

Greenlake Activate ZTP 实现

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1.Activate 平台的迁移

由于 Greenlake 平台的推出，使得 Activate 平台迁移到了 Greenlake 平台之上，Activate 原有设备数据也会同时迁移过去。

HPE 会发邮件让用户更新 Greenlake 账号信息；如果之前没有 Activate 账号，开通 Greenlake 账号应该需要联系 Tac 开通 <https://common.cloud.hpe.com/home> (Activate 是这样子，Greenlake 后不知是否自己就可以开通，还需要验证。)

2.ZTP 说明

2.1 无线控制器采用 ZTP 上线的好处

- 简化流程，加快无线控制器上线速度。
- 可以整合成为客户职场部署自动化业务的一部分。
- 避免认为故障的发生。

2.2 无线控制器 ZTP 前置条件

- 在 Aruba Active (activate.arubanetworks.com) 申请账号 (于 2022 年 1 月并入 Greenlake)
- 在 Activate 上添加无线控制器，可以通过 SN+MAC (单一) 地址或绑定订单号 (批量) 来实现。
- 无线控制器能够通过 DHCP 获取地址，具备 DNS 以及 HTTPS 权限，能够与 activate 服务器进行交互。

3.ZTP 操作步骤

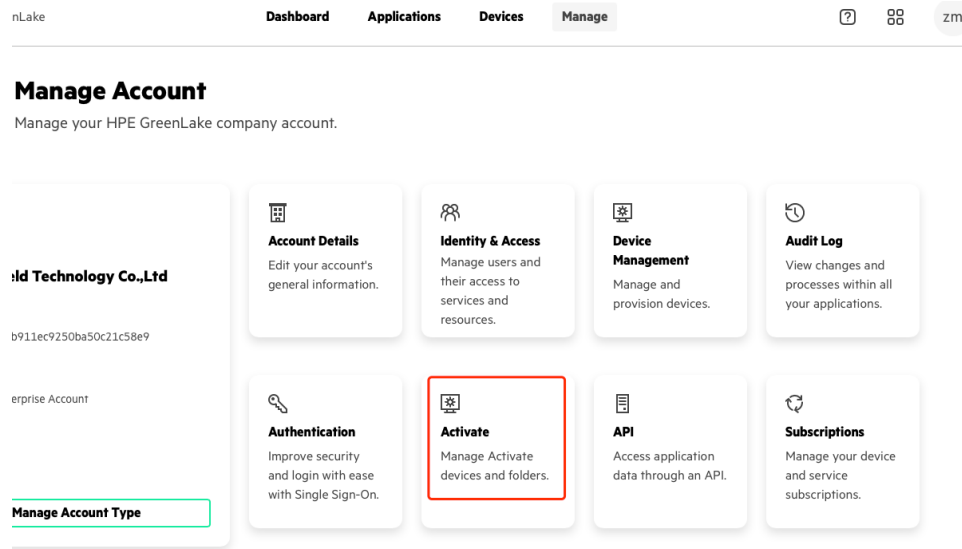
注：如果是硬件 MM 则不需要这些步骤，直接在 Activate 里添加 MD 并移动到对应的 folder

即可。

此实验版本为 8.7.1.9，更高版本的兼容性需要自己验证。

3.1 添加 VMM 平台至 Activate

首先登录 Greenlake 网站，在顶端横幅找到 manage，选择 activate




点击生成 token, 该 token 生成后需要自己保存，是设备登录 Activate 的重要凭证，平台不可查。







Activate Devices

[Export](#)[Generate Token](#)[Add Devices](#)

Activate devices will continue to be supported as we migrate our service to Device Management.

