



Avocado Auto Testing for AArch64 Virtualization

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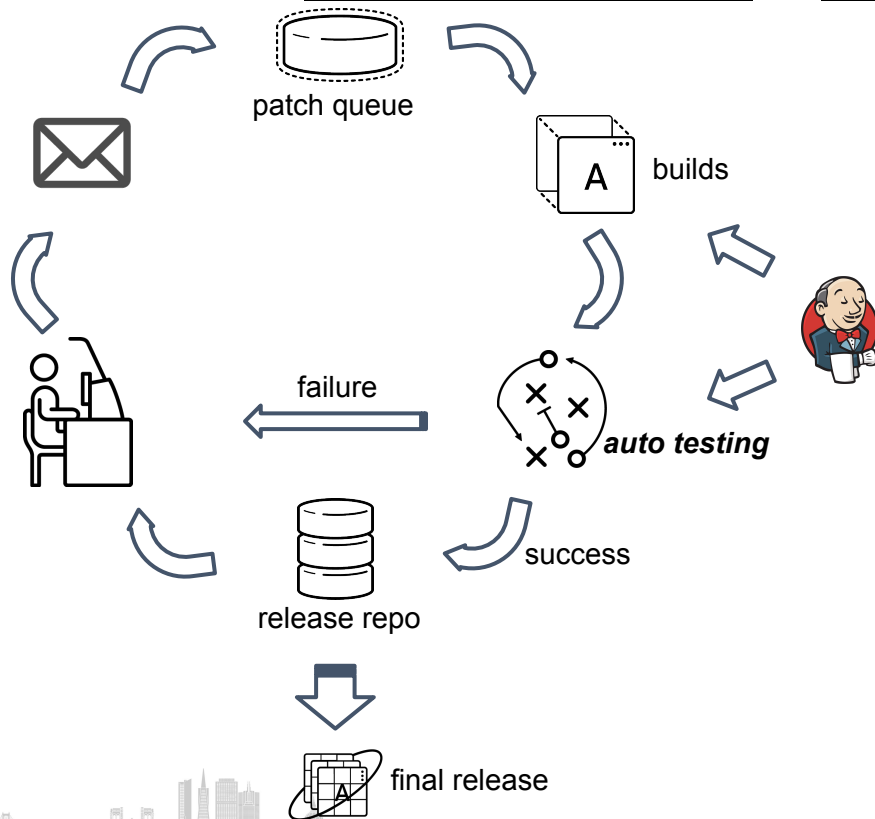
Agenda

- Needs & challenges for virt auto testing
- About Avocado testing framework
- Avocado + AArch64
 - Installation and usage
 - Writing & debugging test cases
 - Avocado + Jenkins
- Experience & summary



Needs for Auto Testing

Transition from *traditional dev model* to *continuous integration (CI)*



Using CI:

- Detect problems immediately
- Align QA with development cycles
- Faster release time

Requirements:

- Shift responsibility to CI engineers
- Auto testing becomes a key tool for CI team



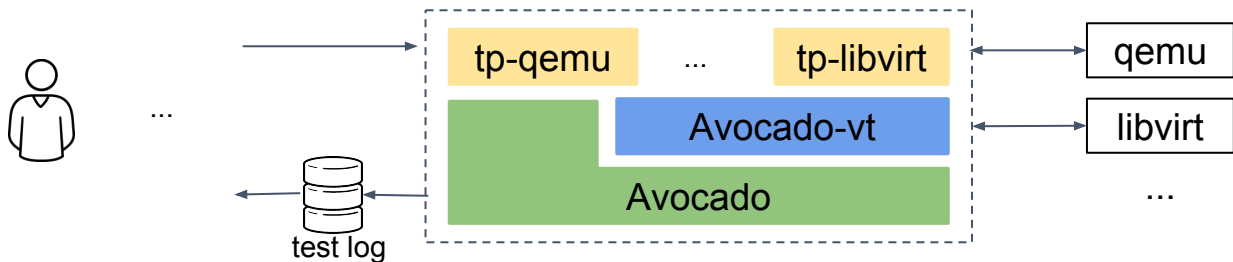
Challenges in AArch64 Virt Auto Testing

- Virt auto testing is sophisticated
 - Different setup, environment, various guest VMs, collecting results
- Test combinations are tremendously large
 - Guest OS types × VM hardwares × target features × virt components × ...
- Need to integrate with CI tools
- Many existing tests were written for x86



