which provides the SCON with an ESCON connection.

IBM 3290 Plasma Display Planning

The 3290 plasma display can support up to 4 sessions through a single coax connection, but it is limited to communication to only one LPAR. Visara provides the special 3290 DSL files required and requested by the 3290 at 3290 boot time. An alternative to the

use of the 3290 would be to use one of the Visara Thin Client products (1783, 1883, 500LX) or the UCT-L. These products can support up to 10 sessions, including simultaneous full screen display of 4 sessions to different LPARs.

Planning for the Visara UCT-L

The Visara UCT-L is designed to support console sessions in a rather unique way. You can use them to display multiple console sessions on the screen (up to 4 full screen console sessions) through its TN3270E feature when using a monitor capable of supporting 1280 x 1024 resolution. Unlike other TN3270E clients however, you can optionally attach the UCT-L directly through a coax connection (fewer security issues). The UCT-L also supports an Ethernet connection. (Visara 1783, 1883, and 500-LX products may be attached in the same way.)

Planning for Hot Console Sessions

One of the unique features available for the SCON allows Console sessions to remain powered on with the host LPAR, even when the client associated with the session is not currently connected. This is referred to as a Hot Console Session. Applications for the Hot Console Session include:

- Provide console connections for a lights out site.
- Provide a means for multiple operators, located in multiple locations to have access to the same console session at different times.
- Provide a tool for disaster recovery from a remote location.

Depending on your choice of connections, you must plan for coax port usage, and/or plan for an Ethernet interface on the SCON-2XL. Up to 32 TN3270E sessions are supported by the base SCON-22L/25L/28L, 16 on the SCON-20L, 128 on the SCON-3074. If you need to provide more TN3270E sessions, you must plan to install optional TN3270 Feature Activation Disks (not available on the SCON-20L and SCON-3074), and add the second ESCON adapter onto models supporting them to achieve maximums.

Use of ESCON Channel Extenders

There is nothing unique about the SCON that should cause problems using ESCON channel extenders. However, Visara has conducted no special testing with channel extenders to verify their correct operation. It is the customer's responsibility to determine compatibility with another vendor's channel extender, when used with the SCON.

Secure Network Connections

Secure network connections for TN3270 or Telnet clients using Secure Socket Layer (SSL) protocol can be provided by the Visara SSL1000 server. The SSL1000 server is designed to provide secure SSL encrypted communication between PC desktops and the SSL1000, and provide clear text between the SSL1000 and the SCON through a separate network interface. By running the SSL protocol on a separate platform, it is possible to use a single SSL1000 to provide communication to multiple SCON platforms, and even provide failover routing of the communications to whichever SCON is available. Also because of the nature of SSL encryption, there is a substantial load on the platform performing encryption. By running this operation on a separate platform designed to provide this function, performance of the SCON platforms can be kept optimum. You can also implement two SSL1000s to provide redundant secure connections.

Management Planning

The SCON offers several options for management. Configuration changes for the SCON can be made while the SCON is performing its normal duties, however for most changes, an IML of the SCON is required. To allow for routine maintenance and system changes, it is strongly suggested that more than one SCON be used to provide redundant console connections.

Configuration and management of the SCON is supported through a simple coax connection (not supported on the SCON-3074) or TELNET connection.

It is recommended that you configure a display, other than a console for the purpose of managing the SCON. If one of the console devices is used to go into central control mode and configure or manage, it may be reported as powered off to the host causing the console function to roll to another device.

If management through a network is intended using Telnet, some thought should be given to the level of security that should be used. Among the security options that are provided by the SCON are:

- Password Protection of the Telnet interface
- Configurable TCP Port assignment
- IP address filtering

Additional security could be added by isolating the IP network used with the SCON from the corporate networks. Another option would be to implement a VPN (Virtual Private Network) using external VPN equipment.

A unique management product produced by Visara for the purpose of managing the SCON, as well as the 1174 Communication Server family and Thin Client/Console desktops is available. This product is called eManager.

Planning for eManager Support

eManager is a platform management software product available from Visara for the purpose of managing the Visara Communication Server and Thin Client desktop product lines. This includes the SCON. eManager requires configuration of the Ethernet interface to provide the management communication path. To allow eManager to communicate with the SCON, you must configure IP for the LAN connection, and either configure a Telnet session as part of the SCON configuration, or create a Limited Access Telnet file, and install it on the SCON.

eManager can be used to communicate with SCONs on site or off site through corporate networks or across the Internet. If you are to manage the SCON from a remote location over public connections, you might want to consider the use of a VPN.

Among the capabilities of eManager are:

- Provide SCON Software Configuration Backups (dynamic or scheduled)
- Provide Configuration Information for Easy Viewing, Storing or Making Printed Copies
- Provide Inventory Information Including a Report Generator (supports coax terminal Vital Product Data reporting)
- Provide Network Status of the SCON through the Pulse Network Monitor feature of eManager
- Displayable Hardware Information Specific to Installed SCONs using an interactive graphical picture interface
- Software and Configuration Management
- Remote Viewing of Event Logs and Other Diagnostic Information
- Telnet Interface into Remote SCON
- Code and Configuration Management of UCT-L, 500-LX, 1783, and 1883 Products Used With the SCON

SCON Maximum Capability Chart

Feature	Number Allowed					Notes
	20L	22L	25L	28L	3074	
Coax Devices	16	16(32)	32(128)	32(128)	0	
Number of LPARs/Host Circuits	3	4(16)	16(32)	20(128)	48(96)	
Sessions/Host Circuit	32	32	32	32	32	
Maximum Console Sessions	96	256	256(512)	256(512)	128(256)	256 Console sessions/ESCON interface
ESCON Interfaces	1	1	1(2)	1(2)	1(2)	
Ethernet Interfaces	1	1(2)	1(5)	1(5)	2	
Telnet Displays and LAN Printers Using Ethernet	16	32	32(256)	32(256)	0	
TN3270 Clients over Ethernet	16	32(256)	32(512)	32(512)	512	512/Ethernet card
Sessions per Coax (CUT) Display or Telnet Display	10	10	10	10	N/A	
Sessions per Coax (DFT) Display or TN3270 Client	Depends on client software	N/A	TN3270 clients get one session per connection			

Notes:

- 1) The numbers inside parenthesis are maximums based on optional features. The numbers outside the parenthesis are standard.
- 2) The 22L supports configuration of up to 32 coax devices in the base configuration, even with only one coax adapter installed. At least part of the coax devices would need to be attached by multiplexer if a single coax adapter is installed.
- 3) The 25L and 28L support 1-4 Multiplexer Coax Controller (MCC) cards, each supporting up to 32 coax devices per card.

Determining the number of SCON

Use the SCON Maximum Capability Chart on the previous pages to help in determining the number of SCON and hardware mixes that will be required to satisfy your requirements.

The minimum number of SCONs that are required is determined by several factors:

- Whether redundant Console Controllers will be used (recommended)
- The number of ESCON cables required to connect to the LPARs defined
- Whether redundant ESCON Directors are being used
- The number of LPARs defined
- The total number of consoles required

A minimum of two consoles, each located on separate SCON should be used for every critical application. This allows for a SCON to be powered down for routine maintenance and configuration changes. At least two SCONs should be connected to each LPAR, to provide these connections.

When directors are used, the overall number of SCONs that would be required may be greatly reduced. Up to 16 LPARs (host circuits) can be connected through an ESCON interface for the 22L (with FADS installed) and 25L. Up to 64 LPARs are supported on the 28L (with FAD) and 48 on the SCON-3074.

When redundant directors are available, two ESCON interfaces may be desired. The total number of LPAR connections (host circuits) that a 25L can be configured for is 32. If redundant host circuits (2) are configured between the 25L and each LPAR, the maximum number of LPARs that could be supported through the configuration of 32 host circuits (16x2), would be 16. Similarly on the 28L the total number of LPAR connections supported is 128 with two ESCON interfaces, and when using redundant connections, that number becomes 64. For the SCON-3074 the numbers are 96 and 48.

The total number of LPARs that the SCON can be configured for is determined by the number of CU images supported by that unit. In planning for the total number, be sure to include the redundant connections that may be desired, and any additional LPARs that may be created in the near-term future, that will require connections for consoles.

Take time to fill out the Console Configurations Planning Worksheet found in Appendix B, or better yet a similar spreadsheet. A software tool, the SCON Configuration Wizard, can be used to generate this spreadsheet. This can be used to help determine the total number of consoles needed to satisfy your requirements. It can later be used as a reference to aid in performing the configuration of the SCON. In determining the console requirement, remember the following:

- A single coax CUT terminal can communicate with more than one LPAR, but display only one full LPAR connection on the screen at one time. Thus you may be able to share a single device to provide the function of multiple consoles.
- The maximum number of sessions per LPAR supported by the SCON is 32. The maximum number of sessions per ESCON interface supported on the SCON-2XL is 256. The maximum number of sessions per ESCON interface on the SCON-3074 is 128.

Parameter Definition Cross Reference Chart

The following chart and notes can be used to help show the corresponding configuration parameters between the IOCDS definitions, HCD definitions, and the SCON configuration.

IOCDS		HCD		SCON-22L/LINCS	
MACRO	Parameter	Panel	Parameter	Panel	Parameter
CNTLUNIT	CUADD	Change Control Unit Definition	Logical Address	Line Options	CU Index
IODEVICE	UNITADD ¹	Define Device/ Processor	Unit Address	Line Options	Device Low
CNTLUNIT	UNITADD				
IODEVICE	ADDRESS ²	Add Device	Number of Devices	Line Options	Device High ³
CHPID	PARTITION	Update CHPID Access and Candidate List	Access List = Yes	N/A	N/A
IODEVICE		Define Device Candidate List	Partition/ Reachable	N/A	N/A
CHPID	SWITCH	Add Channel Path	Dynamic Switch ID or Entry Switch ID	N/A	N/A
CNTLUNIT	LINK	Change Control Unit Definition	Link Address	N/A	N/A
CNTLUNIT	CUNUMBR	Change Control Unit Definition	Control Unit Number	N/A	N/A
IODEVICE		Add Device	Connected to CUs		
IODEVICE	UNIT	Add Device	Device Type	Device Profile Assignments	Device Profile

Notes:

- Note that the UNITADD parameter of the IODEVICE macro must correspond to one of the addresses defined in the UNITADD parameter of the CNTLUNIT macro.
- The number of addresses within the ADDRESS definition of the IODEVICE macro determines the number of addresses that should be configured for the corresponding host circuit on the SCON (as determined by the Device Low and Device High values). Note that if no UNITADD parameter is defined within the IODEVICE macro, the address and range defined by the ADDRESS parameter must fall within the address range defined for the UNITADD parameter of the CNTLUNIT macro.
- If the UNITADD parameter has not been defined in the IODEVICE macro, it will default to the ADDRESS parameter. The Device Low value in the SCON configuration would then have to take on the same value of the two low order hex digits of the ADDRESS value.

Chapter 3. Configuring the SCON

For a complete description of the configuration process and information on all of the SCON configuration panels refer to the SCON-20L/22L/25L/28L/3074 Configuration Manual, or the SCON-3074 Configuration Manual.

For a complete description of the feature activation disk installation process, refer to the LINC'S Central Control Manual.

The SCON is licensed for the number of CU definitions it can support. The SCON-20L comes with, and is limited to 3 LPAR support. The base SCON-22L supports four CU through a single ESCON interface. If additional CU definitions are desired, Extended ESCON CUI Feature Activation Disks (FADs) must be installed on the SCON-22L unit to increase the number of CU images that can be supported to 16. The SCON-25L supports 16 CU images through each of one or two ESCON adapters. The SCON-28L supports up to 20 CU images through each of one or two ESCON adapters, expandable to 64 per ESCON through FADS. The SCON-3074 supports 48 CU images per ESCON interface.

Three different Extended ESCON CUI license FADs exist, and multiple Extended CUI FADs may be installed to increase the support to the number supported by the SCON. FAD increments come in values of 1 CUI, 4 CUI, and 16 CUI.

Each CU definition on the SCON is associated to a specific CNTLUNIT definition assigned to a single LPAR.

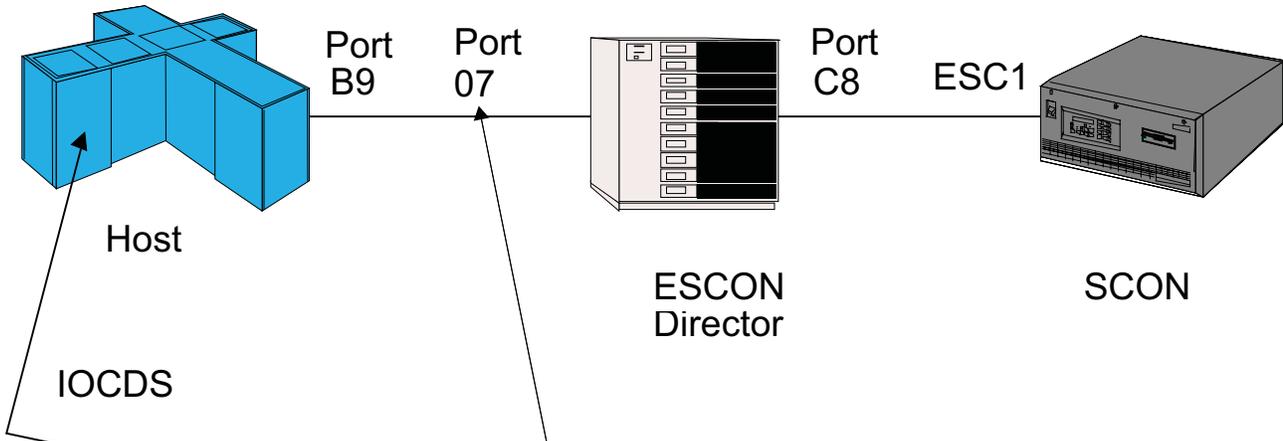
Configuring the Host Interface

You must configure at least one of the following Line Options/ESC (or Line Options/ESX) panels on the SCON for each LPAR that you need to connect to. There are two 'Protocol' options to choose from. It is strongly recommended that you use the 'Non-SNA with Channel Path Filter' option. Using the Channel Path Filter, you can specify which CNTLUNIT definition on the host this panel is to communicate with. Opting to use the 'Non-SNA' protocol option requires that you set a filter in the HCD (by defining the Explicit Device Candidate List) to prevent multiple LPARs from competing for the same SCON resource. An example of both protocol options will follow. You must be consistent on which protocol is selected in configuration (you can not mix the two options).

Note that the configuration process may allow you to configure more CU panels than you have license to support. You will be advised of any CU license deficit at the end of the configuration process when you attempt to save the configuration.

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SCON Line Options/ESC Panel - (Non-SNA with Channel Path Filter)



CNTLUNIT CUNUMBR=1100,PATH=B9,UNITADD=((A0,16)),UNIT=3174,CUADD= 0

```

Line Options/ESC1          LINCS C8.2 Central Control
CU Index:                  0
Protocol:                  Non-SNA with Channel Path Filter
Device Low (Lowest IODEVICE UNITADD): A0
Device High (Highest IODEVICE UNITADD): AF
CHANNEL PATH FILTER
  LPAR Number (Partition Number): 3
  Source Link Address: 07
  CU Number (CUADD): 0

          HOT SESSION SELECTION MATRIX
          0      1      2      3
(Hot Session 00 corresponds to Device Low) —> 01234567890123456789012345678901
-----
Hot Sessions MOD Size (0=Disabled): 00000000000000000000000000000000
Shared Sessions:                   00000000000000000000000000000000

PF: 1-Menu   4-Add 5-Delete          7-Back 8-Forw 9-Default 10-Done
  
```

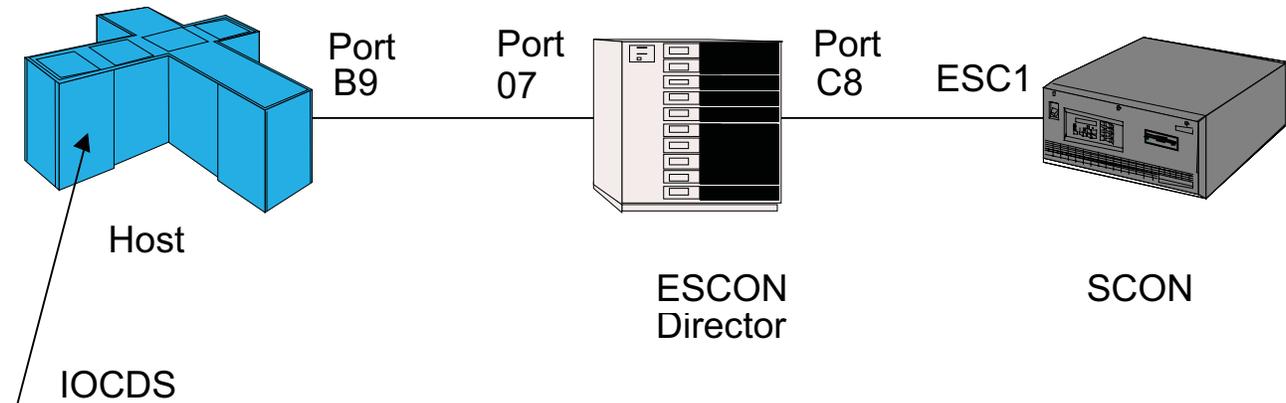
The example shows the Device Low field information being provided by the IOCDS definition for the corresponding CNTLUNIT macro, UNITADD parameter. The second part of the UNITADD parameter gives the quantity of consecutive addresses defined as a decimal number. This number is converted from decimal to hexadecimal and used to calculate the Device High field information. The CU Number field is also taken from the IOCDS definition as the CUADD value. The Source Link Address is not taken from

the IOCDS, but is instead defined as the port on the ESCON director that is connected back to the Host CPU. If there is no ESCON director, the value should be left as FF or can be defined as 01. The CU Index field is an index value that only has meaning to the SCON's configuration for referencing to the Host Circuit later.

