Application Note

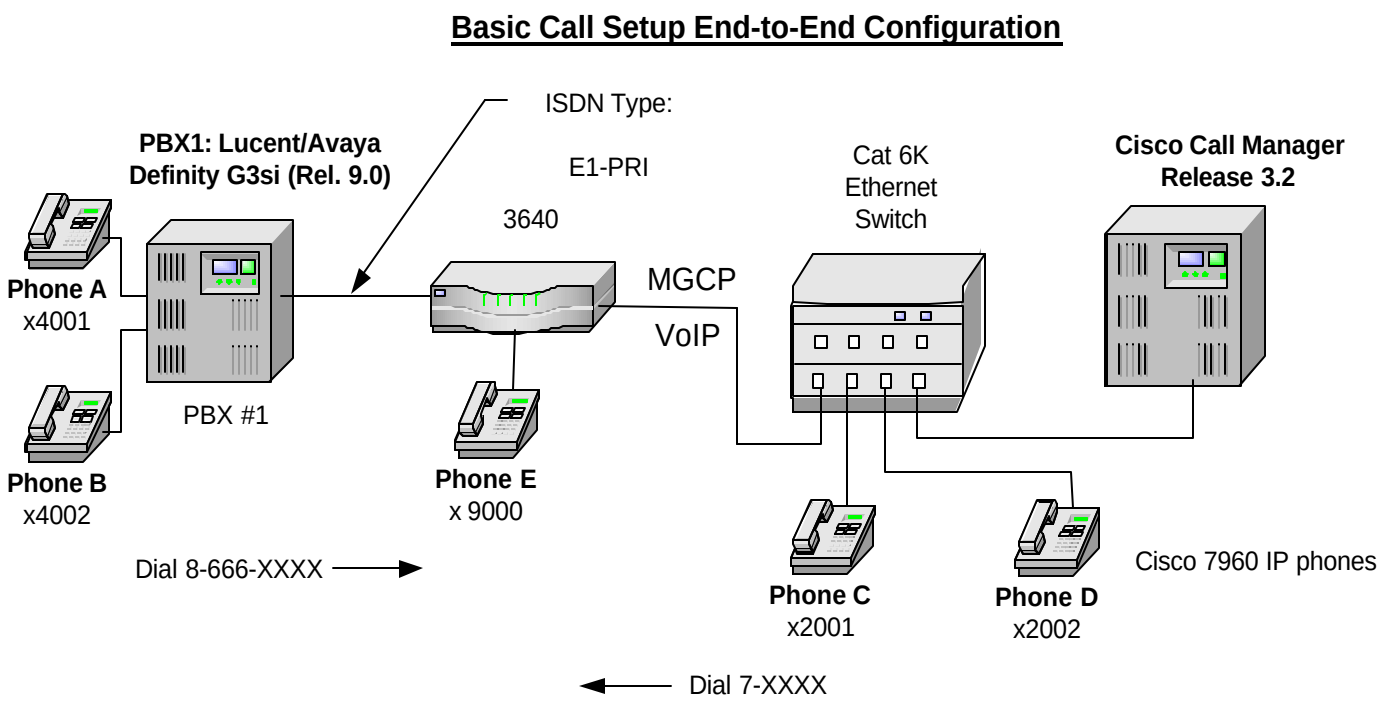
Cisco 3640 Gateway-PBX Interoperability: Lucent/Avaya Definity G3si Version 9 with CallManager Using 3640-E1 PRI as MGCP Gateway

Introduction

- This note describes the interoperability of the /Avaya Definity G3 Version 9 PBX and the Cisco 3640 using-E1 PRI as MGCP Gateway.
- The Network Topology diagram shows the end-to-end interoperability.
- Connectivity is achieved by using the ETSI standard PRI protocol. The Lucent/Avaya Definity G3si can be configured as either network or user side.
- Features supported are as follows:
  - Calling/Called Number
  - Calling Name

Network Topology

Figure 1. Network Topology



Limitations

- Cisco CallManager does not send connected name or connected number information in the connect message back to PBX.
- When calling from Cisco 7960 IP phone to Lucent/Avaya digital phone, Lucent/Avaya phone displays Calling Name and Number after the call is answered as expected. Cisco 7960 IP phone however only displays called number but no connected name even though Lucent/Avaya PBX was sending both connected name and connected number IE information in the connect message back to 3640 Gateway.
- When calling from Lucent/Avaya digital phone to Cisco 7960 IP phone, the Cisco IP phone displays connected name and number after the call is answered. Lucent/Avaya phone however did not display called name or called number. It displays trunk name instead. This was verified using ISDN protocol analyzer that the Cisco CallManager was not sending connected name or connected number information in the connect message back to PBX.
- Features not supported are as follows:
  - Connected Name
  - Connected Number

System Components

Hardware Requirements

- Cisco 3640 Gateway with 2MFT E1 Port
- Cisco Catalyst 6000 switch
- Cisco CallManager 3.2
- Lucent/Avaya Definity G3si V9 PBX, TN464F, DS1 INTFC 24/32

Software Requirements

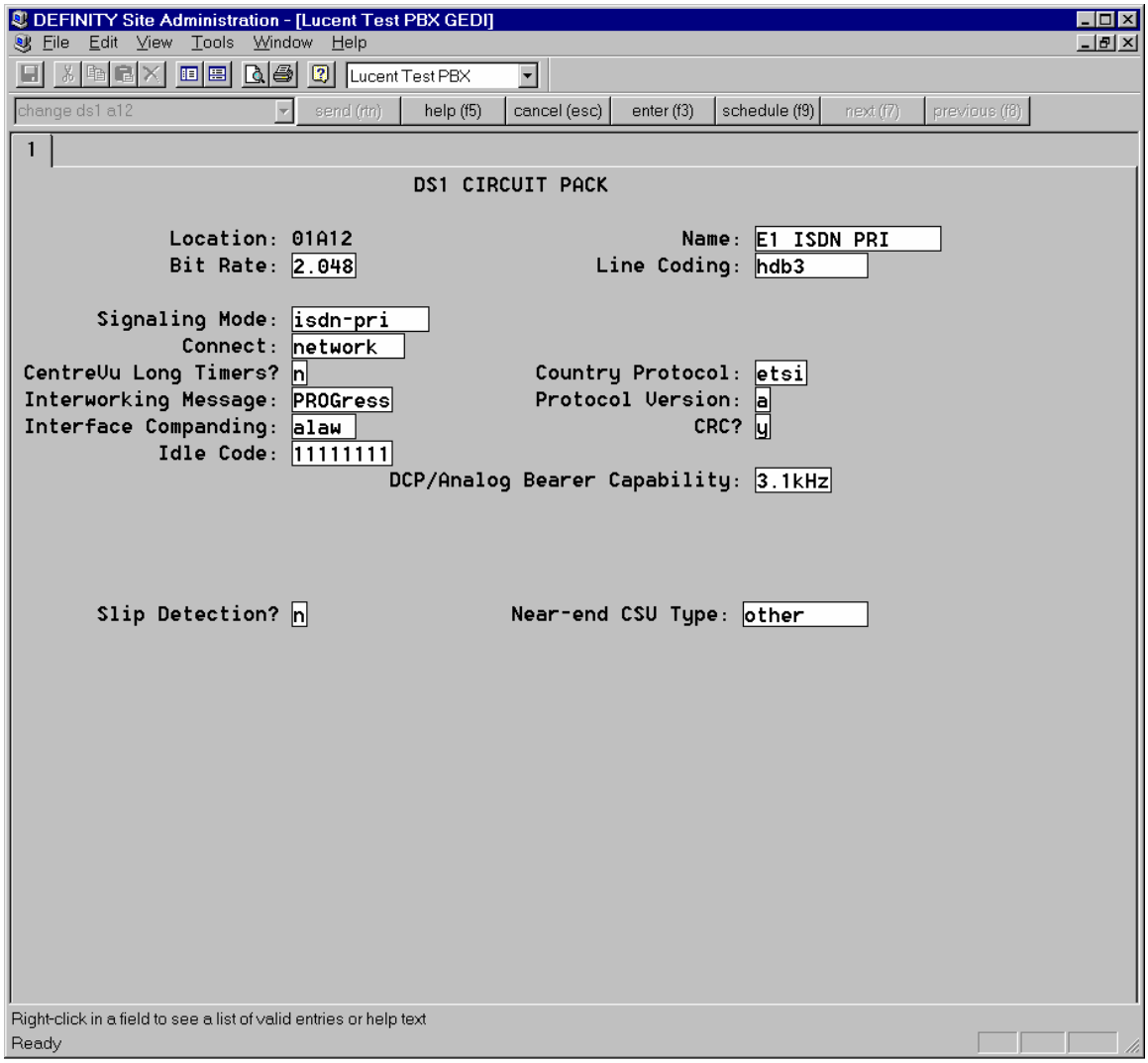
- Cisco IOS Software Release c3640-js-mz.122-2.XN
- PBX Software Version 9.
- Cisco CallManager Release 3.2

