

# Módulo de escucha y Presidente de la configuración ISE 2.0 TrustSec SXP

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## Introducción

Este documento describe cómo configurar y resolver problemas la característica que la versión 2.0 del Cisco Identity Services Engine (ISE) soporta el Exchange Protocol de TrustSec SGT (SXP) en un modo del Lister y del Presidente.

## Prerequisites

### Requisitos

Cisco recomienda que tenga conocimiento sobre estos temas:

- Configuración del switch del Cisco Catalyst
- Servicios del Identity Services Engine (ISE) y de TrustSec

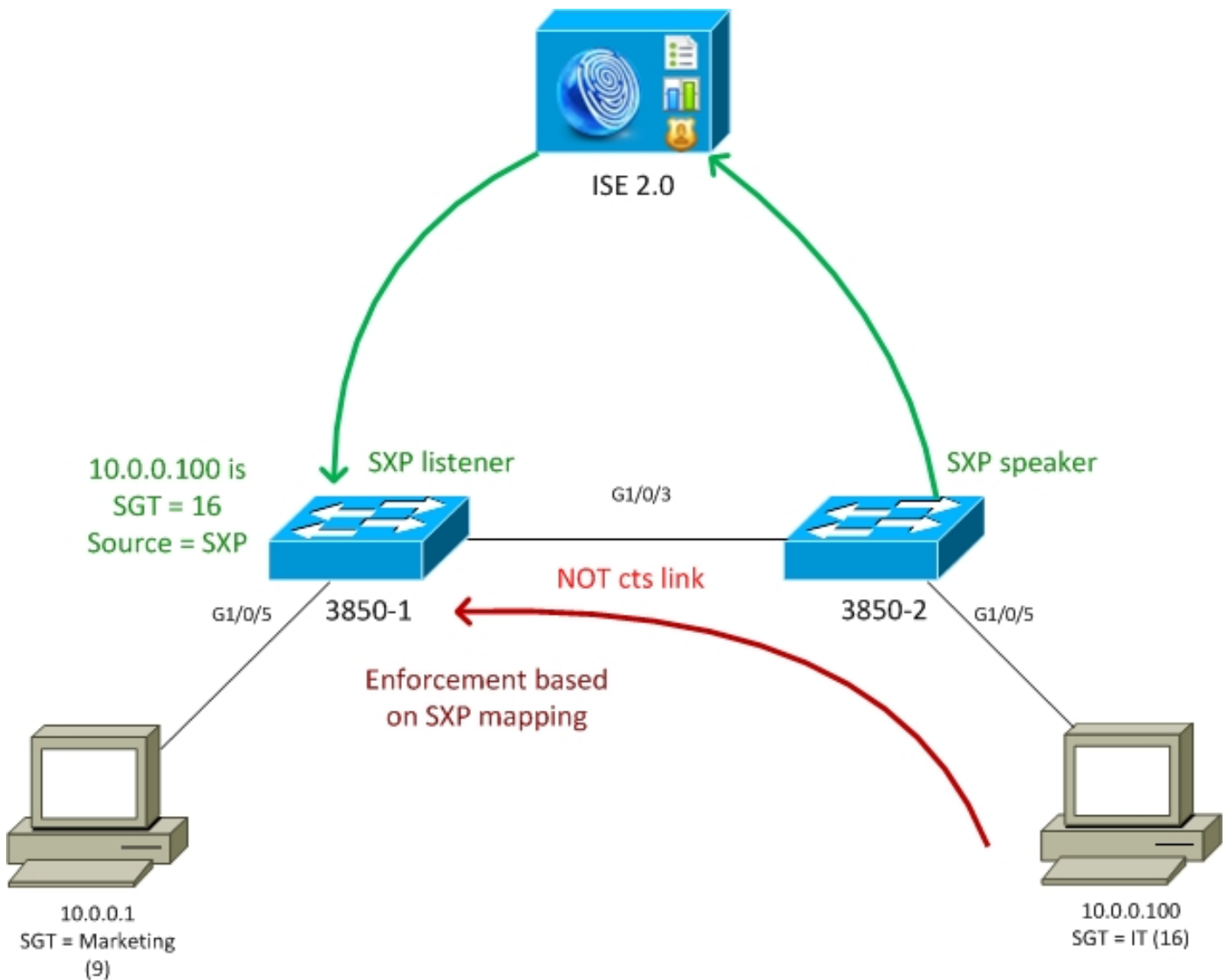
### Componentes Utilizados

La información que contiene este documento se basa en estas versiones de software:

- Cisco Catalyst 3850 Switch con el software IOS-XE 3.7.2 y posterior
- Cisco ISE, libera 2.0 y posterior

## Configurar

## Diagrama de la red



## Flujo de tráfico

- 3850-2 es el authenticator del 802.1x para 10.0.0.100 - Etiqueta de vuelta del grupo de seguridad ISE (SGT) 16 (las TIC) para la autenticación satisfactoria
- El 3850-2 Switch aprende el IP Address del supplicant (dispositivo del IP que sigue) y envía la información de mapeo (IP-SGT) al ISE usando el protocolo SXP
- 3850-1 es el authenticator del 802.1x para 10.0.0.1 - ISE que vuelve la etiqueta 9 (marketing) SGT para la autenticación satisfactoria
- 3850-1 recibe la información de mapeo SXP del ISE (10.0.0.100 es SGT 16), descarga la directiva del ISE
- El tráfico enviado de 10.0.0.100 a 10.0.0.1 es remitido por 3850-2 (ningunas directivas específicas descargadas) a 3850-1 que sea guardián que golpea la directiva las TIC (16) - > el marketing (9)

Observe por favor el link entre el Switches no es cts conectan - así que todas las asignaciones remotas en el Switches están instaladas vía el protocolo SXP.

