

## Deployment and Notice

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# Kiloview NDI Core Server

# Deployment Guide

(V1.0 version)

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**Note**

To deploy the NDI Core, you need to load the NDI Core mirror locally. Please contact the sales staff at Kiloview or send an email to [info@kiloview.com](mailto:info@kiloview.com) to obtain the mirror.

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# 1 Kiloview NDI Core server deployment

## 1.1 Server environment preparation

### 1.1.1 Hardware environment

Processor: High frequency CPU, such as E2288G, 12 Generation Core i5 12600K.

Hard disk: 64G or higher.

Memory: 4GB RAM or above 16G.

Network card: one or more 10G or higher speed network card.

### 1.1.2 Software environment

Operation system: Linux64-bit operating system (Ubuntu 18.04, 20.04) .

### 1.1.3 Network environment

Internet application tools and image files.

LAN Bandwidth: 10 Gigabit networks.

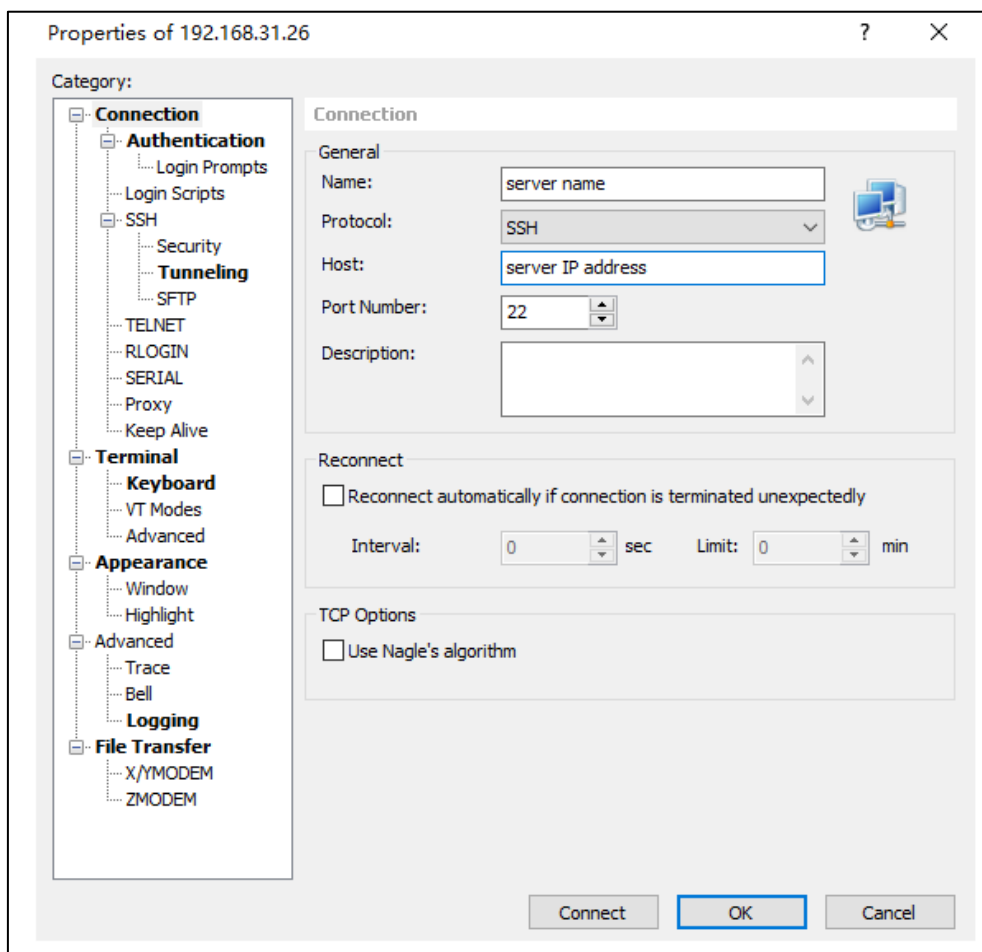
## 1.2 Login to server

You can use remote terminal software to login to the server, Xshell or PuTTY is recommended.

Xshell download website: <https://www.netsarang.com/zh/xshell-download/>

PuTTY download website: <https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

- 1) After installing Xshell, enter IP address of the server in the new session and use SSH protocol to communicate. The default port is 22, click "Ok" after input completed.



