

使用 Cisco Secure Firewall Management Center 在移动设备上配置基于应用的远程访问 VPN (Per App VPN)

首次发布日期: 2023年7月31日

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关于 Per App VPN

当远程用户使用安全客户端从移动设备建立VPN连接时,所有流量(包括来自个人应用的流量)都将通过 VPN 传输。

对于在 Android 或 iOS 上运行的移动设备,可以限制穿越 VPN 隧道的应用。这种基于应用的远程访问 VPN 称为 Per App VPN。

要使用 Per App VPN, 必须执行以下操作:

- 1. 安装和配置第三方移动设备管理器 (MDM) 服务器。
- 2. 在 MDM 服务器中定义可通过 VPN 隧道使用的已批准应用的列表。
- 3. 将 Per App 配置从 MDM 服务器部署到移动设备。
- 4. 在托管前端威胁防御上配置 Per App VPN。

当 MDM 管理的移动设备使用安全客户端连接到 VPN 时,客户端会在通过隧道传输流量之前验证应用。威胁防御上配置的 Per App 策略将执行此验证。

下图显示了使用威胁防御的 Per App VPN 示例:



优势

- •限制企业网络上的 VPN 流量并释放 VPN 前端的资源。您可以防止:
 - 通过 VPN 访问 Netflix、Facebook 和 YouTube 等应用。
 - •受信任的云应用,例如 Outlook 和基于 VPN 的 Webex。
- •优化流量。
- 让延迟最小化。
- •保护企业 VPN 隧道免受移动设备上未经批准的恶意应用的影响。

本指南适用对象

本用例适用于使用管理中心为使用远程访问 VPN 连接到组织网络的远程员工配置 Per App VPN 的网络管理员。

在版本 6.4 至 6.7 中,您可以使用 FlexConfig 在 FTD 上启用 Per App VPN。有关更多信息,请参阅 在移动设备上配置基于应用的(Per App VPN)远程访问 VPN。在 7.0 及更高版本中,您可以使用管 理中心 UI 在威胁防御上启用 Per App VPN。

系统要求

下表列出了该功能支持的平台。

Product	Version	本文档使用的版本
Cisco Secure Firewall Threat Defense(之 前的 Firepower 威胁防御/FTD)	7.0 及更高版本	7.3
Cisco Secure Firewall Management Center (之前的 Firepower 管理中心/FMC)	7.0 及更高版本	7.3
Cisco Secure Client (之前的 AnyConnect)	4.0 及更高版本	5.0
Android 设备	Android 5.0 及更高版本	-
Apple iOS 设备	Apple iOS 8.3 及更高版本and later	-

配置每个应用 VPN 隧道的前提条件

确保:

•在管理中心配置远程接入 VPN 策略。

• 设置 MDM 服务器并将每个移动设备注册到 MDM 服务器。

有关详细信息,请参阅 MDM 文档。

建议您在 MDM 服务器中配置可以遍历 VPN 隧道的应用。这样可以简化前端配置。

• 从 Cisco 软件下载中心将 Cisco AnyConnect Enterprise 应用选择器下载并安装到本地主机。 您需要此工具来定义 Per App VPN 策略。

许可证:

•您需要以下安全客户端许可证之一:

Cisco Secure Client Premier 或 Cisco Secure Client Advantage。

•您的管理中心 Essentials 许可证必须允许导出控制功能。

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依次选择系统 (System) > 许可证 (Licenses) > 智能许可证 (Smart Licenses) 以在管理中心验证此功能。
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如何使用管理中心配置 Per App VPN

步骤	相应操作	更多信息
1	确保您已满足前提条件。	配置每个应用 VPN 隧道的前提条件,第2页
2	确定隧道中应允许哪些应用。	-
3	确定移动应用的应用 ID。	确定移动应用的应用 ID,第3页
4	为 Android 和 Apple iOS 设备定义 Per App VPN 策略	为 Android 和 Apple iOS 设备定义 Per App VPN 策略 ,第 5 页
5	在管理中心将 Per App VPN 策略分配给 远程接入 VPN	在管理中心将 Per App VPN 策略分配给远程接入 VPN ,第8页
6	在威胁防御上部署配置。	在管理中心菜单栏中,单击 部署 (Deploy) ,然后选 择 部署 (Deployment) 。

确定移动应用的应用 ID

如果您决定要在前端配置允许的应用列表,则必须确定每种类型的终端上每个应用的应用 ID。



注释

¥ 建议您在 MDM 服务器中配置 Per App 策略。这样可以简化前端配置。

应用 ID(或 iOS 中的捆绑包 ID)是反向 DNS 名称。您可以使用星号作为通配符。例如,*.* 表示所 有应用, com.cisco.* 表示所有 Cisco 应用。