**Note:** No todo el Switches tiene el hardware permitiendo ser programado vía la directiva recibida del ISE basado en las asignaciones recibidas SXP. Para la verificación refiera por

favor siempre a la última matriz de compatibilidad o contacto Cisco Systems de TrustSec.

## Configuraciones

Para los detalles con respecto a la configuración básica de TrustSec, refiera a los artículos en la sección de referencias.

### Conmute 3850-1

El Switch termina la sesión del 802.1x con la asignación SGT y también como altavoz SXP hacia el ISE.

```
aaa authentication dot1x default group ISE_mgarcarz
aaa authorization network default group ISE_mgarcarz
aaa authorization network ISE_mgarcarz group ISE_mgarcarz
aaa accounting dot1x default start-stop group ISE_mgarcarz
aaa accounting update newinfo

radius server ISE_mgarcarz
  address ipv4 10.48.17.235 auth-port 1645 acct-port 1646
  pac key cisco

aaa group server radius ISE_mgarcarz
  server name ISE_mgarcarz

interface GigabitEthernet1/0/3
  switchport mode trunk

interface GigabitEthernet1/0/5
  description mgarcarz
  switchport access vlan 100
  switchport mode access
  ip flow monitor F_MON input
  ip flow monitor F_MON output
  authentication order dot1x mab
  authentication priority dot1x mab
  authentication port-control auto
  mab
  dot1x pae authenticator

cts authorization list ISE_mgarcarz
cts role-based enforcement
cts role-based enforcement vlan-list 1-4094
cts sxp enable
cts sxp default password cisco
cts sxp connection peer 10.48.17.235 password default mode local listener hold-time 0
```

### Switch 3850-2

El Switch termina la sesión del 802.1x con la asignación SGT y también como módulo de escucha SXP que consigue la asignación del ISE.

```
aaa authentication dot1x default group ISE_mgarcarz
aaa authorization network default group ISE_mgarcarz
aaa authorization network ISE_mgarcarz group ISE_mgarcarz
aaa accounting dot1x default start-stop group ISE_mgarcarz
```

```
aaa accounting update newinfo

radius server ISE_mgarcarz
  address ipv4 10.48.17.235 auth-port 1645 acct-port 1646
  pac key cisco

aaa group server radius ISE_mgarcarz
  server name ISE_mgarcarz

interface GigabitEthernet1/0/3
  switchport mode trunk

interface GigabitEthernet1/0/5
  description mgarcarz
  switchport access vlan 100
  switchport mode access
  authentication order dot1x mab
  authentication priority dot1x mab
  authentication port-control auto
  mab
  dot1x pae authenticator

cts authorization list ISE_mgarcarz
cts role-based enforcement
cts role-based enforcement vlan-list 1-4094
cts sxp enable
cts sxp default password cisco
cts sxp connection peer 10.48.17.235 password default mode local speaker hold-time 0
```

## ISE

### Paso 1. Dispositivos de acceso a la red

Navegue a los **centros de trabajo > Device Administration (Administración del dispositivo) > los recursos de red**, agregue ambo Switches con el secreto compartido Cisco y la contraseña Krakow123 de TrustSec.

Identity Services Engine Home Operations Policy Guest Access Administration Work Centers

TrustSec Device Administration

Overview Identities User Identity Groups Network Resources Network Device Groups Policy Conditions Policy Results

Network Devices

Default Devices  
TACACS External Servers  
TACACS Server Sequence

Network Devices List > KSEC-3850-1

### Network Devices

\* Name: KSEC-3850-1  
Description: [ ]

\* IP Address: 10.62.148.108 / 32

\* Device Profile: Cisco [ + ]  
Model Name: [ ]  
Software Version: [ ]

\* Network Device Group

Location: All Locations [ Set To Default ]  
Device Type: All Device Types [ Set To Default ]

- RADIUS Authentication Settings
- TACACS+ Authentication Settings
- SNMP Settings
- Advanced TrustSec Settings

## Paso 2. Grupos de seguridad

Para agregar SGT para el TIC y el márketing, navegue los grupos al > Security (Seguridad) de los centros de trabajo > de TrustSec > de los componentes.

**Security Groups**  
For Policy Export go to [Administration > System > Backup &](#)

Edit Add Import Export Delete

	Name	SGT (Dec / Hex)
<input type="checkbox"/>	SGT_BYOD	15/000F
<input type="checkbox"/>	SGT_Guest	6/0006
<input type="checkbox"/>	SGT_IT	16/0010
<input type="checkbox"/>	SGT_Marketing	9/0009
<input type="checkbox"/>	Unknown	0/0000

### Paso 3. Grupos de seguridad ACL

Para agregar el grupo de seguridad ACL, navegue el grupo ACL al > Security (Seguridad) de los centros de trabajo > de TrustSec > de los componentes.

