优化Microsoft Office 365/Webex的AnyConnect拆分隧道

目录

[简介](#)

[背景信息](#)

[Split Tunneling](#)

[动态拆分隧道](#)

[配置](#)

[确认](#)

简介

本文档介绍如何使用设置配置ASA，以从VPN连接中排除发往Microsoft Office 365(Microsoft Teams)和Cisco Webex的流量。

背景信息

配置自适应安全设备(ASA)还为支持ASA的AnyConnect客户端引入网络地址排除和基于动态完全限定域名(FQDN)的排除。

Split Tunneling

需要将ASA配置为排除要从隧道中排除的指定IPv4和IPv6目标列表。遗憾的是，地址列表是动态的，可能会发生变化。请参阅Python脚本的“配置”部分，以及指向可用于检索列表和生成示例配置的在线python读取评估打印循环(REPL)的链接。

动态拆分隧道

除了拆分排除网络地址列表之外，Windows和Mac版的AnyConnect 4.6中还添加了动态拆分隧道。动态拆分隧道使用FQDN来确定连接能否通过隧道。python脚本还确定要添加到自定义AnyConnect属性的终端的FQDN。

配置

在Python 3 REPL中运行此脚本，或在公共REPL环境(例如AnyConnectO365DynamicExclude)中运行此脚本

```
import urllib.request
import uuid
```

```
import json
import re


def print_acl_lines(acl_name, ips, section_comment):
    slash_to_mask = (
        "0.0.0.0",
        "192.0.2.1",
        "192.0.2.1",
        "10.224.0.0",
        "10.240.0.0",
        "10.248.0.0",
        "10.252.0.0",
        "10.254.0.0",
        "10.255.0.0",
        "10.255.128.0",
        "10.255.192.0",
        "10.255.224.0",
        "10.255.240.0",
        "10.255.248.0",
        "10.255.252.0",
        "10.255.254.0",
        "10.255.255.0",
        "10.255.255.128",
        "10.255.255.192",
        "10.255.255.224",
        "10.255.255.240",
        "10.255.255.248",
        "10.255.255.252",
        "10.255.255.254",
        "10.255.255.255",
        "10.255.255.255",
        "10.255.255.255",
        "10.255.255.255",
        "10.255.255.240",
        "10.255.255.248",
        "10.255.255.252",
        "10.255.255.254",
        "10.255.255.255",
    )
    print(
        "access-list {acl_name} remark {comment}".format(
            acl_name=acl_name, comment=section_comment
        )
    )
    for ip in sorted(ips):
        if ":" in ip:
            # IPv6 address
            print(
                "access-list {acl_name} extended permit ip {ip} any6".format(
                    acl_name=acl_name, ip=ip
                )
            )
        else:
            # IPv4 address.  Convert to a mask
            addr, slash = ip.split("/")
            slash_mask = slash_to_mask[int(slash)]
            print(
                "access-list {acl_name} extended permit ip {addr} {mask} any4".format(
                    acl_name=acl_name, addr=addr, mask=slash_mask
                )
            )
```

```
# Fetch the current endpoints for O365
http_res = urllib.request.urlopen(
    url="https://endpoints.office.com/endpoints/worldwide?clientrequestid={}".format(
        uuid.uuid4()
    )
)
res = json.loads(http_res.read())
o365_ips = set()
o365_fqdns = set()
for service in res:
    if service["category"] == "Optimize":
        for ip in service.get("ips", []):
            o365_ips.add(ip)
        for fqdn in service.get("urls", []):
            o365_fqdns.add(fqdn)

# Generate an acl for split excluding For instance
print("##### Step 1: Create an access-list to include the split-exclude networks\n")
acl_name = "ExcludeSass"
# O365 networks
print_acl_lines(
    acl_name=acl_name,
    ips=o365_ips,
    section_comment="v4 and v6 networks for Microsoft Office 365",
)
# Microsoft Teams
# https://docs.microsoft.com/en-us/office365/enterprise/office-365-vpn-implement-split-tunnel#configuri
print_acl_lines(
  acl_name=acl_name,
  ips=["10.107.60.1/32"],
  section_comment="v4 address for Microsoft Teams"
)
# Cisco Webex - Per https://help.webex.com/en-us/WBX000028782/Network-Requirements-for-Webex-Teams-Serv
webex_ips = [
    "10.68.96.1/19",
    "10.114.160.1/20",
    "10.163.32.1/19",
    "192.0.2.1/18",
    "192.0.2.2/19",
    "198.51.100.1/20",
    "203.0.113.1/19",
    "203.0.113.254/19",
    "203.0.113.2/19",
    "172.29.192.1/19",
    "203.0.113.1/20",
    "10.26.176.1/20",
    "10.109.192.1/18",
    "10.26.160.1/19",
]
print_acl_lines(
    acl_name=acl_name,
    ips=webex_ips,
    section_comment="IPv4 and IPv6 destinations for Cisco Webex",
)

# Edited. April 1st 2020
# Per advice from Microsoft they do NOT advise using dynamic split tunneling for their properties relat
#
print(
    "\n\n##### Step 2: Create an Anyconnect custom attribute for dynamic split excludes\n"
```