要确定应用 ID, 请执行以下操作:

- Android
 - 1. 在 Web 浏览器中,转至 Google Play (https://play.google.com/store/)。
 - 2. 点击应用 (Apps) 选项卡。
 - 3. 点击要在 VPN 隧道中允许的应用。 应用 ID 是 URL 的一部分。
 - 4. 复制"id="参数后面的字符串。

对于 Microsoft 远程桌面, URL 为:

https://play.google.com/store/apps/details?id=com.microsoft.rdc.androidx, 应用 ID 为 com.microsoft.rdc.androidx。

对于 Google Play 上没有的应用,可下载软件包名称查看器来提取应用 ID。

• iOS

- 1. 在 Web 浏览器中,转至 Apple App Store (https://www.apple.com/in/app-store/)。
- 2. 在搜索结果中,搜索应用。 应用 ID 是 URL 的一部分。
- 3. 复制"id"字符串后面的数字。

对于 Facebook, URL 为:

https://apps.apple.com/in/app/facebook/id284882215,应用 ID 为 284882215。

4. 打开一个新的浏览器窗口,然后将该数字添加到以下 URL 的末尾: https://itunes.apple.com/lookup?id=

对于 Facebook, URL 为 https://itunes.apple.com/lookup?id=284882215。

- 5. 下载文本文件,通常命名为1.txt。
- **6.** 在文本编辑器中打开文件,然后搜索 bundleId。对于 Facebook, "bundleId"为 "com.facebook.Facebook"。以此捆绑包 ID 作为应用 ID。

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有了应用 ID 列表后,您就可以按照下面的步骤为移动设备定义策略了。

为 Android 和 Apple iOS 设备定义 Per App VPN 策略

使用 Cisco AnyConnect 企业应用选择器定义 Per App VPN 策略。

我们建议您创建一个简单的"全部允许"策略,并在 MDM 中定义允许的应用。但是,您可以从头 端指定要允许和控制列表的应用列表。如果要包括特定应用,请使用唯一名称和应用的应用 ID 为每 个应用创建单独的规则。

要使用 AnyConnect 企业应用选择器创建支持 Android 和 iOS 平台的全部允许策略(通配符策略), 请执行以下操作:

- 1. 从下拉列表中选择 Android 或 iOS 作为平台类型。
- 2. 配置以下选项:
 - •友好名称-输入策略的名称。例如, Allow_All。
 - App ID-输入 *.* 以匹配所有可能的应用。
 - 其他选项保持不变。

Eile Policy A	nyConnect Enterprise App bout	olication Selector	-		<
Android			Add Rule	Import from Dis	ik.
Allow_All	Friendly Name: App ID: Minimum Version: Match Certificate ID:	Allow_All			
	Allow Shared UID		Fetch	Certificate ID	

3. 依次选择策略 (Policy) > 查看策略 (View Policy) 以获取策略的 base64 编码字符串。此字符串包含 允许威胁防御查看策略的加密 XML 文件。复制此值。下一步在威胁防御上配置 Per App VPN 时 需要此字符串。

eJyVkFhygkAQhf8K2adWqBcUNb4 azw/1kOLOkCQqowE3DYx0IY14S6 GUN2bs62XGvnNvO4z1FN5gmzh EbA2pQXuppHcIcVSMrWqFHXDI NbU4hDB522fdJ/skg8+BD0lcolV	hGhG8oKBFG9NsZYVVYJHiquG/d20aHi/Wi5kz206+ZOYOFEyPRCFRGWPXS8AAPD/X3cnzl MAEgsEd6CEpHn08mjNE7uvxbOnlw0VpxMb7TYTuWsWdnTQpA090gqzUnwLSfEKu/2xsU /7GYmn3Ya41Ueild3hN0i6i8RjpPWyd+jMM1W2rkLrbiyEXFJ6thJ+s+b4Y3NRbsQvpx00a1p sRN09CksUZ3JOttnayFhucFqCoBjFCGj2IGKX/k0/13tMolsQNh6MQEO+wJchQ9lzCKmDcAt NUHSrhLziXIPSGCf0nmqE01TcMG2io

要使用 AnyConnect Enterprise 应用选择器为 Microsoft 远程桌面应用创建策略,请执行以下操作:

- 1. 从下拉列表中选择 Android 作为平台类型。
- 2. 配置以下选项:
 - •友好名称 (Friendly Name) 输入策略的名称。
 - App ID (应用 ID) 对于 Android, 请输入 com.microsoft.rdc.androidx。
 - 其他选项保持不变。