Caution

Do not define a range of addresses on the SCON that is greater than that defined in the host gen. Doing so can have negative impact on the performance of the existing consoles.

SCON Line Options/ESC Panel - (Non-SNA)



CNTLUNIT CUNUMBR=1100,PATH=B9,UNITADD=((A0,16)),UNIT=3174,CUADD= 0

Line Options/ESC1

LINCS C8.2 Central Control

CU Index (CUADD):

0

Protocol:

Nor-SNA

Device Low (Lowest IODEVICE UNITADD): A0

Device High (Highest IODEVICE UNITADD): AF

(Hot Session 00 corresponds
to Device Low) —>

HOT SESSION SELECTION MATRIX

0	1	2	3
01234567890123456789012345678901	01234567890123456789012345678901	01234567890123456789012345678901	01234567890123456789012345678901

Hot Sessions MOD Size (0=Disabled):

00000000000000000000000000000000

Shared Sessions:

00000000000000000000000000000000

PF: 1-Menu 4-Add 5-Delete

7-Back 8-Forw 9-Default 10-Done

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When selecting 'Non-SNA' as the protocol, the Device Low and Device High fields are derived the same way as before. The CUADD value is combined with the CU Index field. (This restricts each CUADD defined to being a unique value.) To compensate for not defining the Source Link Address and LPAR values in the SCON's configuration, you must configure the Device Candidate List in the HCD to restrict communication to be between the desired LPAR and a single CNTLUNIT definition.

One 3270 Host Circuit panel must be defined for each CU definition that the SCON is to communicate with. Each 3270 Host Circuit panel must reference the CU (CUADD) that it is to be associated with. This is done by entering the correct CU Index number corresponding to the desired CU. Each CU supports one host circuit. Terminals used as consoles to manage the LPAR will be assigned to the host circuit on a later panel.

The Host Identifier field is an information field only, that can be displayed on the attached coax terminals that are making use of this host circuit. It could be used to give the name of the LPAR, for example.

SCON-3270 Host Circuit Panel

```
3270 Host Circuit A                               LINCS C8.2 Central Control
Line:                                             ESC1
Host Identifier:                                OS390_prod4
CU:                                              0
PF: 1-Menu  3-Def_Dflt  4-Add  5-Delete  7-Back 8-Forw 9-Default 10-Done
```

Configuring for Traditional Coax Displays

(does not apply to SCON-3074)

After the host side of the configuration has been made, you can configure for direct attached coax devices. Not all device related panels are covered here, only the ones that are most relevant.

One option on the Device Options/General Panel should be avoided in most instances, the Delayed Power On Notify option.

Device Options/General Panel

```
Device Options/General                                LINC8 C8.2 Central Control

Time Of Day:                                         Disable
Null Space Conversion:                               Off at Control Unit IML
Delayed Power On Notify:                             Disable

                PASSWORD OPTIONS (must use PF4 to save changes)
ASCII/TELNET Password:                               synergy
Number of Days Password is valid:                   021
Password Last Updated:                               10 18 2004
Password Expires On:                                 11 08 2004

                RECORD PLAYBACK OPTIONS
Length of Each Global Sequences (K):                00
Length of Device Sequences (K):                     00

PF: 1-Menu          4-Update Password      7-Back 8-Forw 9-Default 10-Done
```

It is very important to leave the configuration for Delayed Power On Notify disabled when you have a single terminal supporting more than one console session. If you do not, the background sessions will not automatically be activated as consoles when the LPAR comes up, and will instead roll to an alternate console. The default setting for this option is “Disabled”.

Device Profile panels are used to define the feature options that are to be supported for the devices (consoles) assigned to use that profile. One profile can be defined and assigned for use by multiple consoles. All CUT consoles (coax terminals, ASCII terminals, Telnet terminals, StorageTek LMUs) must have a device profile assigned to it. Printers (coax printers, ASCII printers LAN-attached printers) also require a device profile. TN3270 consoles and TN3287 printers are restricted to the features supported by their emulator and do not make use of device profiles on the SCON.

Note: A separate profile should be created for coax devices that will require file transfer to be enabled (such as the StorageTek LMU). Creating a separate profile for the devices requiring file transfer capability will result in better performance (improved response time) in general, and specifically for coax devices that do not require file transfer.

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SCON Device Profile Panel

Device Profile 00/Host Assignments LINCS C8.2 Central Control

Profile Name: _____
Device Type: Display
Power Off Action: None

Session	Host Assignments At Power On
-----	-----
A	3270 Host: OS390_prod4
B	3270 Host: VMESA_prod3
C	Disable
D	Disable
E	Disable
F	Disable
G	Disable
H	Disable
I	Disable
J	Disable

PF: 1-Menu 3-Def_Dflt 4-Add 5-Delete 7-Back 8-Forw 9-Default 10-Done

Each console or printer can be assigned to have up to 10 sessions spread across any of the host circuits previously defined. The device profile allows you to define which of the host circuits the device will have access to and which of the ten sessions will have host circuits assigned. In the example above, any display (console) device assigned to use this profile will have access to two host circuits (two LPARs). Up to 32 different device profiles can be created.

An LMU requires that a separate coax connection be used for every LPAR that it is to communicate with. The device profile for an LMU should only have a host assignment for Session A.

Once all of the device profiles have been defined, they can be assigned to the coax ports as needed on the Device Profile Assignments panel. The PF3 function key is used to invoke default address assignments to the panel, once you have made the Device Profile assignments in the appropriate column.

Note: All host address ranges are referenced from zero on this panel, regardless of the actual address range defined on the Line Options panel for the ESCON interface. So, for example if the range of addresses defined on the Line Options panel are from 20-3F, the range of addresses used on this panel would be from 000-031 (decimal) or 000-01F (hexadecimal).

SCON Device Profile Assignments Panel

```

Device Profile Assignments/MCC1
          Dev ----- Host Assignment At Power On (Hex LUs)-----
Port Prof  A      B      C      D      E      F      G      H      I      J
-----
000  00 00 000 01 000  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
001  00 00 001 01 001  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
002  00 00 002 01 002  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
003  00 00 003 01 003  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
004  00 00 004 01 004  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
005  01 00 005  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
006  01 01 005  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
007  00 00 006 01 006  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
008  00 00 007 01 007  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
009  00 00 008 01 008  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
010  00 00 009 01 009  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
011  00 00 00A 01 00A  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
012  00 00 00B 01 00B  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
013  00 00 00C 01 00C  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
014  00 00 00D 01 00D  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
015  00 00 00E 01 00E  ___  ___  ___  ___  ___  ___  ___  ___  ___  ___
(00 - 7F)3270 HOST (=)3270 Class (>)TELNET (%)Print Q (+)LAT (&)ASCII

PF: 1-Menu  3-Asn_Dflt_LUs              7-Back 8-Forw 9-Default 10-Done
    
```

The Device Profile Assignments panel is arranged with the coax port number (or ASCII Port, or LAN port) in the far left column, profile number assigned in the second column, then 10 sets of columns for the ten sessions supported. Each set of sessions columns actually consist of two columns, the first to indicate the host circuit being used and the second to give the address being used, using a zero reference to refer to the first actual address in the range.

StorageTek LMUs must be attached to the SCON-2XL using a separate coax connection for each LPAR. In the example above, ports MCC1.005 and MCC1.006 represent connections to two host circuits communicating with two different LPARs. Note the different device profile (01) being used to provide FTP support (example of Device Profile 01 shown on next page). In most configurations you will need to customize the host and LU columns beyond what the 2XL defaults, to map the connections to meet your requirements.

Changes can be made to the sessions columns by manually typing over the host and LU assignments. Note that <PF3> will restore Host and LU default assignments based on the Device Profile selection. Once you have customized this panel manually do not press the <PF3> key or your work will be reset back to the default.

Special Considerations for StorageTek LMUs

There are two special requirements on the SCON-2XL when configuring for the StorageTek LMUs.

- Enable the PC File Transfer option on the Device Profile used by the LMUs.
- Set the Coax Poll Rate to enhanced.

Enabling PC File Transfer for StorageTek LMU

```
Device Profile 00/Display                               LINCS C8.2 Central Control

Supervisor Authority:  Disable          Keyboard Tables:  Host Language
Windowing:             Disable          PC File Transfer:  Enable
Calculator:            Disable          SNA Data Display: After Chain
Typeahead:            Disable          HAP Session:      Last
RPB Record Function:  Disable          HAP Status at IML: Enable
Display Host ID:      Disable          HAP Profile:      ___
Session Auto Swap:    Disable          Auto Coax Recovery: Disable

RESOURCE AUTHORIZATION MATRIX
Resource Definition      0  1  2  3  Dynamic
-----
3270 Host Class Access(01-32) 00000000000000000000000000000000 0
3270 Host Class Access(33-64) 00000000000000000000000000000000 0
ASCII Host Class Access      0000000000000000 0
IP Host Class Access         0000000000000000 0
LAT Host Class Access        0000000000000000 0
Printer Class Access         0000000000000000 0
Global Sequence Access       00000000000000000000000000000000 0

PF: 1-Menu  3-Def_Dflt  4-Add 5-Delete  7-Back 8-Forw 9-Default 10-Done
```

The PC file transfer option is part of the Display Profile options.
The Coax Poll Rate option is found on the Coax Multiplexing menu.

Enabling Coax Poll Rate for StorageTek LMU

```
Coax Multiplexing                               LINCS C8.2 Central Control

Method of Connection on  MCC1  Standard
                        MCC2  Standard
                        MCC3  Standard
                        MCC4  Standard

Dynamic Multiplexing  Disable
Coax Poll Rate        Enhanced
Automatic Coax Recovery  Disable

PF: 1-Menu  7-Back 8-Forw 9-Default 10-Done
```

Configuring for Hot Console Sessions

Hot Console Sessions give you the ability to create a console session that will appear to be powered on to the LPAR for as long as the SCON is online. This may be convenient for situations where it is desired to have a console session that can be accessed across a network connection by either one person or by multiple persons. Since the console device always appears to be powered on, it should not be necessary to vary the console active when establishing a new connection to the session, as long as the SCON was active when the LPAR came up.

Since the device always appears to be powered on, the console function will never roll to another device, as long as the SCON is powered on. If the SCON is ever powered off when the LPAR becomes active, or if the SCON is taken out of service, the console function would roll to its backup per normal console operations.

Any of the SCON sessions can be configured to be hot. Note that only the console sessions should be configured as hot (not the normal VTAM sessions).

The following panel shows how you would configure for Hot Sessions. The example shows hot sessions for addresses A1 and A8.

```

Line Options/ESCL                               LINCS C8.2 Central Control

CU Index:                                       0

Protocol:                                       Non-SNA with Channel Path Filter

Device Low (Lowest IODEVICE UNITADD):         A0
Device High (Highest IODEVICE UNITADD):       AF

CHANNEL PATH FILTER
  LPAR Number (Partition Number):             3
  Source Link Address:                         07
  CU Number (CUADD):                           0

                                         HOT SESSION SELECTION MATRIX
(Hot Session 00 corresponds to Device Low) -->
0          1          2          3
01234567890123456789012345678901
-----
Hot Sessions MOD Size (0=Disabled):           01000000100000000000000000000000
Shared Sessions:                             00000000000000000000000000000000

PF: 1-Menu          4-Add 5-Delete          7-Back 8-Forw 9-Default 10-Done
  
```

Hot Session configuration is only available with the Extended Feature Set option.

Configuring for Telnet Clients (does not apply to SCON-3074)

Telnet clients can be configured as CUT displays and used for consoles. Just about any Telnet client can be supported by one of the emulations provided by the LINCS software running on the SCON. Additional device drivers can be created by use of the ASCII Definition Utility (ADU) of the SCON.

Changes to the existing ASCII device drivers can also be made using the ADU.

The 20L supports up to 16 Telnet clients, the 22L supports up to 32, and the 25L and 28L may each be configured to support up to 256. Supporting more than 32 Telnet clients on the 25L and 28L requires the installation of the Telnet FAD. The SCON-3074 does not support TELNET client.

Line Options Panel - FET Card

```
Line Options/FET1                                LINCS C8.2 Central Control
LAN Address:                                     0000 0000 0000
Media Type:                                       Auto Negotiate
Duplex Mode:                                       Auto
TCP/IP:                                           Enable
Coax Ethernet Bridge:                             Disable
PF: 1-Menu                                         7-Back 8-Forw 9-Default 10-Done
```

TCP/IP protocol is enabled for the Ethernet adapter (FET1).

A MAC address can be configured, or you can put all 0's in the LAN Address field to use the burned in address found on the Ethernet card.

Configuring for Token Ring instead of Ethernet will result in a similar set of panels and options.

A password can be entered on this panel that will be used by the Telnet clients when they attempt to establish a connection to the SCON. You can also specify how many days the password is good for.

An expiration message will be displayed as users connect in, on each of the seven days preceding the expiration of the password. If the password is allowed to expire, the password defaults to the supervisor password that is currently configured. The password on this panel may be changed through configuration at any time without having to IML the SCON.

Note: You must press <PF4> to update the password options.

Device Profile - ASCII Display Options

```
Device Profile 00/ASCII Display                LINCS C8.2 Central Control
Display Emulation:                            Negotiate
Keypad Mode:                                  Application Mode
Inactivity Timeout:                            0000
Synchronous Presentation:                      Disable
E/W Presentation Option:                       Disable

Reminder: Press PF4 for an additional Device Profile

PF: 1-Menu  3-Def_Dflt  4-Add 5-Delete  7-Back 8-Forw 9-Default 10-Done
```

When Telnet clients have been defined, ASCII Display options are displayed as part of all Display Device Profiles. You can specify the Display Emulation (from among several predefined emulations), select to be Prompted (Prompt) or select to offer auto-negotiation of the emulation (Negotiate).

When there are to be several different user platforms used to Telnet into the SCON, a selection of Negotiate or Prompt may be preferred.

Device Profile Assignments - Telnet Clients

```
Device Profile Assignments/FET1                LINCS C8.2 Central Control
      Dev  ----- Host Assignment At Power On (Hex LUs) -----
Port Prof  A      B      C      D      E      F      G      H      I      J
-----
000  00  00 006 01 006  _____
001  00  00 007 01 007  _____
002  00  00 008 01 008  _____
003  00  00 009 01 009  _____

(00 - 7F)3270 Host  (=)3270 Class  (>)TELNET  (%)Print Q  (+)LAT  (&)ASCII
PF: 1-Menu  3-Asn_Dflt_LUs                7-Back 8-Forw 9-Default 10-Done
```

The assignment of Device Profile and console sessions to the Telnet client is identical to the assignments for coax devices, up to 10 sessions per port.

