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## [Introducción](#)

Este documento suministra una configuración de ejemplo para configurar el Content Switching Module (CSM) con Secure Socket Layer (SSL).

## [prerrequisitos](#)

### [Requisitos](#)

No hay requisitos específicos para este documento.

### [Componentes Utilizados](#)

La información que contiene este documento se basa en las siguientes versiones de software y hardware.

- ® corriente 12.1 del Cisco IOS del Cisco 7202 Router
- Cisco Catalyst 6509 IOS12.1 que se ejecuta
- CS con el conjunto de características del Motor de terminación SSL (STE) que ejecuta IOS 12.2(11) y SSL(0.86)
- Cisco 7606 Router que ejecuta el IOS12.1
- Estructura CS 3.1(0.119)

La información que contiene este documento se creó a partir de los dispositivos en un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener cualquier comando.

### [Convenciones](#)

Para obtener más información sobre las convenciones del documento, consulte las [Convenciones de Consejos Técnicos de Cisco](#).

## [Configurar](#)



1. Copia de la conexión SSL en el CS
2. Copia fija de SSL en el CS
3. Conmutación por falla del CS con la conexión SSL dejada abierta
4. Conmutación por falla del MSFC activo con la conexión SSL abierta
5. La Conmutación por falla del chasis con las conexiones SSL dejadas se abre
6. Renegociación de la conexión SSL en la misma conexión y reanudación con la nueva conexión SSL (nueva función)
7. Funcionalidad fija CSM con las conexiones SSL múltiples con la reanudación

## 7202

```
7202-Reg#show run Building configuration... Current
configuration : 1042 bytes ! version 12.1 service timestamps
debug uptime service timestamps log uptime no service
password-encryption ! hostname 7202-Reg ! boot system flash
disk0:c7200-jk2o3s-mz.121-11b.E enable password lab ! ip
subnet-zero ! ! no ip domain-lookup ip host defib
223.255.254.242 ! ip cef ip audit notify log ip audit po max-
events 100 ip ssh time-out 120 ip ssh authentication-retries
3 ! controller ISA 1/1 ! controller ISA 2/1 ! interface
Loopback0 ip address 192.10.10.1 255.255.255.255 ! interface
FastEthernet0/0 ip address 15.10.10.21 255.0.0.0 duplex auto
speed auto ! interface FastEthernet0/1 ip address 11.0.0.1
255.0.0.0 duplex auto speed auto ! interface
GigabitEthernet5/0 ip address 10.0.0.100 255.0.0.0
negotiation auto ! ip classless ip route 12.0.0.0 255.0.0.0
11.0.0.100 ip route 192.0.0.0 255.0.0.0 147.10.10.1 ip route
223.255.254.0 255.255.255.0 15.0.100.1 no ip http server no
ip http secure-server ! line con 0 exec-timeout 0 0 line aux
0 line vty 0 4 password lab login line vty 5 15 login ! end
```

