

Configuring CIP Using IP Datagram and Offload

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Introduction

This document provides sample configurations for the Channel Interface Processor (CIP) card in IP Datagram and Offload mode.

Note: While Offload is still supported in the CIP, IBM has discontinued support for Offload in all version of OS/390 and subsequent mainframe operating systems.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

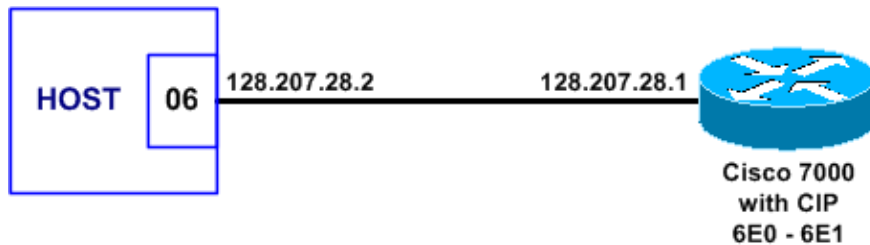
Conventions

For more information on document conventions, refer to Cisco Technical Tips Conventions.

Direct Parallel Connection (4.5 MB per second)

Network Diagram

This is a diagram of this type of configuration:



Configuration

This type of configuration uses these elements:

- Input/Output Configuration Program (IOCP)
- TCPIP.Profile File for IP Datagram
- TCPIP.Profile File for Offload
- Router Configuration for IP Datagram
- Router Configuration for Offload

IOCP
CHPID PATH=06,TYPE=BL CNTLUNIT CUNUMBR=0600,PATH=06,UNIT=3088,PROTOCL=S4,UNITADD=((E0,8)) IODEVICE ADDRESS=(6E0,8),CUNUMBR=0600,UNIT=CTC

TCPIP.Profile File for IP Datagram
DEVICE CIP1 CLAW 6E0 HOSTTCP CIPTCP NONE 20 20 4096 4096 LINK CIP1A IP 0 CIP1 HOME 128.207.28.2 CIP1A GATEWAY ; Network First hop Driver Packet size Subn mask Subn value 128.207 = CIP1A 4096 0.0.255.0 0.0.28.0 DEFAULTNET 128.207.28.1 CIP1A 1500 0 START CIP1

TCPIP.Profile File for Offload
DEVICE CIP1 CLAW 6E0 HOSTTCP CIPTCP NONE 20 20 4096 4096 LINK CIP1A OFFLOADLINK1 1 CIP1 LINK CIP1B OFFLOADAPIBROAD 128.207.28.2 CIP1 CIP1A GATEWAY ; Network First hop Driver Packet size Subn mask Subn value 128.207 = CIP1B 4096 0.0.255.0 0.0.28.0 DEFAULTNET 128.207.28.1 CIP1B 1500 0 START CIP1

Router Configuration for IP Datagram

```
interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
no keepalive
channel-protocol s4
claw 0100 e0 128.207.28.2 hosttcp ciptcp tcpip tcpip
```

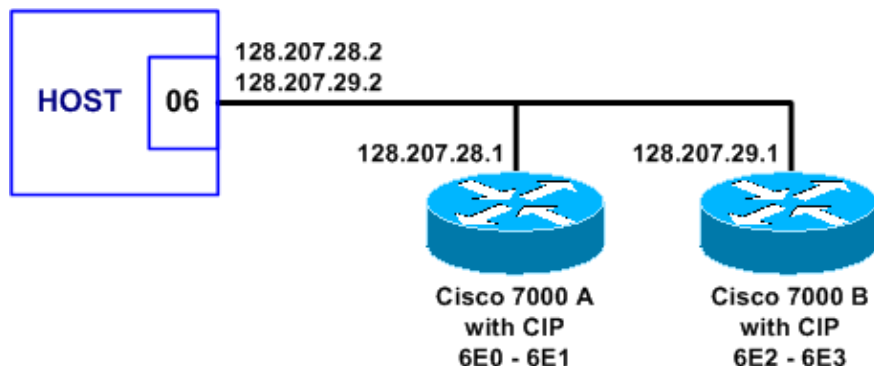
Router Configuration for Offload

```
interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
no keepalive
channel-protocol s4
offload 0100 e0 128.207.28.2 hosttcp ciptcp tcpip tcpip tcpi api
```

Direct Parallel Connection with Daisychain (3 MB per second)