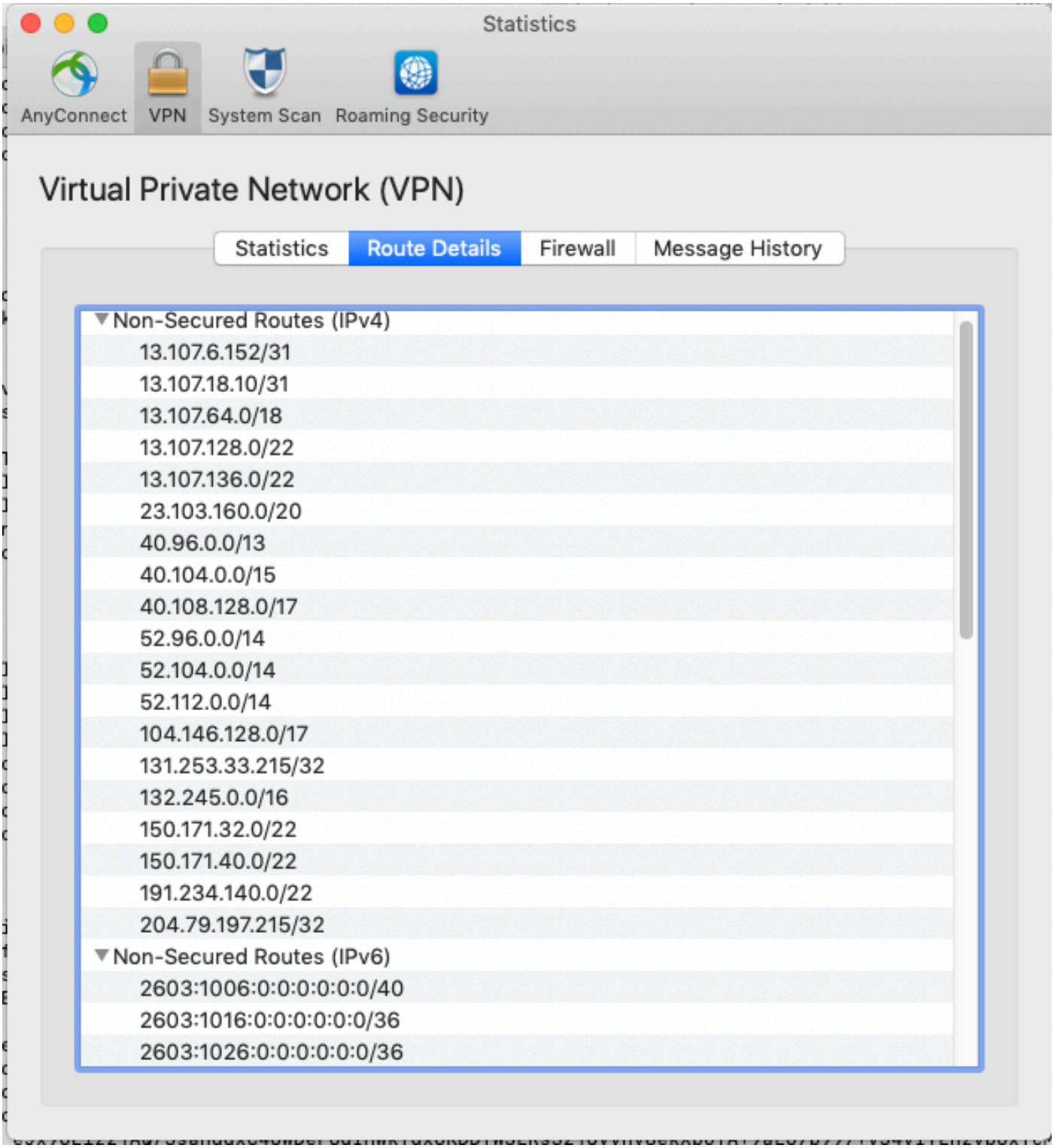
```
)
print("SKIP.  Per Microsoft as of April 2020 they advise not to dynamically split fqdn related to Offic
#print(
#    """
#webvpn
#  anyconnect-custom-attr dynamic-split-exclude-domains description dynamic-split-exclude-domains
#
#anyconnect-custom-data dynamic-split-exclude-domains saas {}
#""".format(
#        ",".join([re.sub(r"^\*\.", "", f) for f in o365_fqdns])
#    )
#)
#
print("\n##### Step 3: Configure the split exclude in the group-policy\n")
print(
    """
group-policy GP1 attributes
 split-tunnel-policy excludespecified
 ipv6-split-tunnel-policy excludespecified
 split-tunnel-network-list value {acl_name}
""".format(
        acl_name=acl_name
    )
)
```