About Avocado

- A testing framework to replace autotest & virt-test

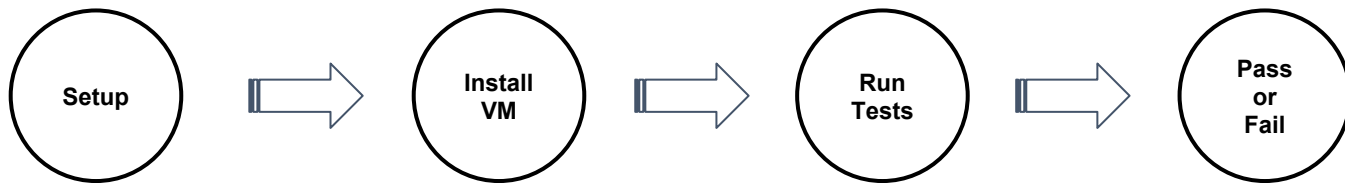


- Benefits
 - Generic framework
 - Easy integration and powerful in creating test cases
 - Guest OS: Linux (RHEL, Fedora, SUSE, ...) of various versions
 - Test plugins: qemu, libvirt, spice, openvswitch, ...
 - A collection of predefined test cases



Avocado + AArch64

- Improving support for AArch64 recently
 - Architecture neutral, mostly written in Python
 - Recently added support for AArch64
 - Support RHEL 7; and Fedora and other guests being added
 - Most plugins and tests are re-useable
- Easy to run on AArch64 machines



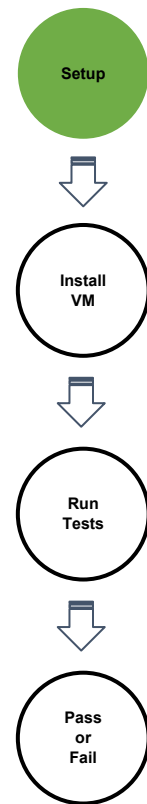
Avocado Setup on AArch64

- Add epel and avocado repos

```
# yum install \
  https://dl.fedoraproject.org/pub/epel/epel-release-latest-7.noarch.rpm
# curl https://repos-avocadoproject.rhcloud.com/static/avocado-el.repo \
  -o /etc/yum.repos.d/avocado.repo
```

- Install avocado-vt and do bootstrap

```
# yum install avocado-plugins-vt
# avocado vt-bootstrap --vt-type qemu --vt-guest-os RHEL.7.devel \
  --vt-selinux-setup
# avocado vt-bootstrap --vt-type libvirt --vt-guest-os RHEL.7.devel \
  --vt-selinux-setup
```



Install AArch64 VM

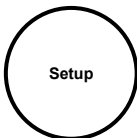
- Install a guest VM via URL

```
# avocado run unattended_install.url.extra_cdrom_ks.default_install.aio_native \  
--vt-type qemu --vt-guest-os RHEL.7.devel --vt-extra-params \  
'url = http://download.devel.redhat.com/released/RHEL-7/7.3/Server/aarch64/os/'
```

```
[root@aarch64-server ~]$ avocado run unattended_install.url.extra_cdrom_ks.default_install.aio_native --vt-type qemu --vt-  
-guest-os RHEL.7.devel --vt-extra-params 'url = http://download.devel.redhat.com/released/RHEL-7/7.3/Server/aarch64/os/'  
JOB ID      : 9d5a85d7239ea97bbcbe92f6f7657c4a7e258064  
JOB LOG     : /root/avocado/job-results/job-2017-09-26T22.10-9d5a85d/job.log
```

- Installation via ISO image
 - Download ISO to local host
 - Specify “cdrom_cd1 = /path/to/iso”
 - Run with

```
# avocado run --vt-type qemu --vt-guest-os RHEL.7.devel \  
unattended_install.cdrom.extra_cdrom_ks.default_install.aio_native
```