## 6509

```
6509-1#show run Building configuration... Current
configuration : 7932 bytes ! version 12.1 service timestamps
debug uptime service timestamps log uptime no service
password-encryption service internal ! hostname 6509-1 ! boot
system flash slot0: logging buffered 50000000 debugging
enable password lab ! !--- Configures the VLANs allowed over
the trunk to the SSL services module. !--- The admin VLAN is
included. The SSL module is located in slot 9. ! ssl-proxy
module 9 allowed-vlan 4,15 diagnostic level complete ip
subnet-zero ! ! no ip domain-lookup ! mls flow ip destination
mls flow ipx destination ! spanning-tree extend system-id no
spanning-tree vlan 2 ! !--- The CSM is located in slot 7. The
module is running as Active. ! module ContentSwitchingModule
7 vlan 3 client ip address 12.0.0.23 255.0.0.0 gateway
12.0.0.100 ! vlan 4 server ip address 12.0.0.23 255.0.0.0 !
vlan 5 server ip address 20.0.0.23 255.0.0.0 alias 20.0.0.100
255.0.0.0 ! probe ICMP icmp interval 5 failed 10 ! !--- These
are the server farm HTTP and real server members. serverfarm
HTTP nat server no nat client real 20.0.0.7 inservice real
20.0.0.8 inservice real 20.0.0.9 inservice real 20.0.0.10
inservice real 20.0.0.11 inservice real 20.0.0.12 inservice !
!--- These are the server farm HTTPS and real server members.
serverfarm HTTPS no nat server no nat client real 12.0.0.50
inservice real 12.0.0.51 inservice probe ICMP ! sticky 1 ssl
timeout 5 sticky 2 netmask 255.0.0.0 timeout 5 ! !--- Virtual
server HTTP. vserver HTTP !--- The virtual server IP address
is specified with TCP port www. virtual 12.0.0.124 tcp www !-
-- The VLAN from where the CSM accepts traffic for a
specified virtual server. vlan 4 !--- Destination server
farm. serverfarm HTTP sticky 5 group 2 !--- Enables
```

```

connection redundancy. !--- Replicates the sticky database to
the backup CSM. replicate csrp sticky !--- Replicates
connections to the backup CSM. replicate csrp connection
persistent rebalance inservice ! !--- Virtual server HTTPS.
vserver HTTPS !--- The virtual server IP address is specified
with TCP port HTTP over SSL. virtual 12.0.0.123 tcp https !--
- The VLAN from where the CSM accepts traffic for a specified
virtual server. vlan 3 !--- Destination server farm.
serverfarm HTTPS ssl-sticky offset 20 length 6 sticky 5 group
1 !--- Enables connection redundancy. !--- Replicates the
sticky database to the backup CSM. replicate csrp sticky !---
Replicates connections to the backup CSM. replicate csrp
connection !--- Disables HTTP 1.1 persistence for connections
in the virtual server. no persistent rebalance inservice ! ft
group 1 vlan 2 ! ! redundancy mode rpr-plus main-cpu auto-
sync running-config auto-sync standard ! power redundancy-
mode combined ! interface Loopback0 ip address 192.10.10.2
255.255.255.255 ! interface GigabitEthernet1/1 no ip address
switchport switchport trunk encapsulation dot1q switchport
trunk allowed vlan 1-5,1002-1005 switchport mode trunk !
interface GigabitEthernet1/2 no ip address shutdown !
interface FastEthernet4/13 ip address 11.0.0.5 255.0.0.0 no
ip redirects standby 2 ip 11.0.0.100 standby 2 priority 101
standby 2 preempt standby 2 name Client-Side ! interface
FastEthernet4/14 no ip address shutdown ! interface
FastEthernet4/48 no ip address switchport switchport access
vlan 15 switchport mode access ! interface GigabitEthernet5/1
no ip address switchport switchport access vlan 5 switchport
mode access ! interface GigabitEthernet5/2 no ip address
switchport switchport access vlan 5 switchport mode access !
interface GigabitEthernet5/3 no ip address switchport
switchport access vlan 5 switchport mode access ! interface
Vlan1 no ip address shutdown ! interface Vlan3 ip address
12.0.0.1 255.0.0.0 no ip redirects standby 1 ip 12.0.0.100
standby 1 priority 101 standby 1 preempt standby 1 name CSM-
Side standby 1 track FastEthernet4/13 ! interface Vlan15 ip
address 15.0.1.1 255.0.0.0 ! ip classless ip route 10.0.0.0
255.0.0.0 11.0.0.1 no ip http server ! alias exec sc show
module csm 7 ! line con 0 exec-timeout 0 0 line vty 0 4
password lab login transport input lat pad mop telnet rlogin
udptn nasi ! scheduler runtime netinput 300 end

```

## STE-1

```

ssl-proxy-9#show run brief Building configuration... Current
configuration : 1437 bytes ! version 12.2 no service pad
service timestamps debug datetime msec service timestamps log
datetime msec no service password-encryption ! hostname ssl-
proxy-9 ! enable password lab ! username braghu secret 5
$1$7Pdr$7dNm7171.BJzELfi.QUzp/ ip subnet-zero ip tftp source-
interface Ethernet0/0.15 no ip domain lookup ! ip ssh rsa
keypair-name ssh-key ! ! !--- Adds a proxy service HTTPS that
identifies a virtual IP address !--- and a server IP address
for each proxy. ssl-proxy service https virtual ipaddr
12.0.0.123 protocol tcp port 443 secondary server ipaddr
12.0.0.124 protocol tcp port 80 certificate rsa general-
purpose trustpoint TP-2048-pkcs12 inservice !--- Configures
this VLAN as administrative. ssl-proxy vlan 15 ipaddr
15.0.10.4 255.0.0.0 gateway 15.0.100.1 admin !--- Adds an
interface to VLAN 4 on the SSL services module. ssl-proxy
vlan 4 ipaddr 12.0.0.50 255.0.0.0 gateway 12.0.0.100 ssl-
proxy mac address 00e0.b0ff.f0c4 ! !--- Declares the
trustpoint that the module is to use. crypto ca trustpoint
TP-2048-pkcs12 !--- Specifies the key pair to associate with
the certificate. rsakeypair TP-2048-pkcs12 ! !--- Declares

