

SIP Trunking using Optimum Business® SIP Trunk Adaptor and the Toshiba CIX40 Version AR5.20 MT037.00 IP PBX. This guide can be used for the CIX100, CIX200, CIX670 and CIX1200 IP PBX's

Goal

The purpose of this configuration guide is to describe the steps needed to configure the Toshiba CIX40 IP PBX version AR5.20 MT037.00 for proper operation with the Optimum Business SIP Trunking.

Prerequisites

Please follow the instructions in the Optimum Business SIP Trunk Set-Up Guide. The Set-Up Guide was left by the Optimum Business technician at installation. If you do not have the Set-Up Guide, go to www.optimumbusiness.com/SIP to download a copy.

Toshiba CIX40 IP PBX Configuration

The steps on the next page describe the minimum configuration required to enable the PBX to use Optimum Business SIP Trunking for inbound and outbound calling.

The configuration described here assumes that the PBX is already configured and operational with station side phones using assigned extensions or DIDs. This configuration is based on Toshiba CIX40 version AR5.20 MT037.00.

Set up the Toshiba CIX40 IP PBX for SIP Trunk provisioning

The Toshiba CIX40 will be configured to send SIP registration to the Optimum Business Sip Trunk Adaptor.

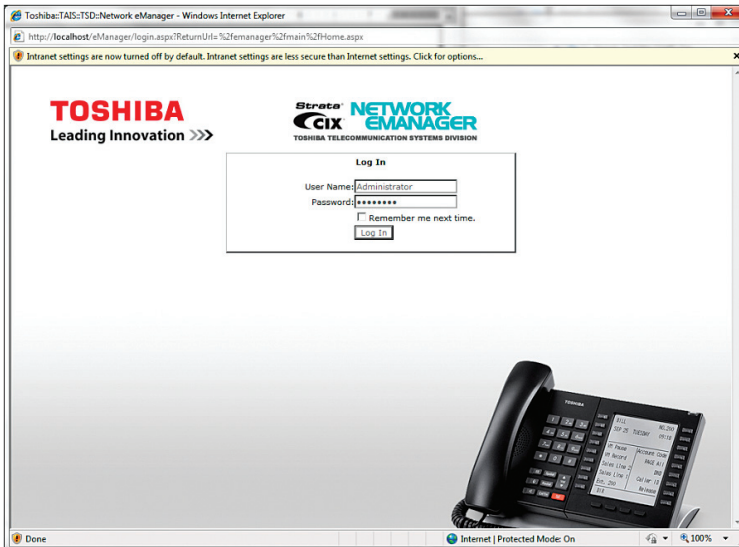
The CIX40 works well with the Toshiba IP5022-SD phones.

The CIX40 PBX was shipped with 2 fixed IP addresses, 192.168.0.252/24 and 192.168.0.253/24, for 2 Ethernet ports (inside the box). 192.168.0.253 is the IP address of the CIX40 processor and it is mainly used by the Network eManager (configuration GUI) for managing the PBX's configuration. 192.168.0.252 is the IP address of the GIPU card that supports SIP trunking. The GIPU should be in the same subnet as the Optimum Business SIP Trunk Adaptor's port 1 and use port 1's IP address as its SIP server. This IP address assignment is step 1 of the Optimum Business SIP Trunk Set-up Guide. All the phones communicate with the PBX via this IP address as well, using the Megaco VoIP protocol.

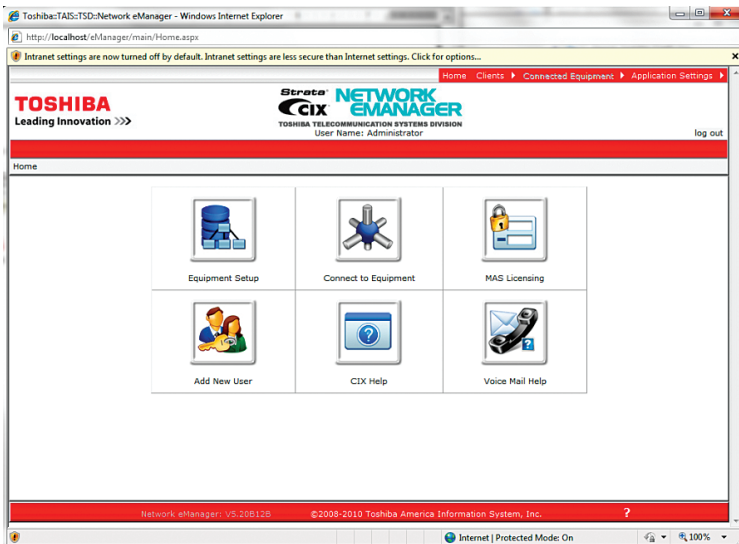
The Toshiba CIX PBX does not support non-registration (static) mode.