2) Enter the user name and password in the pop-up dialog box. Ordinary users need sudo to obtain management right or log in as root user. The deployment process in the following is completed by root user.

You can enter "sudo su- " in command window to switch to the root user.

## 1.3 Deployment guide

Step 1: Install container. Enter "curl -fsSL https://get.docker.com | bash" in the terminal window.

```

root@VM-4-13-ubuntu:/home# curl -fsSL https://get.docker.com | bash
# Executing docker install script, commit: 93d2499759296ac1f9c510605fef85052a2c32be
+ sh -c 'apt-get update -qq >/dev/null'
+ sh -c 'DEBIAN_FRONTEND=noninteractive apt-get install -y -qq apt-transport-https ca-certificates curl >/dev/null'
+ sh -c 'curl -fsSL "https://download.docker.com/linux/ubuntu/gpg" | gpg --dearmor --yes -o /usr/share/keyrings/docker-archive-keyring.gpg'
+ sh -c 'echo "deb [arch=amd64 signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/ubuntu focal stable" > /etc/apt/sources.list.d/docker.list'
+ sh -c 'apt-get update -qq >/dev/null'
+ sh -c 'DEBIAN_FRONTEND=noninteractive apt-get install -y -qq --no-install-recommends docker-ce-cli docker-scanner-plugin docker-ce >/dev/null'
+ version_gte 20.10
+ '[' -z '' ']'
+ return 0
+ sh -c 'DEBIAN_FRONTEND=noninteractive apt-get install -y -qq docker-ce-rootless-extras >/dev/null'
+ sh -c 'docker version'
Client: Docker Engine - Community
 Version:      20.10.8
 API version:  1.41
 Go version:   gol1.16.6
 Git commit:   3967b7d
 Built:        Fri Jul 30 19:54:27 2021
 OS/Arch:     linux/amd64
 Context:     default
 Experimental: true

Server: Docker Engine - Community
 Engine:
  Version:      20.10.8
  API version:  1.41 (minimum version 1.12)
  Go version:   gol1.16.6
  Git commit:   75249d8
  Built:        Fri Jul 30 19:52:33 2021
  OS/Arch:     linux/amd64
  Experimental: false
 containerd:
  Version:      1.4.9
  GitCommit:    e25210fe30a0a703442421b0f60afac609f950a3
 runc:
  Version:      1.0.1
  GitCommit:    v1.0.1-0-g4144b63
 docker-init:
  Version:      0.19.0
  GitCommit:    de40ad0