Network Diagram

This is a diagram of this type of configuration:



Configuration

This type of configuration uses these elements:

- IOCP
- TCPIP.Profile File for IP Datagram
- TCPIP.Profile File for Offload
- 7000 A Router Configuration for IP Datagram
- 7000 B Router Configuration for IP Datagram
- 7000 A Router Configuration for Offload
- 7000 B Router Configuration for Offload

IOCP

```
CHPID PATH=06,TYPE=BL
CNTLUNIT CUNUMBR=0600,PATH=06,UNIT=3088,PROCOCL=S,UNITADD=((E0,8))
IODEVICE ADDRESS=(6E0,8),CUNUMBR=0600,UNIT=CTC
```

TCPIP.Profile File for IP Datagram

```

DEVICE CIP1 CLAW 6E0 HOSTTCP CIP1TCP NONE 20 20 4096 4096
LINK CIP1A IP 0 CIP1
DEVICE CIP2 CLAW 6E2 HOSTTCP CIP2TCP NONE 20 20 4096 4096
LINK CIP2A IP 0 CIP2
HOME
    128.207.28.2 CIP1A
    128.207.29.2 CIP2A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
128.207        =              CIP1A    4096        0.0.255.0  0.0.28.0
128.207        =              CIP2A    4096        0.0.255.0  0.0.29.0
DEFAULTNET    128.207.28.1  CIP1A    1500        0
START CIP1
START CIP2

```

TCPIP.Profile File for Offload

```

DEVICE CIP1 CLAW 6E0 HOSTTCP CIP1TCP NONE 20 20 4096 4096
LINK CIP1A OFFLOADLINK1 1 CIP1
LINK CIP1B OFFLOADAPIBROAD 128.207.28.2 CIP1 CIP1A
DEVICE CIP2 CLAW 6E2 HOSTTCP CIP2TCP NONE 20 20 4096 4096
LINK CIP2A OFFLOADLINK1 1 CIP2
LINK CIP2B OFFLOADAPIBROAD 128.207.29.2 CIP2 CIP2A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
128.207        =              CIP1B    4096        0.0.255.0  0.0.28.0
128.207        =              CIP2B    4096        0.0.255.0  0.0.29.0
DEFAULTNET    128.207.28.1  CIP1B    1500        0
START CIP1
START CIP2

```

7000 A Router Configuration for IP Datagram

```

interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
no keepalive
claw 0100 e0 128.207.28.2 hosttcp cip1tcp tcpip tcpip

```

7000 B Router Configuration for IP Datagram

```

interface Channel0/0
ip address 128.207.29.1 255.255.255.0
ip route-cache cbus
no keepalive
claw 0100 e2 128.207.29.2 hosttcp cip2tcp tcpip tcpip

```

7000 A Router Configuration for Offload

```

interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
no keepalive
offload 0100 e0 128.207.28.2 hosttcp cip1tcp tcpip tcpip tcipip api

```

7000 B Router Configuration for Offload

```

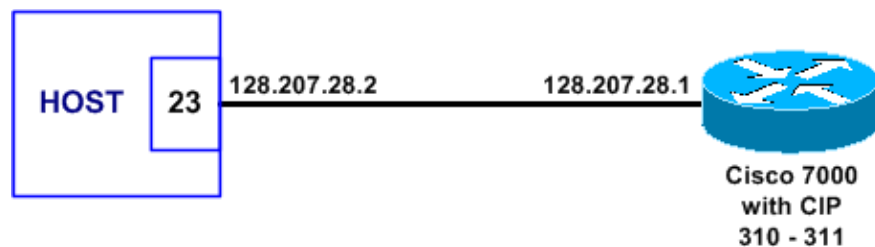
interface Channel0/0
ip address 128.207.29.1 255.255.255.0
ip route-cache cbus
no keepalive
offload 0100 e2 128.207.29.2 hosttcp cip2tcp tcpip tcpip tcipip api

```

Direct Escon Connection Without EMIF

Network Diagram

This is a diagram of this type of configuration:



This type of configuration uses these elements:

- Input/Output Configuration Program (IOCP)
- TCPIP.Profile File for IP Datagram
- TCPIP.Profile File for Offload
- Router Configuration for IP Datagram
- Router Configuration for Offload

IOCP
CHPID PATH=23,TYPE=CNC CNTLUNIT CUNUMBR=2300,PATH=23,UNIT=SCTC,UNITADD=((10,8)) IODEVICE ADDRESS=(310,8),CUNUMBR=2300,UNIT=SCTC