Notes:

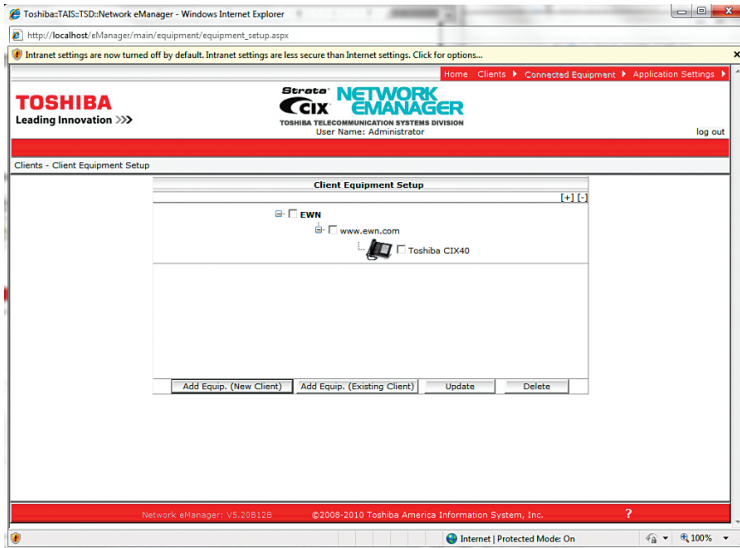
- **IMPORTANT:** When the Optimum SIP Trunk Adaptor is configured to be on the same subnet as the GIPU, its internal user agent will take a default IP address of 192.168.0.252. The default IP address of the GIPU card is also 192.168.0.252. This conflict prevents the GIPU from registering with the Optimum SIP Trunk Adaptor. To resolve this conflict, the GIPU's IP address should be changed from 192.168.0.252 to 192.168.0.251.
- To change the GIPU's IP address from 192.168.0.252 to something else, invoke Network eManager and access the GIPU Configuration screen (IP-Telephony->L/M/G IPU Configuration).
- To change the PBX's management IP address from 192.168.0.253 to something else, invoke Network eManager and access the IP Configuration screen (Maintenance->CIX Processor IP Address).
- You have to unscrew the PBX's top off in order to connect to the 2 Ethernet ports.
- You can install the Network eManager on either the Windows XP or Window 7 machines. Once the Network eManager is successfully installed, run <http://localhost/emanager> with Internet Explorer to invoke Network eManager for configuring the PBX. Network eManager will not work with other browsers.
- The IP5022-SD phones by default will need IP address assignment, the Optimum Business SIP Trunk Adaptor port 1 should have DHCP server enabled. This is step 1 of the Optimum Business SIP Trunk Set-up Guide.
- The PBX comes with pre-set 3-digit extensions (i.e.: 224 to 227) set up and each phone must have its Station ID configured to match one of these extensions.



1. Invoke Network eManager (with Internet Explorer only) with “http://localhost/emanager” and you should see the Log In screen.

