NEC SV8100

Peer to Peer CCIS
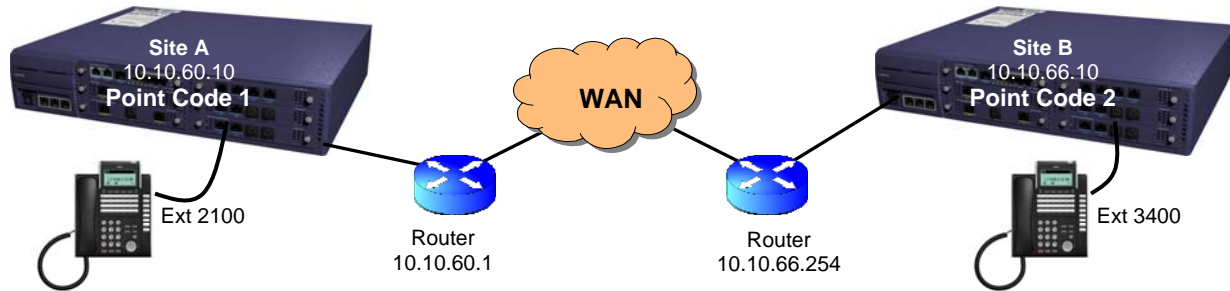
Peer 2 Peer Basic Assignments

The following is an example of P2P CCIS between two SV8100's. The SV8100 programming can also be referenced when connecting to a 2400IPX, 2000IPS, SV8300, SV7000, or SV8500.
NOTE: Trunk, trunk group, station numbers, and IP addressing used are for example only.
ALWAYS (or whenever possible) test the IP-CCIS back to back before connecting to the customer network. This will save hours of finger pointing with IT administrators.

Site A
10.10.60.10
Point Code 1

WAN

Site B
10.10.66.10
Point Code 2

Ext 2100

Ext 3400

Router
10.10.60.1

Router
10.10.66.254

Site A Programming

10-12: CD-CP00 Network Setup

01 - IP Address `0.0.0.0`

02 - Subnet Mask `255.255.255.0`

03 - Default Gateway `10.10.60.1`

09 - IPLA IP Address `10.10.60.10`

10 - IPLA Subnet Mask `255.255.255.0`

CM 10-12-01 is no longer required once the IPLA is installed in the SV8100. All communication for the SV8100 can be done through the IP Address in CM 10-12-09. If an address must be left due to network restrictions (VLANs etc) the first 2 octets **MUST** be different to the first 2 octets in CM 10-12-09.

The Default Gateway is the address of the router to allow connection across the WAN. The IP address **MUST** be a static address and should be pinged on the customer network, before connection, to confirm no duplication. This address **MUST** also be in the same subnet as the IP addresses assigned in **CM 84-26**.

CM 84-26 assign the IPLA ports. Each IP address represents 16 IPLA DSP resources. These resources convert the IP packets to regular voice.
If you have a **32IPLA** you can assign a maximum of 2 IP Addresses. A **64IPLA** can have 4 IP Addresses etc. The addresses **MUST** be in the same subnet as the address in **CM 10-12-09**. Ports not being used should be assigned 0.0.0.0.

84-26: IPLA DSP Basic Setup

Slot `CD-CP00 + PZ-32IPLA - Chassis 1 - Slot 01 (1)`

VoIP Gateway	IP Address	RTP Port	RTCP Port
1	10.10.60.11	10020	10021
2	10.10.60.12	10052	10053
3	0.0.0.0	10084	10085

10-40: IP Trunk Availability

Slot: CD-CP00 + PZ-32IPLA - Chassis 1 - Slot 01 (1)

01 - IP Trunk Availability ☑

02 - IP Trunk Port Count: None

04 - CCISoIP Port Count: 8 ports

Enable IP Trunks with **CM 10-40-01**. **CM 10-40-02** is for SIP Trunks to a provider (See **Note:1**). **CM 10-40-04** assigns the number of trunks for IP-CCIS. No CPU license is needed for CCIS trunks. You should not assign more trunks than you have IPLA ports (E.g. 32 IPLA will allow up to 32 IP-CCIS trunks).