TCPIP.Profile File for IP Datagram
DEVICE CIP1 CLAW 310 HOSTTCP CIPTCP NONE 20 20 4096 4096 LINK CIP1A IP 0 CIP1 HOME 128.207.28.2 CIP1A GATEWAY ; Network First hop Driver Packet size Subn mask Subn value 128.207 = CIP1A 4096 0.0.255.0 0.0.28.0 DEFAULTNET 128.207.28.1 CIP1A 1500 0 START CIP1

TCPIP.Profile File for Offload
DEVICE CIP1 CLAW 310 HOSTTCP CIPTCP NONE 20 20 4096 4096 LINK CIP1A OFFLOADLINK1 1 CIP1 LINK CIP1B OFFLOADAPIBROAD 128.207.28.2 CIP1 CIP1A GATEWAY ; Network First hop Driver Packet size Subn mask Subn value 128.207 = CIP1B 4096 0.0.255.0 0.0.28.0 DEFAULTNET 128.207.28.1 CIP1B 1500 0 START CIP1

Router Configuration for IP Datagram
interface Channel0/0 ip address 128.207.28.1 255.255.255.0 ip route-cache cbus ip route-cache same-interface no ip redirects no keepalive

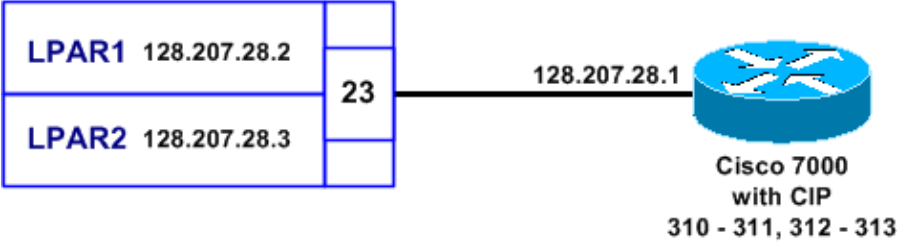
```
claw 0100 10 128.207.28.2 hosttcp ciptcp tcpip tcpip
```

```
Router Configuration for Offload
interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
ip route-cache same-interface
no ip redirects
no keepalive
offload 0100 10 128.207.28.2 hosttcp ciptcp tcpip tcpip tcpip api
```

Direct Escon Connection With EMIF

Network Diagram

This is a diagram of this type of configuration:



Configuration

This type of configuration uses these elements:

- Input/Output Configuration Program (IOCP)
- LPAR1 TCPIP.Profile File for IP Datagram
- LPAR1 TCPIP.Profile File for Offload
- LPAR2 TCPIP.Profile File for IP Datagram
- LPAR2 TCPIP.Profile File for Offload
- Router Configuration for IP Datagram
- Router Configuration for Offload

```
IOCP
RESOURCE PART=((LPAR1,1),(LPAR2,2))
CHPID PATH=23,TYPE=CNC,SHARED,PART=(LPAR1,LPAR2)
CNTLUNIT CUNUMBR=2300,PATH=23,UNIT=SCTC,UNITADD=((10,8))
IODEVICE ADDRESS=(310,8),CUNUMBR=2300,UNIT=SCTC
```

```
LPAR1 TCPIP.Profile File for IP Datagram
DEVICE CIP1 CLAW 310 HOST1TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A IP 0 CIP1
HOME
128.207.28.2 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
128.207      =             CIP1A   4096         0.0.255.0  0.0.28.0
DEFAULTNET  128.207.28.1 CIP1A   1500         0
START CIP1
```

LPAR1 TCPIP.Profile File for Offload

```
DEVICE CIP1 CLAW 310 HOST1TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A OFFLOADLINK1 1 CIP1
LINK CIP1B OFFLOADAPIBROAD 128.207.28.2 CIP1 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
  128.207      =              CIP1B    4096        0.0.255.0  0.0.28.0
  DEFAULTNET   128.207.28.1 CIP1B    1500        0
START CIP1
```

LPAR2 TCPIP.Profile File for IP Datagram

```
DEVICE CIP1 CLAW 312 HOST2TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A IP 0 CIP1
HOME
  128.207.28.3 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
  128.207      =              CIP1A    4096        0.0.255.0  0.0.28.0
  DEFAULTNET   128.207.28.1 CIP1A    1500        0
START CIP1
```