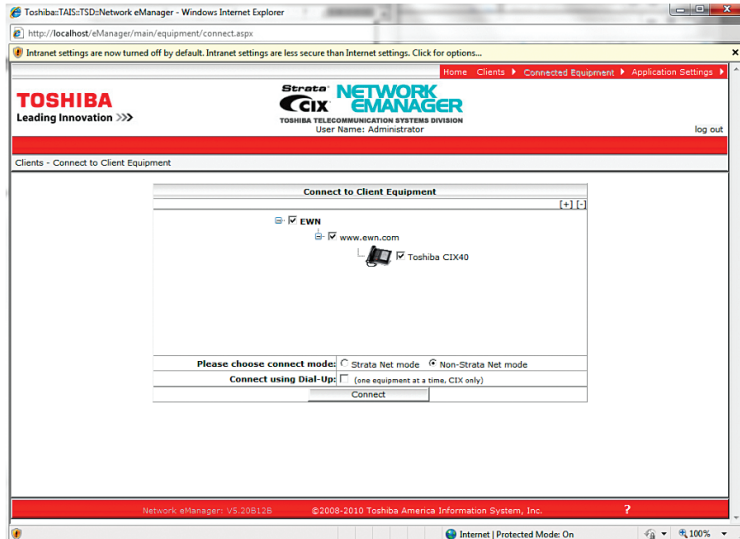


2. Log in with “Administrator” as User Name and “password” as Password and you will see the Home screen.

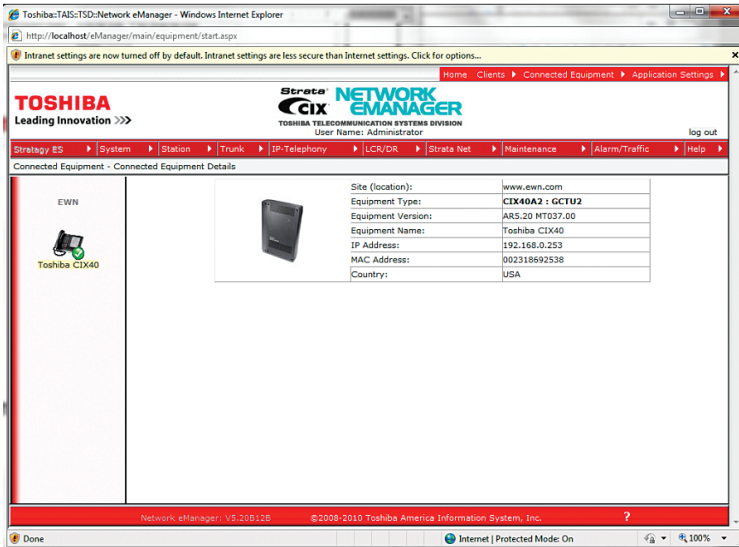


- Click Equipment Setup to set up the identity of the CIX40 (i.e.: the IP address of the CIX40). The PBX equipment is set up in a three-tier format: Company - Site - Equipment.

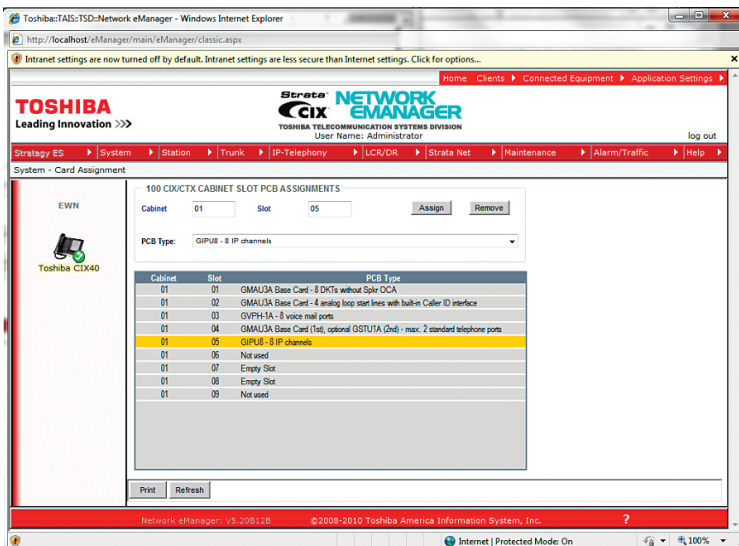
Note: When entering the community name, it must be "communityName".



- Mouse-over the Client tab and click "connect to Client Equipment" and you should see the Connect to Client Equipment screen.



- Click Connect and you should see the Connected Equipment Details screen, which shows important information about the CIX40 such as the software version and MAC address.



- Go to the Card Assignment screen (System->Card Assignment) and note the Cabinet-Slot number of the GIPLUB card.

This is the card that supports SIP trunking. In this example, the Cabinet-Slot number (or the Equipment number) of the GIPLUB is 0105.

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Strata CIX NETWORK EMANAGER
TOSHIBA TELECOMMUNICATION SYSTEMS DIVISION
User Name: Administrator

Home Clients Connected Equipment Application Settings

Strategy ES System Station Trunk IP-Telephony LCR/DR Strata Net Maintenance Alarm/Traffic Help