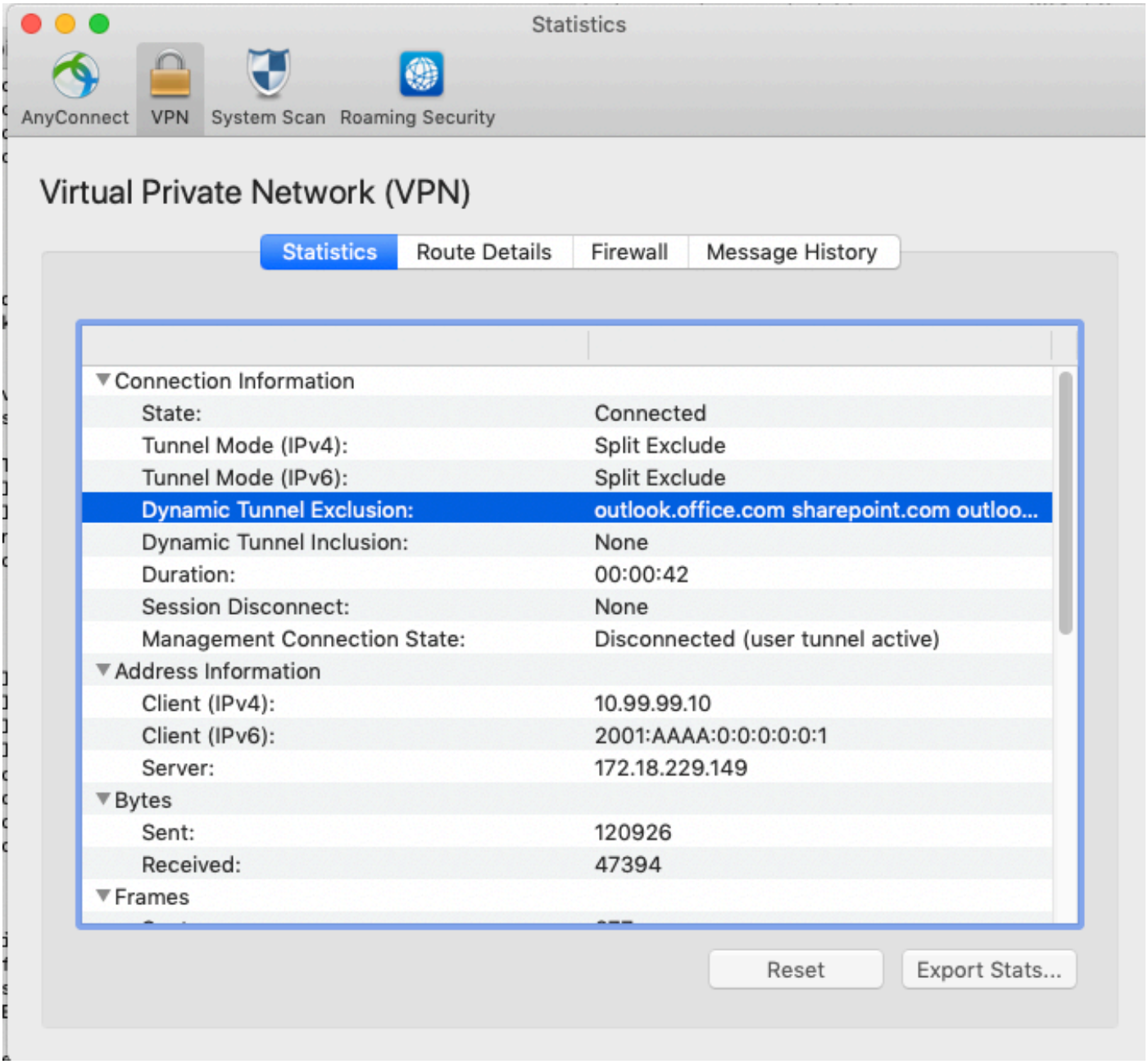
注意:Microsoft建议通过使用发布的IPv4和IPv6地址范围配置分割隧道，将发往关键Office 365服务的流量从VPN连接范围中排除。为了获得最佳性能并最有效地使用VPN容量，可以直接将流向这些与Office 365 Exchange Online、SharePoint Online和Microsoft Teams关联的专用IP地址范围（在Microsoft文档中称为“优化”类别）的流量路由到VPN隧道之外。有关此建议的更多详细信息，请参阅使用VPN拆分隧道优化远程用户的Office 365连接。

