使用REST-API批量将对象推送到FMC

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简介

本文档介绍应用编程接口(API)管理员如何将网络、端口和URL对象批量推送到Firepower管理中心(FMC)。

先决条件

要求

Cisco 建议您了解以下主题：

- 了解各种REST API调用。(什么是REST API?)
- FMC API快速入门指南回顾
- FMC可重用对象研究
- Python请求库的基本知识

使用的组件

- 支持REST API（版本6.1或更高版本）且已启用REST API的Firepower管理中心
- 使用Python的REST API交互。

限制

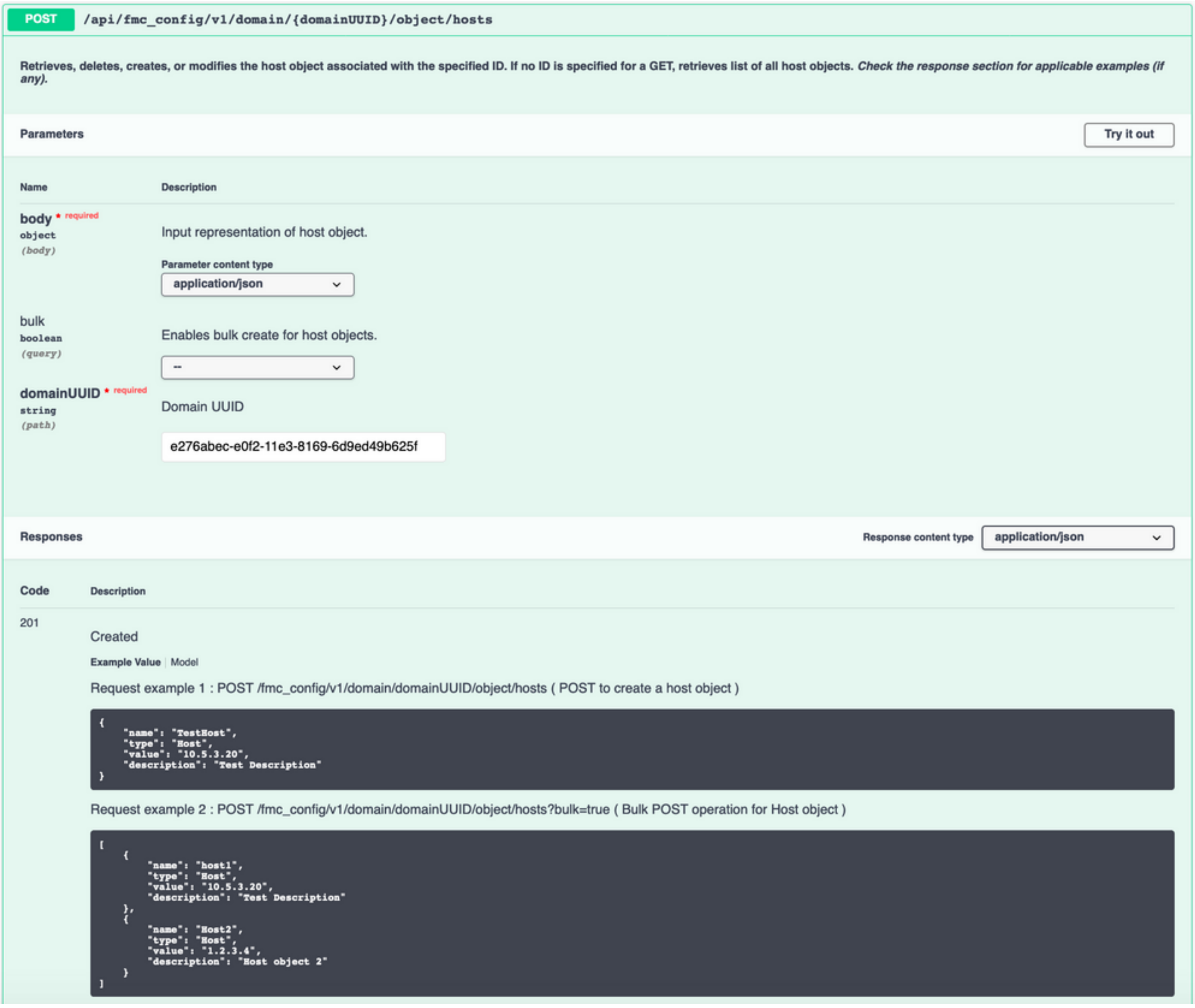
- FMC不接受对象名称大于64个字符。
- 对象名称的开头不应有空格，末尾应有分号。
- 负载在单个批量推送中不能包含超过1,000个条目。
- 单个批量推送中的负载大小不能超过2MB。

背景信息

REST API越来越受欢迎，因为网络管理员可以使用轻量级可编程方法来配置和管理其网络。FMC支持使用任何REST客户端以及使用内置API资源管理器进行配置和管理。

本文档中的示例将CSV文件作为输入，并通过REST API接口将对象推送到FMC。本文档仅涵盖主机网络批量推送，可以扩展其他对象的类似逻辑。示例代码附加到文档中，用于URL和端口对象。

以下是所用网络主机上POST的API参考，如图所示：



/api/fmc_config/v1/domain/{domainUUID}/object/hosts

Retrieves, deletes, creates, or modifies the host object associated with the specified ID. If no ID is specified for a GET, retrieves list of all host objects. *Check the response section for applicable examples (if any).*

body * required
object
(body)

Input representation of host object.

