

show extended channel backup

To display information about the Common Link Access for Workstations (CLAW) and offload commands for each backup group configured on Cisco Mainframe Channel Connection (CMCC) channel interfaces, use the **show extended channel backup** command in privileged EXEC mode.

show extended channel *slot/port backup* [*ip-address*]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
backup	Displays all claw or offload commands associated with the backup group.
<i>ip-address</i>	(Optional) Displays information about all devices in the backup group defined by the <i>ip-address</i> argument.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.0	This command was introduced.

Examples The following is sample output from the **show extended channel backup** command:

```
Router# show extended channel 0/1 backup
```

```
Mode      Path Device IP Address: 10.11.198.2
OFFLOAD  E200  50  CISCOVM  RISPIX  TCPIP  TCPIP  TCPIP  API
OFFLOAD  E300  50  CISCOVM  RISPIX  TCPIP  TCPIP  TCPIP  API
Last statistics 4 seconds old, next in 6 seconds
```

Related Commands	Command	Description
	claw (backup)	Configures a CLAW device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of a CLAW backup group for the IP Host Backup feature.
	offload (backup)	Configures a backup group of Offload devices.

show extended channel cmgr

To display information about the Cisco Multipath Channel (CMPC+) transmission group (TG) connection manager, use the **show extended channel cmgr** command in privileged EXEC mode.

show extended channel slot/port cmgr [tg-name]

Syntax Description	slot	Slot number.
	port	Physical channel interface port number.
	tg-name	(Optional) Name of the TG.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.0(3)T	This command was introduced.

Usage Guidelines This command is valid on the Channel Interface Processor (CIP)'s virtual channel interface or the Channel Port Adapter (CPA)'s physical channel interface.

Examples The following is sample output from the **show extended channel cmgr** command:

```
Router# show extended channel 3/2 cmgr

CMGR:MPCPTG2  Type=PTP
  Local Group Token:0500128933          Remote Group Token :0500993355
  Local VC Token   :0500109002          Local Conn. Token  :0500109003
  Remote VC Token  :0500201002          Remote Conn. Token :0500201002
  VC Status        :Active               Connection Status  :Active

CMGR:MPCPTG3  Type=PTP
  Local Group Token:050014573           Remote Group Token :05008984300
  Local VC Token   :0500109044          Local Conn. Token  :0500109066
  Remote VC Token  :0500201095          Remote Conn. Token :0500201088
  VC Status        :Active               Connection Status  :Active
```

Table 17 describes the significant fields shown in the display.

Table 17 show extended channel cmgr Field Descriptions

Field	Description
Local Group Token	Cisco Mainframe Channel Connection (CMCC)'s Multi-Path Channel plus (MPC+) group token for this TG.
Remote Group Token	Host's MPC+ group token for this TG.
Type	Connection manager type supported is point-to-point (PTP).
Local VC Token	CMCC adapter's token for the connection manager's virtual circuit.

Table 17 *show extended channel cmgr Field Descriptions (continued)*

Field	Description
Remote VC Token	Host's token for the connection manager's virtual circuit.
VC Status	Valid states for a VC are: <ul style="list-style-type: none"> • Reset—Awaiting a connection manager virtual circuit activate indication from the host. • Active—Connection manager virtual circuit active indication was received from the host and CMCC adapter has sent a virtual circuit active indication to the host. The virtual circuit is now ready to send receive connection requests.
Local Conn.Token	CMCC's token for the connection manager's connection.
Remote Conn.Token	Host's token for the connection manager's connection.
Connection Status	Valid states for a connection manager's connection are: <ul style="list-style-type: none"> • Reset—Awaiting a connection manager connection request from the host. • Active—Connection is active. The host has sent a connection request and the CMCC adapter has responded with a confirmation of the connection.

Related Commands

Command	Description
cm pc	Configures a CMPC (or CMPC+) read subchannel and a CMPC (or CMPC+) write subchannel.

show extended channel cmpc

To display information about each Cisco Multipath Channel (CMPC) or CMPC+ subchannel configured on the specified channel interface, use the **show extended channel cmpc** command in privileged EXEC mode.

show extended channel *slot*/*port* cmpc [*path* [*device*]]

Syntax Description

<i>slot</i>	Slot number.
<i>port</i>	Physical channel interface port number.
<i>path</i>	(Optional) Logical channel path.
<i>device</i>	(Optional) Two-digit hexadecimal value that specifies a device address of the CPMC or CMPC+ subchannel. If specified, only status for that CMPC or CMPC+ device is displayed. If not specified, status for all CMPC or CMPC+ devices for the specified path is displayed.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3	This command was introduced.
12.0(3)T	Support was added for the CMPC+ feature.

Usage Guidelines

This command is valid only on the Cisco Mainframe Channel Connection (CMCC) adapter physical interfaces.

Examples

The following is sample output on a Cisco 7500 router from the **show extended channel cmpc** command:

```
Router# show extended channel 3/0 cmpc c020

      Path Dv  TGName   Dir   Bfrs  Status
-----
CMPC C020 46  MVS2ISRA READ   10   Active
CMPC C020 47  MVS2ISRA WRITE  16   Active
CMPC C020 4A  MVS2ISR1 READ    7   Active
CMPC C020 4B  MVS2ISR1 WRITE  16   Active
CMPC C020 4C  MVS2ISR2 READ    7   Active
CMPC C020 4D  MVS2ISR2 WRITE  16   Active
CMPC C020 4E  MVS2TN   READ    0   Inactive
CMPC C020 4F  MVS2TN   WRITE   0   Inactive
```

Table 18 describes the specified fields shown in the display.

Table 18 *show extended channel cmpc Field Descriptions*

Field	Description
Path	CMPC or CMPC+ channel path configured.
Dv	CMPC or CMPC+ subchannel device configured.
TGName	TG name configured for the CMPC or CMPC+ subchannel.
Dir	Identifies this CMPC or CMPC+ subchannel as READ or WRITE.
Bfrs	On the read subchannel, this is the number of 4 KB-size pages that virtual telecommunications access method (VTAM) has allocated for each Read. This will match the MAXBFRU value configured in the VTAM Transport Resource List (TRL) major node. On the write subchannel, this is the maximum number of 4-KB pages VTAM can write to the CMCC adapter for a single channel I/O. The value will always be 16 for the write subchannel because the Channel Interface Processor (CIP) always allows VTAM to write up to 64 KB per channel I/O.
Status	State of the CMPC or CMPC+ subchannel. Valid values are: <ul style="list-style-type: none"> • Shutdown—CMCC adapter interface for this CMPC or CMPC+ subchannel is shut down. In this state, the Bfrs value is not available and will be displayed as zeros. • Inactive—CMPC or CMPC+ subchannel is not active. • XID2 Pending—exchange identification (XID)2 handshaking in progress. • Active—XID2 exchange completed; CMPC or CMPC+ subchannel is active. • Active+—XID2 exchange is complete; subchannel is active in High-Performance Data Transfer (HPDT) mode.

Related Commands

Command	Description
cmpc	Configures a CMPC (or CMPC+) read subchannel and a CMPC (or CMPC+) write subchannel.
tg (CMPC)	Defines LLC connection parameters for the CMPC transmission group.
tg (CMPC+)	Defines IP connection parameters for the CMPC+ transmission group.
show extended channel cmgr	Displays information about the MPC+ transmission group connection manager.

show extended channel connection-map llc2

To display the number of active Logical Link Control, type 2 (LLC2) connections for each service access point (SAP) and the mapping of the internal MAC adapter and the SAP to the resource that activated the SAP, use the **show extended channel connection-map llc2** command in privileged EXEC mode.

show extended channel *slot/port* connection-map llc2

Syntax Description	slot	Slot number.
	port	Port number.
	connection-map llc2	Displays a connection map of LLC2 connections.

Command Modes Privileged EXEC

Command History	Release	Modification
	11.0(3)	This command was introduced.

Usage Guidelines The **show extended channel connection-map llc2** command is valid only on the virtual channel interfaces.

Examples The following is sample output from the **show extended channel connection-map llc2** command:

```
Router# show extended channel 1/2 connection-map llc2

LAN Token 0 Adapter 0 4000.7000.0747
Local SAP=08 LLC2 Connections=4 CSNA Port=1 Path=C200 Device=60
Local SAP=0C LLC2 Connections=4 CSNA Port=1 Path=C200 Device=60
Local SAP=10 LLC2 Connections=2 CSNA Port=1 Path=C200 Device=60
Local SAP=14 LLC2 Connections=0 CSNA Port=1 Path=C200 Device=60

LAN Token 1 Adapter 1 4000.7000.0767
Local SAP=08 LLC2 Connections=3 CSNA Port=1 Path=C200 Device=61
Local SAP=0C LLC2 Connections=3 CSNA Port=1 Path=C200 Device=61
Local SAP=10 LLC2 Connections=2 CSNA Port=1 Path=C200 Device=61
Local SAP=14 LLC2 Connections=2 CSNA Port=1 Path=C200 Device=61

LAN Token 2 Adapter 2 4000.7000.0737
No SAPs open on this interface

Total : SAPs opened = 8      Connections active = 20
```

show extended channel csna

To display information about the cisco systems network architecture (CSNA) subchannels configured on the specified Cisco Mainframe Channel Connection (CMCC) interface, use the **show extended channel csna** command in privileged EXEC mode.

show extended channel *slot/port csna* [*path [device]*] [**admin** | **oper** | **stats**]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
<i>path</i>	(Optional) A hexadecimal value in the range from 0000 to FFFF. This specifies the data path and consists of two digits for the physical connection (either on the host or on the ESCON Director switch), one digit for the control unit address, and one digit for the channel logical address. If not specified, information is displayed for all CSNA subchannels configured on the selected interface.
<i>device</i>	(Optional) A hexadecimal value in the range from 00 to FE. This is the unit address associated with the control unit number and path as specified in the host input/output configuration program (IOCP) file. If not specified, information is displayed for all CSNA subchannels configured with the specified path on the selected interface.
admin	(Optional) Displays configured values for CSNA channel devices. If neither admin , oper , nor stats is specified, admin is the default.
oper	(Optional) Displays operational values for CSNA channel devices.
stats	(Optional) Displays statistics for CSNA channel devices.

Command Modes Privileged EXEC

Command History	Release	Modification
	11.0(3)	This command was introduced.

Usage Guidelines The information that is displayed by this command is generally useful for diagnostic tasks performed by technical support personnel only.

Examples The following is sample output from the **show extended channel csna** command. Three examples are provided, one for each type of output as specified by the **admin**, **oper**, and **stats** keywords.

The following example displays the configured values for all CSNA devices on interface channel 1/0:

```
Router# show extended channel 1/0 csna admin
      Path Dv  maxpiu      time-delay  length-delay
CSNA C200 60  64000      100         64000
CSNA C200 61  64000      100         64000
CSNA C200 62  64000      100         64000
```

The following example displays operational data for all CSNA devices configured on interface channel 1/0. The channel interface must be up (no shut) for this information to be displayed.

```
Router# show extended channel 1/0 csna oper
```

```

      Path Dv Status      SlowDown  maxpiu      time-delay  length-delay
CSNA C200 60 setupComple off        64000      100         64000
CSNA C200 61 setupComple off        64000      100         64000
CSNA C200 62 setupComple off        64000      100         64000

```

The following example displays CSNA statistics for subchannel path c200, device 60. The channel interface must be up (no shut) for this information to be displayed. If the maxpiu value is reconfigured while the CSNA subchannel is active (setupComplete) then the maxpiu value displayed by the **oper** keyword is the old, operational value.

```
Router# show extended channel 1/0 csna c200 60 stats
```

```

CSNA      C200 60
Blocks Transmitted = 38979079 Received = 38979075
Bytes Transmitted = 79251477K Received = 13554
Slow downs Sent = 0 Received = 0
Txd by maxpiu      : Blocks = 0 Bytes = 0
Txd by time-delay  : Blocks = 222 Bytes = 12522
Txd by length-delay: Blocks = 0 Bytes = 0

```

Table 19 describes the specified fields shown in the displays.

Table 19 *show extended channel csna Field Descriptions*

Field	Description
Path	Path from the CSNA configuration.
Dev	Device address from the CSNA configuration.
Status	<p>State of the CSNA device. One of the following values:</p> <ul style="list-style-type: none"> closed—Subchannel is closed. pendingOpen—An Open Subchannel command has been received from virtual telecommunications access method (VTAM). open—Subchannel is open. pendingSetup—VTAM has queried Channel Interface Processor (CIP) for all configured MAC adapters. setupComplete—All internal MAC adapter information has been collected from the CIP. The CSNA subchannel is operational. pendingClose—A Close Subchannel command has been received from VTAM. unknown—Current state of the CSNA subchannel cannot be determined.

Table 19 show extended channel csna Field Descriptions (continued)

Field	Description
SlowDown	<p>Status of flow control for the CSNA device.</p> <ul style="list-style-type: none"> off—Subchannel is normal (both CSNA and VTAM are able to send data). sent— CSNA has put VTAM into a slow down state for this CSNA subchannel. received—VTAM has put the CSNA subchannel into a slow down state. both—Both VTAM and the CSNA subchannel are in a slow down state. unknown—Current state of flow control on this CSNA subchannel cannot be determined.
maxpiu	<p>Maximum size of a channel I/O block that the CSNA subchannel can send to the host. This value may differ from the configured maxpiu value if the value is reconfigured while the CSNA subchannel is active (setupComplete).</p> <p>CSNA blocks Systems Network Architecture (SNA) frames into channel I/O blocks which must not exceed the maxpiu value. A length-delay value less than the maxpiu value can cause the channel I/O blocks to be limited to the lower value.</p> <p>The maxpiu value may be reconfigured while the subchannel is operational but the new maxpiu value does not take effect until the subchannel is reinitialized (in other words, until the XCA major node is recycled). In this case, the maxpiu value displayed with the admin keyword will be the new, configured value while the maxpiu displayed by the oper keyword will be the old, operational value.</p>
time-delay	<p>CSNA blocks SNA frames destined for VTAM for time-delay milliseconds from the time the first SNA frame within a channel I/O block is blocked from sending. This can increase the overall throughput of CSNA by minimizing the number of channel I/O operations. However, blocking can induce response time latency of a transaction by up to the time-delay value. If time-delay=0, CSNA ignores length-delay and puts each frame into the channel I/O block for sending to the host. Even with a time-delay=0, CSNA may still block frames while waiting for a previous channel I/O to complete.</p>
length-delay	<p>CSNA blocks SNA frames destined for VTAM when the current block reaches the length-delay value in size (bytes). This will increase the chance of using larger block sizes for CSNA channel I/O. SNA frames are blocked up to either time-delay milliseconds or until the block reaches the length-delay size, at which time CSNA starts the channel I/O.</p> <p>The length-delay is ignored if larger than the maxpiu value. It can be used to force CSNA blocking to generate smaller I/O blocks than specified by maxpiu. In general, however, larger blocks result in better channel throughput and efficiency. A value of zero causes the length-delay value to be ignored; blocking is then controlled by the maxpiu and time-delay parameters.</p>

Table 19 *show extended channel csna Field Descriptions (continued)*

Field	Description
Blocks Transmitted	Number of channel I/O blocks sent to VTAM from this CSNA subchannel. The Blocks Transmitted value may be higher than the total blocks for the Txd by maxpiu, Txd by time-delay, and Txd by length-delay counters. This is due to NULL blocks (8 bytes each with no data) that CSNA sends. The channel program used for link-state advertisement (LSA) traffic consists of a write/read CCW chain. When VTAM has data for CSNA it sends it with the write CCW. When the chained read CCW is executed CSNA will respond with any pending inbound data. If CSNA has no pending inbound data the read CCW is satisfied with an 8-byte header indicating no data.
Blocks Received	Number of channel I/O blocks received from VTAM by this CSNA subchannel.
Slow downs Sent	Number of times CSNA put VTAM into a slowdown (flow control) for this subchannel device.
Slow downs Received	Number of times VTAM put CSNA into a slowdown (flow control) for this subchannel.
Txd by maxpiu Blocks/Bytes	Number of channel I/O blocks and bytes sent to VTAM by this CSNA subchannel because the size of the channel I/O block reached the maxpiu value configured for this subchannel.
Txd by time-delay Blocks/Bytes	Number of channel I/O blocks and bytes sent to VTAM by this CSNA subchannel because the blocking time delay configured for this subchannel expired.
Txd by length-delay Blocks/Bytes	Number of channel I/O blocks and bytes sent to VTAM by this CSNA subchannel because the blocking length delay configured for this subchannel was reached.

Related Commands

Command	Description
csna	Configures SNA support on a CMCC physical channel interface and specifies the path and device/subchannel on a physical channel of the router to communicate with an attached mainframe.

show extended channel icmp-stack

To display information about the Internet Control Message Protocol (ICMP) stack running on the Cisco Mainframe Channel Connection (CMCC) channel interfaces, use the **show extended channel icmp-stack** command in user EXEC or privileged EXEC mode.

```
show extended channel slot/port icmp-stack [ip-address]
```

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
<i>ip-address</i>	(Optional) IP address specified by the offload interface configuration command or the tn3270-server pu command.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.
	12.0(7)T	The Alias addresses field was added to the output.

Usage Guidelines The **show extended channel icmp-stack** command is valid on both physical and virtual channel interfaces.

Examples The following is sample output from the **show extended channel icmp-stack** command:

```
Router# show extended channel 0/1 icmp-stack

ICMP Statistics for IP Address 10.11.198.2
  InMsgs      : 3          InErrors      : 0          InDestUnreachs : 0
  InTimeExcds : 0          InParmProbs   : 0          InSrcQuenchs   : 0
  InRedirects : 0          InEchos       : 3          OutEchoReps    : 3
  OutTimestamps : 0        OutTimestampReps : 0        OutAddrMasks   : 0
  OutAddrMaskReps : 0

ICMP Statistics for IP Address 10.11.198.3
  InMsgs      : 1          InErrors      : 0          InDestUnreachs : 0
  InTimeExcds : 0          InParmProbs   : 0          InSrcQuenchs   : 0
  InRedirects : 0          InEchos       : 1          OutEchoReps    : 1
  OutTimestamps : 0        OutTimestampReps : 0        OutAddrMasks   : 0
  OutAddrMaskReps : 0
```

The following is sample output from the **show extended channel icmp-stack** for an offload device at real IP address 10.10.21.3 and alias IP address 10.2.33.88:

```
Router# show extended channel 3/1 icmp-stack

ICMP Statistics for IP Address 10.10.21.3
Alias addresses: 10.2.33.88
InMsgs      : 0          InErrors      : 0          InDestUnreachs: 0
InTimeExcds : 0          InParmPrbs   : 0          InSrcQuenchs  : 0
InRedirects : 0          InEchos      : 0          OutEchoReps   : 0
OutTimestamps : 0       OutTimestampReps: 0       OutAddrMasks  : 0
OutAddrMaskReps: 0
```

Table 20 describes the specified fields shown in the display.

Table 20 show extended channel icmp-stack Field Descriptions

Field	Description
Alias addresses	Virtual IP addresses assigned to the real IP address of an offload device.
InMsgs	Total number of Internet Control Message Protocol (ICMP) messages that the entity received. Note that this counter includes all those counted by icmpInErrors.
InErrors	Number of ICMP messages that the entity received but determined as having ICMP-specific errors (for example, bad ICMP checksums, bad length).
InDestUnreachs	Number of ICMP Destination Unreachable messages received.
InTimeExcds	Number of ICMP Time Exceeded messages received.
InParmPrbs	Number of ICMP Parameter Problem messages received.
InSrcQuenchs	Number of ICMP Source Quench messages received.
InRedirects	Number of ICMP Redirect messages received.
InEchos	Number of ICMP Echo (request) messages received.
OutEchoReps	Number of ICMP Echo Reply messages sent.
OutTimestamps	Number of ICMP Timestamp (request) messages sent.
OutTimestampReps	Number of ICMP Timestamp Reply messages sent.
OutAddrMasks	Number of ICMP Address Mask Request messages sent.
OutAddrMaskReps	Number of ICMP Address Mask Reply messages sent.

Related Commands

Command	Description
offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.
pu (TN3270)	Creates a physical unit (PU) entity that has its own direct link to a host and enters PU configuration mode.
pu (DLUR)	Creates a PU entity that has no direct link to a host and enters Dependent Logical Unit Requestor (DLUR) PU configuration mode.

show extended channel ip-stack

To display information about the IP stack running on Cisco Mainframe Channel Connection (CMCC) channel interfaces, use the **show extended channel ip-stack** command in user EXEC or privileged EXEC mode.

show extended channel *slot/port ip-stack* [*ip-address*]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
<i>ip-address</i>	(Optional) IP address specified by the offload interface configuration command or the tn327-server pu command.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.
	12.0(7)T	The Alias addresses field was added to the output.

Usage Guidelines The **show extended channel ip-stack** command is valid on both physical and virtual channel interfaces.