**Security Group ACLs List > ICMP**

**Security Group ACLs**

\* Name

Description

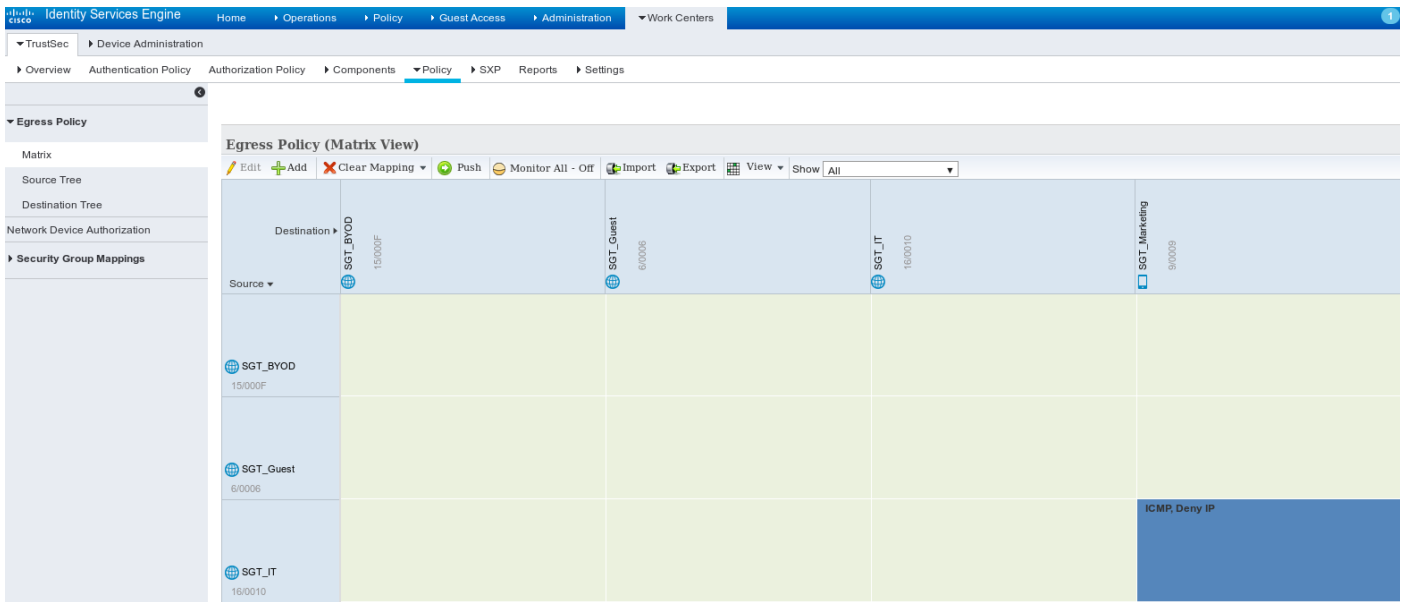
IP Version  IPv4  IPv6  Agnostic

\* Security Group ACL content

Permita solamente el tráfico ICMP.

### Paso 4. Directiva de TrustSec

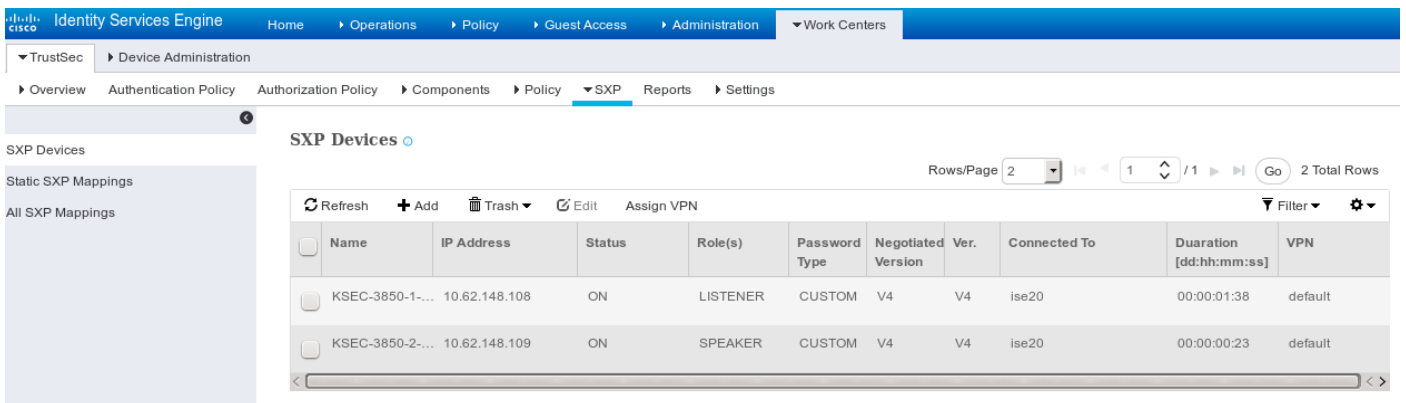
Para agregar la directiva que controla el tráfico del TIC a la comercialización, navegue a los centros de trabajo > a TrustSec > a los componentes > a la política de egress > a la matriz.



Fije la captura de la entrada predeterminada toda la regla para negar todo el tráfico.

## Paso 5. Dispositivos SXP

Para configurar el módulo de escucha y al locutor SXP para el Switches correspondiente, navegue a los **centros de trabajo > a TrustSec > a los dispositivos SXP**.



Utilice la palabra clave Cisco (o cualquier otra configurada para el sxp en el Switch).

## Paso 6. Directiva de la autorización

Asegúrese de que directiva de la autorización vuelve las etiquetas correctas SGT para cada usuario, navegue a la **directiva > a la autorización**.

