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Build_QPKG

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VM creation and Setup
Creating Virtual Machine

- Link for downloading VMware VSphere Clint: http://vsphereclient.vmware.com/vsphereclient/VMware-viclient-all-6.0.0.exe
- After installing VMware VSphere Clint open that.
- Popup will open enter the **IP address**, **username** and **password** and click login.
- After login popup will open clink on **ignore**.
- The host page will open along with VMs.
- On **right** click on **host (IP address)** and click on **New Virtual machine**.
- Popup will open the select **configuration** as **Typical** then click next.
- Then Whatever name you want to Virtual machine the click next.
- The dB is set default then click next.
- Then select **guest operating system** as **Linux** and **version** as **Ubuntu Linux 64bit** then click next.
- Select **Network** as **VM network** then click next.
- Select **Virtual disk size** how much needed then click next.
- **Check the Edit the VM setting then click continue**.
- In **left** side select **Memory**, in that **Set memory** as **16/8 GB**.
- In **left** side select **CPUs**, in that **Set number of virtual sockets as 4 and Set number of core per sockets as 8** then click Finish.
- **Then Virtual Machine is created**,
- Click on Virtual Machine created, in **right side click on Power on VM**.
- **Right** Click on **Virtual Machine created**, then click **open console**.
- Console will open, then in console tool bar click on **CD/DVD drive option**.
- Then click **CD/DVD drive1(1)** in that select **connect to ISO on a database.**
- Then select **ISO,** in that select **Ubuntu 18.04.3 version**
- Then install Ubuntu by below given link

Installation of Ubuntu : https://youtu.be/EH37ee9JDg8
GENARATE QPKG
After Installation Ubuntu/ Linux you need install applications using these commands:

- How to connect these Ubuntu server to mobaxterm:
- To run commands in terminal:
- sudo apt-get install openssh-server
- sudo systemctl enable ssh
- sudo systemctl enable ssh --now
- sudo systemctl start ssh
- run this command and get IP   ip addr
- And open mobaxterm

ssh userName@Your-server-name-IP and enter password.

- Install some applications using these commands
  - To install NPM and node js
    - sudo apt install npm

Note: here nodejs version should be greater 14

  - To install **GIT**
    - sudo apt install git
  - To install **SSHPASS**
    - sudo apt install sshpass
  - To install **Curl**
    - sudo apt install curl
  - To install **nodejs** with version **14.x**
    - curl -fsSL https://deb.nodesource.com/setup_14.x | sudo -E bash -
    - sudo apt-get install -y nodejs

And check version is 14.x or not

  - To install **RUST**
    - curl –proto '=https' –tlsv1.2 –sSf https://sh.rustup.rs | sh
    - after executing above command and you need to give path
      - source "$HOME/.cargo/env"
  - To install **cargo**
    - sudo apt install cargo
  - To install **Cross**
    - cargo install cross
  - To install **DOCKER**
    - sudo apt install **docker.io**
    - sudo snap install **docker**
- Install **Python 3.7**.
  - Change server user to admin by running below command
    - sudo –s
  - Check Python version == python3.7.x and if not there install using below command
    - apt-get install python3.7
- To setup **Python Environment**. Navigate required path to install environment and run this commands
  - python3.7 -m venv env
  - apt-get install python3-venv

And **activate Environment** using this command

- source env/bin/activate

To **Generate QPKG** to follow below steps.

- Clone DA code from git
- Navigate DA and inside scripts have .config.bak file, these file rename to .config file.