Examples The following is sample output from the **show extended channel ip-stack** command:

```
Router# show extended channel 0/1 ip-stack

IP Statistics for IP Address 10.11.198.2
  Forwarding      : no           DefaultTTL      : 64           InReceives     : 165
  InHdrErrors    : 0            InAddrErrors   : 0            ForwDatagrams  : 0
  InUnknownProtos: 0            InDiscards     : 0            InDelivers     : 165
  OutRequests    : 157          OutDiscards    : 0            OutNoRoutes    : 0
  ReasmTimeout   : 60           ReasmReqds     : 0            ReasmOKs       : 0
  ReasmFails     : 0            FragOKs        : 0            FragFails      : 0
  FragCreates    : 0            RoutingDiscards: 0

IP Statistics for IP Address 10.11.198.3
  Forwarding      : no           DefaultTTL      : 64           InReceives     : 77
  InHdrErrors    : 0            InAddrErrors   : 0            ForwDatagrams  : 0
  InUnknownProtos: 0            InDiscards     : 0            InDelivers     : 77
  OutRequests    : 78           OutDiscards    : 0            OutNoRoutes    : 0
  ReasmTimeout   : 60           ReasmReqds     : 0            ReasmOKs       : 0
  ReasmFails     : 0            FragOKs        : 0            FragFails      : 0
  FragCreates    : 0            RoutingDiscards: 0
```

The following is sample output from the **show extended channel ip-stack** for an offload device at real IP address 10.10.21.3 and alias IP address 10.2.33.88:

```
Router# show extended channel 3/1 ip-stack

IP Statistics for IP Address 10.10.21.3
Alias addresses: 10.2.33.88
Forwarding      : no           DefaultTTL      : 64           InReceives     : 16
InHdrErrors    : 0           InAddrErrors    : 0           ForwDatagrams  : 0
InUnknownProtos: 0           InDiscards     : 0           InDelivers     : 16
OutRequests    : 7           OutDiscards    : 0           OutNoRoutes    : 0
ReasmTimeout   : 60          ReasmReqds     : 0           ReasmOKs       : 0
ReasmFails     : 0           FragOKs        : 0           FragFails      : 0
FragCreates    : 0           RoutingDiscards: 0
```

The following is sample output from the **show extended channel ip-stack** when you specify the alias IP address for an offload device at real IP address 10.10.21.3:

```
Router# show extended channel 3/1 ip-stack 10.2.33.88

IP Statistics for IP Address 10.10.21.3
Alias addresses: 10.2.33.88
Forwarding      : no           DefaultTTL      : 64           InReceives     : 16
InHdrErrors    : 0           InAddrErrors    : 0           ForwDatagrams  : 0
InUnknownProtos: 0           InDiscards     : 0           InDelivers     : 16
OutRequests    : 7           OutDiscards    : 0           OutNoRoutes    : 0
ReasmTimeout   : 60          ReasmReqds     : 0           ReasmOKs       : 0
ReasmFails     : 0           FragOKs        : 0           FragFails      : 0
FragCreates    : 0           RoutingDiscards: 0
```

Table 21 describes the specified fields shown in the display.

Table 21 show extended channel ip-stack Field Descriptions

Field	Description
Alias addresses	Virtual IP addresses assigned to the real IP address of an offload device.
Forwarding	Indication of whether this entity is acting as an IP gateway in respect to the forwarding of datagrams received by, but not addressed to, this entity. IP gateways forward datagrams. IP hosts do not (except those source-routed via the host). Note that for some managed nodes this object may take on only a subset of the values possible. Accordingly, it is appropriate for an agent to return a “badValue” response if a management station attempts to change this object to an inappropriate value.
DefaultTTL	The default value inserted into the Time-To-Live field of the IP header of datagrams originated at this entity whenever a TTL value is not supplied by the transport layer protocol.
InReceives	Total number of input datagrams received from interfaces, including those received in error, for this IP address instance.
InHdrErrors	Number of input datagrams discarded due to errors in their IP headers, including bad checksums, version number mismatch, other format errors, time-to-live exceeded, errors discovered in processing their IP options, and so on.

Table 21 show extended channel ip-stack Field Descriptions (continued)

Field	Description
InAddrErrors	Number of input datagrams discarded because the IP address in their IP header's destination field was not a valid address to be received at this entity. This count includes invalid addresses (for example, 0.0.0.0) and addresses of unsupported classes (for example, Class E). For entities that are not IP gateways and therefore do not forward datagrams, this counter includes datagrams discarded because the destination address was not a local address.
ForwDatagrams	Number of input datagrams for which this entity was not their final IP destination, as a result of which an attempt was made to find a route to forward them to that final destination. In entities that do not act as IP Gateways, this counter will include only those packets that were source-routed through this entity, and the source-route option processing was successful.
InUnknownProtos	Number of locally-addressed datagrams received but discarded because of an unknown or unsupported protocol.
InDiscards	Number of input IP datagrams for which no problems were encountered to prevent their continued processing, but that were discarded (for example, for lack of buffer space). Note that this counter does not include any datagrams discarded while awaiting reassembly.
InDelivers	Total number of input datagrams delivered to IP user protocols (including Internet Control Message Protocol (ICMP)).
OutRequests	Total number of IP datagrams that local IP user-protocols (including ICMP) supplied to IP in requests for sending. Note that this counter does not include any datagrams counted in ipForwDatagrams.
OutDiscards	Number of output IP datagrams for which no problem was encountered to prevent sending them to their destination, but that were discarded (for example, for lack of buffer space). Note that this counter would include datagrams counted in ipForwDatagrams if any such packets met this (discretionary) discard criterion.
OutNoRoutes	Number of IP datagrams discarded because no route could be found to send them to their destination. Note that this counter includes any packets counted in ipForwDatagrams that meet this no-route criterion. Note that this includes any datagrams that a host cannot route because all of its default gateways are down.
ReasmTimeout	Maximum number of seconds that received fragments are held while they are awaiting reassembly at this entity.
ReasmReqds	Number of IP fragments received that needed to be reassembled at this entity.
ReasmOKs	Number of IP datagrams reassembled.
ReasmFails	Number of failures detected by the IP reassembly algorithm (for whatever reason: timed out, errors, and so on). Note that this is not necessarily a count of discarded IP fragments because some algorithms (notably the algorithm in RFC 815) can lose track of the number of fragments by combining them as they are received.
FragOKs	Number of IP datagrams that have been fragmented at this entity.
FragFails	Number of IP datagrams that have been discarded because they needed to be fragmented at this entity but could not be, for example, because their Don't Fragment flag was set.

Table 21 *show extended channel ip-stack Field Descriptions (continued)*

Field	Description
FragCreates	Number of IP datagram fragments that have been generated as a result of fragmentation at this entity.
RoutingDiscards	Number of routing entries that were chosen to be discarded even though they are valid. One possible reason for discarding such an entry could be to free buffer space for other routing entries.

Related Commands

Command	Description
offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.
pu (TN3270)	Creates a physical unit (PU) entity that has its own direct link to a host and enters PU configuration mode.
pu (DLUR)	Creates a PU entity that has no direct link to a host and enters Dependent Logical Unit Requestor (DLUR) PU configuration mode.

show extended channel lan

To display the internal LANs and adapters configured on a Cisco Mainframe Channel Connection (CMCC) adapter, use the **show extended channel lan** command in user EXEC or privileged EXEC mode.

```
show extended channel slot/port lan [tokenring [lan-id [adapno]]]
```

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
<i>tokenring</i>	(Optional) Specify the CMCC internal LAN type to be displayed.
<i>lan-id</i>	(Optional) Specify the CMCC internal LAN number to be displayed.
<i>adapno</i>	(Optional) Specify the CMCC internal adapter number on the selected internal LAN to be displayed.

Defaults Display all internal LANs and adapters on the selected channel interface.

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.

Usage Guidelines This command is valid only on the virtual channel interface.

Examples The following is sample output from the **show extended channel lan** command:

```
Router# show extended channel 3/2 lan

Lan TokenRing 0
  Adapno Mac Address      Name      Vcnum
    0 4000.1111.1112
    20 4000.1111.2200      564
    30 4000.3030.0101      574
Lan TokenRing 1
  source-bridge 207 1 2002
  Adapno Mac Address      Name      Vcnum
    1 4000.2222.2222      545
Lan TokenRing 2
  source-bridge 50 1 1500
  Adapno Mac Address      Name      Vcnum
    2 4000.3333.2222      546
Lan TokenRing 5
  source-bridge 112 1 3000
  Adapno Mac Address      Name      Vcnum
    5 4000.1234.5656      549
```

```

Lan TokenRing 9
  source-bridge 111 1 3000
  Adapno Mac Address   Name   Vcnum
    9 4000.9999.1111   553
Lan TokenRing 10
  source-bridge 110 1 3000
  Adapno Mac Address   Name   Vcnum
    10 4000.aaaa.1111  554
Lan TokenRing 20
  source-bridge 20 1 2002
  Adapno Mac Address   Name   Vcnum
    21 4000.2020.2020  565
  
```

Related Commands

Command	Description
adapter	Configures internal adapters.
lan	Configures an internal LAN on a CMCC adapter interface and enters internal LAN configuration mode.

show extended channel llc2

To display information about the Logical Link Control, type 2 (LLC2) sessions running on the Cisco Mainframe Channel Connection (CMCC) adapter interfaces, use the **show extended channel llc2** command in user EXEC or privileged EXEC mode.

```
show extended channel slot/port llc2 [admin | oper | stats] [lmac [lsap [rmac [rsap]]]]
```

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
admin	(Optional) Displays Shows configured values. This is the default.
oper	(Optional) Displays operational values for: <ul style="list-style-type: none"> • Internal adapters • Service access point (SAP)s opened on the internal adapters • LLC2 connections on the internal adapters
stats	(Optional) Displays statistics for: <ul style="list-style-type: none"> • Internal adapters • SAPs opened on the internal adapters • LLC connections on the internal adapters
<i>lmac</i>	(Optional) Local MAC address.
<i>lsap</i>	(Optional) Local SAP address, in the range from 0 to 256.
<i>rmac</i>	(Optional) Remote MAC address.
<i>rsap</i>	(Optional) Remote SAP address, in the range from 0 to 256.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0(3)	This command was introduced.

Usage Guidelines	
	The show extended channel llc2 command is valid on virtual channel interfaces.
	To specify LLC information for internal adapters, perform the following asks: <ul style="list-style-type: none"> • Specify a value for the <i>lmac</i> argument to get information for a specific internal adapter. • Omit the <i>lmac</i> argument to display information for all internal adapters on the specified channel interface.
	To display LLC information for SAPs opened on an internal adapter, perform the following tasks: <ul style="list-style-type: none"> • Specify values for the <i>lmac</i> and <i>lsap</i> arguments to display information for a particular SAP. • Specify a value for the <i>lmac</i> argument and "*" to display information for all SAPs opened on the specified channel adapter.

To display information for LLC2 connections on a channel interface, perform the following tasks:

- Specify values for the *lmac*, *lsap*, *rmac*, and *rsap* arguments to display information for a particular active LLC2 connection.
- Specify values for the *lmac*, *lsap*, and *rmac* arguments to display information for all LLC2 connections active between the specified remote MAC address and the specified local SAP opened on the specified internal adapter.
- Specify values for the *lmac* and *lsap* arguments and "*" to display information for all LLC2 connections active on the specified local SAP and the specified internal adapter and any remote MAC address the connections are active with.
- Specify a value for the *lmac* argument, "*" for the local SAP, and a value for the *rmac* argument to display information for all LLC2 connections active between the specified internal adapter and the remote MAC address.
- Specify a value for the *lmac* argument, "*" for the local SAP, and "*" for the remote MAC address to display information for all active LLC2 connections on the specified internal adapter.

Examples

The following is sample output from the **show extended channel llc2** command. Three examples are provided, one for each type of output as specified by the **admin**, **oper**, and **stats** keywords.

The following sample displays the configured values for all LLC2 connections on channel 2/2:

```
Router# show extended channel 2/2 llc2 admin

Lan Token adapter 0 0004.0004.0004
t1-time = 1000 tpf-time = 1000 trej-time = 3200 tbusy-tim = 9600
idle-time =60000 local-win = 7 recv-wind = 7 N2 = 8
N1 = 1033 ack-delay = 100 ack-max = 3 nw = 0
```

Table 22 describes the specified fields shown in the display.

Table 22 show extended channel llc2 admin Field Descriptions—All LLC2 Connections

Field	Description
t1-time	Length of time in milliseconds the CMCC LLC2 link station waits for an acknowledgment to a sent I-frame before polling the remote LLC2 station.
tpf-time	Length of time in milliseconds the CMCC LLC2 link station waits for a final response to a poll before resending the original poll frame.
trej-time	Length of time in milliseconds the CMCC LLC2 link station waits for a correct frame after sending a reject command to a remote LLC2 station.
tbusy-time	Length of time in milliseconds the CMCC LLC2 link station waits before repolling a busy LLC2 station.
idle-time	Frequency of polls during periods of idle traffic.
local-win	Maximum number of I-frames that the CMCC LLC2 link station connection can send to the remote LLC2 station without receiving an acknowledgment.
recv-wind	Maximum number of I-frames that the CMCC LLC2 link station connection can receive without receiving an acknowledgment.
N2	Number of times the CMCC LLC2 link station connection will resend an unacknowledged I-frame.

Table 22 show extended channel llc2 admin Field Descriptions—All LLC2 Connections (continued)

Field	Description
N1	Maximum size of LLC frames supported by the CMCC LLC2 link station. The maximum size LLC frame supported on the CMCC is controlled by other factors including the largest interface MTU between the CMCC and the remote network device, and configured values at virtual telecommunications access method (VTAM) and at the end station.
ack-delay	Maximum amount of time the CMCC LLC2 link station allows received I-frames to remain unacknowledged. The CMCC LLC2 connection will acknowledge received I-frames within the ack-delay time.
ack-max	Maximum number of I-frames the Channel Interface Processor (CIP) LLC2 link station receives before sending an acknowledgment.
Nw	Working send window size. When I-frames sent by the CMCC are rejected by the remote LLC2 station, the CMCC LLC2 connection reduces its working send window size to 1. Then, for every subsequent I-frame sent by the CMCC LLC2 connection that is positively acknowledged by the remote LLC2 station, the CMCC LLC2 connection increases its working send window by the Nw value until the working send window reaches the configured local-window value.

The following sample displays the operational values for all LLC2 connections on channel 2/2:

```
Router# show extended channel 5/2 llc oper
```

```
LAN Token 0 Adapter 0 4000.1010.2020
Open SAPs=1
Max SAPs Opened=1
```

Open SAPs is the number of SAPs opened on this internal MAC adapter. *Max SAPs Opened* is the number of SAPs concurrently opened on this internal MAC adapter since the last reset of the channel adapter of channel interface.

The following sample displays operational information for the specified SAP opened on a CMCC internal adapter:

```
Router# show extended channel 5/2 llc stats
```

```
LAN Token 0 Adapter 0 4000.1010.2020
PDUIn = 223339 PDUOut = 9564
OctetsIn = 6949875 OctetsOut = 307448
TESTCmdsIn = 213293 TESTRspsOut = 2
LocalBusies= 0 UnknownSAPs = 0
```

[Table 23](#) describes the specified fields shown in the display. These statistics are available on the adapter because when LLC2 connections are deactivated, users can no longer retrieve the information per LLC2 connection.

Table 23 show extended channel llc2 stats Field Descriptions—All LLC2 Connections

Field	Description
PDUIn	Protocol data units received by the internal adapter.
PDUOut	Protocol data Units sent by the internal adapter.
OctetsIn	PDU bytes received by the internal adapter.

Table 23 show extended channel llc2 stats Field Descriptions—All LLC2 Connections (continued)

Field	Description
OctetsOut	PDU bytes sent by the internal adapter.
TESTCmdsIn	Number of TEST commands received destined for this MAC address.
TESTRspOut	Number of TEST responses sent by this MAC address responding to TEST commands received.
Local Buses	Number of times LLC2 connection stations on this adapter entered a busy state, sent Receiver Not Ready (RNR)s to the remote LLC2 station.
UnknownSAPs	Number of frames received that are destined for a SAP that does not exist on this adapter.

The following sample displays operational information for the specified SAP opened on the internal adapter, 4000.1010.2020, configured on channel interface 5/2:

```
Router# show extended channel 5/2 llc2 oper 4000.1010.2020 04

LAN Token 0 Adapter 0 4000.1010.2020
Local SAP=04
Open Connections=2
Max Connections Opened=2
```

Table 24 describes the specified fields shown in the display.

Table 24 show extended channel llc2 oper Field Descriptions for Specified Interface

Field	Description
Open Connections	Number of LLC2 connections active on the SAP.
Max Connections	Highest number of LLC2 connections concurrently active on that SAP since the SAP has been active.

The following sample displays statistics for the specified SAP on the internal adapter, 4000.1010.2020 configured on channel interface 5/2:

```
Router# show extended channel 5/2 llc2 stats 4000.1010.2020 04

LAN Token 0 Adapter 0 4000.1010.2020
Local SAP=04
TESTRspIn      =          0  TESTCmdsOut    =          0
XIDCmdsIn      =         14  XIDCmdsOut    =         16
XIDRspIn       =          4  XIDRspOut     =          0
UIFramesIn     =          0  UIFramesOut   =          0
UIOctetsIn     =          0  UIOctetsOut   =          0
ConnectOk      =          2  ConnectFail   =          0
DiscNorm       =          0  DiscByTmr     =          0
DiscByFRMRSent =          0  DiscByFRMRcvd =          0
DMsInABM      =          0  SABMEsInABM  =          0
```

Table 25 describes the specified fields shown in the display. All statistics for SAPs are based on the time the SAP was last opened.

Table 25 show extended channel llc2 stats Field Descriptions for Specified Interface

Field	Description
TESTRspIn	Number of TEST responses received on this SAP for TEST commands sent by VTAM (connect out).
TESTCmdsOut	Number of TEST commands sent by this SAP to explore for a remote MAC address (VTAM connect out).
XIDCmdsIN	Number of exchange identification (XID) commands received by this SAP from a remote link station.
XIDCmdsOut	Number of XID commands sent by this SAP to a remote link station.
XIDRspIn	Number of XID responses received by this SAP from a remote link station.
XIDRspOut	Number of XID responses sent by this SAP to a remote link station.
UIFramesIn	Number of Unnumbered I-frames received by this SAP from a remote link station.
UIFramesOut	Number of Unnumbered I-frames sent by this SAP to a remote link station.
UIOctetsIn	Number of Unnumbered I-frame bytes received by this SAP from a remote link station.
UIOctetsOut	Number of Unnumbered I-frame bytes sent by this SAP to a remote link station.
ConnectOk	Number of successful LLC2 connection attempts on this SAP.
ConnectFail	Number of LLC2 connections that failed.
DiscNorm	Number of normal LLC2 connection disconnections.
DisByTmr	Number of LLC2 connections disconnected due to the CMCC LLC2 link station not getting responses to polls from the remote LLC2 station, typically due to the remote station being powered off or a severe network failure or congestion. The CMCC LLC2 stack generates an event each time it detects this condition. The event can be configured to generate a NetView alert, SNMP trap, and a router console message.
DiscByFRMRSent	Number of times a CMCC LLC2 connection disconnected after detecting a protocol violation and sending a FRNR to the remote LLC2 station. The CMCC LLC2 link station generates an event each time it detects this condition. The event can be configured to generate a NetView alert, an SNMP trap, and a router console message.
DiscByFRMRRcvd	Number of times the CMCC LLC2 connection disconnected after the remote LLC2 station detected a protocol violation and sent an FRMR to the CMCC LLC2 link station. The CMCC LLC2 stack generates an event each time it detects this condition. The event can be configured to generate a NetView alert, an SNMP trap, and a router console message.

Table 25 show extended channel llc2 stats Field Descriptions for Specified Interface (continued)

Field	Description
DMsInABM	Number of times the CMCC LLC2 link station went into disconnect mode after receiving a disconnect mode (DM). The CMCC LLC2 stack generates an event each time it detects this condition. The event can be configured to generate a NetView alert, an SNMP trap, and a router console message.
SABMEDsInABM	Number of times the CMCC LLC2 link station went into disconnect mode after receiving a Set Asynchronous Balanced Mode Extended (SABME) from the LLC2 station. The CMCC LLC2 stack generates an event each time it detects this condition. The event can be configured to generate a NetView alert, an SNMP trap, and a router console message.

The following sample displays operation information for the specified CMCC link station:

```
Router# show extended channel 5/2 llc2 oper 4000.1010.2020 04 4000.1234.1030 18

LAN Token 0 Adapter 0 4000.1010.2020
Local SAP=04 Remote MAC=4000.1234.1030 Remote SAP=18 State=normal
t1-time = 1000 tpf-time = 1000 trej-time = 3200 tbusy-tim = 9600
idle-time =60000 local-win = 7 recv-wind = 7 N2 = 8
N1-Send = 4105 N1-Rcv = 4105 ack-delay = 100 ack-max = 3
Nw = 0 Ww = 7
Last Ww Cause = neverInvoked
Connection Time: 17:50:11
Last modified: never
```

Table 26 explains parameters in use by the LLC2 connection. These parameters are the ones configured on the internal adapter 4000.0000.0001 at the time the LLC2 connection was established. If the LLC2 parameters on the internal adapter are changed while this connection is active, the connection will not reflect the changes to the adapter.

Table 26 show extended channel llc2 Field Descriptions for Internal LAN Adapter

Field	Description
State	<ul style="list-style-type: none"> • ADM (Asynchronous Disconnect Mode) • setup • conn • normal • busy • reject • await • awaitBusy

Table 26 show extended channel llc2 Field Descriptions for Internal LAN Adapter (continued)

Field	Description
State (continued)	<ul style="list-style-type: none"> • awaitReject • discConn • reset • error • pendDiscRsp <p>The descriptions for each state can be found in Section 7.8.3, IOS 8802-2: 1989, ANSI/IEEE Std 802.2 - 1989.</p>
t1-time	Length of time in milliseconds the CMCC LLC2 link station waits for an acknowledgment to a sent I-frame before polling the remote LLC2 station.
tpf-time	Length of time in milliseconds the CMCC LLC2 link station waits for a final response to a poll before resending the original poll frame.
trej-time	Length of time in milliseconds the CMCC LLC2 link station waits for a correct frame after sending a reject command to a remote LLC2 station.
tbusy-tim	Length of time in milliseconds the CMCC LLC2 link station waits before repolling a busy LLC2 station.
idle-time	Frequency of polls during periods of idle traffic.
local-win	Maximum number of I-frames that the CMCC LLC2 link station can send to the remote LLC2 station without receiving an acknowledgment.
recv-wind	Maximum number of I-frames that a CMCC LLC2 link station can receive without receiving an acknowledgment.
N2	Number of times a CMCC LLC2 link station will resend an unacknowledged I-frame.
N1-Send	Largest frame size this CMCC LLC2 link station is allowed to send.
N1-Rcv	Largest frame size this CMCC LLC2 link station can receive.
ack-delay	Maximum length of time in milliseconds the CMCC LLC2 link station allows received I-frames to remain unacknowledged. The Channel Interface Processor (CIP)LLC2 connection will acknowledge received I-frames within the ack-delay time.
ack-max	Maximum number of I-frames a CMCC LLC2 link station receives before sending an acknowledgment.
Nw	Working send window size. When I-frames sent by a CMCC LLC2 link station are rejected by the remote LLC2 station, the CMCC LLC2 link station reduces its working send window size to 1. Then, for every subsequent I-frame sent by the CMCC LLC2 connection that is positively acknowledged by the remote LLC2 station, the CMCC LLC2 link station increases its working send window by the Nw value until the working send window reaches the configured local-window value.
Ww	Current working window size for this LLC2 link station. This is the current number of unacknowledged I-frames that this LLC2 link station will send.