## Authorization Policy

Define the Authorization Policy by configuring rules based on identity groups and/or other conditions. Drag and drop rules to change the order. For Policy Export go to [Administration > System > Backup & Restore > Policy Export Page](#)

First Matched Rule Applies

▶ Exceptions (0)

Standard

Status	Rule Name	Conditions (identity groups and other conditions)	Permissions
✓	IT	if example.com:ExternalGroups EQUALS example.com/Users/IT	then SGT_IT
✓	Marketing	if example.com:ExternalGroups EQUALS example.com/Users/Marketing	then SGT_Marketing

# Verificación

## Paso 1. Switch que se une al ISE para los cts

De cada Switch proporcione las credenciales de TrustSec (configuradas en ISE/Step1) para conseguir el PAC.

```
KSEC-3850-2#cts credentials id KSEC-3850-2 password Krakow123
```

CTS device ID and password have been inserted in the local keystore. Please make sure that the same ID and password are configured in the server database.

Asegúrese de que el PAC esté descargado.

```
KSEC-3850-2#show cts pacs
AID: 65D55BAF222BBC73362A7810A04A005B
PAC-Info:
  PAC-type = Cisco Trustsec
  AID: 65D55BAF222BBC73362A7810A04A005B
  I-ID: KSEC-3850-2
  A-ID-Info: Identity Services Engine
  Credential Lifetime: 20:42:37 UTC Nov 13 2015
PAC-Opaque:
000200B8000300010004001065D55BAF222BBC73362A7810A04A005B0006009C00030100B26D8DDC125B6595067D64F9
17DA624C0000001355CB2E1C00093A800E567155E0DE76419D2F3B97D890F34F109C4C42F586B29050CEC7B441E0CA60
FC6684D4F6E8263FA2623A6E450927815A140CD3B9D68988E95D8C1E65544E222E187C647B9F7F3F230F6DB4F80F3C20
1ACD623B309077E27688EDF7704740A1CD3F18CE8485788054C19909083ED303BB49A6975AC0395D41E1227B
Refresh timer is set for 12w4d
```

Y se restaura la política ambiental.

```
KSEC-3850-2#show cts environment-data
CTS Environment Data
=====
Current state = COMPLETE
Last status = Successful
Local Device SGT:
  SGT tag = 0-00:Unknown
Server List Info:
Installed list: CTSServerList1-0001, 1 server(s):
*Server: 10.48.17.235, port 1812, A-ID 65D55BAF222BBC73362A7810A04A005B
  Status = ALIVE
```



```
auto-test = FALSE, keywrap-enable = FALSE, idle-time = 60 mins, deadtime = 20 secs
Multicast Group SGT Table:
Security Group Name Table:
  0-00:Unknown
  6-00:SGT_Guest
  9-00:SGT_Marketing
  15-00:SGT_BYOD
  16-00:SGT_IT
  255-00:SGT_Quarantine
Environment Data Lifetime = 86400 secs
Last update time = 20:47:04 UTC Sat Aug 15 2015
Env-data expires in 0:08:09:13 (dd:hr:mm:sec)
Env-data refreshes in 0:08:09:13 (dd:hr:mm:sec)
Cache data applied = NONE
State Machine is running
```

Relance el mismo proceso para 3850-1

## Sesiones del 802.1x del paso 2.

Después de que autenticuen al usuario TIC, se asigna la etiqueta correcta.

```
KSEC-3850-2#show authentication sessions interface g1/0/5 details
```

```
Interface: GigabitEthernet1/0/5
IIF-ID: 0x107E700000000C4
MAC Address: 0050.b611.ed31
IPv6 Address: Unknown
IPv4 Address: 10.0.0.100
User-Name: cisco
Status: Authorized
Domain: DATA
Oper host mode: single-host
Oper control dir: both
Session timeout: N/A
Common Session ID: 0A3E946D00000FF214D18E36
Acct Session ID: 0x00000FDC
Handle: 0xA4000020
Current Policy: POLICY_Gi1/0/5
```

Local Policies:

```
Service Template: DEFAULT_LINKSEC_POLICY_SHOULD_SECURE (priority 150)
Security Policy: Should Secure
Security Status: Link Unsecure
```

Server Policies:

```
SGT Value: 16
```

Method status list:

```
Method      State
dot1x      Authc Success
```

La asignación está instalada en la tabla local SGT-IP.

```
KSEC-3850-2#show cts role-based sgt-map all
```

Active IPv4-SGT Bindings Information

```
IP Address      SGT      Source
=====
10.0.0.100      16       LOCAL
```