Checking Installation Status

- Check the installation result using the job log file

```
2017-07-21 17:54:10,567 qemu monitor L1619 DEBUG| Send command: {'execute': 'cont', 'id': 'zSdev6fb'}  
2017-07-21 17:54:10,569 unattended_insta L1235 INFO | Waiting for installation to finish. Timeout set to 7200 s (120 min)  
2017-07-21 17:54:10,570 unattended_insta L1245 DEBUG| Monitoring serial console log for completion message: /root/avocado/job-results/job-2017-07-21T17:54-f4a388b/test-results/1-io.github-autotest-qemu.unattended_install.url.extra_cdrom_ks.default_install.aio_native/serial-serial0-avocado-vt-vm1.log
```

- Check guest VM status

```
# less serial-serial0-avocado-vt-vm1.log
```

```
2017-07-21 17:54:12: EFI stub: Generating empty DTB  
2017-07-21 17:54:12: EFI stub: Exiting boot services and installing virtual address map...  
2017-07-21 17:54:17: [ 0.000000] Booting Linux on physical CPU 0x0  
2017-07-21 17:54:17: [ 0.000000] Linux version 4.5.0-15.el7.aarch64 (mockbuild@arm64-024.build.eng.bos.redhat.com) (gcc version 4.8.5 20150623 (Red Hat 4.8.5-11) (GCC) ) #1 SMP Wed Oct 12 14:00:10 EDT 2016  
2017-07-21 17:54:17: [ 0.000000] Boot CPU: AArch64 Processor [500f0001]  
2017-07-21 17:54:17: [ 0.000000] debug: ignoring logLevel setting.  
2017-07-21 17:54:17: [ 0.000000] efi: Getting EFI parameters from FDT:  
2017-07-21 17:54:17: [ 0.000000] EFI v2.60 by EDK II  
2017-07-21 17:54:17: [ 0.000000] efi: SMBIOS 3.0=0xb8730000 ACPI 2.0=0xb8710000  
2017-07-21 17:54:17: [ 0.000000] cma: Reserved 512 MiB at 0x0000000080000000  
2017-07-21 17:54:17: [ 0.000000] ACPI: Early table checksum verification disabled
```

- A successful installation

```
[root@aarch64-server ~]$ avocado run unattended_install.url.extra_cdrom_ks.default_install.aio_native --vt-type qemu --vt-guest-os RHEL.7.devel --vt-extra-params 'url = http://download.devel.redhat.com/released/RHEL-7/7.3/Server/aarch64/os/'  
JOB ID   : 02f417b4a8eaa76379c74542fa805c26b2aa0faa  
JOB LOG   : /root/avocado/job-results/job-2017-09-26T22.48-02f417b/job.log  
(1/1) io.github-autotest-qemu.unattended_install.url.extra_cdrom_ks.default_install.aio_native: PASS (1642.00 s)  
RESULTS  : PASS 1 | ERROR 0 | FAIL 0 | SKIP 0 | WARN 0 | INTERRUPT 0 | CANCEL 0  
JOB TIME  : 1645.83 s  
JOB HTML  : /root/avocado/job-results/job-2017-09-26T22.48-02f417b/results.html
```

Setup



Install VM



Run Tests



Result or Debug



Existing Avocado Test Cases

- Currently ~260 qemu test files (tp-qemu)

```
usb_common.py  
live_snapshot.py  
zero_copy.py  
...
```

```
check_block_size.py  
vnc.py  
check_unhalt_vcpu.py  
...
```

```
tsc_drift.py  
vmstop.py  
usb_host.py  
...
```

```
qmp_command.py  
qemu_disk_img.py  
boot_time.py  
...
```



Existing Avocado Test Cases

- Currently ~260 qemu test files (tp-qemu)

tsc_drift.py

```
def get_tsc(machine="host", i=0):
    tsc_cmd = tsc_cmd_guest
    if tsc_cmd == "host":
        tsc_cmd = tsc_cmd_host
    cmd = "taskset %s %s" % (1 << i, tsc_cmd)
    if machine == "host":
        s, o = commands.getstatusoutput(cmd)
    else:
        s, o = session.get_command_status_output(cmd)
    if s != 0:
        raise error.TestError("Fail to get tsc of host, ncpu: %d" % i)
    o = re.findall("(\\d+)", o)[0]
    return float(o)

vm = env.get_vm(params["main_vm"])
vm.verify_alive()

session = vm.wait_for_login(timeout=int(params.get("login_timeout", 360)))

if not os.path.exists(tsc_cmd_guest):
    commands.getoutput("gcc %s" % tsc_freq_path)

.....
```

tsc_drift.cfg

```
- tsc_drift:
    virt_test_type = qemu
    only Linux
    type = tsc_drift
    drift_threshold = 10
    interval = 30
    smp_min = 2
    i386, x86_64:
        required_cpu_flags = "constant_tsc"
        pre_command = "/usr/scripts/check_cpu_flag.py"
```