Configuration

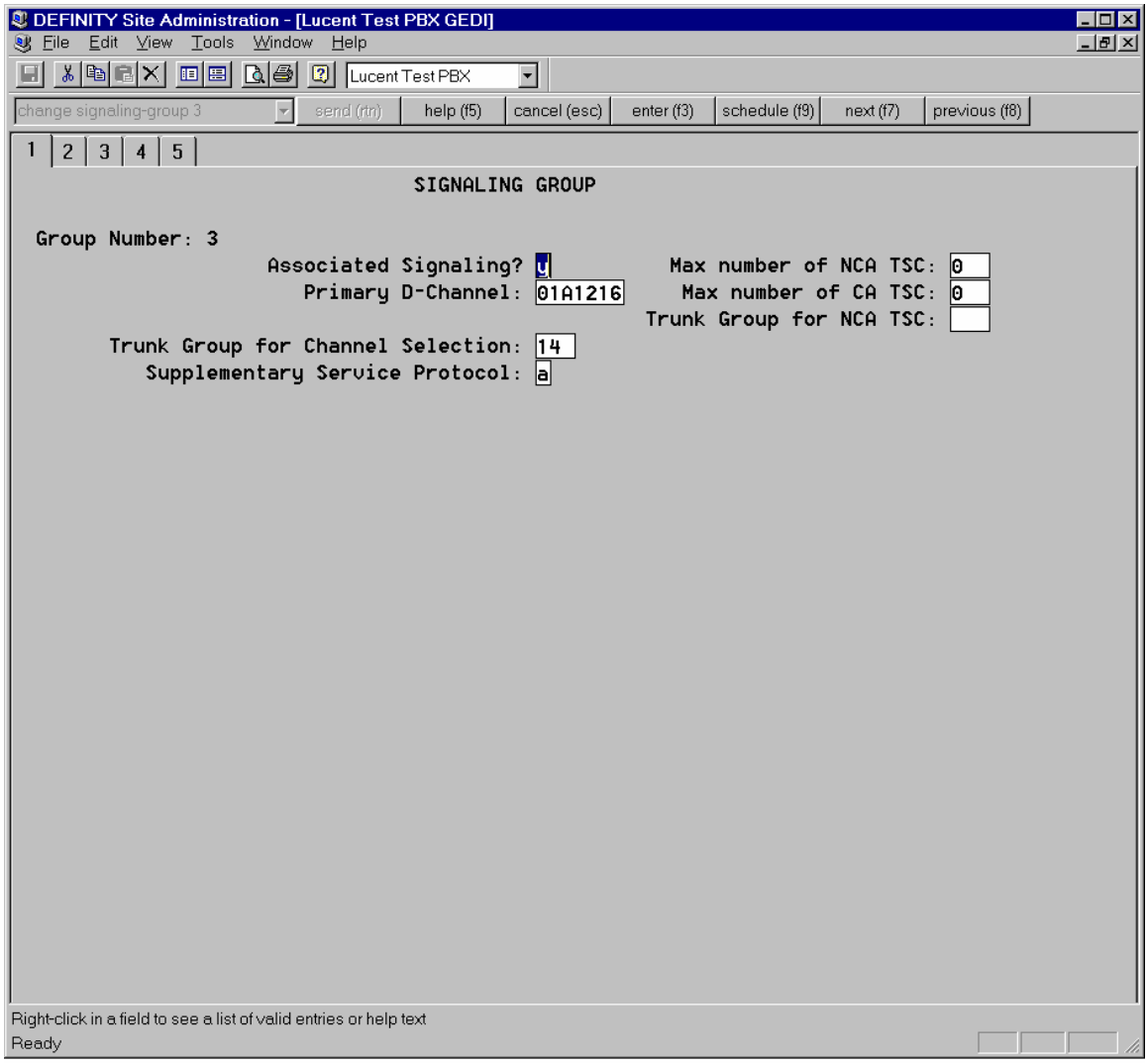
Configure the Lucent/Avaya definity G3si PDX in the following sequence:

1. Add the new circuit pack.
2. Add the new signaling group.
3. Add the new trunk group.
4. Add Uniform Dialing Plan.

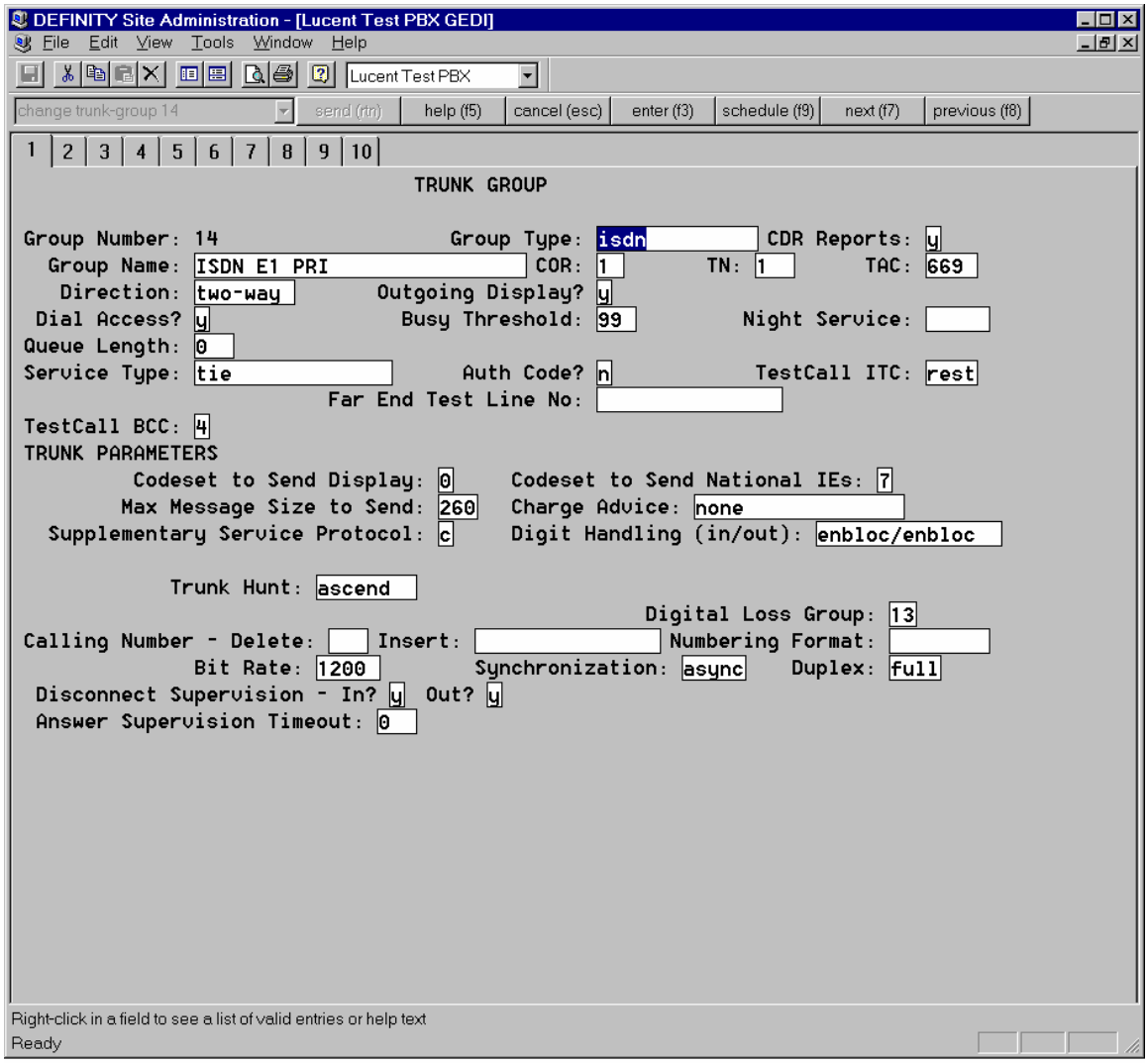
Step 1. DS1 CIRCUIT PACK