Trunk - ILG

304 INCOMING LINE GROUP ASSIGNMENT

Group Number: 8

81 Group Type: SIP 82 Line Type: CO

83 CO Service Type: DID 84 Private Service Type: Standard

85 GCO Key Number: 0 86 Pool Key Number: 0

87 COS Day1: 1 88 COS Day2: 1 89 COS Night: 1

88 DRL Day1: 1 89 DRL Day2: 1 90 DRL Night: 1

89 FRL Day1: 1 90 FRL Day2: 1 91 FRL Night: 1

90 QPL Day1: 1 91 QPL Day2: 1 92 QPL Night: 1

11 DID Digits: 4 12 Speech/3.1KHz: Audio

13 Delay1 Ringing Timer: 12 14 Delay2 Ringing Timer: 24

15 Interdigit 1 Timer: 15 16 Interdigit 2 Timer: 5

17 Auto Campon: Enable 18 Calling Number ID: User Provided

19 Intercept: Disable 20 Send Dial Tone: Disable

21 TGAC Override: Disable 22 Network COS: 1

23 LCR Group: 1 24 Change COS Override Code: Disable

25 Register Speed Dial Codes: Disable 26 Originator Invoke OCA: Disable

27 Sentenized Tone Mode: Dial Tone 28 Emergency Call Group: 1

29 Tenant Number: 1 30 Call By Call Cause: UserBusy

Submit Print Refresh Get Default Create Copy Delete

Network eManager: V5.208128 ©2008-2010 Toshiba America Information System, Inc.

Internet | Protected Mode: On

- Go to the Incoming Line Group screen (Trunk->ILG) to assign group number 8 for SIP calls. Set the DID Digits field to 4.

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Strata CIX NETWORK EMANAGER
TOSHIBA TELECOMMUNICATION SYSTEMS DIVISION
User Name: Administrator

Home Clients Connected Equipment Application Settings

Strategy ES System Station Trunk IP-Telephony LCR/DR Strata Net Maintenance Alarm/Traffic Help

Trunk - DID

309 DIRECT INWARD DIALING

ILG Group Number: 8

81 DID Number: 9576 List

82 MOH Source: 1 Processor MOH Jack

83 GCO Key Group: 0 84 Pooled Key Group: 0

85 Audio Day1 Dst Type: Dialing Digits 86 Audio Day1 Dst Digits: 224

86 Audio Day2 Dst Type: Dialing Digits 87 Audio Day2 Dst Digits: 224

87 Audio Night Dst Type: Dialing Digits 88 Audio Night Dst Digits: 224

88 Data Day1 Dst Type: No Data 89 Data Day1 Dst Digits:

89 Data Day2 Dst Type: No Data 90 Data Day2 Dst Digits:

90 Data Night Dst Type: No Data 91 Data Night Dst Digits:

11 DID/DNIS No. VMID: 12 DID/DNIS Name:

15 VM Application Digits: 16 Tenant Number: 1

Submit Print Refresh Get Default Create Copy Delete DDONS Table View

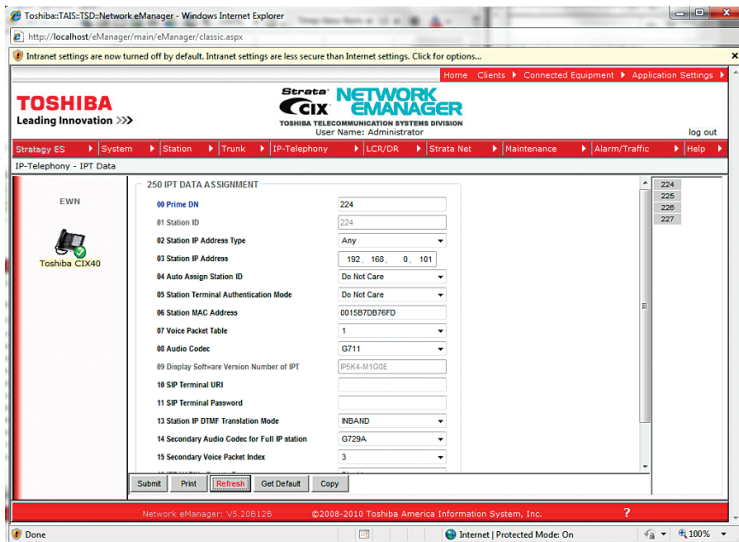
Network eManager: V5.208128 ©2008-2010 Toshiba America Information System, Inc.

