

System z



Open Systems Adapter-Express Integrated Console Controller 3215 Support

System z



Open Systems Adapter-Express Integrated Console Controller 3215 Support

Note!

Before using this information and the products it supports, be sure to read the general information under "Notices" on page 31.

First Edition (January 2009)

This edition, SA23-2247-00, refers to the IBM Open Systems Adapter-Express Integrated Console Controller for the following operating systems: z/OS Version 1 Release 2 or higher (5694-A01), and z/OS.e Version 1 Release 3 or higher (5655-G52), Open Systems Adapter Support Facility for z/Virtual Machine/Enterprise (z/VM) Version 3 Release 1, Version 4 Release 2 (Program Number 5654-A17), and Version 4 Release 3 or higher (Program Number 5739-A03), OSA/SF for VSE Version 2 Release 2 (part of VSE Central Functions 6.1.1, 5686-066) in VSE/ESA Version 2 Release 2.6 (5690-VSE) or higher, and to all subsequent releases and modifications until otherwise indicated in new editions or technical newsletters.

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About this Document

This document describes the configuration process for the Open Systems Adapter-Express Integrated Console Controller 3215 support. It is intended to be used with *eserver zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User's Guide*, SA22-7990.

Who Should Use This Document

This document is intended for the technical staff who will configure the Open Systems Adapter-Express Integrated Console Controller.

Where to Find More Information

This document contains all the instructions necessary to set up the Open Systems Adapter-Express Integrated Console Controller support for the 3215 data stream. In some instances, there are references to other publications for detailed information.

Notes:

1. *eserver zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User's Guide*, SA22-7990, describes the configuration process for the Open Systems Adapter-Express Integrated Console Controller.
2. *z/OS V1R10.0 HCD Planning*, (GA22-7525-13), describes how to define an I/O configuration using Hardware Configuration Definition (HCD).
3. *TPF V4R1 Program Directory*, (GI11-0418-02), is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of the TPF 4.1 product.

A Note on Terminology

Throughout this publication, certain equipment terms and short versions of product names are used to make the information more easily understood. These are:

CS Communications Server

1000Base-T

1000Base-T Ethernet feature capable of 10, 100, or 1000Mbps

GbE Gigabit Ethernet feature

OSA Abbreviation for Open Systems Adapter (OSA-Express and OSA-2) feature.

OSA-Express

Abbreviation for Open Systems Adapter-Express features.

OSA-ICC

Abbreviation for Open Systems Adapter-Express Integrated Console Controller features.

OSC The channel type name for OSA-Express features that are configured as Open Systems Adapter-Express Integrated Console Controller.

OSD The channel type name for OSA-Express features that run under Queued Direct Input/Output architecture (QDIO).

OSE The channel type name for OSA-Express features that do not use QDIO architecture (typically SNA/APPN/HPR applications).

OSN The channel type name for OSA-Express2 features that use QDIO architecture and CDLC protocol.

PCOMM

The Host Access Client Package which includes the eNetwork Personal Communications V5.6 emulator.

TOS TPF Operations Server.

Summary of Changes

Summary of Changes for SA23-2247-00

This is the initial release of the document.

Chapter 1. Introduction

The IBM® Open Systems Adapter-Express Integrated Console Controller (OSA-ICC) is the replacement for 2074 Console Support Controller and local, non-SNA DFT 3174 Control Units. Its primary application is to provide 3270 sessions so you can IPL your logical partitions within any channel subsystem (CSS) and to provide System Operator/Master consoles for z/OS®, z/OS.e, z/VM®, TPF, and VSE. OSA-ICC now provides support for 3215 sessions with the z/TPF master console.

The OSA-ICC is one port on an Open Systems Adapter-Express (OSA-Express) 1000Base-T Ethernet feature. An OSA-Express 1000Base-T feature has 2 ports and either or both can be configured as an OSA-ICC. OSA-ICC function is included with your OSA-Express 1000Base-T feature as Licensed Internal Code and you can enable it by defining the channel path type as OSC.

OSA-ICC 3215 provides console controller support for the 3215 line mode data stream. For the 3215 function, OSA-ICC receives a channel program with 3215 data stream from z/TPF and transmits this data to the remote TCP/IP clients. The TPF Operations Server is a client to the OSA-ICC; it communicates with z/TPF indirectly through OSA-ICC.

OSA-ICC provides support for 3270 and 3215 data streams, however, one OSA-ICC PCHID can support only one of these two data streams. Based on the IOCDS configuration, a particular PCHID will either have 3270 devices and provide support for the 3270 data stream, or it will have 3215 devices and provide support for the 3215. One physical OSA-Express2 card can have two PCHIDs, either of which can be defined as 3270 or 3215. In IOCDS, OSA-ICC PCHID is defined as OSC; however, 3215 will have new CHPID channel parm defined. This distinguishes it from a 3270 data stream.

Quick facts

Here is a summary of the things you need to know about this 3215 support:

- The hardware platform for OSA-ICC 3215 is the OSA-Express2 1000BaseT feature.
- A new OSC CHPID channel parm has been defined to isolate 3215 streams from 3270 streams.
- A maximum of 32 concurrent console sessions are supported.
- This function has been developed for z9. Support for z990 is not provided.
- A new set of Advanced facilities panels have been created for this support. See Chapter 3, “Configuration,” on page 5 for more information.
- 3215 support over OSA-ICC is needed for TPF operating system consoles only.

Configuration checklist

The following needs to be done to configure OSA-ICC 3215 support:

- IOCDS change
- SE/HMC panels
- TPF Operations Server configuration steps

Introducing OSA-Express ICC 3215 support

Chapter 2. Setup/Initialization

This section describes the setup and initialization steps for 3215 support. Initializing and setting up OSA-ICC for 3215 support involves the following:

- Installing and enabling the RPQ
- Defining the OSC CHPID channel parm
- Configuring ICC for 3215 support
- Configuring TOS

Installing and enabling the RPQ

The OSA-ICC 3215 support is delivered as an RPQ. To install the RPQ, do the following from the SE or HMC (reference Figure 1 for this procedure):

1. Highlight your system on the CPC Work Area.
2. From the right panel, scroll to the CPC Configuration and select the Perform Model Conversion icon.
3. From the Perform Model Conversion panel, select the Features option. When this option is expanded, it displays the Add OSA 3215 and Remove OSA 3215 options. These options are added with the SE/HMC MCLs for 3215.
4. From the expanded Features option, enable the 3215 RPQ by selecting Add or Update OSA 3215 and following the online instructions, which will ask for a CD. This CD is built to order by IBM – it goes with specific machine's driver level and serial number

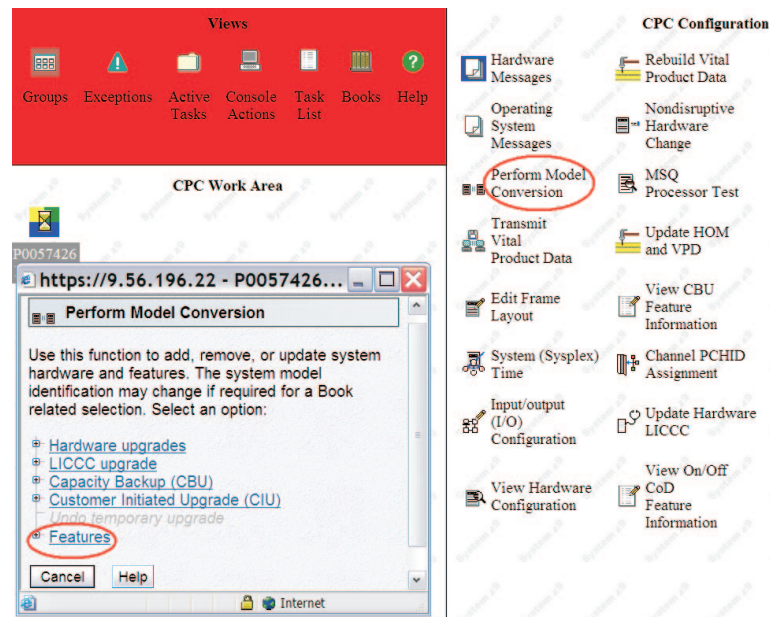


Figure 1. Installing the 3215 RPQ from the CPC work area

To display OSA-ICC 3215 selections under the “features,” correct SE/HMC MCLs need to be installed.

