



Communication Controller for Linux on System z

NPSI PVC INN over XOT

Sample Definitions for Communications
Controller for Linux on System z

Target Audience

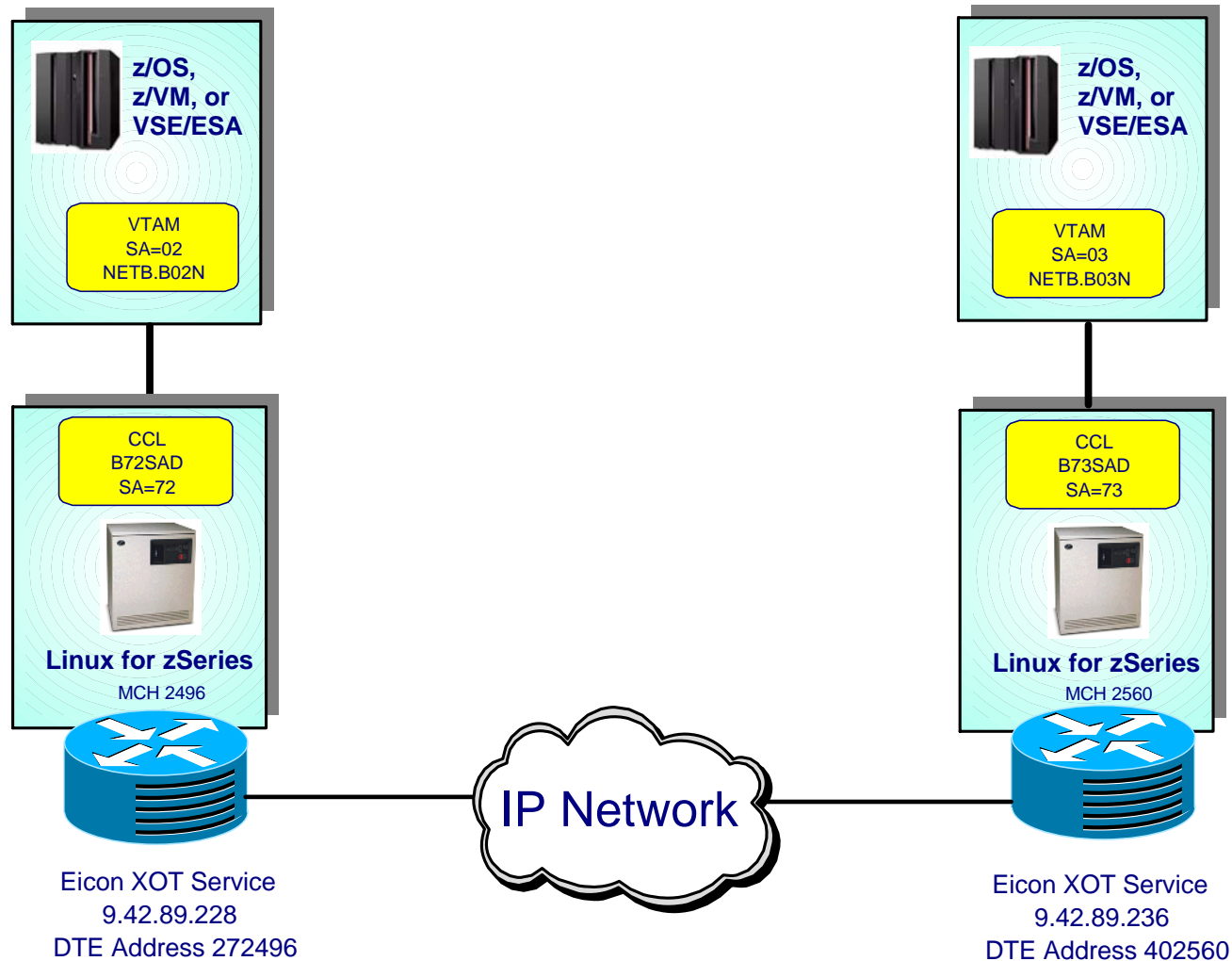
- Customers wanting a migrate NPSI PVC INN connection from 3745/3746 hardware to Communication Controller for Linux on System z9 and zSeries using an IP network as a transport medium.