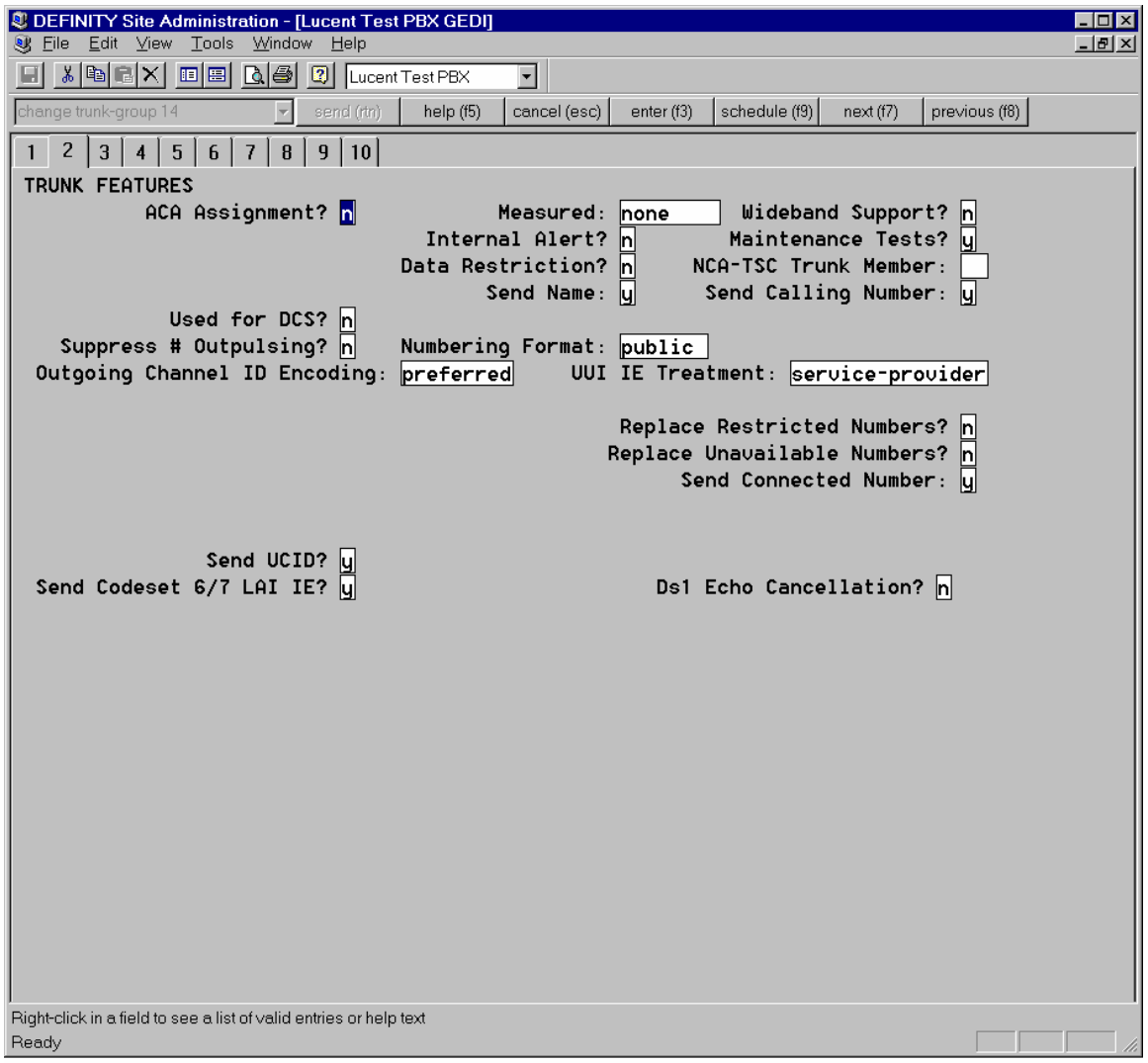


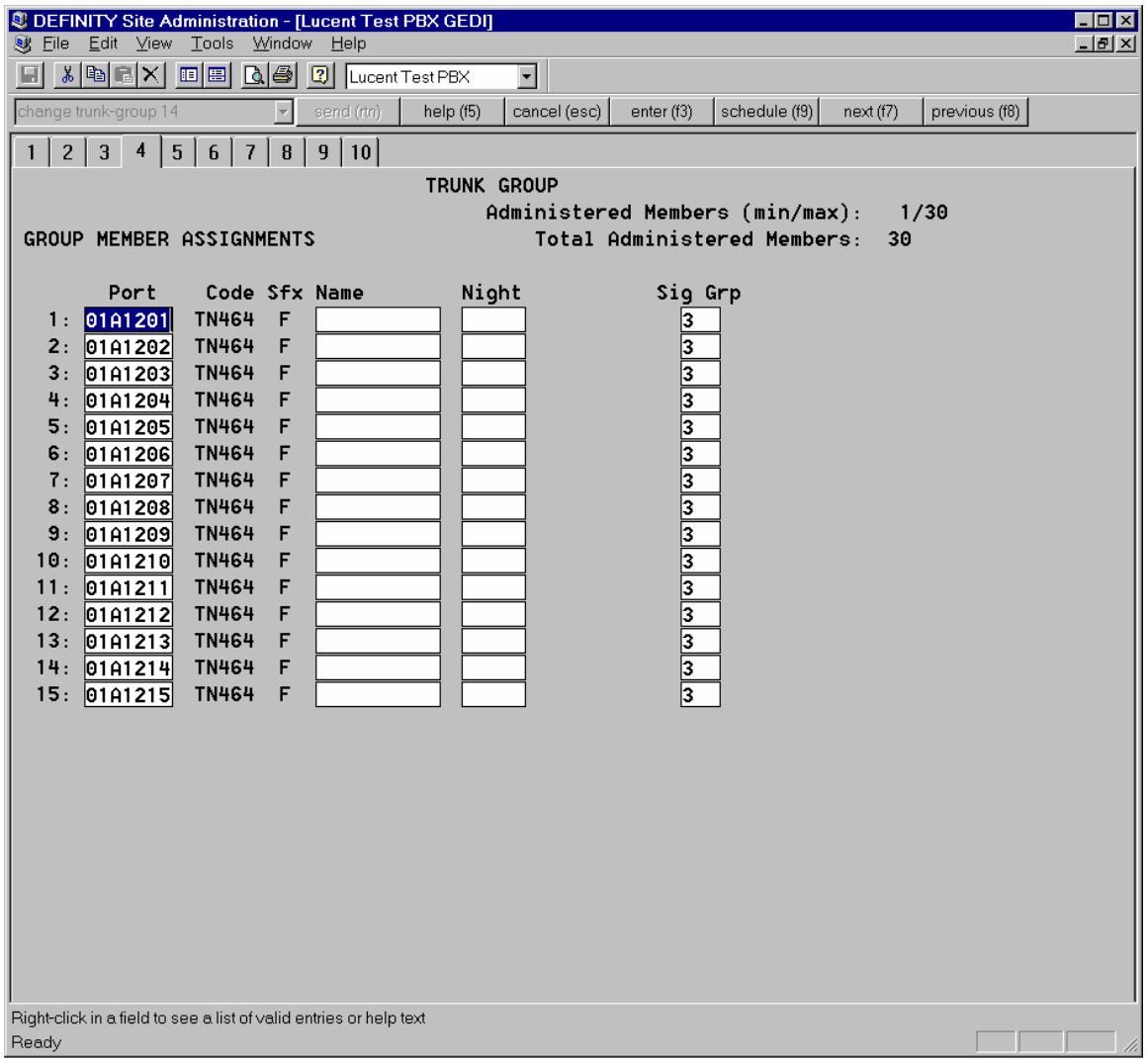
Step 2. Signaling Group

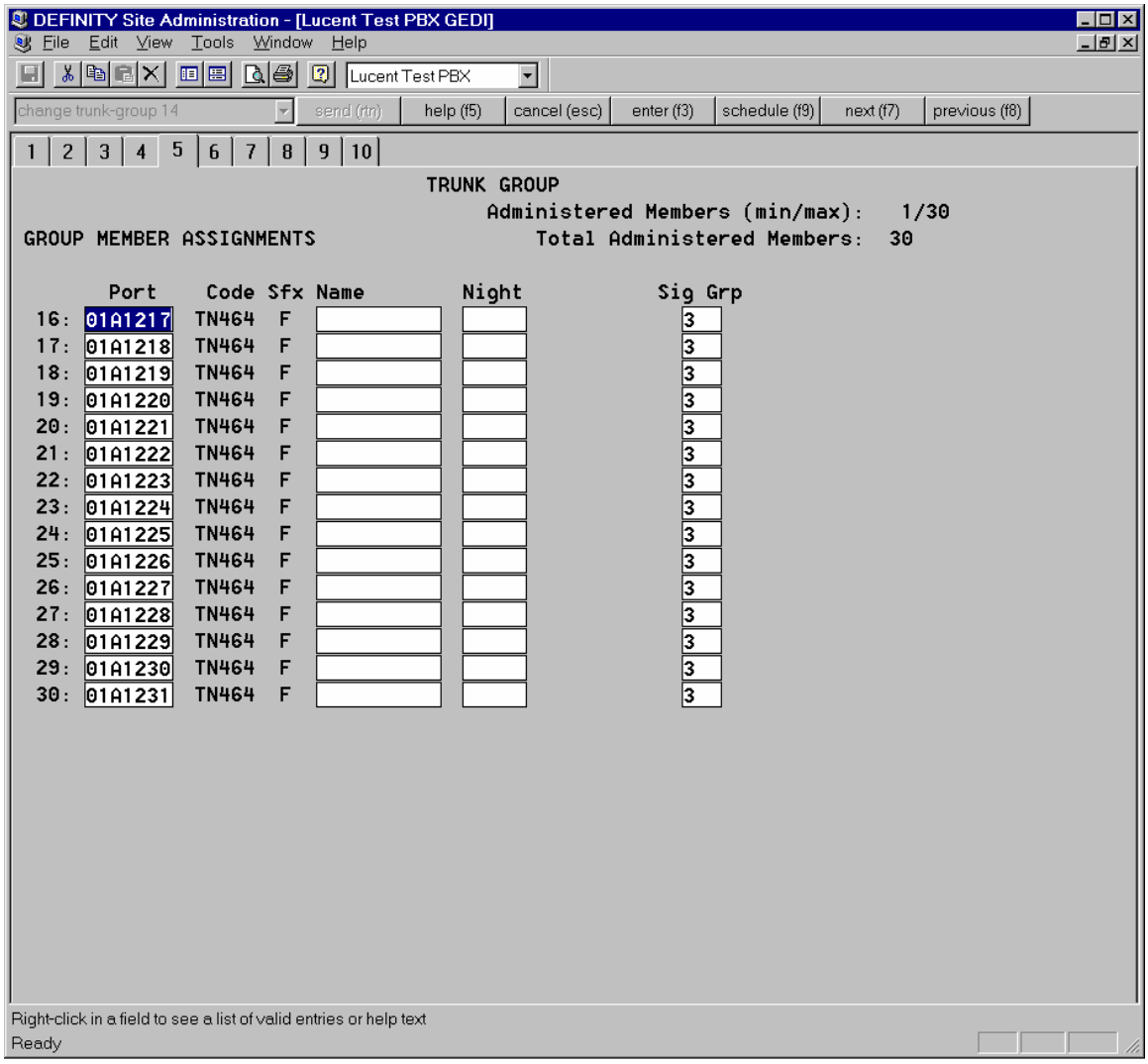


Step 3. Trunk Group

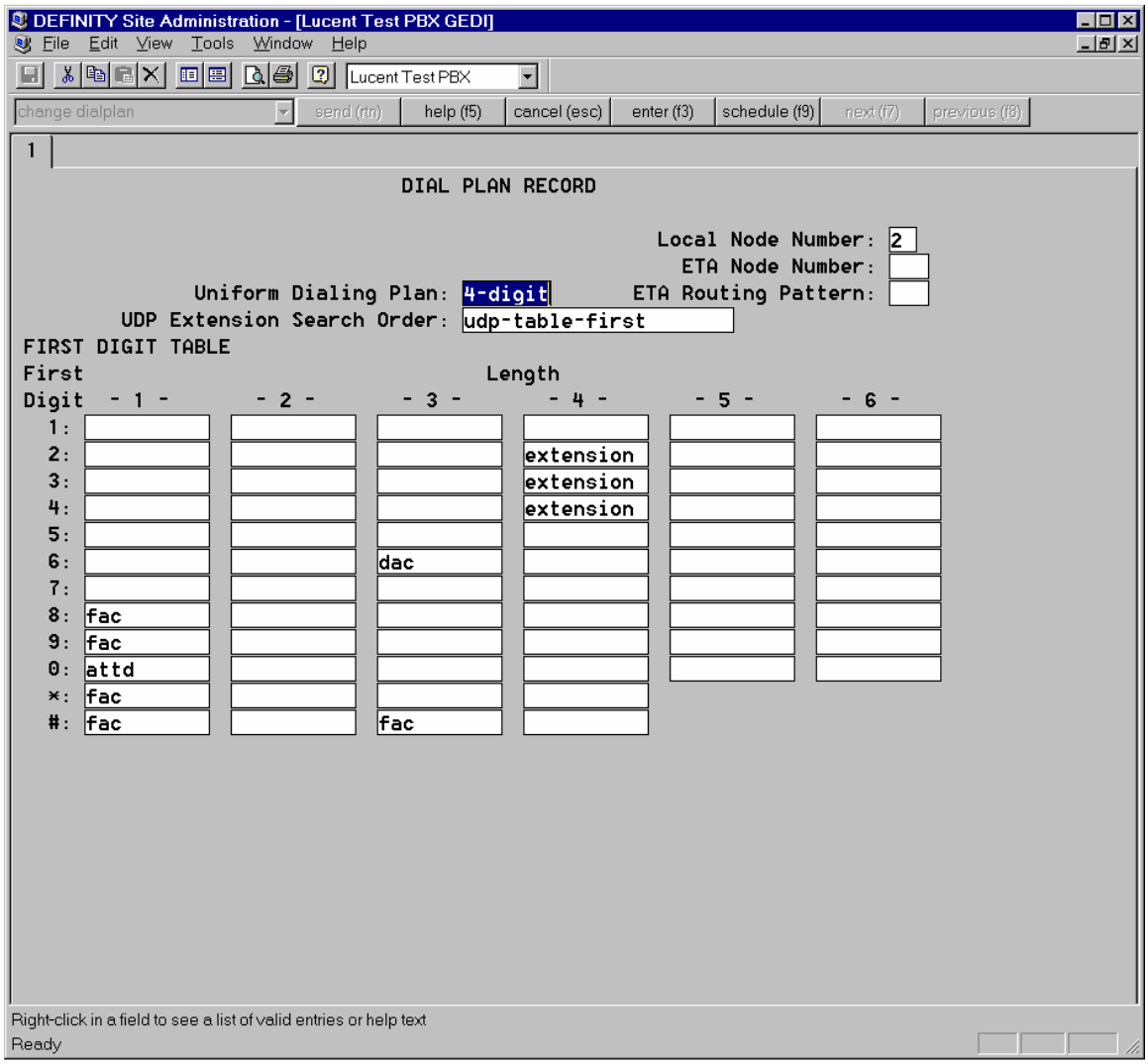


