



TEST REPORT

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Test reports

Tests common for virtu-ci1

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00078 | no paging error | PASS |
| SEAPATH-00079 | no rcu stall | PASS |
| SEAPATH-00080 | no backtraces | PASS |
| SEAPATH-00075 | kernel is PREEMPT RT | PASS |
| SEAPATH-00076 | kernel is realtime | PASS |
| SEAPATH-00081 | kernel is >= 4.19.106 | PASS |
| SEAPATH-00083 | syslog-ng service is running | PASS |
| SEAPATH-00084 | syslog-ng is configured to send log on network | PASS |

- number of tests: 9
- number of failures: 0

Tests common_security for virtu-ci1

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00197 | Only official apt repositories configured | PASS |
| SEAPATH-00198 | No unrecognized packages installed | PASS |
| SEAPATH-00106 | Check /etc/shadow permissions | PASS |
| SEAPATH-00107 | Check /etc/passwd permissions | PASS |
| SEAPATH-00108 | Check /etc/syslog-ng/cert.d/clientkey.pem permissions | PASS |
| SEAPATH-00049 | Check /etc/ssh/ssh_host_ed25519_key permissions | PASS |
| SEAPATH-00090 | Check /etc/ssh/ssh_host_rsa_key permissions | PASS |
| SEAPATH-00192 | All files have a known owner and group | PASS |
| SEAPATH-00193 | All directories writable by all users have the sticky bit | PASS |
| SEAPATH-00194 | All directories writable by all users are owned by root | PASS |
| SEAPATH-00195 | Ceph OSD are owned by ceph | PASS |
| SEAPATH-00196 | No unexpected file has setuid/setgid enabled | PASS |
| SEAPATH-00088 | root password was randomized at boot | PASS |
| SEAPATH-00089 | root password is randomized at each boot | PASS |
| SEAPATH-00091 | root password is encrypted with a crypto at least equivalent as sha512 | PASS |
| SEAPATH-00092 | bash timeout is set read-only to 300s | PASS |
| SEAPATH-00093 | sshd forbids setting environment variables | PASS |
| SEAPATH-00094 | sshd server time-out is set to 300s of client inactivity | PASS |
| SEAPATH-00095 | shadow encrypts passwords with SHA512 by default | PASS |
| SEAPATH-00096 | shadow encryption uses at least 65536 rounds | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00097 | pam password authentication uses sha512 with 65536 rounds or yescrypt | PASS |
| SEAPATH-00098 | password set to expire after 90 days | PASS |
| SEAPATH-00099 | su is denied | PASS |
| SEAPATH-00100 | /etc/securetty is empty | PASS |
| SEAPATH-00101 | PAM securetty module is active in login policy | PASS |
| SEAPATH-00202 | grub root superuser is set in /boot/grub/grub.cfg | PASS |
| SEAPATH-00203 | grub root superuser is password protected | PASS |
| SEAPATH-00204 | main menuentry is unrestricted in /boot/grub/grub.cfg | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SECURITY_YAMA is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : DEBUG_WX is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SECURITY_DMESG_RESTRICT is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : PAGE_TABLE_ISOLATION is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : RETPOLINE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : LEGACY_VSYSCALL_NONE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SLAB_FREELIST_RANDOM is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SLAB_FREELIST_HARDENED is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : HARDENED_USERCOPY is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : FORTIFY_SOURCE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : PAGE_POISONING is enabled | PASS |
| SEAPATH-00170 | Wipe slab and page allocations enabled on cmdline | PASS |
| SEAPATH-00174 | Randomize kstack offset in on | PASS |
| SEAPATH-00175 | Disable slab usercopy fallback | PASS |
| SEAPATH-00201 | LSM Yama is enabled | PASS |
| SEAPATH-00163 | sudo policy is installed for group ansible (ansible) | PASS |
| SEAPATH-00164 | sudo requires password for group operator (operator) | PASS |
| SEAPATH-00165 | sudo requires password for group maintenance-N1 (maint-n1) | PASS |
| SEAPATH-00166 | sudo requires password for group maintenance-N3 (maint-n3) | PASS |
| SEAPATH-00167 | sudo requires password for group administrator (admincluster) | PASS |
| SEAPATH-00168 | sudo requires password for group super-administrator (adminsyzs) | PASS |