## Paso 3. Altavoz SXP

## 3850-2 envía la asignación al ISE, los debugs del Switch para el sxp de los cts.

```
KSEC-3850-2(config)#do show debug
```

```
CTS:
```

```
CTS SXP message debugging is on
```

```
*Aug 16 12:48:30.173: CTS-SXP-MSG:trp_send_msg <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.173: CTS-SXP-MSG:trp_socket_write fd<1>, cdbp->ph_sock_pending<1>,
<10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.226: CTS-SXP-MSG:trp_process_read_sock <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.226: CTS-SXP-MSG:trp_process_read_sock socket_rcv result:-1 errno:11;
<10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.226: CTS-SXP-MSG:trp_process_read_sock socket_conn is accepted; <10.48.17.235,
10.62.148.109>
*Aug 16 12:48:30.226: CTS-SXP-MSG:trp_socket_write fd<1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.226: CTS-SXP-MSG:trp_socket_write freeing tx_msgq_entry, <10.48.17.235,
10.62.148.109>
*Aug 16 12:48:30.227: CTS-SXP-MSG:after socket_send, wlen=28, slen=0, tot_len=28, <10.48.17.235,
10.62.148.109>
*Aug 16 12:48:30.227: CTS-SXP-MSG:trp_socket_write freeing tx_buf, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.227: CTS-SXP-MSG:trp_socket_read <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.227: CTS-SXP-MSG:trp_socket_read readlen = -1; errno = 11, <10.48.17.235,
10.62.148.109>
*Aug 16 12:48:30.278: CTS-SXP-MSG:trp_process_read_sock <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.278: CTS-SXP-MSG:trp_socket_read <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.278: CTS-SXP-MSG:RCVD peer 10.48.17.235 readlen:32, datalen:0 remain:4096 bufp
=
*Aug 16 12:48:30.278: CTS-SXP-MSG:sxp_handle_rx_msg_v2 <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.279: CTS-SXP-MSG:imu_sxp_conn_cr <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.279: CTS-SXP-MSG:wrt_sxp_opcode_info_v4 cdbp 0x3D541160
*Aug 16 12:48:30.279: CTS-SXP-MSG:trp_send_msg <1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.279: CTS-SXP-MSG:trp_socket_write fd<1>, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.279: CTS-SXP-MSG:trp_socket_write freeing tx_msgq_entry, <10.48.17.235,
10.62.148.109>
*Aug 16 12:48:30.279: CTS-SXP-MSG:after socket_send, wlen=28, slen=0, tot_len=28, <10.48.17.235,
10.62.148.109>
*Aug 16 12:48:30.279: CTS-SXP-MSG:trp_socket_write freeing tx_buf, <10.48.17.235, 10.62.148.109>
*Aug 16 12:48:30.280: CTS-SXP-MSG:trp_socket_read readlen = 32; errno = 11, <10.48.17.235,
10.62.148.109>
```

## El ISE señala (sxp\_appserver/sxp.log)

```
2015-08-16 14:44:07,029 INFO [nioEventLoopGroup-2-3]
opendaylight.sxp.core.behavior.Strategy:473 -
[ISE:10.48.17.235][10.48.17.235:21121/10.62.148.109:64999][O|Lv4/Sv4 192.168.77.2] PURGEALL
processing
2015-08-16 14:44:07,029 WARN [nioEventLoopGroup-2-3]
opendaylight.sxp.core.handler.MessageDecoder:173 -
[ISE:10.48.17.235][10.48.17.235:21121/10.62.148.109:64999] Channel inactivation
2015-08-16 14:44:07,029 INFO [pool-3-thread-1] sxp.util.database.spi.MasterDatabaseProvider:721
- SXP_PERF:BINDINGS_PER_SXP_UPDATE_MESSAGE(CHUNK)=1, onlyChanged=true
2015-08-16 14:44:07,030 INFO [pool-3-thread-1] sxp.util.database.spi.MasterDatabaseProvider:725
- SXP_PERF:NUM_OF_CHUNKS=1, onlyChanged=true
2015-08-16 14:44:07,030 INFO [pool-3-thread-9]
opendaylight.sxp.core.service.UpdateExportTask:93 - SXP_PERF:SEND_UPDATE_BUFFER_SIZE=16
2015-08-16 14:44:07,030 INFO [pool-3-thread-9]
opendaylight.sxp.core.service.UpdateExportTask:119 - SENT_UPDATE to
[ISE:10.48.17.235][10.48.17.235:57719/10.62.148.108:64999][O|Sv4]
2015-08-16 14:44:07,030 INFO [pool-3-thread-9]
opendaylight.sxp.core.service.UpdateExportTask:140 - SENT_UPDATE SUCCESSFUL to
[ISE:10.48.17.235][10.48.17.235:57719/10.62.148.108:64999][O|Sv4]:false
```

```

2015-08-16 14:44:07,030 INFO [pool-3-thread-1]
opendaylight.sxp.core.service.BindingDispatcher:198 -
SXP_PERF:MDB_PARTITON_AND_SXP_DISPATCH:DURATION=1 milliseconds, NUM_CONNECTIONS=1
2015-08-16 14:44:07,031 INFO [pool-3-thread-1] sxp.util.database.spi.MasterDatabaseProvider:725
- SXP_PERF:NUM_OF_CHUNKS=0, onlyChanged=true
2015-08-16 14:44:12,534 INFO [nioEventLoopGroup-2-4]
opendaylight.sxp.core.behavior.Strategy:232 -
[ISE:10.48.17.235][10.48.17.235:64999/10.62.148.109:1035][X|Lv4/Sv4 192.168.77.2] received
Message Open
2015-08-16 14:44:12,535 INFO [nioEventLoopGroup-2-4]
opendaylight.sxp.core.behavior.Strategy:358 -
[ISE:10.48.17.235][10.48.17.235:64999/10.62.148.109:1035][O|Lv4/Sv4 192.168.77.2] Sent RESP 0 0
0 32 0 0 0 2 | 0 0 0 4 0 0 0 2 80 6 6 3 0 2 0 1 0 80 7 4 0 120 0 180
2015-08-16 14:44:12,585 INFO [nioEventLoopGroup-2-4]
opendaylight.sxp.core.behavior.Strategy:451 -
[ISE:10.48.17.235][10.48.17.235:64999/10.62.148.109:1035][O|Lv4/Sv4 192.168.77.2] received
Message Update
2015-08-16 14:44:12,586 INFO [pool-3-thread-2]
opendaylight.sxp.core.service.SimpleBindingHandler:663 - PERF_SXP_PROCESS_UPDATE from
[ISE:10.48.17.235][10.48.17.235:64999/10.62.148.109:1035][O|Lv4/Sv4 192.168.77.2]
2015-08-16 14:44:12,586 INFO [pool-3-thread-2]
opendaylight.sxp.core.service.SimpleBindingHandler:666 - PERF_SXP_PROCESS_UPDATE_DONE from
[ISE:10.48.17.235][10.48.17.235:64999/10.62.148.109:1035][O|Lv4/Sv4 192.168.77.2]
2015-08-16 14:44:12,586 INFO [pool-3-thread-1] sxp.util.database.spi.MasterDatabaseProvider:721
- SXP_PERF:BINDINGS_PER_SXP_UPDATE_MESSAGE(CHUNK)=1, onlyChanged=true
2015-08-16 14:44:12,587 INFO [pool-3-thread-1] sxp.util.database.spi.MasterDatabaseProvider:725
- SXP_PERF:NUM_OF_CHUNKS=1, onlyChanged=true
2015-08-16 14:44:12,587 INFO [pool-3-thread-11]
opendaylight.sxp.core.service.UpdateExportTask:93 - SXP_PERF:SEND_UPDATE_BUFFER_SIZE=32
2015-08-16 14:44:12,587 INFO [pool-3-thread-11]
opendaylight.sxp.core.service.UpdateExportTask:119 - SENT_UPDATE to
[ISE:10.48.17.235][10.48.17.235:57719/10.62.148.108:64999][O|Sv4]
2015-08-16 14:44:12,587 INFO [pool-3-thread-11]
opendaylight.sxp.core.service.UpdateExportTask:140 - SENT_UPDATE SUCCESSFUL to
[ISE:10.48.17.235][10.48.17.235:57719/10.62.148.108:64999][O|Sv4]:false
2015-08-16 14:44:12,587 INFO [pool-3-thread-1]
opendaylight.sxp.core.service.BindingDispatcher:198 -
SXP_PERF:MDB_PARTITON_AND_SXP_DISPATCH:DURATION=1 milliseconds, NUM_CONNECTIONS=1

