1 Purpose

This document describes the procedure and a process for configuring the Cisco Main Router. The procedure is intended for SEC Network Administrator to use ONLY in times of setting up new router or adding a remote office link to the corporate network via the SPTC E1 network.

2 Scope

The procedure serves as fine grained guide with step by step tasks to follow in case a new router is configured or adding new site.

3 References

Annex 1

4 Definitions

N/A

5 Responsibilities

a) Network &Security Engineer/ Network Administrator – Only the Network Administrator OR an approved IT department employee is responsible for configure a main router on the SEC corporate network.

b) The Network & Security Engineer – Only the Network & Security Engineer or the IT Manager can approve the modification of settings on this router.

6 Procedure

6.1 Connect the router to your PC with a serial cable and use the following settings:

Connect using: COM1, Bits per second: 9600, Data Bits: 8, Parity: None Stop bits: 1, Flow control: none

1 To configure password, exec-timeout, and logging synchronous on the console port

```
Router>enable
Router#config terminal
Router(config)#line console 0
Router(config-line)#password <password>
Router(config-line)#login
Router(config-line)#exec-timeout 20 10Router(config-line)#logging synchronous
```

```
Router(config-line)#^Z
Router#wr
Router#logout
```

2 Next, we logout of the router then login the router in order to make sure the password works. . The password is "password" as we configured on line console 0.

3 Router con0 is now available
Press RETURN to get started.

6.2 User Access Verification

1 Password:

a. To configure passwords for privileged mode and vty lines.

```
Router>enable
Router#config terminal
Router(config)#enable password <password>
Router(config)#enable secret <password>
Router(config)#service password-encryption
Router(config)#line vty 0 4
Router(config-line)#password vty
Router(config-line)#login
Router(config-line)#^Z
Router#wr
```

2 To configure the FasterEthernet 0/0 interface: Configure the ip address and network mask, finally we bring the interface up with command "no shutdown".

```
Router#configterminal
Router(config)#interface FastEthernet 0/0
Router(config-if)#ip address 147.110.192.40 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#wr
```

Use putty or bring up a Microsoft command, promt window, type in "telnet 147.110.192.40". The telnet program is executed, and started a telnet session on the router for us. Off course a password is needed, we know the password is"vty", because we set it previously when configuring vty line 0 4.

3 To configure E1 links

Note: *If you are connecting to a* ***LG*** *or* ***DANUBE*** *router, ensure that the Cisco router is set for PPP encapsulation rather than the proprietary HDLC encapsulation.*

a. If you have connected a DANUBE or LG router at "Swazi Plaza" please do the following on the Cisco Router (147.110.192.40) on that serial interface**.**

Example:

telnet 147.110.192.40

<enter password>

en

<enter password>

- ***Go to the configuration mode and configure the serial port***

  SEC-Internal-GW# conf t

- ***(An E1 Controller work with time slots, so please make sure that you know what serial interface to use)***

Enter configuration commands, one per line. End with CNTL/Z.

SEC-Internal-GW(config)# controller E1 1/1

SEC-Internal-GW(config-controller)# channel-group 2 timeslots 3-4

CNTL/Z.

SEC-Internal-GW# interface Serial1/1:2

SEC-Internal-GW (config-if)#Ip address 160.124.77.1 255.255.255.252

SEC-Internal-GW (config-if)# encapsulation ppp

SEC-Internal-GW (config-if)# no shutdown

- Note that the serial at "Swazi Plaza" would be 160.124.77.2 255.255.255.252
- Then you can do all the options like (description, bandwidth and many more)

SEC-Internal-GW (config-if)#

CNTL/Z.

- Allow the remote network

SEC-Internal-GW# ip route 147.110.191.0 255.255.255.240 Serial1/1:2

- Save the configuration

SEC-Internal-GW#wr

HDLC is the default encapsulation for synchronous serial links on Cisco routers.so if you are connecting to a remote site and using any cisco, don't configure encapsulation.

NOTE:

There are 32 timeslots in an E1Controller. From 0 to 31 in which the first timeslot is used for framing while 16th timeslot is used to carry signalling data, so only 30 are usable. You can have 4, 13 or even 30 serial interfaces depending on yourinfrastructure and configuration. See Annex 1 – current configuration
To configure ranges, use hyphens. To configure discontinuous time slots, use commas. Do not include spaces.