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Only the Telnet ports defined previously (on the Network Device Definition panel) appear on this panel to have assignments made. The default Device Profile 00 will be assigned initially. You must change this if that profile is not the desired one.

Note: You may also need to remove some of the coax device assignments and reassign them to the Telnet clients, since the SCON will automatically give priority to the assignment of sessions to coax devices.

Configuring for TN3270E Clients

TN3270E clients are supported by the SCON, however there are some things that you should know.

Printers attached to desktops using a TN3270/TN3270E (TN3287 emulation) client are defined the same as other TN3270/TN3270E clients. Care should be taken to use specific LU assignments with printer sessions.

The 20L supports up to 16 TN3270E clients. The other 2XL models support up to 32 TN3270E clients with the base software. A TN3270 feature activation disk installed permits as many TN3270 clients to connect as needed. The 22L can support up to 256 sessions through one ESCON adapter, and the 25L and 28L support up to 512 sessions through two ESCON adapters. The SCON-3074 supports up to 128 sessions per ESCON interface, and does not require, nor use, a TN3270 FAD.

Line Options - FET

```
Line Options/FET1                               LINCS C8.2 Central Control
LAN Address:                                     0000 0000 0000
Media Type:                                       Auto Negotiate
Duplex Mode:                                       Auto
TCP/IP:                                           Enable
Coax Ethernet Bridge:                             Disable
PF: 1-Menu                                       7-Back 8-Forw 9-Default 10-Done
```

The TCP/IP protocol must be enabled to support TN3270E clients.

Line Options Panel - TCP/IP Options

Line Options/FET1 LINCS C8.2 Central Control

TCP/IP OPTIONS

IP Address: 207 015 182 037
Subnet Mask: 255 255 255 000
TELNET Host Connections: 000
TN3270 Client Connections: 0032
IP Router: Disable
BSD 4.2 IP Broadcast: Disable
Expanded IP Addressing: Disable
TCP Quiet Time (sec): 0000
Default Router Address: 207 015 182 001
DNS Primary Name Server: _____
DNS Secondary Name Server: _____
DNS/Ping Response Time: 0000
DNS Default Domain: _____

SNMP Trap IP Address: _____
SNMP Read Authentication String: _____
SNMP Write Authentication String: _____

PF: 1-Menu 7-Back 8-Forw 9-Default 10-Done

You must enable the maximum number of TN3270E client sessions that you will support through the Ethernet interface on this panel. To support more than 32 of the TN3270E sessions on the SCON-2XL models, you must have the appropriate Feature Activation Disk(s) installed.

You also need to configure the IP address and subnet mask that will be used by the SCON Ethernet card.

If the TN3270E clients will have to cross a router to get to the SCON, you will need to configure this default router's IP address.

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TCP/IP Options Panel

```
TCP/IP Options                                LINC8 C8.2 Central Control

LPD Printer Username
LPD Server/Printers Drive:      None

                                SNMP OPTIONS

System Location:                  _____
System Contact:                  _____
System Name:                      _____

                                TN3270 SERVER OPTIONS
TN3270E:                          Enable      ATTN Key:  Disable
SYSREQ Key:                       Disable    3270 Translate:  Disable
Keepalive/Timeout Method:         Keepalive using Telnet NOP
Keepalive/Inactivity Timer (min): 05 Disconnect on UNBIND:  Disable

Telnet Disconnect on Unbind:      Disable

                                SESSION MANAGEMENT SYSTEM
SMS Server:                        None      SMS Client: Disable
Poll Rate (secs):                  00005
Domain Name:                        _____

PF: 1-Menu                          7-Back 8-Forw 9-Default 10-Done
```

You will need to enable the TN3270E Server option to support TN3270E consoles. This is required to run some emulators, and can be enabled for most environments.

You should also select a Keepalive/Timeout Method (the method itself is not important). This keepalive method will be used to detect when a client has disconnected from the SCON, in case the emulator itself does not close the TCP port. Detecting a disconnect is important for freeing up the connection for other TN3270E clients to use. The keepalive interval determines the maximum time it will take to detect that a client is no longer connected, to free up the resource.

3270 Host Classes Panel

3270 Host Classes		LINCS C8.2 Central Control										
Class	Host	Hex LU Ranges										Class Name
		Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	
01	OS390_prod4	08	09	__	__	__	__	__	__	__	__	TN3270E_CLIENTS
02	VMESA_prod3	07	09	__	__	__	__	__	__	__	__	TN3270E_VM_____
03	None	__	__	__	__	__	__	__	__	__	__	_____
04	None	__	__	__	__	__	__	__	__	__	__	_____
05	None	__	__	__	__	__	__	__	__	__	__	_____
06	None	__	__	__	__	__	__	__	__	__	__	_____
07	None	__	__	__	__	__	__	__	__	__	__	_____
08	None	__	__	__	__	__	__	__	__	__	__	_____
09	None	__	__	__	__	__	__	__	__	__	__	_____
10	None	__	__	__	__	__	__	__	__	__	__	_____
11	None	__	__	__	__	__	__	__	__	__	__	_____
12	None	__	__	__	__	__	__	__	__	__	__	_____
13	None	__	__	__	__	__	__	__	__	__	__	_____
14	None	__	__	__	__	__	__	__	__	__	__	_____
15	None	__	__	__	__	__	__	__	__	__	__	_____
16	None	__	__	__	__	__	__	__	__	__	__	_____

PF: 1-Menu 4-Add 5-Delete 7-Back 8-Forw 9-Default 10-Done

A 3270 Host Class can be defined for use by the TN3270E clients, if you wish to pool the sessions that they will use. It is not necessary to define 3270 Host Classes if all of the users will have specific address assignments.

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TN3270 Client Definition Panel

```
TN3270 Client Definition Panel 000                                LINC8 C8.2 Central Control

Line Port  IP Address      Type      3270 Host      LU
---- ----  -
FET1 00983 207 015 182 113  VisaraNCT PW  OS390_prod4    06
FET1 01067 207 015 182 117  VisaraNCT PW  VMESA_prod3    06
FET1 01187 207 015 182 119  Client PW     OS390_prod4    07
FET1 00224   ___ ___ ___ ___  VisaraNCT PW  3270 Class:TN3270E_CLIENTS ___
FET1 00225   ___ ___ ___ ___  VisaraNCT PW  3270 Class:TN3270E_VM   ___
FET1 01677   ___ ___ ___ ___  Client ID     OS390_prod4    01
FET1 01678   ___ ___ ___ ___  Client ID     VMESA_prod3    01
FET1   ___ ___ ___ ___  Client        Disable         ___

PF: 1-Menu    3-Auto  4-Add 5-Delete    7-Back 8-Forw 9-Default 10-Done
```

This panel is used to make session assignments to clients connecting into the SCON using a TN3270E client.

The first three entries on the panel make specific host session assignments to users connecting in with specific IP addresses.

The next two entries assign users connecting in with addresses other than those defined, to sessions defined to the 3270 Host Classes defined on the previous panel.

In each example above, non-standard TCP ports are being used to enhance security. Also, as indicated in the Type column, the Telnet password will be required when the user connects up.

Note that definitions intended for UCT-Ls, 500-LX NCTs, 1783 NCTs, 1883 NCTs, and 1683 NCTs may be configured as a “VisaraNCT” or “VisaraNCT PW” in the Type column. Doing so adds another level of security (PCs with emulators will not establish a connection to these types). If an 1174 with coax terminals will be used to provide remote TN3270 access, they too may be configured as a VisaraNCT or VisaraNCT PW. These definitions will cause the SCON to negotiate the Command Chaining extension with the NCT or 1174, allowing them to function as consoles. These definitions are only compatible with the UCT-L, 500-LX, 1783, 1883, and 1683 or a downstream 1174 with coax terminals and should not be used for any other type of device.

If any PC TN3270E emulation is used, you must configure the 'Type' as "Client", "Client PW", or "Client ID". Some PC TN3270E emulators will not function properly when setup to respond as an "E" client (example: TSO logon screen is not displayed properly). This problem can usually be corrected by setting the client up as a non-E client.

The Client ID and VisaraNCT ID types, allow you to create a User ID and Password combination that the user will be challenged for when making a connection. The User ID and Password information is created and stored in the 'nickname.sys' file. Refer to the SCON Configuration manual for more detail.

Device Options/General Panel

```
Device Options/General                                LINC8 C8.2 Central Control
Time Of Day:                                         Disable
Null Space Conversion:                               Off at Control Unit IML
Delayed Power On Notify:                             Enable

                PASSWORD OPTIONS (must use PF4 to save changes)
ASCII/TELNET Password:                               synergy
Number of Days Password is valid:                   021
Password Last Updated:                               10 18 2000
Password Expires On:                                 11 08 2000

                RECORD PLAYBACK OPTIONS
Length of Each Global Sequences (K):                00
Length of Device Sequences (K):                     00

PF: 1-Menu      4-Update Password    7-Back 8-Forw 9-Default 10-Done
```

A password can be entered on this panel that will be used by the Telnet clients when they attempt to establish a connection to the SCON. You can also specify how many days the password is good for. This is the same password that is used for Telnet clients.

An expiration message will be displayed as users connect in, on each of the seven days preceding the expiration of the password. If the password is allowed to expire, the password defaults to the supervisor password that is currently configured. The password on this panel may be changed through configuration at any time without having to IML the SCON.

Note: You must press <PF4> to update the password options.

Configuring for LAN Printers (does not apply to SCON-3074)

The SCON supports LAN attached printers and presents them to the host as if they were coax printers. There are three ways to communicate with printers across the LAN from the SCON.

- TN3287 emulation
- LPD protocol
- TCP (Socket) connection

For desktops supporting an attached printer using a TN3287 emulation, refer back to the section entitled “Configuring for TN3270E Clients”.

The following series of panels show which configuration panels must be configured to support LAN printers using the LPD and TCP methods.

LPD and TCP printers are configured on the NDD Panel and shares the resource with Telnet Clients. Therefore maximum numbers supported are the same as for Telnet, 16 on the 20L, 32 on the 22L, and up to 256 on the 25L and 28L. Configuring more than 32 requires the Telnet FAD. The SCON-3074 does not support LAN printers.

Line Options Panel - FET

```
Line Options/FET1                               LINCS C8.2 Central Control
LAN Address:                                     0000 0000 0000
Media Type:                                       Auto Negotiate
Duplex Mode:                                       Auto
TCP/IP:                                           Enable
Coax Ethernet Bridge:                             Disable
PF: 1-Menu                                         7-Back 8-Forw 9-Default 10-Done
```

You must enable TCP/IP protocol on the Ethernet card that is being used.

Line Options - TCP/IP Options Panel

```
Line Options/FET1                                LINC8 C8.2 Central Control

                                TCP/IP OPTIONS

IP Address:                                207 015 182 037
Subnet Mask:                               255 255 255 000
TELNET Host Connections:                   000
TN3270 Client Connections:                 0032
IP Router:                                Disable
BSD 4.2 IP Broadcast:                      Disable
Expanded IP Addressing:                    Disable
TCP Quiet Time (sec):                      0000
Default Router Address:                    207 015 182 001
DNS Primary Name Server:                   _ _ _ _
DNS Secondary Name Server:                  _ _ _ _
DNS/Ping Response Time:                    0000
DNS Default Domain:

SNMP Trap IP Address:                      _ _ _ _
SNMP Read Authentication String:           _ _ _ _
SNMP Write Authentication String:          _ _ _ _

PF: 1-Menu                                7-Back 8-Forw 9-Default 10-Done
```

The IP address and subnet mask to be used by the SCON are defined on this panel. The Default Router must be configured if the clients are not to be connected to the same network segment as the SCON.

Although this panel shows a number entered for the TN3270 Client Connections, this parameter has nothing to do with LPD and TCP printer connections. TN3287 printer sessions do need to be included in this number, but that is described in the “Configuring for TN3270E Clients” section.

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TCP/IP Options Panel

```
TCP/IP Options                                LINC8 C8.2 Central Control
LPD Printer Username                          SCON-22L
LPD Server/Printers Drive:                    Drive C
SNMP OPTIONS
System Location:
System Contact:
System Name:
TN3270 SERVER OPTIONS
TN3270E:                                     Enable          ATTN Key:  Disable
SYSREQ Key:                                  Disable         3270 Translate:  Disable
Keepalive/Timeout Method: Keepalive using Telnet NOP
Keepalive/Inactivity Timer (min): 05 Disconnect on UNBIND:  Disable
TELNET Disconnect on UNBIND:                 Disable
SESSION MANAGEMENT SYSTEM
SMS Server:                                  None            SMS Client: Disable
Poll Rate (secs):                            00005
Domain Name:
PF: 1-Menu                                   7-Back 8-Forw 9-Default 10-Done
```

If your LAN printers are to use the LPD/LPR protocol, you will need to configure the first two options on this panel.

The first option is an optional label that can be sent to the LPD printer as a banner page.

The second option allows print jobs to be temporarily queued to the hard drive (as opposed to memory).

Device Profile Assignments Panel - Printer

```

Device Profile 01/Host Assignments                               LINC8 C8.2 Central Control

Profile Name:
Device Type:           Printer
Power Off Action:      None

Session                Host Assignments At Power On
-----                -
A                      3270 Host: OS390_prod4
B                      Disable
C                      Disable
D                      Disable
E                      Disable
F                      Disable
G                      Disable
H                      Disable
I                      Disable
J                      Disable

PF: 1-Menu  3-Def_Dflt  4-Add 5-Delete 7-Back 8-Forw 9-Default 10-Done
    
```

To define a Printer Device Profile, you must toggle the Device Type to “Printer”. You must also toggle the Session A option to one of the “3270 Host” definitions, corresponding to the LPAR that the printer is to be connected to. If the printer is to be printing console messages, you need to limit the printer to just one session.

Device Profile - Printer, Second Panel

```

Device Profile 01/Printer                                       LINC8 C8.2 Central Control

                                                                0      1
                                                                1234567890123456
                                                                -----
Printer Mode:          Shared
Print Buffering:       Enable  Printer Class Assignment: 0000000000000000

                        ASCII PRINTER OPTIONS

Printer Emulation:    Generic  Printer Buffer Size:      Mod 2
Form Feed Support:    Disable  LU3 Null Suppression:    Disable
Forms Width:          132      Printer Character Set:    NRC
Forms Length:         066      Local Print Form Feed:    None
Count 2nd Transparent Order:  Disable
SCS Transparent Data Xlate:  Disable
LU1 Protocol Enveloping:    Disable
Enveloping Delay After CR:   000
Enveloping Delay After FF:   000

PF: 1-Menu  3-Def_Dflt  4-Add 5-Delete  7-Back 8-Forw 9-Default 10-Done
    
```

Additional printer options can be defined on the second panel for the printer profile.

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Device Profile Assignments - LAN Printers

```
Device Profile Assignments/FET1                               LINC8 C8.2 Central Control
  Dev  —Host Assignment At Power On (Hex LUs)—
Port Prof  A    B    C    D    E    F    G    H    I    J
-----
000  00  00 006 01 006  —————
001  00  00 007 01 007  —————
002  00  00 008 01 008  —————
003  00  00 009 01 009  —————
004  02  00 00A —————
005  02  01 00A —————
(00 - 7F)3270 Host  (=)3270 Class  (>)TELNET  (%)Print Q  (+)LAT  (&)ASCII
PF: 1-Menu  3-Asn_Dflt_LUs                               7-Back 8-Forw 9-Default 10-Done
```

On the Device Profile Assignment panel it is necessary to enter the correct Printer Device Profile number for your printer definitions. In this example, the Printer Device Profile is number 01. The letter of the Host Circuit and the session number should reflect what has been defined on the host for your printers.

Configuring for Remote Management

There is more than one way to remotely manage the SCON. Among the ways available are:

- Telnet connection via network
- Dial-in ASCII
- Remote dial-in via coax attached PC using a product such as “PC Anywhere”. (Not available on SCON-3074.)
- eManager remote management software

Management using Telnet comes in two flavors. You can configure the SCON-2XL to support a Telnet client as described previously. A Telnet client, knowing the Supervisor password, can go into the Central Control Mode and into configuration as needed. Using Telnet the client can also have console sessions. (This method is not supported on the SCON-3074.)

A second method using Telnet does not require for you to make definitions for your Telnet session in the SCON configuration utility. The second method makes use of an ASCII text file (acc\$data.sys) to configure the network interface.