Table 26 show extended channel llc2 Field Descriptions for Internal LAN Adapter (continued)

Field	Description
Last Ww Cause	Last event that caused the working window to change values. Valid values are: <ul style="list-style-type: none"> neverInvoked—This LLC2 station has not detected a condition to change the working window from the initial value at activation time. lostData—The current working window value was changed due to loss of data by the remote LLC2 link station. macLayerCongestion—The current working window value was changed due to the remote end station sending this LLC2 link station a Receiver Not Ready (RNR) frame.
Connection Time	Length of time this LLC2 connection has been active.
Last modified	Length of time since one of the LLC2 parameters for this connection was last modified.

The following sample displays statistics for the CMCC LLC2 link station connection between LMAC 4000.1010.2020 LSAP 04 and RMAC 4000.1234.1030 RSAP 18:

```
Router# show extended channel 5/2 llc2 stats 4000.1010.2020 04 4000.1234.1030 18

LAN Token 0 Adapter 0 4000.1010.2020
Local SAP=04 Remote MAC=4000.1234.1030 Remote SAP=18
LocalBusies = 0 RemoteBusies = 0
IFramesIn = 1 IFramesOut = 1
IOctetsIn = 19 IOctetsOut = 21
SFramesIn = 0 SFramesOut = 0
REJsIn = 0 REJsOut = 0
RetransmitsOut = 0 WwCountChanges = 0
```

Table 27 describes the specified fields shown in the display.

Table 27 show extended channel llc2 stats Field Descriptions

Field	Description
LocalBusies	Number of times the CMCC LLC2 link station entered the busy state. This state occurs for a CMCC LLC2 link station when there are <i>x</i> I-frames received from the remote LLC2 station on the CMCC queued to be sent over the channel to VTAM; Where <i>x</i> is two times the rcv-wind value. The CMCC LLC2 link station will also enter into busy state whenever it receives a flow control command from VTAM.
RemoteBusies	Number of times the remote LLC2 link station entered into busy state.
IFramesIn	Number of LLC2 information frames received by the CMCC LLC2 link station from the remote link station.
IFramesOut	Number of LLC2 information frames sent by the CMCC link station to the remote link station.
IOctetsIn	Number of LLC2 information frame bytes received by the CMCC LLC2 link station from the remote link station.
IOctetsOut	Number of LLC2 information frame bytes sent by the CMCC link station to the remote link station.

Table 27 show extended channel llc2 stats Field Descriptions (continued)

Field	Description
SFramesIn	Number of LLC2 supervisory frames received by the CMCC link station from the remote link station. These include RRs, RNRs, and REJs.
SFramesOut	Number of LLC2 supervisory frames sent by the CMCC link station to the remote link station. These include RRs, RNRs and REJs.
REJsIn	Number of LLC2 REJ frames received by the CMCC link station from the remote link station. This field indicates the number of times the remote link station detected dropped I-frames sent from the CMCC LLC2 station.
REJsOut	Number of LLC2 REJ frames sent by the CMCC link station to the remote link station. This indicates the number of times the CMCC link station detected dropped I-frames sent by the remote link station.
RetransmitsOut	Number of I-frames the CMCC link station was required to resend.
WwCountChanges	Number of times the CMCC LLC2 link station changed its working send window (local-win). See the Nw field description in Table 25 for a description of when the LLC2 link stations working send window is changed.

Related Commands

Command	Description
adapter	Configures internal adapters.

show extended channel max-llc2-sessions

To display information about the number of Logical Link Control, type 2 (LLC2) sessions supported on the Cisco Mainframe Channel Connection (CMCC) adapter, use the **show extended channel max-llc2-sessions** command in privileged EXEC mode.

show extended channel *slot*/*port* max-llc2-sessions

Syntax Description

<i>slot</i>	Slot number.
<i>port</i>	Port number.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.0(3)	This command was introduced

Usage Guidelines

This command is valid only on the virtual channel interface.

Examples

The following is sample output from the **show extended channel max-llc2-sessions** command:

```
Router# show extended channel 1/2 max-llc2-sessions

Administrative max-llc2-sessions = 1000
Operational max-llc2_sessions = 1000
Highest concurrent LLC2 sessions = 30
LLC2 session allocation failures = 0
```

[Table 28](#) describes the specified fields shown in the display.

Table 28 *show extended channel max-llc2-sessions* Field Descriptions

Field	Description
Administrative max-llc2-sessions	Maximum number of LLC2 sessions configured.
Operational max-llc2-sessions	Maximum number of LLC2 sessions configured on the CMCC adapter. This value differs from the value for the administrative max-llc2-sessions if the maximum number of LLC2 sessions is decreased by configuring a new value while the CMCC adapter's virtual interface is up. If the CMCC adapter's virtual interface is reset shut and no shut command, both the administrative and operational max-llc2-sessions numbers will match.

Table 28 *show extended channel max-llc2-sessions Field Descriptions (continued)*

Field	Description
Highest concurrent LLC2 sessions	Highest number of LLC2 sessions active concurrently since the CMCC adapter LLC2 was started. When the CMCC adapter llc2 is initiated, the following message displays: %CIP1-6-MSG: %MSG802-6-LLC_START: Starting LLC-2 with a session capacity of 1000
LLC2 session allocation failures	Number of times network devices tried to establish an LLC2 connection with the CMCC adapter and failed because the operational max-llc2-sessions limit was reached when the connection was attempted.

Related Commands

Command	Description
adapter	Configures internal adapters.
show extended channel connection-map llc2	Displays the number of active LLC2 connections for each service access point (SAP) and the mapping of the internal MAC adapter and the SAP to the resource that activated the SAP.

show extended channel packing names

To display Common Link Access for Workstations (CLAW) packing names and their connection state, use the **show extended channel packing names** command in user EXEC or privileged EXEC mode.

show extended channel *slot/port* packing names [*path* [*device-address*]]

Syntax Description		
<i>slot</i>		Slot number.
<i>port</i>		Port number.
<i>path</i>		(Optional) Hexadecimal value in the range from 0000 to FFFF. This value specifies the logical channel path and consists of two digits for the physical connection (either on the host or on the ESCON director), one digit for the channel logical address, and one digit for the control unit logical address. If the path is not specified in the input/output configuration program (IOCP), the default value for channel logical address and control unit logical address is 0.
<i>device-address</i>		(Optional) Hexadecimal value in the range from 00 to FE. This is the unit address associated with the control unit number and path as specified in the host IOCP file. The device address must have an even numbered value.

Command Modes
 User EXEC
 Privileged EXEC

Command History	Release	Modification
	12.0	This command was introduced.

Examples The following is sample output from the **show extended channel packing names** command:

```
Router# show extended channel 3/0 packing names
```

```
Path: C010 Devices: F2,F3 CLAW Link: 1
```

```

Sublink      Link Names
  0          CONTROL
  1          IP      IP
  2          CKSUM   CKSUM
    
```

```
Path: C030 Devices: F6,F7 CLAW Link: N
```

```

Sublink      Link Names
DISCONNECTED CONTROL
DISCONNECTED IP      IP
DISCONNECTED CKSUM   CKSUM
    
```

Table 29 describes the specified fields shown in the display.

Table 29 show extended channel packing names Field Descriptions

Field	Description
Path	Path from the CLAW configuration. It indicates which port on the switch is used by the channel side of the configuration.
Devices	Device address for each device. One CLAW connection requires two devices. You need only specify the even numbered address.
CLAW Link	Established CLAW link number used for all CLAW packing messages. A number value indicates that a CONTROL sublink is connected. "N" indicates that a control sublink is disconnected.
Sublink	DISCONNECTED indicates that a sublink connection for a particular link name is not established. 0 indicates that the CONTROL sublink is established. 1 to 15 indicates the negotiated sublink number for each application pair.
Link Names	Name used to represent the type of traffic that flows over a particular sublink: <ul style="list-style-type: none"> CONTROL indicates the sublink used to transport CLAW packing control messages. IP indicates the sublink used to send IP datagrams whose TCP checksum is handled by the host. CKSUM indicates the sublink used to send IP datagrams that use the CMCC checksum assist feature.

Related Commands

Command	Description
claw (primary) (primary)	Configures a CLAW device (read and write subchannel) for communication with a mainframe TCP/IP stack in IP datagram mode and also configures individual members of a CLAW backup group for the IP Host Backup feature.
offload (primary) (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.

show extended channel packing stats

To display Common Link Access for Workstations (CLAW) packing statistics, use the **show extended channel packing stats** command in user EXEC or privileged EXEC mode.

show extended channel *slot*/*port* packing stats [*path* [*device-address*]]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
<i>path</i>	(Optional) Hexadecimal value in the range from 0000 to FFFF. This specifies the data path and consists of two digits for the physical connection (either on the host or on the ESCON Director switch): one digit for the control unit address, and one digit for the channel logical address. If not specified, the control unit address and channel logical address default to 0.
<i>device-address</i>	(Optional) Hexadecimal value in the range from 00 to FE. This value is the unit address associated with the control unit number and path as specified in the host input/output configuration program (IOCP) file. For CLAW and offload support, the device address must have an even numbered value.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	12.0	This command was introduced.

Examples The following is sample output from the **show extended channel packing stats** command:

```
Router# show extended channel 3/0 packing stats

Path: C010 Devs: F2,F3 CLAW Link: 1  Read Blks: 4584      Wrt Blks: 15054
      Packets                Bytes                Drops
Linkname  Read   Write   Read   Write   Read   Write   Err C
CONTROL   4     2     128   64     0     0     0 Y
IP        5     5     500   500    0     0     0 Y
CKSUM    4694  93584  187854 53889648 0     0     0 Y
  Total:  4703  93591  188482 53890212 0     0     0

Path: C030 Devs: F6,F7 CLAW Link: N  Read Blks: UNKNOWN  Wrt Blks: UNKNOWN
      Packets                Bytes                Drops
Linkname  Read   Write   Read   Write   Read   Write   Err C
CONTROL   0     0     0     0     0     0     0 N
IP        0     0     0     0     0     0     0 N
CKSUM    0     0     0     0     0     0     0 N
  Total:  0     0     0     0     0     0     0
```

Table 30 describes the specified fields shown in the display

Table 30 show extended channel packing stats Field Descriptions

Field	Description
Path	Path from the CLAW, offload, or Cisco Systems Network Architecture (CSNA) configuration.
Devs	Device address for each device. One CLAW connection requires two devices. You need only specify the even numbered address.
CLAW Link	Established CLAW link number used for all CLAW packing messages. A number value indicates that a CONTROL sublink is connected. "N" indicates that a control sublink is disconnected.
Read Blks	Number of CLAW channel blocks read.
Write Blks	Number of CLAW channel blocks written.
Linkname	Name used to represent the type of traffic that flows over a particular sublink. <ul style="list-style-type: none"> CONTROL indicates the sublink used to transport CLAW packing control messages. IP indicates the sublink used to send IP datagrams whose TCP checksum is handled by the host. CKSUM indicates the sublink used to send IP datagrams that use the CMCC checksum assist feature.
Packets Read Write	Total number of packets read and written for each sublink.
Bytes Read Write	Total number of bytes read and written for each sublink.
Drops Read Write	Total number of dropped read and write packets for each sublink.
Err	Number of errors. Each error produces an error message at the router console.
C	Connection state of a sublink. "Y" indicates connected. "N" indicates not connected.
Total	Total for each of the recorded statistics.

Related Commands

Command	Description
claw (primary) (primary)	Configures a CLAW device (read and write subchannel) for communication with a mainframe TCP/IP stack in IP datagram mode and also configures individual members of a CLAW backup group for the IP Host Backup feature.
offload (primary) (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.

show extended channel statistics

To display statistical information about subchannels on the physical interface of a Cisco Mainframe Channel Connection (CMCC) adapter, use the **show extended channel statistics** command in user EXEC or privileged EXEC mode. This command displays information that is specific to the interface channel devices. The information is generally useful only for diagnostic tasks performed by technical support personnel.

show extended channel *slot*/*port* statistics [*path* [*device-address*]] [*connected*]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
<i>path</i>	(Optional) Hexadecimal value in the range from 0x0000 to 0xFFFF. This value specifies the data path and consists of two digits for the physical connection (either on the host or on the ESCON Director switch): one digit for the control unit address, and one digit for the channel logical address.
<i>device-address</i>	(Optional) Hexadecimal value in the range from 0x00 to 0xFE. This value is the unit address associated with the control unit number and path as specified in the host input/output configuration program (IOCP) file. For Common Link Access for Workstations (CLAW) and offload support, the device address must have an even numbered value.
connected	(Optional) For each backup group, displays information only about the active subchannel or the first subchannel defined in the group if none are active.

Command Modes
User EXEC Privileged EXEC

Command History	Release	Modification
	10.2	This command was introduced.
	12.0(3)T	Support was added for the CMPC+ feature.

Examples The following is sample output from the **show extended channel statistics** command from a CMCC adapter configured with Common Link Access for Workstations (CLAW), offload, cisco systems network architecture (CSNA), and Cisco Multipath Channel (CMPC):

```
Router# show extended channel 0/1 statistics E010

Path: E010  -- ESTABLISHED
              Command
Dev  Connects  Retries  Cancels  Selective  System  Device  CU
              Retries  Bytes    Reset    Reset     Errors  Busy
D0    4459      4459     0         0          0       0       0
D1    4950       0        0         0          0       0       0
D2    2529      2526     0         0          0       0       0
D3    2600       0        0         0          0       0       0
D9    2211       0        0         0          0       0       0
DA    4048      2024     0         0          0       0       0
              Blocks          Bytes          Dropped Blk  Memd
```

```

Dev-Lnk      Read      Write      Read      Write      Read      Write  wait  Con
D0-00         0         0         0         0         0         0     0     Y
D0-01       5017         0     1215457         0         0         0     0     Y
Total:       5017         0     1215457         0         0         0     0
D1-00         0         0         0         0         0         0     0     Y
D1-01         0       5039         0     1247307         0         0     0     Y
Total:         0       5039         0     1247307         0         0     0
D2-00         0         0         0         0         0         0     0     Y
D2-01         0         0         0         0         0         0     0     Y
D2-02       2671         0     661621         0         0         0     0     Y
Total:       2671         0     661621         0         0         0     0
D3-00         0         0         0         0         0         0     0     Y
D3-01         0         0         0         0         0         0     0     Y
D3-02         0       2680         0     653285         0         0     0     Y
Total:         0       2680         0     653285         0         0     0
D9-00         0       2214         0     223418         0         0     0     Y
DA-00       2024         0     124587         0         0         0     0     Y
Path E010
Total:       9712       9933     2001665     2124010         0         0     0
  Last statistics 5 seconds old, next in 5 seconds

```

The following is sample output from the **show extended channel statistics** command from a CMCC adapter configured with CLAW, offload, cisco systems network architecture (CSNA), and CMPC+:

Router# **show extended channel 0/1 statistics**

Path:C020 -- ESTABLISHED

Dev	Connects	Command Retries	Cancel	Selective Reset	System Reset	Device Errors	CU Busy
30	5	0	0	0	3	0	0
31	5	0	0	0	3	0	0
36	27	15	1	0	3	0	0
37	29	6	1	0	3	0	0

Dev-Lnk	Blocks		Bytes		Dropped Blk		Memd	wait	Con
	Read	Write	Read	Write	Read	Write			
30-00	0	0	0	0	0	0	0	0	N
31-00	0	0	0	0	0	0	0	0	N
36-00	19	6	54236	789	0	0	0	0	Y
37-00	9	17	801	63302	0	0	0	0	Y

Path C020

```
Total:      28      23      55037      64091      0      0      0
```

Path:C190 -- ESTABLISHED

Dev	Connects	Command Retries	Cancel	Selective Reset	System Reset	Device Errors	CU Busy
34	12	0	0	0	5	0	0
35	12	0	0	0	5	0	0
36	251	226	6	0	5	0	0
37	258	14	8	0	5	0	0
3E	12	0	0	0	5	0	0
3F	12	0	0	0	5	0	0

Dev-Lnk	Blocks		Bytes		Dropped Blk		Memd	wait	Con
	Read	Write	Read	Write	Read	Write			
34-00	0	0	0	0	0	0	0	0	N
35-00	0	0	0	0	0	0	0	0	N
36-00	236	12	3604441	1578	0	0	0	0	Y
37-00	18	236	1602	4217913	0	0	0	0	Y
3E-00	0	0	0	0	0	0	0	0	N
3F-00	0	0	0	0	0	0	0	0	N

Path C190

```

Total:          254          248   3606043   4219491          0          0          0

Adapter Card
Total:          282          271   3661080   4283582          0          0          0

Last statistics 8 seconds old, next in 2 seconds
    
```

Table 31 describes the specified fields shown in the display.

Table 31 show extended channel statistics Field Descriptions

Field	Description
Path	Path from the CLAW, offload, CMPC, CMPC+, or CSNA configuration.
Dev	Address for each device. For CLAW and offload, there are two device addresses. In the configuration statement, you specify only the even numbered address. Both CSNA, CMPC, and CMPC+ have one device.
Connects	Number of times the channel started a channel program on the device.
Command Retries	Number of times the CMCC adapter either had no data to send to the channel (for the read subchannel) or the number of times the CMCC adapter had no buffers to hold data from the channel (for the write subchannel). Every command retry that is resumed results in a connect. A command retry can be ended via a cancel.
Cancels	Host requested any outstanding operation to be terminated. It is a measure of the number of times the host program was started.
Selective Reset	Resets only one device. On the virtual machine (VM), selective reset occurs when a device is attached and a CP Initial Program Load (IPL) command is issued.
System Reset	Number of times the system IPL command was issued. A system reset affects all devices on the given channel. The command is always issued when the ESCON Channel Adapter (ECA) is initialized, and when the channel is taken off line.
Device Errors	Errors detected by the ESCON or parallel interface because of problems on the link. This value should always be 0.
CU Busy	Number of times the adapter returned a control unit busy indication to the host. This indication occurs after a cancel or reset if the host requests an operation before the CMCC adapter has finished processing the cancel or reset.
Dev-Lnk	First number is the device address. The second number is the logical link. Link 0 is always used for CLAW control messages. For IP datagram mode, link 1 is for actual datagram traffic. For offload, link 2 is for application program interface (API) traffic. For CSNA, CMPC, and CMPC+, the Dev-Lnk is not relevant.
Blocks Read/Write	Count of channel blocks that are read and written from the mainframe.
Bytes Read/Write	Sum of the bytes in the blocks.

Table 31 show extended channel statistics Field Descriptions (continued)

Field	Description
Dropped Blk Read/Write	If the Route Processor sends data to the CMCC adapter faster than it can send it to the channel, then the block is dropped. High values mean the host is not running fast enough. A write drop occurs if the CMCC adapter fails to get a router processor buffer <i>x</i> times for a given block. See the Memd wait counter.
Memd wait	Number of times the CMCC adapter could not obtain a buffer.
Con	For link 0, a connection of Y means the system validation is complete. For all other links, Con means the connection request sequence is completed. For CSNA devices, a value of Y is displayed when the CSNA device status is complete. For all other states, the Con shows a value of N. Note If you halt the host or terminate virtual telecommunications access method (VTAM) using the Z NET, CANCEL command, VTAM does not halt the subchannels, and CON shows a value of Y until the subchannels time out (approximately 180 seconds).

The following is sample output from the CSNA path, using the **show extended channel statistics** command:

```
Router# show extended channel 0/1 statistics E200
```

```
Path: E200 -- ESTABLISHED
          Command          Selective   System   Device   CU
Dev  Connects  Retries  Cancels   Reset   Reset   Errors   Busy
D0    217440    108293     1         0       0       0       0
D1    59530     19800     1         0       0       0       0
D2     1065     252       2         0       0       0       0
D3    1329      16        2         0       0       0       0
D4     1066     251       2         0       0       0       0
D5     887      29        2         0       0       0       0
DA    1073      17        2         0       0       0       373
DB     410     174       2         0       0       0       0
DC    1154     14        2         0       0       0       459
DD     254     17        2         0       0       0       0

          Blocks          Bytes          Dropped Blk   Memd
Dev-Lnk   Read   Write   Read   Write   Read   Write   wait Con
D0-00    109096 109095 237799616 880468     0       0     0  Y
D1-00     19877 19875  160688 237876362     0       0     0  Y
D2-00        9 12842    801 52554701     0       0     0  Y
D3-00    1315      8 30378114 1052     0       0     0  Y
D4-00        9 12842    801 52554701     0       0     0  Y
D5-00     860      8 17003956 1052     0       0     0  Y
DA-00     687      8 14617852 1052     0       0     0  Y
DB-00        9 3578    801 14613989     0       0     0  Y
DC-00     682      8 14513604 1052     0       0     0  Y
DD-00        9 3594    801 14679517     0       0     0  Y
Path E200
Total:    132553 161858 314477034 373163946     0       0     0
Last statistics 3 seconds old, next in 7 seconds
```

Related Commands	Command	Description
	claw (primary)	Configures a CLAW device (read and write subchannel) for communication with a mainframe TCP/IP stack in IP datagram mode and also configures individual members of a CLAW backup group for the IP Host Backup feature.
	cmpr	Configures a CMPC (or CMPC+) read subchannel and a CMPC (or CMPC+) write subchannel.
	csna	Configures Systems Network Architecture (SNA) support on a CMCC physical channel interface and specifies the path and device/subchannel on a physical channel of the router to communicate with an attached mainframe.
	offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.

show extended channel subchannel

To display information about the Cisco Mainframe Channel Connection (CMCC) adapter physical interfaces, use the **show extended channel subchannel** command in user EXEC or privileged EXEC mode. This command displays information that is specific to the interface channel connection. The information displayed is generally useful only for diagnostic tasks performed by technical support personnel.

show extended channel *slot/port* subchannel [connected]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
connected	(Optional) For each backup group, displays information about the active subchannel or the first subchannel defined in the group if none are active.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	10.2	This command was introduced.
	12.0(3)T	Support was added for the CMPC+ feature.