7 Records

N/A

ANNEX 1

```
Current configuration : 5789 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname SEC-Internal-GW
!
boot-start-marker
boot-end-marker
!
card type e1 1
logging buffered 51200 warnings
no logging console
enable secret 5 $1$YsHM$YdmluAiptz/KV1HUpZjFe1
enable password 7 0822455D0A16544541
!
no aaa new-model
no network-clock-participate slot 1
!
!
ip cef
!
!
multilink bundle-name authenticated
!
!
!
archive
 log config
  hidekeys
!
!
controller E1 1/0
 channel-group 1 timeslots 1-2
 channel-group 2 timeslots 3
 channel-group 3 timeslots 4-5
 channel-group 4 timeslots 6-7
 channel-group 5 timeslots 8-9
 channel-group 6 timeslots 10
 channel-group 7 timeslots 11-12
 channel-group 8 timeslots 13
 channel-group 9 timeslots 14-15
 channel-group 10 timeslots 16
 channel-group 11 timeslots 17
 channel-group 12 timeslots 18
 channel-group 13 timeslots 19
 channel-group 14 timeslots 20-21
 channel-group 15 timeslots 22
 channel-group 16 timeslots 23-24
 channel-group 17 timeslots 25-26
 channel-group 18 timeslots 27
 channel-group 19 timeslots 29-30
!
controller E1 1/1
 channel-group 1 timeslots 1-2
!
!
!
!
interface Loopback0
 --More--
```

```
 no ip address
!
interface FastEthernet0/0
 description << FastEthernet Connection to LAN >>
 ip address 147.110.192.40 255.255.255.0
 no ip redirects
 no ip unreachables
 no ip proxy-arp
 duplex auto
 speed auto
 no cdp enable
!
interface FastEthernet0/1
 description SEC-Manzini Regional PWR2664
 bandwidth 256
 ip address 160.124.77.97 255.255.255.252
 shutdown
 duplex auto
 speed auto
!
interface Serial1/0:1
 description SEC-Swazi Plaza PWR2711
 bandwidth 128
 ip address 160.124.77.81 255.255.255.252
 encapsulation ppp
!
interface Serial1/0:2
 description SEC-Manzini Regional PWR2664
 bandwidth 128
 no ip address
 shutdown
!
interface Serial1/0:3
 description SEC-Lubombo Regional PWR2654
 bandwidth 128
 ip address 160.124.77.93 255.255.255.252
 encapsulation ppp
!
interface Serial1/0:4
 description SEC-Shiselweni Regional PWR2658
 bandwidth 128
 ip address 160.124.77.89 255.255.255.252
 encapsulation ppp
!
interface Serial1/0:5
 description SEC-Ezulwini Gables PWR 2651
 bandwidth 128
 ip address 160.124.77.77 255.255.255.252
!
interface Serial1/0:6
 description SEC-Manzini Mall Revenue PWR2665
 bandwidth 64
 ip address 160.124.77.69 255.255.255.252
!
interface Serial1/0:7
 description SEC-Mhlume Depot PWR2656
 bandwidth 128
 ip address 160.124.77.65 255.255.255.252
!
interface Serial1/0:8
 description SEC-Mbabane Post PWR2635
 bandwidth 64
 ip address 160.124.77.57 255.255.255.252
 --More--
```

```
 bandwidth 128
 ip address 160.124.78.1 255.255.255.252
 encapsulation ppp
!
interface Serial1/1:1
 description SEC-Manzini Regional PWR2664
 bandwidth 128
 ip address 160.124.77.97 255.255.255.252
!
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 147.110.192.254
ip route 147.110.165.0 255.255.255.0 147.110.192.97
ip route 147.110.166.0 255.255.255.240 Serial1/0:19
ip route 147.110.189.32 255.255.255.224 Serial1/0:4
ip route 147.110.189.64 255.255.255.224 Serial1/0:3
ip route 147.110.189.96 255.255.255.224 Serial1/1:1
ip route 147.110.189.192 255.255.255.224 Serial1/0:16
ip route 147.110.190.16 255.255.255.240 Serial1/0:11
ip route 147.110.190.144 255.255.255.240 Serial1/0:14
ip route 147.110.191.16 255.255.255.240 Serial1/0:1
ip route 147.110.191.32 255.255.255.240 Serial1/0:5
ip route 147.110.191.48 255.255.255.240 Serial1/0:18
ip route 147.110.191.64 255.255.255.240 Serial1/0:6
ip route 147.110.191.80 255.255.255.240 Serial1/0:7
ip route 147.110.191.112 255.255.255.240 Serial1/0:8
ip route 147.110.191.128 255.255.255.240 Serial1/0:9
ip route 147.110.191.144 255.255.255.240 Serial1/0:10
ip route 147.110.191.176 255.255.255.240 Serial1/0:12
ip route 147.110.191.192 255.255.255.240 Serial1/0:17
ip route 147.110.191.224 255.255.255.240 Serial1/0:15
ip route 147.110.192.0 255.255.255.0 FastEthernet0/0
!
!
no ip http server
ip http access-class 23
ip http authentication local
ip http timeout-policy idle 60 life 86400 requests 10000
!
access-list 23 permit 10.10.10.0 0.0.0.7
snmp-server community public RO
snmp-server community private RW
snmp-server trap-source Loopback0
snmp-server enable traps tty
!
!
control-plane
!
!
line con 0
line aux 0
line vty 0 4
 password 7 02050D480809
 login
 transport input telnet
line vty 5 15
 privilege level 15
 login local
 transport input telnet
!
scheduler allocate 20000 1000
!
end

SEC-Internal-GW#
```