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

nLake	Dashboard Applic	ations Devices Ma	nage	? 88
Manage Account				
Manage your HPE GreenLake	company account.			
	Ħ	ጽ	盛	5
d Technology CoLtd	Account Details Edit your account's	Identity & Access Manage users and	Device Management	Audit Log View changes and
	general information.	services and resources.	Manage and provision devices.	processes within all your applications.
TTECASSON920CSTC2064				
prise Account	95	*	Ξ.	Q
	Authentication	Activate	API	Subscriptions
	Improve security and login with ease with Single Sign-On.	Manage Activate devices and folders.	Access application data through an API.	Manage your device and service subscriptions.
fanage Account Type				

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。

	Dashboard	Applications	Devices	Manage	? 88
Activa	te Devices			Export Genera	te Token Add Devices
Activate o Managem	devices will continu ient.	e to be support	ed as we mi	grate our service to Device	
6 Device(s)	ch by Serial or MAC Addre	255			
Se	erial Number	Mod	el	MAC Address	Folder
	MM5F77558	9000)-VM	00:0C:29:F7:75:58	default
((q	») CM0001170	AP-2	05	9C:1C:12:C7:E0:C6	default
((q	⁾⁾ CU0359668	AP-1	03	84:D4:7E:CD:CC:F6	default
((9	») CU0357777	AP-1	03	84:D4:7E:CD:BE:30	default
÷	CV0007463	7210)	00:1A:1E:02:EE:70	default
	Э срооо5855	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			MM5F77558
activate			
Parameter	Value		(ဂု) CM0001170
Activate AP Whitelist Service Activate Device Whitelist Service Activate URL Provision Activate URL Activate Login Username	Enabled Enabled https://activa https://device zhipeng.ma	ite. e.ar	(တု) CU0359668 arubanetworks.com/ ubanetworks.com/ (တု) CU0357777
Activate Login Password Periodic Interval for AP WhiteList Download Periodic Interval for Device WhiteList Download Add-Only Operation Custom cert to upload to Activate Server cert to be used for IPSEC (XIAN mm02) [mynode] (config) #	********* 1 24 Enabled N/A N/A		↔ CV0007463 ↔ CP0005855

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		(၀ု) CU0359668
Туре	Last Success	Last Failure
Activate Login Register Cert Upload AP Whitelist Sync Provision Login Davice Whitelist Sync	Tue Apr 26 15:13:37 2022 Tue Apr 26 15:13:39 2022 Tue Apr 26 15:13:40 2022 Tue Apr 26 15:13:43 2022 N/A	N/A N/A N/A 🔄 🔅 CV0007463 N/A N/A
(XIAN_mm02) [mynode] (config) #	N/A 🔆 CP0005855

在 activate 里查看, 就会发现自动生成了一个 vmm 的条目

HPE GreenLake	Dashboard Applicati	ons Devices	Manage	? 88 zm
(Manage Account				
Activate				
Devices	Activate Devices		Export Generate Token	Add Devices
Folders	Activate devices will continue to be s Management.	supported as we mig	rate our service to Device	
Activate Documentation	Search by Serial or MAC Address Opvice(s)	Y		
	Serial Number	Model	MAC Address	Folder
	MM5F77558	9000-VM	00:0C:29:F7:75:58	default
	(ဂု)) CM0001170	AP-205	9C:1C:12:C7:E0:C6	default
	(ဂု)) CU0359668	AP-103	84:D4:7E:CD:CC:F6	default
	(ဂု)) ငU0357777	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

在 manage 里的 activate 里点击 vmm 条目,

HPE G	GreenLake	Dashboard Ap	oplications	Devices Ma	nage		? 88	zm
00:0C:29:F	15F77558 7:75:58				(Edit	Move To Folder	
Details		Device History						
Device Name	_	Date	Туре	Source IP	Current Version	Mode	Status	
Full Name	-	0/ /2/ /2022 07-2/ DM						
Description	-	04/20/2022 03:24 PM	moved				nan	
Model	9000-VM	04/26/2022 03:15 PM	register				activated	
Serial Number	MM5F77558	04/20/2022 03.13 FM	register				activated	
MAC Address	00:0C:29:F7:75:58							
IMEI	-							
Provisioning Image	-							
JSON Data	{"ca_cert":"BEGIN CERT \nMIIC4DCCAcigAwIBAgIB END CERTIFICATE	TIFICATE ADANBgkqhkiG9w0BAQUFADAhMR8wH \n*}	HQYDVQQDDBZB	T1M6\nOjAwOjBD	Ojl5OkY3Ojc1OjU4MB4X	DTIyMDQyNjA3	MDQyOFoXDTMyM	1DQyM
First Seen	Apr 26, 2022							
Display Device Type	GATEWAY							
Folder	default							
Mode	мс							

