QDK Quick Start Guide

Tutorial to Build Your Own QPKG

Agenda

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- Download QDK
- Install QDK
- Build Your Own QPKG
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  - Configure QPKG
  - Customize QPKG routines
  - Add files to QPKG
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- Learn More

What is QDK

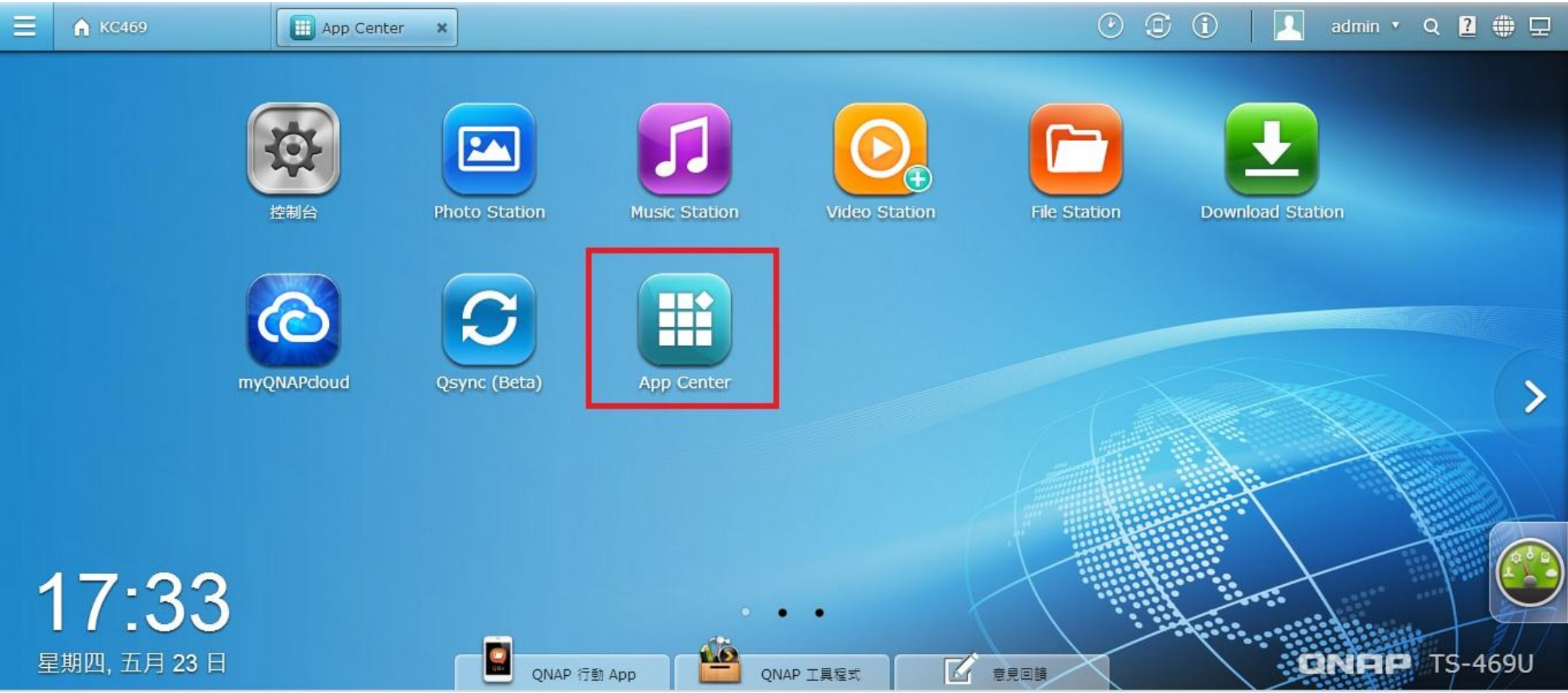
- QDK is used to build QPKG files/applications for QNAP Turbo NAS.
- QDK started out as a simple modification of the first official release of the QPKG SDK, but now supersedes it.
- License: GPL

Download QDK

- To download QDK:
  - http://wiki.qnap.com/wiki/QPKG_Development_Guidelines#Downloads
  - http://files.qnap.com/download/Storage/QPKG/QDK_2.0.1.zip