Note: Using this second method, the Telnet client has access to Central Control Mode only, and can not have a console session to the host.

The ASCII text file may be created on a PC, then transferred over to the SCON. This can be accomplished by saving the file to floppy and inserting the floppy into the SCON floppy drive. The contents of this file is read only during the IML process. An example of the contents of this file are shown below.

```
Ip=207.15.182.66
Tcp=940
Router=207.15.182.10
Lineid=fet1
Speed=
Password=p6x9krw
Baud=
Subnet=255.255.255.0
Mac=020000420066
```

You must specify as a minimum the IP address, TCP port number, and Line ID. All other parameters are optional. You may omit any parameters that are not defined. The file is not case sensitive.

You can copy the file onto the hard drive of the SCON using the file copy routine in Media Management or by using FTP.

To manage the SCON using the eManager product, you will still need to configure the Telnet interface using either of the two methods listed above, and create a LINC node definition in the eManager software. Once defined, eManager can help in many ways. Among the features supported by eManager are:

- Configuration backup and restore
- Configuration panel retrieval (display, print, store)
- Event Log retrieval
- Various diagnostic and problem determination utilities
- Remote Hardware viewing
- Code and configuration updates

Configuring for Telnet or TN3270 Host Sessions

The SCON-25L and SCON-28L support a feature, not available to the other SCON models, that allows a coax user connected to the SCON to have a session to another SCON (or 1174) through the network. The session can be configured to use Telnet or TN3270E. Using Telnet, the session has access to the Central Control Mode of the other platform, for management purposes, as well as for host session purposes. Configuring for TN3270E does not allow Central Control Mode Access, but gives a more realistic 3270 connection through the remote platform, as if coax attached to that platform.

Line Options Panel - FET

```
Line Options/FET1                               LINCS C8.2 Central Control
LAN Address:                                     0000 0000 0000
Media Type:                                     Auto Negotiate
Duplex Mode:                                     Auto
TCP/IP:                                         Enable
Coax Ethernet Bridge:                          Disable
PF: 1-Menu                                     7-Back 8-Forw 9-Default 10-Done
```

You must enable TCP/IP protocol on the Ethernet card that is being used.

Line Options - TCP/IP Options Panel

```
Line Options/FET1                               LINCS C8.2 Central Control
TCP/IP OPTIONS
IP Address:                                     207 015 182 037
Subnet Mask:                                   255 255 255 000
TELNET Host Connections:                       000
TN3270 Client Connections:                     0032
IP Router:                                     Disable
BSD 4.2 IP Broadcast:                          Disable
Expanded IP Addressing:                       Disable
TCP Quiet Time (sec):                         0000
Default Router Address:                       207 015 182 001
DNS Primary Name Server:                       ___ ___ ___ ___
DNS Secondary Name Server:                    ___ ___ ___ ___
DNS/Ping Response Time:                       0000
DNS Default Domain:                           _____
SNMP Trap IP Address:                         ___ ___ ___ ___
SNMP Read Authentication String:              _____
SNMP Write Authentication String:             _____
PF: 1-Menu                                     7-Back 8-Forw 9-Default 10-Done
```

Besides providing a configuration for the IP network parameters (IP Address, Subnet Mask, and Default Router/Gateway), a configuration of how many Telnet Host Connections that are desired is made. This value determines the maximum number of sessions that can be established by this feature concurrently using a combination of Telnet/TN3270.

ASCII Session Profile

```
ASCII Session Profile 00                                LINCS C8.2 Central Control

Profile Name:           Houston

Answer Back Sequence:   _____
Disconnect Sequence:   _____

Terminal Emulation:   DEC VT2xx   Timer Disc:           0000
Translate Tables:       Primary       Bold:                 Normal
Character Set:          NRC           VT2xx Control:     8 bit
Tab Motion:             Direct        Auto Wrap:            Disable
Newline:                Disable      Cursor Keys:          Normal
Keypad Mode:            Numeric       Numeric Keypad:       Decimal
Cursor:                 Disable      Margin Bell:          Disable
Formfeed:               Linefeed     Column Change:        Preserve
3101 Turnaround Char:   CR           3101 CR Key:         CR
3101 Scroll:            Disable
Break Time (msec):      300           Duplex:                Full

PF: 1-Menu      3-Def_Dflt           7-Back 8-Forw 9-Default 10-Done
```

At least one ASCII Host Session profile panel must be configured to support the Telnet or TN3270E host sessions. The most relative items have been highlighted, and are used to define the type of emulation that will be used for a Telnet connection. This emulation is also used initially for TN3270E, while the TN3270E negotiations are proceeding. Each profile panel can be assigned to multiple user sessions as needed.

A second panel providing the Telnet/TN3270 options must also be configured. The configuration of the next panel determines whether the session is to be Telnet or TN3270. An example configuration for each is provided.

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ASCII Session Profile - Telnet Options (Configured for a Telnet Session)

```
ASCII Session Profile 01                                LINCS C8.2 Central Control

                                TELNET OPTIONS

Interrupt Process:      00                Abort Output:      00
Break Character:       00                Are You There:     00
Erase Character:       00                Erase Line:        00

Echo:                  Disable          Binary:            Disable
Timing Mark:           Disable          Status:           Disable
Terminal Type:         Disable          End Of Record:    Disable
TCP Port:              00000            TCP Port Action:   None

TN3270 Session:        Disable          TN3270E Support:  Disable
ATTN Key:              None
SYSREQ Key:            None

Reminder: Press PF4 for an additional ASCII Session Profile
PF: 1-Menu  3-Def_Dflt  4-Add  5-Delete  7-Back  8-Forw  9-Default  10-Done
```

Default can typically be used.

ASCII Session Profile - Telnet Options (Configured for a TN3270 Session)

```
ASCII Session Profile 00                                LINCS C8.2 Central Control

                                TELNET OPTIONS

Interrupt Process:      00                Abort Output:      00
Break Character:       00                Are You There:     00
Erase Character:       00                Erase Line:        00

Echo:                  Disable          Binary:         Enable
Timing Mark:           Disable          Status:           Disable
Terminal Type:      Enable          End Of Record: Enable
TCP Port:              00000            TCP Port Action:   None

TN3270 Session:    Enable          TN3270E Support: Enable
ATTN Key:          Telnet Interrupt Process
SYSREQ Key:       Telnet Abort Output

PF: 1-Menu  3-Def_Dflt  4-Add  5-Delete  7-Back  8-Forw  9-Default  10-Done
```

The highlighted sections display a typical configuration for TN3270E support.

IP Host Classes Panel

```

IP Host Classes                                LINC8 C8.2 Central Control

Class  Line  IP Address or Name  ASCII Ses  Class Name
-----  ---  -
01     FET1  142.67.93.112      01         TN3270_HOST
02     FET1  142.67.96.11       00         SCON-22L_MGMT
03     FET1  LPAR19.HOST.ACME.COM  00         LPAR19
04     None  _____         _____
05     None  _____         _____
06     None  _____         _____
07     None  _____         _____
08     None  _____         _____
09     None  _____         _____
10     None  _____         _____
11     None  _____         _____
12     None  _____         _____
13     None  _____         _____
14     None  _____         _____
15     None  _____         _____
16     None  _____         _____

PF: 1-Menu                                7-Back 8-Forw 9-Default 10-Done
    
```

The IP Host Classes panel is used to define the host connections that the Telnet and TN3270E sessions will go to. Assignment of the ASCII Session Profile determines which connections will use the Telnet definition and which will use the TN3270E definition.

```

Device Profile 00/Host Assignments            LINC8 C8.2 Central Control

Profile Name: _____
Device Type:      Display
Power Off Action: None

Session:          Host Assignments At Power On
-----  -
A          3270 Host A
B          IP Host Class: LPAR19
C          IP Host Class: TN3270_HOST
D          Disable
E          Disable
F          Disable
G          Disable
H          Disable
I          Disable
J          Disable

PF: 1-Menu  3-Def_Dflt  4-Add  5-Delete  7-Back 8-Forw 9-Default 10-Done
    
```

The device profile panel allows you to toggle through all of the possible host connections that have been defined including the Telnet host and TN3270E host connections. In this

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example two of the three host connections defined for network access have been selected as sessions B and C. Session A is defined as normal 3270 host session through the local ESCON adapter.

Device Profile Panel - Display (Configured for Telnet/TN3270 Host Access)

```

Device Profile 00/Display                                LINCS C8.2 Central Control

Supervisor Authority:  Disable      Keyboard Tables:      Host Language
Windowing:             Disable      PC File Transfer:    Enable
Calculator:            Disable      SNA Data Display:    After Chain
Typeahead:             Disable      HAP Session:         Last
RPB Record Function:  Disable      HAP Status at IML:  Enable
Display Host ID:      Disable      HAP Profile:         ____
Session Auto Swap:    Disable      Auto Coax Recovery:  Disable
    
```

RESOURCE AUTHORIZATION MATRIX					
Resource Definition	0	1	2	3	Dynamic Access
3270 Host Class Access(01-32)	00000000000000000000000000000000	0			0
3270 Host Class Access(33-64)	00000000000000000000000000000000	0			0
ASCII Host Class Access	00000000000000000000000000000000	0			0
IP Host Class Access	11000000000000000000000000000000	1			1
LAT Host Class Access	00000000000000000000000000000000	0			0
Printer Class Access	00000000000000000000000000000000	0			0
Global Sequence Access	00000000000000000000000000000000	0			0

PF: 1-Menu 3-Def_Dflt 4-Add 5-Delete 7-Back 8-Forw 9-Default 10-Done

The purpose of the entries in the IP Host Class Access section of this panel is to permit access to the selected host classes defined. Selecting Dynamic Access as shown also permits the users to type in a host IP address dynamically, for connection to other hosts.

Device Profile Assignments Panel

```

Device Profile Assignments/MCC1                LINC8 C8.2 Central Control

  Dev  Host Assignment At Power On (Hex LUs)
Port Prof  A      B      C      D      E      F      G      H      I
-----
000  00 00 000 >_ 003 >_ 001
001  00 00 001 >_ 003 >_ 001
002  00 00 002 >_ 003 >_ 001
003  00 00 003 >_ 003 >_ 001
004  00 00 004 >_ 003 >_ 001
005  00 00 005 >_ 003 >_ 001
006  00 01 005 >_ 003 >_ 001
007  00 00 006 >_ 003 >_ 001
008  00 00 ___ >_ 003 >_ 001
009  00 00 ___ >_ 003 >_ 001
010  00 00 ___ >_ 003 >_ 001
011  00 00 ___ >_ 003 >_ 001
012  00 00 ___ >_ 003 >_ 001
013  00 00 ___ >_ 003 >_ 001
014  00 00 ___ >_ 003 >_ 001
015  00 00 ___ >_ 003 >_ 001
(00 - 7F)3270 Host  (=)3270 Class  (>)TELNET  (%)Print Q  (+)LAT  (&)ASCII
PF: 1-Menu  3-Asn_Dflt_LUs                7-Back 8-Forw 9-Default 10-Done
  
```

The device profile assignments panel shows the results of selecting the Device Profiles host assignments.

In this example, each of the coax ports have three host assignments. Session A is the local host session through the ESCON adapter, and the remaining two sessions are through the Ethernet. The character > designates Telnet/TN3270, and the number following the character > denotes the class number (thus the host address and emulation type).

Back Up Your Configuration

Once you have completed the configuration and tested it to your satisfaction, you need to back the configuration up for disaster recovery. A configuration backup can be made using any of 3 methods.

- Copy the configuration data object onto floppy using Media Management
- Use FTP to backup the configuration files
- Use eManager to do the backup onto the eManager's hard drive

Backup Using Copy Data Object Utility

Access the Media Management Utility 3/3 (Copy Data Objects) from the SCON's Central Control Mode. Stick a blank floppy into the SCON's floppy drive. Make sure that you

Backup Using eManager

Reference the eManager documentation for more detailed information on the utilities specified in the instructions below.

Define the SCON to eManager by performing an Add Node operation and filling in the required network interface information.

Display the SCON list by clicking on the SCON (LINCS) category.

Select the SCON from the node list with a right mouse click, and select the Backups/Create Backup utility. The configuration will be retrieved by eManager and stored into the eManager directory structure.

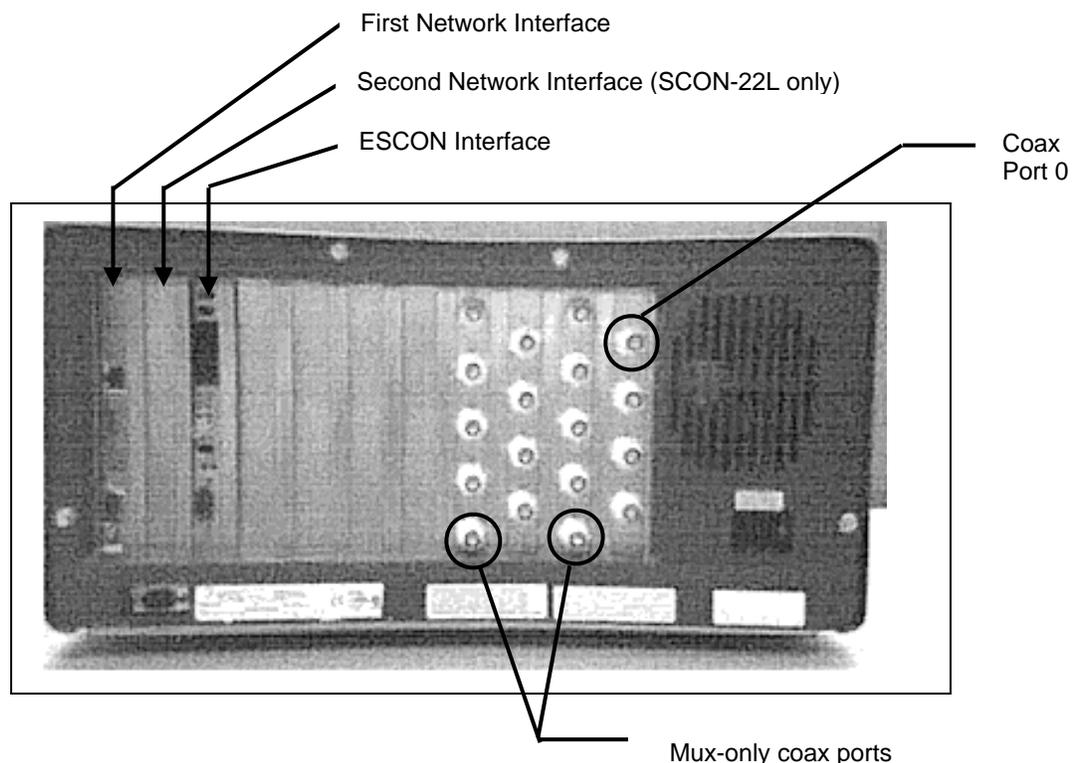
Chapter 4. Cabling Diagram for the SCON

The diagram below shows the rear of the SCON-20L or SCON-22L, where all of the cables are connected. A second 18-port Coax Device Adapter (CDA) can be mounted between the CDA shown and the ESCON card shown (SCON-22L only). When two CDAs are installed, the card on right, as viewed from the rear of the unit, is considered to be CDA1 and the other card would be CDA2. Note that the port numbering on each card will start at 0, but on CDA2 0 actually represents port 16. Refer to the SCON-20L/22L Hardware Reference manual for further information.

Coax Device Cabling Options:

- Direct attach all coax devices to one or two CDAs
- Use 8-port multiplexers to attach some or all of the 32 devices (16 on 20L)
- Use 16-port multiplexers to attach some or all of the 32 devices (16 on 20L)
- Use one 32-port multiplexer to attach all 32 devices (16 on 20L)
- Use a combination of direct-attached, 8-port, and 16-port multiplexers

The references to first and second interface cards apply when there are 2 FET cards installed, to distinguish which one the software is referring to. If only one interface card is installed, then it will naturally be the first.



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Note that a newer version of the CDA only has 16 ports (does not have the mux-only ports shown in the diagram). To run coax devices with only a single CDA installed, you must use a 32-port multiplexer, or make use of the Dynamic Multiplexing feature in conjunction with smaller multiplexers. Refer to the SCON configuration manual for details on configuring the Dynamic Multiplexing feature.