01
1.0
CD-CP00 + PZ-32IPLA
IP: 25~32

Once **CM 10-40** is set the Card Configuration or **CM 10-03** will show the trunks assigned to the CP00.

14-05: Trunk Groups

Trunk: 025: IP - Chassis 1 - Slot 01 (1)

Trunk	Trunk Group	Priority
25	10	8
26	10	7
27	10	6
28	10	5
29	10	4
30	10	3
31	10	2
32	10	1

Assign the IP-CCIS trunks to their unique Trunk Group and reverse the Priority order so that the last trunk is selected first.

Set the IP-CCIS trunks to **Tie Line** for each mode utilized by the customer.

22-02: Incoming Call Trunk Setup

Trunk: 025: IP - Chassis 1 - Slot 01 (1)

Trunk	Mode 1	Night Mode Mode 2
25	Tie line	Tie line
26	Tie line	Tie line
27	Tie line	Tie line
28	Tie line	Tie line
29	Tie line	Tie line
30	Tie line	Tie line
31	Tie line	Tie line
32	Tie line	Tie line

Enable CCIS.

50-01: CCIS System SettingS

01 - CCIS Availability ☑

CM 50-02 should have ONLY the Origination Point Code assigned for IP-CCIS (Route ID 09). All other settings should be at default.

50-02: Connecting System Settings

CCIS Route ID	Common Signaling Channel Port	Common Signaling Channel Data Speed	Origination Point Code	Destination Point Code	Calling Name Indication	CCH Package Channel Number
09 - IP-CCIS	0	56kbps	1	0	☑	0

Assign each of the other sites in the CCIS network in **CM 50-03**.
 DO NOT assign the Origination point code from CM 50-02 only the Destinations in the CCIS network should be assigned.

50-03: CCIS Destination System Settings

CCIS System ID (1~255) 1

CCIS System ID	Destination Point Code	CCIS Route ID	IP Address	Point Code Availability
001	2	0	10.10.66.10	☑

11-01: System Numbering

2nd Dial Digit 1-digit access code

1st and 2nd Dial Digits	Dial Digit Length	Type
2x	4	Extension
3x	1	F-Route

Set the lead digit/digits for stations in the networked site to Type **F-Route**.

44-02: F-Route Dial Analysis Table

Table Entry (1~120) 1

Table Entry	Dial Digits	Service Type	Additional Data
001	3	F-Route Table	1

With **CM 44-02** point the leading digit/digits of the remote site stations to an F-Route Table.

44-05: F-Route Table

F-Route Table (1~500) [1] 🔍 ◀ ▶

	Priority	
	1	2
01 - Trunk Group	10	0
09 - Maximum Dialing Digit	4	0
10 - CCIS over IP Destination Point Code	2	0

Go to **CM 44-05** and access the F-Route previously assigned in Step X.
Set the entry **01** to the CCIS trunk group, entry **09** to the number of digits in the number dialed, and **10** to the Destination Point Code.

Site A Programming

Site B Assignments shown listed for Telephone programming……

To enter programming use **Speaker # * # * 4 7 5 4 4 Transfer**
- **Mic** key steps between fields.
- **Transfer** key writes data.
- **Volume Up/Down** writes data and steps you to the next/previous port/entry.
- **Answer** key will step you backwards.