Install QDK

- Install “QDK_2.0.1.qpkg” in NAS UI



Install QDK

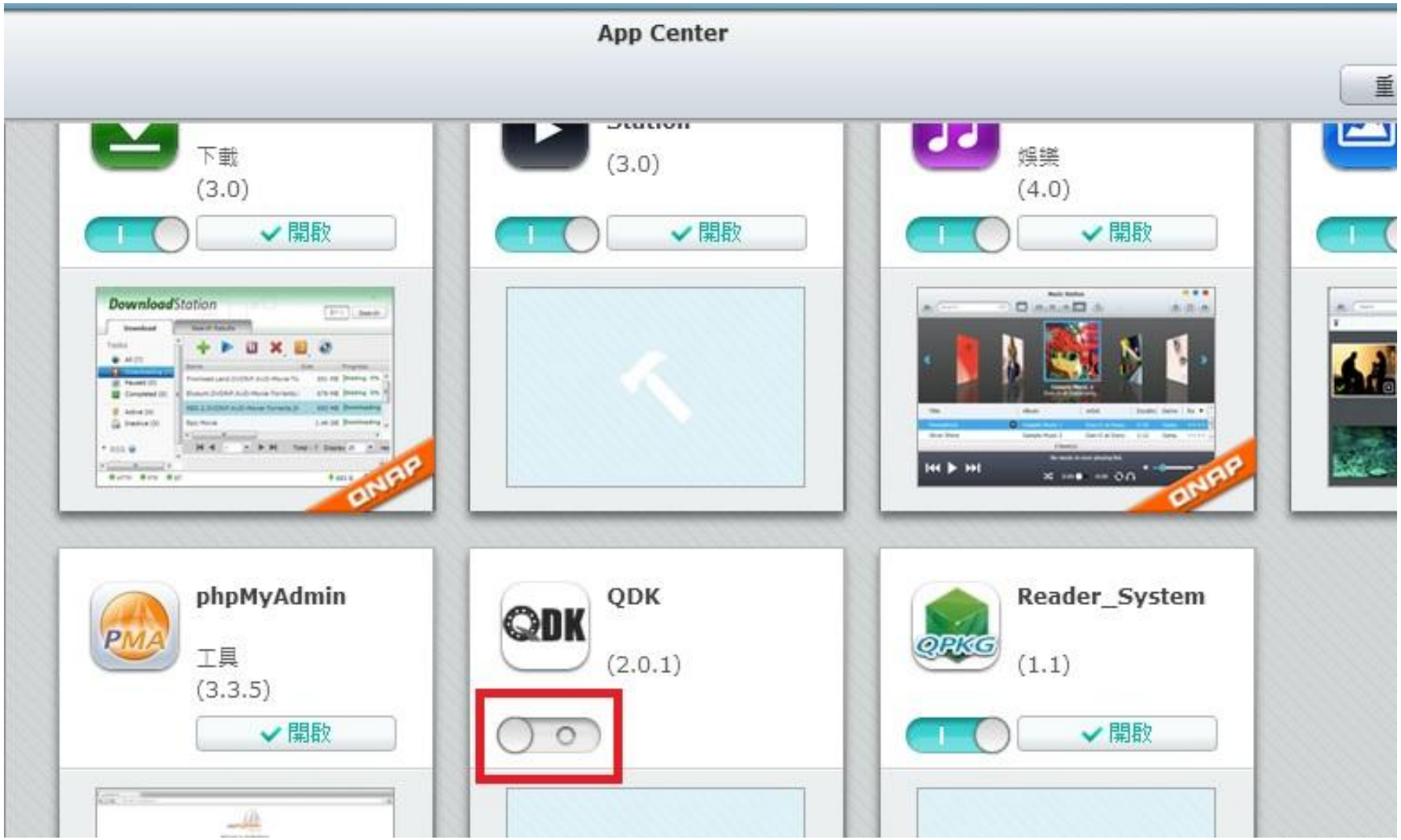

admin
App Center
重新整理
手動安裝
Multimedia Station
(3.0)
開啟
Music Station
娛樂
(4.0)
開啟
Photo Station
娛樂
(3.0)
開啟

