NLS2.0 许可证系统的安装配置流程和 PoC 简介

修订记录

Date	Version	Authors	Description
2021/11/15	1.0	Merlin Ma	Initial version written for NLS 1.0.
2022/08/04	1.1	Shen Song	Add change default vApp mode to vWS in PT mode.
2022/09/06	2.0	Merlin Ma	Adapt operation to NLS 2.0 and the current NLP portal.
			Add new Container based DLS installation step by step.
			Restructuring DLS operation order.

概述

在 2021 年 8 月伴随 vGPU 13.0 的发布, NVIDIA 推出了全新的软件 License 系统 (NLS) 来 替代之前基于 Flexnet 的 License 服务。新的 License 系统需要至少 vGPU 版本 13.0 或者 NVAIE 才能支持使用。如果您使用的是 vGPU 13.0 之前的版本,仍然需要使用传统的 LS 授 权服务器。因此本文将着重介绍全新的 NLS 的安装配置过程以及在 vGPU 13.0 中如何使用 新的 NLS 来实现软件授权。全新的 NLS 提供两种 License 服务形式来授权 vGPU,一种是 在有公网访问环境,vGPU 可以通过 NVIDIA 官方服务器上面的 CLS 服务进行授权,另一种 是在企业私有网络搭建本地的 DLS 服务进行 License 授权。这两种方式本文也将介绍和演 示使用方法。同时,13.0 以及后续版本仍然在一定时间范围内兼容旧的 LS,但强烈建议 尽快迁移到新的 NLS。NLS 2.0 在 2022 年 8 月底发布,主要增加了容器方式的 DLS 部署, 更加灵活和可管理,本文也针对这个部分做了更新。 1. 授权服务实例类型选择 CLS 还是 DLS

NLS 提供两种 License 服务实例类型来对 vGPU 客户进行软件授权。

 如果 vGPU 客户端可以访问互联网环境,vGPU 可以访问 NVIDIA 官方服务器上面的 CLS 服务直接进行授权,就可以选择使用 CLS,使用 CLS 则无需在本地环境再搭建 授权服务器,因此更加方便和快捷,但要注意公网访问的可靠性。



2) 另一种是在企业私网内部署本地 DLS 服务器进行 License 授权。主要面向 vGPU 客 户端全部在企业内网,且不能访问互联网环境时应该采用的方式。



2. CLS 授权服务器的配置步骤

如果您选择 CLS 服务方式,需要在 NVIDIA license 门户上进行相应配置。

使用您的 NVIDIA 账号访问 <u>https://nvid.nvidia.com</u> 添加和配置 CLS 服务。在配置之前,请 确认您已经申请了 NLP 账号并获取了测试或者正式 License. 总体部署流程如下:



 3 登录用户企业账号管理门户 NLP 后,先创建 License Server。因为使用新的 NLS,不 要选择 Create Legacy 方式,然后开始创建,打开 Express CLS Installation 选项可以 自动创建或者使用默认的 CLS Service 实例,从而简化安装步骤。

📀 NVIDIA. LICENSING	NVIDIA APPLICATION HUB 💭 🧬 merina and the model of the second s
🖧 DASHBOARD	
ENTITLEMENTS	Create License Server () Help?
🗎 LICENSE SERVERS 🕕 🗸	Create a license server in NVIDIA INFR-0
LIST SERVERS	Craata lanary carvar 🕐 If the license server is to be installed on a lenary licension system server (mp.JII S) enable "Create lenary server"
CREATE SERVER 2	
A NETWORK ENTITLEMENTS	Basic details \rightarrow Select features \rightarrow Preview server creation
D VIRTUAL GROUPS	① Enter a name, and description for this new license server
LUSER MANAGEMENT	Name
A SOFTWARE DOWNLOADS	Merlin-CLS-2022 0
EVENTS	Description
LEASES	Test Only 0
SERVICE INSTANCES	
🥜 API KEYS	
₽ SUPPORT	C Express CLS Installation? The server will be installed on the default CLS service instance
	S Next: Select features →

2) 下面添加您现有的 License 类型和分配的数量。

ENTITLEMENTS LICENSE SERVERS	Create License Server (*) Help? Create a license server in NVIDIA INFR-GEN (lic-0011w000027/5ylqay) / Group NVIDIA INFR-GEN (lic-0011w000027/5ylqay)					
LIST SERVERS	Create lacacy server () If the license server is to be installed on a lecacy licensing system server (ore-NLS) enable "Create logacy server"					
CREATE SERVER						
A NETWORK ENTITLEMENTS	Basic details \rightarrow 2 Select features \rightarrow Preview server creation					
D VIRTUAL GROUPS	Q Select one or more entitlement features to add to the new license server					
A USER MANAGEMENT	V workstation	\sim				
& SOFTWARE DOWNLOADS		^				
EVENTS	$\blacksquare NAME \ \bigcirc \ \bigcirc \qquad PRODUCT \ KEYID \ \bigtriangledown \ \diamondsuit \ \diamondsuit$					
E LEASES	WVIDIA RTX Virtual 1ug0miszf- rkas/3ftpi- Active Nov 11, 2021 Nov 11, 2022 31	20				

预览并创建:

Create legacy server	 If the license server is to be installed 	ed on a legacy licensing system server (pre-N	LS), enable "Create legacy server	
	Basic detai	Is \rightarrow \bigcirc Select features \rightarrow	Preview server creation	
		(i) Review your selections for this lice	nse server	
You are abou	t to create a server in NVIDIA INFR-GE	EN (lic-0011w000027i5yiqay) / Group NVIDI.	A INFR-GEN (lic-0011w000027i5)	iqay) with the following details:
		Server name and description		
		Merlin-CL S-20	22	
	🧭 This se	rver will be bound and installed on the defa	ult CLS service instance	
		View details after creat	ion	
		View details after creat	ion	
		View details after creat	ion D	
	With 3 t	View details after creat	ion Table view	
∑ Saarak Easturas	With 3 f	View details after creat	ion	
∑ Search Features	With 3 f	View details after creat	ion Table view	
✓ Search Features FEATURE	With 3 f	View details after creat	Table view	START DATE 🗘
Search Features FEATURE VI/IDIA RTX Virtual Morketation 5.0	With 3 t LICENSES \diamondsuit 20	View details after creat	Table view STATUS Active	START DATE 🗘 Nov 11, 2021
Y Search Features FEATURE Image: Comparison of the search sea	With 3 1	View details after creat	Table view STATUS Active	START DATE 🗘 Nov 11, 2021

License Server Details () Help? View details of license server in NVIDIA INFR-GEN (lic-0011w000027/5ylqay) / Group NVIDIA INFR-GEN (lic-0011w000027/5ylqay)	୍ଦି REFRESH	
Merlin-CLS-2022 is ENABLED		~
Status: ENABLED Type: NVIDIA Created: Sep 6, 2022 6:56 PM Modified: Sep 6, 2022 6:56 PM Service Instance: 0011w000027i5yigay-2022-09-06 10-56		
Description: Test Only Overview Server Features License Pools Fulfillment Conditions Leases		
ABOUT THIS SERVER Control Con	E SERVER	

上面是创建后的授权服务器,也可以看到本例中生成的 CLS Service Instance 名称。 此时 CLS 已经运行就绪。 3) 修改 CLS Service Instance 的名称(可选)

选择 Express CLS Installation 选项会自动创建 CLS Service Instance(如果之前已经有 默认的实例则使用默认项,新用户因为没有 CLS Service Instance 所有会自动创建一 个实例并设为默认)并绑定 License Server,自动创建的实例名称可能不易于记忆, 您可以在 Service Instances 表单中找到它改名。这样更方便按名字查找实例,方便 以后创建 Client Token。