Note: SE/HMC-specific panels for the OSA-ICC 3215 are not accessible before RPQ is installed. Trying to open these panels without RPQ being installed

Setup/Initialization

causes an error to be displayed. Without these panels, the ICC-3215 card is not configured and cannot be used for 3215 data stream console support.

Defining the OSC CHPID channel parm

There is an OSC CHPID channel parameter that isolates 3215 streams from 3270 streams.

For your system to recognize the OSC CHPID for 3215 support, you must define the CHPID in your Input/Output Configuration Dataset (IOCDS) through the Hardware Configuration Definition (HCD) or the Input/Output Configuration Program (IOCP).

You must define in the IOCDS each OSA-Express 1000Base-T port you wish to use. Each OSA-ICC function requires a unique CHPID, control unit, and device definition. These definitions are made using HCD or IOCP, which defines the OSA-Express feature to the I/O hardware configuration.

Here is the CHPID in OSA-ICC 3270 mode:

```
CHPID PCHID=160,PATH=(CSS(0,1,2,3),60),TYPE=OSC,SHARED
```

Add **CHPARM=40** to the CHPID to put it into OSA-ICC 3215 mode:

```
CHPID PCHID=160,PATH=(CSS(0,1,2,3),60),TYPE=OSC,SHARED,CHPARM=40
```

See *eserver zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User's Guide* for the steps to define an OSC CHPID with HCD and IOCP.

When configuring through HCD, UNIT parm should be set to 3215; this generates CHPARM=40. See *z/OS V1R10.0 HCD Planning, (GA22-7525-13)*, for more information.

Configuring ICC for 3215 support

Configuration is discussed in Chapter 3, "Configuration," on page 5. Specifically, you need to use the Advanced Facilities panels to do the following:

- Edit the server configuration for a given OSC. See "Edit server configuration" on page 16 for more information.
- Edit the session configuration to include a list of the sessions that are configured for the OSC and configuration information about each session. See "Edit sessions configuration" on page 14 for more information. Both server and session parameters can be configured via manual configuration option, as well.

When you have completed this step, the ICC is configured for 3215 support.

Configuring the TPF Operations Server

On the client side, you need to configure the TPF Operations Server. The setup procedures are done in TPF. See *IBM TPF Operations Server User's Guide* for more information.

Chapter 3. Configuration

This section describes configuration specific to 3215 support. This chapter also includes the following information:

- A brief explanation of the configuration panels
- Steps for accessing the Advanced Facilities panel
- The 3215-specific Advanced Facilities panels and their descriptions
- Configuring with manual editing

Note: The OSA ICC 3215 configuration may get reset to default values when PCHID is defined in 3215 mode, re-defined in 3270 mode, and then back in to 3215 mode. In this case, the original 3215 configuration may get reset to default configuration. It is strongly recommended that you save the configuration file using the manual import/export function.

Structure of the configuration panels

Figure 2 shows the relationship of the panels that are accessed from the **Card Specific Advanced Facilities** panel. Panels that contain changes for 3215 support are shaded.

Note: Although the manual configuration, panels have not changed, the parameters and syntax of the manual configuration has changed for 3215 support.

Figure 2. The structure of the configuration panels. The shaded panels contain changes for 3215 support.

All Configuration operations are selected from the **Advanced Facilities** panel as shown in Figure 6 on page 8.

The following is a brief explanation of the tasks you can perform from each of these panels. The panels that contain changes for the 3215 support are noted.

Note: For a complete description of the 3215-specific panels and the meaning of their entry fields, see “OSA-ICC 3215-specific Advanced Facilities panels” on page 9. For a complete description of all Advanced Facilities panels, see *eserver zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User’s Guide*

Run port diagnostics	This panel allows you to run diagnostics on the OSA-ICC channel.
View port parameters	This panel allows you to view Network Interface Card statistics.
View Code level	This panel is used to display level of code loaded into the card.
Set card mode (changed)	This panel is used to set the speed and mode of the OSC.
Display client connections (changed)	This panel is used to view client connection parameters.
Display active session configuration (changed)	This panel is used to display the active session configuration for a given OSC.

Configuration

Display active server configuration (changed)	This panel is used to display the active server configuration for a given OSC.
Panel configuration options (changed)	This panel allows you to edit session configurations (changed), edit server configurations (changed), validate panel values, and view any validate panel errors
Manual configuration options	This panel allows you to import a source file, export a source file, edit a source file, and validate a source file.
Activate configuration	This panel allows you to activate a configuration.
Display active configuration errors	This panel allows you to view any active configuration errors.
Debug utilities	This panel allows you to ping a client workstation, trace the route of a packet of data to a client workstation, and drop a session.
Cancel command	This panel allows you to cancel a command which is executing on an OSC.

Steps for accessing the Advanced Facilities panel

Perform the following steps to get to the Advance Facilities panel. This example is using the Hardware Management Console. If you are using the SE, the initial panels to select the CHPID are different.