Examples The following is sample output from the **show extended channel subchannel connected** command used on a CMCC adapter configured for Common Link Access for Workstations (CLAW), offload, and cisco systems network architecture (CSNA):

```
Router# show extended channel 1/0 subchannel
```

```
Channel1/0:state up
Flags:VALID ESCON LOADED ENABLED SIGNAL
Link:E9, Buffers 0, CRC errors 1, Load count 1
Link Incident Reports
  implicit 0, bit-error 0, link failed 1,
  NOS 0, sequence timeout 0, invalid sequence 0
Neighbor Node - VALID
  Class:Switch      Type Number :009032      Tag:E9
  Model:002         Manufacturer:IBM
  Plant:02          Sequence      :000000010685
Local Node - VALID
  Class:CTCA-standalone Type Number :C7200      Tag:10
  Model:6           Manufacturer:CSC
  Plant:A           Sequence      :8083599

Mode  Path Device                               Last
CLAW  E020 90 172.18.55.12 CISCOMVS TRAILMIX TCPIP TCPIP 0000  Flags:RESET_EVENT
CLAW  E020 91 172.18.55.12 CISCOMVS TRAILMIX TCPIP TCPIP 0000  Flags:RESET_EVENT
CSNA  E020 94 maxpiu 20470 time-delay 10 length-delay 20470 0000  Flags:RESET_EVENT
OFFLOAD E140 90 172.18.55.11 CISCOMVS TRAILMIX TCPIP TCPIP 0080  TCPIP API  Flags:CMD_RETRY
OFFLOAD E140 91 172.18.55.11 CISCOMVS TRAILMIX TCPIP TCPIP 0080  TCPIP API  Flags:CMD_RETRY
CLAW  E150 90 172.18.55.13 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
```

show extended channel subchannel

```

CLAW  E150 91 172.18.55.13 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E150 96 172.18.55.22 CISCOMVS TRAILMIX TCPIP TCPIP 0080
CLAW  E150 97 172.18.55.22 CISCOMVS TRAILMIX TCPIP TCPIP 0080
CLAW  E160 90 172.18.55.14 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E160 91 172.18.55.14 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E170 90 172.18.55.15 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E170 91 172.18.55.15 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E180 90 172.18.55.20 VMV2R3   TRAILMIX TCPIP TCPIP 0000  Flags:CMD_RETRY
CLAW  E180 91 172.18.55.20 VMV2R3   TRAILMIX TCPIP TCPIP 0000  Flags:CMD_RETRY
CLAW  E180 92 172.18.55.21 TSOMAIN  TRAILMIX TCPIP TCPIP 0000  Flags:CMD_RETRY
CLAW  E180 93 172.18.55.21 TSOMAIN  TRAILMIX TCPIP TCPIP 0000  Flags:CMD_RETRY
CLAW  E190 90 172.18.55.17 CISCOMVS TRAILMIX TCPIP TCPIP 0000  Flags:RESET_EVENT
CLAW  E190 91 172.18.55.17 CISCOMVS TRAILMIX TCPIP TCPIP 0000  Flags:RESET_EVENT
CLAW  E1E0 90 172.18.55.18 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E1E0 91 172.18.55.18 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E1F0 90 172.18.55.19 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY
CLAW  E1F0 91 172.18.55.19 CISCOMVS TRAILMIX TCPIP TCPIP 0080  Flags:CMD_RETRY

```

Last statistics 6 seconds old, next in 4 seconds

Table 32 describes the specified fields shown in the display.

Table 32 *show extended channel subchannel Field Descriptions*

Field	Description
Channel1/0: state	State can be up, down, or administratively down.
Flags	<ul style="list-style-type: none"> • GO-OFF—CMCC adapter is trying to shut down the channel interface. This state should not persist for more than a few seconds. This flag is not applicable to the virtual channel interface. • INVALID—All displays for virtual channel interfaces should contain this flag. On physical channel interfaces, it indicates a problem with the CMCC adapter microcode. • LOADED—Channel firmware for the physical channel interface is loaded. The channel firmware is loaded only if the interface configuration contains at least one device configuration statement and is not shut down. This flag matches the state of the “loaded” LED. This flag is not applicable to the virtual channel interface. • LOVE—Note indicating an interface state change (up-down or down-up) is pending on this interface. This state should not persist for more than a few seconds. • OFFLINE—For an ESCON channel interface, this flag indicates that no mainframe has established an ESCON logical path corresponding to the paths specified in any device configuration statement (claw, offload, csna, or cmpc). For a parallel channel interface, this flag indicates that the x'0100' path is not defined in any device configuration statement or SIGNAL is not present.

Table 32 show extended channel subchannel Field Descriptions (continued)

Field	Description
Flags (continued)	<ul style="list-style-type: none"> • ONLINE—For an ESCON channel interface, this flag indicates that at least one mainframe has established an ESCON logical path corresponding to the paths specified in one of the device configuration statements (CLAW, offload, CSNA, CMPC, or CMPC+). For a parallel channel interface, this flag indicates that the x'0100' path is defined in at least one device configuration statement and SIGNAL is present. • RQC_PEND—CMCC adapter is attempting to send status to the channel on this interface. This state should not persist for more than a few seconds. This flag is not applicable to the virtual channel interface. • RESET_EVENT—Indicates that a reset event has been received. • SIGNAL—For an ESCON channel interface, this flag indicates that light is detected. For a parallel channel interface, this flag indicates that the “operational out” signal is detected. This flag matches the state of the “signal” LED. It will be set only if the LOADED flag is also set. This flag is not applicable to the virtual channel interface. • STAT_PEND—CMCC adapter has status to present for this device. The indication is cleared when the mainframe accepts the status.
Flags (continued)	<ul style="list-style-type: none"> • SUSPEND—Indicates that the CMCC device task has decided to suspend data transfer for a particular device. • VALID—A physical interface is installed. All displays for physical channel interfaces should contain this. This flag matches the state of the “present” LED.
Link: xx	Director port number to which the physical channel is connected. If the physical channel is directly connected, then this value is host dependent.
Buffers	Number of times the CMCC adapter has dropped a packet bound for the Route Processor because no packet switching buffer was available on the Route Processor.
CRC errors	Number of cyclic redundancy check (CRC) errors detected on the channel for ESCON. Number of parity errors detected on the channel for parallel.
Load count	For a CMCC physical channel interface, the number of times the channel adapter microcode has been loaded.

Table 32 show extended channel subchannel Field Descriptions (continued)

Field	Description
Link Incident Reports	<p>Link incidents are errors on an ESCON channel. These errors are reported to the host operating system and are recorded here for additional information.</p> <ul style="list-style-type: none"> • Implicit incidents—Recoverable error occurred in the ESCON Channel Adapter (ECA). • Bit errors—Bit error rate threshold was reached. The bit error rate threshold is 15 error bursts within 5 minutes. An error burst is defined as a time period of 1.5 +/- 0.5 seconds during which one or more code violations occurred. A code violation error is caused by an incorrect sequence of 10 bit characters. • Link failed—Loss of synchronization or light has occurred. • NOS—Channel or switch sent the Not Operational Sequence. • Sequence timeout—Connection recovery timeout has occurred or the router is waiting for the appropriate response while in the send offline sequence (OLS) state. • Invalid Sequence—Unconditional disconnect (UD) or unconditional disconnect response (UDR) is recognized in the wait for offline sequence state.
Neighbor node	<p>Describes the channel or switch. Valid values are:</p> <ul style="list-style-type: none"> • VALID—Information has been exchanged between the router and channel or switch. • Class—Switch or channel depending on whether the connection is a switched point-to-point connection or a point-to-point connection. • Type number—Model of switch or processor. • TAG—Physical location of the connector. • Model—A further classification of type. • Manufacturer—Identifies who made switch or processor. • Plant and sequence—Manufacturer-specific information to uniquely define this one device.

Related Commands

Command	Description
claw (primary)	Configures a CLAW device (read and write subchannel) for communication with a mainframe TCP/IP stack in IP datagram mode and also configures individual members of a CLAW backup group for the IP Host Backup feature.
cmPC	Configures a CMPC (or CMPC+) read subchannel and a CMPC (or CMPC+) write subchannel.

Command	Description
csna	Configures Systems Network Architecture (SNA) support on a CMCC physical channel interface and specifies the path and device/subchannel on a physical channel of the router to communicate with an attached mainframe.
offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.

show extended channel tcp-connections

To display information about the TCP sockets on a channel interface, use the **show extended channel tcp-connections** command in user EXEC or privileged EXEC mode.

show extended channel slot/port tcp-connections [*loc-ip-addr* [*loc-port* [*rem-ip-addr* [*rem-port*]]]] [**detail** | **summary**]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
tcp-connections	Specifies TCP connections display.
<i>loc-ip-addr</i>	(Optional) Local IP address. IP address of the local connection endpoint. Restricts the output to those connections with a matching local IP address.
<i>loc-port</i>	(Optional) Local TCP port. This is the TCP port of the local connection endpoint. Restricts the output to those connections with a matching local TCP port. An asterisk (*) is a wildcard that matches every port.
<i>rem-ip-addr</i>	(Optional) Remote IP address. IP address of the remote connection endpoint. Restricts the output to those connections with a matching remote IP address.
<i>rem-port</i>	(Optional) Remote TCP port. TCP port of the remote connection endpoint. Restricts the output to those connections with a matching remote TCP port.
detail	(Optional) Prints detailed information about every matching connection.
summary	(Optional) This is the default. Prints a summary of all matching connections.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.
	12.0(7)T	The stack address field was added to the output.

Usage Guidelines The **show extended channel tcp-connections** command is valid on both physical and virtual channel interfaces. If no IP addresses or TCP ports are specified, all TCP connections are displayed in a summary for the specified interface.

The command displays detailed information about a large number of sessions that can take a long time. Consider restricting the output by IP address and TCP port to connections of interest.

Examples The following is sample output from the **show extended channel tcp-connections detail** command:

```
Router# show extended channel 0/1 tcp-connections detail
```

Local IP Addr	Port	Remote IP Addr	Port	State	In Bytes	Out Bytes
10.11.198.2	21	0.0.0.0	0	listen	0	0
10.11.198.2	21	172.18.48.194	38668	establish	62	298

```

10.11.198.2    23    0.0.0.0      0    listen        0      0
10.11.198.2    23    172.18.48.194 38666 establish    124    11966
10.11.198.2    1025  0.0.0.0      0    listen        0      0
10.11.198.2    1025  172.18.48.194 38705 closeWait    24     1
10.11.198.3    7     0.0.0.0      0    listen        0      0
10.11.198.3    9     0.0.0.0      0    listen        0      0
10.11.198.3    19    0.0.0.0      0    listen        0      0
10.11.198.3    21    0.0.0.0      0    listen        0      0
10.11.198.3    23    0.0.0.0      0    listen        0      0
10.11.198.3    23    172.18.48.194 38667 establish    85     446

```

The following is sample output from the **show extended channel tcp-connections** command when you specify the **detail** keyword for an offload device at real IP address 10.10.21.3 with an alias address of 10.2.33.88:

```
Router# show extended channel 3/1 tcp-connections 10.10.21.3 detail
```



```

Stack Address 10.10.21.3:
Local IP Addr  Port  Remote IP Addr  Port  State          In Bytes  Out Bytes Addr
0.0.0.0        23   0.0.0.0         0     listen         0         0
10.2.33.88     23   10.70.5.140    61954 establish    59        105

```

Table 33 describes the specified fields shown in the display.

Table 33 show extended channel tcp-connections Field Descriptions

Field	Description
Stack Address	Real IP address of the TCP/IP stack or offload device.
Local IP Addr	Local IP address on the connection.
State	<p>The state of this TCP connection.</p> <p>The only value that may be set by a management station is deleteTCB(12). Accordingly, it is appropriate for an agent to return a “badValue” response if a management station attempts to set this object to any other value.</p> <p>If a management station sets this object to the value deleteTCB(12), then this has the effect of deleting the Transmission Control Block (TCB) (as defined in RFC 793) of the corresponding connection on the managed node, resulting in immediate termination of the connection.</p> <p>As an implementation-specific option, a reset (RST) segment may be sent from the managed node to the other TCP endpoint. (Note, however, that RST segments are not sent reliably.)</p>
In Bytes	<p>Number of bytes sent for this TCP connection.</p> <p> Note To support Simple Network Management Protocol (SNMP) Version 1 Managers, this variable is supplied as a 32-bit value that can wrap frequently.</p>
Out Bytes	<p>Number of bytes received for this TCP connection.</p> <p> Note To support SNMP Version 1 Managers, this variable is supplied as a 32-bit value that can wrap frequently.</p>

The following is sample output from the **show extended channel tcp-connections summary** command:

```
Router# show extended channel 0/1 tcp-connections summary
```

```
TCP Connections=12  Input Bytes=      294  Output Bytes=    13049
```

Related Commands

Command	Description
offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.
pu (TN3270)	Creates a physical unit (PU) entity that has its own direct link to a host and enters PU configuration mode.
pu (DLUR)	Creates a PU entity that has no direct link to a host and enters Dependent Logical Unit Requestor (DLUR) PU configuration mode.
show extended channel tcp-stack	Displays information about the TCP stack running on CMCC adapter interfaces.

show extended channel tcp-stack

To display information about the TCP stack running on Cisco Mainframe Channel Connection (CMCC) adapter interfaces, use the **show extended channel tcp-stack** command in user EXEC or privileged EXEC mode.

show extended channel *slot/port* **tcp-stack** [*ip-address*]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
tcp-stack	Specifies tcp stack display.
<i>ip-address</i>	(Optional) IP address specified by the offload interface configuration command or the tn327-server pu command.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.
	12.0(7)T	The Alias addresses field was added to the output.

Usage Guidelines The **show extended channel tcp-stack** command is valid on both physical and virtual channel interfaces. If no *ip-address* argument is specified, then information is displayed for all IP addresses configured on the specified interface.

Examples The following is sample output from the **show extended channel tcp-stack** command:

```
Router# show extended channel 0/1 tcp-stack

TCP Statistics for IP Address 10.11.198.2
  RtoAlgorithm: vanj          RtoMin      : 1000          RtoMax      : 64000
  MaxConn       : -1          ActiveOpens  : 1            PassiveOpens: 17
  AttemptFails: 0            EstabResets  : 0            CurrEstab   : 5
  InSegs        : 181         OutSegs     : 147          RetransSegs : 0
  InErrs        : 0           OutRsts     : 0

TCP Statistics for IP Address 10.11.198.3
  RtoAlgorithm: vanj          RtoMin      : 1000          RtoMax      : 64000
  MaxConn       : -1          ActiveOpens  : 0            PassiveOpens: 1
  AttemptFails: 0            EstabResets  : 0            CurrEstab   : 6
  InSegs        : 25         OutSegs     : 23          RetransSegs : 0
  InErrs        : 0           OutRsts     : 0
```

The following is sample output from the **show extended channel tcp-stack** command when you specify the real IP address for an offload device at 10.10.21.3:

```
Router# show extended channel 3/1 tcp-stack 10.10.21.3
```

```
TCP Statistics for IP Address 10.10.21.3
Alias addresses: 10.2.33.88
RtoAlgorithm: vanj      RtoMin      : 1000      RtoMax      : 64000
MaxConn      : -1      ActiveOpens : 0          PassiveOpens: 1
AttemptFails: 0      EstabResets : 0          CurrEstab   : 2
InSegs       : 16      OutSegs     : 7          RetransSegs : 0
InErrs       : 0      OutRsts     : 0
```

The following is sample output from the **show extended channel tcp-stack** command when you specify the alias IP address for an offload device at 10.2.33.88:

```
Router# show extended channel 3/1 tcp-stack 10.2.33.88

TCP Statistics for IP Address 10.10.21.3
Alias addresses: 10.2.33.88
RtoAlgorithm: vanj      RtoMin      : 1000      RtoMax      : 64000
MaxConn      : -1      ActiveOpens : 0          PassiveOpens: 1
AttemptFails: 0      EstabResets : 0          CurrEstab   : 2
InSegs       : 16      OutSegs     : 7          RetransSegs : 0
InErrs       : 0      OutRsts     : 0
```

Table 34 describes the specified fields shown in the display.

Table 34 show extended channel tcp-stack Field Descriptions

Field	Description
Alias addresses	Virtual IP addresses assigned to the real IP address of an offload device.
RtoAlgorithm	The algorithm used to determine the timeout value used for resending unacknowledged octets.
RtoMin	The minimum value permitted by a TCP implementation for the retransmission timeout, measured in milliseconds. More refined semantics for objects of this type depend upon the algorithm used to determine the retransmission timeout. In particular, when the timeout algorithm is rsre(3), an object of this type has the semantics of the LBOUND quantity described in RFC 793.
RtoMax	The maximum value permitted by a TCP implementation for the retransmission timeout, measured in milliseconds. More refined semantics for objects of this type depend upon the algorithm used to determine the retransmission timeout. In particular, when the timeout algorithm is rsre(3), an object of this type has the semantics of the UBOUND quantity described in RFC 793.
MaxConn	The limit on the total number of TCP connections the entity can support. In entities where the maximum number of connections is dynamic, this object should contain the value -1.
ActiveOpens	Number of times TCP connections have made a direct transition to the SYN-SENT state from the CLOSED state.
PassiveOpens	Number of times TCP connections have made a direct transition to the SYN-RCVD state from the LISTEN state.
AttemptFails	Number of times TCP connections have made a direct transition to the CLOSED state from either the SYN-SENT state or the SYN-RCVD state, plus the number of times TCP connections have made a direct transition to the LISTEN state from the SYN-RCVD state.

Table 34 show extended channel tcp-stack Field Descriptions (continued)

Field	Description
EstabResets	Number of times TCP connections have made a direct transition to the CLOSED state from either the ESTABLISHED state or the CLOSE-WAIT state.
CurrEstab	Number of TCP connections for which the current state is either ESTABLISHED or CLOSE-WAIT.
InSegs	Total number of segments received, including those received in error. This count includes segments received on established connections.
OutSegs	Total number of segments sent, including those on current connections but excluding those containing only re-sent octets.
RetransSegs	Total number of segments re-sent—that is, the number of TCP segments sent containing one or more previously sent octets.
InErrs	Total number of segments received in error (for example, bad TCP checksums).
OutRsts	Number of TCP segments sent containing the reset (RST) flag.

Related Commands

Command	Description
offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.
pu (TN3270)	Creates a physical unit (PU) entity that has its own direct link to a host and enters PU configuration mode.
pu (DLUR)	Creates a PU entity that has no direct link to a host and enters Dependent Logical Unit Requestor (DLUR) PU configuration mode.
show extended channel tcp-connections	Displays information about the TCP sockets on a channel interface.

show extended channel tg

To display configuration, operational information, and statistics information for Cisco Multipath Channel (CMPC) or CMPC+ transmission groups configured on the specified Cisco Mainframe Channel Connection (CMCC) adapter's virtual interface, use the **show extended channel tg** command in user EXEC or privileged EXEC mode.

show extended channel slot/port tg [oper | stats] [detailed] [tg-name]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
oper	(Optional) Operational parameters for the CMPC or CMPC+ Transmission Group (TG) values.
stats	(Optional) Statistical values for the CMPC or CMPC+ TG.
detailed	(Optional) Additional information about the CMPC or CMPC+ TG.
<i>tg-name</i>	(Optional) Name of the TG.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.3	This command was introduced.
	12.0(3)T	Support was added for the CMPC+ feature.

Usage Guidelines

The **show extended channel tg** command is valid only on the virtual channel interface. If the *tg-name* argument is not specified, information about all TGs configured on the specified interface is displayed. If neither the **oper** or **stats** keyword is specified, operational values are displayed.

Examples

The following is sample output from the **show extended channel tg oper** command for a CMPC TG:

```
Router# show extended channel 3/2 tg oper detailed MVS2-TG1

CMPC-TG: MVS2-TG1 Status: ACTIVE
  Adapter:token    1  RMAC:4000.4040.1996          LSAP:04          RSAP:04
  TGN      :21      Local CP: NETA.MVS2          Remote CP: NETA.CALEB
  MaxIn    :4105    MaxOut   :4105
  HPR      :NO      HPR LSAP:04                HPR RSAP :00
  RIF      :0830.1FF1.0041.00A0

Connection LLC2 Information:
  t1-time    = 1000  tpf-time  = 1000  trej-time = 3200  tbusy-tim = 9600
  idle-time  =60000  local-win =   7   recv-wind =   7   N2        =   8
  N1-Send    = 1033  N1-Rcv   = 1033  ack-delay = 100  ack-max   =   3
  Nw         =   0   Ww         =   7
  Last Ww Cause = other
  Connection Time: 00:00:00 UTC Jan 1 1970
  Last modified: 00:00:00 UTC Jan 1 1970
```

Table 35 describes the specified fields shown in the display.

