



Communication Controller for Linux on System z

NPSI PVC INN over Cisco XOT

Sample Definitions for Communications
Controller for Linux on System z

Target Audience

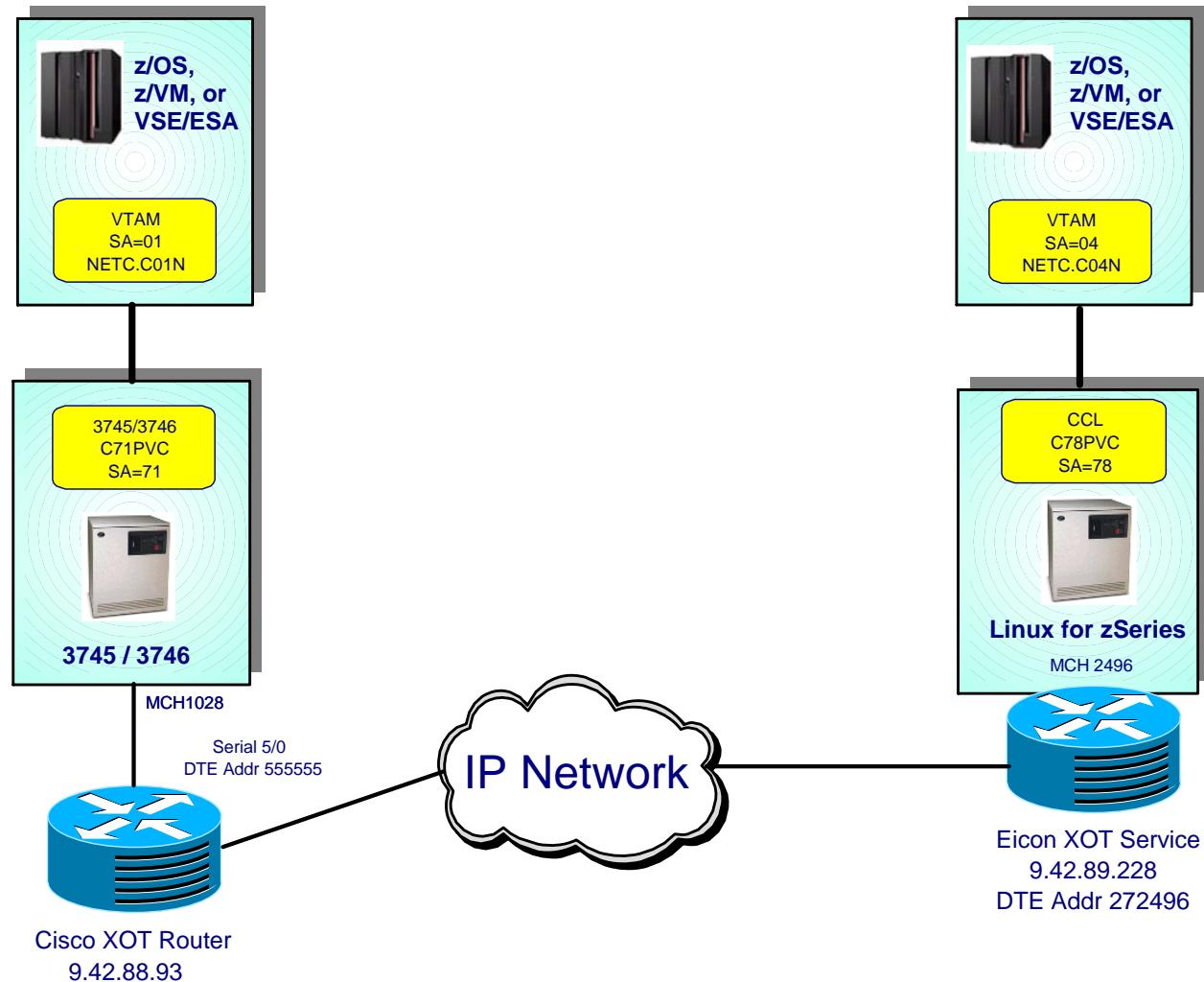
- Customers wanting a migrate NPSI PVC INN connections from 3745/3746 hardware to Communication Controller for Linux on System z9 and zSeries using an IP network as a transport medium.