1. From the Defined CPCs Work Area, drag the selected processor to OSA Advanced Facilities.

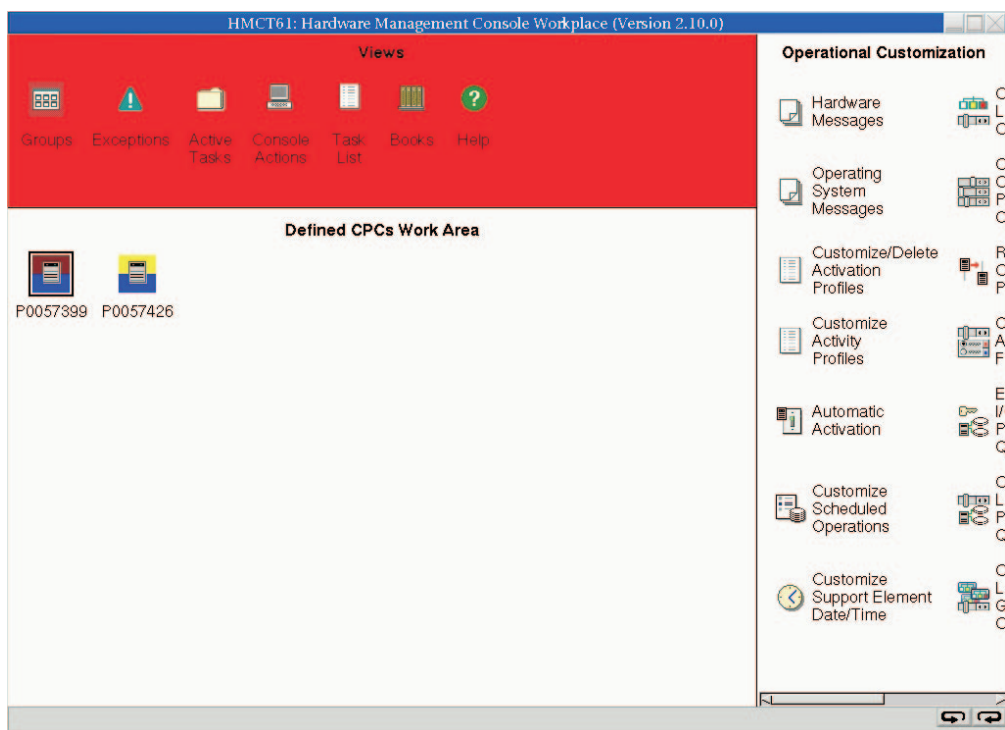


Figure 3. Hardware Management Console workspace panel

2. The OSA Advanced Facilities screen opens. Select the PCHID you wish to configure and select OK.

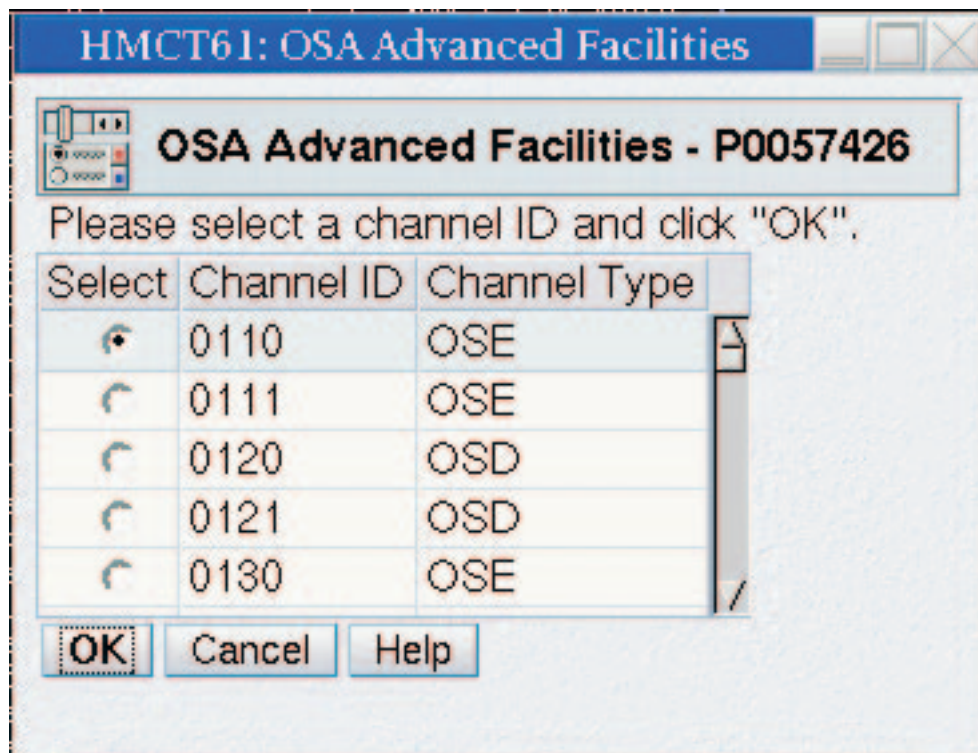


Figure 4. OSA Advanced Facilities panel

3. The **Standard Channel Advanced Facilities** panel will be displayed. Select **Card Specific Advanced Facilities** and click OK.

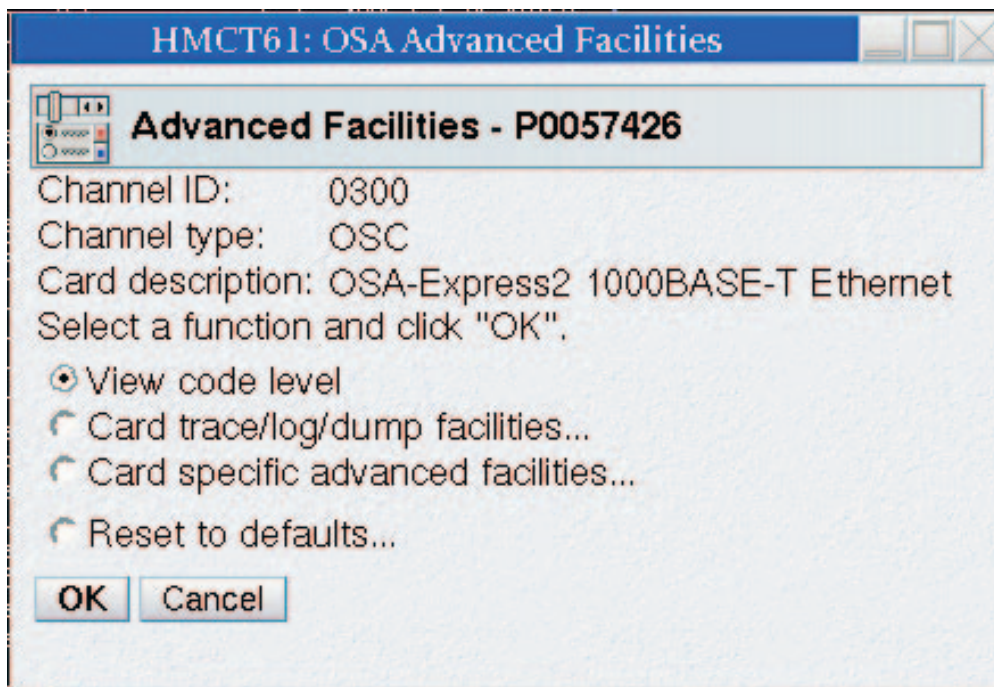


Figure 5. Standard Channel Advanced Facilities

You should now see the **Advanced Facilities** panel.

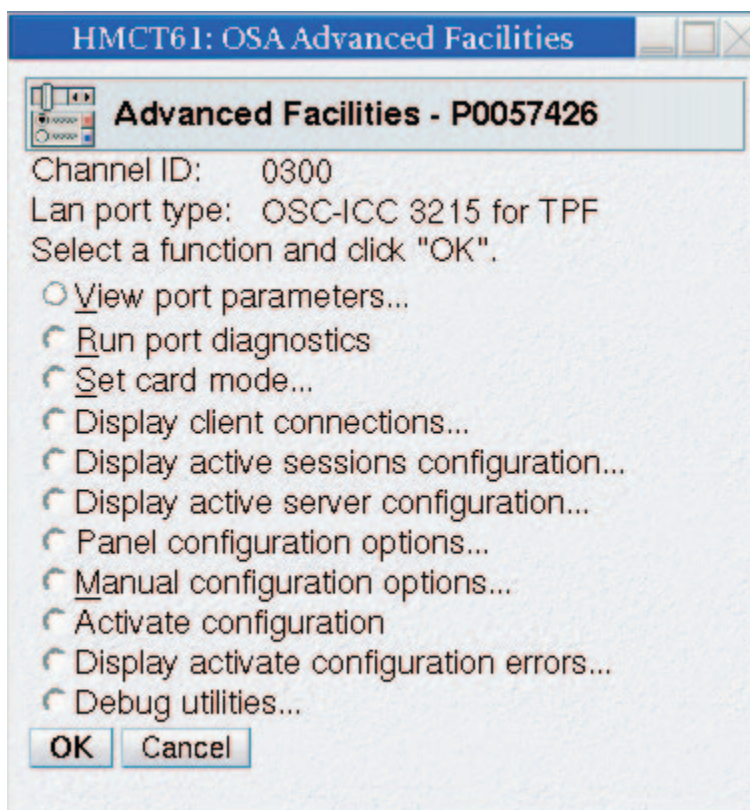


Figure 6. Advanced facilities panel

OSA-ICC 3215-specific Advanced Facilities panels

This section describes the following OSA-ICC Advanced Facilities panels that are specific to 3215 support:

- Set card mode, see “Set card mode”
- *Display client connections, see “Display client connections” on page 10
- *Display active session configuration, see “Display active session configuration” on page 11
- *Display active server configuration, see “Display active server configuration” on page 13
- *Panel configuration option, see “Panel configuration options” on page 14
 - *Edit session configuration, see “Edit sessions configuration” on page 14
 - *Edit server configuration, see “Edit server configuration” on page 16

See *eserver zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User's Guide* for a complete description of all of the Advanced Facilities panels.

3215-specific panel entry descriptions

Configuring your OSA-ICC results in the creation of a session and server configuration file. You can create this file by entering data via panel entry or by manually editing the file. Panel entry requires that you move through a series of data entry panel and enter configuration data on those panels. Panel entry is especially convenient if you want to make a small number of changes to your configuration file. The following describes each of the Advanced facilities panels that are specific to 3215 support.

Set card mode

The **Set card mode** panel is used to set the speed and mode of the OSA-ICC.

Note: This panel does NOT show the way the card is currently set. It is NOT a display card mode panel. This panel shows options to set the card. See *@server zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User's Guide* to see HOW the card is set.

Configuration

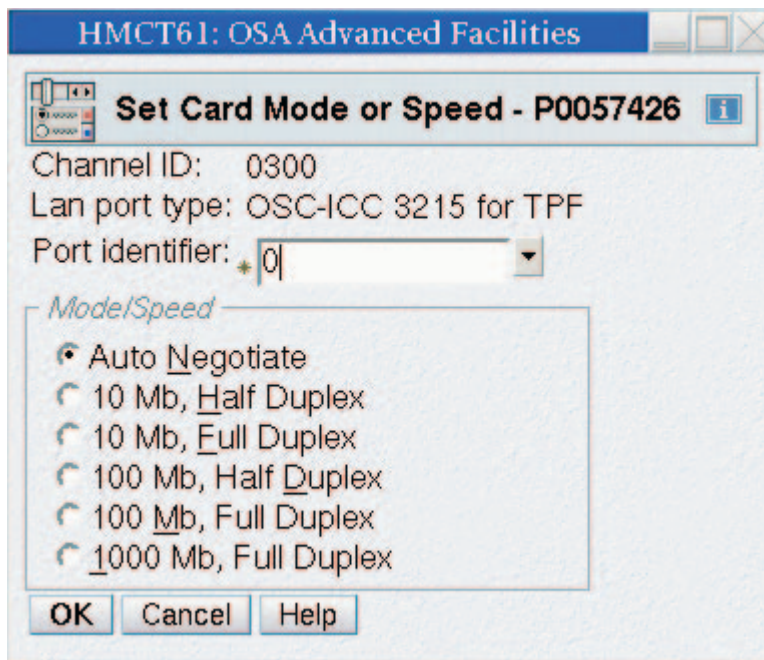


Figure 7. Set card mode panel

Port identifier: Since there is only one port in OSA-ICC, the entry field default is 0. This field is not used.