Existing Avocado Test Cases

- Currently ~260 qemu test files (tp-qemu)

```
usb_common.py      check_block_size.py  tsc_drift.py      qmp_command.py
live_snapshot.py   vnc.py               vmstop.py          qemu_disk_img.py
zero_copy.py       check_unhalt_vcpu.py usb_host.py         boot_time.py
...                ...                  ...                ...
```

- Translated to ~2,400 test combos for AArch64

```
VT      type_specific.io-github-autotest-qemu.multicast_iperf
VT      type_specific.io-github-autotest-qemu.getfd
VT      type_specific.io-github-autotest-qemu.hello_world
VT      type_specific.io-github-autotest-qemu.vnc_test
VT      type_specific.io-github-autotest-qemu.cluster_size_check.positive_testing
```

- Most tests run successfully on AArch64
- Some failed on AArch64 due to:
 - Setup issue
 - Wrong assumption about AArch64
 - Real bug



Create Test Cases on Avocado

- Avocado supports yaml-based, multiplexer for test description

```
variants SMP:
  - up:
      smp = 1
  - smp2:
      smp = 2

variants MEM:
  - mem2g:
      mem = 2048
  - mem4g:
      mem = 4096

variants DISK:
  - qcow2:
      image_type = qcow2
  - raw:
      image_type = raw
  - qcow:
      image_type = qcow
```

SMP \otimes MEM \otimes DISK

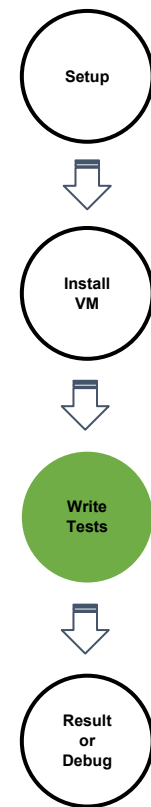


```
dict 1: (DISK=qcow2) . (MEM=mem2g) . (SMP=up)
dict 2: (DISK=qcow2) . (MEM=mem2g) . (SMP=smp2)
dict 3: (DISK=qcow2) . (MEM=mem4g) . (SMP=up)
dict 4: (DISK=qcow2) . (MEM=mem4g) . (SMP=smp2)
dict 5: (DISK=raw) . (MEM=mem2g) . (SMP=up)
dict 6: (DISK=raw) . (MEM=mem2g) . (SMP=smp2)
dict 7: (DISK=raw) . (MEM=mem4g) . (SMP=up)
dict 8: (DISK=raw) . (MEM=mem4g) . (SMP=smp2)
dict 9: (DISK=qcow) . (MEM=mem2g) . (SMP=up)
dict 10: (DISK=qcow) . (MEM=mem2g) . (SMP=smp2)
dict 11: (DISK=qcow) . (MEM=mem4g) . (SMP=up)
dict 12: (DISK=qcow) . (MEM=mem4g) . (SMP=smp2)
```



Define Tests for AArch64

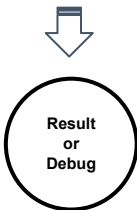
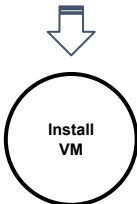
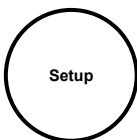
- AArch64 test categories
 - install_loop
E.g. unattended_install, shutdown, rh_kernel_update
 - basic_test
 - cpu_stress
 - storage_test
E.g. format_disk, dd_test.readwrite, fillup_disk
 - network_test
 - storage_migration
 - repeat_reboot
 - post_check



Define Tests for AArch64

- AArch64 test_rhel_gemu.cfg
 - only RHEL.7.devel
arch = aarch64
no x86_64 i386 ppc64 ppc64le
 - only qcow2
 - only virtio_net
 - username = root
password = 123456
hostpassword = redhat
host_password = redhat
 - variants rhel_tests:
 - @install_loop:
 - only shutdown rh_kernel_update
 - variants:
 - @scsi_test:
 - only virtio_scsi
 - @block_test:
 - only virtio_blk
 - @storage_test:
 - only format_disk dd_test.readwrite fillup_disk
 - variants:
 - @virtio_scsi_test:
 - only virtio_scsi
 - @virtio_blk_test:
 - only virtio_blk
 - @network_test:

... ..



