在ASA上禁用服务模块监控以避免不需要的故障转移事件(SFR/CX/IPS/CSC)。

目录

简介

本文档介绍如何在自适应安全设备(ASA)故障切换环境上禁用对模块SourceFire(SFR)、情景感知(CX)、入侵防御系统(IPS)、内容安全和控制(CSC)的监控。

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先决条件

要求

思科建议您了解以下主题：

- 自适应安全设备的配置。
- 了解ASA故障转移以实现高可用性。

从版本9.3(1)开始，此功能是可配置的。在上述版本之前，将始终监控模块。解决方法可用于本文档中介绍的以前版本。

使用的组件

本文档基于以下软件和硬件版本：

- 思科 ASA 版本 9.3(1) 及更高版本.
- 具备FirePOWER服务的ASA 5500-X系列、*ASA CX环*境感知安全或IPS模块。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解任何命令的潜在影响

背景信息

默认情况下，ASA监控已安装的服务模块。如果在主用设备模块中检测到故障，则会触发设备故障切换。

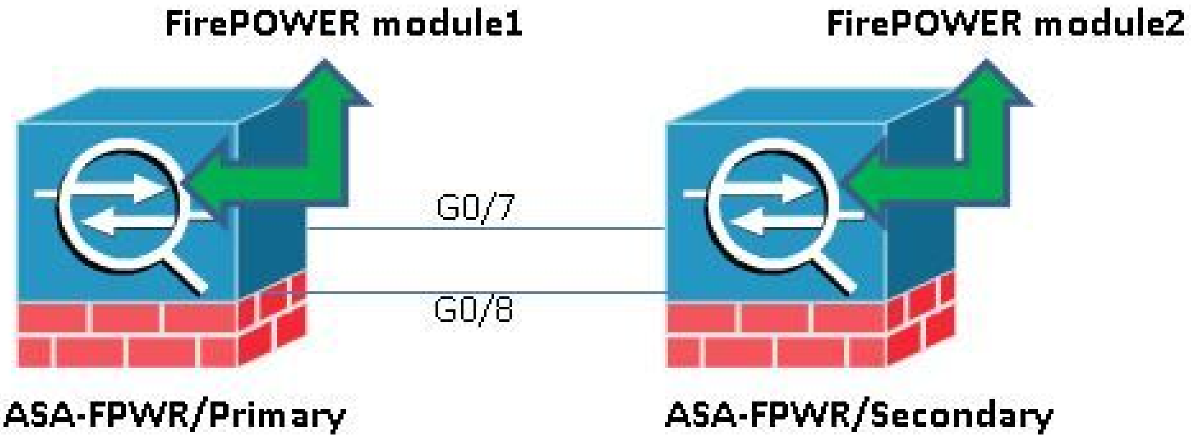
当计划服务模块重新加载或模块持续出现故障时，如果不愿意发生ASA故障切换事件，则禁用此监控器会很有帮助。

> **注意：**ASA需要将流量转移到模块，以便由故障切换过程监控。

配置

网络图

本文档使用以下设置：



配置

实验设备中使用此配置来演示本文档中提到的监控功能。仅包括相关配置。省略了此输出的某些行。

```
ASA Version 9.3(3)
!
hostname ASA-FPWR
!
interface GigabitEthernet0/0
nameif outside
security-level 0
ip address 10.88.247.5 255.255.255.224 standby 10.88.247.6
!
interface GigabitEthernet0/1
nameif inside
security-level 100
ip address 192.168.10.111 255.255.255.0 standby 192.168.10.112
!
...
!
interface GigabitEthernet0/6
description LAN Failover Interface
!
interface GigabitEthernet0/7
description STATE Failover Interface
!
...

failover
failover lan unit primary
failover lan interface folink GigabitEthernet0/6
failover link statelink GigabitEthernet0/7
failover interface ip folink 1.1.1.1 255.255.255.0 standby 1.1.1.2
failover interface ip statelink 2.2.2.1 255.255.255.0 standby 2.2.2.2
!

...
```

```
!
class-map SFR
match any
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns migrated_dns_map_1
parameters
message-length maximum client auto
message-length maximum 512
policy-map global_policy
class inspection_default
inspect dns migrated_dns_map_1
inspect ftp
inspect h323 h225
inspect h323 ras
inspect ip-options
inspect netbios
inspect rsh
inspect rtsp
inspect skinny
inspect esmtp
inspect sqlnet
inspect sunrpc
inspect tftp
inspect sip
inspect xdmcp
class SFR
sfr fail-open
!
service-policy global_policy global
prompt hostname context priority state
no call-home reporting anonymous
Cryptochecksum:b268e0095f175a26aa94d120e9041c29
: end
```