1. **CM 10-12-01** Set to **0.0.0.0**
2. **CM 10-12-03** Assign the default gateway (router) address. **10.10.66.254**
3. **CM 10-12-09** Set the CPU IP address. **10.10.66.10**
4. **CM 10-12-11** Set the CPU Subnet Mask. **255.255.255.0**
5. **CM 84-26-01** Assign the IPLA ports an IP Address **10.10.66.11** and **.12**
6. **CM 84-26-01** De-assign IPLA ports not used. **0.0.0.0**
7. **CM 10-40-01** Enable IP Trunk. **1:Enable**
8. **CM 10-40-04** Assign the number of IP trunks for CCIS. **8**
9. **CM 14-05-01** Place trunks assigned in step 7 to trunk group. **Group No. 10**
10. **CM 22-02-01** Assign all IP-CCIS trunks as **Tie Line** for modes utilized
11. **CM 50-01-01** Enable CCIS. **1:Enable**
12. **CM 50-02-03** For **Route ID 9** assign the Originating Point Code. **Org.Point Code 2**
13. **CM 50-03-01** Assign all Destination Point Codes (DPC) in the IP-CCIS network. **DPC 1**
14. **CM 50-03-03** Assign the IP Address for each DPC. **IP Add 10.10.60.10**
15. **CM 11-01-01** Set the lead digit/digits for stations dialed in remote site to F-Route. **3**
16. **CM 44-02-01** Enter the lead digit/digits for stations dialed in remote site. **3**
17. **CM 44-02-02** Assign the digits entered in **Step 15** to **2:F-Route**.
18. **CM 44-02-03** Assign an F-Route number for digit/digits entered in **Step 15. DataF-rou 1**
19. **CM 44-05-01** Set the IP CCIS trunk group to F –Route entered in **Step 17. Trk GP 10**
20. **CM 44-05-09** Assign the max digits dialed for the stations in the remote site. **Max Digit 4**
21. **CM 44-05-10** Enter the DPC for the remote site being dialed. **Dest. Code 1**

Miscellaneous Notes for CCIS Basic Assignments:

- P2P CCIS is NOT available to the NEC IPKII or the NEC IPK.

- P2P CCIS is available to the SV8100, SV8300, SV8500, SV7000 NEAX 2000 IPS, NEAX 2400 IPX

- No CP00 license is required for P2P CCIS.

- DSP resources on the IPLA board can be shared for P2P CCIS, SIP Stations (NEC and Third party), and SIP trunks to a carrier.

- The IP network used for CCIS requires a low latency, low jitter, and low packet loss network. Packet loss cannot exceed 1%. One way delay MUST not exceed 150ms or 300ms round trip (G.114).

- Extension numbers in the SV8100 cannot start with 0 or 9.

- If you get no speech path when calling a NEAX or SV8300/8500 make sure you change CM 84-21-01 and CM 84-21-07 to the same payload size as the other system. The NEAX and SV8300, SV8500, SV700 all use 40ms by default while the SV8100 is 30ms by default.

CCIS Centralized Voice mail

45-01: Voice Mail Integration Options

01 - Voice Mail Department Group [2]

14 - CCIS Centralized Voice Mail Pilot [   ]

Voice Mail Site.
Assign the Voice Mail as normal. No additional programming is necessary for CCIS Centralized VM. Make sure that **CM 45-01-14** is *NOT* assigned in the main site.

Remote Site.
Assign the Voice Mail Pilot number in **CM 45-01-14**. Make sure that **CM 45-01-01** is **NOT** assigned (0).

45-01: Voice Mail Integration Options

01 - Voice Mail Department Group [0]

14 - CCIS Centralized Voice Mai Pilot [2199]

Miscellaneous Notes for CCIS Centralized VM:

- Only UM8000 is supported for Centralized VM. VM8000 (In-Mail) or other third party analog port Voice Mails are not supported for Centralized use.
- If CCIS network contains NEAX PBX's the Centralized VM cannot reside in the SV8100.
- Centralized VM in the SV8100 does not support Open Numbering Plan
- Centralized VM in the SV8100 will only support station numbers over 4 digits in length with R3 and higher.
- The following VM features are **NOT** supported at the remote site
    - VM Softkeys
    - Live Record
    - Live Monitor (Answering Machine Emulation)
    - Call Hold
    - Call Screening
    - Await Answer Transfer
    - Call Holding
    - Constant Message Count
    - Call Back to VM
    - Live Transfer (Caller ID Return)

Internal Page over CCIS

Internal Page over CCIS requires sending an access code over the CCIS link to the remote site where an F-Route replaces it with the regular Internal Page code.
In this example Site A will dial access code 53 to perform an internal Page in Site B.

Site A Programming

11-01: System Numbering

2nd Dial Digit [1-digit access code ▼] ◄ ►

Assign the leading digit/digits to an F-Route in site A.