Table 35 *show extended channel tg oper Field Descriptions*

Field	Description
Status	<p>Connection status of the CMPC TG. Valid values are:</p> <ul style="list-style-type: none"> • Shutdown—CMCC virtual interface is shut down. In this state, all nonconfigurable values will not be displayed and the Logical Link Control (LLC) connection operational values displayed when the detailed keyword is specified also are not displayed. • Inactive—CMPC TG is reset ready to activate. • LocatingRemoteLinkStation—Exploring network for configured CMPC TG peer. • RemoteLinkStationLocated—CMPC TG network peer found. Waiting for connection negotiation to start. • XID3Negotiation—exchange identification (XID) negotiation in progress. • PendingActive—Connect station pending. • ACTIVE—CMPC TG connection active.
Adapter	Identifies the CMCC adapter's internal MAC adapter configured for this CMPC TG. The MAC address configured for this adapter is the local MAC address for the CMPC or CMPC+ TG LLC connection.
RMAC	Remote MAC address configured for the CMPC TG LLC connection.
LSAP	Local service access point (SAP) configured for the CMPC TG LLC connection.
RSAP	Remote SAP configured for the CMPC TG LLC connection.
TGN	TG number for this CMPC TG LLC connection. This value is extracted from the XID3 negotiation exchange.
Local CP	Control point name for virtual telecommunications access method (VTAM). The name is extracted from XID3s received from virtual telecommunications access method (VTAM).
Remote CP	Control point name for the remote node connected by this CMPC TG. The name is extracted from XID3 received from the remote node.
MaxIn	Maximum path information unit (PIU) the remote node is allowed to send to VTAM. The value is the max PIU field in the XID3s received from VTAM.
MaxOut	Maximum PIU VTAM is allowed to send to the remote node. The value is the lowest of the max PIU field in the XID3 received from the remote node, the LF (length field) size in the RIF, and the CMCC virtual interface MTU size.
HPR	Valid values are YES and NO. If HPR is active on this CMPC TG, then the value will display YES.
HPR LSAP	Local SAP value used for HPR traffic. This value will be the same as the configured local service access point (SAP) value.
HPR RSAP	Remote SAP value used for HPR traffic. This value is extracted from the XID3s during the connection negotiation between VTAM and the remote node.
RIF	Routing information field. If the CMPC TG LLC connection is established using source-route bridging, then the RIF used for the connection is displayed here.

The following is sample output on a Cisco 7500 router from the **show extended channel tg stats** command for a CMPC TG:

Router# **show extended channel 3/2 tg stats detailed MVS2-TG1**

```

CMPC-TG:MVS2ISR1
  IFramesIn      :51          IFramesOut      :41
  IBytesIn       :4378       IBytesOut       :51803
  UIFramesIn     :0          UIFramesOut     :0
  UIBytesIn      :0          UIBytesOut      :0
  TESTRspIn     :1          TESTCmdsOut    :1
  XIDCmdsIn     :3          XIDCmdsOut     :3
  XIDRspIn      :0          XIDRspOut     :0
  ConnectReqs   :2          ConnectInds    :0
  ConnectRsp    :2          ConnectCnfm    :0
  DISCReqs      :1          DISCInds       :0
  SweepReqsIn   :0          SweepReqsOut   :0
  SweepRspIn    :0          SweepRspOut    :0
  Wraps         :0
  LastSeqNoIn   :9          LastSeqNoOut   :7
  LastSeqNoFailureCause : None
TimeSinceLastSeqNoFailure : never
LLC2 Connection Statistics:
LAN Token 0 Adapter 1 4000.cdcd.cdcd
  Local SAP=04 Remote MAC=4000.4040.1996 Remote SAP=04
  LocalBusies    =          0 RemoteBusies    =          0
  IFramesIn     =          51 IFramesOut     =          41
  IOctetsIn     =         4378 IOctetsOut     =         51803
  SFramesIn     =          0 SFramesOut     =          0
  REJsIn       =          0 REJsOut        =          0
  RetransmitsOut =          0 WwCountChanges =          0
    
```

Table 36 describes the specified fields shown in the display.

Table 36 show extended channel tg stats Field Descriptions

Field	Description
IFramesIn	Number of connection-oriented PIUs received by this CMPC TG from the remote network node.
IFramesOut	Number of connection-oriented PIUs sent by this CMPC TG to the remote network node.
IBytesIn	Number of bytes for connection-oriented PIUs received by this CMPC TG from the remote network node.
IBytesOut	Number of bytes for connection-oriented PIUs sent by this CMPC TG to the remote network node.
UIFramesIn	Number of connectionless PIUs (HPR frames) received by this CMPC TG from the remote network node.
UIFramesOut	Number of connectionless PIUs (HPR frames) sent by this CMPC TG to the remote network node.
UIBytesIn	Number of bytes for connectionless PIUs received by this CMPC TG from the remote network node.
UIBytesOut	Number of bytes for connectionless PIUs sent by this CMPC TG to the remote network node.
TESTRspIn	Number of TEST responses received for this CMPC TG.

Table 36 show extended channel tg stats Field Descriptions (continued)

Field	Description
TESTCmdsOut	Number of TEST commands sent by this CMPC TG to the configured remote MAC address.
XIDCmdsIn	Number of XID commands received for this CMPC TG.
XIDCmdsOut	Number of XID commands sent by this CMPC TG.
XIDRspIn	Number of XID responses received for this CMPC TG.
XIDRspOut	Number of XID responses sent by this CMPC TG.
ConnectReqs	Number of connect requests received from the host by this CMPC TG.
ConnectInds	Number of connect indications sent to the host by this CMPC TG.
ConnectRsp	Number of connect responses received from the host by this CMPC TG.
ConnectCnfms	Number of connect confirms sent to the host by this CMPC TG.
DISCReqs	Number of disconnect requests received from the host by this CMPC TG.
DISCInds	Number of disconnect indications sent to the host by this CMPC TG.
SweepReqsIn	Number of CMPC sweep requests received from VTAM on this CMPC TG.
SweepReqsOut	Number of CMPC sweep requests sent to VTAM on the CMPC TG.
SweepRspIn	Number of CMPC responses received from VTAM on this CMPC TG.
SweepRspOut	Number of CMPC responses sent to VTAM on this CMPC TG.
Wraps	The number of times the sequence numbers wrapped for this CMPC TG.
LastSeqNoIn	The sequence number on the last CMPC data block sent to the host from this CMPC TG.
LastSeqNoOut	The sequence number on the last CMPC data block received from the host for this CMPC TG.
LastSeqNoFailureCause	The cause of the last sequence number failure for this CMPC TG. Valid values are as follows: <ul style="list-style-type: none"> • None—No sequence number failures have occurred on this CMPC TG since it was configured or the interface was last “no shut.” • Block—The sequence number failure occurred on an Multi-Path Channel plus (MPC) data block received from the host for this CMPC TG. • Sweep—The sequence number failure occurred on a sweep command received from the host for this CMPC TG.
TimeSinceLastSeqNoFailure	Time since the last CMPC sequence number failure for this CMPC TG. If there have been no failures, “never” is displayed.

The following is sample output on a Cisco 7500 router from the **show extended channel tg stats** command for a CMPC TG when the interface is shut down:

```
Router# show extended channel 3/2 tg stats detailed MVS2-TG1
```

```
CIP LLC-TG:MVS2ISR1 -Statistics Not Available
```

The following is sample output from the **show extended channel tg** command for a CMPC+ TG:

```
CMPC-TG:MPCPTG2   Status:Active
  Local IP address:10.44.4.1                Remote IP Address :10.44.4.2

  Connection Info: Type=TCP/IP
  Local VC Token  :0500109002              Local Conn. Token :0500109003
  Remote VC Token :0500201002              Remote Conn. Token:0500201002
  VC Status      :Active                   Connection Status :Active

CMPC-TG:MPCPTG3   Status:Active
  Local IP address:172.18.3.1              Remote IP Address :172.18.3.2

  MPC+ Connection Info: Type=HSAS IP
  Local VC Token  :0500109002              Local Conn. Token :0500109003
  Remote VC Token :0500201002              Remote Conn. Token:0500201002
  VC Status      :Active                   Connection Status :PendingActive
```

Table 37 describes the specified fields shown in the display.

Table 37 show extended channel tg Field Descriptions

Field	Description
Status	<p>Connection status of the CMPC+ TG. Valid values are:</p> <ul style="list-style-type: none"> Shutdown—CMCC virtual interface is shut down. In this state, all nonconfigurable values will not be displayed and the connection operational values displayed when the detailed keyword is specified also are not displayed. Ready—CMCC virtual interface is operational. Unknown—Unknown status. Inactive—CMPC+ TG is reset ready to activate. Active—CMPC+ TG connection active.
Local IP Address	IP address of the CMCC interface for this TG. This address matches the router's IP address configured on the corresponding TG statement.
Remote IP Address	IP address of the host for this TG. This address matches the host IP address configured on the corresponding TG statement.
Type	<p>Valid IP connection types are:</p> <ul style="list-style-type: none"> TCP/IP—Indicates that the connection is via the TCP/IP stack. HSAS IP—Indicates that the connection is via the High Speed Access Services (HSAS) stack.
Local VC Token	CMCC adapter's token for the virtual circuit.
Remote VC Token	Host's token for the virtual circuit.

Table 37 show extended channel tg Field Descriptions (continued)

Field	Description
VC Status	Valid states for the virtual circuit are: <ul style="list-style-type: none"> Reset—Awaiting a connection request from the host or CMCC adapter. Active—Virtual circuit active indication was received from the host and the CMCC adapter sent a virtual circuit active indication to the host. The virtual circuit is now ready to send and receive connection requests.
Local Conn Token	CMCC adapter's token for the Multi-Path Channel plus (MPC+) connection.
Remote Conn Token	Host's token for the MPC+ connection.
Connection Status	The valid states for a connection are: <ul style="list-style-type: none"> Reset—Awaiting a connection request from the host or CMCC adapter. ConnectionRequestSent—CMCC adapter sent a Connection Request to the host and is waiting a Connection Confirm from the host. PendingActive—CMCC adapter is waiting for the host to enable traffic flow on the connection. Active—Connection is active and both the CMCC adapter and the host have enabled traffic flow on the connection. At this point, the CMCC adapter has added a static route on the router for the host's IP address. Verify with the show ip route static command.

The following sample shows output on a CMCC adapter from the **show extended channel tg stats** command for a CMPC+ TG:

```
Router# show extended channel 3/2 tg stats MVS2-TG1
```

```
CMPC-TG:MPCPTG2
PacketsIn      :      81361  PacketsOut     :      71369
BytesIn        : 3874888438  BytesOut       : 3774999994
ConnNr         :           0  ConnNs         :           0
SweepReqsIn   :           0  SweepReqsOut  :           0
SweepRspsIn   :           0  SweepRspsOut  :           0
Wraps          :           0
LastSeqNoIn   : 56047093    LastSeqNoOut   : 6751136
LastSeqNoFailureCause : None
TimeSinceLastSeqNoFailure : never

CMPC-TG:MPCPTG3
PacketsIn      :      44361  PacketsOut     :      63369
BytesIn        : 6834888438  BytesOut       : 9545399994
ConnNr         :           0  ConnNs         :           0
SweepReqsIn   :           0  SweepReqsOut  :           0
SweepRspsIn   :           0  SweepRspsOut  :           0
Wraps          :           0
LastSeqNoIn   : 6274700    LastSeqNoOut   : 1829808
LastSeqNoFailureCause : None
TimeSinceLastSeqNoFailure : never
```

Table 38 describes the specified fields shown in the display.

Table 38 show extended channel tg stats Field Descriptions

Field	Description
PacketsIn	Number of packets sent to the host on this TG.
PacketsOut	Number of packets sent by the host on this TG.
BytesIn	Total byte count for all packets sent to the host on this TG.
BytesOut	Total byte count for all packets sent by the host on this TG.
ConnNr	Sequence number of the last MPC+ frame on this connection from the host. Because IP traffic is all connectionless, the value is always 0.
ConnNs	Sequence number of the last MPC+ frame on this connection sent to the host. Because IP traffic is always connectionless, the value is always 0.
SweepsReqsIn	Number of CMPC+ sweep requests received from the host on this CMPC+ TG.
SweepsReqsOut	Number of CMPC+ sweep requests sent to the host on the CMPC+ TG.
SweepsRspIn	Number of CMPC+ sweep responses received from the host on the CMPC+ TG.
SweepsRspOut	Number of CMPC+ responses sent to the host on this CMPC+ TG.
Wraps	Number of times the CMPC+ sequence number for this TG has wrapped on the write subchannel.
LastSeqNoIn	Last block sequence number sent on the read subchannel.
LastSeqNoOut	Last block sequence number received on the write subchannel.
Last SeqNoFailureCause	Valid values are: <ul style="list-style-type: none"> • None—No sequence number failures detected since the program started. • Block—Sequence number received in a data block on the write subchannel was not the expected sequence number. • Sweep—Sequence number received in a sweep message on the write subchannel was not the expected sequence number.
TimeSinceLastSeqNoFailure	Number of seconds since the last sequence number failure.

Related Commands

Command	Description
cmpr	Configures a CMPC (or CMPC+) read subchannel and a CMPC (or CMPC+) write subchannel.
tg (CMPC)	Defines LLC connection parameters for the CMPC transmission group.
tg (CMPC+)	Defines IP connection parameters for the CMPC+ transmission group.
show extended channel cmgr	Displays information about the MPC+ transmission group connection manager.

show extended channel tn3270-server client-ip-address

To display information about all clients at a specific IP address, use the **show extended channel tn3270-server client-ip-address** command in user EXEC or privileged EXEC mode.

```
show extended channel slot/port tn3270-server client-ip-address ip-address [disconnected |
in-session | pending]
```

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
<i>ip-address</i>	IP address of the client.
disconnected	(Optional) Displays all clients with the <i>ip-address</i> argument in disconnected state. Disconnected state refers to an logical unit (LU) session state of ACTIVE or INACTIVE. In this case, the <i>ip-address</i> argument refers to the client that last used the LU.
in-session	(Optional) Displays all clients with the <i>ip-address</i> argument in active session state. Active session state refers to an LU session state of ACT/SESS.
pending	(Optional) Displays all clients with the <i>ip-address</i> argument in pending state. Pending session state refers to an LU session state of P-SDT, P-ACTLU, P-NTF/AV, P-NTF/UA, P-RESET, P-PSID, P-BIND, P-UNBIND, WT-UNBND, WT-SDT, or UNKNOWN.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.2	This command was introduced.

Usage Guidelines The **show extended channel tn3270-server client-ip-address** command is valid only on the virtual channel interface. Note that this command does not display information about LUs that have never been connected.

Examples The following is sample output from the **show extended channel tn3270-server client-ip-address** command. The example shows only active sessions because no other session types exist at this client IP address.

```
Router# show extended channel 3/2 tn3270-server client-ip-address 192.195.80.40

lu   name      client-ip:tcp      nail state  model  frames in out  idle for
1   PUS11001  192.195.80.40:3169  Y  ACT/SESS 327804  5      5      0:5:47

pu is PUS11, lu is DYNAMIC type 2, negotiated TN3270
bytes 155 in, 1758 out; RuSize 1024 in, 3840 out; NegRsp 0 in, 0 out
pacing window 0 in, 1 out; credits 0 in, queue-size 0 in, 0 out
```

The following is sample output using the **disconnected** keyword:

```
Router# show extended channel 2/2 tn3270 client-ip-address 10.14.1.21 disconnected
```

Total 2 clients found using 10.14.1.21

The following is sample output using the **in-session** keyword:

```
Router# show extended channel 2/2 tn3270 client-ip-address 10.14.1.21 in-session
```

Note: if state is ACT/NA then the client is disconnected

```
lu   name   client-ip:tcp      nail state   model   frames in out   idle for
3    PU1L03 10.14.1.21:35215   N   ACT/SESS 327804   317    316    0:0:1
```

pu is PU1, lu is DYNAMIC type 2, negotiated TN3270
 bytes 12167 in, 225476 out; RuSize 2048 in, 1536 out; NegRsp 0 in, 0 out
 pacing window 0 in, 1 out; credits 0 in, queue-size 0 in, 0 out

Note: if state is ACT/NA then the client is disconnected

```
lu   name   client-ip:tcp      nail state   model   frames in out   idle for
4    PU1L04 10.14.1.21:35216   N   ACT/SESS 327804   317    316    0:0:1
```

pu is PU1, lu is DYNAMIC type 2, negotiated TN3270
 bytes 12167 in, 225476 out; RuSize 2048 in, 1536 out; NegRsp 0 in, 0 out
 pacing window 0 in, 1 out; credits 0 in, queue-size 0 in, 0 out

Note: if state is ACT/NA then the client is disconnected

Total 2 clients found using 10.14.1.21

The following is sample output using the **pending** keyword:

```
Router# show extended channel 2/2 tn3270 client-ip-address 10.14.1.21 pending
```

Total 2 clients found using 10.14.1.21

Table 39 describes the significant fields in the display.

Table 39 show extended channel tn3270-server client-ip-address Field Descriptions

Field	Description
lu	Local address of the logical unit (LU).
name	If the physical unit (PU) is directly connected, then the name shown is the one generated by the seed. If LU, then only the unqualified portion is shown. The network entity title (NET) ID portion will be the same as the current Dependent Logical Unit Server (DLUS)
client-ip:tcp	Client's IP address and TCP port number.
nail	Status of LU nailing, either Y or N.
state	LU state values and their meanings are: <ul style="list-style-type: none"> UNKNOWN—LU in an undefined state. INACTIVE—LU did not receive activate logical unit (ACTLU). ACT/NA—LU received ACTLU and acknowledged positively. P-SDT—LU is bound but there is no Structured Data Transfer (SDT) yet.

Table 39 show extended channel tn3270-server client-ip-address Field Descriptions (continued)

Field	Description
state (continued)	<ul style="list-style-type: none"> • ACT/SESS—LU is bound and in session. • P-ACTLU—Telnet connects in and is waiting for ACTLU. • P-NTF/AV—Awaiting host notify-available response. • P-NTF/UA—Awaiting host notify-unavailable response. • P-RESET—Awaiting a buffer to send Deactivate LU (DACTLU) response. • P-PSID—Awaiting NMVT Reply PSID response. • P-BIND—Waiting for host to send bind. • P-UNBIND—Awaiting host unbind response. • WT-UNBND—Waiting for client to acknowledge disconnection. • WT-SDT—Waiting for client to acknowledge SDT.
model	IBM 3278 model type of client; blank if Static LU.
frames in	Number of frames sent inbound to the host.
frames out	Number of frames sent outbound from the host.
idle for	Time the client has been idle. The time is in HH:MM:SS.
pu is	Name of the PU.
lu is	Whether LU is DYNAMIC or STATIC.
negotiated	Whether client is TN3270 or TN3270E.
bytes in/out	Total number of bytes sent to and received from the host.
RuSize in/out	Request/response unit (RU) size as configured in the bind.
NegRsp in/out	Number of Systems Network Architecture (SNA) negative responses sent to and received from the host.
pacing window in/out	SNA pacing window as configured in the bind.
credits in	Number of frames that can be sent inbound without requiring an isolated pacing response.
queue size in	Indicates the number of SNA frames waiting to be sent to the host that are blocked and are waiting for a pacing response.
queue-size out	SNA frames not yet acknowledged by an isolated pacing response by the TN3270 server.

Related Commands

Command	Description
client ip lu	Defines a specific LU or range of LUs to a client at the IP address or subnet.

show extended channel tn3270-server client-name

To display information about all connected clients with a specific machine name, use the **show extended channel tn3270-server client-name** command in user EXEC or privileged EXEC mode.

show extended channel *slot*/*virtual-channel* tn3270-server client-name *name*

Syntax Description	slot	Specifies a particular Cisco Mainframe Channel Connection (CMCC) adapter in the router where the <i>slot</i> argument is the slot number.
	<i>virtual-channel</i>	Virtual channel number.
	<i>name</i>	Specifies the client machine name. This name is specified originally in the client pool command.

Defaults No default behavior or values

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	12.1(5)T	This command was introduced.

Usage Guidelines There is not a **no** form for this command.

Examples The following is sample output from the **show extended channel tn3270-server client-name** command:

```
Router# show extended channel 4/2 tn3270-server client-name dhcp-rtp-34-40.cisco.com
```

Note: if state is ACT/NA then the client is disconnected

```
lu   name   client-name           nail state   model   frames in out   idle for
6           dhcp-rtp-34-40.cisco. N   P-ACTLU  3278S2E  1       0       0:1:59
```

```
pu is T240CA, lu is DYNAMIC unbound, negotiated TN3270E
bytes 101 in, 0 out; RuSize 256 in, 256 out; NegRsp 0 in, 0 out
pacing window 0 in, 0 out; credits 0 in, queue-size 0 in, 0 out
response time buckets 0 0 0 0 0
average total response time 0 average IP response time 0
number of transactions 0
```

Note: if state is ACT/NA then the client is disconnected

```
lu   name   client-name           nail state   model   frames in out   idle for
7   T240DA07 dhcp-rtp-34-40.cisco. N   P-BIND   3278S2E  4       3       0:1:32
```

```
pu is T240CA, lu is DYNAMIC unbound, negotiated TN3270E
bytes 199 in, 407 out; RuSize 256 in, 256 out; NegRsp 0 in, 0 out
pacing window 0 in, 0 out; credits 0 in, queue-size 0 in, 0 out
response time buckets 0 0 0 0 0
average total response time 0 average IP response time 0
number of transactions 0
```

Total 2 clients found using dhcp-rtp-34-40.cisco.com

Table 40 describes the significant fields in the display.

Table 40 show extended channel tn3270-server client-name Field Descriptions

Field	Description
lu	Local address of the logical unit (LU).
name	If the physical unit (PU) is directly connected, then the name shown is the one generated by the seed. If LU, then only the unqualified portion is shown. The network entity title (NET) ID portion will be the same as the current Dependent Logical Unit Server (DLUS)
client-name	Client's machine name.
nail	Status of LU nailing, either Y or N.
state	LU state values and their meanings are: <ul style="list-style-type: none"> • UNKNOWN—LU in an undefined state. • INACTIVE—LU did not receive activate logical unit (ACTLU). • ACT/NA—LU received ACTLU and acknowledged positively. • P-SDT—LU is bound but there is no Structured Data Transfer (SDT) yet. • ACT/SESS—LU is bound and in session. • P-ACTLU—Telnet connects in and is waiting for ACTLU. • P-NTF/AV—Awaiting host notify-available response. • P-NTF/UA—Awaiting host notify-unavailable response. • P-RESET—Awaiting a buffer to send Deactivate LU (DACTLU) response. • P-PSID—Awaiting NMVT Reply PSID response. • P-BIND—Waiting for host to send bind. • P-UNBIND—Awaiting host unbind response. • WT-UNBND—Waiting for client to acknowledge disconnection. • WT-SDT—Waiting for client to acknowledge SDT.
model	IBM 3278 model type of client; blank if Static LU.
frames in	Number of frames sent inbound to the host.
frames out	Number of frames sent outbound from the host.
idle for	Time the client has been idle. The time is in HH:MM:SS.
pu is	Name of the PU.
lu is	Whether LU is DYNAMIC or STATIC.
negotiated	Whether client is TN3270 or TN3270E.
bytes in/out	Total number of bytes sent to and received from the host.
RuSize in/out	Request/response unit (RU) size as configured in the bind.
NegRsp in/out	Number of Systems Network Architecture (SNA) negative responses sent to and received from the host.