Mode: The default is half duplex. The mode can be changed dynamically, but it is recommended that you do not make this change while sessions are active and connected.

Display client connections

The **Display client connections** panel allows you to view currently connected clients. This information is queried at the time you open this panel. To refresh the information, exit the panel and reopen it.

Session Index	Status	MAC	Clients IP	Port	Socket Number	Connect Rule
1	Connected	00:12:F2:95:B9:00	9.57.9.14	4765	2	Session Name Only
2	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
3	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
4	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
5	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
6	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
7	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
8	Connected	00:12:F2:95:B9:00	9.57.9.14	4771	3	Session Name Only
9	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
10	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
11	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
12	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
13	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
14	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown
15	Available	00:00:00:00:00:00	0.0.0.0	0	0	Unknown

Figure 8. Display client connections panel

Session Index specifies the session number. The valid range is 1-32.

Status specifies whether the session is not configured, available, connected, active, or has a definition error:

- Not configured: the session has not yet been configured.
- Available: the session has been configured and the client can connect to it.
- Connected: the session has been configured and the client is connected to it.
- Active: the session has been configured, the client is connected to it, and the client is connected to the host.
- Definition error: the session is not a valid session and the client cannot connect. The session CSS, MIFID, or Device Number does not exist or was dynamically deleted during dynamic I/O.

MAC specifies the address of the client that is being connected if the client is on the local end. Otherwise, the MAC address of the router is displayed.

Client's IP specifies the IP address of the attached client.

Port specifies the port number of the attached client.

Socket Number specifies the Local TCP socket number that uniquely defines the connection. This parameter is only useful to the OSA-ICC PE.

Connect rule can be session name only, or session name and IP. For more information on connection rules, see *@server zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User's Guide*.

Display active session configuration

The **Display active session configuration** panel is used to display the active session configuration for a given OSC. This includes a list of the sessions that are

Configuration

configured for the OSC and configuration information about each session.

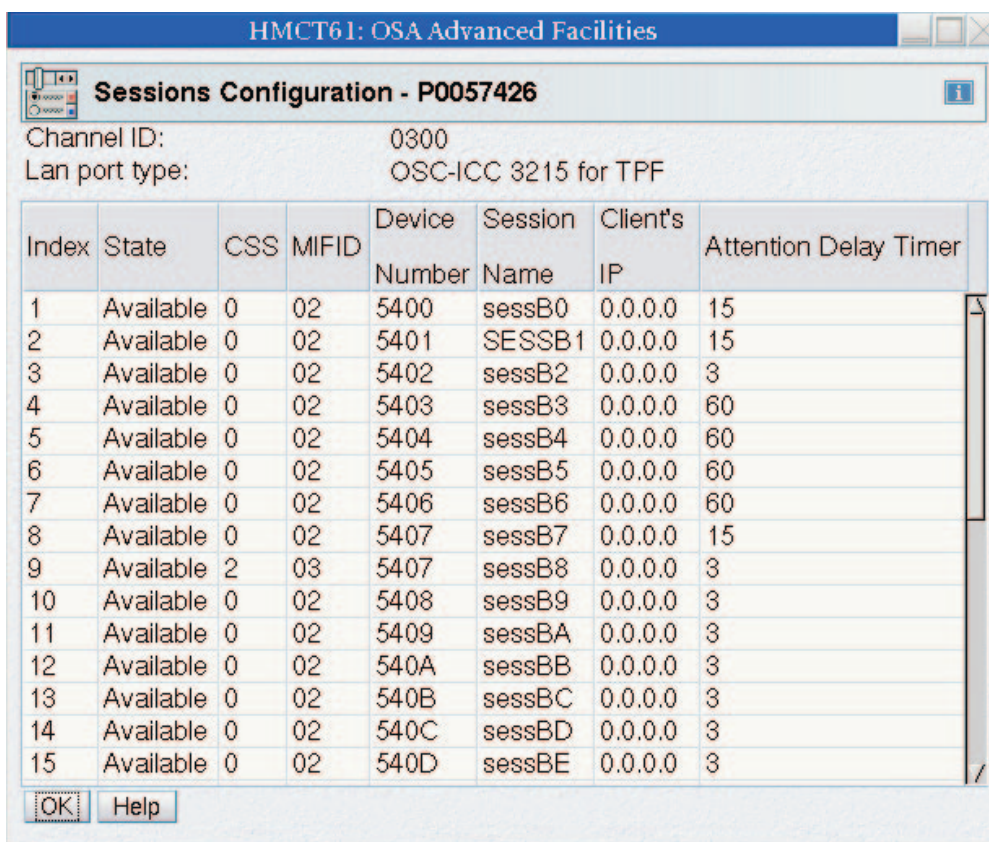


Figure 9. Display active session configuration panel

Index specifies the session number.

State specifies whether the session is not configured, available, or has a definition error:

- Not configured: the session has not yet been configured.
- Available: the session has been configured and the client can connect to it.
- Definition error: the session is not a valid session and the client cannot connect. The session CSS, MIFID, or Device Number does not exist or was dynamically deleted during dynamic I/O.

CSS specifies the logical channel subsystem ID. The valid range for CSS is 0–3.

MIFID is the logical partition MIF image ID. A valid range for the image ID is 1–F.

Device Number is a hexadecimal number assigned for each device that was defined in the IOCDS. The valid range is 1-FFFF.

Session Name identifies the session you are going to connect to. This has to be unique per session.

Client's IP (optional) specifies the IP address that a client will use to connect to the session. The client's IP address can remain 0.0.0.0 or empty in order to allow any client to connect to a specific session. If a non-zero IP is specified, any client with a non-matching IP will be rejected.

Attention Delay Timer started by OSA-ICC when a command is received from the client, and attention is issued to the operating system. The timer is stopped after the read is received, data is sent to the host, and channel end/device end is received from the host OS. The default is 3 seconds; the maximum is 60 seconds.

Display active server configuration

The *Display active server configuration* panel is used to display the active TCP/IP connection configuration information about the OSC channel.

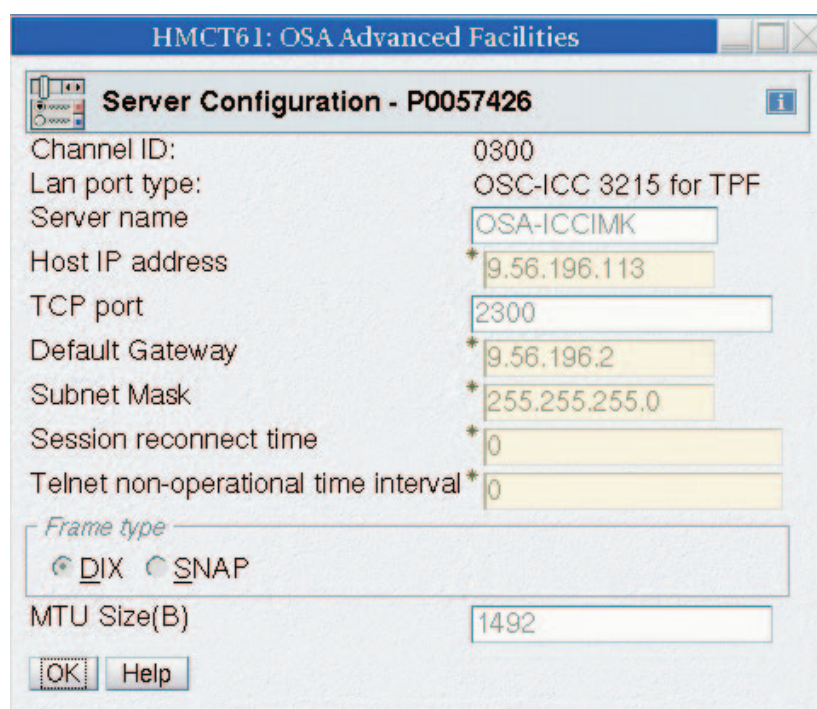


Figure 10. Display active server configuration panel

Server Name specifies the name of the server that a client is connected to. This field is not used except for display.