Open .config file and add BUILD_PYTHON_INTERPRETER and version. To find location of python using these command → type –a python3

```
(env) root@subbu-VMM:~/subbu/dadriveanalyzer# type -a python3
python3 is /home/subbu/subbu/dadriveanalyzer/env/bin/python3
python3 is /usr/bin/python3
(env) root@subbu-VMM:~/subbu/dadriveanalyzer#
```

Add python interpreter path and version like below fig.,

```
REMOTE_ADDR="10.24.64.61"
REMOTE_USER="admin"
REMOTE_PASSWD="qnap"
REMOTE_PATH="/share/CACHEDEV1_DATA/.qpkg/QDK"

BUILD_PYTHON_INTERPRETER="/home/subbu/subbu/dadriveanalyzer-5.1.0/env/bin/python3.7"
PYTHON_VERSION="3.7.5"

CODE_SIGNIN_TOKEN=d485ca9040f34fe4bfe8eb0917612964
```

- Open build.apkg.sh inside scripts folder

Change server user to admin and to build qpkg run these command

- bash scripts/build-qpkg.sh 6.1.16.1.1 is version

And run above command

- If you get this error, To fix this error and we need add .tgz file path manually as shown in below

```
Listing '/home/subbu/subbu/dadriveanalyzer-5.1.0/target/qpkg/shared/html/cgi-bin' ...
Compiling '/home/subbu/subbu/dadriveanalyzer-5.1.0/target/qpkg/shared/html/cgi-bin/app.py' ...
 [V] [2022/11/02 08:36:24] [ api ] (1/3) Building for x86_64
tar (child): Python/3.7.5/Python-3.7.2-x86_64.tgz: Cannot open: No such file or directory
tar (child): Error is not recoverable: exiting now
tar: Child returned status 2
tar: Error is not recoverable: exiting now
 [X] [2022/11/02 08:36:24] ERROR: Encountered error (2) while running the following:
 [X] [2022/11/02 08:36:24]          tar -C /home/subbu/subbu/dadriveanalyzer-5.1.0/target/qpkg/x86_64/env -zxvf Python/3.7.5/Python-3.7
.2-x86_64.tgz
 [X] [2022/11/02 08:36:24]          (at line 116 of file /home/subbu/subbu/dadriveanalyzer-5.1.0/scripts/build-qpkg.sh)
 [X] [2022/11/02 08:36:24]          Aborted
(env) root@ubuntu:~/subbu/dadriveanalyzer-5.1.0#
```


If you get ERRORS as show in below figures.,
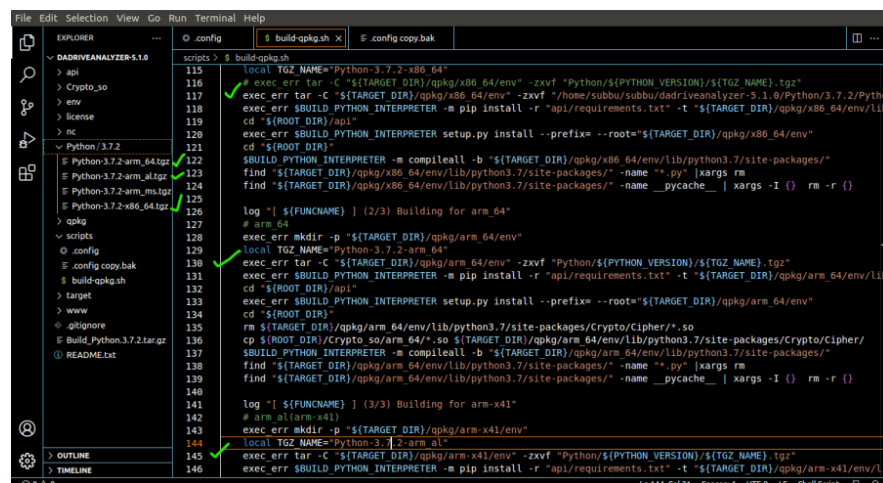
Error: If the token is invalid and need to generate CODE_SIGNIN_TOKEN

```
Creating archive with data files for x86_64 ...
Connecting to code signing server to create anti-tampering data ...
Can't find build_sign.csv, ignore anti-tamper
Creating archive with control files ...
Creating QPKG package ...
2022-10-26 22:46:49,973 - ERROR - Error message from server: Token d485ca9040f34fe4bfe8eb0917612964 is invalid
Driveanalyzer_2.9.5.1027_x86_64.qpkg: Code signing digital signature was not added
Creating archive with data files for arm_64 ...
Connecting to code signing server to create anti-tampering data ...
Can't find build_sign.csv, ignore anti-tamper
Creating archive with control files ...
Creating QPKG package ...
2022-10-26 22:47:14,520 - ERROR - Error message from server: Token d485ca9040f34fe4bfe8eb0917612964 is invalid
Driveanalyzer_2.9.5.1027_arm_64.qpkg: Code signing digital signature was not added
Creating archive with data files for arm-x41 ...
Connecting to code signing server to create anti-tampering data ...
Can't find build_sign.csv, ignore anti-tamper
Creating archive with control files ...
Creating QPKG package ...
2022-10-26 22:47:37,073 - ERROR - Error message from server: Token d485ca9040f34fe4bfe8eb0917612964 is invalid
Driveanalyzer_2.9.5.1027_arm-x41.qpkg: Code signing digital signature was not added
 [I] [2022/10/27 15:17:43] **** Building QPKG END ****
 [I] [2022/10/27 15:17:43] *** BUILDING QPKG version 2.9.5.1027 FINISHED ***
root@subbuk-VMM:~/subbu/dadriveanalyzer-master# docker --version
Docker version 20.10.7, build 20.10.7-0ubuntu5~18.04.3
root@subbuk-VMM:~/subbu/dadriveanalyzer-master# cd "/home/subbu/subbu/dadriveanalyzer-master/target"
```