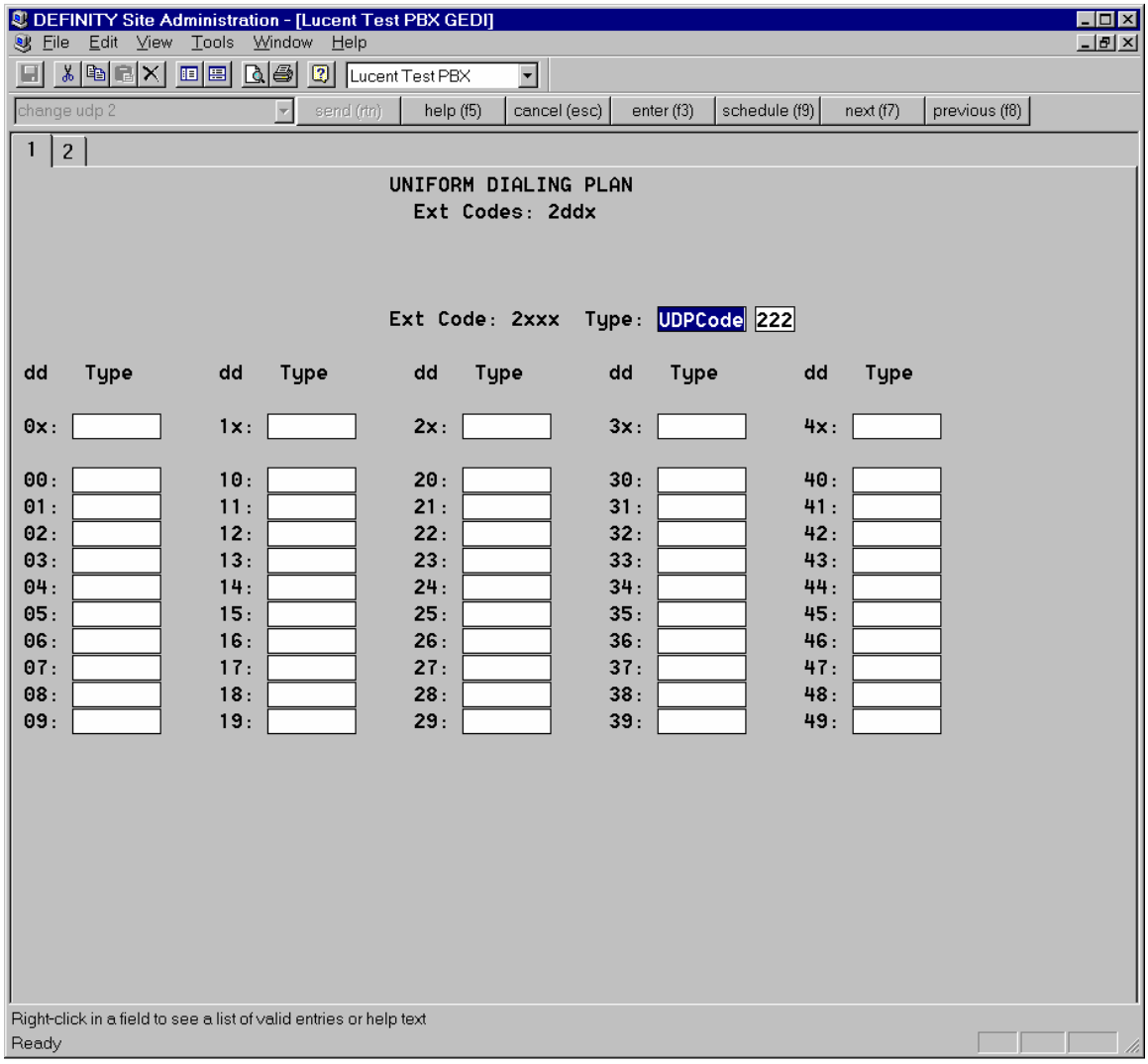


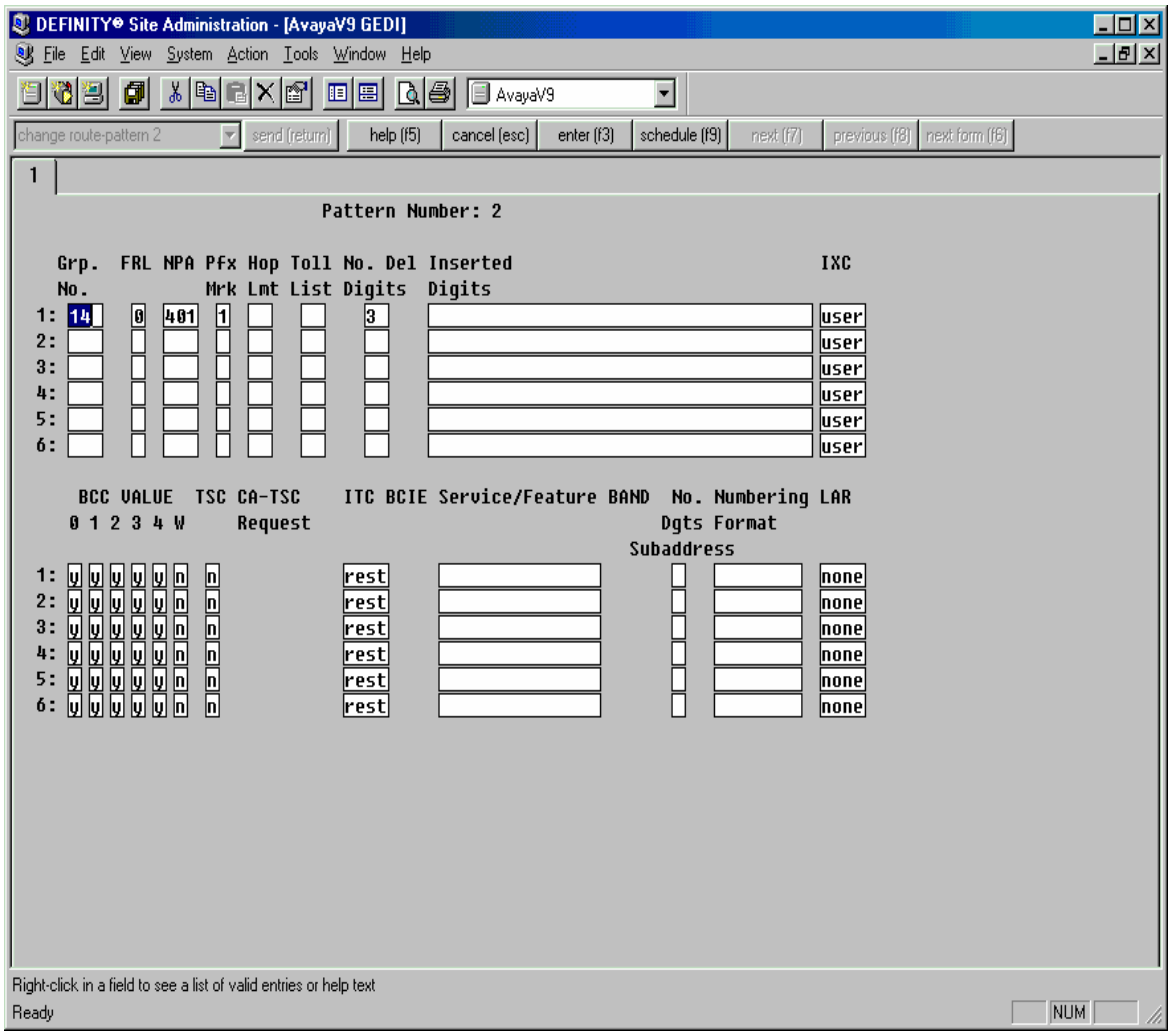




Step 4. Uniform Dialing Plan

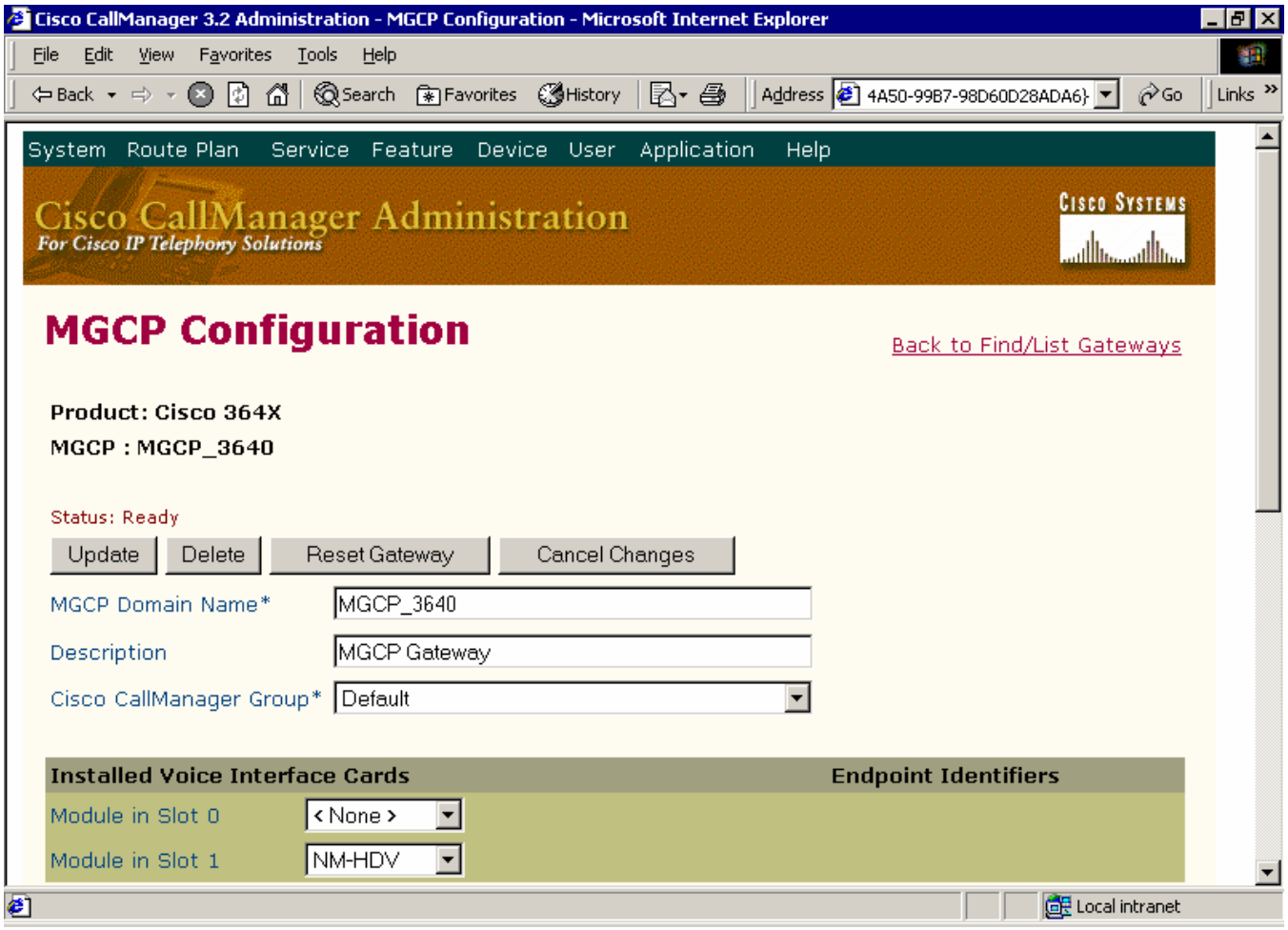


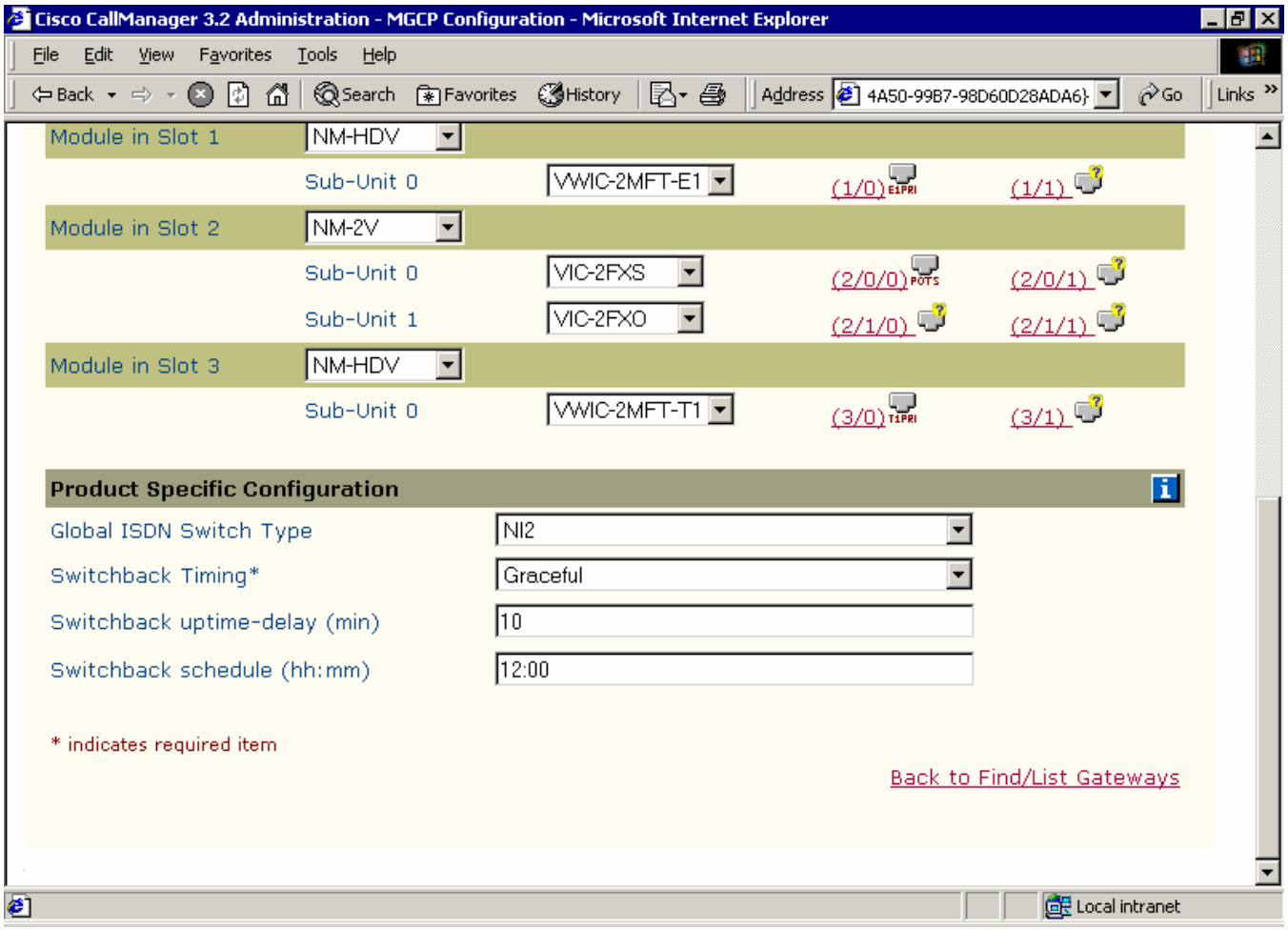