Done Internet | Protected Mode: On

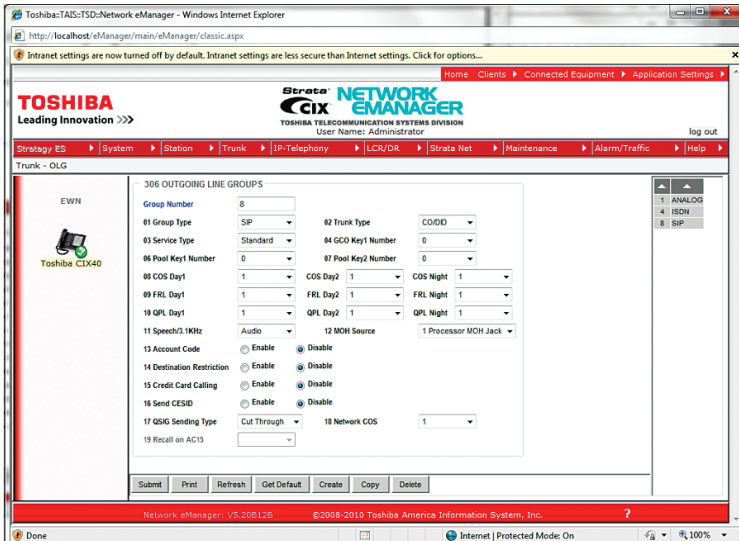
- Go to the DID screen (Trunk - DID) to match the last 4 digits of each DID to one of the 3-digit extension.

Note: To see what extensions have been pre-set for SIP trunking, access the PDN Table View screen (Station->Station Assignment->Basic->PDN Table View) and see what extensions are already there for the GIPU.

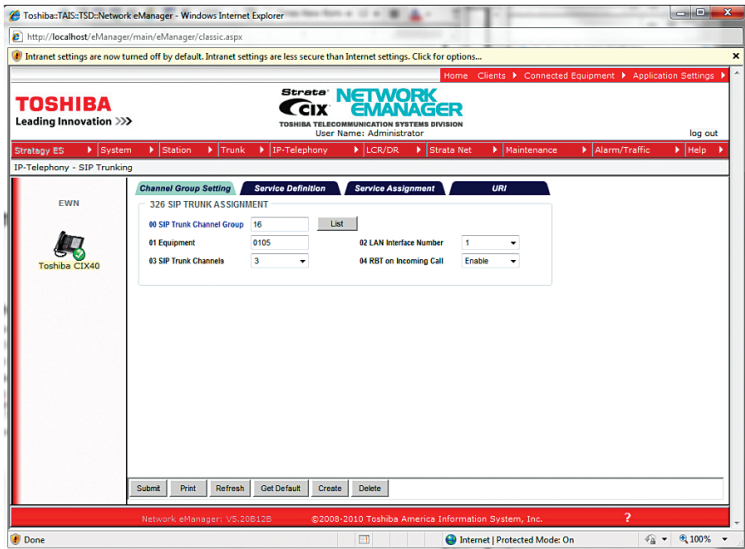
If each phone has an assigned IP address and has its Station ID configured to match one of the pre-set 3-digit extension number, the IPT Data screen (IP-Telephony->IPT Data) should reflect that.



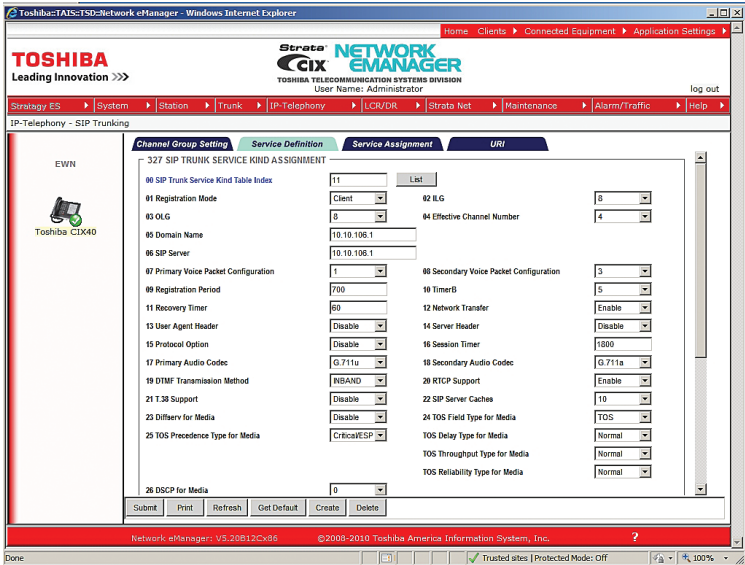
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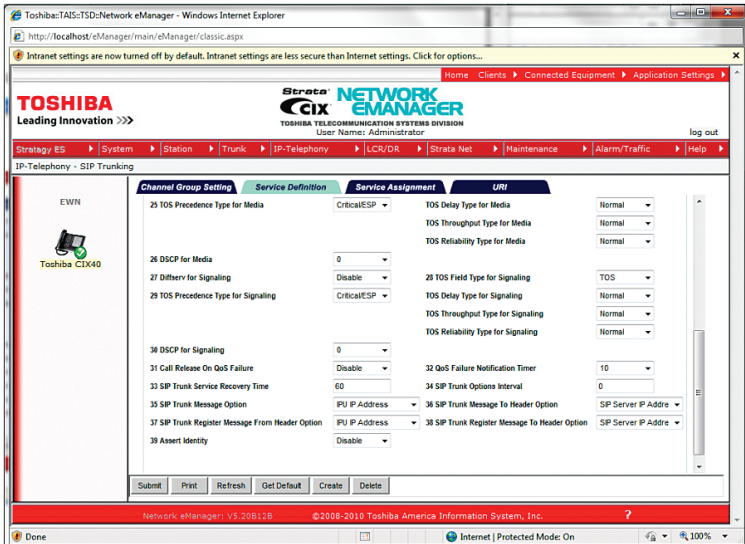