On the SCON-25L and SCON-28L, there are 13 card slots which are numbered 1-13 from left to right as viewed from the rear. The installed cards are numbered from left to right, so that if there are multiple cards of the same type, the leftmost of the cards will be referred to as the first (FET1 for example), and the next card of the same type to the right would be the second (FET2 for example). There is a single exception to this rule if Slot 13 is populated by a Multiplexed Coax Controller card (MCC) it will be treated as the first MCC (MCC1).

Each MCC has four ports as shown in the diagram. Each port is capable of driving an 8-port multiplexer. You may also attach a 32-port mux to port 0 to provide all 32 supported connections, or use 16-port muxes on ports 0 and/or 16. You must specify in configuration if you elect to use 16-port or 32-port muxes.



Chapter 5. Host Gens - OS/390 with HCD

Task List

The following is a general list of the tasks that are needed to successfully implement the SCON in the OS/390 host environment. (An assumption is made that the LPARs being used are already defined.) Example panels are given for many of the steps below, along with other example panels to give you a better flavor of what to expect to see.

- Define Switch (ESCON Director) if not already defined (HCD Panels 4-9)
- Define CHPID: identifies which ESCON cable connected to the processor, ESCON Director (switch), and downstream port to the controller are to be used (view: HCD Panel 13)
- Define Controller Definition: identifies controller type, protocol (define: 16-18, 20 / view: 14, 19)
- Define I/O Device Definitions: defines the number of I/O devices (define: 21-26, 29 / view: 15, 28)
- Define the Explicit Device Candidate List (on EMIF systems): Used to limit access to each SCON host circuit to one LPAR (define: 23, 24)
- Build the production I/O Definition File with the new definitions

HCD Panel 1

```
OS/390 Release 5 HCD
C -----Define, Modify, or View Configuration Data-----
S   Select type of objects to define, modify, or view data.
1   ___ 1. Operating system configurations
      consoles
      system-defined generics
      EDTs
      esoterics
      user-modified generics
      2. Switches
      ports
      switch configurations
      port matrix
      3. Processors
      partitions
      channel paths
F   4. Control units
I   5. I/O devices

      F1=Help  F2=Split  F3=Exit  F9=Swap  F12=Cancel
-----
      F1=Help  F2=Split  F3=Exit  F4=Prompt  F9=Swap  F12=Cancel
```

Above is the first screen you see when you start the HCD program in OS/390.

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HCD Panel 2

```
Goto   Backup   Query   Help
-----
                Operating System Configuration List      Row 1 of 1
Command ==> _____ Scroll ==> PAGE

Select one or more operating system configurations, then press Enter. To
add, use F11.

/ Config. ID      Type      Description
_ OS39X          MVS        LPAR os39x
***** Bottom of data *****

F1=Help   F2=Split  F3=Exit   F4=Prompt  F5=Reset   F7=Backward
F8=Forward F9=Swap   F10=Actions F11=Add    F12=Cancel
```

Selecting option 1 on HCD panel 1 results in the above panel. This panel defines what the operating system type is (MVS). Multiple LPARs may be defined in one Config. ID, or separate Config. IDs may be established for each LPAR.

HCD Panel 3

```
                Switch List      Row 1 of 1 More:  >
Command ==> _____ Scroll ==> PAGE

Select one or more switches, then press Enter. To add, use F11.

/ ID Type +      Serial-#      Description      CU      Dev
_ 01 9033      _____      escon director 01  000A    000A
***** Bottom of data *****

F1=Help   F2=Split  F3=Exit   F4=Prompt  F5=Reset   F7=Backward
F8=Forward F9=Swap   F10=Actions F11=Add    F12=Cancel
Goto Filter Backup Query Help
```

Selecting option 2 on panel 1 brings you to where ESCON Directors (Switches) are defined.

The example shows a type 9033 ESCON Director defined as switch ID (#01).

HCD Panel 4

```

-----Change Switch Definition-----
C   Specify or revise the following values.                               E
S   Switch ID . . . . . : 01
    Switch type . . . . . 9033      +
/
/   Serial number . . . . . _____ +
*   Description . . . . . escon director 01                               ***

F1=Help   F2=Split  F3=Exit   F4=Prompt  F5=Reset   F9=Swap
F12=Cancel
    
```

```

F1=Help   F2=Split  F3=Exit   F4=Prompt  F5=Reset   F7=Backward
F8=Forward F9=Swap   F10=Actions F11=Add   F12=Cancel
Goto Filter Backup Query Help
    
```

Above shows how a switch definition is created or edited.

HCD Panel 5

```

Port List                               Row 1 of 17
Command ==> _____ Scroll ==> PAGE

Select one or more ports, then press Enter.
Switch ID . . . . . : 01          escon director 01
Switch configuration ID : SWITCH01 escon switch config
-----Connection-----          Ded
/ Port H Name +                Unit ID          Unit Type          O B Con+
- C0   Y _____              PR CBIPO          CHPID 1D 9121-310  N N ___
- C1   Y _____              PR CBIPO          CHPID 1E 9121-310  N N ___
- C2   Y _____              PR CBIPO          CHPID 1F 9121-310  N N ___
- C3   Y _____              PR CBIPO          CHPID 1F 9121-310  N N ___
- C4   Y _____              CU 1F00          3174                N N ___
- C5   Y _____              CU 1E00          3174                N N ___
- C6   Y _____              CU 1E00          3174                N N ___
- C7   Y _____              CU 1D10          3174                N N ___
- C8   N _____              _____          _____          - - -
- C9   N _____              _____          _____          - - -

F1=Help   F2=Split  F3=Exit   F4=Prompt  F5=Reset   F7=Backward
F8=Forward F9=Swap   F10=Actions F11=Add   F12=Cancel
Goto Filter Backup Query Help
    
```

Selecting option P “work with ports” on the switch list panel will list the ports available on this ESCON director and how they are assigned.

Note the 3174 unit types used to denote the SCON.

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HCD Panel 6

```
-----Change Port Definition-----
C   Specify or revise the following values.
S   Switch ID . . . . . : 01      escon director 01
    Port . . . . . : C4
S
S   Hardware status . . . . . 1  1.  Installed
                                   2.  Not Installed
/   Port Name . . . . . _____ +
-
-   Switch configuration ID . . : SWITCH01  escon switch config
-
-   Port Blocked . . . . . 2  1.  Yes
/                                   2.  No
-   Dedicated port. . . . . _  +
-
-   Occupied . . . . . 2  1.  Yes
-                                   2.  No
-   F1=Help      F2=Split  F3=Exit   F4=Prompt  F5=Reset  F9=Swap
    F12=Cancel
-----
Goto  Filter  Backup  Query  Help
```

If you elect to edit one of the port definitions, the above panel appears.

HCD Panel 7

```
Switch Configuration List          Row 1 of 1
Command ==> _____ Scroll ==> PAGE

Select one or more switch configurations, then press Enter.
To add, use F11.

Switch ID . . . . . : 01      escon director 01

  Switch      Default
/  Config. ID  Connection + Description
_  SWITCH01   Allow      escon switch config
***** Bottom of data *****

F1=Help      F2=Split  F3=Exit   F4=Prompt  F5=Reset  F7=Backward
F8=Forward   F9=Swap    F10=Actions F11=Add    F12=Cancel
Goto  Filter  Backup  Query  Help
```

Selecting option S on panel 3 will display the “Switch Configuration List”. This panel is used to define whether you allow the default connection to be “Allow” or “Blocked”.

HCD Panel 8

```

Port Matrix                               Row 1 of 1

Command ==> _____ Scroll ==> PAGE

Select one or more switch ports, then press Enter.

Switch ID . . . . . : 01                escon director 01
Switch configuration ID . : SWITCH01      Default connection : Allow

      Ded      --Dynamic Connection Ports Cx--
/ Port H Name +   B Con + 0 1 2 3 4 5 6 7 8 9 A B C D E F
- C0 _____ N ___ \ * * * * * * * - - - - - - - -
- C1 _____ N ___ * \ * * * * * * * - - - - - - -
- C2 _____ N ___ * * \ * * * * * * * - - - - - - -
- C3 _____ N ___ * * * \ * * * * * * * - - - - - - -
- C4 _____ N ___ * * * * \ * * * * * * * - - - - - - -
- C5 _____ N ___ * * * * * \ * * * * * * * - - - - - - -
- C6 _____ N ___ * * * * * * \ * * * * * * * - - - - - - -
- C7 _____ N ___ * * * * * * * \ - - - - - - - -

***** Bottom of data *****

F1=Help      F2=Split   F3=Exit      F4=Prompt    F5=Reset     F7=Backward
F8=Forward   F9=Swap     F10=Actions  F11=Add     F12=Cancel
    
```

Select option S on panel 7. This panel allows you to override the default connection: "Allow", and specify block on a per (switch) port basis.

HCD Panel 9

```

Goto  Backup  Query  Help

-----View Connected Units-----
                                           Row 1 of 1

Command ==> _____ Scroll ==> PAGE

Switch ID . . . . . : 01                escon director 01

ENTER to continue.

      -----Connection-----
Port  Unit  Unit ID   Unit Type  Description
C4   CU    1F00     3174      SCON-22L test for emif support
***** Bottom of data *****

F1=Help      F2=Split   F3=Exit      F7=Backward    F8= Forward
F9=Swap     F12=Cancel

-----
F8= Forward   F9=Swap     F10=Actions  F12=Cancel
Goto  Filter  Backup  Query  Help
    
```

You can view/edit/define what is connected to each port on the switch.

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HCD Panel 10

```
Processor List      Row 1 of 1 More:      >
Command ==>> _____ Scroll ==>> PAGE
Select one or more processors, then press Enter. To add, use F11.

/ Proc. ID  Type +  Model +  Mode+  Serial-# +  Description
_ CBIPO    9121   310     LPAR   _____ 9121-310 VISARA INC.
***** Bottom of data *****

F1=Help      F2=Split    F3=Exit     F4=Prompt   F5=Reset    F7=Backward
F8=Forward   F9=Swap     F10=Actions F11=Add     F12=Cancel
Goto Filter Backup Query Help
```

The panel shown above is obtained by selecting option 3 on HCD panel 1. This panel is where we define our processor and whether this processor is in LPAR MODE or in BASIC MODE (BASIC MODE means partitioning is turned off).

HCD Panel 11

```
-----
Command ==>>
Select one or
/ Proc. ID Ty
_ CBIPO    91
*****
-----
-----Actions on selected processors-----
Select by number or action code and press Enter.
6_  1. Add like . . . . . (a)
    2. Repeat (Copy) processor configurations (r)
    3. Change . . . . . (c)
    4. Prime Serial number . . . . . (i)
    5. Delete . . . . . (d)
    6. Work with partitions . . . . . (p)
    7. Work with attached channel paths . . . (s)
    8. Work with attached devices . . . . . (u)
    9. View related CTC connections . . . . . (k)
   10. View processor definition . . . . . (v)
F1=Help  F2=Split  F3=Exit  F9=Swap  F12=Cancel
-----
F1=Help      F2=Split    F3=Exit     F4=Prompt   F5=Reset    F7=Backward
F8=Forward   F9=Swap     F10=Actions F11=Add     F12=Cancel
```

From this panel, you can select to work with the partitions.

HCD Panel 12

```

----- Partition List -----
  Goto  Backup  Query  Help
-----
                                           Row 1 of 1
Command ==> _____ Scroll ==> PAGE
Select one or more partitions, then press Enter. To add, use F11.

Processor ID . . . . : CBIPO      9121-310 VISARA INC.
Configuration mode . : LPAR
/ Partition Name      Number      Usage + Description
- LPAR390             1         OS      Production LPAR
- LPAR39X             2         OS      Test LPAR
***** Bottom of data *****

F1=Help      F2=Split      F3=Exit      F4=Prompt      F5=Reset
F7=Backward  F8=Forward    F9=Swap      F10=Actions    F11=Add
F12=Cancel

```

This panel shows the LPAR named LPAR390 and LPAR 39X.

HCD Panel 13

```

----- View Partition / Channel Paths -----
                                           Row 1 of 5
Command ==> _____ Scroll ==> PAGE

Processor ID . . . . : CBIPO      9121-310 VISARA INC.
Configuration mode . : LPAR
Partition name . . . : LPAR390    os39x lpar

ENTER to continue.

CHPID      Type      Mode      Description
0A         BL         REC
0B         BL         REC
1D         CNC         SHR       chpid 1d
1E         CNC         SHR       escon channel 1e
1F         CNC         SHR       escon channel 1f
***** Bottom of data *****

F1=Help      F2=Split      F3=Exit      F7=Backward    F8=Forward
F9=Swap      F12=Cancel

```

Entering option V on partition LPAR390 in panel 12 and a panel similar to the one above, showing the channel paths that are defined for the LPAR.

Note that on chpid 1D-1F the type channel used for the SCON is CNC.

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HCD Panel 14

```
----- View Partition / Control Units -----
Row 1 of 5
Command ==> _____ Scroll ==> PAGE

Processor ID . . . : CBIPO      9121-310 VISARA INC.
Configuration mode : LPAR
Partition name . . : LPAR390    os39x lpar

ENTER to continue.

---Control Unit--- -----Channel Path ID . Link Address-----
Number Type          1---- 2---- 3---- 4---- 5---- 6---- 7---- 8----
000A  9033            1D.FE
0140  3990 6      0A    0B
1D10  3174            1D.C7
1E00  3174            1E.C5
1F00  3174            1F.C4
***** Bottom of data *****

F1=Help      F2=Split    F3=Exit     F7=Backward  F8=Forward
F9=Swap      F12=Cancel
```

Selecting option S on panel 12, you come to the panels showing the control units defined for the LPAR. Note the control unit type of “3174” used for the SCON. Also note the format of the Channel Path ID (defined on HCD panel 13) and Link Address (ESCON Director port being used - as listed on HCD panel 5).

HCD Panel 15

```

----- View Partition / Devices -----
                                                    Row 74 of 81
Command ==> _____ Scroll ==> PAGE

Processor ID . . . : CBIPO          9121-310 VISARA INC.
Configuration mode : LPAR
Partition name . . : LPAR390      os39x lpar

ENTER to continue.

----Device---- Access  -----Attached Control Units-----
Number  Type    Allowed  1--- 2--- 3--- 4--- 5--- 6--- 7--- 8--- UA
1F00   3270-X  Yes     1F00
1F01   3270-X  Yes     1F00
1F02   3270-X  Yes     1F00
1F03   3270-X  Yes     1F00
1F04   3270-X  Yes     1F00
1F05   3270-X  Yes     1F00
1F06   3270-X  Yes     1F00
1F07   3270-X  Yes     1F00
***** Bottom of data *****

F1=Help      F2=Split    F3=Exit     F7=Backward  F8=Forward
F9=Swap      F12=Cancel

-----
Goto   Filter  Backup  Query  Help

```

Select option U on panel 12. The panel above shows the IO Devices (consoles) that are defined to control unit 1F00 from the HCD Panel 14. Notice the column labeled Access Allowed. This would be a NO if access to this LPAR is turned off in the IO Device Candidate List. (1F00-1F07 corresponds to the 00-07 Device Low-High range in the SCON configuration).

HCD Panel 16

```

Control Unit List                               Row 113 of 115
Command ==> _____ Scroll ==> PAGE

Select one or more control units, then press Enter. To add, use F11.

/ CU      Type +      Serial-# +Description
_ 1D10    3174              _____
_ 1E00    3174              _____os39x lpar test consoles
/ 1F00    3174              _____SCON-22L test for emif support
***** Bottom of data *****

F1=Help      F2=Split    F3=Exit     F4=Prompt    F5=Reset F7=Backward
F8=Forward   F9=Swap     F10=Actions F11=Add      F12=Cancel

Goto   Filter  Backup  Query  Help

```

Select option 4 from HCD panel 1. The panel above shows the Control Unit List panel.

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HCD Panel 17

```
Control Unit List
Command ==> _____ Scroll ==> PAGE

Select on ----- Change Control Unit Definition -----
/ CU Ty Specify or revise the following values.
_ 1D10 31
_ 1E00 31 Control unit number . . . . 1F00 +
/ 1F00 31 Control unit type . . . . . 3174 +
***** Serial number . . . . . _____ +
Description . . . . . SCON-22L test for emif support

Connected to switches . . . 01 _____ +
Ports . . . . . C4 _____ +

F1=Help F2=Split F3=Exit F4=Prompt F5=Reset F9=Swap
F8=Forwa F12=Cancel
```

The panel above shows the detail for the control unit definition when selected from the previous panel. Note the references to the switch number and the output port number of the switch.