Define Tests for AArch64

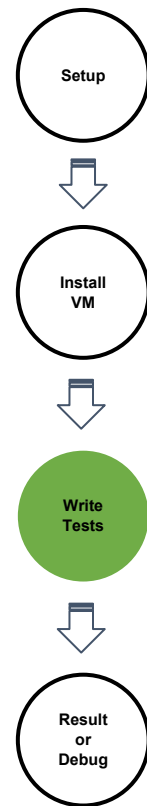
- AArch64 test categories

- install_loop
E.g. unattended_install, shutdown, rh_kernel_update
- basic_test
- cpu_stress
- storage_test
E.g. format_disk dd_test.readwrite fillup_disk
- network_test
- storage_migration
- repeat_reboot
- post_check

- Sample config available at <https://github.com/huangwei/linaro-sfo17>



53 total # of tests



AArch64 Testing Results

Autotest job 2058682 execution report

RESULTS DIR : [/root/avocado/job-results/job-2017-09-04T07:00:468c53c/test-results](#)
REPORT GENERATED AT : Tue Sep 5 02:26:45 2017
STATS : 49 pass, 4 errors, 0 failures

TEST RESULTS

| Date/Time | Test Case | Status | Time (sec) | Info | Debug |
|----------------|--|--------|------------|------|-----------------------|
| | | ALL ▾ | | | |
| Sep 4 19:00:34 | 01-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.unattended_install.cdrom.extra_cdrom_ks.default_install.aio_threads | PASS | 1147 | | Debug |
| Sep 4 19:19:42 | 02-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.shutdown | PASS | 399 | | Debug |
| Sep 4 19:26:21 | 03-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_blk.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.unattended_install.cdrom.extra_cdrom_ks.default_install.aio_threads | PASS | 1133 | | Debug |
| Sep 4 19:45:14 | 04-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_blk.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.shutdown | PASS | 172 | | Debug |
| Sep 4 19:48:07 | 05-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.rh_kernel_update | PASS | 599 | | Debug |
| Sep 4 19:58:07 | 06-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.reboot | PASS | 2118 | | Debug |
| Sep 4 20:33:25 | 07-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.system_powerdown | PASS | 162 | | Debug |
| Sep 4 20:36:08 | 08-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.system_reset_during_boot | PASS | 1698 | | Debug |
| Sep 4 21:04:27 | 09-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.system_reset_bootable | PASS | 361 | | Debug |
| Sep 4 21:10:28 | 10-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.stop_continue.stop_cont_only | PASS | 163 | | Debug |
| Sep 4 21:13:12 | 11-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.boot | PASS | 163 | | Debug |
| Sep 4 21:15:56 | 12-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.format_disk | PASS | 153 | | Debug |
| Sep 4 21:18:29 | 13-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.cdrom_test.cdrom_default | PASS | 517 | | Debug |
| Sep 4 21:27:07 | 14-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.autotest_scsi_testsuite.scsi-disk | PASS | 211 | | Debug |
| Sep 4 21:30:39 | 15-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.fillup_disk | PASS | 463 | | Debug |
| Sep 4 21:38:22 | 16-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.dd_test.readwrite.zero2disk | PASS | 122 | | Debug |
| Sep 4 21:40:25 | 17-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.dd_test.readwrite.disk2null | PASS | 172 | | Debug |
| Sep 4 21:43:17 | 18-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.netperf_stress_test.TCP_STREAM.guest2guest | PASS | 484 | | Debug |
| Sep 4 21:51:22 | 19-smp_4.4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.netperf_stress_test.TCP_STREAM.host2guest | PASS | 297 | | Debug |

* Courtesy of Yanan Fu (Red Hat)