```

Step 2: Install NDI discovery tool. Enter "apt install avahi-daemon" in the terminal window.

```
root@HW-413-ubuntu:/home/ubuntu# apt install avahi-daemon
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
amd54-microcode dlatex dlatex-doc dh-strip-nondeterminism docbook-dsssl docbook-xsl duvism dwz fonts-droid-fallback fonts-gfs-baskerville fonts-gfs-person fonts-lmodern fonts-noto-mono fonts-tergyre
fonts-urw-base35 ghostscript libalgorithm-c3-perl libapache-pom-java libarchive-zip-perl libauthen-sasl-perl libb-hooks-endofscope-perl libb-hooks-op-check-perl libc-dev-bin libcairo2 libclass-c3-perl
libclass-c3-xs-perl libclass-data-inheritable-perl libclass-method-modifiers-perl libclass-xsaccessor-perl libcommons-logging-java libcommons-parent-java libcrypt-dev libcups2 libdata-dump-perl libdata-optlist-perl libdatriel
libdbus-glib-1-2 libdebhelper-perl libdevel-callchecker-perl libdevel-caller-perl libdevel-globaldestruction-perl libdevel-lexalias-perl libdevel-stacktrace-perl libdist-checkconflicts-perl libdynamoloader-functions-perl
libemail-date-format-perl libencode-locale-perl libeval-closure-perl libexception-class-perl libfile-basedir-perl libfile-desktopentry-perl libfile-homedir-perl libfile-listing-perl libfile-mimeinfo-perl libfile-stripopndeterminism-perl
libfile-which-perl libfont-afm-perl libfontbox-java libgraphviz-2 libgs9 libgs9-common libharfbuzz-icu libharfbuzz08 libhtml-form-perl libhtml-format-perl libhtml-parser-perl libhtml-tagset-perl libhtml-tree-perl libhttp-cookies-perl
libhttp-daemon-perl libhttp-date-perl libhttp-message-perl libhttp-negotiate-perl libijs-0.35 libio-html-perl libio-socket-ssl-perl libio-stringy-perl libipc-shareable-perl libipc-system-simple-perl libjq20190401 libkpathsea6 liblms2-2
liblog-dispatch-perl liblog-log4perl-perl libltdl-dev liblwp-mediatypes-perl liblwp-protocol-https-perl libmailtools-perl libmime-charset-perl libmime-lite-perl libmime-types-perl libmodule-implementation-perl libmodule-runtime-perl
libmro-compat-perl libnamespace-autoclean-perl libnamespace-clean-perl libnet-dbus-perl libnet-http-perl libnet-smtp-ssl-perl libnet-ssleay-perl libossp5 libostylel2 libpackage-stash-perl libpackage-stash-xs-perl libpadwalker-perl
libpaper-utils libpaper1 libparams-classify-perl libparams-util-perl libparams-validatecompiler-perl libpdfbox-java libpsimage-1.0 libptexenc1 libreadonly-perl libref-util-perl libref-util-xs-perl librole-tiny-perl libsgmls-perl
libshok3 libspecio-perl libsub-exporter-perl libsub-exporter-progressive-perl libsub-identify-perl libsub-install-perl libsub-name-perl libsub-override-perl libsub-quote-perl libsubynctex2 libicl8.6 libteckit0 libtexlua53 libtexluajit2
libthai-data libthai0 libtie-ixhash-perl libtime-date-perl libtk8.6 libtry-tiny-perl libunicode-linebreak-perl liburi-perl libvariable-magic-perl libwoff1 libwww-perl libwww-robotrules-perl libx11-protocol-perl libxcb-render0 libxcb-shm0
libxcursor1 libxml-parser-perl libxml-twig-perl libxml-xpathengine-perl libxss1 libxstring-perl libyaml-tiny-perl libzip-0.13 lmodern openjade openssl perl-openssl-defaults poppler-data preview-latex-style sgml-base sgml-data sgmlspl
squashfs-tools turtlits tcl tcl8.6 teckit tex-common tex-gyre texlive texlive-base texlive-libtex-extra texlive-binaries texlive-extra-utils texlive-fonts-recommended texlive-formats-extra texlive-lang-greek texlive-latex-base
texlive-latex-extra texlive-latex-recommended texlive-pictures texlive-plain-generic texlive-science texlive-xetex thermald tipa tk tk8.6 x11-xserver-utils xdg-utils xfonts-encodings xfonts-utils xml-core xsltproc
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
libavahi-core7 libdaemon0 libnss-mdns
Suggested packages:
avahi-autoipd avahi-autoipd | zeroconf
The following NEW packages will be installed:
avahi-daemon libavahi-core7 libdaemon0 libnss-mdns
0 upgraded, 4 newly installed, 0 to remove and 220 not upgraded.
Need to get 189 kB of archives.
After this operation, 765 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Enter Y behind "Do you want to continue?[Y/n]" . Waiting for the installation completed.

Step 3: Install netdata to obtain CPU, network datasheet, etc. Enter

"docker run -d --name status --restart=always -v /var/run/docker.sock:/var/run/docker.sock:ro --pid host --network host -e GLANCES\_OPT="-w" nicolargo/glances" in the terminal window.