```

Y presente todas las asignaciones vía el GUI (asignación incluyendo para 10.0.0.100 recibió a partir de la 3850-2), tal y como se muestra en de esta imagen.

The screenshot shows the Cisco Identity Services Engine (ISE) GUI. The navigation menu includes 'TrustSec' and 'Device Administration'. The main content area is titled 'All SXP Mappings' and contains a table with the following data:

IP Address	SGT	Learned From	Learned By
10.0.0.100/32	SGT_IT(16/0010)	192.168.77.2	SXP
192.168.1.203/32	SGT_IT(16/0010)	10.48.17.235,10.48.67.250	Session

192.168.77.2 es el identificador de la conexión SXP en 3850-2 (el IP Address más alto definido).

KSEC-3850-2#show ip interface brief

```

Interface                IP-Address      OK? Method Status      Protocol
GigabitEthernet0/0      unassigned      YES unset  down        down

```

Vlan1	unassigned	YES NVRAM	administratively down	down
Vlan100	10.0.0.2	YES manual	up	up
Vlan480	10.62.148.109	YES NVRAM	up	up
Vlan613	unassigned	YES NVRAM	administratively down	down
Vlan666	192.168.66.2	YES NVRAM	down	down
<b>Vlan777</b>	<b>192.168.77.2</b>	<b>YES NVRAM</b>	<b>down</b>	<b>down</b>

#### Paso 4. Módulo de escucha SXP

Entonces el ISE vuelve a enviar esa asignación a 3850-1, los debugs del Switch.

```
*Aug 16 05:42:54.199: CTS-SXP-MSG:trp_send_msg <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.199: CTS-SXP-MSG:trp_socket_write fd<1>, cdbp->ph_sock_pending<1>,
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.248: CTS-SXP-MSG:trp_process_read_sock <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.248: CTS-SXP-MSG:trp_process_read_sock socket_recv result:-1 errno:11;
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.248: CTS-SXP-MSG:trp_process_read_sock socket_conn is accepted; <10.48.17.235,
10.62.148.108>
*Aug 16 05:42:54.248: CTS-SXP-MSG:trp_socket_write fd<1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.248: CTS-SXP-MSG:trp_socket_write freeing tx_msgq_entry, <10.48.17.235,
10.62.148.108>
*Aug 16 05:42:54.248: CTS-SXP-MSG:after socket_send, wlen=32, slen=0, tot_len=32, <10.48.17.235,
10.62.148.108>
*Aug 16 05:42:54.248: CTS-SXP-MSG:trp_socket_write freeing tx_buf, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.249: CTS-SXP-MSG:trp_socket_read <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.249: CTS-SXP-MSG:trp_socket_read readlen = -1; errno = 11, <10.48.17.235,
10.62.148.108>
*Aug 16 05:42:54.300: CTS-SXP-MSG:trp_process_read_sock <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.300: CTS-SXP-MSG:trp_socket_read <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.300: CTS-SXP-MSG:RCVD peer 10.48.17.235 readlen:28, datalen:0 remain:4096 bufp
=
*Aug 16 05:42:54.301: CTS-SXP-MSG:sxp_handle_rx_msg_v2 <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.301: CTS-SXP-MSG:imu_sxp_conn_cr ci<1> cdbp->ph_conn_state<2>, <10.48.17.235,
10.62.148.108>
*Aug 16 05:42:54.301: CTS-SXP-MSG:trp_socket_read readlen = 28; errno = 11, <10.48.17.235,
10.62.148.108>
*Aug 16 05:42:54.301: CTS-SXP-MSG:trp_process_read_sock <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:trp_socket_read <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:RCVD peer 10.48.17.235 readlen:52, datalen:0 remain:4096 bufp
=
*Aug 16 05:42:54.302: CTS-SXP-MSG:sxp_handle_rx_msg_v2 <1>, <10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:sxp_rcv_update_v4 <1> peer ip: 10.48.17.235
*Aug 16 05:42:54.302: CTS-SXP-MSG:1. msg type:3, total len:52, payl len:44, opc_ptr:0x3DFC7308,
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:1. msg type:3, total len:52, payl len:37, opc_ptr:0x3DFC730F,
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:1. msg type:3, total len:52, payl len:32, opc_ptr:0x3DFC7314,
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:1. msg type:3, total len:52, payl len:24, opc_ptr:0x3DFC731C,
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:1. msg type:3, total len:52, payl len:13, opc_ptr:0x3DFC7327,
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.302: CTS-SXP-MSG:1. msg type:3, total len:52, payl len:8, opc_ptr:0x3DFC732C,
<10.48.17.235, 10.62.148.108>
*Aug 16 05:42:54.303: CTS-SXP-MSG:1. msg type:3, total len:52, payl len:0, opc_ptr:0x3DFC7334,
<10.48.17.235, 10.62.148.108>
```