Parameter content type: application/json

bulk
boolean
(query)

Enables bulk create for host objects.

--

domainUUID * required
string
(path)

Domain UUID

e276abec-e0f2-11e3-8169-6d9ed49b625f

201

Created

Request example 1 : POST /fmc_config/v1/domain/domainUUID/object/hosts (POST to create a host object)

```
{
    "name": "TestHost",
    "type": "Host",
    "value": "10.5.3.20",
    "description": "Test Description"
}
```

Request example 2 : POST /fmc_config/v1/domain/domainUUID/object/hosts?bulk=true (Bulk POST operation for Host object)

```
[
    {
        "name": "host1",
        "type": "Host",
        "value": "10.5.3.20",
        "description": "Test Description"
    },
    {
        "name": "Host2",
        "type": "Host",
        "value": "1.2.3.4",
        "description": "Host object 2"
    }
]
```

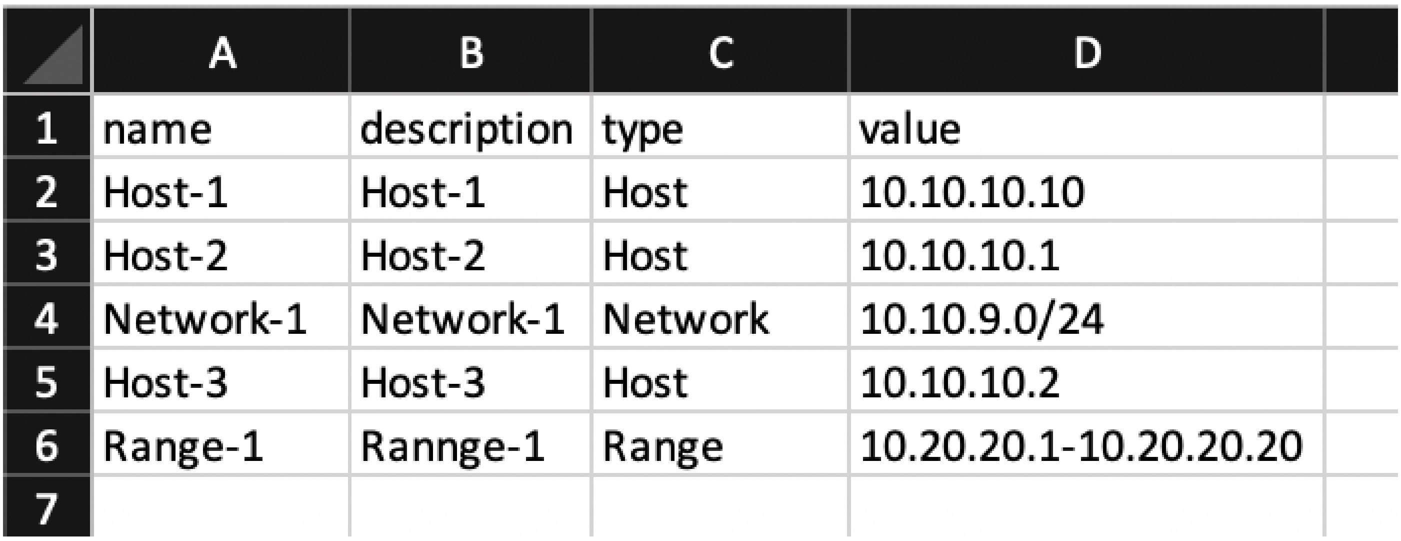
配置

步骤1.启用REST API并生成身份验证令牌。有关详细配置步骤和示例，请参阅在FMC上生成身份验证令牌。

```
import requests import csv import json from requests.auth import HTTPBasicAuth from getpass
import getpass address = input("Enter IP Address of the FMC: ") username = input ("Enter
Username: ") password = getpass("Enter Password: ") api_uri =
"/api/fmc_platform/v1/auth/generatetoken" url = "https://" + address + api_uri response =
requests.request("POST", url, verify=False, auth=HTTPBasicAuth(username, password)) accesstoken
= response.headers["X-auth-access-token"] refreshtoken = response.headers["X-auth-refresh-
token"] DOMAIN_UUID = response.headers["DOMAIN_UUID"]
```