Install QDK


App Center
手動安裝新的應用程式
若要安裝新的套件，請依循以下步驟：
1. 點擊 這裡 來查看更多可安裝的QPKG套件，包含 QPKG實驗室中新開發的程式。您可以下載並解壓縮這些程式到您的電腦中。
QPKG 軟體開發：我們誠摯歡迎您，發揮您的創意，並善用QDK提供的工具、文件、及程式碼，在 Turbo NAS上開發更多的應用程式。
2. 選取所解壓縮過後的檔案，並點擊 [安裝] 來進行安裝步驟。
瀏覽...
安裝
關閉

Enable QDK

- Enable QDK in NAS UI



Build Your Own QPKG (1/5)

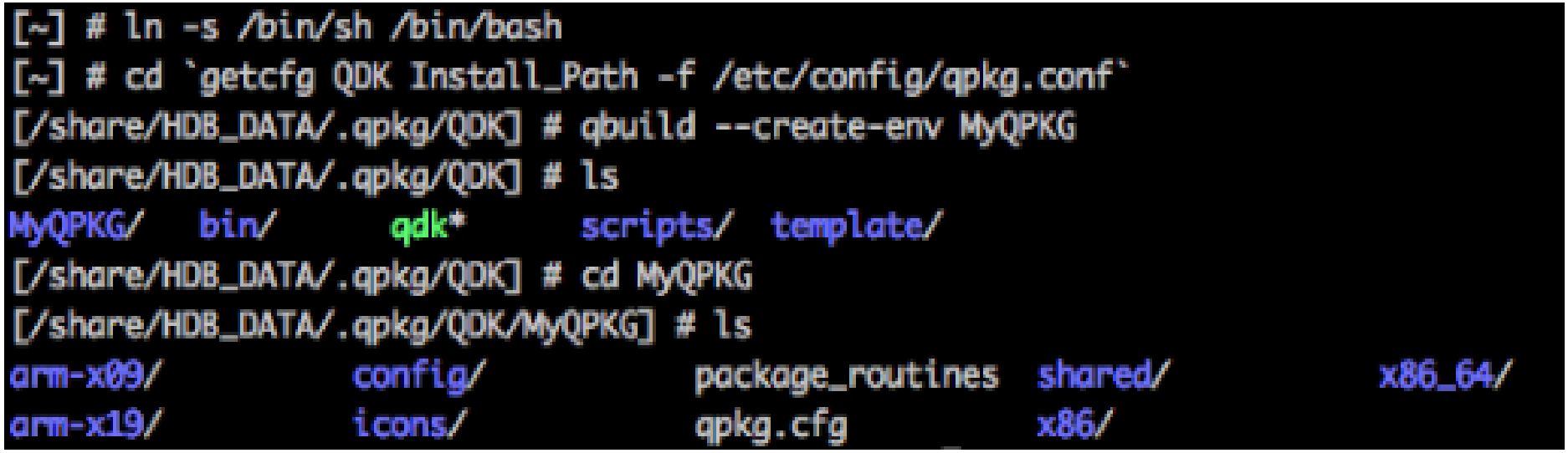
- Generate environment for QPKG
  - Use SSH client to connect to your NAS
  - Issue below commands to create an environment of your own QPKG (assuming to-be-built QPKG name is “MyQPKG”)

```
[~] ln -s /bin/sh /bin/bash
[~] cd `getcfg QDK Install_Path -f /etc/config/qpkg.conf`
[/share/HDA_DATA/.qpkg/QDK] # qbuild --create-env MyQPKG
```

  - A folder named “MyQPKG” is then generated

```
[/share/HDA_DATA/.qpkg/QDK] # ls
MyQPKG/   bin/     qdk*     scripts/  template/
[/share/HDA_DATA/.qpkg/QDK] # cd MyQPKG/
l[/share/HDA_DATA/.qpkg/QDK/MyQPKG] # ls
arm-x09/        build/          icons/          qpkg.cfg        x86/
arm-x19/        config/         package_routines  shared/       x86_64/
```

Screenshot


[~] # ln -s /bin/sh /bin/bash
[~] # cd `getcfg QDK Install_Path -f /etc/config/qpkg.conf`
[/share/HDB_DATA/.qpkg/QDK] # qbuild --create-env MyQPKG
[/share/HDB_DATA/.qpkg/QDK] # ls
MyQPKG/ bin/ qdk* scripts/ template/
[/share/HDB_DATA/.qpkg/QDK] # cd MyQPKG
[/share/HDB_DATA/.qpkg/QDK/MyQPKG] # ls
arm-x09/ config/ package_routines shared/ x86_64/
arm-x19/ icons/ qpkg.cfg x86/