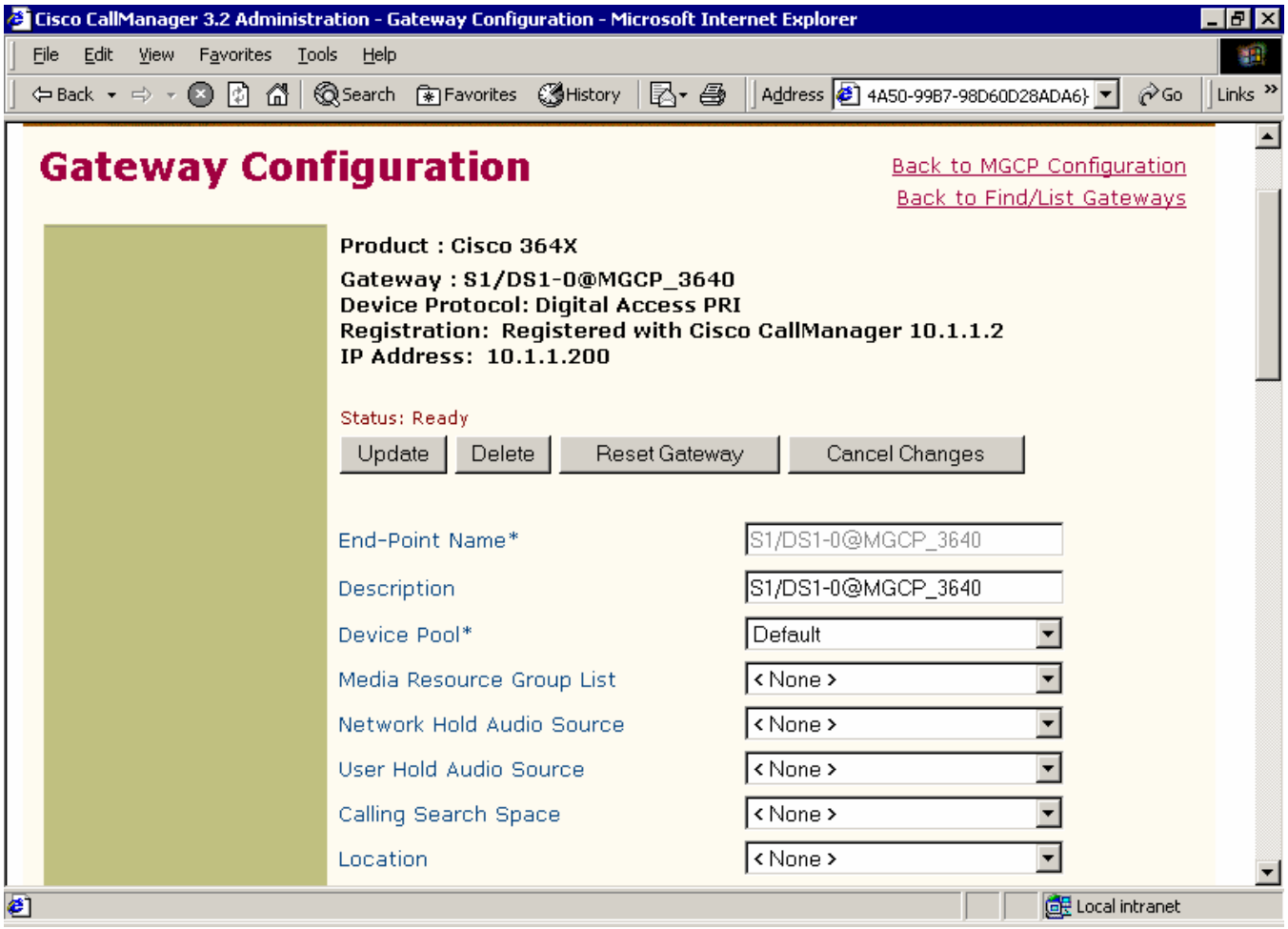
Configuring Cisco CallManager

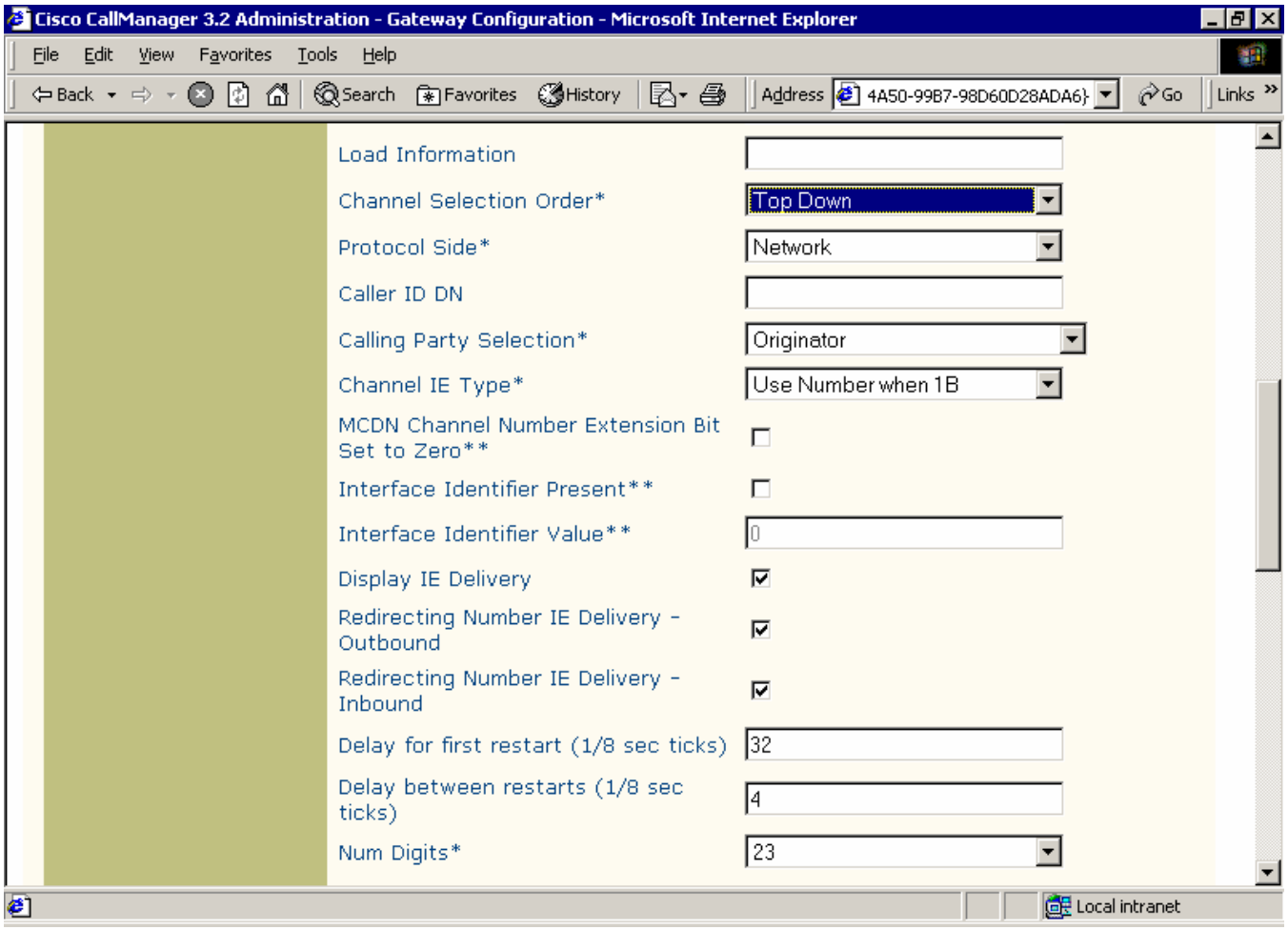
Configure the MGCP Cisco 3640 Gateway. Use the following screens as a reference.