6 Device(s)

<input type="checkbox"/>	Serial Number	Model	MAC Address	Folder
<input type="checkbox"/>	 MMSF77558	9000-VM	00:0C:29:F7:75:58	default
<input type="checkbox"/>	 CM0001170	AP-205	9C:1C:12:C7:E0:C6	default
<input type="checkbox"/>	 CU0359668	AP-103	84:D4:7E:CD:CC:F6	default
<input type="checkbox"/>	 CU0357777	AP-103	84:D4:7E:CD:BE:30	default
<input type="checkbox"/>	 CV0007463	7210	00:1A:1E:02:EE:70	default
<input type="checkbox"/>	 CP0005855	7005-RW	00:0B:86:BE:44:E0	default

在 MM 上关联 Active，该步骤仅为了同步 ZTP 证书，并不会上传/下载配置，建议在/mm 层级配置

```
(config)#activate
```

```
(config)#whitelist-enable
```

```
(config)#username "activate_username" //账号不用加@后缀
```

```
(config)#password "Token"
```

查看状态：

```
show activate 查看 activate 当前配置
```

```
(XIAN_mm02) [mynode] (config) #show activate
activate
-----
Parameter                               Value
-----
Activate AP Whitelist Service           Enabled
Activate Device Whitelist Service       Enabled
Activate URL                             https://activate.arubanetworks.com/
Provision Activate URL                   https://device.arubanetworks.com/
Activate Login Username                   zhipeng.ma
Activate Login Password                   *****
Periodic Interval for AP WhiteList Download 1
Periodic Interval for Device WhiteList Download 24
Add-Only Operation                       Enabled
Custom cert to upload to Activate        N/A
Server cert to be used for IPSEC         N/A
(XIAN_mm02) [mynode] (config) #
```

show activate status 查看 activate 登录及证书下载状态，如下就是正常的

```
(XIAN_mm02) [mynode] (config) #show activate status
Activate Sync Status
-----
Type                                     Last Success                               Last Failure
-----
Activate Login                          Tue Apr 26 15:13:37 2022                 N/A
Register                                 Tue Apr 26 15:13:39 2022                 N/A
Cert Upload                              Tue Apr 26 15:13:40 2022                 N/A
AP Whitelist Sync                        Tue Apr 26 15:13:43 2022                 N/A
Provision Login                          N/A                                         N/A
Device Whitelist Sync                    N/A                                         N/A
(XIAN_mm02) [mynode] (config) #
```

在 activate 里查看，就会发现自动生成了一个 vmm 的条目

The screenshot shows the 'Manage' section of the HPE GreenLake interface, specifically the 'Activate' page. The page title is 'Activate Devices'. Below the title, there are buttons for 'Export', 'Generate Token', and 'Add Devices'. A search bar is present with the text 'Search by Serial or MAC Address'. Below the search bar, there is a table of activated devices. The first row of the table is highlighted with a red border.

Serial Number	Model	MAC Address	Folder
MM5F77558	9000-VM	00:0C:29:F7:75:58	default
CM0001170	AP-205	9C:1C:12:C7:E0:C6	default
CU0359668	AP-103	84:D4:7E:CD:CC:F6	default
CU0357777	AP-103	84:D4:7E:CD:BE:30	default
CV0007463	7210	00:1A:1E:02:EE:70	default
CP0005855	7005-RW	00:0B:86:BE:44:E0	default

3.2 Activate 添加设备以及下发策略

在 MM 上允许特定 MD 关联（安全考虑）

```
(config) #local-custom-cert local-mac 00:0c:29:ec:97:0f ca-cert factory-ca-cert server-cert self-signed-field-cert
```

点击 manage 里的 activate，找到 folders，新建一个 ztp 的 folder

The screenshot shows the 'Manage Account' page with the 'Activate' section selected. Under 'Activate', the 'Folders' option is highlighted. The 'Folders' section displays a table of existing folders:

Name	Parent	Description	Number of Devices	Number of Rules	Created By
athena-f-0a8d928cc4a011ec9c07529c5f544c1b	nan	nan	0	1	
athena-f-2ef20018c4a011ecb9a2bec5b4581e37	nan	nan	0	1	
athena-f-a2429dbcc49f11ec8320323db01e0646	nan	nan	0	4	
default	nan	nan	6	0	
test	default		0	0	
zip_test	test		0	0	

新建 folder 的 rules

The screenshot shows the 'zip_test' folder details page. The 'Rules' section is highlighted, indicating where to add new rules for provisioning devices.

Details

Name	zip_test
Parent Folder	test
Description	--
ID	37350380
UUID	nan

配置 Rule:

Edit Rule

Enter the details below to update a device provisioning rule.