	Service Instances ③ H View your service instances in NVIDIA INFR-GEN (IG-64	eip?)11w000027i5yiqay)			
NETWORK ENTITLEMENTS VIRTUAL GROUPS	E CLS				
요 USER MANAGEMENT	√ Search service instances			updated @ 7:08:25 PM	$\land \land \diamond \diamond$
SOFTWARE DOWNLOADS	NAME \bigtriangledown \diamondsuit	environment \heartsuit \diamondsuit	status \bigtriangledown \diamondsuit	date created \bigtriangledown \diamondsuit	
LEASES	0011w000027i5yiqay-2022-09-06_10-56 (fa58aa40-e663-4600-a6b9-adaaed0b5297)	⊘ CLS Default	Registered	Sep 6, 2022 6:56 PM	3 Actions
SERVICE INSTANCES	RKEATING_VGPU_2022-09-02 (4bea5abc-ede7-4887-8710-99b37f26a0f1)		Registered	Sep 3, 2022 5:3: Edit 4	-b
€ SUPPORT	JL-TEST (3109c285-46a0-4b20-89f1-0fbe2247776f)	😝 DLS	Registered	Aug 31, 2022 4:	
逸 USER MANAGEMENT 象 SOFTWARE DOWNLOADS	▼ Search service instances NAME ♥ ◊ Edit	Service Instanc	e ×	updated @ 7:08:25 PM	7 ⊻ ‡
EVENTS	0011w000027i5yiqay-2022-09-06_10- (fa58aa40-e663-4600-a6b9-adaaed00 Merlin-C	LSi-2022		Sep 6, 2022 6:56 PM	Actions
API KEYS	RKEATING_VGPU_2022-09-02 (4bea5abc-ede7-4887-8710-99b37f26 Description	n		Sep 3, 2022 5:32 AM	Actions
R SUPPORT	JL-TEST (3109c285-46a0-4b20-89f1-0fbe22477	nerated service instance for Merlin	Test	Aug 31, 2022 4:00 AM	Actions
	DEFAULT_2022-08-30_00:50:07 (982147af-1928-4f1b-b12a-99b95d306		_	Aug 30, 2022 8:51 AM	Actions
4	SanjivDLS20 (1304e5a2-0e2e-4b98-b2a8-di806983	EDIT SER		Aug 30, 2022 5:45 AM	Actions
AS USER MANAGEMENT	∇ Search service instances			updated 🍥 7:29:49 PM 🛛 🏠	7 ⊻ ‡
SOFTWARE DOWNLOADS	NAME \heartsuit \diamondsuit	Environment \heartsuit \diamondsuit	status \heartsuit \diamondsuit	date created \heartsuit \diamondsuit	
E LEASES	Merlin-CLSi-2022 (fa58aa40-a663-4600-a6b9-adaaed0b5297)	CLS Default	Registered	Sep 6, 2022 6:56 PM	Actions
SERVICE INSTANCES	RKEATING_VGPU_2022-09-02 (4bea5abc-ede7-4887-8710-99b37f26a0f1)	DLS	Registered	Sep 3, 2022 5:32 AM	Actions

可以看到上面的实例名已修改为 Merlin-CLSi-2022。

4) 回到 License Server 页面点击查看刚刚创建好的 License Server 的详细信息。

LICENSE SERVERS	View license servers in NVIDIA INFR-GEN (lic-UU11WU) Clicking on a row will display the related server features,	1002/15y(qay) / Group NVIDIA INFR-GEN (IIC-0011 clicking on the server name will display the full serve	w00002/15ylqay) r details.	
📋 LIST SERVERS				
CREATE SERVER	ACTIVE ES DISABLED	⊘ CLS 📄 DLS 👫	PENDING INSTALL	
A NETWORK ENTITLEMENTS				
D VIRTUAL GROUPS	γ Search license servers		updated @ 8:23:17 PM C	S 1 7 8
A USER MANAGEMENT	$>$ name \bigtriangledown \diamondsuit	FAMILY \bigtriangledown	SERVICE INSTANCE \bigtriangledown	
& SOFTWARE DOWNLOADS	Merlin-CI S-2022 Installed	VGPU	Merlin-Cl Si-2022 🔗 (Cloud)	
EVENTS	2	1.01.0	(cod)	

可以看到当前服务带有的 vGPU License 和数量,以及默认规划的 License 池,默认 池中有所有的 License,可直接使用这个池,也可以拆分成不同的池给不同的部门 使用。

LICENSE SERVERS V					^
LIST SERVERS)			
CREATE SERVER	Status: 😿 ENABLED Type: NVIDIA Co	reated: Sep 6, 2022 6:56 PM	Modified: Sep 6, 2022 8:22	PM	
SERVER DETAILS	Service Instance: Merlin-CLSi-2022	Install Status: 🛃 INSTALLED			
A NETWORK ENTITLEMENTS	Description: Test Only				
VIRTUAL GROUPS					
A USER MANAGEMENT	Overview Server Features License Pools	Fulfillment Conditions	Leases		
& SOFTWARE DOWNLOADS					
EVENTS	У Search license pools			updated @ 8:25:24	
LEASES	\checkmark name \heartsuit \diamondsuit		status \heartsuit \diamondsuit		
SERVICE INSTANCES	V Initial LP		ENABLED		Actions
🖉 API KEYS					
€ SUPPORT					↓ 尊
	Feature \bigtriangledown	IN USE /		fective \heartsuit \diamondsuit	Expiration \bigtriangledown \diamondsuit
	NVIDIA RTX Virtual Workstation-5.0 1ug0mlsxzf-rkax3frtpi-brpvqiygxn	0 / 20	Nov	11, 2021	Nov 11, 2022
	NVIDIA RTX Virtual Workstation-5.0 <u>vcfagfsrpc-iw5iivma71-tdpalk0wgk</u>	0/12	Aug	29, 2022	Aug 29, 2023
	NVIDIA Virtual Compute Server-9.0 ig3ofgztcm-ujdibdikth-tbcnuomh05	0/20	Jun	15, 2022	Jun 15, 2023

5) 到服务实例页面,下载用于 vGPU 客户的 Token 文件。

E ENTITLEMENTS	Service Instances () Help? View your service instances in NVIDIA INFR-GEN (IIC-0011W000027/5y/gay)					
NETWORK ENTITLEMENTS VIRTUAL GROUPS	CLS DLS					
LUSER MANAGEMENT	🖓 Search service instances updated 💿 8:32:07 PM 🦙 🚽 🄅					
	NAME \heartsuit \diamondsuit		status \bigtriangledown \diamondsuit	date created \bigtriangledown \diamondsuit		
LEASES	Merlin-CLSi-2022 (fa58aa40-e663-4600-a6b9-adaaed0b5297)	CLS Default	Registered	Sep 6, 2022 6:56 PM 2 Actions 3 S Generate client config token		
E SERVICE INSTANCES	test	⊘ CLS	Registered	Jul 19, 2022 10: DEdit		
🖉 API KEYS	(01910011-0200-4089-0600-020908061127)		-	③ Settings		
₽ SUPPORT	jg_instance (9c2dc69c-203a-4143-84ef-c75a845b17e4)	📀 CLS	Registered	Jul 6, 2022 1:20		

 \times

Generate Client Configuration Token Create a configuration token for client access to server resources

Scop	e references Fulfilln	nent class references
\bigtriangledown	Search scope references	
	SERVER NAME \bigtriangledown	Reference \bigtriangledown
	Merlin-CLS-2022	18898a72-b2a3-4526-b31f-4df0c501049a
		$<\!\!<$ (1 - 1 of 1 scope references) 1 of 1 pages $>$ $>>$
		2 L DOWNLOAD CLIENT CONFIGURATION TOKEN
	client_configuration	n_token_09-06-2022-20-35-40.tok
	blob:https://ui.licen	sing.nvidia.com/ef9ae5a1-6b0b-4371
	Show in folder	