修改 vmm 条目里的 mode 为 mobility conductor

Details		Device History					
Device Name		Date	Туре	Source IP	Current Version	Mode	Status
		04/26/2022 03:24 PM	moved				nan
Full Name							
		04/26/2022 03:15 PM	register				activated
Description]						
Model	2000 V/M						
Serial Number	MM5F77558						
MAC Address	00:0C:29:F7:75:58						
IMEI							
Provisioning Image	-						
JSON Data	{"ca_cert":"BEGIN CER \nMIIC4DCCAcigAwIBAgII END CERTIFICATE	TIFICATE 3ADANBgkqhkiG9w0BAQUFADAhMR8v -\n"}	HQYDVQQDDBZ	BT1M6\nOjAwOj	BDOjI5OkY3Ojc1OjU4MB	4XDTIyMDQyl	NjA3MDQyOFoX[
First Seen	Apr 26, 2022						
Display Device Type	GATEWAY						
Folder Name							
default	×						
Mode							

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-cacert server-cert self-signed-field-cert

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

	HPE GreenLake	Dashboard Applicati	ons	Devic	es Manag	ge		? 88	zm
< Mar	age Account								
	Activate								
	Devices	Folders					Create	New Folder	
ſ	Folders	View and manage all Activate folder	s anc	l rules.					
·	Activate Documentation	Q Search by Folder Name							
		6 Folders							
		Name		Parent	Description	Number of Devices	Number of Rules	Created By	
		athena-f- 0a8d928cc4a011ec9c07529c5f544c1b	0	nan	nan	0	1		
		athena-f- 2ef20018c4a011ecb9a2bec5b4581e37	0	nan	nan	0	1		
		athena-f- a2429dbcc49f11ec8320323db01e0646	0	nan	nan	0	4		
		default ()		nan	nan	6	0		
		test		default		0	0		
		zip_test		test		0	0		

新建 floder 的 rules

Details		Rules	Add New Rule
Name	zip_test	And or modify rules for provisioning devices	
Parent Folder	test		
Description	-		
D	37350380		
JUID	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

 \sim

 \sim

 \sim

Redundancy Level

No Redundancy

Config Node Path

/md/ztp

Mobility Conductor

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

Mobility Conductor IP

192.168.2.189

China		~
Country Code*		
Select VPN MAC		~
VPN Concentrator MAC		
192.168.2.188		
00:00:24:11:22	<u> </u>	
Mobility Conductor		
Config Node Path		
No Redundancy	~	
Redundancy Level		
Managed Device to Mobility Condu	~	
Previsioning Type*		
zip_test	~	
Parent Folder*		
Provisioning Rule	~	
Rule Type*		
zip_md		
Rule Name*		
provisioning rule.		
Enter the details below to create a dev	ice	

配置完成后会向如下显示

Add or modify rules for provisioning devices	
zip_md	Delete

点击 manage, 选择 device management, 添加 md 设备

1*1				
Manage your HPE GreenLake	company account.			
	m	25		ŝ
M		(O)	쎺	0
	Account Details	Identity & Access	Device	Audit Log
Microshield Technology Co.,Ltd	Edit your account's	their access to	Manage and	View changes and
	general mormanon.	services and	provision devices.	your applications.
Account ID		resources.		
122d501c7ab911ec9250ba50c21c58e9				
Account Type				
Standard Enterprise Account	Q.	*	Ę	C
	Authentication	Activate	API	Subscriptions
	Authenneution	Activate		Subscriptions
Account Status	Improve security	Manage Activate	Access application	Manage your device