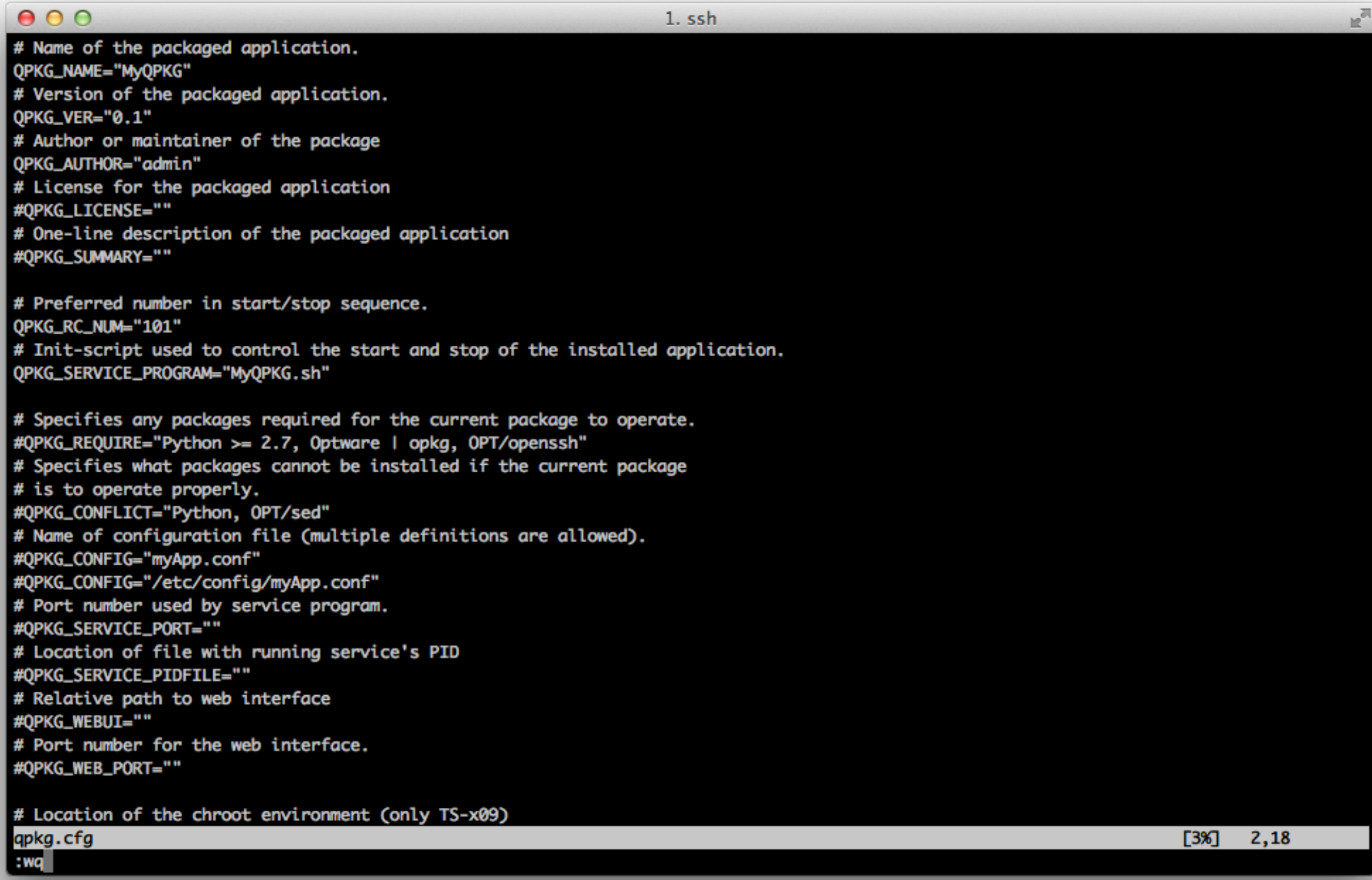
Build Your Own QPKG (2/5)