- Go to the Outgoing Line Group screen (Trunk->OLG) to assign group number 8 for SIP calls.

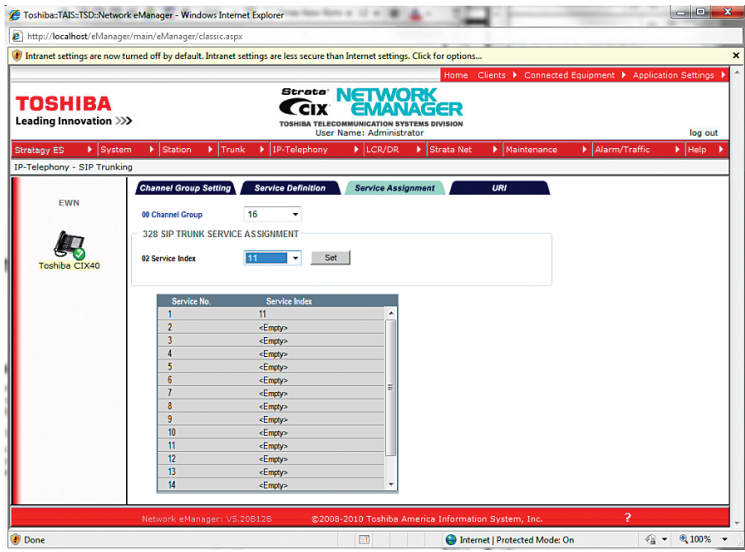


11. Go to the Channel Group Setting screen (IP-Telephony>SIP Trunking>Channel Group Setting) to set the Trunk Channel Group number for GPU card .