1st and 2nd Dial Digits	Dial Digit Length	Type
5x	1	F-Route ▼

44-02: F-Route Dial Analysis Table

Table Entry (1~120) [1] 🔍 ◄

Using **CM 44-02** point the Paging access code to its own individual F-Route.

Table Entry	Dial Digits	Service Type	Additional Data
001	3	F-Route Table ▼	1
002	53	F-Route Table ▼	53

44-05: F-Route Table

F-Route Table (1~500) [53] 🔍 ◄

Finally at site A assign the F-Route for the Paging access code programmed in the previous step.
NOTE: The site dialing the code is doing nothing more than sending the access code over the CCIS link. There is no digit deletion or addition done at the initiating site.

	1
01 - Trunk Group	10
09 - Maximum Dialing Digit	2
10 - CCIS over IP Destination Point Code	2

Site B Programming

11-01: System Numbering

Assign the leading digit/digits to an F-Route.

2nd Dial Digit: 1-digit access code

1st and 2nd Dial Digits	Dial Digit Length	Type
5x	1	F-Route

44-02: F-Route Dial Analysis Table

Using **CM 44-02** point the incoming Paging access code to its own individual F-Route.

Table Entry (1~120): 1

	Dial Digits	Service Type	Additional Data
001	3	F-Route Table	1
002	53	F-Route Table	53

Note: The F-Route number and Additional Dial Table no. match the access code. This was done to keep the numbering uniform which sometimes helps with troubleshooting but is not necessary.

44-05: F-Route Table

F-Route Table (1~500): 53

	1
01 - Trunk Group	255
02 - Delete Dial Digits	2
03 - Additional Dial Digits Table	53

The F-Route directs the digits to intercom dial tone (trunk Group **255**) and deletes them. Using an Addition table with **CM 44-06** the F-Route then adds back the default Internal Paging access code. Programming can be confirmed at Site B and then A by simply dialing the new access code (53) to perform the Internal Page.

44-06: Additional Dial Table

Additional Dial Table (1~1000): 53

Additional Dial Table	Additional Dial Data
0053	7011

Miscellaneous Notes for Internal/External Page over CCIS:

- Internal and External page codes can be utilized in CM 44-06 at the destination site. The Combined Paging code (Internal and External simultaneous page) is not supported.
- Internal/External page over CCIS into the SV8100 can be initiated by SV8100 and NEAX PBX. Only External Page can be initiated by the SV8100 into the NEAX PBX.

Trunk Call over CCIS

Trunk calls over CCIS require ARS enabled at both sites. This is especially important if you are routing calls over CCIS and then out ISDN PRI trunks.

The following example shows international, long distance (LD) and local calls routing over the CCIS and then out ISDN PRI trunks while the Emergency 911 calls route over POTS trunks at the remote site. For the main **Site A** programming see the *Basic ARS/LCR* Cheat Sheet.

Site B Programming

With **CM 11-01** confirm that your trunk access code (**9**) is assigned as Trunk.

11-01: System Numbering

2nd Dial Digit — 1-digit access code ◄ ►

1st and 2nd Dial Digits	Dial Digit Length	Type
9x	1	Trunk

26-01: Automatic Route Selection Service

01 - ARS Service ☑

Enable ARS with CM 26-01-01

26-02: ARS/LCR Dial Analysis Table

Table Entry (1~400) [1]

Assign the dialed numbers to **CM 26-02**. Notice the 911 is sent straight to the local trunk route while the other dialed digits are routed to F-Routes.

Table Entry	Dial Data	Service Type	Additional Data
001	011	F-Route Access	100
002	1	F-Route Access	101
003	911	Route to Trunk Group	1
004	@@@	F-Route Access	102

26-03: ARS Dial Treatments

Dial Treatment

01	D019RE

Assign a Dial Treatment to add a **9** (**Site A** trunk access code) to the front of the number dialed. This 9 will place the call into the ARS routing assigned at the main site.

44-05: F-Route Table | International call.