检查当前受监控的组件。

当ASA处于故障切换模式时，默认情况下会监控安装的服务模块，就像设备接口一样。可使用此命令，以查看监控的当前组件：

```
ASA-FPWR/pri/act# show run all monitor-interface
monitor-interface outside
monitor-interface inside
monitor-interface service-module
```

检查ASA设备服务模块状态。

show failover输出显示每个单元模块的当前状态：

```
ASA-FPWR/pri/act# show failover
Failover On
Failover unit Primary
Failover LAN Interface: folink GigabitEthernet0/6 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 2 of 316 maximum
```

```
MAC Address Move Notification Interval not set
Version: Ours 9.3(3), Mate 9.3(3)
Last Failover at: 14:30:44 UTC Aug 6 2015
This host: Primary - Active
Active time: 85 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.5): Normal (Monitored)
Interface inside (192.168.10.111): Normal (Monitored)
 slot 1: SFR5545 hw/sw rev (N/A/5.3.1-152) status (Up/Up)
 ASA FirePOWER, 5.3.1-152, Up
Other host: Secondary - Standby Ready
Active time: 396 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.6): Normal (Monitored)
Interface inside (192.168.10.112): Normal (Monitored)
 slot 1: SFR5545 hw/sw rev (N/A/5.3.1-155) status (Up/Up)
 ASA FirePOWER, 5.3.1-155, Up
```

如果主用设备的服务模块发生故障，则会发生故障切换事件。主用设备变为备用设备，而上一个备用设备则充当主用设备。在某些情况下，这会导致状态故障切换不支持的某些功能重新收敛。

验证服务模块故障模式策略：

如果使用fail-open策略将流量发送到模块，则流量将继续通过ASA而不发送到服务模块。这可以是克服预期模块关闭状态的更透明方法。

> **警告**：如果已应用故障关闭策略，则ASA会丢弃与用于将流量转移到模块的类映射匹配的所有流量。

要了解所使用的策略状态，请运**行命令show service-policy [sfr|cx|ips|csc]**。

```
ASA-FPWR/pri/act# show service-policy sfr

Global policy:
Service-policy: global_policy
Class-map: SFR
SFR: card status Up, mode fail-open
packet input 0, packet output 0, drop 0, reset-drop 0
```

通过检查模块化策略框架(MPF)配置也可以看到这一点：

```
ASA-FPWR/pri/act# show run policy-map
!
policy-map type inspect dns migrated_dns_map_1
parameters
message-length maximum client auto
message-length maximum 512
policy-map global_policy
class inspection_default
inspect dns migrated_dns_map_1
inspect ftp
inspect h323 h225
inspect h323 ras
inspect ip-options
inspect netbios
inspect rsh
inspect rtsp
inspect skinny
inspect esmtp
inspect sqlnet
inspect sunrpc
inspect tftp
inspect sip
inspect xdmcp
class SFR
sfr fail-open
!
ASA-FPWR/pri/act#
```

禁用服务模块监控。

此命令使故障切换进程停止服务模块的监控。如果模块“关闭”或“无响应”，则任何计划的重新加载或故障排除都可以在没有故障切换的情况下对模块执行。

```
no monitor-interface service-module
```

验证

验证服务模块监控是否已禁用。

在运行配置下，monitor-interface命令被取消。

```
ASA-FPWR/pri/act(config)# show run all monitor-interface
monitor-interface outside
monitor-interface inside
no monitor-interface service-module
```

测试重新加载主用设备托管的模块。

出于演示目的，将重新加载此设备上的FirePOWER模块，以确认主用故障切换设备是否继续担任此角色。

ASA主/主设备中FirePOWER模块的输出。

```
Sourcefire ASA5545 v5.3.1 (build 152)

Last login: Thu Aug 6 14:40:46 on ttyS1
>
>system reboot
This command will reboot the system. Continue?
Please enter 'YES' or 'NO': YES

Broadcast message from root (Thu Aug 6 14:40:59 2015):

The system is going down for reboot NOW!

Escape Sequence detected
Console session with module sfr terminated.
```