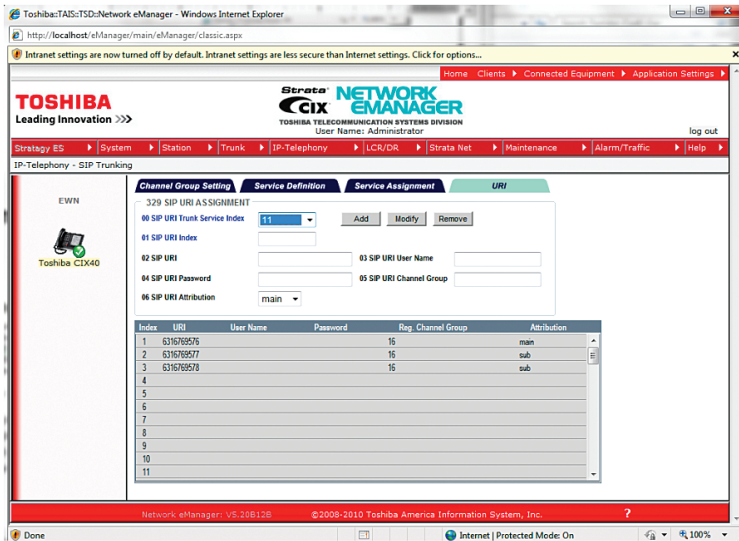




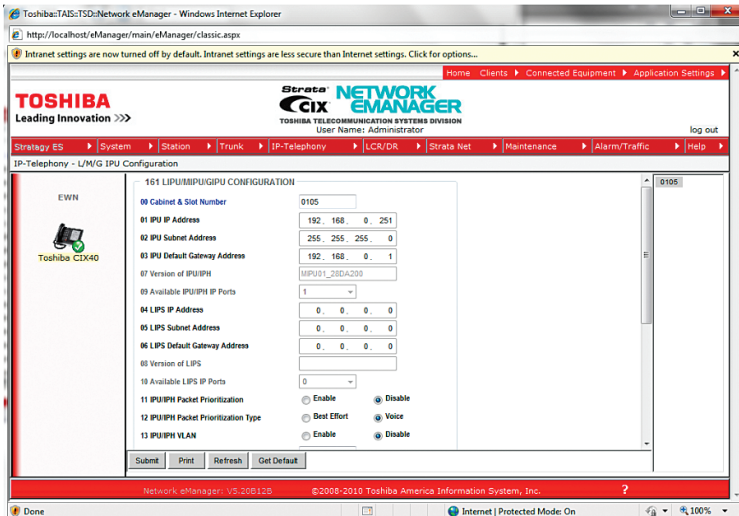
- Go to the Service Definition screen (IP-Telephony->SIP Trunking->Service Definition) to set the SIP Trunk Service Kind Table Index for the SIP trunk ISP and configure the service for SIP trunk.
PBX will send SIP registration when Registration Mode is set to Client.



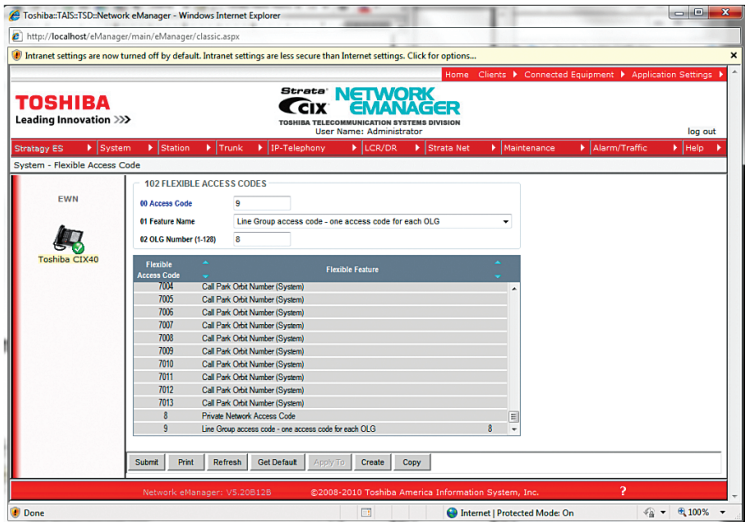
- Go to the Service Assignment screen (IP-Telephony->SIP Trunking->Service Assignment) to assign Service #1 for the SIP Trunk ISP (represented by the SIP Trunk Service Kind Table Index) and its associated channel group.



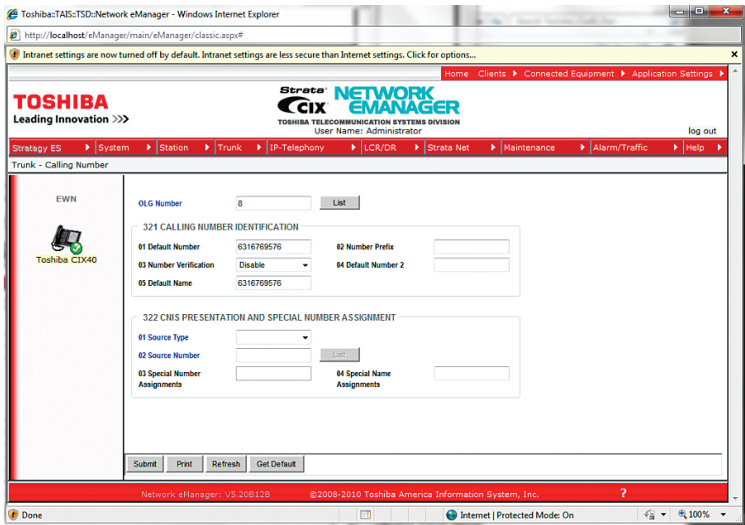
14. Go to the URI screen (IP-Telephony->SIP Trunking->URI) to decide which DID should register with the Optimum Business SIP Trunk Adaptor. Only the DID with SIP URI Attribution set to “main” will be used to register with the Optimum Business SIP Trunk Adaptor. The “main” DID in this screen **must** match the Pilot DID. The password for “main” **must** match the password set for the Pilot DID. This is a configuration requirement; calls will not work if this is not set.



15. Go to the L/M/G IPU Configuration screen (IP-Telephony->L/M/G IPU Configuration) for configuring the GPU card (Cabinet-Slot number = 0105). The IPU Default Gateway Address should be set to the same as the Optimum Business SIP Trunk Adaptor's port 1's IP address.