F-Route Table (1~500) [100]

1

01 - Trunk Group   (CCIS Trk Grp)   [10]

08 - Dial Treatment   [1]

09 - Maximum Dialing Digit   [17]

10 - CCIS over IP Destination Point Code   [1]

44-05: F-Route Table | Long Distance call

F-Route Table (1~500) [101]

1

01 - Trunk Group   [10]

08 - Dial Treatment   [1]

09 - Maximum Dialing Digit   [12]

10 - CCIS over IP Destination Point Code   [1]

44-05: F-Route Table | Local call

F-Route Table (1~500) [102]

1

01 - Trunk Group   [10]

08 - Dial Treatment   [1]

09 - Maximum Dialing Digit   [11]

10 - CCIS over IP Destination Point Code   [1]

Finally assign the actual F-Routes in **CM 44-05**. Notice each F-Route is identical with only CM **44-05-09** showing the different digit length for the dialed call. The digit length is the actual number of digits sent over the CCIS trunks. That is the number of digits dialed + the access code added by the Dial Treatment.
CM 44-05-10 is the DPC of the site where the trunks reside.

Miscellaneous Notes for Trunk Calls over CCIS:

- Successful trunk calls over CCIS must use ARS. The use of F-Routes for the trunk calls over CCIS does not allow certain features to complete such as account codes and some times forwarding off premise.
- Calls over CCIS may need the leading 1 or the area code removed before being sent to the other site. To perform either of these functions the digits in CM 26-02 must be broken out to 8 digits minimum. This can be done by adding @ signs. To delete a leading 1 use a Dial Treatment **2RE**. To remove a 1 + area code use a Dial Treatment **23RE**.

Sending CPN Over CCIS

Many times the remote location will be utilizing the ISDN trunks at another site for their outgoing calls. When this happens the site may want to project their own CPN (Calling Party Number) rather than that of the tandem site. In this example Site B (3400's) will send its own CPN over the CCIS and out the ISDN PRI in Site A.

Site B Programming

For the COS for each of the stations (**CM 20-06**) enable ISDN CLIP. **CM 15-01-05** is also required on a station by station basis but is on by default.

20-08: Class of Service Options (Outgoing Call Service)

Class of Service (1~15) `1`

13 - ISDN Clip ☑

21-13: ISDN Calling Party Number Setup for Extensions

ICM Extension `3400: MLT - STA 101 - Port 001`

Assign a number to each station in the remote site you want sending CPN. This should be a ten digit number.

ICM Extension	Calling Party Number	ICM Extension	Calling Party Number
3400	2142623400	3408	2142623408
3401	2142623401	3409	2142623400
3402	2142623400	3410	2142623410
3403	2142623403	3411	2142623411

Site A Programming

Finally at the tandem site flag **CM 14-01-24** for the ISDN B Channels **ONLY**.

14-01: Trunk Basic Setup

Trunk `001: PRI - Chassis 1 - Slot 03 (3)`

01 - Trunk Name `Line 001`

24 - Trunk to Trunk Outgoing Caller ID Through Mode ☑

Miscellaneous Notes for Sending CPN Over CCIS:

- This feature is not supported in all areas as some carrier will not allow the sending of CPN out a span that does not have that same number allocated as an incoming DID.
- If you do not provide an entry in CM 21-13 in the remote site the call will utilize the CPN assigned in CM 21-12 at the tandem site.

CCIS Centralized Night Mode

Centralized Night Mode allows the Main site to place not only its own system into another mode but also to place the remote site into a different mode. In this example Site A will control the Day/Night modes for Site B. That is setting Night mode, by the Attendant in Site A will also set Night mode in site B.

Site A Programming

At the main site uncheck **CM 50-06-02.** This should only be assigned for sites to Receive the Day/Night Mode signaling.

50-06: CCIS Feature Availability

01 - Link Reconnect ☑

02 - Centralized Day/Night Switching (for Message Receiver Side) ☐

Then in **CM 50-11** assign each of the **Destination Point Codes** to receive the Day/Night Mode signaling messages. Notice with IP-CCIS the **CCIS Route ID** must stay set at the default 0. *Note:* The Sending Group number has no relation to the Point Code.

50-11: CCIS Centralized Day/Night Switching Sending Group Assignment

Sending Group	Destination Point Code	CCIS Route ID	Sending Group	Destination Point Code	CCIS Route ID
01	2	0	09	0	0
02	0	0	10	0	0

Site B Programming

At the remote site confirm **CM 50-06-02** is assigned (default).

