Homework 1

Homework 1 Writeup CS444 Spring2018 Group 37

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Abstract

The report details the assigned group 37 (Brandon Mei, Brian Huang) to ensure that it properly build the kernel and run it in qemu. The goal is to understand of how the tools and operating within a qemu based Yocto environment and make use of git to all subsequent projects.

COMMAND LOGS

Commands	Explination
cd/scratch/spring2018	Navigates us into the scrach folder.
mkdir group37	Create a folder for our group.
cp ../bin/acl_open./..bin/acl_open group37 onid(s)	Gives access to other people in thr group
cp files to our folder	copying files to our group folder.
qemu-system-i386 -gdb tcp::5537 -S -nographic -kernel bzImage-qemux86.bin -drive file=core-image-lsb-sdk-qemux86.ext4,if=virtio -enable-kvm -net none -usb -localtime –no-reboot –append ”root=/dev/vda rw console=ttyS0 debug”	Launches qemu.
Open a new terminal to run debug commands.	
copy kernel files.	
gdb -tui	Launch the debug mode to a target remote.
target remote: 5537	Sets the target our port.
continue	continues gdb.
root	gains access to root.
Open another terminal and navigate to the group folder.	
Copy conifg files as /.config into our group37 folder.	
make -j4 all	Builds the kernel inside the vm.

QUESTIONS

What do you think the main point of this assignment is?

The main point of this assignment was to understand and familiarize with operating within qemu based Yocto environment and know how to build the kernel and run it in qemu properly of the VM. Achieving this requires to have the right command and source the appropriate file prior to building the kernel or running qemu.

How did you personally approach the problem? Design decisions, algorithms?

We make sure we have everyone on our group to access our source control repo with assigned group number. Brandon make sure to get the acl open file to work and preceded to source the appropriate file on the environment configuration script in the opt folder. Since our group of two, we split the work evenly among Brandon Mei and Brian Huang.

How did you ensure your solution was correct? Testing details?

To ensure our solution was correct by running each of the step one at a time and make sure the result expected to run the source file prior to building the kernel or running qemu by making use of the command.

What did you learn

A lesson we learned that is our group had to experience a part of the process to build and see how it runs to the target remote in debug mode. The group learned that kernel boots on the VM and prepare with the next kernel portion of assignments.

CONTROL LOG

commit	Author	commit message
b5db43c	Brandon Mei	Create README.md
d467979	Brian Huang	added a writeup template
1588bdb	Brian Huang	Added some utilitiy files
5db36bb	Brian Huang	second test
b8a91bd	Brian Huang	Rough draft of the command log
7e5da85	Brian Huang	Roughdraft 2

WORK LOG

Date	Work Done	By Whom
April 11, 2018	Brandon Mei setup the source control repo under our assigned group name. Also setup github for commiting work to thise repo.	Brandon Mei
April 12, 2018	Brandon Mei sets up and builds the kernel.	Brandon Mei
April 13, 2018	Brian Huang set up the documentation for homework 1 and completed the command log.	Brian Huang
April 15, 2018	Brandon Mei finished the answers for the questions.	Brandon Mei
April 15, 2018	Brian Huang Completed the control log and the work log. Working on the final draft.	Brian Huang

REFERENCES

[1] J. Debian, "qemu-doc - qemu emulator user documentation," https://manpages.debian.org/jessie/qemu-system-x86/qemu-system-x86_64.1.en.html, May 2016, (Accessed on 4/15/2018).