HCD Panel 18

```
----- Change Control Unit Definition -----
C Specify or revise the following values.
S Control unit number . . : 1F00 Type . . . . . : 3174
C Processor ID . . . . . : CBIPO 9121-310 VISARA INC.

Channel path IDs . . . . 1F _____ +
/ Link address . . . . . C4 _____ +
/
* Unit address . . . . . 00 _____ +
Number of units . . . . 008 _____

Logical address . . . . 2 + (same as CUADD)

Protocol . . . . . ___ + (D, S or S4)
I/O concurrency level . _ + (1, 2 or 3)

F1=Help F2=Split F3=Exit F4=Prompt F5=Reset F9=Swap
F12=Cancel

Goto Filter Backup Query Help
```

The parameter circled corresponds to the CUADD (CU address) parameter for the SCON over the ESCON interface (CU parameter in the SCON configuration).

HCD Panel 19

```

----- View Control Unit Definition -----
                                         Row 1 of 1 More:   >
Command ==>> _____ Scroll ==>> PAGE
Control unit number . : 1F00          SCON-22L test for emif support
Control unit type   . : CBIPO         Serial number . . . :

Connected to switches : 01
Ports . . . . . : C4

Enter to continue

Processor Logical ----- Channel Path ID . Link Address -----
ID      Address 1---- 2---- 3---- 4---- 5---- 6---- 7---- 8----
CBIPO   2       1F.C4
*****Bottom of data*****

F1=Help   F2=Split  F3=Exit  F7=Backward  F8=Forward
F9=Swap   F12=Cancel

-----
Goto  Filter  Backup  Query  Help

```

From the “Control Unit List” panel enter option V on control unit 1F00. This panel allows you to view the control unit definition for the SCON.

HCD Panel 20

```

----- Select Processor / Control Unit -----
                                         Row 1 of 1 More:   >
Command ==>> _____ Scroll ==>> PAGE
Select processors to change CU/processor parameters, then press Enter.

Control unit number . : 1F00          Control unit type . . : 3174

          Log. Addr. ----- Channel Path ID . Link Address + -----
/ Proc. ID Att.(CUADD)+ 1---- 2---- 3---- 4---- 5---- 6---- 7---- 8----
/ CBIPO   Yes 2       1F.C4 _____
*****Bottom of data*****

F1=Help   F2=Split   F3=Exit   F4=Prompt  F5=Reset
F6=Previous F7=Backward F8=Forward F9=Swap    F12=Cancel

-----
Goto  Filter  Backup  Query  Help

```

This panel is where you select which processor you are attaching the control unit to. For a multi-processor mainframe you would select the appropriate processor ID.

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HCD Panel 21

```
----- Add Device -----
Specify or revise the following values.

Device number . . . . . 1f00 (0000 - FFFF)
Number of devices . . . . . 08_
Device type . . . . . 3270-X_____ +

Serial number . . . . . _____
Description . . . . . SCON-22L iodevice defn _____

Volume serial number . . . . . _____ (for DASD)

Connected to CUs . . 1f00 _____ +

F1=Help      F2=Split   F3=Exit     F4=Prompt   F5=Reset    F9=Swap
F12=Cancel

-----
F1=Help      F2=Split   F3=Exit     F4=Prompt   F5=Reset    F7=Backward
F8=Forward   F9=Swap    F10=Actions F11=Add     F12=Cancel
```

By selecting item 5 from HCD Panel 1, you can bring up panels to define the devices (consoles) that will be attached to the SCON. It is important to match the address range on the SCON with the range defined by this panel. Note that the Device Numbers used must be unique within each Config. ID, even if multiple MVS systems are defined. If different Config. IDs are used to define each MVS system, then the same Device Number may appear in more than one of the definitions. (Reference Config. IDs in HCD Panel 2.)

HCD Panel 22

```
----- Device / Processor Definition -----
Row 1 of 1
Command ==> _____ Scroll ==> PAGE
Select processors to change device/processor definitions, then press
Enter.
Device number . . : 1F00          Number of devices . . : 8
Device type . . . : 3270-X

Preferred Explicit Device
/ Processor ID UA + Time-Out STADET CHPID + Candidate List *****
/ CBIPO      ___ No      Yes      ___
*****Bottom of data*****

F1=Help      F2=Split   F3=Exit     F4=Prompt   F5=Reset
F6=Previous  F7=Backward F8=Forward  F9=Swap     F12=Cancel
```

Depressing the Enter key on the “Add Device” panel brings us to this panel. This is where we select which processor this IO device (console) connects to.

HCD Panel 23

```

----- Device / Processor Definition -----
----- Define Device / Processor -----
Specify or revise the following values.

Device number . . : 1F00          Number of devices . . . . . : 8
Device type . . . : 3270-X
Processor ID . . . : CBIPO        9121-310 VISARA INC.

Unit address . . . . . 00 + (Only necessary when different
                           from the last 2 digits of
                           device number)
Time-Out. . . . . No (Yes or No)
STADET . . . . . Yes (Yes or No)

Preferred CHPID . . . . .
Explicit device candidate list. yes + (Yes or No)
F1=Help   F2=Split   F3=Exit   F4=Prompt   F5=Reset   F9=Swap
F12=Cancel

-----
F6=Previous F7=Backward F8=Forward F9=Swap F12=Cancel
    
```

Making a selection on the previous panel will allow you to define I/O device definition. One of the options is for the Explicit Device Candidate List. The purpose of the Explicit Device Candidate List is to limit which LPARs have access to a particular resource in an EMIF environment. In the case of the SCON, it is necessary to limit access to each host circuit to one LPAR. Below is the related help information.

----- HCD Help -----	
Command ==>	Scroll ==> PAGE
Specify or	Explicit Device Candidate List
Device numb	Specify a value for this field only if the designated processor type-model has ESCON Multiple Image Facility (EMIF) capability.
Device type	
Processor I	Indicate whether you want to explicitly specify in a device candidate list, which partitions, defined in the IODF for the processor, should be allowed to access the device being added or changed, or the group being changed.
Unit address	
Time-Out. .	To change the displayed value, either type over or delete
STADET . .	Yes or No. No is the default.
Preferred C	Yes to explicitly define a device candidate list.
Explicit de	The Define Device Candidate List panel is displayed when Yes is specified. You can then select the partitions that you want to be allowed to access the device or device group.
F1=Help	
F12=Cancel	
Specify or	No not to explicitly define a device candidate list.
Device numb	All partitions are allowed to access the device or device group.
Device type	
Processor I	- end -

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HCD Panel 24

```
----- Define Device Candidate List -----
                                                    Row 1 of 6
Select one or more partitions to allow them to access the
device, or ENTER to continue without selection.

Device number . . . : 1F00           Number of devices . . : 8
Device type . . . . : 3270-X
Processor ID . . . . : CBIPO         This is the main processor

/ Partition Name      Description          Reachable
/ LPAR390             OS/390 production partition      Yes
- TEST1              First test system                Yes
- TEST2              Second test system                Yes
- TEST3              CF partition                    Yes
- TEST4              OS partition                    Yes
```

If you specify **Yes** in the Explicit device candidate list field of HCD Panel 23, the panel above is displayed.

Note that the partition must also be in the channel path access or candidate list to access the device. On the Define Device Candidate List panel, place a slash (/) character to the left of only one specific Partition Name.

HCD Panel 25

```
----- Define Device to Operating System Configuration -----
                                                    Row 1 of 1
Command ==> _____ Scroll ==> PAGE
Select OSs to connect or disconnect devices, then press Enter.

Device number . . . : 1F00           Number of devices . . : 8
Device type . . . . : 3270-X

/ Config. ID      Type      Description          Defined
/ OS39X          MVS       LPAR os39x
*****Bottom of data*****

F1=Help      F2=Split      F3=Exit      F4=Prompt      F5=Reset
F6=Previous  F7=Backward   F8=Forward   F9=Swap        F12=Cancel
```

This panel allows you to connect the device to the operating system.

HCD Panel 26

```

----- Define Device Parameters / Features -----
                                                    Row 1 of 3
Command ==> _____ Scroll ==> PAGE

Specify or revise the values below.

Configuration ID . : OS39X   LPR ox39x
Device number   . . : 1F00   Number of devices : 8
Device type     . . . : 3270-X

Parameter/
Feature  Value  P Req.  Description
OFFLINE  No          Device considered online or offline at IPL
DYNAMIC  Yes         Device supports dynamic configuration
OWNER    VTAM      +       Subsystem or access method using the device
*****Bottom of data*****

F1=Help      F2=Split      F3=Exit      F4=Prompt    F5=Reset
F7=Backward  F8=Forward     F9=Swap     F12=Cancel
    
```

This panel lets you define some of the specific features of the device.

HCD Panel 27

```

----- Define Device to Operating System Configuration -----
                                                    Row 1 of 1
Command ==> _____ Scroll ==> PAGE

Select OSs to connect or disconnect devices, then press Enter.

Device number   . . : 1F00   Number of devices : 8
Device type     . . . : 3270-X

/ Config. ID Type      Description          Defined
_ OS39X      MVS       LPAR os39x         Yes
*****Bottom of data*****

F1=Help      F2=Split      F3=Exit      F4=Prompt    F5=Reset
F6=Previous  F7=Backward   F8=Forward   F9=Swap     F12=Cancel
    
```

This just shows that the device has been defined to the operating system.

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HCD Panel 28

```

I/O Device List          Row 1805 of 1816 More:      >
Command ==> _____ Scroll ==> PAGE
Select one or more devices, then press Enter. To add, use F11.

  ---Device---  --#--  -----Control Unit Numbers + -----
/ Number Type + PR  OS  1--- 2--- 3--- 4--- 5--- 6--- 7--- 8--- Base
- 1E1C  3270-X 1  1  1E00 _____ _____ _____ _____ _____
- 1E1D  3270-X 1  1  1E00 _____ _____ _____ _____ _____
- 1E1E  3270-X 1  1  1E00 _____ _____ _____ _____ _____
- 1E1F  3270-X 1  1  1E00 _____ _____ _____ _____ _____
- 1F00  3270-X 1  1  1F00 _____ _____ _____ _____ _____
- 1F01  3270-X 1  1  1F00 _____ _____ _____ _____ _____
- 1F02  3270-X 1  1  1F00 _____ _____ _____ _____ _____
- 1F03  3270-X 1  1  1F00 _____ _____ _____ _____ _____
- 1F04  3270-X 1  1  1F00 _____ _____ _____ _____ _____
- 1F05  3270-X 1  1  1F00 _____ _____ _____ _____ _____
- 1F06  3270-X 1  1  1F00 _____ _____ _____ _____ _____
- 1F07  3270-X 1  1  1F00 _____ _____ _____ _____ _____
*****Bottom of data*****
F1=Help   F2=Split  F3=Exit   F4=Prompt  F5=Reset  F7=Backward
F8=Forward F9=Swap   F10=Actions F11=Add   F12=Cancel
Goto Filter Backup Query Help

```

This just shows the 8 IO Devices you just created.

HCD Panel 29

```

----- Device / Processor Definition -----
----- Define Device / Processor -----
Specify or revise the following values.
Device number . . : 1F00          Number of devices . . . . : 8
Device type . . . : 3270-X
Processor ID . . . : CBIPO        9121-190 VISARA INC.
Unit address . . . . . 00 + (Only necessary when different
                             from the last 2 digits of
                             device number)
Time-Out . . . . . No (Yes or No)
STADET . . . . . Yes (Yes or No)
Preferred CHPID . . . . . +
Explicit device candidate list. Yes (Yes or No)
F1=Help   F2=Split  F3=Exit   F4=Prompt  F5=Reset  F9=Swap
F12=Cancel
-----
Type 9121-190 of processor CBIPO does not support sharing of channels |

```

This panel shows what you would see if you tried to configure a “Explicit device candidate list” on a processor that does not support EMIF.

Chapter 6. IOCDs Sample Definitions

Following are some example IOCDs definitions. Detailed examples of the corresponding HCD panels are not practical, due to the large number of panels required to create one of these definitions. Refer to the sample HCD panels in Chapter 5, and to the parameter cross reference chart in Chapter 2, to aid in determining what to define in the HCD panels.

Here are some of the key parameters used in the definitions for the SCON, and what their purpose are.

CHPID

- PATH=number identifies which host ESCON connection is used
- TYPE=CNC required for ESCON
- SWITCH=number identifies an ESCON Director as being in the channel path

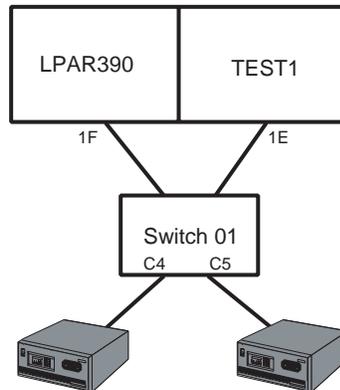
CNTLUNIT -

- LINK=number identifies the ESCON Director port that the controller is attached to
- PATH argument allows association of the PATH to the LINK

IODEVICE - Basically the same as for Bus and Tag

- PARTITION identifies which partition the definition is assigned to. Note that if no PARTITION parameter is specified, then the IODEVICE statement applies to all partitions sharing the CHPID (and the CNTLUNIT macro also applies to each). When this is the situation, the single set of statements is actually defining a CU in each of the LPARs with identical addressing. The SCON in turn, must have a separate CU defined to each of the LPARS sharing the path. Channel Path Filtering must be used to allow duplicate CUADD values to be used on the same path, and to distinguish which definition is to be used for each LPAR

SAMPLE 1 - Typical 3174 Implementation



This first example shows definitions where an ESCON director (switch 01) is being used. The definitions shown may be used to define the SCON or even a 3174-22L. The output ports C4 and C5 are being used to connect to two SCON-2XL(s).

```
RESOURCE PARTITION=((LPAR390,1),(TEST1,2))
```

```
CHPID PATH=(1F),TYPE=CNC,SWITCH=01,SHARED
```

```
CHPID PATH=(1E),TYPE=CNC,SWITCH=01,SHARED
```

```
CNTLUNIT CUNUMBR=1E00,PATH=1E,UNITADD=((00,5)),UNIT=3174,LINK=C5
```

```
CNTLUNIT CUNUMBR=1F00,PATH=1F,UNITADD=((00,5)),UNIT=3174,LINK=C4
```

```
IODEVICE CUNUMBR=1E00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(TEST1)
```

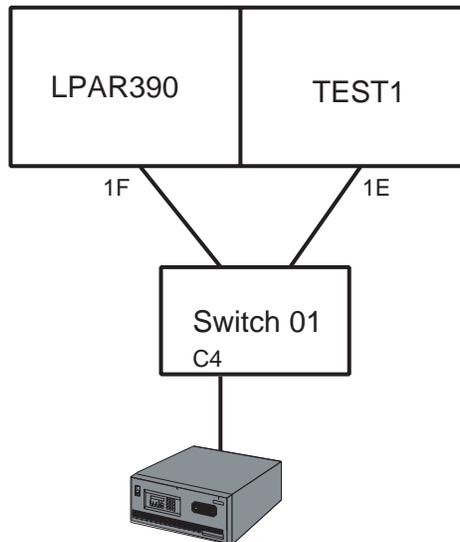
```
IODEVICE CUNUMBR=1F00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(LPAR390)
```

Notes:

1. Each of the two 2XLs shown is dedicated to one of the two LPARs. This is not an efficient use of the 2XL, but would be the necessary implementation of the 3174s.
2. The CNTLUNIT macros do not include the CUADD parameter, and the default value of "0" would be assumed.