LPAR2 TCPIP.Profile File for Offload

```
DEVICE CIP1 CLAW 312 HOST2TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A OFFLOADLINK1 1 CIP1
LINK CIP1B OFFLOADAPIBROAD 128.207.28.3 CIP1 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
  128.207      =              CIP1B    4096        0.0.255.0  0.0.28.0
  DEFAULTNET   128.207.28.1 CIP1B    1500        0
START CIP1
```

Router Configuration for IP Datagram

```
interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
ip route-cache same-interface
no ip redirects
no keepalive
claw 0110 10 128.207.28.2 host1tcp ciptcp tcpip tcpip
claw 0120 12 128.207.28.3 host2tcp ciptcp tcpip tcpip
```

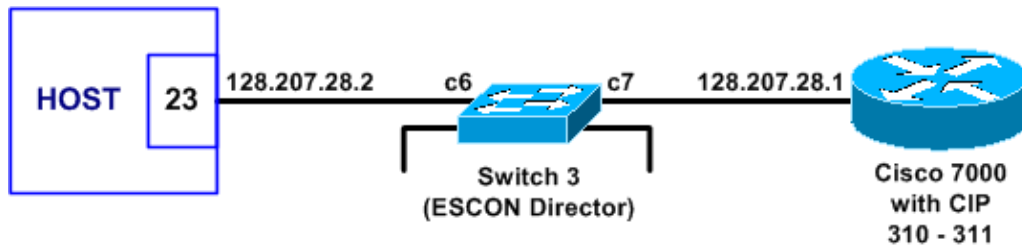
Router Configuration for Offload

```
interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
ip route-cache same-interface
no ip redirects
no keepalive
offload 0110 10 128.207.28.2 host1tcp ciptcp tcpip tcpip tcpip api
offload 0120 12 128.207.28.3 host2tcp ciptcp tcpip tcpip tcpip api
```

Escon Connection Through an Escon Director Without EMIF

Network Diagram

This is a diagram of this type of configuration:



Configuration

This type of configuration uses these elements:

- Input/Output Configuration Program (IOCP)
- TCPIP.Profile File for IP Datagram
- TCPIP.Profile File for Offload
- Router Configuration for IP Datagram
- Router Configuration for Offload

IOCP
<pre> CHPID PATH=23,TYPE=CNC,SWITCH=3 CNTLUNIT CUNUMBR=2300,PATH=23,UNIT=SCTC,LINK=C7,UNITADD=((10,8)) IODEVICE ADDRESS=(310,8),CUNUMBR=2300,UNIT=SCTC </pre>

TCPIP.Profile File for IP Datagram
<pre> DEVICE CIP1 CLAW 310 HOSTTCP CIPTCP NONE 20 20 4096 4096 LINK CIP1A IP 0 CIP1 HOME 128.207.28.2 CIP1A GATEWAY ; Network First hop Driver Packet size Subn mask Subn value 128.207 = CIP1A 4096 0.0.255.0 0.0.28.0 DEFAULTNET 128.207.28.1 CIP1A 1500 0 START CIP1 </pre>

TCPIP.Profile File for Offload
<pre> DEVICE CIP1 CLAW 310 HOSTTCP CIPTCP NONE 20 20 4096 4096 LINK CIP1A OFFLOADLINK1 1 CIP1 LINK CIP1B OFFLOADAPIBROAD 128.207.28.2 CIP1 CIP1A GATEWAY ; Network First hop Driver Packet size Subn mask Subn value 128.207 = CIP1B 4096 0.0.255.0 0.0.28.0 DEFAULTNET 128.207.28.1 CIP1B 1500 0 START CIP1 </pre>

Router Configuration for IP Datagram
<pre> interface Channel0/0 ip address 128.207.28.1 255.255.255.0 ip route-cache cbus ip route-cache same-interface no ip redirects no keepalive </pre>

```
claw C600 10 128.207.28.2 hosttcp ciptcp tcpip tcpip
```