生成 License 配置 Token 以后,下载该 tok 文件,后面复制到客户端授权使用。 将 Tok 文件复制到 vGPU 客户端 VM 内。然后参见《配置 vGPU 客户端的 License 授 权》章节。

3. DLS 本地授权方式的配置步骤

如果您选择 DLS 服务方式,需要在本地部署 DLS 授权服务器虚拟机。然后使用您的 NVIDIA 账号访问 <u>https://nvid.nvidia.com</u> 注册您的本地 DLS 服务实例并添加 License Server。在配置之前,请确认已经获取了测试或者正式 License。DLS 部署流程如下:



不同于传统授权服务器的基于 OS 和软件包的安装方法,新的 DLS 的安装直接提供了 两种部署方式,一种是**基于虚拟机映像**的安装,另一方式是**通过容器映像来部署** DLS 服务,请**二选其一**进行安装。所有安装映像的下载和 vGPU 软件一样要通过企业用户 portal (NLP)。

1) 虚拟机映像方式部署 DLS 的本地服务

📀 NVIDIA. LICENSING	NVIDIA APPLICATION HUB	rlinm@nvidia.com	NVIDIA INFR-GEN (IIc-00 Group NVIDIA INFR-GEN 🛞 logout
🖧 DASHBOARD			
ENTITLEMENTS	Software Downloads		3 ADDITIONAL SOFTWARE
LICENSE SERVERS >	View available software downloads for NVIDIA INFR-GEN (IIC-0011W000022/ISVIDB) / Stoup NVIDIA INFR-GEN (IIC-	0011W00002715y1	DLS 2.0 for Citrix Hypervisor
A NETWORK ENTITLEMENTS			DLS 2.0 for VMware vSphere
D VIRTUAL GROUPS	Y PRODUCT FAMILY		ULS 2.0 for Microsoft Hyper-V
A USER MANAGEMENT			LS 2.0 Container Platforms : Docker, kubernetes, Re
			LLS 2.0 Ubuntu OS Source
Contract Domicor.Do	PLATFORM \Diamond PLATFORM VERSION \Diamond PRODUCT VERSION \Diamond	DESCRIPTIO	
E EVENTS			
LEASES	Citrix Hypervisor	DLS 2.0 for C	JLS 1.1 for Linux KVM
SERVICE INSTANCES	Linux KVM	DLS 2.0 for L	LS 1.1 for Citrix Hypervisor
2 API KEYS			
-	VMware vSphere	DLS 2.0 for V	
R SUPPORT			

这里以 Linux KVM 平台为例, 下载 DLS 2.0 for KVM 软件(nls-2.0.0-bios-KVM.zip). 创建用于 DLS 的虚拟机最小配置为: vCPU:4, MEMORY: 8GB, DISK: 10GB。 KVM 使用 DHCP 分配虚拟机网络地址, 并启用 NTP。KVM 环境和 zip 软件包准备好 后开始在 KVM Host 上安装:

unzip nls-2.0.0-bios-KVM.zip

cp nls-2.0.0-bios.qcow2 /var/lib/libvirt/images/

virt-install -v --memory 16384 --vcpus=8 --name dls2-test --import --disk

/var/lib/libvirt/images/nls-2.0.0-bios.qcow2 --os-variant ubuntu18.04 --network=default --noautoconsole --autostart

[root	@kvm ~]# unzip nls-2.0.0-bio	os-KVM.zip						
Archi	ve: nls-2.0.0-bios-KVM.zip							
inf	lating: nls-2.0.0-bios.qcow	2						
[root	root@kvm ~]# mv nls-2.0.0-bios.qcow2 /var/lib/libvirt/images/							
[root	root@kvm ~]# virt-install -vmemory 16384vcpus=8name dls2-testimportdisk /var/lib/							
libvi	rt/images/nls-2.0.0-bios.qc	ow2os-vari	ant ubuntu18.04ne	etwork=defaultnoautoconsole				
autos	tart							
Start	ing install							
Domai	n creation completed.							
[root	@kvm ~]# virsh list							
Id	Name	State						
2	licserv	running						
3	ubun18_000084000_8Q_1	running						
5	win10-2_000084000_8Q_1	running						
17	docker2004_000084000_nogpu	_1 running						
18	dls2-test	running						
[root	@k∨m ~]#							
[root	@kvm ~]# virsh domifaddr dls	s2-test						
Name	MAC address	Protocol	Address					
vnet	4 52:54:00:66:76:16	ipv4	192.168.122.218/24					

看到 DLS 的虚拟机启动正常, virsh domifaddr 查看 DLS 分配的 IP 地址。

本案为 192.168.122.218.

下一步请跳转到 <u>第 3 节《配置 DLS 本地服务》</u>

2) 容器方式部署 DLS 的本地服务(可选方式)

下载容器 DLS 的软件包:

📀 NVIDIA. LICENSING	NVIDIA APPLICATION HUB 🤘 merlinm@nvidia.com	NVIDIA INFR-GEN (IIc-00 Group NVIDIA INFR-GEN 🛞 logout
	Software Downloads View available software downloads for NVIDIA INFR-GEN (IIc-0011w000027/5yiqay) / Group NVIDIA INFR-GEN (IIc-0011w000027/5yi	ADDITIONAL SOFTWARE
NETWORK ENTITLEMENTS VIRTUAL GROUPS	PRODUCT FAMILY PRODUCT FAMILY	DLS 2.0 for Linux KVM DLS 2.0 for VMware vSphere DLS 2.0 for Microsoft Hyper-V
& USER MANAGEMENT Software downloads 때 Events	PLATFORM \Diamond PLATFORM VERSION \Diamond PRODUCT VERSION \Diamond DESCRIPTING	

这里以 Ubuntu 20.04 为演示平台为例, root 身份执行:

1. 安装前准备:

```
apt-get update
apt-get remove docker docker-engine docker.io containerd runc
apt-get install -y ca-certificates curl gnupg unzip lsb-release
```

 安装 docker 和 docker-compose: 版本要求请务必参见 release notes 中的说明, dls2.0.0 要求 docker version 20.10.17, docker-compose version 2.6.0。 curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -

add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu

\$(lsb_release -cs) stable"

apt install -y docker-ce docker-ce-cli containerd.io

curl -L https://github.com/docker/compose/releases/download/v2.6.0/docker-compose-

linux-x86_64 -o /usr/local/bin/docker-compose

chmod +x /usr/local/bin/docker-compose

not@docker:~#	curl -	-fssi	https:/	/download	.docker.	com/linux	/uhuntu/gng	sudo	ant-key	/ add
		1995	neeps./	/ downitoud		com/ IIIux	/ ubuncu/ sps	5440	арс ксу	uuuu

<pre>~oot@docker:~# add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu \$(lsb_release -cs) stable"</pre>
Set:1 https://download.docker.com/linux/ubuntu focal InRelease [57.7 kB]
Hit:2 http://hk.archive.ubuntu.com/ubuntu focal InRelease
Set:3 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages [17.9 kB]
Set:4 http://hk.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Set:5 http://hk.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Set:6 http://hk.archive.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Set:7 http://hk.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2,077 kB]
Set:8 http://hk.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [15.9 kB]
Set:9 http://hk.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [949 kB]
Set:10 http://hk.archive.ubuntu.com/ubuntu focal-security/main amd64 Packages [1,707 kB]
Set:11 http://hk.archive.ubuntu.com/ubuntu focal-security/main Translation-en [286 kB]
Set:12 http://hk.archive.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [1,169 kB]
Set:13 http://hk.archive.ubuntu.com/ubuntu focal-security/restricted Translation-en [166 kB]
Fetched 6,781 kB in 6s (1,176 kB/s)
Reading package lists Done

root@docker:~# apt install docker-ce docker-ce-cli containerd.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
 docker-ce-rootless-extras docker-scan-plugin libseccomp2 pigz slirp4netns
Suggested packages:
 aufs-tools cgroupfs-mount | cgroup-lite
The following NEW packages will be installed:
 containerd.io docker-ce-cli docker-ce-rootless-extras docker-scan-plugin pigz slirp4netns
The following packages will be upgraded:
 libseccomp2
1 upgraded, 7 newly installed, 0 to remove and 247 not upgraded.
Need to get 102 MB of archives.
After this operation, 422 MB of additional disk space will be used.