Purpose of this Paper

The intent of this paper is to provide a sample solution for customers during the migration from 3745/3746-900 FEPs to Communication Controller for Linux on System z9 or zSeries (CCL). This document will provide working examples of the following:

- NCP gen parameters
- XOT definitions for Eicon (CCL Connection)
- XOT definitions for Cisco (3745/3746 Connection)

Test Configuration



Resources Used for Solution Verification

- Two z/OS Communications Servers
- One Linux ID running as guest under z/VM
 - 512mb of memory
 - 2 Virtual CPs
 - 2 3390-3 DASD volumes
- OSN Connection from zOS to CCL
 - LSA/LCS connections can be used – OSN is not a requirement
- One QDIO or LCS OSA Adapter for IP communication
- Eicon XOT Server for Linux on System z
- Cisco IOS Router
 - Cisco fix is tracked by following the DDTS number CSCsd77820. The fix is targeted for 12.4 train of IOS code.

C71SAD – VCCPT and OUFT Indexes

* X25.VCCPT STATEMENTS

*

X25.VCCPT INDEX=1,MAXPKTL=128,VWINDOW=1

X25.VCCPT INDEX=2,MAXPKTL=128,VWINDOW=7

X25.VCCPT INDEX=3,MAXPKTL=4096,VWINDOW=127

X25.VCCPT INDEX=4,MAXPKTL=4096,VWINDOW=127

*

* X25.OUFT STATEMENTS

*

X25.OUFT INDEX=1

X25.OUFT INDEX=2,OPTFACL=420707430707

X25.OUFT INDEX=3,OPTFACL=420707430303,USRFIELD=1234567890

X25.OUFT INDEX=4,OPTFACL=420A0A436464

*

C71PVC – MCH1028 Physical Line Definition

```
MCH1028  X25.MCH ADDRESS=1028,
          RESETPVC=YES,
          RNRTIMER=30,
          RNRPKT=YES,
          FRMLGTH=133,
          MMODULO=8,
          MWINDOW=7,
          ANS=CONT,
          DBIT=YES,
          GATE=NO,
          LCGDEF=(0,1),
          LCN0=NOTUSED,
          LLCLIST=LLC3,
          LSPRI=NO,
          LUNAME=XU1028,
          MBITCHN=YES,
          NPADTEAD=711028,
          NCPGRP=XM1028,
          PHYSRSC=NO,
          PUNAME=XP1028,
          SPEED=1843200,
          STATION=DTE,
          TPTIMER=3,
          TDTIMER=1,
          NPRETRY=10,
          NDRETRY=3,
          XMONLNK=YES
```

C71PVC – PVC INN Logical Line Definitions

```
*****
*                                LOGICAL LINE DEFINITIONS                                *
*****
*
*      X25.LCG LCGN=0
*
XL28LPVC X25.LINE DSTNODE=INN,SPAN=OPER1,TYPE=P,MONLINK=CONT,
          NCPGRP=XGA28PVC,LLC=LLC3,LCN=1,VCCINDX=1
XPP28PVC X25.PU  ISTATUS=ACTIVE,PUTYPE=4
*
```

C78PVC – MCH2496 Physical Line Definition

```
MCH2496  X25.MCH ADDRESS=2496,
          RESETPVC=YES,
          RNRTIMER=30,
          RNRPKT=YES,
          FRMLGTH=133,
          MWINDOW=7,
          MMODULO=8,
          ANS=CONT,
          DBIT=YES,
          GATE=NO,
          LCGDEF=(0,1),
          LCN0=NOTUSED,
          LLCLIST=LLC3,
          LSPRI=NO,
          LUNAME=XU2496,
          MBITCHN=YES,
          NCPGRP=XM2496,
          PHYSRSC=NO,
          PUNAME=XP2496,
          SPEED=1843200,
          STATION=DTE,
          TPTIMER=3,
          TDTIMER=1,
          NPRETRY=10,
          NDRETRY=3,
          XMONLNK=YES
```