```
root@ndi:/home/kiloview# docker run -d --name status --restart=always -v /var/run/docker.sock:/var/run/docker.sock:ro --pid host --network host -e GLANCES_OPT="-w" nicolargo/glances
Unable to find image 'nicolargo/glances:latest' locally
latest: Pulling from nicolargo/glances
e1acddb380c: Pull complete
ec7ff4d2622: Pull complete
dae1d9fd74c1: Pull complete
87bc5aa6fc42: Pull complete
76f124ca9af: Pull complete
9c40be6c51a4: Pull complete
c12588bd0329: Pull complete
342605490b7f: Pull complete
Digest: sha256:6b856a266ab42240c337dec99f487c542f70670372909e3a55e42858a21fcec3
Status: Downloaded newer image for nicolargo/glances:latest
2594ce003d0d6603d18ef045786842cca43e744b8c9b08841c290ef0b03d0b51
root@ndi:/home/kiloview#
```

Step 4: Upload NDI Core image to the server

(1) Upload NDI Core image from personal computer to server.



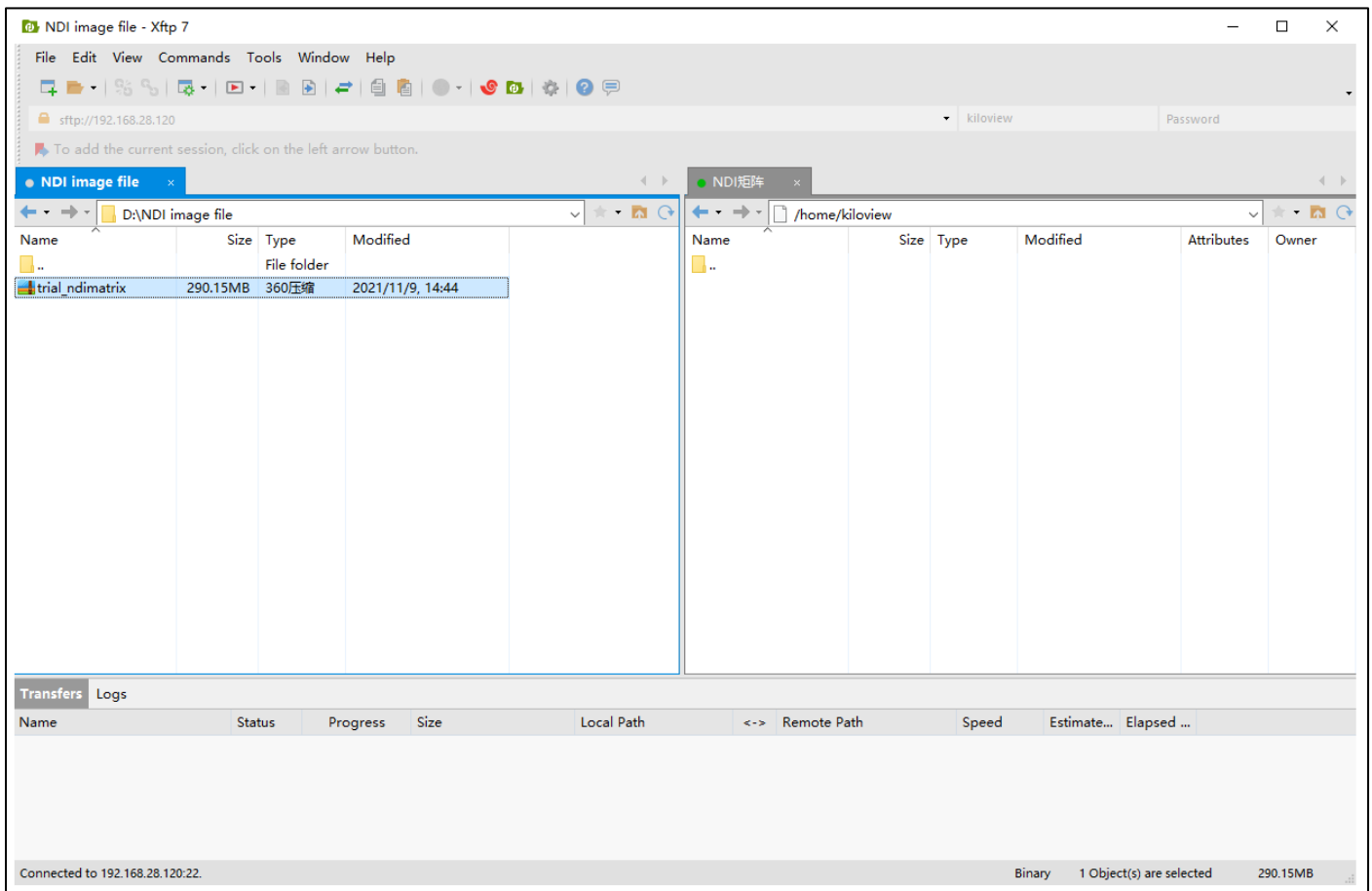
**Note**

NDI Core image need to be uploaded to Liunx system from NDI local personal computer, which is required to transfer files by a file transfer tool. Deployers can use xftp files transferring tool that comes with the Xshell or other file transfer tool, such as SecureCRT.

Step 1: Click file transfer icon in the Xshell.



Step 2: Drag NDI Core image file in your computer from left window to the right window, to finish files transferring from local PC to server. (Please contact Kiloview sales or mail to [info@kiloview.com](mailto:info@kiloview.com) with NDI Core image documents).



(2) Load NDI Core image in the server