Table 40 *show extended channel tn3270-server client-name Field Descriptions (continued)*

Field	Description
pacing window in/out	SNA pacing window as configured in the bind.
credits in	Number of frames that can be sent inbound without requiring an isolated pacing response.
queue size in	Indicates the number of SNA frames waiting to be sent to the host that are blocked and are waiting for a pacing response.
response time buckets	Number of transactions in each response-time “bucket” for the specified LU. The bucket boundaries are defined using the response-time group command.
average total response time	Average response time (in tenths of seconds) for the total number of response-time transactions.
average IP response time	Average IP transit response time (in tenths of seconds) for the total number of response-time transactions.
number of transactions	Total number of response-time transactions across all response-time buckets.

show extended channel tn3270-server dlur

To display information about the Systems Network Architecture (SNA) session switch, use the **show extended channel tn3270-server dlur** command in user EXEC or privileged EXEC mode.

show extended channel *slot/port* tn3270-server dlur

Syntax Description	<i>slot</i>	Slot number.
	<i>port</i>	Port number.

Command Modes	User EXEC Privileged EXEC
---------------	------------------------------

Command History	Release	Modification
	11.2	This command was introduced.

Usage Guidelines The **show extended channel tn3270-server dlur** command is valid only on the virtual channel interface.

Examples The following is sample output from the **show extended channel tn3270-server dlur** command:

```
Router# show extended channel 3/2 tn3270-server dlur

dlur MPX.GOANCP
current dlus MPX.NGMVMPC          dlur-dlus status ACTIVE
preferred dlus MPX.NGMVMPC        backup dlus MPX.NGMVMPB
preferred server MPX.NGMVMPA
lsap token-adapter 0 5C          vrn MPX.LAN4          status ACTIVE
link P390                    remote 4000.7470.00e7 08 status ACTIVE
```

[Table 41](#) describes the significant fields in the display.

Table 41 *show extended channel tn3270-server dlur* Field Descriptions

Field	Description
dlur	Fully qualified control point (CP) name used by the SNA session switch and the logical unit (LU) name for the Dependent Logical Unit Requestor (DLUR) function configured as the fully qualified CP named on the dlur statement.
current dlus	Name of the active Dependent Logical Unit Server (DLUS), either the primary DLUS or the backup DLUS.

Table 41 *show extended channel tn3270-server dlur Field Descriptions (continued)*

Field	Description
dlur-dlus status	Values for the status of the DLUR-DLUS pipe and their meanings are: <ul style="list-style-type: none"> • RESET—The pipe is reset. • PND-ACTV—The pipe is pending active. • ACTIVE—The pipe is active. • PND-INAC—The pipe is pending inactive. • OTHER—Status is an undefined value. • WAIT—Waiting for status from the Cisco Mainframe Channel Connection (CMCC) adapter. • SHUT—The TN3270 server is shut down. • NOTKNOWN—Status cannot be obtained.
preferred dlus	Name of the DLUS as configured on the DLUR statement.
backup dlus	Name of the DLUS that is used if the preferred DLUS is unavailable.
preferred server	Fully qualified name of the preferred network node server.
lsap	Configured value for the local service access point (SAP) on the configured internal adapter. Token-adapter specifies the type of internal adapter used.
vrn	Name of the connection network as configured by the vrn statement for this Link Service Access Point (LSAP) and internal adapter pair.
lsap...status	LSAP values and their meanings are: <ul style="list-style-type: none"> • ACTIVE—The SAP is open. • INACTIVE—Not connected to the adapter. • PDN-ACTV—SAP activation in progress. • PND-INAC—SAP deactivation in progress. • OTHER—Status is an undefined value. • WAIT—Waiting for status from the CMCC adapter. • SHUT—The TN3270 server is shut down. • NOTKNOWN—Status cannot be obtained.
link	Name of the configured link. If not a configured link, then the name is an invented name, @DLUR

Table 41 *show extended channel tn3270-server dlur Field Descriptions (continued)*

Field	Description
remote	Remote MAC and SAP for this link.
link status	Values and their meanings are: <ul style="list-style-type: none"> • ACTIVE—Link is active. • INACTIVE—Not connected to host. • PND-ACTV—Link activation in progress. • PND-INAC—Link deactivation in progress. • OTHER—Status is an undefined value. • WAIT—Waiting for status from the CMCC adapter. • SHUT—The TN3270 server is shut down. • NOTKNOWN—Status cannot be obtained.

show extended channel tn3270-server dlurlink

To display information about the Dependent Logical Unit Requestor (DLUR) components, use the **show extended channel tn3270-server dlurlink** command in user EXEC or privileged EXEC mode.

show extended channel *slot/port* tn3270-server dlurlink *name*

Syntax Description

<i>slot</i>	Specifies a particular Cisco Mainframe Channel Connection (CMCC) adapter in the router where the <i>slot</i> argument is the slot number.
<i>port</i>	Port number.
<i>name</i>	Name of the Systems Network Architecture (SNA) session switch link to be displayed.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
11.2	This command was introduced.

Usage Guidelines

The **show extended channel tn3270-server dlurlink** command is valid only on the virtual channel interface.

Examples

The following is sample output from the **show extended channel tn3270-server dlurlink** command:

```
Router# show extended channel 3/2 tn3270-server dlurlink P390

lsap token-adapter 0 5C   vrn MPX.LAN4           status ACTIVE
link P390                remote 4000.7470.00e7 08 status ACTIVE
partner MPX.NGMVMPC      tgn 1                  maxdata 1033
```

Table 42 describes the significant fields in the display.

Table 42 show extended channel tn3270-server dlurlink Field Descriptions

Field	Description
lsap vrn status	Values and their meanings are: <ul style="list-style-type: none"> • ACTIVE—The service access point (SAP) is open. • INACTIVE—Not connected to the adapter. • PDN-ACTV—SAP activation in progress. • PND-INAC—SAP deactivation in progress. • OTHER—Status is an undefined value. • WAIT—Waiting for status from the CMCC adapter. • SHUT—The TN3270 server is shut down. • NOTKNOWN—Status cannot be obtained.
link	Name is an invented name, @DLURnn, if not a configured link.
link status	Values and their meanings are: <ul style="list-style-type: none"> • ACTIVE—The SAP is open. • INACTIVE—Not connected to the adapter. • PDN-ACTV—SAP activation in progress. • PND-INAC—SAP deactivation in progress. • OTHER—Status is an undefined value. • WAIT—Waiting for status from the CMCC adapter. • SHUT—The TN3270 server is shut down. • NOTKNOWN—Status cannot be obtained.
partner	Control point (CP) name of the remote node for this link.
tgn	Transmission group (TG) number for this link. Because the SNA session switch supports only one TG per pair of CP names, it is typically 0 or 1.
maxdata	Maximum frame size allowed on this link.

Related Commands

Command	Description
client pool	Nails clients to pools.

show extended channel tn3270-server nailed-domain

To list all nailing statements with a specific nailed-domain name, use the **show extended channel tn3270-server nailed-domain** command in user EXEC or privileged EXEC mode.

show extended channel *slot/virtual-channel* **tn3270-server nailed-domain** *name*

Syntax Description	slot	Specifies a particular Cisco Mainframe Channel Connection (CMCC) adapter in the router where the <i>slot</i> argument is the slot number.
	<i>virtual-channel</i>	Virtual channel number.
	<i>name</i>	Specifies the <i>exact</i> nailed-domain name, as specified originally in the client pool command. Output is displayed for the nailed-domain name <i>exactly</i> as specified. That is, specifying “cisco.com” is different from specifying “.cisco.com.”

Defaults No default behavior or values

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	12.1(5)T	This command was introduced.

Usage Guidelines There is not a **no** form for this command.

Examples The following is sample output from the **show extended channel tn3270-server nailed-domain** command:

```
Router# show extended channel 1/2 tn3270-server nailed-domain .cisco.com
.CISCO.COM listen-point 172.18.4.18 pool PCPOOL
```

[Table 43](#) describes the significant fields in the display.

Table 43 *show extended channel tn3270-server nailed-domain Field Descriptions*

Field	Description
.CISCO.COM	Nailed domain name.
listen point	Listen point IP address under which the client pool command was configured.
pool	Pool name to which the client is nailed.

show extended channel tn3270-server nailed-ip

To display mappings between a nailed client IP address and nailed logical unit (LU)s, use the **show extended channel tn3270-server nailed-ip** command in user EXEC or privileged EXEC mode.

show extended channel *slot/port tn3270-server nailed-ip ip-address*

Syntax Description	slot	Slot number.
	<i>port</i>	Port number.
	<i>ip-address</i>	Remote client IP address.

Command Modes	User EXEC Privileged EXEC
---------------	------------------------------

Command History	Release	Modification
	12.0	This command was introduced.

Usage Guidelines The **show extended channel tn3270-server nailed-ip** command is valid only on the virtual channel interface.

Examples The following is sample output from the **show extended channel tn3270-server nailed-ip** command:

```
Router# show extended channel 3/2 tn3270-server nailed-ip 172.28.0.0

172.28.1.0 255.255.255.192 pu BAGE1 lu 1 50
172.28.1.80 255.255.255.248 pu BAGE2 lu 100 200 printer
172.28.1.83 pu BAGE3 lu 1 60 printer
172.28.1.82 pu BAGE1 lu 100 200
```

[Table 44](#) describes the significant fields in the display.

Table 44 *show extended channel tn3270-server nailed-ip Field Descriptions*

Field	Description
172.28.1.0	IP address of the nailed client.
255.255.255.192	Network mask for the range of configured nailed clients.
pu BAGE1	PU name under which the client command was configured.

Table 44 *show extended channel tn3270-server nailed-ip Field Descriptions (continued)*

Field	Description
lu 1 50	LU local address range showing the first local address and last local address. There need not be a last local address if only a single local address rather than a range is configured.
printer	Type of device being nailed to the local addresss. If printer is specified, only clients that are printers are nailed to the local addresss. If screen is specified, only clients that are screens are nailed to the local addresss. If neither is specified, both screens and printers can use the local addresss. A printer client is any client with a device type of "328*". A screen client is a client with any other device type.

show extended channel tn3270-server nailed-name

To list all nailing statements with a specific nailed machine name, use the **show extended channel tn3270-server nailed-name** command in user EXEC or privileged EXEC mode.

show extended channel *slot/virtual-channel* **tn3270-server nailed-name** *name*

Syntax Description	slot	Specifies a particular Cisco Mainframe Channel Connection (CMCC) adapter in the router where the <i>slot</i> argument is the slot number.
	<i>virtual-channel</i>	Virtual channel number.
	<i>name</i>	Specifies the nailed machine name. This name is specified originally in the client pool command.

Defaults No default behavior or values

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	12.1(5)T	This command was introduced.

Examples The following is sample output from the **show extended channel tn3270-server nailed-name** command:

```
Router# show extended channel 1/2 tn3270-server nailed-name myclient.cisco.com

MYCLIENT.CISCO.COM    listen-point 172.18.4.18  pool PCPOOL
HISCLIENT.CISCO.COM  listen-point 172.18.4.18  pool UNIXPOOL
HERCLIENT.CISCO.COM  listen-point 172.18.4.19  pool GENERALPOOL
```

[Table 45](#) describes the significant fields in the display.

Table 45 *show extended channel tn3270-server nailed-name* Field Descriptions

Field	Description
MYCLIENT.CISCO.COM	Fully qualified domain name of nailed client.
listen point	Listen point IP address under which the client pool command was configured.
pool	Pool name to which the client is nailed.

show extended channel tn3270-server pu lu

To display information about the TN3270 server logical unit (LU)s running on the Cisco Mainframe Channel Connection (CMCC) adapter interface, use the **show extended channel tn3270-server pu lu** command in user EXEC or privileged EXEC mode.

show extended channel *slot*/*port* tn3270-server pu *pu-name* lu *locaddr* [history]

Syntax Description	slot	Specifies a particular CMCC adapter in the router where the <i>slot</i> argument is the slot number. The port value for a TN3270 server will always be 2.
	<i>port</i>	Port value for a TN3270 server will always be 2.
	<i>pu-name</i>	Physical unit (PU) name that uniquely identifies this PU.
	<i>locaddr</i>	Logical unit (LU) local address that uniquely identifies the LU.
	history	(Optional) Displays the LU trace history.

Defaults No default behavior or values

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	11.2	This command was introduced.
	11.2(2.1)	ACT/NA replaced ACTIVE status for LU states. A note was added to the output to describe its meaning.
	11.2(18)BC	The response time buckets, average total response time, average IP response time, and the number of transactions fields were added to the output display.

Usage Guidelines The **show extended channel tn3270-server pu lu** command is valid only on the virtual channel interface.

Examples The following is sample output from the **show extended channel tn3270-server pu lu** command for a Systems Network Architecture (SNA) session switch PU:

```
Router# show extended channel 3/2 tn3270 pu int1 lu 1
```

Note: if state is ACT/NA then the client is disconnected

```
lu  name  client-ip:tcp      nail state      model  frames in out  idle for
1  GOAN1X01 10.69.176.77:3828    N   ACT/NA        4      4      0:4:51
```

```
pu is INT1, lu is STATIC type 0, negotiated TN3270E
bytes 74 in, 1219 out; RuSize 0 in, 0 out; NegRsp 0 in, 0 out
pacing window 0 in, 0 out; credits 0 in, queue-size 0 in, 0 out
```

The following is sample output from the **show extended channel tn3270-server pu lu history** command:

```
Router# show extended channel 3/2 tn3270 pu pus20 lu 1 history
```

Note: if state is ACT/NA then the client is disconnected

```
lu   name   client-ip:tcp      nail  state   model  frames in out  idle for
1   PUS20001 10.195.80.40:2480  N    ACT/SESS 327804  5      4      0:0:8
```

pu is PUS20, lu is DYNAMIC type 2, negotiated TN3270

bytes 155 in, 1752 out; RuSize 1024 in, 3840 out; NegRsp 0 in, 0 out> pacing window 0 in, 1 out; credits 0 in, queue-size 0 in, 0 out

traces:

```
Client connect req
Reply PSID pos rsp
actlu req
bind req
sdt req
OUT len=12  2Dxxxxxxxx456B80000D0201
IN  len=25  xxxxxxxxxxx45EB80000D0201000000
OUT len=53  2Dxxxxxxxx466B800031010303B1
IN  len=10  2D0001010646EB800031
OUT len=10  2D00010106476B8000A0
IN  len=10  2D0001010647EB8000A0
OUT len=1677 2Cxxxxxxxx010381C07EC7114040
IN  len=9   2C0001010001838100
```

The following example shows the response-time information using the **show extended channel tn3270-server pu lu** command for the LU at local address 1 associated with the PU named vincdpu:

```
sydney# show extended channel 1/2 tn3270-server pu vincdpu lu 1
```

Note: if state is ACT/NA then the client is disconnected

```
lu   name   client-ip:tcp      nail  state   model  frames in out  idle for
1   VINDG001 10.44.100.210:1315 N    ACT/NA  3278S2E 12     11     0:0:18
```

pu is VINCDCPU, lu is DYNAMIC unbound, negotiated TN3270E

bytes 253 in, 954 out; RuSize 0 in, 0 out; NegRsp 1 in, 0 out

pacing window 0 in, 1 out; credits 0 in, queue-size 0 in, 0 out

response time buckets 14 31 15 3 1

average total response time 19 average IP response time 8

number of transactions 64

Table 46 describes the significant fields in the display.

Table 46 show extended channel tn3270-server pu lu Field Descriptions

Field	Description
lu	Local address of the LU.
name	Name of the TN3270 LU.
client-ip:tcp	Client's IP address and TCP port number.

Table 46 show extended channel tn3270-server pu lu Field Descriptions (continued)

Field	Description
state	<p>LU state values and their meanings are:</p> <ul style="list-style-type: none"> • UNKNOWN—LU in an undefined state. • INACTIVE—LU did not receive activate logical unit (ACTLU). • ACT/NA—LU received ACTLU and acknowledged positively. If a client IP address is shown, then the client is disconnected. • P-SDT—LU is bound but there is no Structured Data Transfer (SDT) yet. • ACT/SESS—LU is bound and in session. • P-ACTLU—Telnet connects in and is awaiting ACTLU. • P-NTF/AV—Awaiting host notify-available response. • P-NTF/UA—Awaiting host notify-unavailable response. • P-RESET—Waiting for a buffer to send Deactivate LU (DACTLU) response. • P-PSID—Waiting for NMVT Reply PSID response. • P-BIND—Waiting for host to send bind. • P-UNBIND—Awaiting host unbind response. • WT-UNBND—Waiting for client to acknowledge disconnection. • WT-SDT—Waiting for client to acknowledge SDT.
model	IBM 3278 model type of client; blank if Static LU.
frames in	Number of frames sent inbound to the host.
frames out	Number of frames sent outbound from the host.
idle for	Time the client has been idle. The time is in HH:MM:SS.
pu is	Name of the PU.
lu is	Whether LU is DYNAMIC or STATIC.
negotiated	Whether client is TN3270 or TN3270E.
bytes in/out	Total number of bytes sent to or received from the host.
RuSize in/out	Request/response unit (RU) size as configured in the bind.
NegRsp in/out	Number of Systems Network Architecture (SNA) negative responses sent to or received from the host.
pacing window in/out	SNA pacing window as configured in the bind.
credits in	Number of frames that can be sent inbound without requiring an isolated pacing response.
queue-size in	If nonzero, indicates the number of SNA frames waiting to be sent to the host that are blocked, waiting for a pacing response.
queue-size out	SNA frames not yet acknowledged by an isolated pacing response by the TN3270 server.

Table 46 show extended channel tn3270-server pu lu Field Descriptions (continued)

Field	Description
response time buckets	Displays the number of transactions in each response-time “bucket” for the specified LU. The bucket boundaries are defined using the response-time group command.
average total response time	Average response time (in tenths of seconds) for the total number of response-time transactions.
average IP response time	Average response time in tenths of seconds (including IP transit time) for the total number of response-time transactions.
number of transactions	Total number of response-time transactions across all response-time buckets.

Related Commands

Command	Description
pu (listen-point)	Creates a PU entity that has a direct link to a host and enters listen-point PU configuration mode.
pu dlur (listen-point)	Creates a PU entity that has no direct link to a host and enters listen-point PU configuration mode.
response-time group	Configures a client subnet group for response-time measurements.

show extended channel tn3270-server pu

To display configuration parameters for a physical unit (PU) and all the logical unit (LU)s attached to the PU, including the logical unit (LU) cluster layout and pool name, use the **show extended channel tn3270-server pu** command in user EXEC or privileged EXEC mode.

```
show extended channel slot/virtual-channel tn3270-server pu pu-name [cluster | client-name]
```

Syntax Description

<i>slot</i>	Specifies a particular Cisco Mainframe Channel Connection (CMCC) adapter in the router where the <i>slot</i> argument is the slot number.
<i>virtual-channel</i>	Virtual channel number.
<i>pu-name</i>	Name that uniquely identifies this PU.
cluster	(Optional) Displays cluster information for the LUs within the pool.
client-name	(Optional) Displays client name information for the LUs within the pool.

Defaults

No default behavior or values

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
11.2	This command was introduced.
11.2(2.1)	ACT/NA replaced ACTIVE status for logical unit (LU) states. A note was added to the output to describe its meaning.
11.2(18)BC	The cluster keyword was added.
12.0(5)T	The following fields were added to the output display: <ul style="list-style-type: none"> lu-termination lu-deletion
12.1(5)T	The client-name keyword was added.
12.2	The named value was added for the lu-deletion field in the output display.

Usage Guidelines

The **show extended channel tn3270-server pu** command is valid only on the virtual channel interface. The display shown depends on whether the PU is a direct PU or a Systems Network Architecture (SNA) session switch PU.

The output from the **show extended channel tn3270-server pu** command varies based on use of the optional **cluster** keyword. Without the **cluster** keyword, the output column headings for the LU information appear as “model,” “frames in out,” and “idle for.”

When you use the **cluster** keyword, the output column headings for the LU information appear as “cluster,” “pool,” and “count.” The cluster heading lists the specific cluster within the pool to which the LU belongs, along with the specific cluster layout after the slash.

The pool heading identifies the corresponding pool name, and the count heading identifies the cluster number out of the total number of clusters in the pool.

There is not a **no** form for this command.