• • •	Cisco AnyConnect Enterprise App	olication Selector
ile Policy About Android 📀		Add Rule Import from Disk
licrosoft Remote Desktop	Friendly Name: App ID: Minimum Version: Match Certificate ID:	Microsoft Remote Desktop com.microsoft.rdc.androidx
	✓ Allow Shared UID	Fetch Certificate ID
	Delete	

3. 依次选择策略 (Policy) > 查看策略 (View Policy) 以获取策略的 base64 编码字符串。

在管理中心将 Per App VPN 策略分配给远程接入 VPN

过程

- 步骤1 选择设备 > 远程访问。
- 步骤2 选择远程访问 VPN 策略,然后点击 编辑。
- 步骤3 选择一个连接配置文件,然后点击编辑(Edit)。
- 步骤4 点击编辑组策略。
- 步骤5 点击安全客户端 (Secure Client) 选项卡。
- 步骤6 点击自定义属性,然后点击+。
- 步骤7 从安全客户端属性 (Secure Client Attribute) 下拉列表中选择 Per App VPN。
- 步骤8 从自定义属性对象下拉列表中选择对象,或点击+添加对象。

在为 Per App VPN 添加新的自定义属性对象时:

- 1. 输入名称和说明。
- 2. 在属性值 (Attribute Value) 字段中,指定来自思科 AnyConnect 企业应用选择器的 base64 编码策略字符串。

Add Secure Client Custom Attribute				
Name:* Description:]		
Secure Client Attribute:*				
Per App VPN				
Attribute Value:*				
Enter base64 format string created using 'Cisco Secure				
Allow Overrides				
			Cancel	Save

步骤9 点击保存 (Save) 并点击添加 (Add)。

Edit Group Policy					•
Name:* DflGrpPolicy Description: General Secure	Client Advan	ced			
Profile Management Profile Client Modules	Secure Client C configuring nev feature is supp	Custom Attribute v endpoint featu orted on Firewal	feature allo res on Firew I Threat Def	ws a more expedited vall Threat Defense. Th ense 7.0 onwards.	way of his +
SSL Settings	Attribute	Name	Content		
Connection Settings Custom Attributes	Per App VPN	Per_App_Allow_	All_policy	Attribute Value: eJy VkFtvgkAQhf8K2ad WqBcUNb4hGhG8o KBFG9NsZYVVYJHI quG/d20aH/rWl5kz	/1

步骤10 单击保存。

下一步做什么

- 1. 在威胁防御上部署配置。
- 2. 使用安全客户端建立与威胁防御的 VPN 连接。
- 3. 验证 Per App VPN 配置。

验证 Per App VPN 配置

在威胁防御上

在威胁防御系统上使用以下命令验证 Per App 配置:

命令	说明
show run webvpn	查看安全客户端配置的详细信息。
show run group-policy <group_policy_name></group_policy_name>	查看安全客户端的远程接入 VPN 组策略的详细信息。
show vpn-sessiondb anyconnect	查看活动安全客户端 VPN 会话的详细信息。
show run anyconnect-custom-data	查看 Per App 配置的详细信息。

sh run webvpn 的输出示例如下:

```
firepower# sh run webvpn
webvpn
enable inside
anyconnect-custom-attr perapp description Per-App Allow
http-headers
hsts-server
enable
max-age 31536000
include-sub-domains
no preload
hsts-client
enable
x-content-type-options
x-xss-protection
content-security-policy
anyconnect image disk0:/csm/cisco-secure-client-win-5.0.03076-webdeploy-k9 1 regex "Windows"
```

anyconnect enable tunnel-group-list enable cache no disable error-recovery disable

sh run anyconnect-custom-data 的输出示例如下:

```
firepower# sh run anyconnect-custom-data
anyconnect-custom-data perapp PerAppPolicy
eJw9kFtvgkAQhf8K2ae2GC+rqPFNgYjgBcUL2PRhCyuuZVlkuRv/
```

sh running-config group-policy 的输出示例如下:

```
firepower# sh running-config group-policy
group-policy DfltGrpPolicy attributes
vpn-tunnel-protocol ikev2 ssl-client
user-authentication-idle-timeout none
anyconnect-custom perapp value PerAppPolicy
webvpn
anyconnect keep-installer none
```

```
anyconnect modules value none
anyconnect ask none default anyconnect
http-comp none
activex-relay disable
file-entry disable
file-browsing disable
url-entry disable
deny-message none
```

在终端上

在终端与威胁防御建立 VPN 连接后,点击安全客户端的统计信息 (Statistics) 图标:

- •隧道模式将是"应用隧道",而不是"隧道所有流量"。
- 隧道应用 将列出您在 MDM 中启用隧道的应用。

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