击 add					
HPE GreenLake	Dashboar	d Application	s Devices Mar	age	? 88
nage Account					
Device Mana	gement				
Overview	Devices				Add Device
Devices	View and manage all devices	in your inventor	у.		
Auto-Subscribe	Devices Require Assignments	Devices Requi Subscriptions	re Assi Subs	cribed	Total Devices
	Search by Serial, Model, or MAI	C Address			
	Serial Number	Model	MAC Address	Application	Subscription Tier
	MM5F77558	9000-VM	00:0C:29:F7:75:58	-	
	(ဂု)) CM0001170	AP-205	9C:1C:12:C7:E0:C6		
	((၇)) CU0359668	AP-103	84:D4:7E:CD:CC:F6	-	_

输入 MD 的 mac 地址和 sn



点击 manage, 选择 activate, 然后找到新加的 md

HPE GreenLake	Dashboard Ap	plications Devices	Manage	? 88
Manage Account				
Activate				
Devices	Activate Devices		Export Genera	te Token Add Devices
Folders	Activate devices will continue to Management.	o be supported as we	migrate our service to Device	
Activate Documentation	Q Search by Serial or MAC Address 1 of 6 Device(s) selected	\	Move To Folder	
	– Serial Number	Model	MAC Address	Folder
	MM5F77558	9000-VM	00:0C:29:F7:75:58	default
	(ဂု)) ငM0001170	AP-205	9C:1C:12:C7:E0:C6	default
	(ဂု)) ငU0359668	AP-103	84:D4:7E:CD:CC:F6	default
	(ဂု)) ငU0357777	AP-103	84:D4:7E:CD:BE:30	default
	🔶 CV0007463	7210	00:1A:1E:02:EE:70	default
	✓	7005-RW	00:0B:86:BE:44:E0	default

进入 MD 界面,点击编辑

00:0B:86:B	0001395 8:6D:10						Move To Fok	
Details		Device History						
Device Name	SX_XA_WLC01	Date	Туре	Source IP	Current Version	Mode	Status	
Full Name Description	-	04/26/2022 03:35 PM	nan	nan	nan	nan	claimed	
Model Serial Number	7005-RW CP0001395	04/26/2022 03:33 PM	moved	nan	nan	nan	nan	
MAC Address	00:0B:86:B8:6D:10	04/26/2022 02:09 PM	provision-update	219.145.1.212	nan	MD	provisioned	
Provisioning mage	-	04/26/2022 02:08 PM	provision-update	219.145.1.212	8.7.1.8_83050	MD	provisioned	
ISON Data First Seen		04/26/2022 01-50 PM	moved	nan	nan	nan	nan	
Display Device Type	GATEWAY	0 17 E07 E0E 0 E100 1 F1				< 1	2 3	
Folder	default							

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

Device Name		Date	Туре	Source IP	Current Version	Mode	Status
SX_XA_WL	C01	0/ /2/ /2022 07.75 DM					ومنعو
Full Name		04/20/2022 05:55 PM	nan	ndn	nan	nan	claimed
Full Name		04/26/2022 03:33 PM	moved	nan	nan	nan	nan
Description		04/26/2022 02:09 PM	provision-update	219.145.1.212	nan	MD	provisioned
Madal	7005 DW	04/26/2022 02:08 PM	provision-update	219.145.1.212	8.7.1.8_83050	MD	provisioned
Serial	7005-RW						
Number	CF0001343	04/26/2022 01:50 PM	moved	nan	nan	nan	nan
MAC Address	00:0B:86:B8:6D:10					< 1	2 3 >
IMEI	-						
Provisioning Image	-						
JSON Data	-						
First Seen	Jan 22, 2022						
Display Device Type	GATEWAY						
Folder Name							
zip_test	~						

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 Current Time 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 certmgmt... Restarting ctrlmgmt... Restarting licensemgr... 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 swi						-
All Switches Internation IP Address IPv6 Addres te Config Sync Time (sec)	s Name Config ID	Rule1 ^{zip_mdo} cation		Delete Version	Edit Status	Configuration Sta
Description						
192.168.2.188 None	XIAN_mm02 2					UPDATE SUCCESSFUL
192.168.3.139 None 0	MASTER_CTRL_B8_6D Ø	_10 Building1.floor1	Aruba7005	8.7.1.8_83050		LAST SNAPSHOT
Total Switches:2 (XIAN_mm02) [mm] #						