```

```
the trustpoint that the module is to use. crypto ca
trustpoint TP-1024-pkcs12 !--- Specifies the key pair to
associate with the certificate. rsakeypair TP-1024-pkcs12 !--
- Specifies the certificate and key to be associated. crypto
ca certificate chain TP-2048-pkcs12 certificate ca
313AD6510D25ABAE4626E96305511AC4 certificate
3C2DF2E50001000000DC crypto ca certificate chain TP-1024-
pkcs12 certificate 3C2CD2330001000000DB certificate ca
313AD6510D25ABAE4626E96305511AC4 ! ip classless ip route
0.0.0.0 0.0.0.0 15.0.100.1 ip http server ! no cdp run ! line
con 0 exec-timeout 0 0 line 1 3 no exec transport input all
flowcontrol software line vty 0 1 exec-timeout 0 0 password
lab login line vty 2 4 exec-timeout 0 0 password lab login no
exec flowcontrol software ! end
```

## 7606

```
7606-2#show run Building configuration... Current
configuration : 7375 bytes ! version 12.1 service timestamps
debug uptime service timestamps log uptime no service
password-encryption ! hostname 7606-2 ! boot system flash
slot0: enable password lab ! !--- Configures the VLANs
allowed over the trunk to the SSL services module. !--- The
admin VLAN is included. The SSL module is located in slot 3.
ssl-proxy module 3 allowed-vlan 4,15 ip subnet-zero ! no ip
domain-lookup ip host mat 223.255.254.228 ip host defib
223.255.254.242 ! mls flow ip destination mls flow ipx
destination ! spanning-tree extend system-id no spanning-tree
vlan 2,10 !--- The CSM is located in slot 5. The module
running as Active. module ContentSwitchingModule 5 vlan 3
client ip address 12.0.0.24 255.0.0.0 gateway 12.0.0.100 !
vlan 4 server ip address 12.0.0.24 255.0.0.0 ! vlan 5 server
ip address 20.0.0.24 255.0.0.0 alias 20.0.0.100 255.0.0.0 !
probe ICMP icmp interval 5 failed 10 ! !--- These are the
server farm HTTP and real server members. serverfarm HTTP nat
server no nat client real 20.0.0.7 inservice real 20.0.0.8
inservice real 20.0.0.9 inservice real 20.0.0.10 inservice
real 20.0.0.11 inservice real 20.0.0.12 inservice ! !---
These are the server farm HTTPS and real server members.
serverfarm HTTPS no nat server no nat client real 12.0.0.50
inservice real 12.0.0.51 inservice probe ICMP ! sticky 1 ssl
timeout 5 sticky 2 netmask 255.0.0.0 timeout 5 ! !--- Virtual
server HTTP. vserver HTTP !--- The virtual server IP address
is specified with TCP port www. virtual 12.0.0.124 tcp www !-
- This is the VLAN from where the CSM accepts traffic for a
specified !--- virtual server. vlan 4 !--- This is the
destination server farm. serverfarm HTTP sticky 5 group 2 !--
- Enables connection redundancy. !--- Replicates the sticky
database to the backup CSM. replicate csrp sticky !---
Replicates connections to the backup CSM. replicate csrp
connection persistent rebalance inservice ! !--- This is the
virtual server HTTPS. vserver HTTPS !--- The virtual server
IP address is specified with TCP port HTTP over SSL. virtual
12.0.0.123 tcp https !--- This is the VLAN from where the CSM
accepts traffic for a specified !--- virtual server. vlan 3
!--- Destination server farm. serverfarm HTTPS !--- The CSM
load balances an incoming SSL connection to the SSL !---
termination engine that generated that SSL ID. ssl-sticky
offset 20 length 6 sticky 5 group 1 !--- Enables connection
redundancy. !--- Replicates the sticky database to the backup
CSM. replicate csrp sticky !--- Replicates connections to the
backup CSM. replicate csrp connection no persistent rebalance
inservice ! ft group 1 vlan 2 ! redundancy mode rpr-plus
main-cpu auto-sync running-config auto-sync standard !
interface Loopback0 ip address 192.10.10.3 255.255.255.0 !
```

```

interface GigabitEthernet1/1 no ip address switchport
switchport trunk encapsulation dot1q switchport trunk allowed
vlan 1-5,1002-1005 switchport mode trunk no cdp enable !
interface GigabitEthernet1/2 no ip address shutdown no cdp
enable ! interface FastEthernet2/1 no ip address switchport
switchport access vlan 5 switchport mode access no cdp enable
! interface FastEthernet2/2 no ip address switchport
switchport access vlan 5 switchport mode access no cdp enable
! interface FastEthernet2/3 no ip address switchport
switchport access vlan 5 switchport mode access no cdp enable
! interface FastEthernet2/13 ip address 11.0.0.6 255.0.0.0 no
ip redirects no cdp enable standby 2 ip 11.0.0.100 standby 2
preempt standby 2 name Client-Side ! interface
FastEthernet2/48 no ip address switchport switchport access
vlan 15 switchport mode access no cdp enable ! interface
Vlan1 no ip address shutdown ! interface Vlan3 ip address
12.0.0.2 255.0.0.0 no ip redirects standby 1 ip 12.0.0.100
standby 1 preempt standby 1 name CSM-Side standby 1 track
FastEthernet2/13 ! interface Vlan15 ip address 15.0.1.2
255.0.0.0 ! ip classless ip route 10.0.0.0 255.0.0.0 11.0.0.1
no ip http server ! no cdp run ! alias exec sc show module
csm 5 ! line con 0 exec-timeout 0 0 line vty 0 4 password lab
login transport input lat pad mop telnet rlogin udptn nasi !
end