Host IP Address specifies your IP address.

TCP Port Port that server will use to connect with the client. A valid range is 1–65535.

Default Gateway specifies IP address gateway to any machines out of network.

Subnet Mask A mask used to determine what subnet an IP address belongs to.

Session reconnect time indicates the amount of time to wait (in seconds) until the OSA-ICC tells the host operating system that the 3215 console session has disconnected.

Telnet non-operational time interval the interval (in seconds) in which OSA-ICC sends the Telnet NOP command to the client. The default is 180 seconds. Setting the value to 0 is equivalent to disabling it.

Configuration

Frame type specifies the Ethernet standards that you want the network to follow. Every host in a network must have the same frame type. It is **strongly recommended** that you use DIX as your frame type. SNAP refers to IEEE 802.3 framing, but most traffic on Ethernet is usually carried on DIX frames. Please contact your network administrator to see what you are using.

MTU Size(B) specifies the maximum size to be transferred in one frame. A valid range is 256-1492. The default is 576. Speak to your network administrator to see if you need the MTU size to be different from the default.

Panel configuration options

The **Panel configuration options** panel is the high level selection panel for the configuration options that are used for editing a session or server configuration, validating panel values, and/or viewing validate panel values errors. To choose a panel configuration option, select a utility option and click OK.

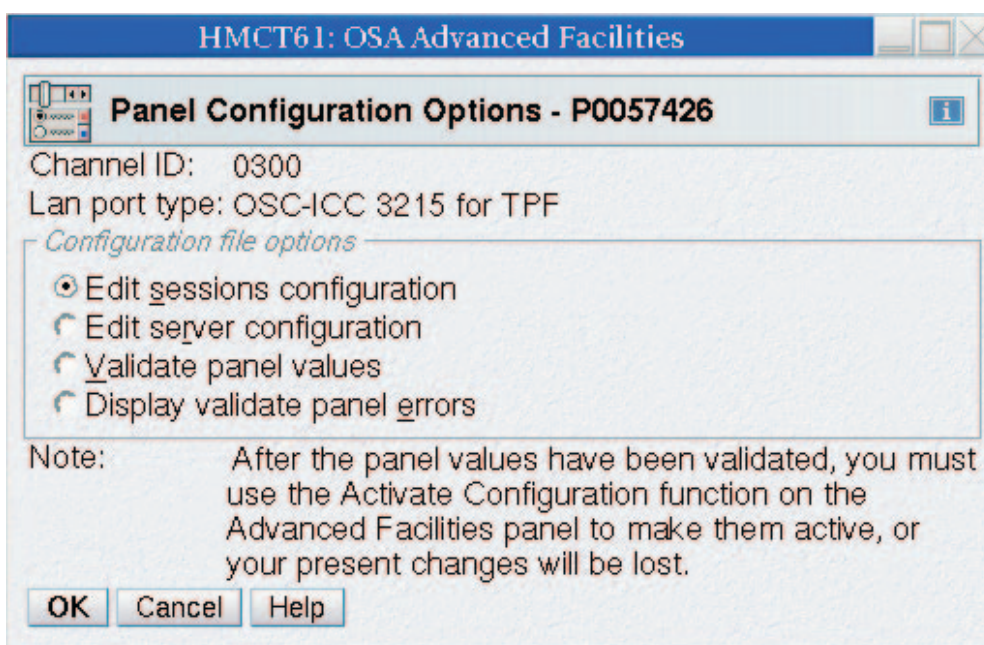


Figure 11. Panel configuration options panel

The **Edit sessions configuration** and **Edit server configuration** panels have been changed for the 3215 support.

Edit sessions configuration

The **Edit sessions configuration** panel is used to edit the session configuration for a given OSC. This includes a list of the sessions that are configured for the OSC and configuration information about each session. The display is the same as the **Display active session configuration** panel except the fields may be edited.

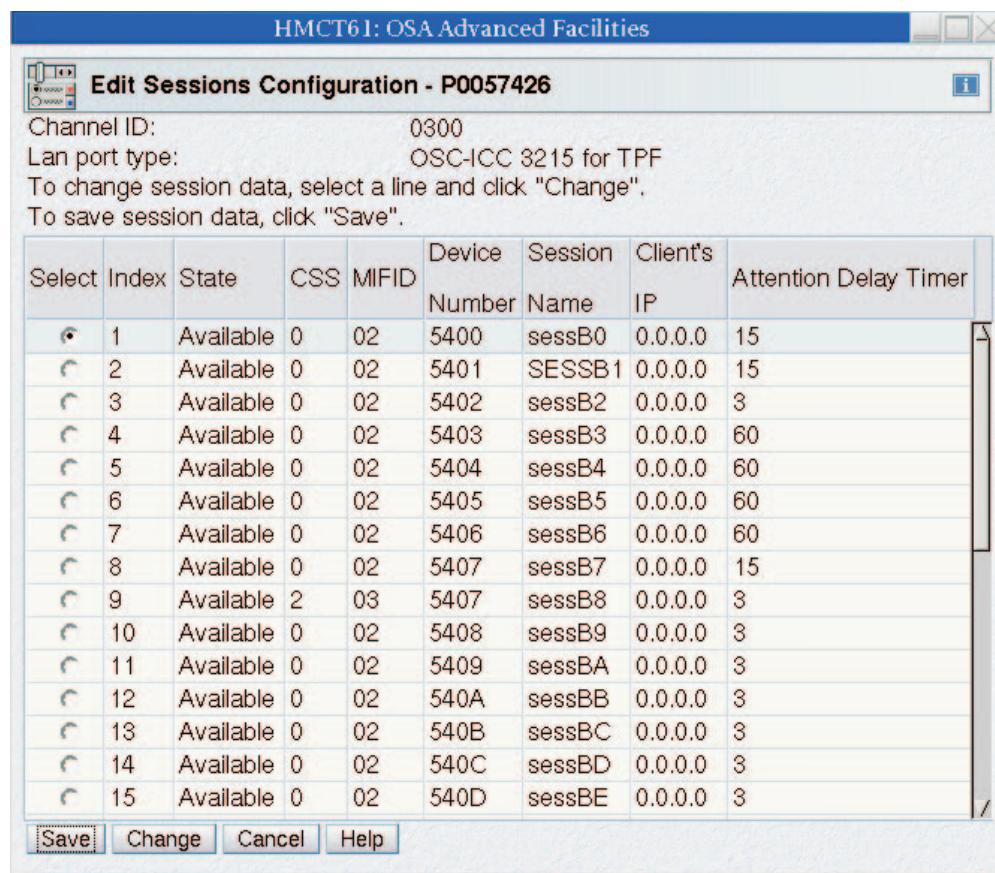


Figure 12. Edit session configuration panel

Index specifies the session number.

State specifies whether the session is not configured, available, or has a definition error:

- Not configured: the session has not yet been configured.
- Available: the session has been configured and the client can connect to it.
- Definition error: the session is not a valid session and the client cannot connect. The session CSS, MIFID, or Device Number does not exist or was dynamically deleted during dynamic I/O.

CSS specifies the logical channel subsystem ID. The valid range for CSS is 0–3.

MIFID is the logical partition MIF image ID. A valid range for the image ID is 1–F.

Device Number is a hexadecimal number assigned for each device that was defined in the IOCDs. The valid range is 1-FFFF.

Session Name identifies the session you are going to connect to. This has to be unique per session.

Client's IP (optional) specifies the IP address that a client will use to connect to the session. The client's IP address can remain 0.0.0.0 or empty in order to allow any client to connect to a specific session. If a non-zero IP is specified, any client with a non-matching IP will be rejected.

Configuration

Attention Delay Timer started by OSA-ICC when a command is received from the client, and attention is issued to the operating system. The timer is stopped after the read is received, data is sent to the host, and channel end/device end is received from the host OS. The default is 3 seconds; the maximum is 60 seconds.