- Configure QPKG
  - Edit the content of qpkg.cfg
    - QPKG_NAME: Name of the QPKG
    - QPKG_VER: Version of the QPKG
    - QPKG_AUTHOR: Author of the QPKG

```
[/share/HDA_DATA/.qpkg/QDK/MyQPKG] # vi qpkg.cfg

# Name of the packaged application.
QPKG_NAME="MyQPKG"
# Version of the packaged application.
QPKG_VER="0.1"
# Author or maintainer of the package
QPKG_AUTHOR="admin"
```

Screenshot


1. ssh
# Name of the packaged application.
QPKG_NAME="MyQPKG"
# Version of the packaged application.
QPKG_VER="0.1"
# Author or maintainer of the package
QPKG_AUTHOR="admin"
# License for the packaged application
#QPKG_LICENSE=""
One-line description of the packaged application
#QPKG_SUMMARY=""

# Preferred number in start/stop sequence.
QPKG_RC_NUM="101"
# Init-script used to control the start and stop of the installed application.
QPKG_SERVICE_PROGRAM="MyQPKG.sh"

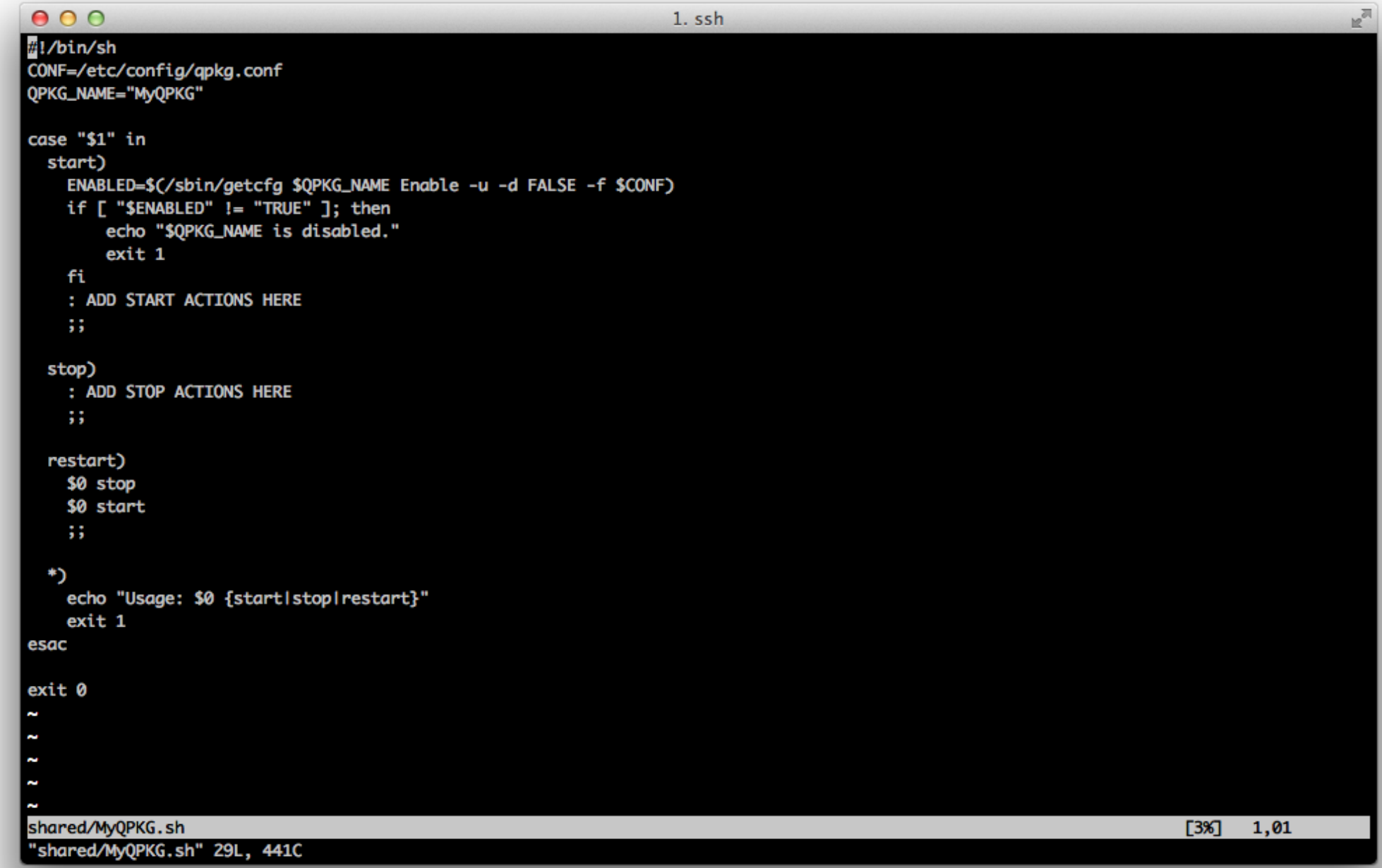
Specifies any packages required for the current package to operate.
#QPKG_REQUIRE="Python >= 2.7, Optware | opkg, OPT/openssh"
Specifies what packages cannot be installed if the current package
is to operate properly.
#QPKG_CONFLICT="Python, OPT/sed"
Name of configuration file (multiple definitions are allowed).
#QPKG_CONFIG="myApp.conf"
#QPKG_CONFIG="/etc/config/myApp.conf"
Port number used by service program.
#QPKG_SERVICE_PORT=""
Location of file with running service's PID
#QPKG_SERVICE_PIDFILE=""
Relative path to web interface
#QPKG_WEBUI=""
Port number for the web interface.
#QPKG_WEB_PORT=""