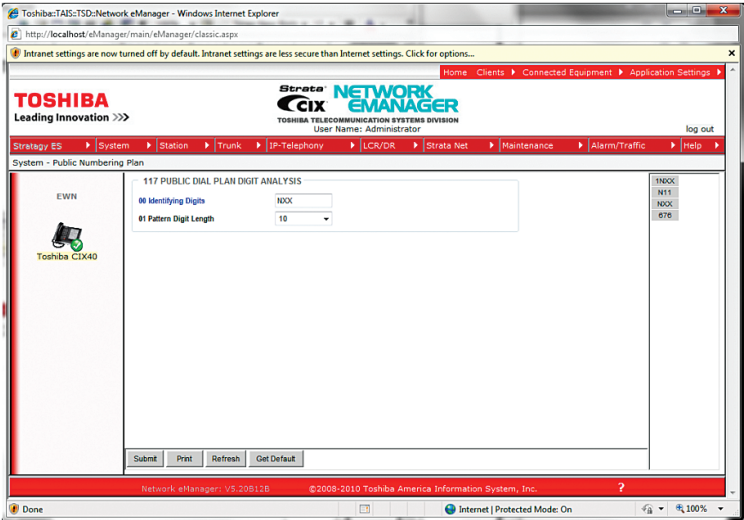
- Go to the Flexible Access Code screen and configure 9 as the Line Group access code.



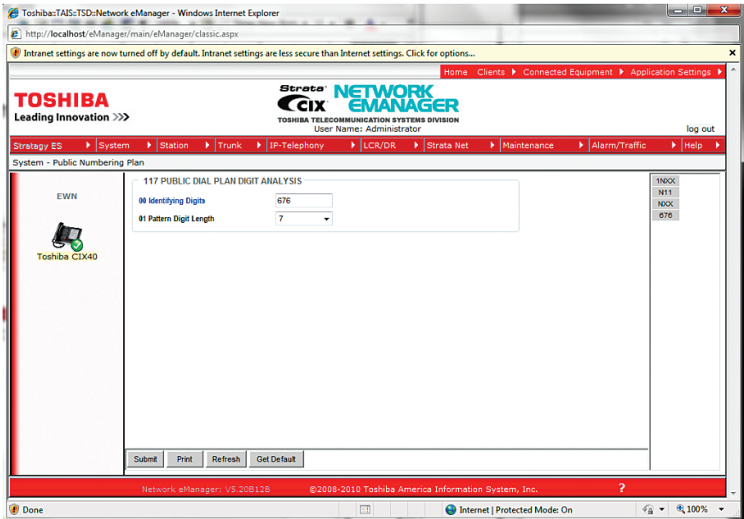
- Go to the Calling number screen (Trunk->Calling Number) to configure the same DID for registration as the calling number when the PBX places an outbound call . This will set the Caller ID to match the Pilot DID. This is a requirement for registration mode configuration. The only supported mode for the Toshiba CIX is registration mode.

18. Go to the Public Numbering Plan screen (System -> Public Numbering Plan) to configure the PBX for allowing 10-digit or 7-digit outcalls, outbound calls and other dialing patterns.

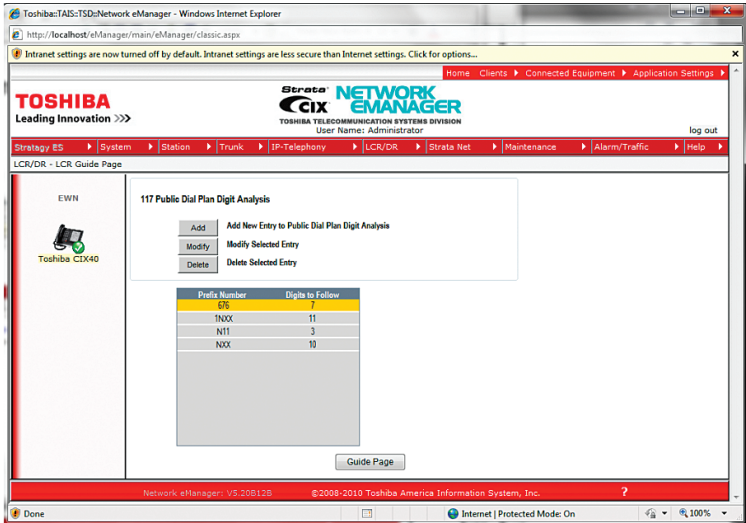
Network eManager - Public Numbering Plan screen (dial plan for 10-digit plan)



Network eManager - Public Numbering Plan screen (dial plan for 7-digit plan)



Network eManager - Public dial plan analysis



Network eManager - PDN Table View screen