To edit a field:

1. Highlight the entry you want to edit.
2. Double click the change button at the bottom of the screen.

HMCT61: OSA Advanced Facilities

Edit Session Configuration - P0057426

Channel ID: 0300
Lan port type: OSC-ICC 3215 for TPF
Session Index: 1
Session state: Available
CSS Value: 0
MIFID: 2
Device number: 5400
Session Name: sessB0
Client's IP address: 0.0.0.0
Attention delay timer: 15 (3 - 60)

If this session is active, then changing configurations can cause client connection to drop.

OK Delete Session Cancel Help

Figure 13. Edit session configuration panel

3. Make any desired changes. Be sure to scroll down to view all the fields that you can edit. For a description of the fields, see the field descriptions above.
4. Click OK to save the updated session information or the information will be lost.
5. Validate and activate your changes. For more information on validating and activating see, *@server zSeries z890 and z990 Open Systems Adapter-Express Integrated Console Controller User's Guide*.

Edit server configuration

The **Edit server configuration** panel is used to edit the server configuration for a given OSC.

HMCT61: OSA Advanced Facilities

Edit Server Configuration - P0057426

Channel ID: 0300

Lan port type: OSC-ICC 3215 for TPF

Server name: OSA-ICCIMK

Host IP address: * 9.56.196.113

TCP port: 2300 (0-65535)

Default Gateway: * 9.56.196.2

Subnet Mask: * 255.255.255.0

Session reconnect time: * 0 (0 - 86400)

Telnet non-operational time interval: * 0 (0 - 180)

Frame type

DIX SNAP

Note: The recommended frame type for OSA-ICC is DIX. Changing the frame type to another mode without checking with your Network Administrator could cause a loss of connectivity to your sessions.

MTU Size(B): 1492 (256-1492)

Changing host IP address or port will cause dropping of any currently connected clients.

OK Cancel Help

Figure 14. Edit server configuration panel

The *Edit server configuration* panel requires the following input:

Server name Used for display only.

Host IP Address specifies your IP address.

TCP Port Port that server will use to connect with the client. A valid range is 1–65535.

Default Gateway specifies IP address gateway to any machines out of network.

Subnet Mask A mask used to determine what subnet an IP address belongs to.

Session reconnect time indicates the amount of time to wait (in seconds) until the OSA-ICC tells the host operating system that the 3215 console session has disconnected.

Telnet non-operational time interval the interval (in seconds) in which OSA-ICC sends the Telnet NOP command to the client. The default is 180 seconds. Setting the value to 0 is equivalent to disabling it.

Frame type specifies the Ethernet standards that you want the network to follow. Every host in a network must have the same frame type. It is **strongly recommended** that you use DIX as your frame type. SNAP refers to IEEE 802.3 framing, but most traffic on Ethernet is usually carried on DIX frames. Please contact your network administrator to see what you are using.

Configuration

MTU Size(B) specifies the maximum size to be transferred in one frame. A valid range is 256-1492. The default is 576. Speak to your network administrator to see if you need the MTU size to be different from the default.

Configuring with manual editing

Configuring your OSA-ICC results in the creation of a session configuration file. You can create this file by entering data through panel entry or by manually editing the file. Manual editing is much faster for multiple data entries because of the powerful editing capabilities of most workstation editors. You can edit the configuration file on your Hardware Management Console or SE console, or you can export the configuration file to a storage device, edit it on the workstation of your choice, and import back to the SE. You can also edit the configuration file directly on the SE console by selecting the Edit source file panel under the Manual configuration options panel (as shown in Figure 15).

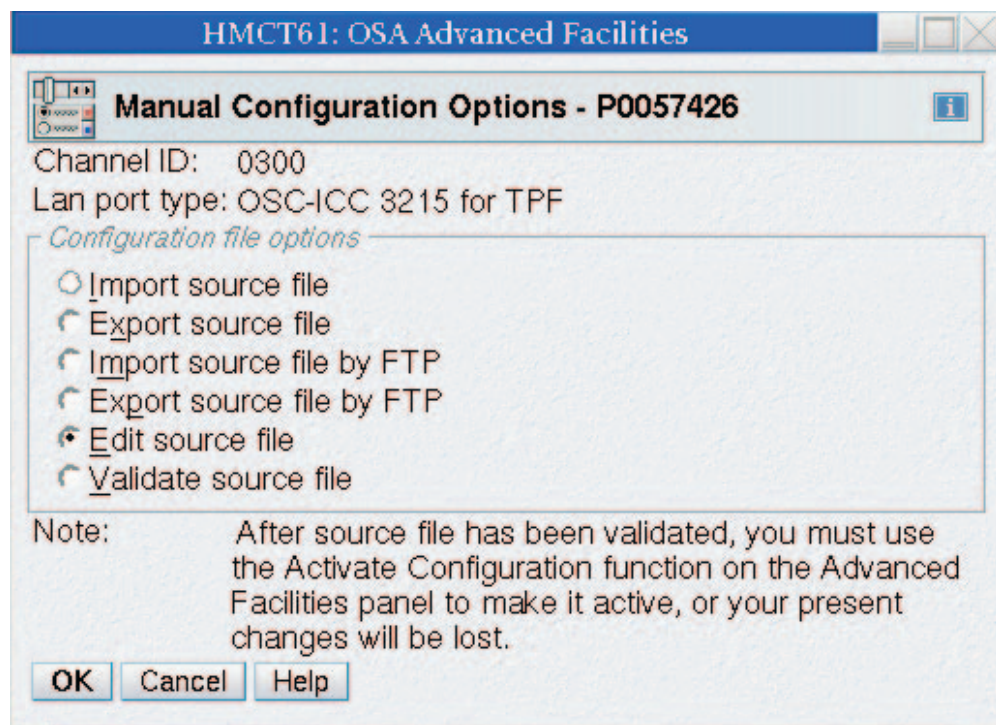


Figure 15. Selecting an Edit source file from the Manual configuration options panel

Selecting an Edit source file from the Manual configuration options panel generates the editor shown in Figure 16 on page 19. It includes a sample manual configuration of the data defined in the Panel configuration process described in "Panel configuration options" on page 14.

```

// This file has been generated from the binary file 0300.hut
<OSC_SERVER>
  HOST_IP= 9.56.196.113
  DEFAULT_GATEWAY= 9.56.196.2
  SUBNET_MASK= 255.255.255.0
  PORT= 2300
  ETHERNET_FRAME= DIX
  MTU= 1492
  NAME= OSA-ICCIMK
  SESSION_RECONNECTION_TIMEOUT= 0
  TELNET_NOOP_TIME_INTERVAL= 0
</OSC_SERVER>

<CONFIG_SESSION>
<SESSION1>
  CSS= 00 IID= 02 DEVICE= 00B0
  SESSION_NAME= sessB0
  ATTN_DELAY= 15
</SESSION1>

<SESSION2>
  CSS= 00 IID= 02 DEVICE= 00B1
  SESSION_NAME= sessB1
  ATTN_DELAY= 15
</SESSION2>

<SESSION3>
  CSS= 00 IID= 02 DEVICE= 00B2
  SESSION_NAME= sessB2
  ATTN_DELAY= 3
</SESSION3>
.
.
.
.
</CONFIG_SESSION>

```

Insert Mode Char 2 Ln 2 Col 1

Figure 16. Manual configuration editor

Configuration file sections

As shown in Figure 16, there are two sections to the session configuration file:

- Parameters about the OSC.
 - These are referred to as card parameters because they relate to the OSA-Express card. In the file, the first line of the card parameters is the `<OSC_SERVER>` tag and the last line of the card parameters is the `</OSC_SERVER>` tag.
- Parameters about the 3215 sessions you want to configure for your OSA-ICC.

Configuration

You can configure up to 32 sessions on an OSA-ICC 3215. In the file, the first line of the session parameters is the <CONFIG_SESSION> tag and the last line of the card parameters is the </CONFIG_SESSION> tag. Within the <CONFIG_SESSION> section of the file are the individual session configuration parameters. Each set session parameters begins with the <SESSIONx> tag and ends with the </SESSIONx> tag, where x is the index number of the 3215 session within the configuration.

Configuration file syntax

The following tags can be included in the manual configuration file.