Location of the chroot environment (only TS-x09)
qpkg.cfg [3%] 2,18
:wq

Build Your Own QPKG (3/5)

- Customize QPKG routines
  - Content of file “package_routines”
    - pkg_pre_install() : routines before install
    - pkg_install() : routines during install
    - pkg_post_install() : routines after install
    - PKG_PRE_REMOVE : routines before uninstall
    - PKG_MAIN_REMOVE : routines during uninstall
    - PKG_POST_REMOVE : routines after uninstall
  - Content of file “shared/MyQPKG.sh"
    - Start : routines when starting the QPKG
    - Stop : routines when stoping the QPKG

Screenshot


1. ssh
#!/bin/sh
CONF=/etc/config/qpkg.conf
QPKG_NAME="MyQPKG"
case "$1" in
start)
ENABLED=$(/sbin/getcfg $QPKG_NAME Enable -u -d FALSE -f $CONF)
if ["$ENABLED" != "TRUE"]; then
echo "$QPKG_NAME is disabled."
exit 1
fi
: ADD START ACTIONS HERE
;;
stop)
: ADD STOP ACTIONS HERE
;;
restart)
$0 stop
$0 start
;;
*)
echo "Usage: $0 {start|stop|restart}"
exit 1
esac
exit 0
~
~
~
~
~
shared/MyQPKG.sh [3%] 1,01
"shared/MyQPKG.sh" 29L, 441C