50-06: CCIS Feature Availability

01 - Link Reconnect ☑

02 - Centralized Day/Night Switching (for Message Receiver Side) ☑

50-12: CCIS Centralized Day/Night Mode to System Mode Assignment

01 - Day Mode 1

02 - Night Mode 2

Finally assign the Modes you want the remote system to go into when it receives the **Day** (Mode 1) signal or the **Night** (Mode 2) Signal from the main site.

Miscellaneous Notes for CCIS Centralized Night Mode:

- CCIS Centralized Night Mode can be used to change the Night Mode in other SV8100's, IPKII, IPK, NEAX2000IPS and SV8300.
- The Main Site **ONLY** sends a message when changing between **Mode 1** and **Mode 2**. If the Main site goes into any other Modes (3~8) no Centralized Day/Night Mode message is sent to the remote sites and they will stay in the Mode last received from the main
- The remote site can over ride the received Mode change from the Main site by use of a Feature key or access code if enabled in programming at the remote site.

CCIS Centralized DSS/BLF

Centralized DSS/BLF involves programming in the site sending the BLF information **ONLY**. In this example Site A has a DSS console with the DSS/BLF One touch keys programmed for ext's 3400~3403 which reside in site B.

Site B Programming

50-08: CCIS Centralized BLF Sending Group Assignment

Sending Group	Destination Point Code	CCIS Route ID
1	1	0
2	0	0

At the remote assign the **Destination Point Codes** that you wish to *send* the BLF messages to.

In **CM 50-09** enter all the stations you wish to send the BLF status of, over the CCIS link. These **MUST** be valid stations assigned in **CM 11-02** or **CM 11-04** in the site database.

50-09: CCIS Centralized BLF Sending Extension Number

Sending Entry (1~120) 1

Sending Entry	Extension	Sending Group 1	Sending Group 2	Sending Group 3	Sending Group 4
001	3400	☑	☐	☐	☐
002	3401	☑	☐	☐	☐
003	3402	☑	☐	☐	☐
004	3403	☑	☐	☐	☐

Site A Programming

30-03: DSS Console Key Assignment

DSS Console [01 ▾] ◄ ► DSS Key (1~200) [1   ] 🔍 ◄ ►

DSS Key	Function	
001	01 - DSS/One-Touch ▾	3400
002	01 - DSS/One-Touch ▾	3401
003	01 - DSS/One-Touch ▾	3402
004	01 - DSS/One-Touch ▾	3403

> Assign the stations to the keys of the DSS console in the destination site with **CM 30-03**. Stations can also be assigned to One Touch DSS/BLF keys on station sets with **CM 15-07**

Miscellaneous Notes for DSS/BLF over CCIS:

- Stations assigned in **CM 50-09** MUST exist in **CM 11-02** or **CM 11-04** of that site.
- Only the sending the BLF for stations that are actually programmed on One Touch keys in the destination site.
- **CM 50-08** and **CM 50-09** must be programmed first before assigning the One Touch keys in the destination site.
- There is a slight delay in operation for lamp status between sites. CCIS BLF messages have a low priority on the CCIS link so the busier the CCIS link the slower the BLF operation.