votidocker:~# docker-compose version bocker Compose version v2.6.0 votidocker:~# votidocker:~# docker version lient: Docker Engine - Community Version: 1.41 Go version: gol.17.11 Git commit: 100c701 Built: Mon Jun 6 23:02:57 2022 OS/Arch: linux/amd64 Context: default Context: Experimental: default true erver: Docker Engine - Community Engine: Version: API version: 20.10.17 1.41 (minimum version 1.12) g01.17.11 a89b842 Mon Jun 6 23:01:03 2022 linux/amd64 Go version: Git commit: Built: OS/Arch: Experimental: containerd: Version: GitCommit: false 1.6.8 9cd3357b7fd7218e4aec3eae239db1f68a5a6ec6 Version: GitCommit: 1.1.4 v1.1.4-0-g5fd4c4d docker-init: Version: GitCommit: oot@docker:~# 0.19.0 de40ad0

3. 部署 NLS 2.0 image:

将软件包 nls-2.0.0-bios.zip 解压到一个目录中。



加载容器映像:

docker load --input dls_pgsql_2.0.0.tar.gz docker load --input dls_appliance_2.0.0.tar.gz

root@docker:~/DLS# 1s	
dls_appliance_2.0.0.tar.gz_dls_pgsql_2.0.0.tar.gz_docker-compose.yml_	
root@docker:~/DLS# docker loadinput dls_pgsql_2.0.0.tar.gz && docker	<pre>b loadinput dls_appliance_2.0.0.tar.gz</pre>
8d3ac3489996: Loading layer [====================================	======>] 5.866MB/5.866MB
6cab14f8a434: Loading layer [====================================	======>] 12.8kB/12.8kB
b737c2580132: Loading layer [====================================	======>] 2.048kB/2.048kB
82de5388a1ef: Loading layer [====================================	======>] 199MB/199MB
1921cd61465c: Loading layer [====================================	======>] 52.22kB/52.22kB
19296757164e: Loading layer [====================================	======>] 2.56kB/2.56kB
b98b052dab33: Loading layer [====================================	======>] 3.584kB/3.584kB
49f63e2b4713: Loading layer [====================================	======>] 15.36kB/15.36kB
60052ce797ae: Loading layer [====================================	======>] 5.632kB/5.632kB
717d90867840: Loading layer [====================================	======>] 10.75kB/10.75kB
1f6fc160855f: Loading layer [====================================	======>] 3.584kB/3.584kB
33c1559c7d63: Loading layer [====================================	======>] 5.632kB/5.632kB
1d42f54750bc: Loading layer [====================================	======>] 21.5kB/21.5kB
8b9d6412e5e5: Loading layer [====================================	======>] 111.6kB/111.6kB
b5682f23de0d: Loading layer [====================================	======>] 160.3kB/160.3kB
c01eb6088a7a: Loading layer [====================================	======>] 2.033MB/2.033MB
8e15a5b599df: Loading layer [====================================	======>] 194kB/194kB
24225 hoze 777 h. Londing Joven [

设定环境变量,并用 docker-compose 启动 DLS 服务。操作必须在上面软件及压缩的目录中进行(含 docker-compose.yml 文件)。

DLS_PUBLIC_IP='192.168.122.170' docker-compose up

容器对外提供服务的地址是该容器主机的 IP 地址。因此只需要改变主机地址,

和启动 docker-compose 时的 DLS_PUBLIC_IP 环境变量即可。

也可以使用-d参数将容器服务放在后台运行。

DLS_PUBLIC_IP='192.168.122.170' docker-compose up -d

WARN[0000] The "DLS_PRIVATE_HOSTNAME" variable is not set. Defaulting to a blank string. WARN[0000] The "FQDN" variable is not set. Defaulting to a blank string. WARN[0000] The "DLS_PRIVATE_HOSTNAME" variable is not set. Defaulting to a blank string. [+] Running 7/7 # Network dls_back-tier Created # Volume "postgres-data" Created # Volume "configurations" Created # Volume "configurations" Created	root@docker:~/DLS# DLS_PUE	BLIC_IP='192.168.122.170' docker-compose up
WARN[0000] The "FQDN" variable is not set. Defaulting to a blank string. WARN[0000] The "DLS_PRIVATE_HOSTNAME" variable is not set. Defaulting to a blank string. [+] Running 7/7 # Network dls_back-tier Created # Volume "postgres-data" Created # Volume "configurations" Created # Volume "configurations" Created	WARN[0000] The "DLS_PRIVAT	E_HOSTNAME" variable is not set. Defaulting to a blank string.
WARN[0000] The "DLS_PRIVATE_HOSTNAME" variable is not set. Defaulting to a blank string. [+] Running 7/7 # Network dls_back-tier Created # Volume "postgres-data" Created # Volume "configurations" Created # Volume "architers data" Created	WARN[0000] The "FQDN" vari	able is not set. Defaulting to a blank string.
[+] Running 7/7 # Network dls_back-tier Created # Volume "postgres-data" Created # Volume "configurations" Created # Volume "unplications" Created	WARN[0000] The "DLS_PRIVAT	E_HOSTNAME" variable is not set. Defaulting to a blank string.
Network dls_back-tier Created Volume "postgres-data" Created Volume "configurations" Created Volume "nothigters data" Created	<pre>[+] Running 7/7</pre>	
<pre># Volume "postgres-data" Created # Volume "configurations" Created # Volume "configurations" Created</pre>	<pre># Network dls_back-tier</pre>	
<pre># Volume "configurations" Created " Volume "matheating data"</pre>	<pre>% Volume "postgres-data"</pre>	
	<pre># Volume "configurations"</pre>	
" Volume rabbiling_data Created	<pre>% Volume "rabbitmq_data"</pre>	
# Volume "logs" Created	∷ Volume "logs"	
# Container dls-postgres-nls-si-0-1 Created	<pre># Container dls-postgres-</pre>	
# Container dls-nls-si-0-1 Created	<pre># Container dls-nls-si-0-</pre>	
Attaching to dls-nls-si-0-1, dls-postgres-nls-si-0-1	Attaching to dls-nls-si-0	1, dls-postgres-nls-si-0-1
<code>dls-postgres-nls-si-0-1</code> \mid The files belonging to this database system will be owned by user "postgres".	dls-postgres-nls-si-0-1	The files belonging to this database system will be owned by user "postgres".
dls-postgres-nls-si-0-1 This user must also own the server process.	dls-postgres-nls-si-0-1	This user must also own the server process.
dls-postgres-nls-si-0-1	dls-postgres-nls-si-0-1	
<code>dls-postgres-nls-si-0-1</code> The database cluster will be initialized with locale "en_US.utf8".	dls-postgres-nls-si-0-1	The database cluster will be initialized with locale "en_US.utf8".
dls-postgres-nls-si-0-1 The default database encoding has accordingly been set to "UTF8".	dls-postgres-nls-si-0-1	The default database encoding has accordingly been set to "UTF8".
<code>dls-postgres-nls-si-0-1</code> The default text search configuration will be set to "english".	dls-postgres-nls-si-0-1	The default text search configuration will be set to "english".
dls-postgres-nls-si-0-1	dls-postgres-nls-si-0-1	
dls-postgres-nls-si-0-1 Data page checksums are disabled.	dls-postgres-nls-si-0-1	Data page checksums are disabled.
dls-postgres-nls-si-0-1	dls-postgres-nls-si-0-1	
dls-postgres-nls-si-0-1 fixing permissions on existing directory /var/lib/postgresql/data ok	dls-postgres-nls-si-0-1	fixing permissions on existing directory /var/lib/postgresql/data ok
dls-postgres-nls-si-0-1 🕴 creating subdirectories ok	dls-postgres-nls-si-0-1	creating subdirectories ok