Setup

Install VM

Write Tests

Result or Debug



AArch64 Testing Results

Autotest job 2058682 execution report

```
RESULTS DIR : /root/avocado/job-results/job-2017-09-04T07.00-468c53c/test-results
REPORT GENERATED AT : Tue Sep 5 02:26:45 2017
STATS : 49 pass, 4 errors, 0 failures
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TEST RESULTS

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|----------------|--|
| Sep 4 19:00:34 | 01-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.unattended_install |
| Sep 4 19:19:42 | 02-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.shutdown |
| Sep 4 19:26:21 | 03-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_blk.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.unattended_install |
| Sep 4 19:45:14 | 04-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_blk.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.shutdown |
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| Sep 4 21:04:27 | 09-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.system_reset_boot |
| Sep 4 21:10:28 | 10-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.stop_continue_stop |
| Sep 4 21:13:12 | 11-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.boot |
| Sep 4 21:15:56 | 12-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.format_disk |
| Sep 4 21:18:29 | 13-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.cdrom_test_cdrom |
| Sep 4 21:27:07 | 14-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.autotest_scsi_testcdrom |
| Sep 4 21:30:39 | 15-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.netperf_stress_test |
| Sep 4 21:38:22 | 16-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.dd_test.readwrite2 |
| Sep 4 21:40:25 | 17-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.dd_test.readwrite1 |
| Sep 4 21:43:17 | 18-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.netperf_stress_test |
| Sep 4 21:51:22 | 19-smp_4_4096m.repeat1.Host_RHEL.RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.up.virtio_net.RHEL.AIT.7.4.aarch64.io-github-autotest-qemu.netperf_stress_test |

* Courtesy of Yanan Fu (Red Hat)

```
../  
data/  
sysinfo/  
vm_register_avocado-vt-vm1_3283/  
catch_monitor-avocado-vt-vm1.log  
debug.log  
output  
gmpmonitor1-avocado-vt-vm1.log  
remote.log  
serial-serial0-avocado-vt-vm1.log  
stderr  
stdout  
tcpdump.log  
whiteboard
```

Info Debug

Debug

Debut

[Debug](#)

2. **Define**

[Debug](#)

Debug

Debut

[Debug](#)

10

[Debug](#)

Debug

[Debug](#)

Setup

Install VM

Write Tests

[illegible]

ENGINEERS AND DEVICES WORKING TOGETHER

AArch64 Testing Results

```
07:26:28 INFO | Created qemu process with parent PID 3281
07:26:28 WARNI | 'NoneType' object has no attribute 'info'
07:26:28 DEBUG | avocado-vt-vm1 alive now. Used to failed to get register info from
07:26:29 INFO | Connecting to monitor '<virtest.qemu.monitor.QMPMonitor> qmpmonit
07:26:29 DEBUG | (monitor avocado-vt-vm1.qmpmonitor1) Sending command 'qmp capabili
07:26:29 DEBUG | Send command: {'execute': 'qmp_capabilities', 'id': '7b8UXnCQ'}
07:26:29 INFO | Connecting to monitor '<virtest.qemu.monitor.QMPMonitor> catch_mc
07:26:29 DEBUG | (monitor avocado-vt-vm1.catch_monitor) Sending command 'qmp capabi
07:26:29 DEBUG | Send command: {'execute': 'qmp_capabilities', 'id': 'roFlQ08U'}
07:26:29 WARNI | No virtio console created in VM. Virtio ports: [<virtest.qemu_vir
07:26:29 DEBUG | VM appears to be alive with PID 3283
07:26:29 DEBUG | (monitor avocado-vt-vm1.qmpmonitor1) Sending command 'query-cpus'
07:26:29 DEBUG | Send command: {'execute': 'query-cpus', 'id': 'hAPh3ETU'}
```

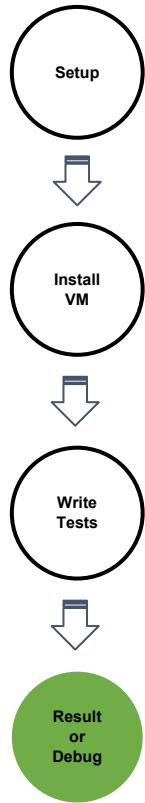
| | | |
|----------------|---|--|
| Sep 4 19:48:07 | 05-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | kernel_update |
| Sep 4 19:58:07 | 06-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu |
| Sep 4 20:33:25 | 07-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.system_powerdown |
| Sep 4 20:36:08 | 08-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.system_reset_during |
| Sep 4 21:04:27 | 09-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.system_reset_boot |
| Sep 4 21:10:28 | 10-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.stop_continue_stop |
| Sep 4 21:13:12 | 11-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.boot |
| Sep 4 21:15:56 | 12-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.format_disk |
| Sep 4 21:18:29 | 13-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.cdrom_test.cdrom |
| Sep 4 21:27:07 | 14-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.autotest_scsi_tests |
| Sep 4 21:30:39 | 15-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.filloop_dsc |
| Sep 4 21:38:22 | 16-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.dd_test.readwrite_c |
| Sep 4 21:40:25 | 17-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.dd_test.readwrite_c |
| Sep 4 21:43:17 | 18-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.netperf_stress_test |
| Sep 4 21:51:22 | 19-smp.4.4096m.repeat1.Host_RHEL_RHEL_AIT.m7.u4.arm64-pci.qcow2.virtio_scsi.virtio_net.RHEL.AIT.7.4.aarch64.linux | github-autotest-qemu.netperf_stress_test |

* Courtesy of Yanan Fu (Red Hat)