How to Generate token:

- Navigate to this path → /share/CACHEDEV1_DATA/.qpkg/QDK

And run this below command and enter ldap server credentials to generate new token as shown below fig.,

- sh scripts/codesigning_login.sh

```
[/] # cd share/CACHEDEV1_DATA/.qpkg/QDK/
[/share/CACHEDEV1_DATA/.qpkg/QDK] # pwd
/share/CACHEDEV1_DATA/.qpkg/QDK
[/share/CACHEDEV1_DATA/.qpkg/QDK] # ls
bin/   doc/   qdk*   qdk.conf   qpkg/   qpkg_782/   qpkg.tar.gz   scripts/   template/
[/share/CACHEDEV1_DATA/.qpkg/QDK] # sh scripts/codesigning_login.sh ✔
username: subbuk
password:
Token: f71ebd0b0c344f04841d3c61b087100e
[/share/CACHEDEV1_DATA/.qpkg/QDK] # █
```

Error1:

```
        module = import_module(module_name)
    File "/usr/lib/python3.7/importlib/__init__.py", line 127, in import_module
      return _bootstrap._gcd_import(name[level:], package, level)
    File "<frozen importlib._bootstrap>", line 1006, in _gcd_import
    File "<frozen importlib._bootstrap>", line 983, in _find_and_load
    File "<frozen importlib._bootstrap>", line 965, in _find_and_load_unlocked
ModuleNotFoundError: No module named 'markupsafe'
----------------------------------------
Command "python setup.py egg_info" failed with error code 1 in /tmp/pip-build-sx7uipoj/MarkupSafe/
[X] [2022/11/02 08:45:30] ERROR: Encountered error (1) while running the following:
[X] [2022/11/02 08:45:30]          /home/subbu/subbu/dadriveanalyzer-5.1.0/env/bin/python3.7 -m pip install -r api/requirements.txt -t
/home/subbu/subbu/dadriveanalyzer-5.1.0/target/qpkg/x86_64/env/lib/python3.7/site-packages/
[X] [2022/11/02 08:45:30]          (at line 118 of file /home/subbu/subbu/dadriveanalyzer-5.1.0/scripts/build-qpkg.sh)
[X] [2022/11/02 08:45:30]          Aborted
(env) root@ubuntu:~/subbu/dadriveanalyzer-5.1.0#
```