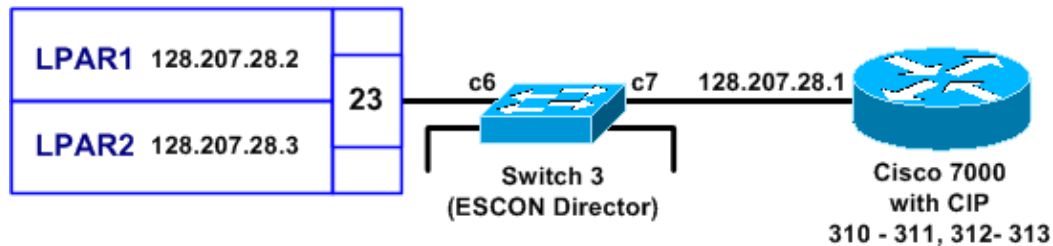
```
Router Configuration for Offload

interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
ip route-cache same-interface
no ip redirects
no keepalive
offload C600 10 128.207.28.2 hosttcp ciptcp tcpip tcpip tcpip api
```

Escon Connection Through an Escon Director With EMIF

Network Diagram

This is a diagram of this type of configuration:



Configuration

This type of configuration uses these elements:

- Input/Output Configuration Program (IOCP)
- LPAR1 TCPIP.Profile File for IP Datagram
- LPAR1 TCPIP.Profile File for Offload
- LPAR2 TCPIP.Profile File for IP Datagram
- LPAR2 TCPIP.Profile File for Offload
- Router Configuration for IP Datagram
- Router Configuration for Offload

```
IOCP

RESOURCE PART=((LPAR1,1),(LPAR2,2))
CHPID PATH=23,TYPE=CNC,SHARED,PART=(LPAR1,LPAR2),SWITCH=3
CNTLUNIT CUNUMBR=2300,PATH=23,UNIT=SCTC,LINK=C7,UNITADD=((10,8))
IODEVICE ADDRESS=(310,8),CUNUMBR=2300,UNIT=SCTC
```

```
LPAR1 TCPIP.Profile File for IP Datagram

DEVICE CIP1 CLAW 310 HOST1TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A IP 0 CIP1
HOME
  128.207.28.2 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
  128.207      =              CIP1A   4096         0.0.255.0  0.0.28.0
  DEFAULTNET   128.207.28.1  CIP1A   1500         0
START CIP1
```

LPAR1 TCPIP.Profile File for Offload

```
DEVICE CIP1 CLAW 310 HOST1TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A OFFLOADLINK1 1 CIP1
LINK CIP1B OFFLOADAPIBROAD 128.207.28.2 CIP1 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
  128.207      =              CIP1B   4096         0.0.255.0  0.0.28.0
  DEFAULTNET   128.207.28.1  CIP1B   1500         0
START CIP1
```

LPAR2 TCPIP.Profile File for IP Datagram

```
DEVICE CIP1 CLAW 312 HOST2TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A IP 0 CIP1
HOME
  128.207.28.3 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
  128.207      =              CIP1A   4096         0.0.255.0  0.0.28.0
  DEFAULTNET   128.207.28.1  CIP1A   1500         0
START CIP1
```

LPAR2 TCPIP.Profile File for Offload

```
DEVICE CIP1 CLAW 312 HOST2TCP CIPTCP NONE 20 20 4096 4096
LINK CIP1A OFFLOADLINK1 1 CIP1
LINK CIP1B OFFLOADAPIBROAD 128.207.28.3 CIP1 CIP1A
GATEWAY
; Network      First hop      Driver  Packet size  Subn mask  Subn value
  128.207      =              CIP1B   4096         0.0.255.0  0.0.28.0
  DEFAULTNET   128.207.28.1  CIP1B   1500         0
START CIP1
```

Router Configuration for IP Datagram

```
interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
ip route-cache same-interface
no ip redirects
no keepalive
claw C610 10 128.207.28.2 host1tcp ciptcp tcpip tcpip
claw C620 12 128.207.28.3 host2tcp ciptcp tcpip tcpip
```

Router Configuration for Offload

```
interface Channel0/0
ip address 128.207.28.1 255.255.255.0
ip route-cache cbus
ip route-cache same-interface
no ip redirects
no keepalive
offload C610 10 128.207.28.2 host1tcp ciptcp tcpip tcpip tcpip api
offload C620 12 128.207.28.3 host2tcp ciptcp tcpip tcpip tcpip api
```

Verify

There is currently no verification procedure available for these configurations.

Troubleshoot

These document sections provide additional information about troubleshooting typical CIP configurations:

- Introduction and Overview to Troubleshoot CSNA
 - ◆ Host and Router Configuration Dependencies
 - ◆ Common CSNA Problems
-

Related Information

- **Technology Support**
 - **Product Support**
 - **Technical Support – Cisco Systems**
-

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