```

## STE-2

```

ssl-proxy-3#show run br Building configuration... Current
configuration : 1216 bytes ! version 12.2 no service pad
service timestamps debug datetime msec service timestamps log
datetime msec no service password-encryption ! hostname ssl-
proxy-3 ! enable password lab ! ip subnet-zero ip tftp
source-interface Ethernet0/0.15 no ip domain lookup ip host
defib 223.255.254.242 ip host mat 223.255.254.228 ! ! ! !---
Adds a proxy service HTTPS that identifies a virtual IP
address !--- and a server IP address for each proxy. ssl-
proxy service https virtual ipaddr 12.0.0.123 protocol tcp
port 443 secondary server ipaddr 12.0.0.124 protocol tcp port
80 certificate rsa general-purpose trustpoint TP-2048-pkcs12
inservice !--- Configures this VLAN as administrative. ssl-
proxy vlan 15 ipaddr 15.0.10.5 255.0.0.0 gateway 15.0.100.1
admin !--- Adds an interface to VLAN 4 on the SSL services
module. ssl-proxy vlan 4 ipaddr 12.0.0.51 255.0.0.0 gateway
12.0.0.100 ssl-proxy mac address 0001.6446.a1c0 ! !---
Declares the trustpoint that the module is to use. crypto ca
trustpoint TP-2048-pkcs12 !--- Specifies key pair to
associate with the certificate. rsa keypair TP-2048-pkcs12 !---
Specifies the certificate and key to be associated. crypto
ca certificate chain TP-2048-pkcs12 certificate
3C2DF2E50001000000DC certificate ca
313AD6510D25ABAE4626E96305511AC4 ! ! ! ! ip classless ip
route 0.0.0.0 0.0.0.0 15.0.100.1 ip http server ! ! no cdp
run ! line con 0 exec-timeout 0 0 line 1 3 no exec transport
input all flowcontrol software line vty 0 1 exec-timeout 0 0
password lab login line vty 2 4 exec-timeout 0 0 password lab
login no exec flowcontrol software ! end

```

## Verificación

Utilice esta información para verificar su configuración:

```
Router# sh module contentSwitchingModule all vservers
```

- **¿muestre a proxy SSL el servidor/el cliente del servicio?** Este comando muestra cómo visualizar el estatus del servicio de representación del servidor SSL.
- **¿muestre la Mod?** Este comando muestra el estatus del VLA N entre el módulo de servicios SSL y el Supervisor Engine.
- **¿muestre al proxy SSL stats hdr?** Este comando muestra cómo visualizar la información de inserción de encabezado.
- **¿muestre a proxy SSL el SSL stats?** Este comando muestra cómo visualizar las estadísticas del SSL.
- **¿muestre a proxy SSL el servicio stats y muestre el recurso seguro?** Estos comandos show cómo visualizar las estadísticas para mostrar que el Equilibrio de carga está ocurriendo en dos módulos de servicios SSL.
- **¿muestre a proxy SSL la estafa?** Este comando muestra cómo visualizar las estadísticas cuando las conexiones son activas.

## [Troubleshooting](#)

Refiera a los [servicios del proxy SSL de la prueba](#) para los consejos de Troubleshooting.

## [Información Relacionada](#)

- [Soporte del hardware del módulo content switching](#)
- [Descargas del software del módulo content switching \(clientes registrados solamente\)](#)
- [Soporte Técnico y Documentación - Cisco Systems](#)