Rule Name

zip_md

Rule Type

Provisioning Rule

Parent Folder*

zip_test

Provisioning Type

Managed Device to Mobility Conductor

Redundancy Level

No Redundancy

Config Node Path

/md/ztp

Mobility Conductor

00:0C:29:F7:75:58

Mobility Conductor IP

192.168.2.189

Create New Rule

Enter the details below to create a device provisioning rule.

Rule Name*

Rule Type*

Parent Folder*

Provisioning Type*

Redundancy Level

Config Node Path

Mobility Conductor

Mobility Conductor IP

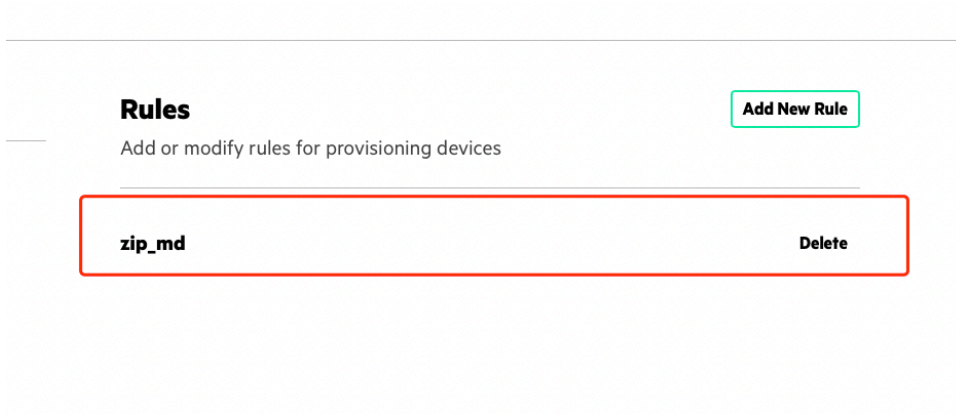
VPN Concentrator MAC

Country Code*

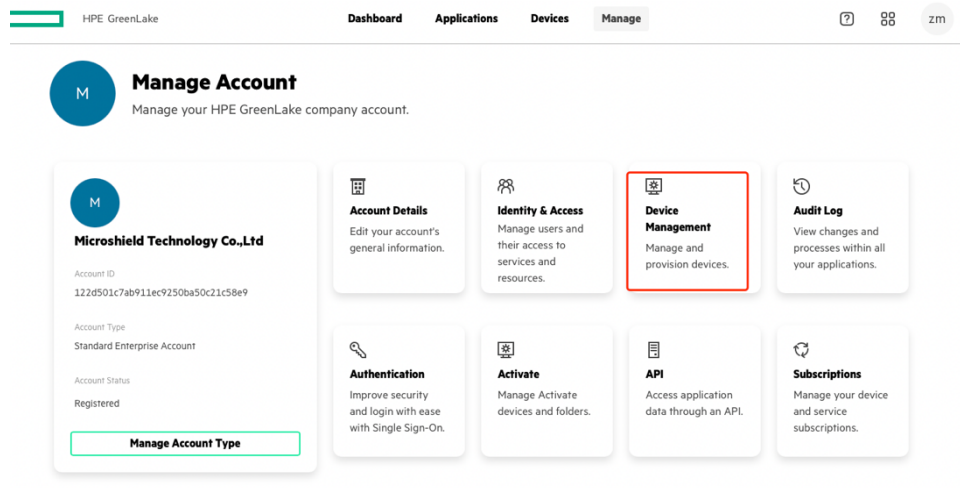
Cancel

Create

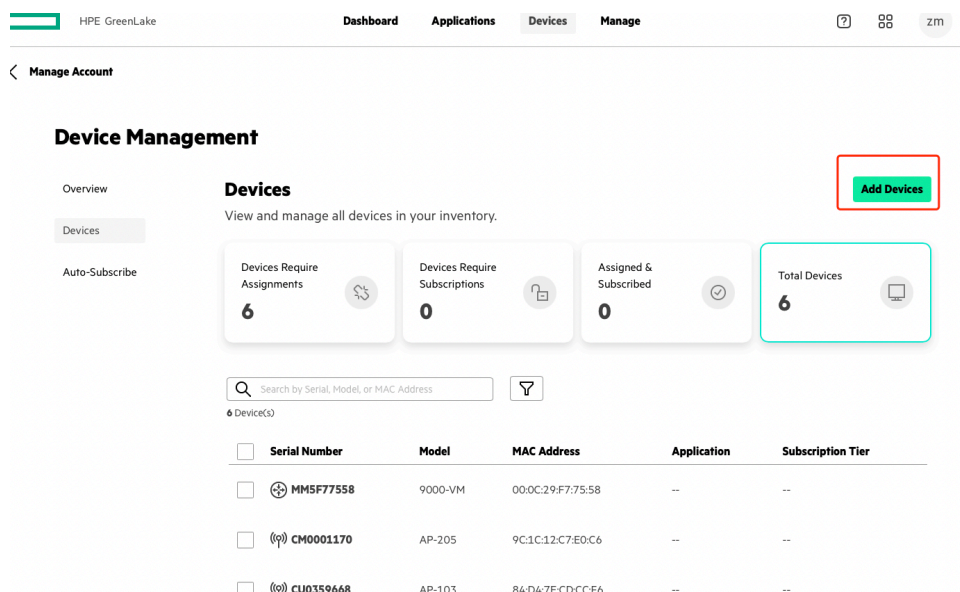
配置完成后会向如下显示



点击 manage, 选择 device management, 添加 md 设备



点击 add



输入 MD 的 mac 地址和 sn

Add Devices

Serial Number & MAC Address

Type and add the serial number and MAC Address of the devices you would like to add.

Serial Number: MZSD4PD005 MAC Address: 00:00:00:00:00:00 **Enter**

Serial Number	MAC Address	
CP0001395	00:0b:86:b8:6d:10	

Cancel **Add Devices**

点击 manage, 选择 activate, 然后找到新加的 md

HPE GreenLake Dashboard Applications Devices **Manage** ? ☰

< Manage Account

Activate

Devices Folders Activate Documentation

Activate Devices

Export Generate Token Add Devices

Activate devices will continue to be supported as we migrate our service to Device Management.


Search by Serial or MAC Address Move To Folder

1 of 6 Device(s) selected