```


















































register avocado-vt-vm1 3283/
catch_monitor-avocado-vt-vm1.log
debug.log
output
qmpmonitor1-avocado-vt-vm1.log
remote.log
serial-serial0-avocado-vt-vm1.log
stderr
stdout
tcpdump.log
whiteboard

```

[illegible]

Jenkins Test Results

- Sample test cases in Jenkins CI instance

| S | W | Name ↓ | Last Success | Last Failure | Last Duration | Q | Type | Last Triggered | Last Successful Duration | Node Name | Number of builds | Progress |
|---|---|--|---------------------------------------|--------------------------------------|---------------|---|-----------|---------------------------|--------------------------|-----------|--|---|
|  |  | 05-config-beaker-machine-aarch64 | 2 mo 3 days - #3 | 2 mo 19 days - #1 | 5 min 22 sec |  | Freestyle | 2017-07-27 17:11 (#3) | 5 min 22 sec | N/A |  2  0  1 |  |
|  |  | 10-install-avocado-base-aarch64 | 2 mo 3 days - #22 | 3 mo 3 days - #19 | 1 min 32 sec |  | Freestyle | 2017-07-27 17:17 (#22) | 1 min 32 sec | N/A |  14  0  0 |  |
|  |  | 15-download-guest-iso-aarch64 | 2 mo 3 days - #15 | 7 mo 3 days - #7 | 53 sec |  | Freestyle | 2017-07-27 17:19 (#15) | 53 sec | N/A |  10  0  0 |  |
|  |  | 20-install-guest-vm-from-iso-aarch64 | 2 mo 3 days - #2 | N/A | 25 min |  | Freestyle | 2017-07-27 17:20 (#2) | 25 min | N/A |  2  0  0 |  |
|  |  | 30-run-kvm-unit-testing-aarch64 | 2 mo 19 days - #12 | 7 mo 6 days - #1 | 24 sec |  | Freestyle | 2017-07-11 19:31 (#12) | 24 sec | N/A |  11  0  0 |  |
|  |  | 30-run-qemu-avocado-tests-aarch64 | 2 mo 3 days - #3 | 2 mo 19 days - #2 | 1 hr 35 min |  | Freestyle | 2017-07-27 17:54 (#3) | 1 hr 35 min | N/A |  1  0  2 |  |
|  |  | 30-run-qemu-tests-aarch64 | N/A | N/A | N/A |  | Freestyle | N/A | N/A | N/A |  0  0  0 |  |



Summary

- Avocado is a powerful tool for virt auto testing
- Avocado + AArch64 is in better shape than ever
- Making AArch64 virt tests on-par with x86/ppc is possible
- Still need cleanup & fixes in various areas
- Call for community support to make Avocado + AArch64 complete



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Resources

1. Avocado projects at github

- Avocado: <https://github.com/avocado-framework/avocado.git>
- Avocado-vt: <https://github.com/avocado-framework/avocado-vt.git>
- tp-qemu: <https://github.com/autotest/tp-qemu.git>
- tp-libvirt: <https://github.com/autotest/tp-libvirt.git>
- Mailing list: <https://www.redhat.com/mailman/listinfo/avocado-devel>



2. Sample test config files

- <https://github.com/huangwei/linaro-sfo17>





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Thank You

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SFO17 keynotes and videos on: connect.linaro.org

For further information: www.linaro.org