首次运行会初始化数据库,之后重新运行时信息如下:

root@docker:~/DLS# root@docker:~/DLS# DLS_PU& MARN[0000] The "DLS_PRIVA" MARN[0000] The "FQDN" var: MARN[0000] The "DLS_PRIVA" [+] Running 2/0	BLIC IP='192.168.122.170' docker-compose up TE MOSTMAWE [®] variable is not set. Defaulting to a blank string. Alable is not set. Defaulting to a blank string. TE_MOSTMAWE [®] variable is not set. Defaulting to a blank string.
Container dis postgres-	
4 Container dis-415-51-0-	
Attaching to dls-nls-si-0	-1, dls-postgres-nls-si-0-1
dls-postgres-nls-si-0-1	
dls-postgres-nls-si-0-1	PostgreSQL Database directory appears to contain a database; Skipping initialization
dls-postgres-nls-si-0-1	
dls-postgres-nls-si-0-1	2022-09-07 15:05:50.373 UTC [1] LOG: listening on IPv4 address "0.0.0.0", port 5432
dls-postgres-nls-si-0-1	2022-09-07 15:05:50.373 UTC [1] LOG: listening on IPv6 address "::", port 5432
dls-postgres-nls-si-0-1	2022-09-07 15:05:50.380 UTC [1] LOG: listening on Unix socket "/var/run/postgresql/.s.PGSQL.5432"
dls-postgres-nls-si-0-1	2022-09-07 15:05:50.432 UTC [37] LOG: database system was shut down at 2022-09-07 15:05:45 UTC
dls-postgres-nls-si-0-1	2022-09-07 15:05:50.438 UTC [1] LOG: database system is ready to accept connections
dls-nls-si-0-1	2022-09-07 15:05:52,099 WARN For [program:va], redirect_stderr=true but stderr_logfile has also been set to a filename, the filename has been ignored
dls-nls-si-0-1	2022-09-07 15:05:52,100 WARN For [program:auth], redirect_stderr=true but stderr_logfile has also been set to a filename, the filename has been ignored
dls-nls-si-0-1	2022-09-07 15:05:52,100 WARN For [program:serviceInstance], redirect stderr=true but stderr logfile has also been set to a filename, the filename has been ignored
dls-nls-si-0-1	2022-09-07 15:05:52,100 WARN For [program:admin], redirect stderr=true but stderr logfile has also been set to a filename, the filename has been ignored
dls-nls-si-0-1	2022-09-07 15:05:52,100 WARN For [program:lease], redirect stderr=true but stderr logfile has also been set to a filename, the filename has been ignored
dls-nls-si-0-1	2022-09-07 15:05:52,100 WARN For [program:fileInstallation], redirect stderr=true but stderr logfile has also been set to a filename, the filename has been ignored
dls-nls-si-0-1	2022-09-07 15:05:52,109 CRIT Server 'Inet_http_server' running without any HTTP authentication checking

浏览器访问该容器 docker 主机地址:

https://docker-host-ip

🚳 DLS - Setup	×	+			~	-	C	ו	×
← → C ▲ 不安全	₿2	ŀ	☆			:			
📀 NVIDIA. LICENS	SING							6	Ø.,
③ SETUP	>								
R SUPPORT		Choose if this virtual appliance will be used as a new installa	tion or to upgrade an existing one						
		First time setup Setting up the virtual appliance for the first time?	Upgrade existing Upgrading from an older virtual appliance version?						
		New Installation	Upgrade						

下面开始配置 DLS 服务过程。

3) 配置 DLS 本地服务

用浏览器访问 DLS 控制台 <u>https://192.168.122.218</u>, 选择新安装。



📀 NVIDIA. LICENSING

③ SETUP	\sim	
🗟 NEW INSTALL		Register user account
€ UPGRADE		Username
R SUPPORT		dls_admin
		Password
		•••••
		Confirm password
		•••••
		Create a diagnostic user 👔
		REGISTER

按提示操作,设置口令,登录名为 dls_admin.

lage the DLS service instance and customize to your environment.	2	⊥ Downlo	ad DLS Instance Toker راس
BEFAULT_2022-09-07_06:02:07		ি Pre-Reg 로 Log Arc	jister Service Instance chive Settings
id: ec77ad25-59e1-4120-8ad0-8f2137f6f8a4 Type: DLS State: 🛦 Registration pending 🕁 Download DLS Instance Token	Create	SSL Co	nfiguration rver Configuration
Modified: Sep 7, 2022 2:02 PM Description: ON_PREM_SERVICE_INSTANCE		🕲 Genera	
High availability: Standalone 堤 Configure high availability			
Primary Node Health	3	C 🛱 C	ONFIGURE IP ADDRES

上面是创建完成的 DLS 实例,可以根据您的偏好更改 IP 静态地址以及实例名称。

Service Instance D Manage the DLS service instance and customic	etails ze to your environment		
🔚 Merlin-DLS	Configure Node IP Address × The IP address must be in the subnet range of the node's virtual network		
ld: ec77ad25-59e1-4120-8ad0-8f21	Static IP Address	vnload DLS Instance Token	Created: Sep 7, 2022 2:02 PM
Modified: Sep 7, 2022 2:13 PM	192.168.122.10		
Description: Merlin ON_PREM_SERV	Gateway (Will use DHCP settings if left blank)		
High availability: Standalone 堤 Cor	192.168.122.1		
	Netmask Prefix (CIDR notation e.g. 24 for 255.255.255.0, 28 for 255.255.255.240)		
Primary Node Health	24		
	DNS Server		
Fully qualified domain name: nls-si-0	192.168.122.1		
Critical services: 🥝 Active 🕂 Resta	DNS Server		
	DNS Server Two		
	\triangle The configuration takes a few minutes to complete after triggering		
	SET NODE IP ADDRESS		

改好固定 IP 以后重新登录到新的 IP 地址。

← → C ▲ 不安全 https	x//192.168.122.10/service-instances 🔯 🖻 🖄 🖬 😩
📀 NVIDIA. LICENSING	alls_admin 🙁 logo
C DASHBOARD	
SERVICE INSTANCE	
€ SUPPORT	Merlin-DLS de ec77ad25-59e1-4120-8ad0-8f2137f6f8a4 Type: DLS State: Registration pending Download DLS Instance Token Created: Sep 7, 2022 2:02 PM Modified: Sep 7, 2022 2:13 PM Description: Merlin ON_PREM_SERVICE_INSTANCE High availability: Standalone Configure high availability
	Primary Node Health Fully qualified domain name: NA IPV4 address: 192.168.122.10 IPV6 address: not assigned Critical services: Active Restart Other services: Active Restart

核对全部信息正确后,点击"DOWNLOAD DLS INSTANCE TOKEN"按钮,下载 DLS 实例 Tok 文件。

dls_instance_token_09-07-2022-14-18-42.tok

blob:https://192.168.122.10/166059ea-e75f-44fc-a030

```
准备将此文件提交到 NVIDIA NLP 企业用户门户。
```

4) 返回 NVIDIA NLP 企业用户门户 <u>https://nvid.nvidia.com</u>

在 Service Instances 页面上传上一步生成的 Tok 文件, 注册该 DLS 实例:

ி DASHBOARD	and the second sec				2
ENTITLEMENTS	Service Instances ③	Help?			
LICENSE SERVERS >	View your service instances in NVIDIA INFR-GEN (lice	Create CLS instant	nce		
				Opload DLS insta	nce token
A NETWORK ENTITLEMENTS	CLS DLS			Register DLS for	classified network
D VIRTUAL GROUPS					
& USER MANAGEMENT	γ Search service instances			updated 🥥 2:47:54 PM 🏼 🏠	▼ 业 錄
& SOFTWARE DOWNLOADS	NAME 🖓 🗘	Environment \heartsuit \diamondsuit	status \heartsuit (date created \bigtriangledown (
EVENTS					
LEASES	Merlin-CLSi-2022 (fa58aa40-e663-4600-a6b9-adaaed0b5297)	CLS Default	Registered	Sep 6, 2022 6:56 PM	Actions
SERVICE INSTANCES	PREATING VGPU 2022-09-02				
🧬 API KEYS	(4bea5abc-ede7-4887-8710-99b37f26a0f1)	🗎 DLS	Registered	Sep 3, 2022 5:32 AM	Actions

Upload DLS Instance Token Upload a DLS Instance token for initial registra	tion or for a DLS	Upload DLS In Token Upload a DLS instance token for i upgrade	ISTANCE ×	
Are you registering a new DLS instance or grade on an existing DLS inst • New installation Upgrade • SELECT INSTANCE TOKEN • U 2	ULS instance or performing an up- isting DLS instance? Upgrade existing			
Service Instances ⑦ H	lelp? 011w000027i5yiqay)			
			updated (a) 3:11:38 PM	$\circ \diamond \wedge \uparrow \diamond$
NAME \bigtriangledown \diamondsuit	Environment \heartsuit \diamondsuit	status \bigtriangledown \diamondsuit	date created γ	۵
Merlin-DLS (ec77ad25-59e1-4120-8ad0-8f2137f6f8a4)	DLS	🏴 Pending	Sep 7, 2022 3:11 PM	Register Jm 2
Merlin-CLSi-2022 (fa58aa40-e663-4600-a6b9-adaaed0b5297)		Registered	Sep 6, 2022 6:56 PM	Reject
NAME \bigtriangledown \diamondsuit	Environment \heartsuit \diamondsuit	status \bigtriangledown \diamondsuit	DATE CREATED	7 🗘
Merlin-DLS (ec77ad25-59e1-4120-8ad0-8f2137f6f8a4)	DLS	Registered	Sep 7, 2022 3:11 PM	E Actions

上面看到注册成功的 Merlin-DLS 本地 DLS 空的实例。下一步要创建 License Server, 然后绑定到此 DLS 服务实例。

5) 创建 License Server

் DASHBOARD						
ENTITLEMENTS						
☐ LICENSE SERVERS ∨	Create a license server in NVIDIA INFR-GEN (lic-0011w000027/5yiqay) / Group NVIDIA INFR-GEN (lic-0011w000027/5yiqay)					
E LIST SERVERS	Create langest cancer (). If the linense server is to be installed on a lensest linension system server (nrs.bil S), enable "Create langest server"					
A NETWORK ENTITLEMENTS	Basic details \rightarrow Select features \rightarrow Preview server creation					
VIRTUAL GROUPS	① Enter a name, and description for this new license server					
公 USER MANAGEMENT	Nama					
& SOFTWARE DOWNLOADS	Merlin-DLS-2022					
EVENTS	Description					
LEASES	Merlin DLS test 2022					
SERVICE INSTANCES						
🖉 API KEYS						
€ SUPPORT	Express CLS Installation?					
	$\bullet \text{Next: Select features } \rightarrow $					

创建 License Server 时需要指定服务命名并添加所需的 License 类型以及 License 数量。这里添加了 5 个 vWS 类型许可。然后选择创建服务器。

Create License Server ③ Helle?

Create a license server in NVIDIA INFR-GEN (lic-0011w000027i5yiqay) / Group NVIDIA INFR-GEN (lic-0011w000027i5yiqay) Create legacy server ① If the license server is to be installed on a legacy licensing system server (pre-NLS), enable *Create legacy server 🔲 Basic details ightarrow 2 Select features ightarrow Preview server creation (j) Select one or more entitlement features to add to the new license server Y work X NAME \heartsuit \diamondsuit PRODUCT KEY ID \bigtriangledown \$TATUS \bigtriangledown \diamondsuit START DATE \bigtriangledown \Diamond EXPIRATION \bigtriangledown \diamond AVAILABLE \bigtriangledown \diamond ADDED \bigcirc NVIDIA RTX Virtual Workstation-5.0 Nov 11, 65 Active Nov 11, 2021 7 5 Sec. Increases. You are about to create a server in NVIDIA INFR-GEN (lic-0011w00002715yiqay) / Group NVIDIA INFR-GEN (lic-0011w00002715yiqay) with the following details: Server name and description Merlin-DLS-2022 Merlin DLS test 2022 View details after creation CREATE SERVER With 1 feature(s) across 1 product key id(s) Table view Search Features FEATURE 🔿 LICENSES () PRODUCT KEY ID 🔿 STATUS 🔿 START DATE 🔿 NVIDIA RTX Virtual Workstation-5.0 1ug0mlsxzf-rkax3frtpi-brpvqjvgxn 5 Active Nov 11, 2021

License Server Details () Help? View details of license server in NVIDIA INFR-GEN (lic-0011w00002715yiqay) / Group NVIDIA INFR-GEN (lic-0011w00002715yiqay)	୍ଦି REFRESH	
Em Merlin-DLS-2022		~
Type: NVIDIA Created: Sep 7, 2022 2:41 PM Modified: Sep 7, 2022 2:41 PM		
Service Instance: UNBOUND Install Status: UNBOUND		
Description: Merlin DLS test 2022		
Overview Server Features License Pools Fulfillment Conditions Leases		
ABOUT THIS SERVER		
This server is not bound to a service instance Olick "Evenence CLS Install" to bind and install this service as the default CLS service instance		
Otherwise, click the 'Bind' button to choose an existing CLS/DLS service instance.		

BIND SERVICE INSTANCE EXPRESS CLS INSTALL

上面是创建好的 Merlin-DLS-2022 服务,选择 BIND SERVICE INSTANCE 按钮,绑定本 LS (Merlin-DLS-2022) 到之前注册的名为(Merlin-DLS)的 Service Instance 上。

🛱 DASHBOARD		
ENTITLEMENTS	License Server Details ⁽²⁾ Help?	
LICENSE SERVERS V	View details of license server in NVIDIA INFR-GEN (lic-0011w000027/5yiqay) / Group NVIDIA INFR-GEN (lic-0011w000027/5yiqay)	
LIST SERVERS		
CREATE SERVER	Merlin-DLS-2022	~
SERVER DETAILS	(<u>u</u>)	
A NETWORK ENTITLEMENTS	Type: NVIDIA Created: Sep 7, 2022 2:41 PM Modified: Sep 7, 2022 2:41 PM	
D VIRTUAL GROUPS	Service Instance: UNBOUND Install Status: UNBOUND	
A USER MANAGEMENT	Description: Merlin DLS test 2022	
& SOFTWARE DOWNLOADS	Bind Service Instance Bind this license server to a registered service instance	
EVENTS	Overview Server Features Lice	
E LEASES	ABOUT THIS SERVER	
SERVICE INSTANCES	This server is not bound to a service ALL CLS	
C API KEYS	Click 'Express CLS Install' to bind an Otherwise, click the Bind' button to chk Description	
R SUPPORT	BIND SERVICE INSTANC	
	RKEATING_VGPU_2022-09-02 DLS CHEATED Sep 3, 2022 5:32 AM 4bea5abc-ede7-4887-8710-99b37/26a0/1	