SAMPLE 2 - No EMIF Used, Director Used

This example is similar to SAMPLE 1, except the multiple LPAR communications capabilities of the SCON are being used. Up to 3 LPARs can be connected to the 20L, up to 16 LPARs to the 22L and 25L, and up to 64 LPARs to the 28L or SCON-3074 in this fashion. Since no EMIF is in use on the host, the ESCON channels are not shared between LPARs on the host side of the switch, so a separate ESCON channel into the switch is required for each LPAR.



```
RESOURCE PARTITION=((LPAR390,1),(TEST1,2))
```

```
CHPID PATH=(1F),PARTITION=((LPAR390)),TYPE=CNC,SWITCH=01
```

```
CHPID PATH=(1E),PARTITION=((TEST1)),TYPE=CNC,SWITCH=01
```

```
CNTLUNIT CUNUMBR=1E00,PATH=1E,UNITADD=((00,5)),UNIT=3174,CUADD=0,LINK=C4
```

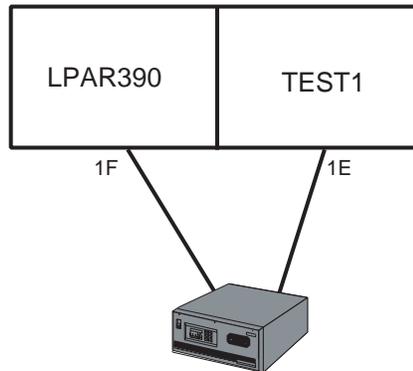
```
CNTLUNIT CUNUMBR=1F00,PATH=1F,UNITADD=((00,5)),UNIT=3174,CUADD=1,LINK=C4
```

```
IODEVICE CUNUMBR=1E00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(TEST1)
```

```
IODEVICE CUNUMBR=1F00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(LPAR390)
```

Note: Each CNTLUNIT definition requires a different CUADD value, since the multiple definitions share the same ESCON line to the SCON, unless Channel Path Filtering is configured.

SAMPLE 3 - No EMIF, No Director



This example shows one 25L/28L/3074 connected to two LPARs on one CPU. Because EMIF is not being used, and because there is no ESCON director being used, each LPAR must have a separate ESCON connection to the SCON. Only two LPARs can be supported in this fashion. This is a very inefficient use of the SCON.

```
RESOURCE PARTITION=((LPAR390,1),(TEST1,2))
```

```
CHPID PATH=(1F),PARTITION=((LPAR390)),TYPE=CNC
```

```
CHPID PATH=(1E),PARTITION=((TEST1)),TYPE=CNC
```

```
CNTLUNIT CUNUMBR=1E00,PATH=1E,UNITADD=((00,5)),UNIT=3174
```

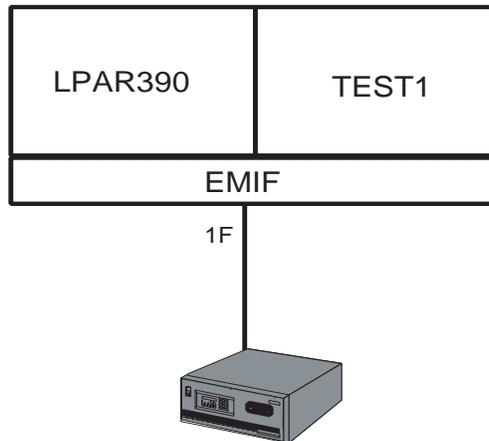
```
CNTLUNIT CUNUMBR=1F00,PATH=1F,UNITADD=((00,5)),UNIT=3174
```

```
IODEVICE CUNUMBR=1E00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(TEST1)
```

```
IODEVICE CUNUMBR=1F00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(LPAR390)
```

Note: No CUADD parameter is shown, and the default value of “0” is being used on each of the two ESCON interfaces. On the SCON, you would need to configure “0” as the value for CU, for each of the two ESCON interfaces, in this example.

SAMPLE 4 - EMIF Used, No Director



With EMIF support, both LPARs can share the channel path to the SCON.

```
RESOURCE PARTITION=((LPAR390,1),(TEST1,2))
```

```
CHPID PATH=(1F),PARTITION=((LPAR390,TEST1)),TYPE=CNC,SHARED
```

```
CNTLUNIT CUNUMBR=1E00,PATH=1F,UNITADD=((00,5)),UNIT=3174,CUADD=0
```

```
CNTLUNIT CUNUMBR=1F00,PATH=1F,UNITADD=((00,5)),UNIT=3174,CUADD=1
```

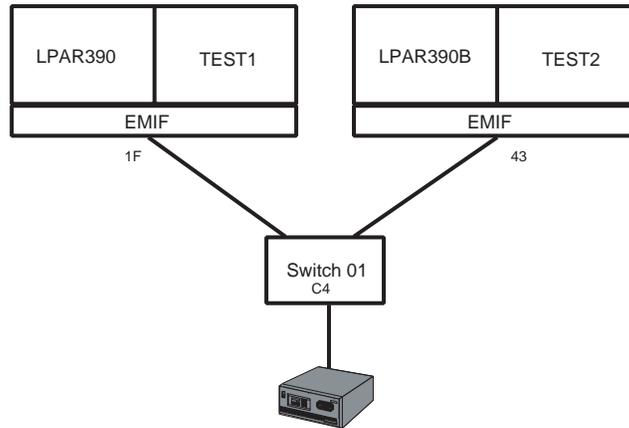
```
IODEVICE CUNUMBR=1E00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(TEST1)
```

```
IODEVICE CUNUMBR=1F00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(LPAR390)
```

Notes:

1. Different CUADD values are required for each CNTLUNIT macro sharing the single ESCON interface, unless Channel Path Filtering is configured.
2. The PATH value for each CNTLUNIT macro is the same.
3. The Device Candidate List has been properly configured on the host (required if Channel Path Filtering is not configured) since the IODEVICE statement displays the PARTITION parameter with a single LPAR specified.

SAMPLE 5 - EMIF and ESCON Directors Used



LPARS on two different CPUs are connected through an ESCON director to a single SCON over a single ESCON interface. Users on the SCON can have sessions on any or all of the 4 LPARs shown.

First CPU Definitions:

```
RESOURCE PARTITION=((LPAR390,1),(TEST1,2))
```

```
CHPID PATH=(1F),PARTITION=((LPAR390,TEST1)),TYPE=CNC,SHARED
```

```
CNTLUNIT CUNUMBR=1E00,PATH=1F,UNITADD=((00,5)),UNIT=3174,CUADD=0,LINK=C4
```

```
CNTLUNIT CUNUMBR=1F00,PATH=1F,UNITADD=((00,5)),UNIT=3174,CUADD=1,LINK=C4
```

```
IODEVICE CUNUMBR=1E00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(TEST1)
```

```
IODEVICE CUNUMBR=1F00,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(LPAR390)
```

Second CPU Definitions:

```
RESOURCE PARTITION=((LPAR390B,3),(TEST2,4))
```

```
CHPID PATH=(43),PARTITION=((LPAR390B,TEST2)),TYPE=CNC,SHARED
```

```
CNTLUNIT CUNUMBR=1195,PATH=43,UNITADD=((00,5)),UNIT=3174,CUADD=5,LINK=C4
```

```
CNTLUNIT CUNUMBR=2144,PATH=43,UNITADD=((00,5)),UNIT=3174,CUADD=6,LINK=C4
```

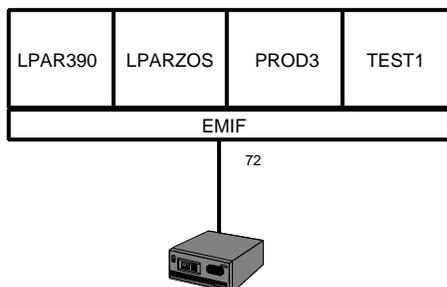
```
IODEVICE CUNUMBR=1195,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(TEST2)
```

```
IODEVICE CUNUMBR=2144,ADDRESS=(600,5),UNIT=3270-X,UNITADD=00,PARTITION=(LPAR390B)
```

Notes:

1. Different CUADD values are required for each CNTLUNIT macro across both sets of definitions since they will be sharing the same ESCON interface of the SCON, unless Channel Path filtering is configured.
2. CUADD values do not have to be consecutive.

SAMPLE 6 – Device Candidate List not Specified



A single CNTLUNIT and IODEVICE definition is used to define consoles on all four LPARS, by intentionally not using the Device Candidate list, and by making use of Channel Path Filtering on the SCON to direct each connection to the correct CU definition.

```
RESOURCE PARTITION==(LPAR390,1),(LPARZOS,2),(PROD3,3),(TEST1,1)
```

```
CHPID PATH==(72),PARTITION=((LPAR390,LPARZOS,PROD3,TEST1)),TYPE=CNC,SHARED
```

```
CNTLUNIT CUNUMBR=985,PATH=72,UNITADD=((20,16)),UNIT=3174,CUADD=3
```

```
IODEVICE CUNUMBR=985,ADDRESS=(800,16),UNIT=3270-X,UNITADD=2
```

Notes:

1. Since there is no PARTITION parameter displayed in the IODEVICE statement, the IODEVICE and CNTLUNIT definitions are valid in all partitions sharing the path. The attached SCON must have a CU defined to communicate with each of the four partitions.
2. Channel Path Filtering must be configured as the protocol since the same CUADD applies to each of the four CU definitions.

Chapter 7. Bringing Your SCON Active

Preparing the SCON

Ensure that the SCON is powered up and that the ESCON cable is attached. You should see a green light on the back of the SCON card if there is light on the cable. Light should be on the cable if one or more of the LPARs sharing the path are up.

The normal state for the SCON host interface will be the model number (unless customized to display). If instead, you have a 503-0x status for one or more of your host circuits, then refer to Chapter 9, Troubleshooting.

Once you have a status indicating that all of the Host Circuits are connected, you may need to activate the devices. (The status indicator that is displayed when all Host Circuits are connected is configurable. By default it is the SCON model number, such as 'SCON-25L'.) Two types of device assignments may be used for displays. A console provides access to the operating system console messages. A VTAM terminal is used to access applications. The activation of these two types of devices is different.

Activating Consoles

Consoles will only automatically activate if the device is powered on when the LPAR comes up or if the session is 'hot'. If you have powered on the SCON and the LPAR is already up, you will need to activate the consoles individually from another active console, or from the support element.

Here are some of the commands used to vary on consoles:

1. **v cn(mcon0b20),auth=master**
- defines master level authority to a console named mcon0b20 as defined in SYS1.PARMLIB(CONSOL00).
2. **v cn(fred),online**
- to activate console FRED.
3. **v cn(fred),online,uncond**
- to activate console FRED, even if the address is currently boxed.
4. **v 0b20,mstcons**
- use this command to cause master authority to be switched to the console whose IO device number is 0B20.

Activating Non-SNA VTAM Devices

1. **v 0d20,online**
 - this command typically is not necessary as the device will automatically go online after the SCON is powered on.
2. **v net,act,id=vtam_pu_name**
 - this command is used to activate the VTAM controlled devices.

Displaying Device Status

1. **d u,,0b20,8**
 - this command will display the current status of 8 devices starting with address 0b20.

Chapter 8. Frequently Asked Questions

- Q: Does the SCON support SNA over ESCON?
A: No. The SCON product line is dedicated to supporting Non-SNA communications over ESCON. If SNA communications is required, you can use the 1174-25S instead. The 1174-25S is capable of supporting both Non-SNA and SNA communications over ESCON.
- Q: Does the SCON support Bus and Tag connections?
A: No. Only ESCON host connections are supported. You can use the 1174-25S to support both Bus and Tag connections and ESCON connections on the same platform. Up to 2 ESCON and 2 Bus and Tag interfaces may be supported at the same time on the 1174-25S.
- Q: Does the SCON-2XL support the IBM 3290 plasma display?
A: Yes. The SCON-2XL supports the IBM 3290 to allow the support and display of up to 4 sessions at one time. In order for the 3290 to work, you must insure that the files requested by the 3290 for download when it communicates with the SCON-2XL are available either on the hard drive of the SCON-2XL or in the floppy drive. 3290 DSL code is available from IBM or Visara if it is not already loaded on the 2XL hard drive. Note, that DFT terminals such as the 3290 and many PC packages will not allow for connection to multiple LPARs. They will only let you have multiple sessions on the same LPAR.
- Q: Can a coax terminal communicate with multiple LPARs?
A: Yes. A coax (CUT) terminal can support up to 10 host sessions at one time. These sessions can be spread across one or more LPARs.
- Q: Can you attach StorageTek Silos to the SCON-2XL.
A: Yes. The LMU (Library Management Unit) used to manage the Silos will attach to the 2XL using coax connections. You need to enable file transfer for the ports that will be supporting the LMU, as well as enable the RPQ "Coax Poll Rate" in the SCON-2XL configuration.
- Q: Can StorageTek LMUs make use of the MLS (Multiple Logical Session) feature of the SCON-2XL to communicate with multiple LPARs through a single coax connection.
A: No, you must use a separate coax connection for each LPAR that you wish to communicate with. The SCON-2XL can provide access up to 16 LPARs to an LMU, through separate coax cables for each LPAR.
- Q: Is there any way to remotely manage the SCON?
A: Yes. The SCON supports Telnet and a serial interface for dial-in. The biggest concern for remote management is probably security. The SCON can be configured to challenge either interface for a password to gain access. If remote access via Telnet is to be used, it is recommended that a Virtual Private Network (VPN) be used to help with security. Besides using a standard Telnet interface for management, Visara offers a management platform, eManager, that can be used to provide additional capabilities for remote problem determination and microcode management.

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- Q: Does the SCON support VPNs?
A: No, not directly. You can use external products to provide the Virtual Private Network security.
- Q: Does the SCON support Secure Socket Layer communication over the network?
A: No, not directly. Visara does have a companion product, the SSL1000 that provides SSL security as well as provides session failover support for a pair of SCON platforms.
- Q: Does the SCON support international languages?
A: Yes. The host communications can be any one of a great many languages supported by the LINCS software. The configuration process however, Central Control Mode and any error messages that are generated by the SCON itself, will be in English.
- Q: Does the SCON have any provisions for redundancy?
A: The SCON-25L/28L/3074 supports 2 ESCON interfaces, allowing you to provide multiple paths to your LPARs.
- Q: What is the difference between the TN3270E support and Telnet support?
A: The Telnet interface make use of Asynchronous emulations such as VT220, IBM3151, Wyse60, etc., to provide CUT communication to the SCON-2XL. As a CUT emulation, the SCON-2XL can provide multiple LPAR access through a single connection, as well as access to 2XL management panels if needed, however the keyboard mapping is not usually as clean as with TN3270E. The screen presentation provided by Telnet is limited in the way some attributes can be portrayed since the set of attributes, and the way they are managed are different from a 3270 native emulation. The TN3270E provides a more natural looking console emulation, with typically better keyboard mapping. TN3270E clients must establish multiple virtual connections across the network to support multiple console sessions. TN3270E clients do not have access to the 2XL management panels, and are therefore better suited for console or application users.
- Q: Does the SCON support all TN3270E clients.
A: Yes, for the most part. All of the more popular emulators, as well as many more obscure ones will work. There is nothing about the TN3270E interface that should preclude the operation of a specific emulator. You may however wish to contact a Visara representative for a list of PC emulations that are known to work as consoles.
- Q: Does the SCON support a FICON interface?
A: Not directly. You can connect the SCON to an ESCON Director that is in turn fed by a FICON link.
- Q: If there is a power failure, will the SCON automatically recover?
A: Yes. The SCON should power back up and automatically go online. The process should be complete within 5 minutes. It will probably be necessary to vary the console sessions active again, since a failed console connection will normally roll to another console or to the support element.

Chapter 8. Frequently Asked Questions

- Q: Does the SCON support NIP consoles?
A: Yes. You can define NIP and MCS (MVS) consoles to the SCON. It is good planning to define multiple NIP consoles, spread across more than one SCON for redundancy sake.
- Q: Can you change the configuration of one LPAR on the SCON, or add a new LPAR definition without performing an IML?
A: No, you can not. That is why it is important to have a redundant SCON, with alternate consoles defined to it. By having redundant SCONs, you can take one down for periodic maintenance while the other SCON is providing critical services.
- Q: Will a Telnet or TN3270E client get a live console session when they connect in?
A: Only if the Hot Session option is configured on the SCON. Otherwise, if the client is not connected when the LPAR first comes up, the device is reported as being powered off, and the console session would roll to the alternate console or to the support element.
- Q: How does the Hot Console Session feature work?
A: The SCON treats a Hot Console Session as if the device were always powered up. Console messages are received and discarded by the SCON when no client is connected to the session. When a client does connect to the session, a clear is sent inbound automatically to cause the host to repaint the latest screen.
- Q: Can a console operator retrieve messages discarded by the SCON from a Hot Session?
A: No, not directly from the SCON. You would need to access the SDSF, on the host.
- Q: Can I configure a combination of regular console session and Hot Console sessions?
A: Yes. You can determine which sessions need to be hot and which ones do not.
- Q: Can I configure Hot VTAM sessions?
A: In general, you do not need to. The host should detect when a VTAM terminal powers up, and provide the user with a session. The hot session feature of the SCON was designed specifically for use with consoles. Configuring a VTAM session as a hot session may result in unpredictable results.
- Q: How do I make a Hot Session roll to another terminal?
A: Do not configure a Hot Session if you need it to roll to another terminal automatically. If you need to switch control of a console to another device use the procedure described in Chapter 7 under 'Activating Consoles'.
- Q: Is there any way around having to configure the device candidate list in my GEN?
A: Yes. By configuring the Channel Path Filtering option to the SCON, it is possible to configure around the device candidate lists in HCD.
- Q: Is it possible to share a console session between two or more operators?
A: Yes. You can share a single session between up to 24 people at one time (if the session is configured to be shared). All operators may enter console commands, and each of the operators sharing the session will see the results of the command entered. This option can be used for training, joint problem determination, and disaster recovery situations.