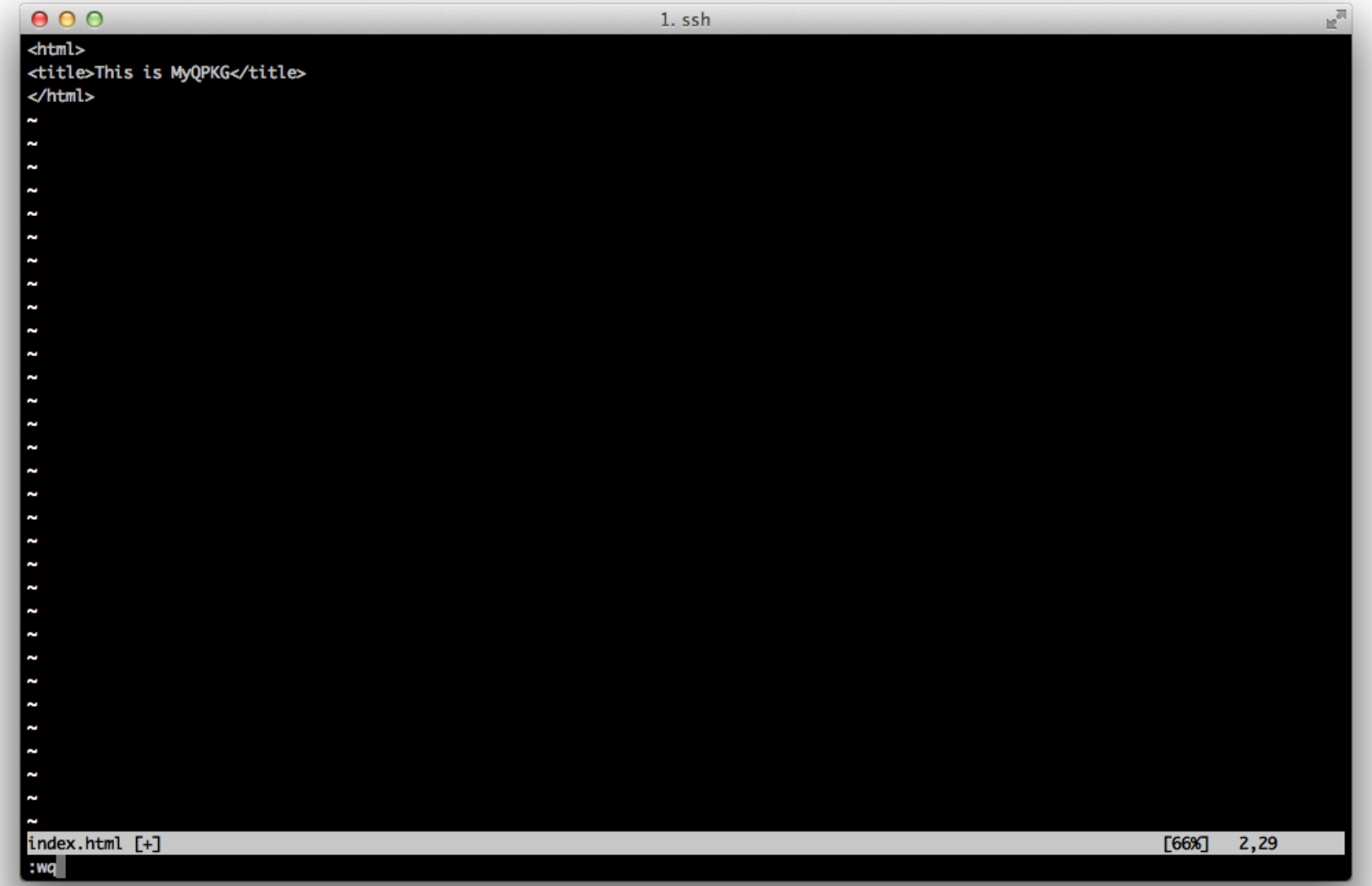
Build Your Own QPKG (4/5)

- Add files to QPKG
  - Put files in below folders for different purposes:
    - shared/: Platform-independent files and folders
    - arm-x09/ arm-x19/ x86/ x86_64/: Platform-dependent files and folders
    - icons/: icon files
    - config/: config files

```
[/share/HDA_DATA/.qpkg/QDK/MyQPKG] # ls
arm-x09/        build/          icons/          qpkg.cfg        x86/
arm-x19/        config/         package_routines  shared/       x86_64/
```

Screenshot

```
[/share/HDB_DATA/.qpkg/QDK/MyQPKG/shared] # mkdir web
[/share/HDB_DATA/.qpkg/QDK/MyQPKG/shared] # cd web
[/share/HDB_DATA/.qpkg/QDK/MyQPKG/shared/web] # vi index.html
```



Build Your Own QPKG (5/5)