| SEAPATH-00169 | sudo requires password for group ansible (ansible) | PASS |
| SEAPATH-00103 | /usr/bin/sudo exists | PASS |
| SEAPATH-00104 | /usr/bin/sudo belongs to group privileged | PASS |
| SEAPATH-00105 | /usr/bin/sudo has permissions 4750 | PASS |
| SEAPATH-00148 | /etc/sudoers include env_reset directive | PASS |
| SEAPATH-00150 | /etc/sudoers all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers /etc/sudoers is owned by root:root with 0440 permissions | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00150 | /etc/sudoers.d/ansible all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/ansible EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/ansible rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/ansible commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/ansible no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/ansible /etc/sudoers.d/ansible is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/admin all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/admin EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/admin rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/admin commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/admin no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/admin /etc/sudoers.d/admin is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/virtu all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/virtu EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/virtu rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/virtu commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/virtu no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/virtu /etc/sudoers.d/virtu is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/Debian-snmp all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/Debian-snmp EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/Debian-snmp rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/Debian-snmp commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/Debian-snmp no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/Debian-snmp /etc/sudoers.d/Debian-snmp is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/ceph-osd-smartctl all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/ceph-osd-smartctl EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/ceph-osd-smartctl rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/ceph-osd-smartctl commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/ceph-osd-smartctl no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/ceph-osd-smartctl /etc/sudoers.d/ceph-osd-smartctl is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00171 | Check coredumps are disabled | PASS |
| SEAPATH-00172 | Check kexec is disabled | PASS |
| SEAPATH-00173 | Check binfmt_misc is disabled | PASS |
| SEAPATH-00176 | Check kptr_restrict is set to 2 | PASS |
| SEAPATH-00177 | Check dmesg_restrict is set to 1 | PASS |
| SEAPATH-00178 | Check pid_max is set to 4194304 | PASS |
| SEAPATH-00179 | Check perf_cpu_time_max_percent is set to 1 | PASS |
| SEAPATH-00180 | Check perf_event_max_sample_rate is set to 1 | PASS |
| SEAPATH-00181 | Check perf_event_paranoid is set to 2 | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00182 | Check randomize_va_space is set to 2 | PASS |
| SEAPATH-00183 | Check sysrq is set to 0 | PASS |
| SEAPATH-00184 | Check unprivileged_bpf_disabled is set to 1 | PASS |
| SEAPATH-00185 | Check panic_on_oops is set to 1 | PASS |
| SEAPATH-00186 | Check kernel.yama.ptrace_scope is set to 2 | PASS |
| SEAPATH-00187 | Check suid_dumpable is set to 0 | PASS |
| SEAPATH-00188 | Check protected_fifos is set to 2 | PASS |
| SEAPATH-00189 | Check protected_regular is set to 2 | PASS |
| SEAPATH-00190 | Check protected_symlinks is set to 1 | PASS |
| SEAPATH-00191 | Check protected_hardlinks is set to 1 | PASS |
| SEAPATH-00082 | /var/log is mounted on a separate partition | PASS |
| SEAPATH-00085 | syslog-ng can not acquire new privileges | PASS |
| SEAPATH-00086 | syslog-ng capabilities are bounded | PASS |
| SEAPATH-00087 | syslog-ng system calls are filtered | PASS |
| SEAPATH-00199 | No systemd service failed | PASS |