```
docker load -i trial_ndimatrix.tar
```



## Note

If the location of the NDI image file is not in the current directory, you need to specify the folder where NDI image file is located.

For example: If the directory where NDI image file is located as /home/kiloview, then the NDI image file loading command is “docker load -i /home/kiloview/trial\_ndimatrix.tar”

```

root@ndi:/home/kiloview# docker load -i trial_ndimatrix.tar
cc967c529ced: Loading layer [=====>] 65.57MB/65.57MB
2c6ac8e5063e: Loading layer [=====>] 991.2kB/991.2kB
6c01b5a53aac: Loading layer [=====>] 15.87kB/15.87kB
e0b3afb09dc3: Loading layer [=====>] 3.072kB/3.072kB
9d3cad3d17e: Loading layer [=====>] 27.69MB/27.69MB
db6e2a638ab1: Loading layer [=====>] 114.3MB/114.3MB
9f2fd036a4a9: Loading layer [=====>] 3.584kB/3.584kB
20b2e7d325d4: Loading layer [=====>] 2.56kB/2.56kB
758a8236e8b9: Loading layer [=====>] 2.048kB/2.048kB
8abff239dac8: Loading layer [=====>] 1.536kB/1.536kB
ac9c6590408b: Loading layer [=====>] 4.643MB/4.643MB
bda72356d77c: Loading layer [=====>] 9.728kB/9.728kB
75810feecf4b: Loading layer [=====>] 39.62MB/39.62MB
7e47cfdd3260: Loading layer [=====>] 556kB/556kB
bc90e555b3c8: Loading layer [=====>] 3.072kB/3.072kB
87bf4592c061: Loading layer [=====>] 36.35kB/36.35kB
8017a395ddee: Loading layer [=====>] 16.38kB/16.38kB
f275a7a61f6f: Loading layer [=====>] 10.46MB/10.46MB
e98830ac8618: Loading layer [=====>] 14.39MB/14.39MB
a10c5d895642: Loading layer [=====>] 927.7kB/927.7kB
87e801439ab8: Loading layer [=====>] 9.403MB/9.403MB
1488b496f22c: Loading layer [=====>] 879.6kB/879.6kB
4ee4f7e0dd9a: Loading layer [=====>] 894.5kB/894.5kB
b0439f642b95: Loading layer [=====>] 1.386MB/1.386MB
f0af0a693169: Loading layer [=====>] 891.9kB/891.9kB
5168f669e526: Loading layer [=====>] 1.038MB/1.038MB
8687bcb79567: Loading layer [=====>] 1.086MB/1.086MB
9bc7ef5b6ee5: Loading layer [=====>] 2.048kB/2.048kB
aa53f8beb59a: Loading layer [=====>] 4.355MB/4.355MB
e9ff06da24bd: Loading layer [=====>] 4.704MB/4.704MB
b517b608e114: Loading layer [=====>] 3.584kB/3.584kB
a9bc9bcd5del: Loading layer [=====>] 266.2kB/266.2kB
Loaded image: kiloview/trial_ndimatrix:latest
root@ndi:/home/kiloview#

```

### Step 4: Run container

```

docker run -d -v /home/data:/data/configs -v /var/run/avahi-daemon:/var/run/avahi-daemon -
v /var/run/dbus:/var/run/dbus --restart=always --name kv_ndimatrix --network host --
privileged=true kiloview/trial_ndimatrix:latest

```



**Note:**

The last image name in the above command (like trial ndimatrix in the below picture) must be the same as the name behind the loaded image at the top of the command line.