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Q: Can I upgrade from one model of SCON to another in the field?

A: No.

Q: With support for 128 sessions and 48 LPARs per ESCON on the SCON-3074, am I limited to one session per LPAR?

A: No. you can allocate the 128 sessions across the configured LPARs any way that you wish.

Q: Can I share VTAM sessions?

A: No. The shared session feature is designed to work with consoles. Attempting to share VTAM sessions is unpredictable.

Q: Can I share a session between coax users and TN3270 users?

A: No. A shared session is between TN3270 clients only. If a session configured as shared is allocated to a coax user, it will appear unavailable to the TN3270 clients.

Chapter 9. Troubleshooting Guide

Very Slow Response Times

Response times are in the multiple-second range. This is likely to be device definitions in the SCON that do not have corresponding definitions on the host. Another possible reason for slow response times can be having File Transfer enabled in the Device Profile being used by fixed function terminals (although delays would only be in the subsecond range). Only devices that need File Transfer should have it enabled (these would StorageTek LMUs and PCs that need to exchange files with the host).

B5D Error Occurs at IML Time After Configuration

More than 32 Telnet client, LPD, or Socket sessions were configured on the SCON without a Feature Activation Disk to support them. You will need to reconfigure to reduce the sessions back to two or less, or add the Incoming Telnet Feature Activation Disk to cover what is configured.

B63 Error Occurs at IML Time After Configuration

More TN3270E sessions were configured on the SCON than what the installed Feature Activation Disks support. You will need to reconfigure to reduce the sessions, or add Feature Activation Disk(s) to cover what is configured.

B71 Error Occurs at IML Time After Configuration

More CUs (and more Host Circuits) were configured than what the installed Feature Activation Disks support. You will need to reconfigure to reduce the number of CUs defined, or add Feature Activation Disk(s) to cover what is configured.

B71 Error Occurs After Microcode Upgrade

It is possible that the unit that you have upgraded microcode on was shipped at a level that supported more LPARs in the base unit. At code levels prior to IL 3308, LINC software supported configurations up to 16 LPARs without requiring a Feature Activation Disk to increase support for the number of LPARs. At IL 3308, the number of LPARs supported without a FAD decrease to 4. At IL 3321 this number was further reduced to 1 on the 1174-25S.

9F7 Error When Attempting To Load A New Configuration

A 9F7 error indicates unsupported features have been configured or a configuration from another model has been copied onto the failing unit. (SCON-25L configuration copied onto a SCON-22L for example.)

No Green Light on SCON ESCON Interface Card

Verify that ESCON cable is completely plugged in. Make sure that ESCON cable connectors are properly keyed to match the SCON interface card. Light on the ESCON cable should be present as long as at least one of the LPARs sharing the ESCON path are up. When only one LPAR is using the path, and that LPAR is down, there will be no light on the cable.

Communications Event Code 503-02

This event code will appear if the ESCON cable becomes disconnected from the unit. In this case you will need to reconnect the cable, then use the correct sequence to put it back online.

Communications Event Code 503-03

The 503-03 code indicates a “online, not connected” condition. A common condition to cause this is when no devices are powered on at the time the SCON goes online. Normally powering one of the devices on will clear the code.

Communications Event Code 503-04

This indicates that the SCON ESCON interface was switched from online to offline. You can use the same sequence to switch the SCON back online. This sequence is <Alt> <1> <Enter> for ESCON channel 1 or <Alt> <2> <Enter> for ESCON channel 2. You should press and release each key in this sequence.

IML Button does not IML SCON

You must first place the SCON offline before the IML button will cause the SCON to IML. Note you can press and hold the “0” key then press the IML button to force an IML while the SCON is still online.

Unable to Communicate with Console Device

Ensure that the device in question has been defined to the CONSOLxx member in PARMLIB. This is what defines the device to be an MVS console.

Powered on terminals should automatically come up at LPAR IPL time. If the terminal was powered off at IPL time, it will not automatically come up, but must be varied on using the vary console command:

v xxx,console

where xxx is the device number.

You may not have the Device Candidate List configured correctly. Remember that only one LPAR may be configured to have access to each CU. You can use a console command to view the channel path from each LPAR. The command to use from an OS/390 partition is:

d m=chp(xx)

where xx represents the number of the channel path.

When enabled, this option causes only the foreground session to appear initially as having a powered on device associated with it. As the user hot keys into the other sessions, the SCON will forward the correct powered-on status to the host. For console sessions, the result of appearing to be powered on, will result in the console sessions not being varied active automatically.

When disabled, all sessions associated with an individual coax terminal will appear to be powered on whenever the terminal is powered on and communicating with the SCON. In this instance, all console sessions can be established, even though the user has not viewed some of their sessions.

540-80 Error In Event Log

This error occurs when a host attempts to establish a path for which the SCON is not configured.

540-81 Error In Event Log

A request to establish a path has been received but the path has already been established by a different LPAR. This error usually indicates that Channel Path Filtering has not been configured on the SCON and the device candidate list has not been properly configured.

540-82 Error In Event Log

This error typically is associated with TN3270E clients not responding quick enough for the channel when used with non-SNA SCON. Turn on the 'reset session on non-SNA SCON read timeout' RPQ.

540-83 Error In Event Log

This error may result if a printer device attempts to use a non-SNA host session genned as a console display.

540-84 Error In Event Log

This event indicates that channel path has been established and is not normally viewed as an error event. Only if this event indicates that a connection was established from the wrong LPAR would this be an error indication.

Unable To Communicate From One Of The Configured Hosts

Look in the Event Log for 540-81 errors indicating that the host device candidate list has not been configured correctly. You may also look in the host IOCDS GEN for the IODEVICE MACRO, Partition Parameter. If the path is defined to include multiple partitions and the partition parameter is missing or specifies more than one partition, there is an incorrect configuration of the device candidate list.

Appendix A. Glossary of Terms

ATL - Automated Tape Library.

Basic Mode - The mode of the mainframe processor when it is not configured for LPAR mode. Only one partition.

CCW - Channel Command Word. A doubleword at the location in the host's main storage identified by the Channel Address Word. CCWs are used to direct data channel operations.

CHPID - Channel Path Identification. This is a number associated with a communication path between the host and a controller.

Command Chaining - The fetching of a new CCW immediately following the completion of the previous CCW.

Console - The term usually used to refer to a Non-SNA terminal that is used to help manage the operating system or one of the started tasks running on the mainframe.

CNC - A mnemonic used to define an ESCON channel type.

CUADD - The CUADD is a parameter used in ESCON host definitions that refers to one of 16 logical paths through an ESCON channel. The value is given as a single hex digit.

CU Image - Another term used to describe how an SCON host circuit appears to the host. Each CU Image or host circuit appears to the host as if it were a control unit.

CUT - Control Unit Terminal. A Control Unit Terminal is a device that depends on the SCON to decode keyboard input from the device, to determine what action is needed. CUTs supported by the SCON include: fixed-function coax display terminals, ASCII display terminals, and Telnet clients.

DFT - Distributed Function Terminal. A term used to describe a coax terminal that processes the host data stream itself, rather than depend on the 3270 controller to process the data stream for it. DFT devices typically do not have access to CUT features provided by the SCON such as test mode panels, configuration, MLS, etc.

DSL -Down Stream Loadable. The term DSL refers to a special category of IBM terminals that depend on the controller to download their operating software over a coax connection. A typical DSL device used for console operations is the IBM 3290 Plasma Display.

EMIF - ESCON Multiple Imaging Facility

ESCD - Enterprise Systems Connection Director (ESCON Director, switch).

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ESCON - Enterprise Systems Connection. The term used to describe the fiber optic channel connection used on most ES9000 processors.

ESCON XDF - ESCON Extended Distance Feature. A feature that uses laser/single-mode fiber technology that extends unrepeatable link distances up to 20 KM (12.5 miles).

Explicit Device Candidate List - This is a panel found in the HCD panels of OS/390 environments when EMIF is being used, that is used to identify which LPARs have access to the device in question.

FICON - High speed fiber optic channel found on many modern CPUs, faster than ESCON.

HCD - Hardware Configuration Definition. This is the facility used in OS/390 environments to define hardware that will be attached to the host.

Host Circuit - This is the term used in the SCON configuration that corresponds to a set of terminal definitions supported by a single CU. Each CU/Host Circuit defined must have a corresponding CUADD definition on the host. The SCON-22L supports a maximum of 16 Host Circuits, the SCON-20L supports 2, and the SCON-25L supports up to 32.

Host Gen - The configuration definitions for hardware attached to the mainframe, that informs the mainframe what types of hardware is attached and how to communicate with it.

Hot Sessions - Console sessions that always appear to be powered on whether or not a display is actually powered on or connected (Telnet and TN3270).

IOCDS - Input Output Configuration Data Set. The data set created and loaded onto the support element for defining the channel connections and attached hardware to CPU.

LCSS - Logical Channel Subsystem. Grouping of LPARs on a new CPU (i.e. IBM z990) that share a single channel subsystem.

LINCS - LAN Integration and Network Communications System, the proprietary communications operating system used by the Visara SCON products.

LMU - Library Management Unit. The name of the unit used to manage a StorageTek Silo.

LPAR - Logical Partition. Each LPAR on the host operates with its own operating system, and can be brought up and taken down independent of the other LPARs defined on the same mainframe.

MCS Console - Multiple Console Support console. All MVS consoles are MCS consoles, once MVS is up and running. Up to 99 MCS consoles can be defined in the CONSOLxx member of PARMLIB. Prior to the MCS consoles coming active, the NIP console is used to control the bring up of MVS.

MIF - Multiple Imaging Facility.

MLS - Multiple Logical Sessions. This feature of the SCON allows a single CUT device such as a coax terminal to have up to 10 sessions simultaneously. The user switches between these sessions through the use of a session swap hot key.

NIP Console - Nucleus Initialization Program console. This is an MVS console used for a short period during initial startup, assigned through the HCD. If more than one NIP console is defined, the first active console in the list will be used, the rest in the list are used as alternate consoles. If the first active breaks communication with the host, the NIP function will pass to the next active alternate in the list. Once the Multiple Console Support function comes up, the NIP console function ceases, and all other MVS consoles come active. (It is common to define the NIP console device to also function as the MVS master console.

Parallel Sysplex - Multiple mainframes or LPARs present a single system image to the user.

PCHID – Physical Channel Identifier, found on CPUs with multiple logical channel subsystems (LCSS). The logical channels of each LCSS gets mapped to a physical channel, or PCHID.

PR/SM - Processor Resource/Systems Manager. Feature that allows for the configuration of multiple LPARs on a CPU.

RFC - Request for Comment. This refers to the specification documents used to describe most protocols and procedures associated with the TCP/IP environment.

Shared Session – A session where two or more users are able to provide input and view output at the same time.

Silo - Automated tape library product sold by StorageTek.

Support Element - PC directly attached to the mainframe that provides the mainframe with the initial configuration and acts as the initial console at IPL time.

TN3270E – Emulation that provides a 3270 session using Telnet as the interface. The letter 'E' indicates compliance with RFC 1647, which describes enhancements over RFC 1576 (TN3270).

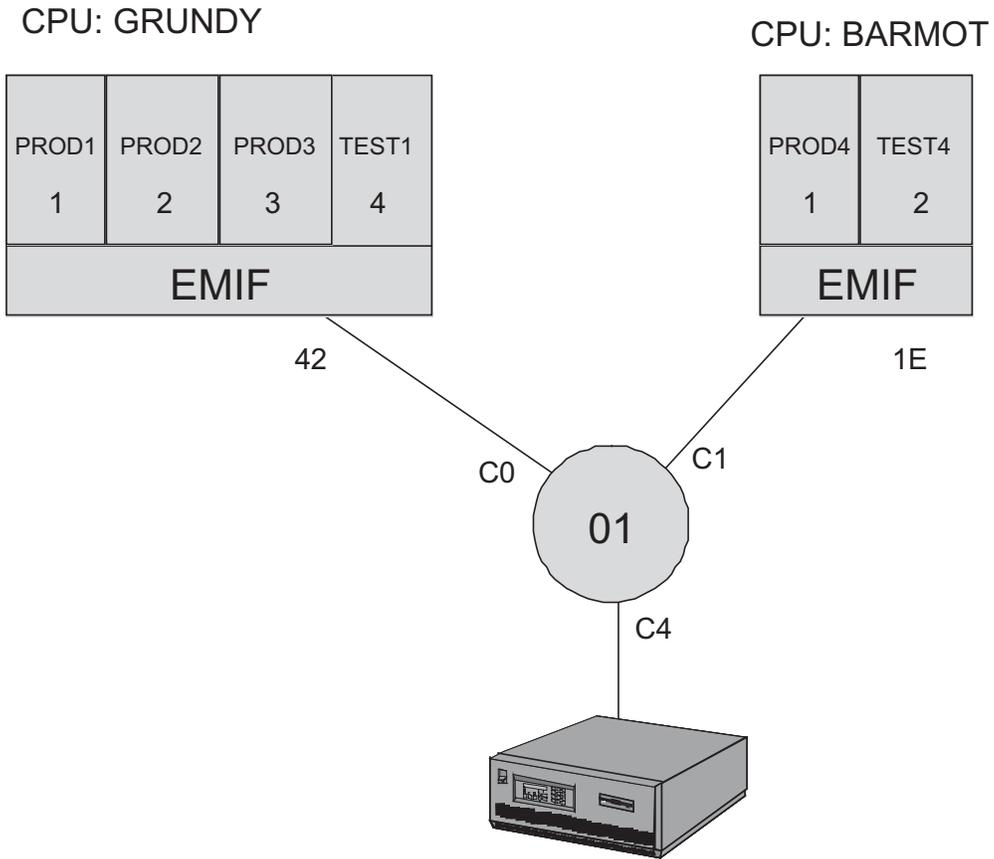
Virtual Private Network (VPN) - A session established across a public network, using encryption to keep the session private.

VTAM Terminal – Terminal that communicates with an application, accessed through VTAM.

Visara – Vision of the Future

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Example: Console Configurations Planning Worksheet



Appendix B. Console Configurations Planning Worksheet

CPU	CHPID #	Switch #	Director Port to CPU	Director Port to SCON	SCON ESCON Card #	LPAR Name	LPAR #	SCON Host ID	CUADD	HCD/IOCP Control Unit #	UNITADD	Terminal Function	Device Address	SCON Coax Port #	Port Session Number
GRUNDY	42	01	C0	C4	ESC1	PROD1	1	A	1	619	00	MASTER	700	0	A
													701	1	B
													702	2	A
													703	3	A
													704	4	A
						PROD2	2	B	2	620	00	MASTER	700	1	A
													701	0	B
													702	5	A
													703	6	A
													704	7	A
						PROD3	3	C	3	621	00	MASTER	700	8	A
													701	0	C
													702	1	C
													703	9	A
													704	10	A
						TEST1	4	D	4	622	00	MASTER	700	15	A
													701	16	A
													702	17	A
BARMOT	1E	01	C1	C4	ESC1	PROD4	1	E	5	201	00	MASTER	700	21	A
													701	22	A
													702	23	A
													703	24	A
													704	25	A
						TEST4	2	F	6	202	00	MASTER	700	21	B
													701	22	B
													702	23	B

Note: A tool from Visara, the SCON Configuration Wizard, is available to help create these worksheets.

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