模块重新加载时ASA主/主设备的输出。

设备保持“活动”角色。

```
ASA-FPWR/pri/act# show failover
Failover On
Failover unit Primary
Failover LAN Interface: folink GigabitEthernet0/6 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 2 of 316 maximum
MAC Address Move Notification Interval not set
Version: Ours 9.3(3), Mate 9.3(3)
Last Failover at: 14:30:44 UTC Aug 6 2015
This host: Primary - Active
Active time: 616 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.5): Normal (Monitored)
Interface inside (192.168.10.111): Normal (Monitored)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-152) status (Unresponsive/Down)
ASA FirePOWER, 5.3.1-152, Not Applicable
Other host: Secondary - Standby Ready
Active time: 396 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.6): Normal (Monitored)
Interface inside (192.168.10.112): Normal (Monitored)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-155) status (Up/Up)
ASA FirePOWER, 5.3.1-155, Up
```

模块重新加载时ASA辅助/备用设备的输出：

备用设备不会将此状态检测为故障，因此不会担任主用角色。

```
ASA-FPWR/sec/stby# show failover
Failover On
Failover unit Secondary
Failover LAN Interface: folink GigabitEthernet0/6 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 2 of 316 maximum
MAC Address Move Notification Interval not set
Version: Ours 9.3(3), Mate 9.3(3)
Last Failover at: 14:30:59 UTC Aug 6 2015
This host: Secondary - Standby Ready
Active time: 396 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.6): Normal (Monitored)
Interface inside (192.168.10.112): Normal (Monitored)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-155) status (Up/Up)
ASA FirePOWER, 5.3.1-155, Up
Other host: Primary - Active
Active time: 670 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.5): Normal (Monitored)
Interface inside (192.168.10.111): Normal (Monitored)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-152) status (Unresponsive/Down)
ASA FirePOWER, 5.3.1-152, Not Applicable
```

启用服务模块监控。

要启用模块监控，请运行以下命令：

```
monitor-interface service-module
```

验证服务模块是否已启用。

服务模块命令不再被否定。

```
ASA-FPWR/pri/act(config)# show run all monitor-interface
monitor-interface outside
monitor-interface inside
monitor-interface service-module
```

故障排除

问题1. ASA持续进行故障切换，并显示此消息“Service card in other unit has failed”。

如果检测到一个或多个故障切换事件，**show failover history**可用于了解可能的原因。

```
ASA-FPWR/sec/act# show failover history
==========================================================================
From State To State Reason
==========================================================================
14:38:58 UTC Aug 5 2015
Bulk Sync Standby Ready Detected an Active mate

14:39:05 UTC Aug 5 2015
Standby Ready Bulk Sync No Error

14:39:17 UTC Aug 5 2015
Bulk Sync Standby Ready No Error

14:48:12 UTC Aug 6 2015
Standby Ready Just Active Service card in other unit has failed

14:48:12 UTC Aug 6 2015
Just Active Active Drain Service card in other unit has failed

14:48:12 UTC Aug 6 2015
Active Drain Active Applying Config Service card in other unit has failed

14:48:12 UTC Aug 6 2015
Active Applying Config Active Config Applied Service card in other unit has failed

14:48:12 UTC Aug 6 2015
Active Config Applied Active Service card in other unit has failed
```

现在的备用设备显示以下消息：

```
14:47:56 UTC Aug 6 2015
Standby Ready Failed Detect service card failure
```

如果出现“Service card in other unit has failed”（其他设备中的服务卡失败）消息，则发生故障切换，因为主用设备检测到其自己的模块无响应。

如果模块保持“无响应”状态，则受影响的ASA将保持**故障**模式。

```
ASA-FPWR/sec/stby# Waiting for the earlier webvpn instance to terminate...
Previous instance shut down. Starting a new one.

Switching to Active

ASA-FPWR/sec/act#
ASA-FPWR/sec/act# show failover
Failover On
Failover unit Secondary
Failover LAN Interface: folink GigabitEthernet0/6 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 2 of 316 maximum
MAC Address Move Notification Interval not set
Version: Ours 9.3(3), Mate 9.3(3)
Last Failover at: 14:24:23 UTC Aug 6 2015
This host: Secondary - Active
Active time: 38 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.5): Normal (Waiting)
Interface inside (192.168.10.111): Normal (Waiting)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-155) status (Up/Up)
ASA FirePOWER, 5.3.1-155, Up
Other host: Primary - Failed
Active time: 182 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.6): Normal (Waiting)
Interface inside (192.168.10.112): Normal (Waiting)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-152) status (Unresponsive/Down)
ASA FirePOWER, 5.3.1-152, Not Applicable
```