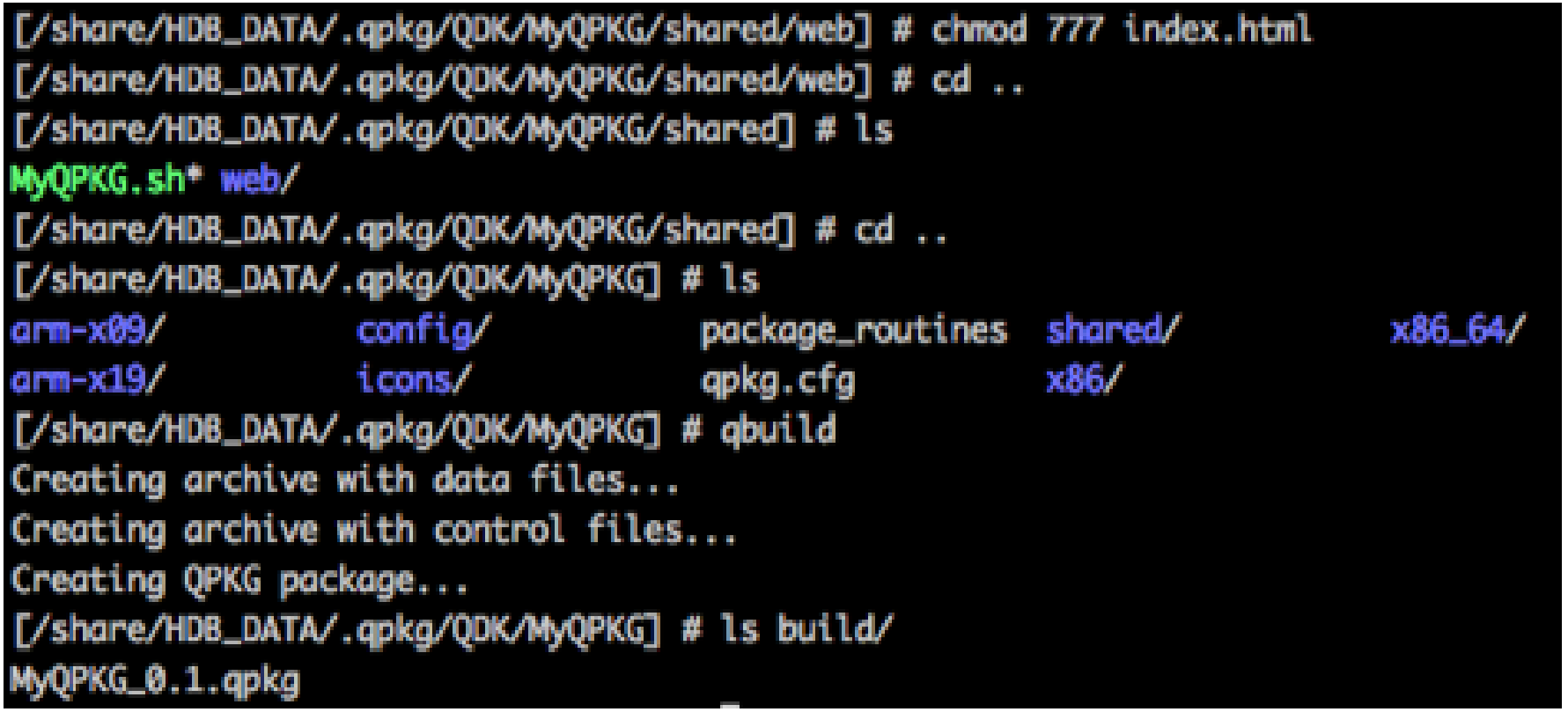
- Generate QPKG file
  - Use below command to build the QPKG file

```
[/share/HDA_DATA/.qpkg/QDK/MyQPKG] # qbuild
Creating archive with data files...
Creating archive with control files...
Creating QPKG package...
```

  - The QPKG file will be generated in the build folder

```
[/[/share/HDA_DATA/.qpkg/QDK/MyQPKG] # cd build/
[/share/HDA_DATA/.qpkg/QDK/MyQPKG/build] # ls
MyQPKG_0.1.qpkg
```

Screenshot


[/share/HDB_DATA/.qpkg/QDK/MyQPKG/shared/web] # chmod 777 index.html
[/share/HDB_DATA/.qpkg/QDK/MyQPKG/shared/web] # cd ..
[/share/HDB_DATA/.qpkg/QDK/MyQPKG/shared] # ls
MyQPKG.sh* web/
[/share/HDB_DATA/.qpkg/QDK/MyQPKG/shared] # cd ..
[/share/HDB_DATA/.qpkg/QDK/MyQPKG] # ls
arm-x09/ config/ package_routines shared/ x86_64/
arm-x19/ icons/ qpkg.cfg x86/
[/share/HDB_DATA/.qpkg/QDK/MyQPKG] # qbuild
Creating archive with data files...
Creating archive with control files...
Creating QPKG package...
[/share/HDB_DATA/.qpkg/QDK/MyQPKG] # ls build/
MyQPKG_0.1.qpkg

Learn More

- Learn more from QDK_2.0.pdf in below URL
  - http://files.qnap.com/download/Storage/QPKG/QDK_2.0_doc.zip