To fix this error ::: To upgrade pip pip install --upgrade pip

Error2:

```
    x86_64-linux-gnu-gcc -pthread -Wno-unused-result -Wsign-compare -fwrapv -Wall -fstack-protector-strong -Wformat -Werror=format-secu
rity -fwrapv -fstack-protector-strong -Wformat -Werror=format-security -Wdate-time -D_FORTIFY_SOURCE=2 -fPIC -std=c99 -O3 -fomit-frame-po
inter -Isrc/ -I/home/subbu/subbu/dadriveanalyzer-5.1.0/env/include -I/usr/include/python3.7m -c src/MD2.c -o build/temp.linux-x86_64-3.7/
src/MD2.o
    src/MD2.c:31:10: fatal error: Python.h: No such file or directory
       #include "Python.h"
                ^~~~~~~~~~
    compilation terminated.
    error: command 'x86_64-linux-gnu-gcc' failed with exit status 1
    [end of output]

    note: This error originates from a subprocess, and is likely not a problem with pip.
error: legacy-install-failure

× Encountered error while trying to install package.
╰─> pycrypto

note: This is an issue with the package mentioned above, not pip.
hint: See above for output from the failure.
[X] [2022/11/02 08:49:47] ERROR: Encountered error (1) while running the following:
[X] [2022/11/02 08:49:47]          /home/subbu/subbu/dadriveanalyzer-5.1.0/env/bin/python3.7 -m pip install -r api/requirements.txt -t
/home/subbu/subbu/dadriveanalyzer-5.1.0/target/qpkg/x86_64/env/lib/python3.7/site-packages/
[X] [2022/11/02 08:49:47]          (at line 118 of file /home/subbu/subbu/dadriveanalyzer-5.1.0/scripts/build-qpkg.sh)
[X] [2022/11/02 08:49:47]          Aborted
(env) root@ubuntu:~/subbu/dadriveanalyzer-5.1.0#
```

sudo apt-get install python3.7-dev

Error3:

```
Compiling '/home/subbu/subbu/dadriveanalyzer-master/target/qpkg/arm-x41/env/lib/python3.7/site-packages/zipp.py' ...
[I] [2022/10/27 14:06:10] **** Building and collecting api END ****
[I] [2022/10/27 14:06:10] **** Building and collecting license START ****
[V] [2022/10/27 14:06:10] [ license ] (1/3) Building for x86_64
info: downloading component 'rust-src'
info: installing component 'rust-src'
Error:
    0: no container engine found

Suggestion: is docker or podman installed?
[X] [2022/10/27 14:06:18] ERROR: Encountered error (1) while running the following:
[X] [2022/10/27 14:06:18]          cross build --release --target x86_64-unknown-linux-gnu
realpath: scripts/build-qpkg.sh: No such file or directory
[X] [2022/10/27 14:06:18]          (at line 166 of file )
[X] [2022/10/27 14:06:18]          Aborted
root@subbuk-VM:~/subbu/dadriveanalyzer-master# eval "$(/home/linuxbrew/.linuxbrew/bin/brew shellenv)"
bash: /home/linuxbrew/.linuxbrew/bin/brew: No such file or directory
```

To fix this error run below commands.

- /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
- eval "$(/home/linuxbrew/.linuxbrew/bin/brew shellenv)"
- sudo apt-get install build-essential
- brew tap messense/macos-cross-toolchains
- brew install x86_64-unknown-linux-gnu
- export CC_X86_64_UNKNOWN_LINUX_GNU=x86_64-unknown-linux-gnu-gcc
- export CXX_X86_64_UNKNOWN_LINUX_GNU=x86_64-unknown-linux-gnu-g++
- export AR_X86_64_UNKNOWN_LINUX_GNU=x86_64-unknown-linux-gnu-ar
- export CARGO_TARGET_X86_64_UNKNOWN_LINUX_GNU_LINKER=x86_64-unknown-linux-gnu-gcc
- rustup target add x86_64-unknown-linux-gnu
- cargo build --target x86_64-unknown-linux-gnu