- **Server tag identifiers**

Table 1. Server tag identifiers

```
//  
<OSC_SERVER>      Server definition start delimiter  
</OSC_SERVER>    Server definition end delimiter  
HOST_IP=  
PORT=  
DEFAULT_GATEWAY=  
SUBNET_MASK=  
ETHERNET_FRAME=  
NAME=  
MTU=  
SESSION_RECONNECTION_TIMEOUT =  
TELNET_NOOP_TIME_INTERVAL =
```

- **Client tag identifiers**

Table 2. Client tag identifiers

```
<CONFIG_SESSION>  Session definition start delimiter  
</CONFIG_SESSION> Session definition end delimiter  
<SESSION#>       Inner session definition start delimiter  
</SESSION#>      Inner session definition end delimiter  
CSS=  
MIFID= or IID=  
DEVICE=  
CLIENT_IP=  
SESSION_NAME=  
ATTN_DELAY=
```

The following rules apply to tag placement:

1. Tags that are immediately followed by '=' need associated values.
2. Non delimiter tags may be abbreviated to a minimum of 4 characters.
3. Tags can be placed in any order as long as they are within the bounds of their delimiters.
4. Server tags must be within the server delimiters.

5. Session tags must be within the inner session delimiter and these inner delimiters must be within the session definition delimiters.

Server tag identifiers

// Indicates that any text at the end of the line is treated as a comment.

Note: Any user-entered comment is erased during activation.

<OSC_SERVER>

The beginning of the server configuration data. There can be only one such tag in the configuration file. It must be followed by the </OSC_SERVER> tag, or a syntax error is produced.

</OSC_SERVER>

The delimitator for the server configuration section. There can be only one such tag in the configuration file. It must be preceded by the </OSC_SERVER> tag, or a syntax error is produced.

HOST_IP=

Used to label the Host's IP address; a value that follows it should be an IP address in dotted format (for example, 10.10.12.43). This address is assigned to the OSA-ICC 3215 server, and this is the address to which TOS connects. The following is an example of using this tag:

```
HOST_IP= 10.10.121.44
```

There is no default.

PORT=

The port number on which the OSA-ICC 3215 server is listening to (accepting) clients. For example, PORT= 23. Since there are no other network services provided by OSA-ICC, it is acceptable to use any valid port number in the port number range 1 to 65535; however it is not recommended to use well known ports due to the risk of the DoS attacks. In addition, where firewalls are used, setup should allow for TCP traffic using this port number.

DEFAULT_GATEWAY=

The IP address in dotted decimal format for the default gateway. For example, DEFAULT_GATEWAY= 10.10.121.48. There is no default.

SUBNET_MASK=

The IP address in dotted decimal format for subnet mask. For example, SUBNET_MASK= 225.225.225.0. There is no default.

ETHERNET_FRAME=

The Ethernet standards that you want the network to follow. Every host in a network must have the same frame type. The value can be DIX or SNAP. It is strongly recommended that you use DIX as your frame type. SNAP refers to IEEE 802.3 framing, but most traffic on Ethernet is usually carried on DIX frames. Contact your network administrator to see what you are using. Here are two examples of specifying a frame type:

```
ETHERNET_FRAME= DIX  
ETHERNET_FRAME= SNAP
```

Default value: ETHERNET_FRAME= DIX.

NAME=

The name, which can be up to 15 characters and is not case sensitive. This is an ASCII string that is 15 characters long. Non-blank alphanumeric characters are allowed as well as special printable characters. More

Configuration

specifically, the ASCII hex values 0x21 through 0x7E are valid constructs for a session name. Any character outside of this range produces a syntax error.

MTU= The maximum size to be transferred in one frame. A valid range is 256–1492. Use an MTU size of less than 1492 when the routing equipment does not support anything above 576. The default MTU size is 576.

SESSION_RECONNECTION_TIMEOUT=

The amount of time to wait (in seconds) until the OSA-ICC tells the host operating system that the 3215 console session has been disconnected. The default is 180 seconds. Setting this parameter to 0 is equivalent to disabling it. The maximum value for this parameter is 86400 seconds) which is equivalent to 24 hours.

TELNET_NOOP_TIME_INTERVAL= OSA-ICC 3215

Sends Telnet NOP commands to the client based on the interval (time in seconds) specified in this parameter. Once the client's disconnection is detected, if SESSION_RECONNECTION_TIMEOUT is set, OSA-ICC waits for this timeout before notifying the host operating system. This parameter by default is set to 180 seconds. Setting this parameter to 0 is equivalent of disabling it.

Client tag identifiers

<CONFIG_SESSION>

Marks the beginning of the session configuration.

</CONFIG_SESSION>

Marks the end of the session configuration.

<SESSION#>

Marks the beginning of the individual session configuration. It must be followed by the </SESSION#> tag. Everything between the <SESSION#> and </SESSION#> tags is treated as configuration data for one session. # is replaced by the corresponding index of the session. This number is in the range 1 to 32. Each number can be used only once, since a session can be configured only once.

</SESSION#>

Marks the ending of the individual session configuration. It must be preceded by the <SESSION#> tag. Client tags (tags following this definition) within this boundary beginning with <SESSION#> and ending with </SESSION#> can be defined in any order. Each tag can appear only once for a particular session. They are followed by a number or string, which is assigned to a particular session's parameter.

CSS= The channel subsystem number. The valid range is 0 to 3. This number is compared with IOCDS to make sure that it is defined.

MIFID= or IID=

The image ID for the session. The valid range is 1 to F. This number is compared with IOCDS to make sure that it is defined.

DEVICE=

The device number associated to the session. This hexadecimal number is compared with IOCDS to make sure that it is defined. The valid range is 1 to FFFF.

CLIENT_IP=

The IP address that the client will use to connect to this session. IP address

should be in dotted decimal format; for example, 10.10.23.23. Specifying a client's IP is optional. Omitting this tag will allow any client to connect to a specific session.

SESSION_NAME=

A unique name defined to each session; it is equivalent to the user name in a Telnet session. This has to be defined as an ASCII string with a length no greater than 25 characters long. Non blank alphanumeric characters are allowed as well as special printable characters. More specifically, the ASCII hex values 0x21 through 0x7E are valid constructs for a session name. This parameter is not case sensitive.

ATTN_DELAY=

An attention delay timer (for each session) in micro seconds. OSA-ICC starts this timer when it receives a command from the client. The timer is stopped when a response is received from the host OS. The default is 3 seconds (3000 ms). Maximum value is 60 seconds (60000 ms).

Configuration

Chapter 4. Error and warning messages

This section lists OSA error messages and provides explanations and corrective actions. This chapter also includes the following information:

- ...

Messages

The messages for the 3215 support have the following format:

Example: **OSAC***nnnns message text* +

OSAC The product identifier.

nnnn Four-digit message sequence number. The messages in this book are listed numerically according to these four digits.

s The message severity, denoted by one of the following characters:

I Informational, no action required. Message numbers 1000-1999 are informational.

E Errors that requires action eventually. Message numbers 2000-2999 are error.

W Warning, action is not required, but an error can occur later,

message text

An ASCII string.

+ Character following the message text, used to distinguish OSA-generated messages from messages sent by operating system.

How to Find a Message

Messages are listed numerically according to the last four characters.

Use LookAt, the online message facility, to look up messages and explanations that appear in this topic. You can access LookAt from the internet at:

<http://www.ibm.com/eserver/zseries/zos/bkserv/lookat/>

OSA/SF Reason Codes:

Reason codes that are issued as part of OSA/SF messages are for IBM use only. It is for this reason that explanations of reason codes are not documented. Reason codes may be encountered in messages found in the OSA/SF message log.

Table 3. OSA/SF reason codes

Message code	Message text and description
10011	connected to <i>OSA-ICC name</i> via <i>IP address</i> session name <i>session name</i> session index <i>number 1-32</i> + Description: This configuration information is sent to the client after the session connection is fully established.

Messages

Table 3. OSA/SF reason codes (continued)

Message code	Message text and description
1002I	Send Session Name + Description: OSA-ICC sends this message to the client to request session name.
2001E	Bad syntax for session name Description: The session name is too long or unsupported characters are used. This is sent just before disconnecting the client.
2002E	IP not matching Description: The password is too long or unsupported characters are used. This is sent just before disconnecting the client.
2003	Session name not defined Description: Session name sent to OSA-ICC is not defined in the session table. This is sent just before disconnecting the client.
2004	Timeout waiting for session info Description: Timeout waiting for session name. This is sent just before disconnecting the client.
2005	Session name already in use Description: The session is already assigned to another client. This is sent just before disconnecting the client.
2010	Disconnecting because of the configuration mismatch Description: Disconnecting because of the configuration mismatch that occurs when the dynamic I/O delete causes the session to enter a definition error state. This is sent just before disconnecting the client.
2011	Disconnecting because OSA-ICC reset Description: Disconnecting because the CHPID is off (or POR).