License Server Details () Help? View details of license server in NVIDIA INFR-GEN (lic-0011w000027/5ylqay) / Group NVIDIA INFR-GEN (lic-0011w000027/5ylqay)	€ REFRESH
Merlin-DLS-2022	 ☞ Manage Features ← Move server Ø Unbind
Type: NVIDIA Created: Sep 7, 2022 2:41 PM Modified: Sep 7, 2022 2:41 PM Service Instance: Merlin-DLS Install Status: PENDING Description: Merlin DLS test 2022	Delete
verview Server Features License Pools Fulfillment Conditions Leases	
	updated 🍥 3:27:25 PM 🍙 🍸 🛓 🌼
FEATURE (PKID) \bigtriangledown \diamond Assigned / Allocated \bigtriangledown \diamond License type \bigtriangledown \diamond	Effective \bigtriangledown \diamondsuit expiration \bigtriangledown \diamondsuit
NV/DIA PTX Virtual Workstation 5.0	

看到上面绑定成功后的状态,从 Actions 菜单中点击下载按钮,下载用于转移 License 配置的 Bin 文件。

license_09-07-2022-15-31-29.bin

 \times

blob:https://ui.licensing.nvidia.com/196c5c67-3af4-4b2d-a174-b07c041efc7b

6) 回到本地 DLS 控制台将 Bin 文件上传到 DLS 完成 License 传输。



← → C ▲ 不安全 https://	192.168.122.10	🕸 🖻 🖈 🔲 🏝 🗄
📀 NVIDIA. LICENSING	🥵 🖑 dis_edmin NVIDIA	The license server was
DASHBOARD SERVICE INSTANCE EVENTS	License Server Details ③ Help2 View details and manage the installed license server	
日 LEASES	Merlin-DLS-2022 is ENABLED	^
■ MAINTENANCE ₽ SUPPORT	Status: ENABLED Type: NVIDIA Created: Sep 7, 2022 2:41 PM Modified: Sep 7, 2022 2:41 PM Service Instance: Merlin-DLS DLS Install Status: INSTALLED Description: Merlin DLS test 2022	
← → C ▲ 不安全 https://	192.168.122.10/?tab=3	ª @ ☆ □ 😩 :
	🥫 🐻 dis,admin . WiDiA IN	FR-GEN (lic-001 Group NVIDIA INFR-GEN 🛞 logout
DASHBOARD SERVICE INSTANCE	License Server Details ③ Help? View details and manage the installed license server	© REFRESH
	Merlin-DLS-2022 is ENABLED	~
MAINTENANCE	Statur: E E Generate Client Configuration Token X Create a configuration token for dient access to server resources Service instance Scope references Fulfillment class references	
	Decorption N Overview Search scope references Overview Search scope references	
	Search licer Merlin-DLS-2022 4b805f23-7588-4839-bdf5-4ad63bbb8167	ipdated 🐵 15:36:40 🔗 🍸 🛓 🐯
	V Initial LF	
	abla Search pool features	↓ 尊
	Feature $\gamma \Diamond$. In use / allocated $\gamma \Diamond$. Effective $\gamma \Diamond$	Expiration \bigtriangledown
	NVIDIA RTX Virtual Workstation-5.0 (1ug0mlsxdr-kkax3frtpi-brpvq)gxn) 0 / 5	Nov 11, 2022

上面看到上传 Bin 文件以后,本地 DLS 即获得 License 授权能力。可以为本地 vGPU License 授权。与 CLS 相同,授权仍然使用 Tok 文件方式,需要从本地 DLS 生成并 下载 .tok 文件,然后上传到 vGPU 客户端。

下载授权 Token 文件:
 生成并下载客户端配置授权文件。

← → C ▲ 不安全 https://	192.168.122.10/?tab=3		鞫 🖒 ☆ 🔲 😩 :
📀 NVIDIA. LICENSING		-	🛞 dls_admin NVIDIA INFR-GEN (lic-001 Group NVIDIA INFR-GEN 🛞 logout
값 DASHBOARD Image: Service Instance Image: Service Instance Image: Service Instance	License Server Details ③ Holp? View details and manage the installed license server		 ⊘ REFRESH ■ ACTIONS ④ Disable ■ Manage Features
LEASES METRICS MAINTENANCE G SUPPORT	Merlin-DLS-2022 is ENABLED Status: ENABLED Type: NVIDIA Created: Sep 7, 2022 2:41 PM Service Instance: Merlin-DLS Description: Merlin DLS test 2022	Modified: Sep 7, 2022 2:41	PM
	Overview Server Features License Pools Fulfillment Conditions Y Search license pools	Leases status \heartsuit \diamondsuit	updated 🎯 15:43:18 🔗 🍸 냋 🐯
	> Initial LP	ENABLED	E Actions
Generate Client create a configuration token for cli Scope references Ful Search scope references	Configuration Token × ent access to server resources fillment class references		
SERVER NAME \heartsuit \diamondsuit	Reference \bigtriangledown		
Merlin-DLS-2022	4b805f23-7588-4839-b4f5-4ad63bbb8167	blob:	_configuration_token_09-07-2022-15-47-12.tok https://192.168.122.10/097821b0-8f25-47c0-bf80-61158652ae24
		11XI	TXTWN

将下载的 Tok 文件复制到 vGPU 客户端 VM 内。

之后请参见 "配置 vGPU 客户端的 License 授权" 章节。

[root@linuxvm_000084000_8Q_1 ~]# mv client_configuration_token_11-15-2021-20-24-24.tok /etc/nvidia/
ClientConfigToken/ gridd.conf.template nvidia-topologyd.conf.template
gridd.conf license/
[root@linuxvm_000084000_80_1 ~]# mv client_configuration_token_11-15-2021-20-24-24.tok /etc/nvidia/ClientConfigToken/
[root@linuxvm_000084000_80_1 ~]# systemctl restart nvidia-gridd.service
[root@linuxvm_000084000_80_1 ~]# systemctl status nvidia-gridd.service
• nvidia-gridd.service - NVIDIA Grid Daemon
Loaded: loaded (/usr/lib/systemd/system/nvidia-gridd.service; enabled; vendor preset: disabled)
Active: active (running) since Mon 2021-11-15 20:37:13 CST; 14s ago
Process: 8763 ExecStopPost=/bin/rm -rf /var/run/nvidia-gridd (code=exited, status=0/SUCCESS)
Process: 8765 ExecStart=/usr/bin/nvidia-gridd (code=exited, status=0/SUCCESS)
Main PID: 8766 (nvidia-gridd)
Tasks: 4 (limit: 49632)
Memory: 2.9M
CGroup: /system.slice/nvidia-gridd.service
└─8766 /usr/bin/nvidia-gridd
Nov 15 20:37:13 linuxvm_000084000_8Q_1 systemd[1]: Stopped NVIDIA Grid Daemon.
Nov 15 20:37:13 linuxvm_000084000_8Q_1 systemd[1]: Starting NVIDIA Grid Daemon
Nov 15 20:37:13 linuxvm_000084000_8Q_1 nvidia-gridd[8766]: Started (8766)
Nov 15 20:37:13 linuxvm_000084000_8Q_1 systemd[1]: Started NVIDIA Grid Daemon.
Nov 15 20:37:13 linuxvm_000084000_8Q_1 nvidia-gridd[8766]: Configuration parameter (ServerAddress) not set
Nov 15 20:37:13 linuxvm_000084000_8Q_1 nvidia-gridd[8766]: vGPU Software package (0)
Nov 15 20:37:13 linuxvm_000084000_8Q_1 nvidia-gridd[8766]: Ignore service provider and node-locked licensing
Nov 15 20:37:13 linuxvm_000084000_8Q_1 nvidia-gridd[8766]: NLS initialized
Nov 15 20:37:13 linuxvm_000084000_8Q_1 nvidia-gridd[8766]: Acquiring license. (Info: 192.168.122.10; NVIDIA RTX Virtua
Nov 15 20:37:15 linuxvm_000084000_8Q_1 nvidia-gridd[8766]: License acquired successfully. (Info: 192.168.122.10; NVIDI
lines 1-21/21 (END)

上面是使用 DLS 授权的 VM 成功状态。

4. 配置 vGPU 客户端的 License 授权

升级到 NLS 以后,对 vGPU 客户端的配置方法也有比较大的改变。之前是通过手工添加 License Server 的主机名称或 IP/端口号来访问服务器。NLS 则是将客户端访问服务器的配 置信息全部包含在 tok 文件中。

下载 CLS 或者 DLS 生成的 Token 文件后,即可通过该文件用于客户端的授权来提供 License。只需要向 vGPU 客户端提供 token 文件即可,而无需再指定 License Server 的 IP 地址。下面分 Linux 和 Windows 两种客户端说明:

1) Linux 客户端

对于 Linux 客户端, 先在 VM 内安装 13.0 版本以上的 vGPU 驱动程序, 并下载 好 .tok 客户端授权文件:

cd /etc/nvidia, 复制 gridd.conf.template 为 gridd.conf.