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)

Test Configuration



Resources Used for Solution Verification

- Two z/OS Communications Servers
- Two Linux IDs running as guest under z/VM
 - 512mb of memory
 - 2 Virtual CPs
 - 2 3390-3 DASD volumes
- OSN Connections from zOS to CCL
 - LSA/LCS connections can be used – OSN is not a requirement
- One QDIO or LCS OSA Adapter for IP communication per z/VM guest
- Eicon XOT Server for Linux

B72PVC – 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

*

B72PVC – MCH2496 Physical Line Definition

```
MCH2496  X25.MCH ADDRESS=2496,
          RESETPVC=YES,
          RNRTIMER=30,
          RNRPKT=YES,
          FRMLGTH=133,
          MMODULO=8,
          MWINDOW=7,
          ANS=CONT,
          DBIT=YES,
          GATE=NO,
          LCGDEF=(1,1),
          LCN0=NOTUSED,
          LLCLIST=LLC3,
          LSPRI=NO,
          LUNAME=XU2496,
          MBITCHN=YES,
          NPADTEAD=712496,
          NCPGRP=XG2496,
          PHYSRSC=NO,
          PUNAME=XP2496,
          SPEED=1843200,
          STATION=DTE,
          TPTIMER=3,
          TDTIMER=1,
          NPRETRY=10,
          NDRETRY=3,
          XMONLNK=YES
```

B72PVC – PVC INN Logical Line Definitions

```
*****
*                                LOGICAL LINE DEFINITIONS                                *
*****
*
      X25.LCG LCGN=1
*
XL96LPVC X25.LINE DSTNODE=INN,SPAN=OPER1,TYPE=P,MONLINK=CONT,
          NCPGRP=XGA96PVC,LLC=LLC3,LCN=1,VCCINDX=2
*
XPP96PVC X25.PU ISTATUS=ACTIVE,PUTYPE=4
```

B73PVC – 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
*
```


B73PVC – MCH2560 Physical Line Definition

```
MCH2560  X25.MCH ADDRESS=2560,
          RESETPVC=YES,
          RNRTIMER=30,
          RNRPKT=YES,
          FRMLGTH=133,
          MWINDOW=7,
          MMODULO=8,
          ANS=CONT,
          DBIT=YES,
          GATE=NO,
          LCGDEF=(1,1),
          LCN0=NOTUSED,
          LLCLIST=LLC3,
          LSPRI=NO,
          LUNAME=XU2560,
          MBITCHN=YES,
          NCPGRP=XG2560,
          NDRETRY=3,
          NPRETRY=7,
          PHYSRSC=NO,
          PUNAME=XP2560,
          SPEED=1843200,
          STATION=DTE,
          TDTIMER=3,
          TPTIMER=10,
          XMONLNK=YES
```

B73PVC – PVC INN Logical Line Definitions

```
*****
*                                LOGICAL LINE DEFINITIONS                                *
*****
*
      X25.LCG LCGN=1
*
XL60LPVC X25.LINE DSTNODE=INN,SPAN=OPER1,TYPE=P,MONLINK=CONT,
          NCPGRP=XGA60PVC,LLC=LLC3,LCN=1,VCCINDX=2
XPP60PVC X25.PU ISTATUS=ACTIVE,PUTYPE=4
```

B72PVC – EICON Definitions (Page 1 of 3)

```
[xot_server]
  product_id=EXS
  product_name=Eicon XOT Server
  product_version=V1R1
  number_of_ports=1

;-----
; MCH2496 - PVC INN
;-----

[xot_server/port.1]
  mch_name=MCH2496
  lcn_support=1
  local_svc_x25_address=272496
  local_pvc_interface=Serial1
  remote_pvc_interface=Serial2
  number_of_xot_maps=1
  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
```

The local_pvc_interface of this XOT instance must match the remote_pvc_interface on the adjacent XOT server

B72PVC – EICON Definitions (Page 2 of 3)