<input type="checkbox"/>	Serial Number	Model	MAC Address	Folder
<input type="checkbox"/>	MMSF77558	9000-VM	00:0C:29:F7:75:58	default
<input type="checkbox"/>	CM0001170	AP-205	9C:1C:12:C7:E0:C6	default
<input type="checkbox"/>	CU0359668	AP-103	84:D4:7E:CD:CC:F6	default
<input type="checkbox"/>	CU0357777	AP-103	84:D4:7E:CD:BE:30	default
<input type="checkbox"/>	CV0007463	7210	00:1A:1E:02:EE:70	default
<input checked="" type="checkbox"/>	CP0005855	7005-RW	00:0B:86:BE:44:E0	default

进入 MD 界面，点击编辑

Devices

 **CP0001395** [Edit](#) [Move To Folder](#)

00:0B:86:B8:6D:10

Details

Device Name SX_XA_WLC01
Full Name --
Description --
Model 7005-RW
Serial Number CP0001395
MAC Address 00:0B:86:B8:6D:10
IMEI --
Provisioning Image --
JSON Data --
First Seen Jan 22, 2022
Display Device Type GATEWAY
Folder default
Mode MD

Device History

Date	Type	Source IP	Current Version	Mode	Status
04/26/2022 03:35 PM	nan	nan	nan	nan	claimed
04/26/2022 03:33 PM	moved	nan	nan	nan	nan
04/26/2022 02:09 PM	provision-update	219.145.1.212	nan	MD	provisioned
04/26/2022 02:08 PM	provision-update	219.145.1.212	8.7.1.8_83050	MD	provisioned
04/26/2022 01:50 PM	moved	nan	nan	nan	nan

< 1 2 3 >

将 Folder 改为 ztp folder (示例)，设备类型选择为 managed device

Details

Device Name
Full Name
Description
Model 7005-RW
Serial Number CP0001395
MAC Address 00:0B:86:B8:6D:10
IMEI --
Provisioning Image --
JSON Data --
First Seen Jan 22, 2022
Display Device Type GATEWAY
Folder Name
Mode