解决方案

可以禁用服务模块监控，同时可以执行进一步的故障排除步骤以恢复模块。

```
no monitor-interface service-module
```

问题2.我的ASA不支持9.3(1)或无法升级。如何避免故障切换事件？

传统ASA5500系列不支持9.3(1)版本，即使它们不支持软件模块，也有一些硬件模块，如CSC或IPS。

即使使用新的ASA5500-X系列，也有一些低于版本的设备支持禁用监控。

解决方案

ASA仅在配置了将流量传递到模块的策略时监控模块。因此，为避免故障转移，可以删除模块策略。

确定使用的类映射和策略。

在这种情况下，此配置用于消除FirePOWER模块的流量转移。

```
class-map SFR
match any
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns migrated_dns_map_1
parameters
message-length maximum client auto
message-length maximum 512
policy-map global_policy
class inspection_default
inspect dns migrated_dns_map_1
inspect ftp
inspect h323 h225
inspect h323 ras
inspect ip-options
inspect netbios
inspect rsh
inspect rtsp
inspect skinny
inspect esmtp
inspect sqlnet
inspect sunrpc
inspect tftp
inspect sip
inspect xdmcp
 class SFR
 sfr fail-open
!
```

命令**show service-policy [csc|cxsc|ips|sfr]可**用于检测类映射和当前状态。

```
ASA-FPWR/pri/act# show service-policy sfr

Global policy:
Service-policy: global_policy
Class-map: SFR
SFR: card status Up, mode fail-open
packet input 0, packet output 0, drop 0, reset-drop
```

禁用流量重定向到模块。

删除策略后，不再从ASA向模块发送更多流量。

```
ASA-FPWR/pri/act# conf t
ASA-FPWR/pri/act(config)# policy-map global_policy
ASA-FPWR/pri/act(config-pmap)# class SFR
ASA-FPWR/pri/act(config-pmap-c)# no sfr fail-open
ASA-FPWR/pri/act(config-pmap-c)# end
ASA-FPWR/pri/act#
```

验证是否禁用了ASA重定向到模块。

同一**show** 命令可用于验证流量是否不再流向模块。输出必须为空。

```
 ASA-FPWR/pri/act# show service-policy sfr
ASA-FPWR/pri/act#
```

即使模块无响应，主用设备仍保持相同角色。

```
ASA-FPWR/pri/act# show module sfr

Mod Card Type Model Serial No.
---- -------------------------------------------- ------------------ -----------
sfr FirePOWER Services Software Module ASA5545 FCH18457CNM

Mod MAC Address Range Hw Version Fw Version Sw Version
---- --------------------------------- ------------ ------------ ---------------
sfr 74a0.2fa4.6c7a to 74a0.2fa4.6c7a N/A N/A 5.3.1-152

Mod SSM Application Name Status SSM Application Version
---- ------------------------------ ---------------- --------------------------
sfr ASA FirePOWER Not Applicable 5.3.1-152

Mod Status Data Plane Status Compatibility
---- ------------------ --------------------- -------------
sfr Unresponsive Not Applicable

ASA-FPWR/pri/act# show failover
Failover On
Failover unit Primary
Failover LAN Interface: folink GigabitEthernet0/6 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 2 of 316 maximum
MAC Address Move Notification Interval not set
Version: Ours 9.3(3), Mate 9.3(3)
Last Failover at: 14:51:20 UTC Aug 6 2015
This host: Primary - Active
Active time: 428 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.5): Normal (Monitored)
Interface inside (192.168.10.111): Normal (Monitored)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-152) status (Unresponsive/Down)
ASA FirePOWER, 5.3.1-152, Not Applicable
Other host: Secondary - Standby Ready
Active time: 204 (sec)
slot 0: ASA5545 hw/sw rev (1.0/9.3(3)) status (Up Sys)
Interface outside (10.88.247.6): Normal (Monitored)
Interface inside (192.168.10.112): Normal (Monitored)
slot 1: SFR5545 hw/sw rev (N/A/5.3.1-155) status (Up/Up)
ASA FirePOWER, 5.3.1-155, Up
```

启用重定向到模块的流量。

当流量需要发回模块后，可以重新添加故障打开或故障关闭策略。

```
ASA-FPWR/pri/act(config)# policy-map global_policy
ASA-FPWR/pri/act(config-pmap)# class SFR
ASA-FPWR/pri/act(config-pmap-c)# sfr fail-open
ASA-FPWR/pri/act(config-pmap-c)# end
ASA-FPWR/pri/act#
```