```
[xot_server/port.1/xot_map.1]
  map_enabled=1
  lcn=1
  remote_svc_x25_address=402560
  remote_svc_ip=9.42.89.236
  remote_pvc_ip=9.42.89.236
  group_first_pvc=1
  group_num_pvc=1
  group_first_svc=0
  group_num_svc=0
  backup_svc_ip=0.0.0.0
  backup_timer=0
  caller_address=
  caller_override=0
  call_timer=0
  call_retries=0
  call_retry_delay=0
  cug=0
  cug_ext_format=0
  cug_override=0
  idle_timer=0
```

B72PVC – EICON Definitions (Page 3 of 3)

```
[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
```

B73PVC – EICON Definitions (Page 1 of 3)

```
[xot_server]
  product_id=EXS
  product_name=Eicon XOT Server
  product_version=V1R1
  number_of_ports=1

;-----
; MCH2560 - PVC INN
;-----

[xot_server/port.1]
  mch_name=MCH2560
  lcn_support=1
  local_svc_x25_address=402560
  local_pvc_interface=Serial2
  remote_pvc_interface=Serial1
  number_of_xot_maps=1
  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
```

The local_pvc_interface of this XOT instance must match the remote_pvc_interface on the adjacent XOT server

B73PVC – EICON Definitions (Page 2 of 3)

```
[xot_server/port.1/xot_map.1]
  map_enabled=1
  lcn=1
  remote_svc_x25_address=272496
  remote_svc_ip=9.42.89.228
  remote_pvc_ip=9.42.89.228
  group_first_pvc=1
  group_num_pvc=1
  group_first_svc=0
  group_num_svc=0
  backup_svc_ip=0.0.0.0
  backup_timer=0
  caller_address=
  caller_override=0
  call_timer=0
  call_retries=0
  call_retry_delay=0
  cug=0
  cug_ext_format=0
  cug_override=0
  idle_timer=0
```

B73PVC – EICON Definitions (Page 3 of 3)

```
[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
```


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 -p2072 B72 & at z/VM Guest #1`
 - `nohup ./cclengine -mcclcldp -p2073 B73 & at z/VM Guest #2`
 - 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
 - B72 and B73 are the directories where the `iplport` definitions are located

Starting the XOT Servers

- 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 NETB.B02N, load and activate the NCP Major Node

```
V NET,ACT,ID=B72PVC,ALL,LOAD=YES,U=3F81
```

```
IST097I  VARY          ACCEPTED
```

```
IST461I  ACTIVATE     FOR U/RNAME ENTRY ID = 3F81-S    STARTED
```

```
IST897I  LOAD          OF B72PVC                      STARTED
```

```
IST270I  LOAD OF B72PVC  COMPLETE - LOAD MODULE = B72PVC
```

```
IST464I  LINK STATION 3F81-S    HAS CONTACTED B72PVC    SA          72
```

```
IST093I  B72PVC      ACTIVE
```

```
IST093I  B72P2112    ACTIVE
```

```
IST093I  XP2496      ACTIVE
```

```
IST464I  LINK STATION C1P13E80 HAS CONTACTED ISTPUS    SA          2
```

```
IST093I  C1P13E80    ACTIVE
```

```
IST324I  ACTIVATE IN PROGRESS WITH ID = B03N          DUE TO ACTCDRM    REQUEST
```

```
IST093I  B03N        ACTIVE
```

Activating NCP using Channel Commands

From NETB.B03N, load and activate the NCP Major Node

```

V NET,ACT,ID=B73PVC,ALL,LOAD=YES,U=3F01
IST097I  VARY          ACCEPTED
IST461I  ACTIVATE      FOR U/RNAME ENTRY ID = 3F01-S    STARTED
IST897I  LOAD          OF B73PVC                        STARTED
IST270I  LOAD OF B73PVC  COMPLETE - LOAD MODULE = B73PVC
IST464I  LINK STATION 3F01-S    HAS CONTACTED B73PVC    SA          73
IST093I  B73PVC      ACTIVE
IST093I  B73P2112    ACTIVE
IST093I  B73NPPU     ACTIVE
IST093I  XP2560      ACTIVE
IST464I  LINK STATION C3P23E00 HAS CONTACTED ISTDUS     SA          3
IST093I  C3P23E00    ACTIVE
IST464I  LINK STATION XPP60PVC HAS CONTACTED B72PVC     SA          72
IST621I  RECOVERY SUCCESSFUL      FOR NETWORK RESOURCE XPP60PVC
IST093I  B02N        ACTIVE

```