- number of tests: 115
- number of failures: 0

Tests hypervisor for virtu-ci1

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00044 | Check /etc/syslog-ng/cert.d/clientcert.pem permissions | PASS |
| SEAPATH-00045 | Check /etc/syslog-ng/cert.d/clientkey.pem permissions | PASS |
| SEAPATH-00003 | libvirtd service is running | PASS |
| SEAPATH-00035 | ovs-vswitchd service is running | PASS |
| SEAPATH-00035 | ovsdb-server service is running | PASS |
| SEAPATH-00038 | lspci 3.6.2+ is available | PASS |
| SEAPATH-00018 | KVM device available | PASS |
| SEAPATH-00019 | Qemu for x86-64 available | PASS |
| SEAPATH-00020 | Libvirtd service is running | PASS |

- number of tests: 10
- number of failures: 0

Tests hypervisor iommu for virtu-ci1

| Test ID | Tests | Results |
|---------------|-----------------------------------|---------|
| SEAPATH-00030 | iommu enabled in passthrough mode | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00031 | iommu is loaded | PASS |
| SEAPATH-00032 | iommu is populated | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : INTEL_IOMMU is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : AMD_IOMMU is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : AMD_IOMMU_V2 is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : IOMMU_IOVA is enabled | PASS |

- number of tests: 8
- number of failures: 0

Tests hypervisorsecurity for virtu-ci1

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00033 | /etc/group is consistent | PASS |
| SEAPATH-00033 | /etc/gshadow is consistent | PASS |
| SEAPATH-00034 | /etc/group does not include extra group | PASS |
| SEAPATH-00034 | /etc/gshadow does not include extra group | PASS |
| SEAPATH-00008 | Slab merging is disabled on cmdline | PASS |
| SEAPATH-00009 | Kernel Page Table Isolation is always enabled on cmdline | PASS |
| SEAPATH-00010 | SLUB redzoning and sanity checking enabled on cmdline | PASS |
| SEAPATH-00047 | /etc/passwd is consistent | PASS |
| SEAPATH-00048 | /etc/passwd does not include extra user | PASS |
| SEAPATH-00046 | /etc/shadow is consistent | PASS |
| SEAPATH-00015 | Vulnerabilities sysfs entry exist | PASS |
| SEAPATH-00017 | System is not vulnerable to : meltdown | PASS |
| SEAPATH-00017 | System is not vulnerable to : l1tf | PASS |
| SEAPATH-00017 | System is not vulnerable to : spectre_v1 | PASS |
| SEAPATH-00017 | System is not vulnerable to : spectre_v2 | PASS |
| SEAPATH-00012 | admin user exists | PASS |
| SEAPATH-00013 | admin has a password | PASS |

- number of tests: 17
- number of failures: 0

Tests common for virtu-ci3

| Test ID | Tests | Results |
|---------------|-----------------|---------|
| SEAPATH-00078 | no paging error | PASS |
| SEAPATH-00079 | no rcu stall | PASS |

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00080 | no backtraces | PASS |
| SEAPATH-00075 | kernel is PREEMPT RT | PASS |
| SEAPATH-00076 | kernel is realtime | PASS |
| SEAPATH-00081 | kernel is >= 4.19.106 | PASS |
| SEAPATH-00083 | syslog-ng service is running | PASS |
| SEAPATH-00084 | syslog-ng is configured to send log on network | PASS |