Examples

The following example shows a sample router configuration and the corresponding output using the **show extended channel tn3270-server pu** command:

```
interface Channel6/1
  no ip address
  no keepalive
  csna El60 40
!
interface Channel6/2
  ip address 172.18.4.17 255.255.255.248
  no keepalive
  lan TokenRing 15
    source-bridge 15 1 500
    adapter 15 4000.b0ca.0015
  lan TokenRing 16
    source-bridge 16 1 500
    adapter 16 4000.b0ca.0016
tn3270-server
  pool PCPOOL cluster layout 4s1p
  pool SIMPLE cluster layout 1a
  pool UNIXPOOL cluster layout 49s1p
  dlur NETA.SHEK NETA.MVSD
  lsap token-adapter 15 04
  link SHE1 rmac 4000.b0ca.0016
  listen-point 172.18.4.18 tcp-port 23
  pu PU1 91903315 dlur
    allocate lu 1 pool PCPOOL clusters 10
    allocate lu 51 pool UNIXPOOL clusters 2
    allocate lu 200 pool SIMPLE clusters 50
  listen-point 172.18.4.19 tcp-port 2023
  pu PU2 91913315 token-adapter 16 08
    allocate lu 1 pool UNIXPOOL clusters 2
    allocate lu 101 pool SIMPLE clusters 100
    allocate lu 201 pool PCPOOL clusters 10
```

The following sample output from the **show extended channel tn3270-server pu** command without the cluster keyword for a PU named PU1:

```
Router# show extended channel 6/2 tn3270-server pu pu1
```

```
name(index)   ip:tcp           xid  state   link  destination r-lsap
PU1(1)        172.18.4.18:23  91903315 ACTIVE dlur  NETA.SHPU1
```

```
idle-time 0 keepalive 1800 (send nop) unbind-act disconnect generic-poolperm
ip-preced-screen 0 ip-preced-printer 0 ip-tos-screen 0 ip-tos-printer 0
```

```
lu-termination unbind lu-deletion never
```

```
bytes 27019 in, 73751 out; frames 1144 in, 869 out; NegRsp 0 in, 0 out
```

```
actlus 5, dacltus 0, binds 5
```

```
Note: if state is ACT/NA then the client is disconnected
```

```
lu  name  client-ip:tcp  nail state  model  frames in out  idle for
1   SHED1001 10.44.100.162:1538 N  ACT/SESS 3278S2E 228 172 0:0:2
51  SHED1051 10.44.100.162:1539 N  ACT/SESS 3278S2E 240 181 0:0:2
151 SHED1151 10.44.100.162:1536 N  ACT/SESS 327802E 212 160 0:0:5
152 SHED1152 10.44.100.162:1537 N  ACT/SESS 3278S2E 220 166 0:0:4
200 SHED1200 10.44.100.162:1557 N  ACT/SESS 3278S2E 244 184 0:0:2
```

The following is sample output from the **show extended channel tn3270-server pu** command with the cluster keyword for a PU named PU1. In the example, 1/1a identifies cluster 1 with a layout of 1a, which contains one LU of any type.

```
Router# show extended channel 6/2 tn3270-server pu pu1 cluster

name(index)  ip:tcp          xid  state  link  destination  r-lsap
PU1(1)       172.18.4.18:23  91903315 ACTIVE  dlur  NETA.SHPU1

idle-time 0  keepalive 1800 (send nop)  unbind-act discon  generic-poolperm
ip-preced-screen 0  ip-preced-printer 0  ip-tos-screen 0  ip-tos-printer 0
lu-termination unbind lu-deletion never
bytes 27489 in, 74761 out; frames 1164 in, 884 out; NegRsp 0 in, 0 out
actlus 5, dacltus 0, binds 5
Note: if state is ACT/NA then the client is disconnected

lu  name  client-ip:tcp  nail state  cluster  pool  count
1  SHED1001  10.44.100.162:1538  N  ACT/SESS 1/4s1p  PCPOOL  1/5
51  SHED1051  10.44.100.162:1539  N  ACT/SESS 1/49s1p  UNIXPOOL 1/50
151  SHED1151  10.44.100.162:1536  N  ACT/SESS 1/1a  :GENERIC 1/1
152  SHED1152  10.44.100.162:1537  N  ACT/SESS 1/1a  :GENERIC 1/1
200  SHED1200  10.44.100.162:1557  N  ACT/SESS 1/1a  SIMPLE 1/1
```



Note

If the cluster layout is very long, only the first eight bytes are displayed under the cluster column. The pool called: GENERIC is shown for all LUs that are not allocated to any specific pool name.

The following is sample output from the **show extended channel tn3270-server pu** command with the **client-name** keyword for a PU named JADOEPU:

```
Router# show extended channel 1/2 tn3270-server pu jadoepu client-name

name(index)  ip:tcp          xid  state  link  destination  r-lsap
JADOEPU(1)   172.18.5.168:23  91922362 ACTIVE  tok 31 4000.4000.0001 04 10

idle-time 0  keepalive 30  unbind-act discon  generic-pool perm
ip-preced-screen 0  ip-preced-printer 0  ip-tos-screen 0  ip-tos-printer 0
lu-termination unbind lu-deletion never
bytes 824 in, 2619 out; frames 36 in, 39 out; NegRsp 0 in, 0 out
actlus 4, dacltus 0, binds 3
Note: if state is ACT/NA then the client is disconnected

lu  name  client-name  nail state  model frames in out  idle for
1  VINCDP01  never connected  Y  ACT/NA  1  1  2:31:43
2  VINCDP02  never connected  Y  ACT/NA  1  1  2:31:43
5  VINDG005  HERCLIENT.CISCO.COM  Y  ACT/SESS 327904E 22  21  0:0:6
6  VINDG006  HISCLIENT.CISCO.COM  Y  ACT/NA  327904E 12  12  1:44:47

client-ip  mask  nail-type  lu-first  lu-last
10.20.30.40  screen  1  2
20.30.40.50  screen  9  10

client-name  nail-type  lu-first  lu-last
MYCLIENT.CISCO.COM  screen  5  10
.CISCO.COM  screen  11  15
```

Table 47 describes the significant fields in the display.

Table 47 show extended channel tn3270-server pu Field Descriptions

Field	Description
name (index)	Name and index of the PU as configured.
ip:tcp	IP address and TCP port number configured for the PU.
xid	Configured XID—idblk and idnum.
state	<p>pu-state values and their meaning are:</p> <ul style="list-style-type: none"> • SHUT—PU is configured but in shut state. • RESET—Link station of this PU is not active. • TEST—PU is sending a TEST to establish link. • XID—TEST is responded, exchange identification (XID) is sent. • P-ACTPU—Link station is up but no Activate Physical Unit (ACTPU) is received. • ACTIVE—ACTPU is received and acknowledged positively. • ACT/BUSY—Awaiting host to acknowledge the system services control points (SSCP)-PU data. • WAIT—Waiting for PU status from CMCC adapter. • UNKNOWN—Direct PU in undefined state. • P-RQACTPU-R—PU is pending request ACTPU response. • P-ACTIVE—Dependent Logical Unit Requestor (DLUR) PU and direct PU states disagree. • P-DACTPU—PU is pending Deactivate Physical Unit (DACTPU). • OTHER—State is an undefined value.
link	LINK type is either internal adapter type and internal adapter number, or dlur if it is an SNA Session Switch PU.
destination	If a direct PU, then it is the destination MAC address; otherwise, it is the name of the partner PU.
r-lsap	Remote and local service access point (SAP) values.
idle-time	Configured idle time for this PU.
keepalive	<p>Configured keepalive time for this PU. The <i>action</i> is one of the following:</p> <ul style="list-style-type: none"> • send nop—The Telnet command for no operation is sent to the TN3270 client to verify the physical connection. • send timing mark number—Number of seconds within which the TN3270 server expects a response to the DO TIMING-MARK from the TN3270 client.
unbind-act	Configured unbind action for LUs on this PU.
generic-pool	Configured generic pool for LUs on this PU.
ip-preced-screen	IP precedence value for screen LUs on this PU.
ip-preced-printer	IP precedence value for printer LUs on this PU.

Table 47 show extended channel tn3270-server pu Field Descriptions (continued)

Field	Description
ip-tos-screen <i>number</i>	IP type of service (ToS) value for screen LUs on this PU.
ip-tos-printer <i>number</i>	IP ToS value for printer LUs on this PU.
lu-termination	Value configured in the PU for the lu termination siftdown command. The lu termination command specifies whether a TERMSELF or UNBIND request/response unit (RU) is sent by the TN3270 server when a client turns off the device or disconnects. The values are: <ul style="list-style-type: none"> • termself—Termination of all sessions and session requests associated with an LU is ordered upon disconnect. • unbind—Termination of the session by the application is requested upon LU disconnect.
lu-deletion	Value configured in the PU for the lu deletion siftdown command. The lu deletion command specifies whether the TN3270 server sends a REPLY-PSID poweroff request to virtual telecommunications access method (VTAM) to delete the corresponding LU when a client disconnects. The values are: <ul style="list-style-type: none"> • always—Dynamic LUs for this PU are always deleted upon disconnect. • named—Only named LUs for this PU are deleted upon disconnect. • normal—Only screen LUs for this PU are deleted upon disconnect. • non-generic—Only specified LUs for this PU are deleted upon disconnect. • never—None of the LUs for this PU are ever deleted upon disconnect.
bytes in/out	Total number of bytes sent to or received from the host for this PU.
frames in/out	Total number of frames sent to or received from the host for this PU.
NegRsp in/out	Total number of SNA negative responses sent to or received from the host.
actlus	Total number of ACTLUs received from the host.
dactlus	Total number of DACTLUs received from the host.
binds	Total number of BINDs received from the host.
lu	Local address of the LU.
name	Name of the TN3270 LU.
client-name	Client's IP address and TCP port number.
nail	Status of LU nailing, either Y or N

Table 47 show extended channel tn3270-server pu Field Descriptions (continued)

Field	Description
state	<p>LU state values and their meanings:</p> <ul style="list-style-type: none"> • UNKNOWN—LU in an undefined state. • INACTIVE—LU did not receive activate logical unit (ACTLU). • ACT/NA—LU received ACTLU and acknowledged positively. If a client IP address is shown, then the client is disconnected. • P-SDT—LU is bound but there is no Structured Data Transfer (SDT) yet. • ACT/SESS—LU is bound and in session. • P-ACTLU—Telnet has connected and is awaiting ACTLU. • P-NTF/av—Awaiting host notify-available response. • P-NTF/UA—Awaiting host notify-unavailable response. • P-RESET—Waiting for a buffer to send Deactivate LU (DACTLU) response. • P-PSID—Waiting for NMVT Reply psid response. • P-BIND—Waiting for host to send bind. • P-UNBIND—Awaiting host unbind response. • WT-UNBND—Waiting for client to acknowledge disconnection. • WT-SDT—Waiting for client to acknowledge SDT.
model	IBM 3278 model type of client.
frames in	Number of frames sent inbound to the host.
frames out	Number of frames sent outbound from the host.
idle for	Time the client has been idle. The time is in HH:MM:SS.
client-ip	Remote client IP address.
mask	Current network mask.
nail-type	LU nailing type, screen or printer.
lu-first	First LU address in the range.
lu-last	Last LU address in the range, if one is specified in the client configuration command.
client-name	Client machine name or domain name.
nail-type	LU nailing type, screen or printer.
lu-first	First LU address in the range.
lu-last	Last LU address in the range, if one is specified in the client configuration command.

Related Commands

Command	Description
pu (listen-point)	Creates a PU entity that has a direct link to a host and enters listen-point PU configuration mode.
pu dlur (listen-point)	Creates a PU entity that has no direct link to a host and enters listen-point PU configuration mode.
allocate lu	Assigns LUs to a pool.

show extended channel tn3270-server response-time application

To display information for application client groups, use the **show extended channel tn3270-server response-time application** command in privileged EXEC mode.

```
show extended channel slot/virtual-channel tn3270-server response-time application
[appl-name [detail]]
```

Syntax Description	slot	Slot number.
	<i>virtual-channel</i>	Virtual channel number.
	<i>appl-name</i>	(Optional) Display only the client group corresponding to the virtual telecommunications access method (VTAM) application name.
	detail	(Optional) List client members and their response-time statistics following the client group entry.

Defaults No default behavior or values

Command Modes Privileged EXEC

Command History	Release	Modification
	11.2(18)BC	This command was introduced.

Usage Guidelines If optional keywords are not used for the **show extended channel tn3270-server response-time application** command, a complete list of existing per-application client groups is displayed along with their collection control parameters. If you specify the *appl-name* argument, only the client group corresponding to that application is displayed. If you specify the **detail** keyword, the client group entry is followed by a list of its client members and their response-time statistics.

Examples The following is sample output from the **show extended channel tn3270-server response-time application** command:

```
Router# show extended channel 3/2 tn3270-server response-time application MYAPPL
group APPL MYAPPL
  aggregate NO excludeip NO dynamic definite response NO
  sample period multiplier 30
  bucket boundaries 10 20 50 100
```

Table 48 describes the significant fields in the display.



Note

The aggregate, excludeip, and dynamic definite response field values are MIB parameters that are configured automatically by the TN3270 server according to the type of response-time group. These values are not configurable in the TN3270 server.

Table 48 show extended channel tn3270-server response-time application Field Descriptions

Field	Description
aggregate	Displays whether the response time statistics for the clients in this response-time group are reported collectively for the group (YES) or individually by client (NO). This value is automatically set to NO by the TN3270 server for application client response-time groups.
excludeip	Displays whether the IP component (the client/server path) is included in the response time for any transaction (NO) or if only the Systems Network Architecture (SNA) component (the server/host path) is included in the response time for any transaction (YES). This value is automatically set to NO by the TN3270 server for application client response-time groups.
dynamic definite response	Displays whether the server adds a Definite Response request to the first-in-chain (FIC) reply in each transaction, to get a response from the client so that the IP component can be included in the response time. The value is automatically set to NO by the TN3270 server for all types of response-time groups.
sample period multiplier	Displays the number that is multiplied by an interval of 20 seconds to determine the collection interval for the response-time group. The multiplier value is defined using the response-time group command. For example, a sample period multiplier of 30 results in a collection interval of 600 seconds (30 x 20 seconds), or 10 minutes, for this client group.
response time buckets	Displays the number of transactions in each response-time “bucket” for the specified application group. The bucket boundaries are defined using the response-time group command.
average total response time	Displays the average response time (in tenths of seconds) for the total number of response-time transactions.
average IP response time	Displays the average response time in tenths of seconds (including IP transit time) for the total number of response-time transactions.
number of transactions	Displays the total number of response-time transactions across all response-time buckets.

Related Commands

Command	Description
response-time group	Configures a client subnet group for response-time measurements.
show extended channel tn3270-server response-time global	Displays information about the global response-time client group.

Command	Description
show extended channel tn3270-server response-time link	Displays information about host link response-time client groups.
show extended channel tn3270-server response-time listen-point	Displays information about listen point response-time client groups.
show extended channel tn3270-server response-time subnet	Displays information about Subnet response-time client groups.

show extended channel tn3270-server response-time global

To display collection control parameters for the global client group, use the **show extended channel tn3270-server response-time global** command in privileged EXEC mode.

show extended channel *slot/virtual-channel* tn3270-server response-time global

Syntax Description	slot	Slot number.
	<i>virtual-channel</i>	Virtual channel number.

Defaults No default behavior or values

Command Modes Privileged EXEC

Command History	Release	Modification
	11.2(18)BC	This command was introduced.

Usage Guidelines The **show extended channel tn3270-server response-time global** command displays collection control parameters for the global client group.

Examples The following is sample output from the **show extended channel tn3270-server response-time global** command:

```
Router# show extended channel 3/2 tn3270-server response-time global

group CLIENT GLOBAL
 aggregate YES excludeip NO dynamic definite response NO
 sample period multiplier 30
 bucket boundaries 10 20 50 100
 buckets 105 118 211 109 104
 average total response time 33 average IP response time 24
 number of transactions 647
```

Table 49 describes the significant fields in the display.



Note

The aggregate, excludeip, and dynamic definite response field values are MIB parameters that are configured automatically by the TN3270 server according to the type of response-time group. These values are not configurable in the TN3270 server.

Table 49 *show extended channel tn3270-server response-time global Field Descriptions*

Field	Description
aggregate	Displays whether the response time statistics for the clients in this response-time group are reported collectively for the group (YES) or individually by client (NO). This value is automatically set to YES by the TN3270 server for global client response-time groups.
excludeip	Displays whether the IP component (the client/server path) is included in the response time for any transaction (NO) or if only the Systems Network Architecture (SNA) component (the server/host path) is included in the response time for any transaction (YES). This value is automatically set to NO by the TN3270 server for global client response-time groups.
dynamic definite response	Displays whether the server adds a Definite Response request to the first-in-chain (FIC) reply in each transaction, to get a response from the client so that the IP component can be included in the response time. The value is automatically set to NO by the TN3270 server for all types of response-time groups.
sample period multiplier	Displays the number that is multiplied by an interval of 20 seconds to determine the collection interval for the response-time group. The multiplier value is defined using the response-time group command. For example, a sample period multiplier of 30 results in a collection interval of 600 seconds (30 x 20 seconds), or 10 minutes, for this client group.
bucket boundaries	Displays the value of the response-time bucket boundaries in tenths of seconds. The bucket boundaries are defined using the response-time group command.
buckets	Displays the number of transactions in each response-time bucket for the specified application group.
average total response time	Displays the average response time (in tenths of seconds) for the total number of response-time transactions.
average IP response time	Displays the average response time in tenths of seconds (including IP transit time) for the total number of response-time transactions.
number of transactions	Displays the total number of response-time transactions across all response-time buckets.

Related Commands

Command	Description
response-time group	Configures a client subnet group for response-time measurements.
show extended channel tn3270-server response-time application	Displays information about application response-time client groups.
show extended channel tn3270-server response-time link	Displays information about host link response-time client groups.
show extended channel tn3270-server response-time listen-point	Displays information about listen point response-time client groups.
show extended channel tn3270-server response-time subnet	Displays information about Subnet response-time client groups.

show extended channel tn3270-server response-time link

To display information about host link client groups, use the **show extended channel tn3270-server response-time link** command in privileged EXEC mode.

show extended channel *slot/virtual-channel* **tn3270-server response-time link** [*link-name*]

Syntax Description	
<i>slot</i>	Slot number.
<i>virtual-channel</i>	Port number.
<i>link-name</i>	(Optional) physical unit (PU) name for a direct PU or link name for a Dependent Logical Unit Requestor (DLUR) PU.

Defaults No default behavior or values

Command Modes Privileged EXEC

Command History	Release	Modification
	11.2(18)BC	This command was first introduced.

Usage Guidelines This command displays information clients groups by host link. If no optional arguments are specified, a complete list of existing client groups by host link is displayed along with their collection control parameters and aggregate response-time statistics. If a value for the *link-name* argument is specified, only the client group corresponding to that link is displayed.

Examples The following is sample output from the **show extended channel tn3270-server response-time link** command without optional arguments. It shows all client groups by host link:

```
Router# show extended channel 3/2 tn3270-server response-time link

group DIRECT LINK MYLINK
  aggregate YES excludeip YES dynamic definite response NO
  sample period multiplier 30
  bucket boundaries 10 20 50 100
  buckets 10 18 21 10 10
  average total response time 37 average IP response time 23
  number of transactions 69
group DLUR LINK HISLINK
  aggregate YES excludeip YES dynamic definite response NO
  sample period multiplier 30
  bucket boundaries 10 20 50 100
  buckets 14 31 15 3 1
  average total response time 19 average IP response time 8
  number of transactions 64
```

The following is sample output from the **show extended channel tn3270-server response-time link** command for the link named Direct link mylink:

```
Router# show extended channel 3/2 tn3270-server response-time link direct link mylink

group DIRECT LINK MYLINK
  aggregate YES excludeip YES dynamic definite response NO
  sample period multiplier 30
  bucket boundaries 10 20 50 100
  buckets 10 18 21 10 10
  average total response time 37 average IP response time 23
  number of transactions 69
```

Table 50 describes the significant fields in the display.



Note

The aggregate, excludeip, and dynamic definite response field values are MIB parameters that are configured automatically by the TN3270 server according to the type of response-time group. These values are not configurable in the TN3270 server.

Table 50 show extended channel tn3270-server response-time link Field Descriptions

Field	Description
aggregate	Displays whether the response time statistics for the clients in this response-time group are reported collectively for the group (YES) or individually by client (NO). This value is automatically set to YES by the TN3270 server for link client response-time groups.
excludeip	Displays whether the IP component (the client/server path) is included in the response time for any transaction (NO) or if only the Systems Network Architecture (SNA) component (the server/host path) is included in the response time for any transaction (YES). This value is automatically set to YES by the TN3270 server for link client response-time groups.
dynamic definite response	Displays whether the server adds a Definite Response request to the first-in-chain (FIC) reply in each transaction, to get a response from the client so that the IP component can be included in the response time. The value is automatically set to NO by the TN3270 server for all types of response-time groups.
sample period multiplier	Displays the number that is multiplied by an interval of 20 seconds to determine the collection interval for the response-time group. The multiplier value is defined using the response-time group command. For example, a sample period multiplier of 30 results in a collection interval of 600 seconds (30 x 20 seconds), or 10 minutes, for this client group.
bucket boundaries	Displays the value of the response-time bucket boundaries in tenths of seconds. The bucket boundaries are defined using the response-time group command.
buckets	Displays the number of transactions in each response-time bucket for the specified application group.
average total response time	Displays the average response time (in tenths of seconds) for the total number of response-time transactions.

Table 50 *show extended channel tn3270-server response-time link Field Descriptions (continued)*

Field	Description
average IP response time	Displays the average response time in tenths of seconds (including IP transit time) for the total number of response-time transactions.
number of transactions	Displays the total number of response-time transactions across all response-time buckets.

Related Commands

Command	Description
response-time group	Configures a client subnet group for response-time measurements.
show extended channel tn3270-server response-time application	Displays information about application response-time client groups.
show extended channel tn3270-server response-time global	Displays information about the global response-time client group.
show extended channel tn3270-server response-time listen-point	Displays information about listen point response-time client groups.
show extended channel tn3270-server response-time subnet	Displays information about Subnet response-time client groups.

show extended channel tn3270-server response-time listen-point

To display information about listen-point client groups, use the **show extended channel tn3270-server response-time listen-point** command in privileged EXEC mode.

show extended channel *slot/virtual-channel* tn3270-server response-time listen-point

Syntax Description	slot	Slot number.
	<i>virtual-channel</i>	Virtual channel number.

Defaults No default behavior or values

Command Modes Privileged EXEC

CommandHistory	Release	Modification
	11.2(18)BC	This command was first introduced.

Usage Guidelines The **show extended channel tn3270-server response-time listen-point** command displays information about groups of clients summarized by listen point. A complete list of currently existing listen-point client groups is displayed along with their collection control parameters and aggregate response-time statistics.