CCIS Open Numbering Plan

Site A Office Code 30
10.10.60.10
Point Code 1

WAN

Site B Office Code 31
10.10.66.10
Point Code 2

Ext **2100**

Router
10.10.60.1

Router
10.10.66.254

Ext **2100**
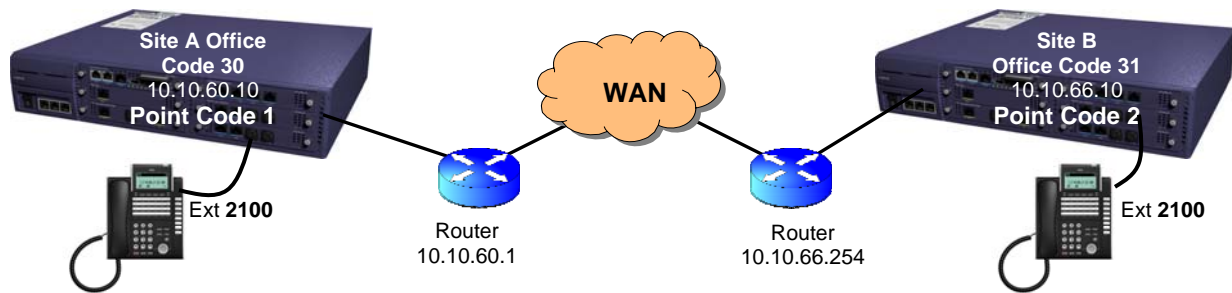
CCIS open numbering allows for the *same extension* numbers to be assigned at multiple sites in a CCIS network. Each site in the network is assigned an "**Office Code**". To call a station in another site you would dial the Office Code followed by the ext number. Above Station 2100 resides in both systems. For site A to call ext 2100 in site B they would dial 312100.
The CCIS programming is the same with the addition of CM 50-04 and some additional assignments in CM 11-01 and CM 44-02.

Site A Programming

In this example **CM 11-01** will be assigned the same in both sites. The digit **2** is set for a **4** digit extension and the digit **3** to **1** digit **F-Route** for the Office Codes.

11-01: System Numbering

2nd Dial Digit: 1-digit access code

1st and 2nd Dial Digits	Dial Digit Length	Type
2x	4	Extension
3x	1	F-Route

Assign the Office Code for Site A in **CM 50-04-01.** This number will be added to the front of the ext number in CM 11-02 when calling over CCIS

50-04: CCIS Office Code Assignment

01 - CCIS Office Code: 30

44-02: F-Route Dial Analysis Table

Table Entry (1~120): 1

Table Entry	Dial Digits	Service Type	Additional Data
001	30	Extension Call	2
002	31	F-Route Table	1

CM 44-02 must have all Office Codes assigned *INCLUDING* its own Office Code. Here Site A's digits **30** are pointed to **Extension Call**. The **Additional Data** in this type of assignment represents how many digits should be stripped from the incoming number leaving only the ext number. Calls into site A will show **3021XX**. **CM 44-02** will strip off the leading 2 digits (**30**) leaving only the **21XX** ext number. Digits **31** for site B are routed to an F-Route.

44-05: F-Route Table

F-Route Table (1~500)   [1]   🔍

The F-Route is then assigned for calls to the other site (**Site B**). Notice the Maximum digits is set for the 2 digit Office Code (**31**) + the 4 digit extension (**21XX**) which = 6 digits.

1

01 - Trunk Group   [10]

09 - Maximum Dialing Digit   [6]

10 - CCIS over IP Destination Point Code   [2]

Site B Programming

44-02: F-Route Dial Analysis Table

Table Entry (1~120)   [1]   🔍 ◀ ▶

CM 11-01 is first assigned the same as **Site A**. **CM 44-02** has the Office Code for **Site A** routed to an F-Route and it's own Office Code **31** set to an **Extension Call**. The **Additional Data** entry of **2** deletes the leading 2 digits of an incoming 3121XX call dialed from **Site A** leaving the 21XX extension number.

Table Entry	Dial Digits	Service Type	Additional Data
001	30	F-Route Table ▾	1
002	31	Extension Call ▾	2

44-05: F-Route Table

F-Route Table (1~500)   [1]   🔍

The F-Route is then assigned for calls to the other site (**Site A**). Notice the Maximum digits is set for the 2 digit Office Code (**30**) + the 4 digit extension (**21XX**) which = 6 digits.

1

01 - Trunk Group   [10]

09 - Maximum Dialing Digit   [6]

10 - CCIS over IP Destination Point Code   [1]

Miscellaneous Notes for Open Numbering Plan:

- Open Numbering Plan in a Key System only environment does not support Centralized Voice Mail. Centralized Voice Mail in an Open Numbering Plan network must be installed in a NEAX, SV8300, or SV8500 system.