La captura de paquetes tomada del ISE para el tráfico hacia 3850-1 confirma las asignaciones SXP se está enviando.

No.	Time	Source	Destination	Protocol	Length	Info
10	2015-08-16 21:57:50.286099	10.48.17.235	10.62.148.108	SMPP	102	SMPP Bind_transmi
11	2015-08-16 21:57:50.286821	10.48.17.235	10.62.148.108	SMPP	126	SMPP Query_sm

```

> Frame 11: 126 bytes on wire (1008 bits), 126 bytes captured (1008 bits)
> Ethernet II, Src: Vmware_99:29:cc (00:50:56:99:29:cc), Dst: Cisco_1c:e8:00 (00:07:4f:1c:e8:00)
> Internet Protocol Version 4, Src: 10.48.17.235 (10.48.17.235), Dst: 10.62.148.108 (10.62.148.108)
> Transmission Control Protocol, Src Port: 64999 (64999), Dst Port: activesync (1034), Seq: 29, Ack: 33, Len: 52
Short Message Peer to Peer, Command: Query_sm, Seq: 806480656, Len: 52

```

```

Length: 52
Operation: Query_sm (0x00000003)
Sequence #: 806480656
Message id.: \021\002
Type of number (originator): Unknown (0x10)
Numbering plan indicator (originator): Unknown (0x10)
Originator address: \v\005 \300\250\001\313\020\020\b\n0\021\353\300\250M\002\020\021\002

```

```

0000 00 07 4f 1c e8 00 00 50 56 99 29 cc 08 00 45 00  ..0...P V.)...E.
0010 00 70 6a d8 40 00 40 06 14 eb 0a 30 11 eb 0a 3e  .pj.@.@. ...0...>
0020 94 6c fd e7 04 0a d8 2e 8f 8c 48 c5 e1 1b a0 18  .l..... ..H....
0030 39 08 bb 27 00 00 01 01 13 12 b6 72 86 e1 5a 6d  9..'.... ..r..Zm
0040 98 56 18 3c 5d 24 ba 00 98 85 00 00 00 34 00 00  .V.<]$. . . . .4..
0050 00 03 10 10 04 0a 30 11 eb 10 11 02 00 10 10 0b  .....0. ....
0060 05 20 c0 a8 01 cb 10 10 08 0a 30 11 eb c0 a8 4d  . . . . .0...M
0070 02 10 11 02 00 10 10 0b 05 20 0a 00 00 64  . . . . .d

```

Wireshark utiliza el decodificador estándar SMPP. Para marcar el payload:

10 (SGT = 16) para los Cb "c0 a8 01" (192.168.1.203)

10 (SGT = 16) para "0a 00 00 64" (10.0.0.100)

3850-1 instala todas las asignaciones recibidas del ISE.

```

KSEC-3850-1# show cts sxp sgt-map
SXP Node ID(generated):0xC0A84D01(192.168.77.1)
IP-SGT Mappings as follows:
IPv4,SGT: <10.0.0.100 , 16:SGT_IT>
source : SXP;
Peer IP : 10.48.17.235;
Ins Num : 2;
Status : Active;
Seq Num : 439
Peer Seq: 0A3011EB,C0A84D02,
IPv4,SGT: <192.168.1.203 , 16:SGT_IT>
source : SXP;
Peer IP : 10.48.17.235;
Ins Num : 6;
Status : Active;
Seq Num : 21
Peer Seq: 0A3011EB,
Total number of IP-SGT Mappings: 2

```

```

KSEC-3850-1# show cts role-based sgt-map all
Active IPv4-SGT Bindings Information

```

```

IP Address          SGT      Source
=====
10.0.0.100         16       SXP
192.168.1.203     16       SXP

```

## IP-SGT Active Bindings Summary

```
=====
Total number of CLI      bindings = 1
Total number of SXP      bindings = 2
Total number of active   bindings = 3
```