Examples The following is sample output from the **show extended channel tn3270-server response-time listen-point** command:

```
Router# show extended channel 3/2 tn3270-server response-time listen-point

group LP 10.20.30.40:23
  aggregate YES excludeip NO dynamic definite response NO
  sample period multiplier 30
  bucket boundaries 10 20 50 100
  buckets 10 18 21 10 10
  average total response time 37 average IP response time 23
  number of transactions 69
group LP 50.60.70.80:23
  aggregate YES excludeip NO dynamic definite response NO
  sample period multiplier 30
  bucket boundaries 10 20 50 100
  buckets 310 418 521 510 210
  average total response time 27 average IP response time 20
  number of transactions 1969
```

Table 51 describes the significant fields in the display.



Note

The aggregate, excludeip, and dynamic definite response field values are MIB parameters that are configured automatically by the TN3270 server according to the type of response-time group. These values are not configurable in the TN3270 server.

Table 51 *show extended channel tn3270-server response-time listen-point Field Descriptions*

Field	Description
aggregate	Displays whether the response time statistics for the clients in this response-time group are reported collectively for the group (YES) or individually by client (NO). This value is automatically set to YES by the TN3270 server for link client response-time groups.
excludeip	Displays whether the IP component (the client/server path) is included in the response time for any transaction (NO) or if only the Systems Network Architecture (SNA) component (the server/host path) is included in the response time for any transaction (YES). This value is automatically set to NO by the TN3270 server for link client response-time groups.
dynamic definite response	Displays whether the server adds a Definite Response request to the first-in-chain (FIC) reply in each transaction, to get a response from the client so that the IP component can be included in the response time. The value is automatically set to NO by the TN3270 server for all types of response-time groups.
sample period multiplier	Displays the number that is multiplied by an interval of 20 seconds to determine the collection interval for the response-time group. The multiplier value is defined using the response-time group command. For example, a sample period multiplier of 30 results in a collection interval of 600 seconds (30 x 20 seconds), or 10 minutes, for this client group.
bucket boundaries	Displays the value of the response-time bucket boundaries in tenths of seconds. The bucket boundaries are defined using the response-time group command.
buckets	Displays the number of transactions in each response-time bucket for the specified application group.
average total response time	Displays the average response time (in tenths of seconds) for the total number of response-time transactions.
average IP response time	Displays the average response time in tenths of seconds (including IP transit time) for the total number of response-time transactions.
number of transactions	Displays the total number of response-time transactions across all response-time buckets.

Related Commands

Command	Description
response-time group	Configures a client subnet group for response-time measurements.

show extended channel tn3270-server response-time application	Displays information about application response-time client groups.
show extended channel tn3270-server response-time global	Displays information about the global response-time client group.
show extended channel tn3270-server response-time link	Displays information about host link response-time client groups.
show extended channel tn3270-server response-time subnet	Displays information about Subnet response-time client groups.

show extended channel tn3270-server response-time subnet

To display information about subnet client groups, use the **show extended channel tn3270-server response-time subnet** command in privileged EXEC mode.

```
show extended channel slot/virtual-channel tn3270-server response-time subnet [ip-address
ip-mask [detail]]
```

Syntax Description	
<i>slot</i>	Slot number.
<i>virtual-channel</i>	Virtual channel number.
ip-address	(Optional) Subnet IP address.
<i>ip-mask</i>	(Optional) Subnet mask.
detail	(Optional) Each client group entry is followed by a list of its client members and their respective response-time statistics.

Defaults No default behavior or values

Command Modes Privileged EXEC

CommandHistory	Release	Modification
	11.2(18)BC	This command was first introduced.

Usage Guidelines This command displays information about client subnet client groups. This includes all configured groups and the CLIENT SUBNET OTHER group. If no optional parameters are specified, a complete list of client subnet client groups is displayed along with their collection control parameters. If you specify values for the **ip-address** keyword and *ip-mask* argument, only client groups containing that subnet are displayed. If you specify the **detail** keyword, each client group entry is followed by a list of its client members and their response-time statistics.

Examples The following is sample output from all configured client groups using the **show extended channel tn3270-server response-time subnet** command:

```
Router# show extended channel 3/2 tn3270-server response-time subnet

group SUBNETGROUP1
 subnet 10.10.10.0 255.255.255.192
 aggregate NO excludeip NO dynamic definite response NO
 sample period multiplier 30
 bucket boundaries 10 20 50 100
group SUBNETGROUP2
 subnet 10.10.10.128 255.255.255.192
 subnet 10.10.10.192 255.255.255.192
 aggregate NO exclude ip NO dynamic definite response NO
 sample period multiplier 40
```

```

bucket boundaries 20 30 60 120
group CLIENT SUBNET OTHER
aggregate NO exclude ip NO dynamic definite response NO
sample period multiplier 30
bucket boundaries 10 20 50 100
    
```

The following is sample output from subnet 10.10.10.0 with IP mask 255.255.255.192, which shows a list of the client members and their response-time statistics:

```

Router# show extended channel 3/2 tn3270-server response-time subnet
10.10.10.0 255.255.255.192 detail
    
```

```

group SUBNETGROUP1
 subnet 10.10.10.0 255.255.255.192
 aggregate NO excludeip NO dynamic definite response NO
 sample period multiplier 30
 bucket boundaries 10 20 50 100
 client 10.10.10.129:23
   buckets 5 8 11 9 4
   average total response time 33 average IP response time 24
   number of transactions 37
 client 10.10.10.130:23
   buckets 6 9 10 10 2
   average total response time 32 average IP response time 25
   number of transactions 37
 client 10.10.10.131:23
   buckets 11 14 10 8 7
   average total response time 27 average IP response time 19
   number of transactions 50
    
```

Table 52 describes the significant fields in the display.



Note

The aggregate, excludeip, and dynamic definite response field values are MIB parameters that are configured automatically by the TN3270 server according to the type of response-time group. These values are not configurable in the TN3270 server.

Table 52 *show extended channel tn3270-server response-time subnet Field Descriptions*

Field	Description
subnet	Displays the IP address and IP mask of the client subnet group for which response-time statistics are being shown.
aggregate	Displays whether the response time statistics for the clients in this response-time group are reported collectively for the group (YES) or individually by client (NO). This value is automatically set to NO by the TN3270 server for subnet client response-time groups.
excludeip	Displays whether the IP component (the client/server path) is included in the response time for any transaction (NO) or if only the Systems Network Architecture (SNA) component (the server/host path) is included in the response time for any transaction (YES). This value is automatically set to NO by the TN3270 server for subnet client response-time groups.

Table 52 *show extended channel tn3270-server response-time subnet Field Descriptions (continued)*

Field	Description
dynamic definite response	Displays whether the server adds a Definite Response request to the first-in-chain (FIC) reply in each transaction, to get a response from the client so that the IP component can be included in the response time. The value is automatically set to NO by the TN3270 server for all types of response-time groups.
sample period multiplier	Displays the number that is multiplied by an interval of 20 seconds to determine the collection interval for the response-time group. The multiplier value is defined using the response-time group command. For example, a sample period multiplier of 30 results in a collection interval of 600 seconds (30 x 20 seconds), or 10 minutes, for this client group.
bucket boundaries	Displays the value of the response-time bucket boundaries in tenths of seconds. The bucket boundaries are defined using the response-time group command.
buckets	Displays the number of transactions in each response-time bucket for the specified application group.
average total response time	Displays the average response time (in tenths of seconds) for the total number of response-time transactions.
average IP response time	Displays the average response time in tenths of seconds (including IP transit time) for the total number of response-time transactions.
number of transactions	Displays the total number of response-time transactions across all response-time buckets.

Related Commands

Command	Description
response-time group	Configures a client subnet group for response-time measurements.
show extended channel tn3270-server response-time application	Displays information about application response-time client groups.
show extended channel tn3270-server response-time global	Displays information about the global response-time client group.
show extended channel tn3270-server response-time link	Displays information about host link response-time client groups.
show extended channel tn3270-server response-time listen-point	Displays information about listen point response-time client groups.

show extended channel tn3270-server security

To display information about the TN3270 security enhancement, use the **show extended channel tn3270-server security** command in user EXEC or privileged EXEC mode.

```
show extended channel slot/virtual-channel tn3270-server security [sec-profile profilename]
[listen-point ip-address [tcp-port number]]
```

Syntax Description

<i>slot</i>	Specifies a particular Cisco Mainframe Channel Connection (CMCC) adapter in the router where the <i>slot</i> argument is the slot number.
<i>virtual-channel</i>	Virtual channel number.
sec-profile <i>profilename</i>	(Optional) Alphanumeric name that specifies the security profile name to be associated with a listen point. The character range is from 1 to 24. This name is specified originally in the profile command.
listen-point <i>ip-address</i>	(Optional) IP address that the clients should use as the host IP address to map to logical unit (LU) sessions under this physical unit (PU) and listen point.
tcp-port <i>number</i>	(Optional) Port number used for the listen operation. The default value is 23.

Defaults

The default **tcp-port** value is 23.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.1(5)T	This command was introduced.

Usage Guidelines

There is not a **no** form for this command.

Examples

The following is sample output from the **show extended channel tn3270-server security** command with the optional **sec-profile** keyword configured:

```
Router# show extended channel 3/2 tn3270-server security sec-profile cert40

status:ENABLE Default Profile: (Not Configured)
Name           Active LUs  keylen encryptorder  Mechanism
CERT40         0          40    RC4 RC2 RC5 DES 3DES  SSL
Servercert:slot0:coach188.pem
Certificate Loaded:YES Default-Profile:NO
```

The following is sample output from the **show extended channel tn3270-server security** command with the optional **listen-point** keyword configured:

```
Router# show extended channel 3/2 tn3270-server security listen-point 172.18.5.188

status:ENABLE Default Profile: (Not Configured)
IPAddress      tcp-port  Security-Profile  active-sessions  Type    State
172.18.5.188   23       CERT40             0                Secure  ACTIVE
Active Sessions using Deleted Profile:0
```

Table 53 describes the significant fields in the display.

Table 53 *show extended channel tn3270-server security Field Descriptions*

Field	Description
status ENABLE	Status of TN3270 server security. Enable or Disable.
Default Profile (Not Configured)	Displays if a default profile is configured. (Not Configured) or (Configured).
Name	Name of the security profile as specified in the profile command.
Active LUs	Number of active LUs.
keylen	Maximum encryption key length in bits.
encryptorder	Order of encryption algorithms. Choices are DES, 3DES, RC4, RC2, or RC5.
Mechanism	Type of security protocol being used. Values are SSL or none.
Servercert	Location of the TN3270 server's security certificate status in the Flash memory.
Certificate Loaded	Security certificate is loaded. YES or NO.
Default-Profile	Default profile is configured. YES or NO.
IPAddress	IP address that the clients should use as the host IP address to map to LU sessions under this PU and listen point.
tcp-port	Port number used for the listen operation. The default value is 23.
Security-Profile	Name of the security profile as specified in the profile command.
active-sessions	Number of active sessions.
Type	Type of connection.
State	State of the listen point.
Active Sessions using Deleted Profile:	Number of sessions using a security profile that has been deleted.

Related Commands

Command	Description
sec-profile	Specifies the security profile to be associated with a listen point.
listen-point	Defines an IP address for the TN3270 server.

show extended channel tn3270-server

To display current server configuration parameters and the status of the physical unit (PU)s defined for the TN3270 server, use the **show extended channel tn3270-server** command in user EXEC or privileged EXEC mode.

show extended channel *slot*/*port* tn3270-server

Syntax Description	slot	Specifies a particular Cisco Mainframe Channel Connection (CMCC) adapter in the router where the <i>slot</i> argument is the slot number.
	<i>port</i>	Port value for a TN3270 server will always be 2.

Defaults No default behavior or values

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	11.2	This command was introduced.
	12.0(5)T	The following fields were added to the output display: <ul style="list-style-type: none"> lu-termination lu-deletion
	12.2	The Named value was added for the lu-deletion field in the output display.

Examples The following is sample output from the **show extended channel tn3270-server** command:

```
Router# show extended channel 3/2 tn3270-server

<current stats> < connection stats > <response time(ms)>
server-ip:tcp      lu in-use  connect disconn fail  host  tcp
172.28.1.106:23    510      1       12     11   0     54   40
172.28.1.107:23    511      0        0      0    0     0     0
172.28.1.108:23    255      0        0      0    0     0     0
total              1276     1
configured max_lu 20000 unbind-action disconnect
idle-time 0 keepalive 1800 (send nop)
tcp-port 23 generic-pool permit no timing-mark
lu-termination unbind lu-deletion never
dlur MPX.GOANCP                               status SHUT
dlus MPX.NGMVMPC
name(index)  ip:tcp      xid  state  link  destination  r-lsap
EXT2(1)     172.28.1.106:23 05D18092 ACTIVE tok 0 4000.7470.00e7 08 04
PUS10(2)    172.28.1.107:23 05D19010 ACTIVE tok 0 4000.7470.00e7 08 2C
PUS11(3)    172.28.1.107:23 05D19011 ACTIVE tok 0 4000.7470.00e7 08 28
PUS12(4)    172.28.1.108:23 05D19012 ACTIVE tok 0 4000.7470.00e7 08 24
PUS9(5)     172.28.1.109:23 05D18509 SHUT   tok 0 4001.3745.1088 04 40
SDTF(7)     172.28.1.107:23 12345678 ACTIVE tok 0 0800.5a4b.1cbc 04 08
```

```

TEST(8)      172.28.1.106:23      05D18091 ACTIVE      tok 0  4000.7470.00e7 08 30
INT1(6)      172.28.1.106:23      05D18091 SHUT        dlur

```

Table 54 describes the significant fields in the display. Those fields not described correspond to configured values.

Table 54 show extended channel tn3270-server Field Descriptions

Field	Description
server	IP address and TCP port number, listen point, configured on one or more PUs.
lu	Total number of logical unit (LU)s available for this listen point.
in-use	Number of LUs in use.
connect	Total number of connections since the TN3270 feature was started.
disconn	Total number of disconnects since the TN3270 feature was started.
fail	Total number of failed connections since the TN3270 feature was started.
response time, host	The average response time from the host across all sessions through this server IP address. This is measured from sending Carrier Detect (CD) to the host to receiving the reply.
response time, tcp	Average response time from the clients on this server IP address. This is measured only when TIMING MARKs are sent. If no timing-mark is configured, they are sent only on special occasions, such as Bind.
idle-time <i>number</i>	Configured idle-time for this physical unit (PU).
keepalive	Configured keepalive time for this PU. <i>action</i> is one of the following: <ul style="list-style-type: none"> • send nop—The Telnet command for no operation is sent to the TN3270 client to verify the physical connection. • send timing mark <i>number</i>—Number of seconds within which the TN3270 server expects a response to the DO TIMING-MARK from the TN3270 client.
unbind-action	Configured unbind action for LUs on this PU.
tcp-port	Configured TCP port number.
generic-pool	Configured generic pool for LUs on this PU.
lu-termination	Displays the value configured for the lu termination siftdown command for the PUs supported by the TN3270 server. The lu termination command specifies whether a TERMSELF or UNBIND request/response unit (RU) is sent by the TN3270 server when a client turns off the device or disconnects. The values are: <ul style="list-style-type: none"> • termself—Termination of all sessions and session requests associated with an LU is ordered upon disconnect. • unbind—Termination of the session by the application is requested upon LU disconnect.

Table 54 show extended channel tn3270-server Field Descriptions (continued)

Field	Description
lu-deletion	<p>Displays the value configured for the lu deletion siftdown command for the PUs supported by the TN3270 server. The lu deletion command specifies whether the TN3270 server sends a REPLY-PSID poweroff request to virtual telecommunications access method (VTAM) to delete the corresponding LU when a client disconnects. The values are:</p> <ul style="list-style-type: none"> • always—Dynamic LUs for this PU are always deleted upon disconnect. • named—Only named LUs for this PU are deleted upon disconnect. • normal—Only screen LUs for this PU are deleted upon disconnect. • non-generic—Only specified LUs for this PU are deleted upon disconnect. • never—None of the LUs for this PU are ever deleted upon disconnect.
dlur	Configured fully qualified Dependent Logical Unit Requestor (DLUR) CP name(fq-cpname).
status	<p>Shows the status of the DLUR-DLUS pipe followed by the state of the pipe. Values for the status are:</p> <ul style="list-style-type: none"> • RESET—The pipe is reset. • PND-ACTV—The pipe is pending active. • ACTIVE—The pipe is active. • PND-INAC—The pipe is pending inactive. • OTHER—Status is an undefined value. • WAIT—Waiting for status from the CMCC adapter. • SHUT—The TN3270 server is shut down. • NOTKNOWN—Status cannot be obtained.
dlus	Active DLUS.
name	This is the name of the PU as configured.
ip:tcp	IP address and TCP port number configured for the PU.
xid	Configured exchange identification (XID)—idblk and idnum.

Table 54 show extended channel tn3270-server Field Descriptions (continued)

Field	Description
state	<p>STATE values and their meanings are:</p> <ul style="list-style-type: none"> • SHUT—The PU is configured but in shut state. • RESET—The link station of this PU is not active. • TEST—PU is sending a TEST to establish link. • XID—TEST is responded, XID is sent. • P-ACTPU—The link station is up but no Activate Physical Unit (ACTPU) is received. • ACTIVE—ACTPU is received and acknowledged positively. • ACT/BUSY—Awaiting host to acknowledge the system services control points (SSCP) data. • WAIT—Waiting for PU status from CMCC adapter. • OTHER—PU in undefined state. • P-RQACTPU-R—DLUR PU is pending request ACTPU response. • P-ACTIVE—ACTPU received by DLUR but not yet passed to PU. • P-DACTPU—PU is pending Deactivate Physical Unit (DACTPU). • UNKNOWN—State cannot be obtained.
link type	Link type is either internal adapter type and internal adapter number or dlur if it is a Systems Network Architecture (SNA) Session Switch PU.
Destination	If a direct PU, then it is the destination MAC address; otherwise, it is the name of the partner PU.
r-lsap	Remote and local service access point (SAP) values.

show extended channel udp-listeners

To display information about the User Datagram Protocol (UDP) listener sockets running on the Cisco Mainframe Channel Connection (CMCC) adapter interfaces, use the **show extended channel udp-listeners** command in user EXEC or privileged EXEC mode.

```
show extended channel slot/port udp-listeners [ip-address]
```

Syntax Description

<i>slot</i>	Slot number.
<i>port</i>	Port number.
udp-listeners	Specifies UDP listener port display.
<i>ip-address</i>	(Optional) IP address specified by the offload interface configuration command or the tn3270-server pu command.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
11.0	This command was introduced.

Usage Guidelines

The **show extended channel udp-listeners** command is valid on both physical and virtual channel interfaces.

Examples

The following is sample output from the **show extended channel udp-listeners** command:

```
Router# show extended channel 0/1 udp-listeners

UDP Listener: IP Address 10.11.198.3      LocalPort 7
UDP Listener: IP Address 10.11.198.3      LocalPort 9
UDP Listener: IP Address 10.11.198.3      LocalPort 19
```

Related Commands

Command	Description
offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.
pu (TN3270)	Creates a PU entity that has its own direct link to a host and enters PU configuration mode.
pu (DLUR)	Creates a PU entity that has no direct link to a host and enters Dependent Logical Unit Requestor (DLUR) PU configuration mode.

show extended channel udp-stack

To display information about the User Datagram Protocol (UDP) stack running on the Cisco Mainframe Channel Connection (CMCC) adapter interfaces, use the **show extended channel udp-stack** command in user EXEC or privileged EXEC mode.

show extended channel *slot/port* udp-stack [*ip-address*]

Syntax Description	
<i>slot</i>	Slot number.
<i>port</i>	Port number.
udp-stack	Selects UDP stack display.
<i>ip-address</i>	(Optional) IP address specified by the offload interface configuration command or the tn3270-server pu command.

Command Modes	
	User EXEC Privileged EXEC

Command History	Release	Modification
	11.0	This command was introduced.
	12.0(7)T	The Alias addresses field was added to the output.

Usage Guidelines	
	The show extended channel udp-stack command is valid on both physical and virtual channel interfaces.

Examples The following is sample output from the **show extended channel udp-stack** command:

```
Router# show extended channel o1 udp-stack

UDP Statistics for IP Address 10.11.198.2
  InDatagrams : 6           NoPorts      : 6
  InErrors    : 0           OutDatagrams: 0
UDP Statistics for IP Address 10.11.198.3
  InDatagrams : 6           NoPorts      : 6
  InErrors    : 0           OutDatagrams: 1
```

The following examples show sample output from the **show extended channel udp-stack** command when you specify the real IP address or the alias IP address, for an offload device at real IP address 10.10.21.3 and alias IP address of 10.2.33.88:

```
Router# show extended channel 3/1 udp-stack 10.10.21.3

UDP Statistics for IP Address 10.10.21.3
Alias addresses: 10.2.33.88
  InDatagrams : 6           NoPorts      : 6
  InErrors    : 0           OutDatagrams: 1
```

```
Router# show extended channel 3/1 udp-stack 10.2.33.88

UDP Statistics for IP Address 10.10.21.3
Alias addresses: 10.2.33.88
  InDatagrams : 6          NoPorts      : 6
  InErrors    : 0          OutDatagrams: 1
```

Table 55 describes the specified fields shown in the display.

Table 55 *show extended channel udp-stack Field Descriptions*

Field	Description
Alias addresses	Virtual IP addresses assigned to the real IP address of an offload device.
InDatagrams	Total number of UDP datagrams delivered to UDP users.
NoPorts	Total number of received UDP datagrams for which there was no application at the destination port.
InErrors	Number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port.
OutDatagrams	Total number of UDP datagrams sent from this entity.

Related Commands

Command	Description
offload (primary)	Configures an Offload device (read and write subchannel) for communication with a mainframe TCP/IP stack in offload mode and also configures individual members of an Offload backup group for the IP Host Backup feature.
pu (TN3270)	Creates a physical unit (PU) entity that has its own direct link to a host and enters PU configuration mode.
pu (DLUR)	Creates a PU entity that has no direct link to a host and enters Dependent Logical Unit Requestor (DLUR) PU configuration mode.