步骤2.将提供的CSV文件转换为词典，以用作请求的JSON负载。每个对象类型的示例CSV文件将

附加到文档。



	A	B	C	D
1	name	description	type	value
2	Host-1	Host-1	Host	10.10.10.10
3	Host-2	Host-2	Host	10.10.10.1
4	Network-1	Network-1	Network	10.10.9.0/24
5	Host-3	Host-3	Host	10.10.10.2
6	Range-1	Rannge-1	Range	10.20.20.1-10.20.20.20
7				

```
csvFilePath = input("Please enter the CSV Filepath (For eg. : path/to/file/objects.csv) :") host
= [] with open(csvFilePath, encoding='utf-8-sig') as csvf: csvReader = csv.DictReader(csvf) for
rows in csvReader: if rows['type'] == "Host": host.append(rows) host_payload = json.dumps(host)
```

此阶段的host_payload与图像中所示相同：

```
[{ "name": "Host-1", "description": "Host-1", "type": "Host", "value": "10.10.10.10" }, {
"name": "Host-2", "description": "Host-2", "type": "Host", "value": "10.10.10.1" }, { "name":
"Host-3", "description": "Host-3", "type": "Host", "value": "10.10.10.2" } ]
```

步骤3.根据前面步骤收到的输入创建请求，并在负载不为空时发送请求。

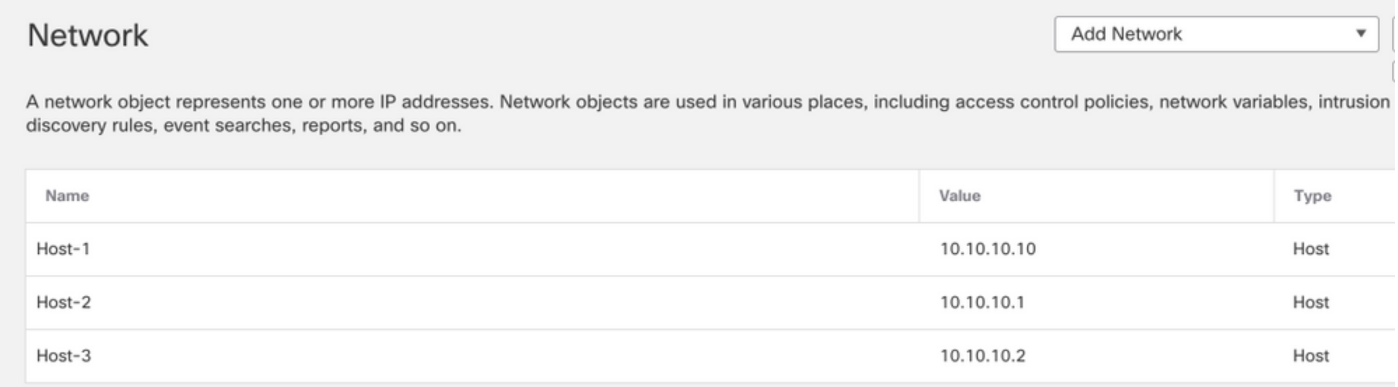
```
host_api_uri = "/api/fmc_config/v1/domain/" + DOMAIN_UUID + "/object/hosts?bulk =true" host_url
= "https://" + address + host_api_uri headers = { 'Content-Type': 'application/json', 'x-auth-
access-token': accesstoken } if host != []: response = requests.request("POST", host_url,
headers=headers, data = host_payload, verify = False) else : print("Please Validate that the CSV
file provided is correct or at correct location")
```

验证

- 打印响应的状态代码以验证请求是成功还是失败，如下所示。

```
if response.status_code == 201 or response.status_code == 202: print("Host Objects successfully
pushed") else: print("Host Object creation failed")
```

- 登录FMC导航至**对象>对象管理>网**络并验证主机对象，如图所示：



Network

A network object represents one or more IP addresses. Network objects are used in various places, including access control policies, network variables, intrusion discovery rules, event searches, reports, and so on.

Name	Value	Type
Host-1	10.10.10.10	Host
Host-2	10.10.10.1	Host
Host-3	10.10.10.2	Host

故障排除

- 使用REST客户端时，可能会看到与SSL证书问题相关的错误，原因是自签名证书。您可以根据您使用的客户端关闭此验证。
- FMC REST API身份验证令牌的有效期为30分钟，最多可刷新三次。
- 与请求相关的错误可以从响应正文中提取。这可以作为日志文件收集，以帮助进行故障排除。

```
logfile = "requestlog.txt" log = open(logfile,"w+") log.write(response.text) log.close
```

- 所有REST请求都记录到FMC上的这两个日志文件中。搜索您的URL(例如.../object/hosts)，并且操作正确(如果您在查找GET操作的错误，请确保日志启动类似GET的内容……对象/主机)

```
tail -f /var/opt/CSCOpx/MDC/tomcat/logs/stdout.logs tail -f
/var/opt/CSCOpx/MDC/log/operation/usmsharedsvcs.log
```