### Paso 5. Descarga y aplicación de la directiva

Descargue la directiva correcta del ISE. (Fila de la matriz con SGT 16)

```
KSEC-3850-1#show cts role-based permissions
```

```
IPv4 Role-based permissions default:
```

```
Permit IP-00
```

```
IPv4 Role-based permissions from group 16:SGT_IT to group 9:SGT_Marketing:
```

```
ICMP-10
```

```
Deny IP-00
```

```
RBACL Monitor All for Dynamic Policies : FALSE
```

```
RBACL Monitor All for Configured Policies : FALSE
```

El tráfico ICMP de 10.0.0.100 (SGT LAS TIC) a 10.0.0.1 (marketing SGT) se permite, aumento de los contadores.

```
KSEC-3850-1#show cts role-based counters from 16
```

```
Role-based IPv4 counters
```

```
#Hardware counters are not available for specific SGT/DGT
```

```
#Use this command without arguments to see hardware counters
```

From	To	SW-Denied	SW-Permitted		
16	9	0	0	11	0

Cuando el intentar utilizar la conexión Telnet falla, los contadores de caídas aumenta.

```
KSEC-3850-1#show cts role-based counters from 16
```

```
Role-based IPv4 counters
```

```
#Hardware counters are not available for specific SGT/DGT
```

```
#Use this command without arguments to see hardware counters
```

From	To	SW-Denied	SW-Permitted		
16	9	3	0	11	0

Observe por favor allí no es ninguna directiva específica en 3850-2, todo el tráfico se permite.

```
KSEC-3850-2#show cts role-based permissions
```

```
IPv4 Role-based permissions default:
```

```
Permit IP-00
```

```
RBACL Monitor All for Dynamic Policies : FALSE
```

```
RBACL Monitor All for Configured Policies : FALSE
```

Después de modificar SG ACL en el ISE, agregar el permiso tcp, y cts restaura la directiva en 3850-1 - entonces el tráfico telnet se valida.

Su posible también utilizar la NetFlow Flexible (a partir de IOS-XE 3.7.2 es SGT enterado) caché local para confirmar el comportamiento.

```
KSEC-3850-2#show cts role-based permissions
```

```
IPv4 Role-based permissions default:
```

```
Permit IP-00
```

```
RBACL Monitor All for Dynamic Policies : FALSE
```

```
RBACL Monitor All for Configured Policies : FALSE
```

El tráfico de las demostraciones de los resultados recibido a partir de la 3850-2. La fuente SGT es 0 porque el tráfico recibido no tiene ningún SGT (ningún link de los cts), pero la etiqueta del grupo de destino automáticamente se substituye basada en la tabla de correspondencia local.

KSEC-3850-1#show flow monitor F\_MON cache

```
Cache type: Normal (Platform cache)
Cache size: Unknown
Current entries: 6

Flows added: 1978
Flows aged: 1972
- Active timeout ( 1800 secs) 30
- Inactive timeout ( 15 secs) 1942
```

IPV4 SRC ADDR	IPV4 DST ADDR	TRNS SRC PORT	TRNS DST PORT	FLOW DIRN	FLOW CTS	SRC GROUP
TAG	FLOW CTS	DST GROUP	TAG	IP	PROT	pkts long
150.1.1.7.1	224.0.0.10	0	0	Output		
0	0	88	57			
10.62.148.1	224.0.0.13	0	8192	Output		
0	0	103	0			
7.7.4.1	224.0.0.10	0	0	Output		
0	0	88	56			
10.0.0.1	10.0.0.100	0	0	Output		
0	0	1	1388			
150.1.1.7.105	224.0.0.5	0	0	Output		
0	0	89	24			
150.1.1.7.1	224.0.0.5	0	0	Output		
0	0	89	24			
10.0.0.100	10.0.0.1	0	2048	Input		
0	9	1	1388			

El Netflow caché local se puede utilizar para confirmar el tráfico recibido. Si se valida o se cae ese tráfico, eso es confirmada por los contadores de los cts presentados antes.

El ISE también permite generar los informes del atascamiento y de la conexión SXP, tal y como se muestra en de esta imagen.

The screenshot shows the Cisco Identity Services Engine (ISE) Reports interface. The 'Report Selector' on the left includes 'SXP' and 'SXP Connection'. The main area displays the 'SXP Connection' report for the time range 'Yesterday'. The report shows a list of connections with columns for Generated Time, Peer IP, Port, SXP Node Ip, VPN, SXP Mode, SXP Version, Password Type, Status, and Reason. All connections listed have a status of 'PendingOn'.

Generated Time	Peer IP	Port	SXP Node Ip	VPN	SXP Mode	SXP Version	Password Type	Status	Reason
2015-08-15 07:13:41.1	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 07:11:41.1	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 07:09:41.0	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 07:07:40.7	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 07:05:40.4	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 07:03:40.4	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 07:01:40.2	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 06:59:39.9	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 06:57:39.5	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 06:55:39.3	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	
2015-08-15 06:53:38.9	10.48.67.250	64999	10.48.17.235	default	BOTH	VERSION_4	CUSTOM	PendingOn	

## Referencias

- [Postura de la Versión de ASA 9.2.1 VPN con el ejemplo de configuración ISE](#)
- [ASA y ejemplo de configuración de TrustSec del Catalyst 3750X Series Switch y guía del Troubleshooting](#)
- [Guía de configuración del switch de Cisco TrustSec: Comprensión de Cisco TrustSec](#)
- [Despliegue y mapa de ruta de Cisco TrustSec](#)
- [Guía de configuración de TrustSec del Cisco Catalyst 3850](#)
- [Matriz de compatibilidad de Cisco TrustSec](#)
- [Soporte Técnico y Documentación - Cisco Systems](#)