[root@linuxvm_000084000_80_1 ~]# cd /etc/nvidia/
[root@linuxvm_000084000_8Q_1 nvidia]# ls
ClientConfigToken gridd.conf.template license nvidia-topologyd.conf.template
[root@linuxvm_000084000_8Q_1 nvidia]# cp gridd.conf.template gridd.conf
[root@linuxvm_000084000_8Q_1 nvidia]# <mark>_</mark>

编辑 gridd.conf, 只需设置 FeatureType 的值为要请求的 vGPU License 类型编号, **不要**设置其中的 ServerAddress。



然后将下载到的 Token 文件复制到 /etc/nvidia/ClientConfigToken 目录中,例如:

cp client_configuration_token_11-15-2021-11-53-00.tok /etc/nvidia/ClientConfigToken/



systemctl restart nvidia-gridd 重启 nvidia-gridd 服务,应看到 vGPU 授权成功。

[root@linuxvm_000084000_8Q_1 ~]# systemctl restart nvidia-gridd.service 🛛 🕕
[root@linuxvm_000084000_8Q_1 ~]# systemctl_status_nvidia-gridd.service
• nvidia-gridd.service - NVIDIA Grid Daemon
Loaded: loaded (/usr/lib/systemd/system/nvidia-gridd.service; enabled; vendor preset: disabled)
Active: active (running) since Mon 2021-11-15 12:40:40 CST; 8s ago
Process: 26582 ExecStopPost=/bin/rm -rf /var/run/nvidia-gridd (code=exited, status=0/SUCCESS)
Process: 26583 ExecStart=/usr/bin/nvidia-gridd (code=exited, status=0/SUCCESS)
Main PID: 26585 (nvidia-gridd)
Tasks: 4 (limit: 49632)
Memory: 1.5M
CGroup: /system.slice/nvidia-gridd.service
└─26585 /usr/bin/nvidia-gridd
Nov 15 12:40:40 linuxvm_000084000_8Q_1 systemd[1]: Stopped NVIDIA Grid Daemon.
Nov 15 12:40:40 linuxvm_000084000_80_1 systemd[1]: Starting NVIDIA Grid Daemon
Nov 15 12:40:40 linuxvm_000084000_8Q_1 nvidia-gridd[26585]: Started (26585)
Nov 15 12:40:40 linuxvm_000084000_80_1 systemd[1]: Started NVIDIA Grid Daemon.
Nov 15 12:40:40 linuxvm_000084000_8Q_1 nvidia-gridd[26585]: Configuration parameter (ServerAddress) not set
Nov 15 12:40:40 linuxvm_000084000_8Q_1 nvidia-gridd[26585]: vGPU Software package (0)
Nov 15 12:40:40 linuxvm_000084000_80_1 nvidia-gridd[26585]: Ignore service provider and node-locked licensing
Nov 15 12:40:40 linuxvm_000084000_8Q_1 nvidia-gridd[26585]: NLS initialized (3)
Nov 15 12:40:40 linuxvm_000084000_80_1 nvidia-gridd[26585]: Acquiring license. (Info: api.cls.licensing.nvidia.
Nov 15 12:40:48 linuxvm_000084000_80_1 nvidia-gridd[26585]: License acquired successfully. (Info: api.cls.licen
lines 1-21/21 (END)

也可以用 nvidia-smi -q 查询授权状态:

[root@l	inuxvm_000084000_8Q_1 ~]# nvidia	-smi	i -q grep -i status
	License Status		: Licensed (Expiry: 2021-11-16 4:39:24 GMT)
[root@l	inuxvm_000084000_8Q_1 ~]# 🗧		

如果授权失败则输出:



- 2) Windows 客户端
 - 1. 安装 GRID v13.0 以上的 Windows 驱动程序。
 - 2. 将下载的.tok 文件复制到:

C:\Program Files\NVIDIA Corporation\vGPU Licensing\ClientConfigToken 目录

\leftarrow \rightarrow \checkmark \uparrow	This	: PC \rightarrow Local Disk (C:) \rightarrow Program Files \rightarrow NVIDIA Corporation \rightarrow	nfigToken	ٽ ~	
3 Outstansee	^	Name	Date modified	Туре	Size
Desktop		client_configuration_token_11-15-2021-11-53-00.tok	11/15/2021 11:53 AM	TOK File	3 KB
📕 Downloads 🖌		<u></u>			

3. 重启 NvDisplayContainer 服务。

Services						- 0	×		
File Action View Help									
🔍 Services (Local)	Services (Local)								
	NVIDIA Display Container LS	Name	Description	Status	Startup Type	Log On As	^		
Stop the service Restart the service	🏟 Network Setup Service	The Network Setup Service		Manual (Trig	Local Syste				
	Stop the service	🎑 Network Store Interface Service	This service delivers netwo	Running	Automatic	Local Service			
	<u>Restart</u> the service	NVIDIA Display Container LS	Container service for NVID	Running	Automatic	Local Syste			
	1	Standing a same in the second se	IN THE SAME AND A COMPANY	n	A. 1. 17 17	1 10 1			

4. C:\Program Files\NVIDIA Corporation\NVSMI\nvidia-smi.exe -q

vGPU Software Licensed Product Product Name License Status	: NVIDIA RTX Virtual Workstation : Licensed (Expiry: 2021-11-16 5:12:43 GMT)
TRMNDLI	

查看 Licensed 状态。

- 5. License Server 的管理
 - 1. 调整 CLS 的 License 的类型或者数量:

如果后期需要调整 License Server 上的 License 数量或者类型,需要从 License Server Details 中的 Actions 中 Disable 此服务,然后对 Features 进行修改,最后 Enable 此 License Server。

	Install	
	Manage Features	
Merlin-CLS-2022 is DISABLED 0	+ Create Pool	
	+ Create Condition	
tatus: 🐻 DISABLED Type: NVIDIA Created: Sep 6, 2022 6:56 PM Modified: Sep 6, 2022 7:00 PM	 ③ Generate client config token Settings ←> Move server 𝚱 Unbind 	
Description: Test Only		
	Delete	

Encense server Merlin-CLS-2022 is disabled and will not serve leases, you can make changes while the server is disabled SERVE

6. 常见问题与排错

 直通 GPU VM 或者裸金属部署 vGPU 默认 vAPP 类型,而不是 vWS 的 vGPU 类型。
 直通 GPU VM 或者裸金属部署 vGPU 需要在注册表内增加以下条目,否则默认会以 vAPP 方 式运行(其最大分辨率为 1280*720)。
 将 FeatureType DWord (REG_DWORD) 注册表值添加到 Windows 注册表
 HKEY_LOCAL_MACHINE\SOFTWARE\NVIDIA Corporation\Global\GridLicensing
 其值设为 2

GPU Type	Setting
NVIDIA vGPU	Do not change the value of this registry key. NVIDIA vGPU software automatically selects the correct type of license based on the vGPU type.
Physical GPU	The feature type of a GPU in pass-through mode or a bare-metal deployment: * 0: NVIDIA Virtual Applications
	 2: NVIDIA RTX Virtual Workstation