```
Loaded image: kiloview/trial_ndimatrix:latest
root@ndi:/home/kiloview# docker run -d -v /root/cp_data3:/data/configs -v /var/run/avahi-daemon:/var/run/avahi-daemon -v /var/run/dbus:/var/run/dbus --restart=always --name trial_ndimatrix --network host --privileged=true kiloview/trial_ndimatrix:latest
563282ee0ce969e5a3h45ic2fdcccd548c17adbcd2d0604b1195cec5a9d78c
```

## 1.4 Login authentications

Enter "IP address of server:81" in the browser (Google is recommended), press enter to display the login interface of the NDI Core. The default user name and password are **admin**.



## 2 General Questions and Solutions

### 2.1 If there is an error message during the deployment process.

Solution:

Please check the version of your operation system, currently it only supports Linux64-bit operating system

(Ubuntu 18.04+ / Debian 9+)

(1) Check linux digits: `getconf LONG_BIT`

```

Last login: Wed Oct 13 21:13:38 2021 from
ubuntu@VM-4-5-ubuntu:~$ getconf LONG_BIT
64
ubuntu@VM-4-5-ubuntu:~$ █
  
```

(2) Check the version number of the linux: `cat /proc/version`

```

ubuntu@VM-4-5-ubuntu:~$ cat /proc/version
Linux version 5.4.0-77-generic (bulld@lgw01-amd64-028) (gcc version 9.3.0 (Ubuntu 9.3.0-17ubuntu1~20.04))
#86-Ubuntu SMP Thu Jun 17 02:35:03 UTC 2021
ubuntu@VM-4-5-ubuntu:~$ █
  
```

### 2.2 No response for a long time for the installation of the docker.

Solution:

The process of the installation is relatively slow, please wait patiently. You can use command “`docker version`” to check and confirm whether the installation is successful.

```

root@ndi:~/cp_data3# docker version
Client: Docker Engine - Community
 Version:           20.10.6
 API version:       1.41
 Go version:        go1.13.15
 Git commit:        370c289
 Built:             Fri Apr 9 22:47:17 2021
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true

Server: Docker Engine - Community
Engine:
 Version:           20.10.6
 API version:       1.41 (minimum version 1.12)
 Go version:        go1.13.15
 Git commit:        8728dd2
 Built:             Fri Apr 9 22:45:28 2021
 OS/Arch:           linux/amd64
 Experimental:      false
containerd:
 Version:           1.4.4
 GitCommit:        05f951a3781f4f2c1911b05e61c160e9c30eaa8e
runc:
 Version:           1.0.0-rc93
 GitCommit:        12644e614e25b05da6fd08a38ffa0cfe1903fdec
docker-init:
 Version:           0.19.0
 GitCommit:        de40ad0
root@ndi:~/cp_data3# █
  
```

## 2.3 Fail to pull image

```

root@ndi:/# docker run -d --name status --restart=always -v /var/run/docker.sock:/var/run/docker.sock:ro --pid host --network host -e GLANCES_OPT="-w" nicolargo/glances
Unable to find image 'nicolargo/glances:latest' locally
latest: Pulling from nicolargo/glances
e1acddbe389c: Pulling fs layer
ec07ff4d2622: Pulling fs layer
d0e1d9f674e1: Pulling fs layer
87bc5ea6fc42: Waiting
76f124ca9af: Waiting
9c40be6c51a4: Waiting
c1258800329: Waiting
3426954907f: Waiting
docker: error pulling image configuration: Get https://production.cloudflare.docker.com/registry-v2/docker/registry/v2/blobs/sha256/b3/b39a65d9d3bba1f740dd5c3fde71c65ab5f7113448ee923d459547969d65e222/data?verify=1636450334-W9xGk2Bd05e3GwgJ4
08FJv2FByyQne4%3D: dial tcp 104.18.124.25:443: i/o timeout.
See 'docker run --help'.
root@ndi:/# docker run -d --name status --restart=always -v /var/run/docker.sock:/var/run/docker.sock:ro --pid host --network host -e GLANCES_OPT="-w" nicolargo/glances
Unable to find image 'nicolargo/glances:latest' locally
latest: Pulling from nicolargo/glances
docker: error parsing HTTP 408 response body: invalid character '<' looking for beginning of value: "<html><body><h1>408 Request Time-out</h1>\nYour browser didn't send a complete request in time.\n</body></html>\n\n".
See 'docker run --help'.
root@ndi:/# █
  
```

### Solution:

To pull the image, you need to get the image file by the internet. If the network delay is high or you cannot connect to the internet, kindly check whether the network is smooth by ping an external website.

## 2.4 NDI Core could not be logged in normally

Solution:

Check the server whether it could start normally. "win+R" to open command prompt window -> "cmd"

-> "ping server ip" .

(1) If it is able to ping the server IP, please check via below command.

<1>Check the status of running docker: `systemctl status docker`