QOS and IP Ports for P2P CCIS

QOS must be implemented when the P2P CCIS connection is across a WAN being shared with other data. QOS enables real time media (VOIP) to have priority over the regular data packets when routing to the opposite location. QOS is setup by the IT personnel in charge of the network. The two types of QOS that will require programming in the SV8100 are IP Precedence and Diff-Serv. Other network QOS options available to the IT personnel include Port based priority, IP Address priority and many others. These other QOS options require no programming input to the SV8100. In this example the IT personnel have set up Expedited Forwarding which is an element of Diffserv.

Site A and Site B Programming

In this case **Expedited Forwarding** is part of **Diffserve** so ToS Mode is set to this. If a Precedecnce level is provided by the IT personnel set this to IP Precedence.

84-10: ToS Setup

Protocol Type	ToS Mode	IP Precedence Priority	IP Precedence Delay	IP Precedence Throughput	IP Precedence	IP Precedence Cost	Priority (Diffserve)
RTP/RTCP	Diffserve	0	Normal	NOT USED		Normal	46
CCIS	Diffserve	0	Normal			Normal	46

The 2 protocols that require QOS for P2P CCIS are **RTP/RTCP** (Voice Data) and **CCIS** (Call Control Data).

If the **ToS Mode** used is **IP Precedence** set the Precedence level (**1~7**) provided by the IT personnel. See chart on next page for details.

If the **ToS Mode** used is **Diffserve** set the Priority level (**0~56**), provided by the IT personnel. See chart on the next page for details

Ports for P2P CCIS

The IT personnel may want to prioritize the IP ports utilized by the P2P CCIS application or may have a Firewall in place blocking CCIS calls. Below is a chart identifying the IP Ports to be prioritized or opened up in a Firewall for P2P CCIS.

IP Ports Used for Peer 2 Peer CCIS		
Type	Ports	TCP/UDP
CCIS Call Control	57000/59000	TCP
Voice with 32IPLA	10020~10083	UDP
Voice with 64IPLA	10020~10147	UDP
Voice with 128IPLA	10020~10275	UDP

QOS Settings		
Priority Name	**Type** **IP Precedence/Diffserve**	**CM 84-10** **Setting**
Routine	**IP Precedence**	**0**
Priority	**IP Precedence**	**1**
Immediate	**IP Precedence**	**2**
Flash	**IP Precedence**	**3**
Flash Override	**IP Precedence**	**4**
Critical	**IP Precedence**	**5**
Internetworking Control	**IP Precedence**	**6**
Network Control	**IP Precedence**	**7**
Best Effort	**Diffserve**	**0**
Class Selector 1	**Diffserve**	**8**
Assured Forwarding 11	**Diffserve**	**10**
Assured Forwarding 12	**Diffserve**	**12**
Assured Forwarding 13	**Diffserve**	**14**
Class Selector 2	**Diffserve**	**16**
Assured Forwarding 21	**Diffserve**	**18**
Assured Forwarding 22	**Diffserve**	**20**
Assured Forwarding 23	**Diffserve**	**22**
Class Selector 3	**Diffserve**	**23**
Assured Forwarding 31	**Diffserve**	**26**
Assured Forwarding 32	**Diffserve**	**28**
Assured Forwarding 33	**Diffserve**	**30**
Class Selector 4	**Diffserve**	**32**
Assured Forwarding 41	**Diffserve**	**34**
Assured Forwarding 42	**Diffserve**	**36**
Assured Forwarding 43	**Diffserve**	**38**
Expedited Forwarding	**Diffserve**	**46**
Class Selector 6	**Diffserve**	**48**
Class Selector 7	**Diffserve**	**56**

Miscellaneous Notes for QOS and IP Ports for P2P CCIS:

- QOS is implemented by the IT personnel. Applying QOS settings in CM 84-10 does not automatically provide QOS. The network routing equipment must be programmed first. The network settings must then be provided so CM 84-10 can be assigned correctly if at all.
- If the IT personnel wish to prioritize on IP Addressing be sure to provide to them the IP address in CM 10-12-09 and all valid addresses in CM 84-26.
- Choppy voice is caused 99.99% of the time because of QOS not being implemented or implemented incorrectly on the network.
- A ping test does NOT mean the ports for CCIS are available across a network.