Device History

Date	Type	Source IP	Current Version	Mode	Status
04/26/2022 03:35 PM	nan	nan	nan	nan	claimed
04/26/2022 03:33 PM	moved	nan	nan	nan	nan
04/26/2022 02:09 PM	provision-update	219.145.1.212	nan	MD	provisioned
04/26/2022 02:08 PM	provision-update	219.145.1.212	8.7.1.8_83050	MD	provisioned
04/26/2022 01:50 PM	moved	nan	nan	nan	nan

< 1 2 3 >

3.3 ZTP 线路接入 MD

注：MD 插入网线（不能使用 0 口，必须 dhcp 获取地址）

MD 启动过程：

=====

Starting ztp

Starting ztp auto provision

Starting auto provisioning

Registered for NTP Sync

Initiated DHCP, awaiting DHCP response

Received DHCP response, My IP = 192.168.3.139, Master = none, Mask = 255.255.255.0, GW = 192.168.3.254, DNS = 114.114.114.114, Country code = none, Physical Port = 3
DNS server name 114.114.114.114 assigned to info structure..

No vendor option for DHCPv4, wait for DHCPv6

Auto-provisioning is in progress. It requires DHCP and Activate servers

Choose one of the following options to override or debug auto-provisioning...

'enable-debug' : Enable auto-provisioning debug logs

'disable-debug' : Disable auto-provisioning debug logs

'mini-setup' : Start mini setup dialog. Provides minimal customization and requires DHCP server

'full-setup' : Start full setup dialog. Provides full customization

'static-activate' : Provides customization for static or PPPOE ip assignment. Uses activate for master information

Enter Option (partial string is acceptable):

Master info not received, trying activate

% Total	% Received	% Xferd	Average Speed		Time	Time	Time	Current			
			Dload	Upload	Total	Spent	Left	Speed			
100	2703	0	0	100	2703	0	2217	0:00:01	0:00:01	--:--:--	2219

Received Activate response, My Role = md, Master = 192.168.2.188, Master MAC = 00:0C:29:F7:75:58, Hostname = MASTER_CTRL_B8_6D_10, Country code = CN, Redundant Master MAC = none, VPN IP = none, VPN MAC = none, Redundant VPN MAC = none, Secondary Master = none, Secondary Master Mac = none, Redundant Secondary Master Mac = none, Secondary VPN IP = none, Secondary VPN MAC = none, Secondary Redundant VPN MAC = none

Master = 192.168.2.188 auto-discovered from Activate

INFO: Backing up existing configuration directory.

Uplink Port : gigabitethernet 0/0/3

Adding gigabitethernet 0/0/3 as switchport to vlan 4094

copying ca-cert

Processes will restart now

Restarting profmgr...

Restarting cfgm...

Restarting central_agent...

Restarting isakmpd...

Restarting certmgr...

Restarting ctrlmgmt...

Restarting licensmgr...

Restarting aaa...

Restarting ntpwrap...

Restarting cert_dwnld...

Restarting resolvwrap...

Processes restarted successfully!

[07:50:58]:Initializing GSM [DONE]
[07:50:58]:Initializing CCM [DONE]
[07:50:58]:Initializing FPAPPs [DONE]
[07:50:58]:Initializing CFGM [DONE]
[07:51:01]:Waiting for Controller IP [DONE]
[07:51:05]:Initializing AAA [DONE]
[07:51:05]:Initializing Controller management [DONE]

最后登录 mm 查看 md 状态

```
(XIAN_mm02) [mm] #show switches
All Switches
-----
IP Address IPv6 Address Name Location Type Model Version Status Configuration Sta
te Config Sync Time (sec) Config ID
-----
192.168.2.188 None XIAN_mm02 Building1.floor1 master ArubaMM-VA 8.7.1.9_83631 up UPDATE SUCCESSFUL
0 2
192.168.3.139 None MASTER_CTRL_B8_60_10 Building1.floor1 MD Aruba7005 8.7.1.8_83050 up LAST SNAPSHOT
0
Total Switches:2
(XIAN_mm02) [mm] #
```