Errors for validate source file:

Table 4. Errors for validate source file

Message code	Message text
1010	// @@@ error: Sessions X and Y are defining same device; i.e. same css/mifid/device
1020	// @@@ error: Can't have multiple <OSC_SERVER> tags
1021	// @@@ error: Can't have <OSC_SERVER> tag within session configuration
1022	// @@@ error: Card configuration already done
1030	// @@@ error: Illegal <OSC_SERVER> position
1031	// @@@ error: Server configuration section has to be closed by <OSC_SERVER>
1032	// @@@ error: Missing HOST_IP tag
1033	// @@@ error: Missing PORT tag
1034	// @@@ error: Missing DEFAULT_GATEWAY tag
1035	// @@@ error: Missing SUBNET_MASK tag

Table 4. Errors for validate source file (continued)

Message code	Message text
1036	// @@@ error: Missing ETHERNET tag
1037	// @@@ error: Missing NAME tag
1038	// @@@ error: Missing MTU tag
1040	// @@@ error: No host IP value
1041	// @@@ error: Can't have host IP outside of card configuration area
1042	// @@@ error: Host IP value is in bad format
1044	// @@@ error: Host name value is too long - 15 chars is the Max
1045	// @@@ error: No host name value
1046	// @@@ error: Unsupported name format
1047	// @@@ error: Can't have name outside of card configuration area
1050	// @@@ error: No host port value
1051	// @@@ error: Can't have host port outside of card configuration area
1052	// @@@ error: Out of range port value
1060	// @@@ error: No gateway router value
1061	// @@@ error: Can't define gateway outside of the card configuration area
1062	// @@@ error: Invalid gateway address value or format
1070	// @@@ error: No subnet mask value
1071	// @@@ error: Can't define subnet mask outside of the card configuration area
1072	// @@@ error: Invalid subnet address value or format
1080	// @@@ error: No value for Ethernet standard
1081	// @@@ error: Can't define Ethernet standard outside of card configuration
1082	// @@@ error: Unknown Ethernet standard value or format
1090	// @@@ error: No value for MTU
1091	// @@@ error: Can't define MTU outside of card configuration
1092	// @@@ error: MTU value outside of 256 – 1492 range
1093	// @@@ error: MTU value has to be a decimal number
1100	// @@@ error: Can't have <CONFIG_SESSION> tag within card configuration area
1101	// @@@ error: Can't have multiple <CONFIG_SESSION> tags
1102	// @@@ error: Sessions configuration already done
1110	// @@@ error: Illegal <CONFIG_SESSION> position
1120	// @@@ error: <SESSION# needs to end with>, i.e. <SESSION#>
1121	// @@@ error: Trying to configure session outside of session configuration area
1122	// @@@ error: Session # is not between [1 and 32]
1123	// @@@ error: Overlapping configuration for different session
1124	// @@@ error: </SESSION# needs to end with >, i.e. </SESSION#>
1125	// @@@ error: Wrong session # in a </SESSION#> tag

Messages

Table 4. Errors for validate source file (continued)

Message code	Message text
1126	// @@@ error: This Session # has already been configured
1127	// @@@ error: Session # has to be a decimal number
1128	// @@@ error: This session is missing one of the mandatory tags: css, iid, device or attn_delay
1130	// @@@ error: Can't define CSS outside of session configuration area
1131	// @@@ error: Have to define CSS between <SESSION#> and </SESSION#> tags
1132	// @@@ error: Unsupported CSS value
1133	// @@@ error: CSS value is not present
1140	// @@@ error: Can't define MIFID (IID) outside of session configuration area
1141	// @@@ error: Have to define MIFID (IID) between <SESSION#> and </SESSION#> tags
1142	// @@@ error: Unsupported MIFID (IID) value. Range is [01– 0F]
1143	// @@@ error: MIFID (IID) value not present
1150	// @@@ error: Can't define device outside of session configuration area
1151	// @@@ error: Have to define device between <SESSION#> and </SESSION#> tags
1152	// @@@ error: Unsupported device value
1153	// @@@ error: Device value not present
1170	// @@@ error: Can't define client's IP outside of session configuration area
1171	// @@@ error: Have to define client IP between <SESSION#> and </SESSION#> tags
1172	// @@@ error: Client IP value is in bad format
1173	// @@@ error: Client IP value not present
1240	// @@@ error: No Session Reconnect Timeout value
1241	// @@@ error: Can't define Session Reconnect Timeout outside of card configuration
1242	// @@@ error: Session Reconnect value is outside of 0-86400 range
1243	// @@@ error: Session Reconnect value has to be a decimal number in seconds (s)
1250	// @@@ error: No Telnet Noop Time Interval value
1251	// @@@ error: Can't define Telnet Noop Time Interval outside of card configuration
1252	// @@@ error: Telnet Noop Time Interval outside of range 0 – 180 range
1253	// @@@ error: Telnet Noop Time Interval has to be a decimal number in seconds (s)
1260	// @@@ error: Can't define session name outside of session configuration area
1261	// @@@ error: Have to define session name between <SESSION#> and </SESSION#> tags

Table 4. Errors for validate source file (continued)

Message code	Message text
1262	// @@@ error: Unsupported session name length
1263	// @@@ error: Session name value not present
1270	// @@@ error: Can't define attention delay outside of session configuration area
1271	// @@@ error: Have to define attention delay between <SESSION#> and </SESSION#> tags
1272	// @@@ error: Attention delay value is outside 3-60 range
1273	// @@@ error: Attention delay value not present
1280	// @@@ error: 1280: Session name must be unique per session. Sessions X and Y are in conflict.
1281	// @@@ error: 1281: Session name is not specified for session X

Warnings from validate source file:

Table 5. Warnings from validate source file

Message code	Message text
506	// @@@ warning: 505 The session is in Definition Error state because CSS is not defined in IOCDS
507	// @@@ warning: 507 This session is in Definition Error state because IID is not defined for CSS in IOCDS
508	// @@@ warning: 508 This session is in Definition Error state because Device is not defined for IID in IOCDS
509	// @@@ warning: 509 This session is in Definition Error state because device is not defined for IOCDS

Errors from validate panels:

Table 6. Errors from validate panels

Message code	Message text
1010	// @@@ Error 1010: Session #X and session #Y are defining same device; i.e. same css/mifid/device
1042	// @@@ Error 1042: Invalid server IP value: XXXXX
1046	// @@@ Error 1046: Unsupported name format
1052	// @@@ Error 1052: Invalid server port value: XXXXX
1082	// @@@ Error 1082: Invalid server LAN PARM value
1092	// @@@ Error 1092: Invalid server MTU value: XXXXX
1132	// @@@ Error 1132: Session #X has out of range CSS value
1142	// @@@ Error 1142: Session #X has out of range IID value.
1152	// @@@ Error 1152: Session #X has out of range device number value
1242	// @@@ Error 1242: Invalid session reconnection value: XXXXX
1252	// @@@ Error 1252: Invalid Telnet Noop Time Interval value: XXXXX
1262	// @@@ Error 1262: Session #X has an invalid session name

Messages

Table 6. Errors from validate panels (continued)

Message code	Message text
1272	// @@@ Error 1272: Session #X has out of range attention delay value
1280	// @@@ Error: 1280: Session name has to be unique per session. Sessions #X and #Y are in conflict.
1281	// @@@ Error: 1281: Session name is not specified for session #X

Warnings from validate panels:

Table 7. Warnings from validate panels

Message code	Message text
62	// @@@ Warning 62: Invalid server gateway value: XXXXX
72	// @@@ Warning 72: Invalid server subnet mask value: XXXXX
506	// @@@ warning: Session X is in Definition Error state because CSS is not defined in IOCDS
507	// @@@ warning: Session X is in Definition Error state because IID is not defined in IOCDS
508	// @@@ warning: Session X is in Definition Error state because device is not defined for IID in IOCDS
509	// @@@ warning: Session X is in Definition Error state because device is not defined in IOCDS

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Open Systems Adapter-Express
Integrated Console Controller
3215 Support**

Publication No. SA23-2247-00

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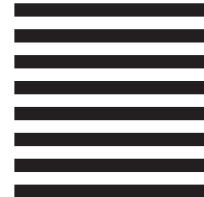
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