C78PVC – PVC INN Logical Line Definitions

```
*****
*                                LOGICAL LINE DEFINITIONS                                *
*****
*
      X25.LCG LCGN=0
*
XL96LPVC X25.LINE DSTNODE=INN,SPAN=OPER1,TYPE=P,MONLINK=CONT,
          NCPGRP=XGA96PVC,LLC=LLC3,LCN=1,VCCINDX=1
XPP96PVC X25.PU ISTATUS=ACTIVE,PUTYPE=4
```

C78PVC – EICON Definitions

```
[xot_server]
  product_id=EXS
  product_name=Eicon XOT Server
  product_version=V1R1
  number_of_ports=1
;
[xot_server/port.1]
  mch_name=MCH2496
  lcgcn_support=0
  local_svc_x25_address=272496
  local_pvc_interface=Serial1
  remote_pvc_interface=Serial5/0
  number_of_xot_maps=0
  pvc_reconnect_timer=30
  vport_trace_enabled=1
  vport_trace_size=2
;
[xot_server/port.1/x25]
  max_window_size=7
  max_packet_size=128
  first_pvc=1
  num_pvc=1
  first_svc=0
  num_svc=0
  remote_pvc_ip=9.42.88.93
  remote_svc_x25_address=555555
  remote_svc_ip=9.42.88.93
```

```
[xot_server/port.1/hdlc]
  startup=0
  station_type=0
  pack_format=0
  max_window_size=7
  max_retry_counter=10
  check_point_timer=2900
  ack_delay_timer=200
  idle_probe_timer=15000
```

Note: remote_pvc_interface must match the serial interface on the Cisco router. The local_pvc_interface value is coded on the Cisco side to map the PVCs back to this interface.

Cisco Router – XOT Definitions

```
x25 routing
!
interface Serial5/0
description Connection for PVC INN MCH
bandwidth 1024
no ip address
no ip unreachable
no ip proxy-arp
encapsulation x25 dce
no ip mroute-cache
x25 address 555555
x25 win 7
x25 wout 7
x25 use-source-address
x25 pvc 1 xot 9.42.89.228 interface Serial 1 pvc 1
serial restart-delay 0
dce-terminal-timing-enable
no cdp enable
```

■ “Serial 1” on the X25 PVC statement must map the local_pvc_interface called “Serial 1” in the Eicon XOT definitions

Starting CCL from Linux – With Load Option

- From the Linux console, change to the CCL directory:
 - `cd /opt/ibm/ndh`
- Load the CCL kernel module
 - `./load_ndh.sh`
 - You will receive the message :
NDH kernel modules loaded. You are now able to run the cclengine
- From the Linux console, change to the CCL directory:
 - `cd /opt/ibm/Communication_Controller_for_Linux/`
- Start the CCL engine
 - `nohup ./cclengine -mcclcldp -p2078 C78 &`
 - If you use telnet or ssh into the Linux host you will want to preface the command with “nohup” so that the process will remain active even after the telnet/ssh session is terminated.
 - `cclcldp` tells the cclengine the load will come from the VTAM command

Starting the XOT Server

- The XOT configuration file must be in the same directory as the exotd server
 - In this case, the exotd server will be in the directory /opt/eicon/xot
- Start the XOT server
 - `nohup ./exotd &`
 - If you use telnet or ssh into the Linux host you will want to preface the command with “nohup” so that the process will remain active even after the telnet/ssh session is terminated.

Activating NCP using Channel Commands

From NETC.C04N, load and activate the NCP Major Node

```
V NET,ACT,ALL,ID=C78PVC,LOAD=YES,U=012
IST097I VARY ACCEPTED
IST461I ACTIVATE FOR U/RNAME ENTRY ID = 0012-S STARTED
IST897I LOAD OF C78PVC STARTED
IST270I LOAD OF C78PVC COMPLETE - LOAD MODULE = C78PVC
IST093I C78PVC ACTIVE
IST093I C78P2112 ACTIVE
IST093I XPA96 ACTIVE
IST464I LINK STATION C3P23E00 HAS CONTACTED ISTPUS SA 4
IST093I C3P23E00 ACTIVE
IST464I LINK STATION XPP96PVC HAS CONTACTED C71PVC SA 71
IST621I RECOVERY SUCCESSFUL FOR NETWORK RESOURCE XPP96PVC
IST093I C01N ACTIVE
```