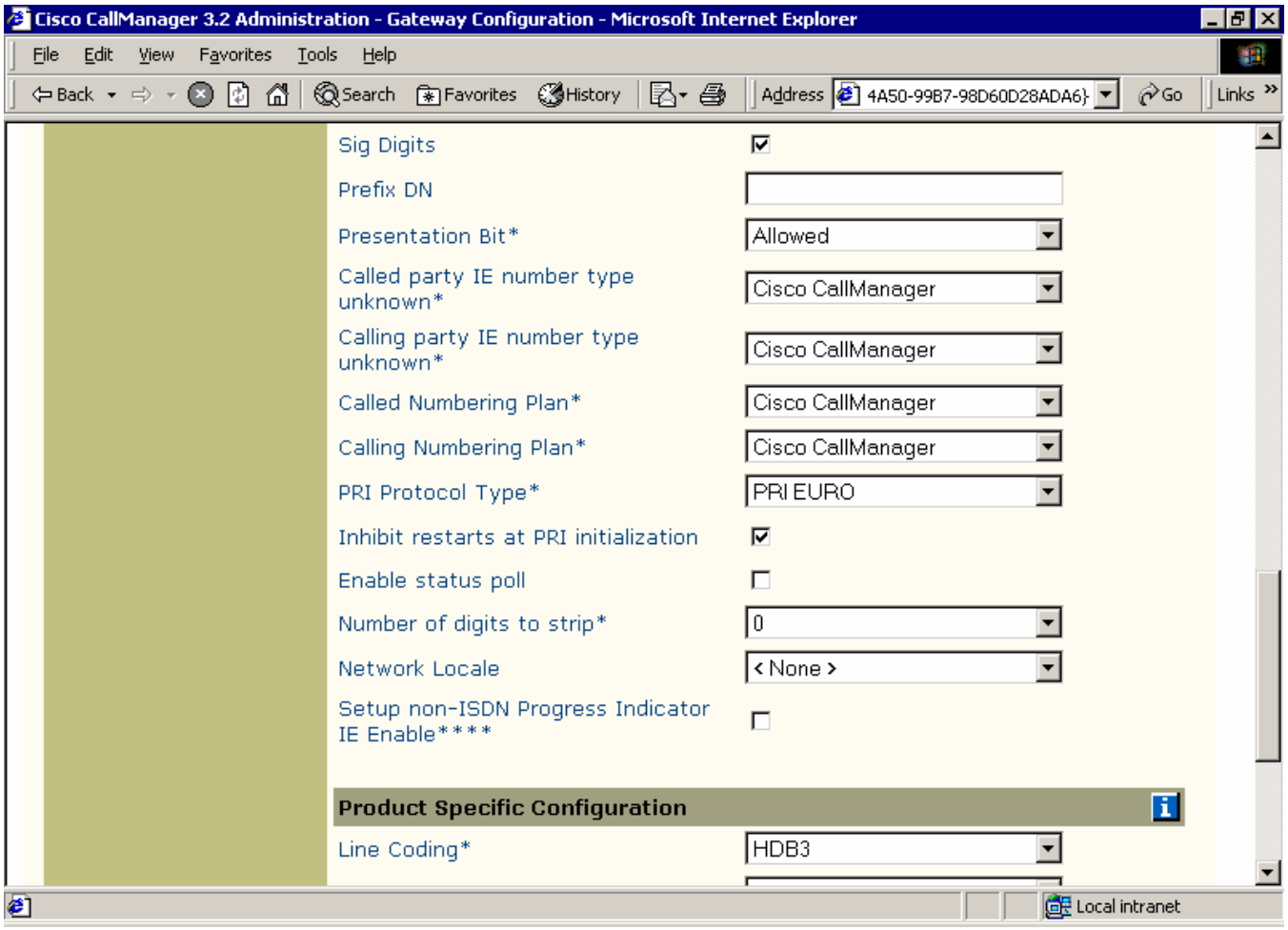


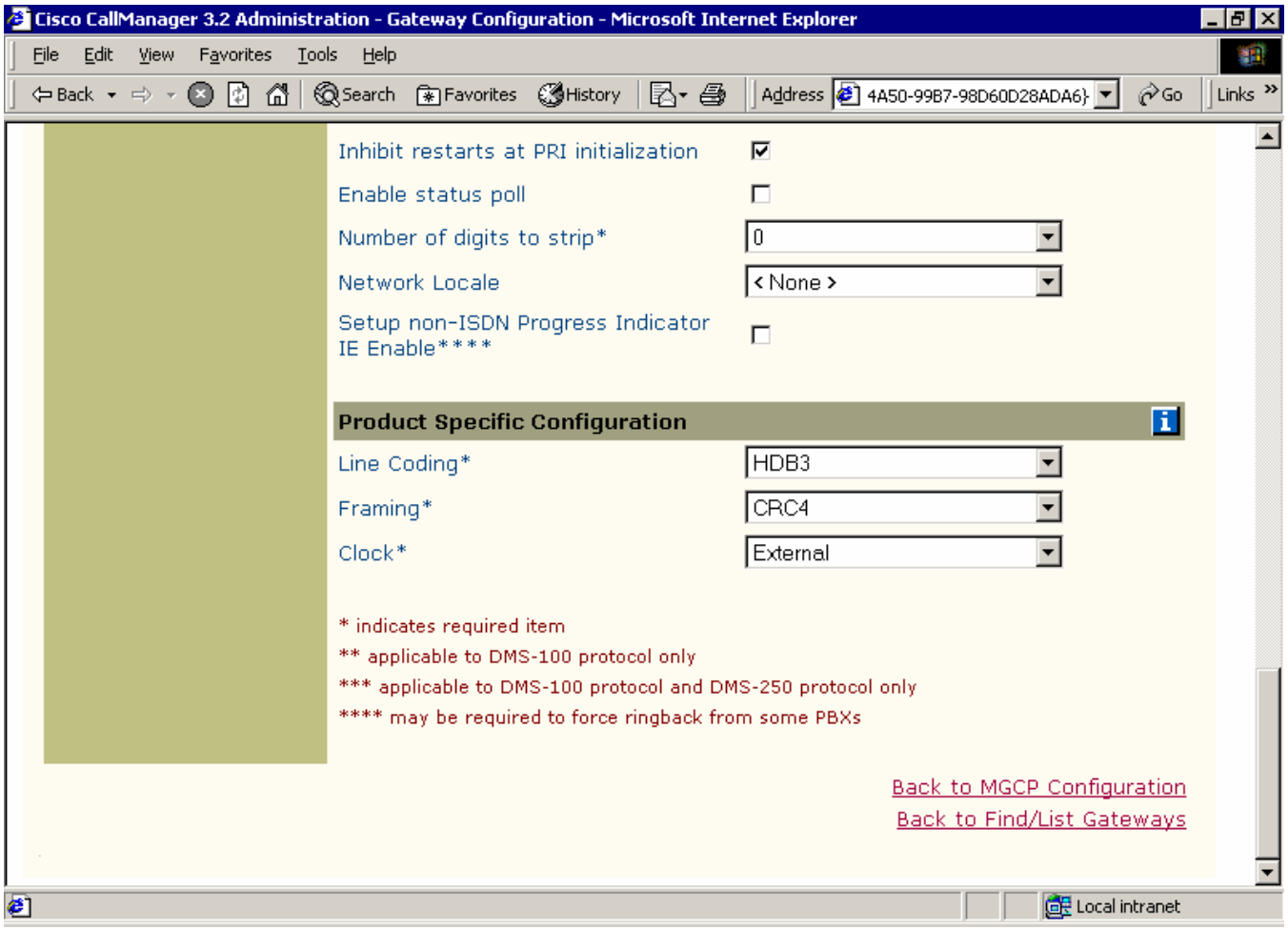


Configure the ISDN PRI. Use the following screens as a reference.