```

root@ndi:~/cp_data3# systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2021-11-09 09:00:05 UTC; 1 day 1h ago
   TriggeredBy: ● docker.socket
     Docs: https://docs.docker.com
    Main PID: 53134 (dockerd)
      Tasks: 25
     Memory: 640.7M
    CGroup: /system.slice/docker.service
            └─53134 /usr/bin/dockerd -H fd:// -H 0.0.0.0:2375 --containerd=/run/containerd/containerd.sock
    
```

If docker could not start normally, start docker: `systemctl start docker`

<2>Check the status of running container: `docker ps -a`

```

root@ndi:~/cp_data3# docker ps -a
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS        NAMES
563282ea0ee8   kiloview/trial_ndimatrix:latest     "/start_server.sh"     24 hours ago  Up 24 hours           trial_ndimatric
2594ce003d0d   nicolargo/glances                   "/bin/sh -c 'python3..." 24 hours ago  Up 24 hours           status
root@ndi:~/cp_data3#
    
```

If container runs abnormally, execute below command to delete container and image, then redeploy as deployment guide.

Stop all containers: `docker stop $(docker ps -aq)`

Delete all containers: `docker rm $(docker ps -aq)`

Delete all images: `docker rmi $(docker images -q)`

(2) If it is unable to ping the server IP, please check as below instruction.

<1> Check whether maintenance PC and server run normally or not and whether LAN port light flashes normally or not.

<2> The server IP maybe already changed, directly connect server "win+R" -> "cmd" -> "ifconfig" , and apply changed IP address: 81 to visit.

## 2.5 How to set static IP address for NDI Core

Solution:

The ways of setting static IP address may be different as different operation system. Configuration ways in below applies to ubuntu 20.04 version.

```
sudo vi /etc/netplan/00-installer-config.yaml
```



**Note:**

- (1) The Internet configuration file name for different minor versions may be different, as "00-installer-config.yaml" files name is different, enter netplan file via `cd /etc/netplan`, search Internet configuration file, enter corresponding Internet configuration files by `vi` command.
  - (2) Press "i" to access the file editing mode.
  - (3) After inputting, enter "ESC" , and then enter " :wq " , save the file and exit.
-

- (4) If you make a mistake input and don't want to save the file, press "ESC" and input ":q!" , exit without saving files.

```
# This is the network config written by 'subiquity'
network:
  ethernets:
    eno1:
      addresses:
        - 192.168.28.120/24
      gateway4: 192.168.28.254
      nameservers:
        addresses:
          - 8.8.8.8
    enp3s0f0:
      addresses:
        - 192.168.0.114/24
      gateway4: 192.168.0.1
    enp3s0f1:
      addresses:
        - 192.168.2.115/24
      gateway4: 192.168.2.1
  version: 2
~
```

## 2.6 It shows "no such file or directory" error during command execution.

```
root@1:~# docker run -d -v /home/data:/data/configs -v /var/run/avahi-daemon:/var/run/avahi-daemon -v /var/run/dbus:/var/run/dbus --restart=always --name kv_ndimatrix --network host --privileged=true kiloview/trial_ndimatrix:latest
-bash: docker run -d -v /home/data:/data/configs -v /var/run/avahi-daemon:/var/run/avahi-daemon -v /var/run/dbus:/var/run/dbus --restart=always --name kv_ndimatrix: No such file or directory
root@1:~# ls
snap
```

Solution:

When you copy the command from the file, it may include the form character and cause the command to change. When you encounter this, please execute the command manually.

For more questions, please contact us via:  
<https://www.kiloview.com/en/support>



Please scan with browser.

**KILOVIEW Electronics CO., LTD.**

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Changsha City, Hunan Province, China.