注：截至2020年4月初，Microsoft Teams有一个依赖关系，即必须从隧道中排除IP范围10.107.60.1/32。有关详细信息，请参阅配置和保护Teams媒体流量。

确认

连接用户后，您会看到非安全路由填充了ACL中提供的地址以及Dynamic Tunnel Exclusion列表。


Statistics
AnyConnect
VPN
System Scan
Roaming Security
Virtual Private Network (VPN)
Statistics
Route Details
Firewall
Message History
Non-Secured Routes (IPv4)
13.107.6.152/31
13.107.18.10/31
13.107.64.0/18
13.107.128.0/22
13.107.136.0/22
23.103.160.0/20
40.96.0.0/13
40.104.0.0/15
40.108.128.0/17
52.96.0.0/14
52.104.0.0/14
52.112.0.0/14
104.146.128.0/17
131.253.33.215/32
132.245.0.0/16
150.171.32.0/22
150.171.40.0/22
191.234.140.0/22
204.79.197.215/32
Non-Secured Routes (IPv6)
2603:1006:0:0:0:0:0:0/40
2603:1016:0:0:0:0:0:0/36
2603:1026:0:0:0:0:0:0/36


Statistics
AnyConnect
VPN
System Scan
Roaming Security
Virtual Private Network (VPN)
Statistics
Route Details
Firewall
Message History
Connection Information
State: Connected
Tunnel Mode (IPv4): Split Exclude
Tunnel Mode (IPv6): Split Exclude
Dynamic Tunnel Exclusion: outlook.office.com sharepoint.com outloo...
Dynamic Tunnel Inclusion: None
Duration: 00:00:42
Session Disconnect: None
Management Connection State: Disconnected (user tunnel active)
Address Information
Client (IPv4): 10.99.99.10
Client (IPv6): 2001:AAAA:0:0:0:0:0:1
Server: 172.18.229.149
Bytes
Sent: 120926
Received: 47394
Frames
Reset
Export Stats...

关于此翻译
思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言，希望全球的用户都能通过各自的语言得到支持性的内容。

请注意：即使是最好的机器翻译，其准确度也不及专业翻译人员的水平。

Cisco Systems, Inc. 对于翻译的准确性不承担任何责任，并建议您总是参考英文原始文档（已提供链接）。