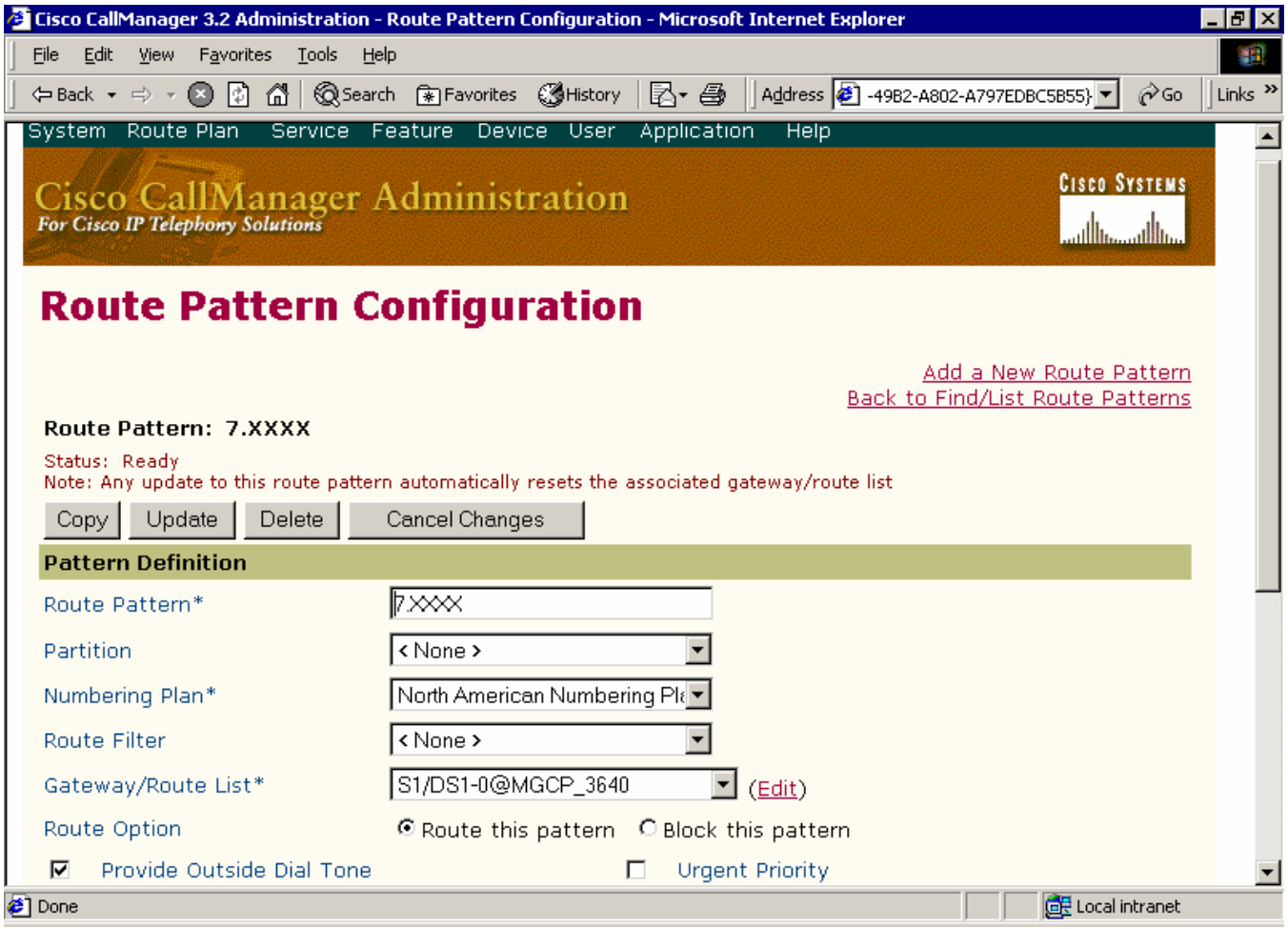


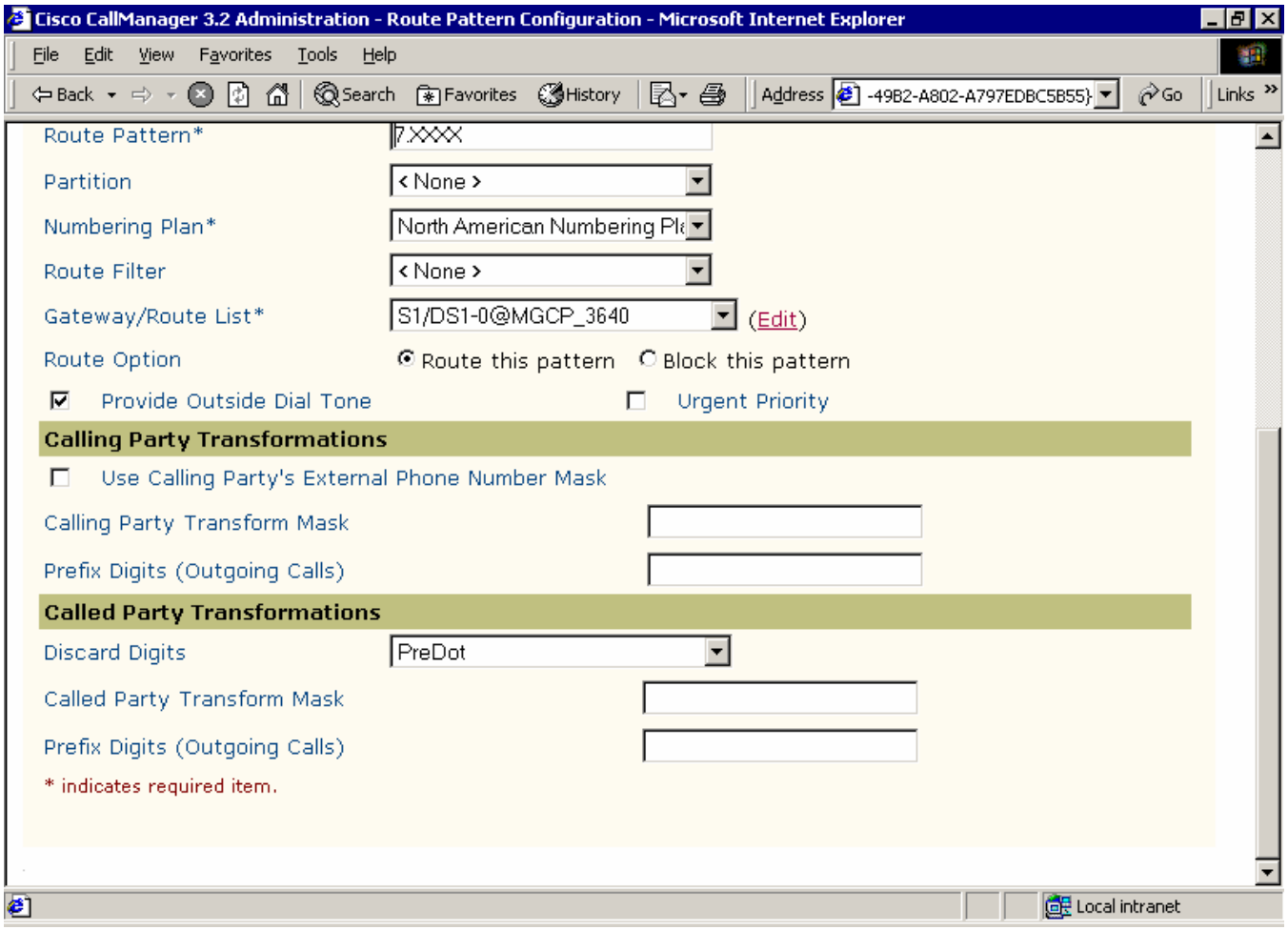






Configure the route pattern. Use the following screens as a reference.





Configuring the Cisco 3640 Gateway

- The following sample output shows the router configuration for interoperability with the PBX.

```
MGCP_3640#show running configuration
Using 2297 out of 129016 bytes
!
version 12.2
no parser cache
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
no service dhcp
!
hostname MGCP_3640
!
logging rate-limit console 10 except errors
!
!
!
voice-card 1
!
voice-card 3
!
ip subnet-zero
!
!
!
no ip dhcp-client network-discovery
mgcp
mgcp call-agent 10.1.1.2 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode cisco
mgcp sdp simple
mgcp package-capability rtp-package
mgcp package-capability sst-package
no mgcp timer receive-rtcp
no mgcp explicit hookstate
isdn switch-type primary-ni
call rsvp-sync
!
!
!
!
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.1.1.2
ccm-manager config
!
!
controller E1 1/0
 pri-group timeslots 1-31 service mgcp
!
controller E1 1/1
!
controller T1 3/0
 framing esf
 linecode b8zs
 pri-group timeslots 1-24 service mgcp
!
controller T1 3/1
 framing sf
 linecode ami
```

```
!
!
!
interface Ethernet0/0
 ip address 10.1.1.200 255.255.255.0
 no ip mroute-cache
 half-duplex
!
interface Ethernet0/1
 ip address 171.69.231.23 255.255.255.0
 no ip mroute-cache
 half-duplex
!
interface Serial1/0:15
 no ip address
 no logging event link-status
 isdn switch-type primary-net5
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn T310 4000
 isdn bind-l3 ccm-manager
 no cdp enable
!
interface Serial3/0:23
 no ip address
 no logging event link-status
 isdn switch-type primary-ni
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn T306 30000
 isdn T310 40000
 isdn bind-l3 ccm-manager
 no cdp enable
!
ip classless
no ip http server
!
!
!
!
snmp-server manager
!
voice-port 1/0:15
!
voice-port 2/0/0
!
voice-port 2/0/1
!
voice-port 2/1/0
!
voice-port 2/1/1
!
voice-port 3/0:23
!
dial-peer cor custom
!
!
!
dial-peer voice 1 pots
 application mgcp
!
dial-peer voice 3 pots
 application mgcpapp
 port 2/0/1
!
dial-peer voice 2 pots
 application mgcpapp
```

```
 port 2/0/0
!
dial-peer voice 999200 pots
 application mgcpapp
 port 2/0/0
!
dial-peer voice 9991015 pots
 application mgcpapp
 port 1/0:15
!
dial-peer voice 9993023 pots
 application mgcpapp
 port 3/0:23
!
!
line con 0
line aux 0
line vty 0 4
 login
!
!
end
```

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