- number of tests: 9
- number of failures: 0

Tests common_security for virtu-ci3

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00197 | Only official apt repositories configured | PASS |
| SEAPATH-00198 | No unrecognized packages installed | PASS |
| SEAPATH-00106 | Check /etc/shadow permissions | PASS |
| SEAPATH-00107 | Check /etc/passwd permissions | PASS |
| SEAPATH-00108 | Check /etc/syslog-ng/cert.d/clientkey.pem permissions | PASS |
| SEAPATH-00049 | Check /etc/ssh/ssh_host_ed25519_key permissions | PASS |
| SEAPATH-00090 | Check /etc/ssh/ssh_host_rsa_key permissions | PASS |
| SEAPATH-00192 | All files have a known owner and group | PASS |
| SEAPATH-00193 | All directories writable by all users have the sticky bit | PASS |
| SEAPATH-00194 | All directories writable by all users are owned by root | PASS |
| SEAPATH-00195 | Ceph OSD are owned by ceph | PASS |
| SEAPATH-00196 | No unexpected file has setuid/setgid enabled | PASS |
| SEAPATH-00088 | root password was randomized at boot | PASS |
| SEAPATH-00089 | root password is randomized at each boot | PASS |
| SEAPATH-00091 | root password is encrypted with a crypto at least equivalent as sha512 | PASS |
| SEAPATH-00092 | bash timeout is set read-only to 300s | PASS |
| SEAPATH-00093 | sshd forbids setting environment variables | PASS |
| SEAPATH-00094 | sshd server time-out is set to 300s of client inactivity | PASS |
| SEAPATH-00095 | shadow encrypts passwords with SHA512 by default | PASS |
| SEAPATH-00096 | shadow encryption uses at least 65536 rounds | PASS |
| SEAPATH-00097 | pam password authentication uses sha512 with 65536 rounds or yescrypt | PASS |
| SEAPATH-00098 | password set to expire after 90 days | PASS |
| SEAPATH-00099 | su is denied | PASS |
| SEAPATH-00100 | /etc/securetty is empty | PASS |
| SEAPATH-00101 | PAM securetty module is active in login policy | PASS |
| SEAPATH-00202 | grub root superuser is set in /boot/grub/grub.cfg | PASS |
| SEAPATH-00203 | grub root superuser is password protected | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00204 | main menuentry is unrestricted in /boot/grub/grub.cfg | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SECURITY_YAMA is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : DEBUG_WX is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SECURITY_DMESG_RESTRICT is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : PAGE_TABLE_ISOLATION is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : RETPOLINE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : LEGACY_VSYSCALL_NONE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SLAB_FREELIST_RANDOM is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SLAB_FREELIST_HARDENED is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : HARDENED_USERCOPY is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : FORTIFY_SOURCE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : PAGE_POISONING is enabled | PASS |
| SEAPATH-00170 | Wipe slab and page allocations enabled on cmdline | PASS |
| SEAPATH-00174 | Randomize kstack offset in on | PASS |
| SEAPATH-00175 | Disable slab usercopy fallback | PASS |
| SEAPATH-00201 | LSM Yama is enabled | PASS |
| SEAPATH-00163 | sudo policy is installed for group ansible (ansible) | PASS |
| SEAPATH-00164 | sudo requires password for group operator (operator) | PASS |
| SEAPATH-00165 | sudo requires password for group maintenance-N1 (maint-n1) | PASS |
| SEAPATH-00166 | sudo requires password for group maintenance-N3 (maint-n3) | PASS |
| SEAPATH-00167 | sudo requires password for group administrator (admincluster) | PASS |
| SEAPATH-00168 | sudo requires password for group super-administrator (adminsyz) | PASS |
| SEAPATH-00169 | sudo requires password for group ansible (ansible) | PASS |
| SEAPATH-00103 | /usr/bin/sudo exists | PASS |
| SEAPATH-00104 | /usr/bin/sudo belongs to group privileged | PASS |
| SEAPATH-00105 | /usr/bin/sudo has permissions 4750 | PASS |
| SEAPATH-00148 | /etc/sudoers include env_reset directive | PASS |
| SEAPATH-00150 | /etc/sudoers all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers /etc/sudoers is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/ansible all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/ansible EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/ansible rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/ansible commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/ansible no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/ansible /etc/sudoers.d/ansible is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/ceph-osd-smartctl all commands require authentication | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00152 | /etc/sudoers.d/ceph-osd-smartctl EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/ceph-osd-smartctl rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/ceph-osd-smartctl commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/ceph-osd-smartctl no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/ceph-osd-smartctl /etc/sudoers.d/ceph-osd-smartctl is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/virtu all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/virtu EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/virtu rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/virtu commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/virtu no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/virtu /etc/sudoers.d/virtu is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/admin all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/admin EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/admin rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/admin commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/admin no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/admin /etc/sudoers.d/admin is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/Debian-snmp all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/Debian-snmp EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/Debian-snmp rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/Debian-snmp commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/Debian-snmp no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/Debian-snmp /etc/sudoers.d/Debian-snmp is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00171 | Check coredumps are disabled | PASS |
| SEAPATH-00172 | Check kexec is disabled | PASS |
| SEAPATH-00173 | Check binfmt_misc is disabled | PASS |
| SEAPATH-00176 | Check kptr_restrict is set to 2 | PASS |
| SEAPATH-00177 | Check dmesg_restrict is set to 1 | PASS |
| SEAPATH-00178 | Check pid_max is set to 4194304 | PASS |
| SEAPATH-00179 | Check perf_cpu_time_max_percent is set to 1 | PASS |
| SEAPATH-00180 | Check perf_event_max_sample_rate is set to 1 | PASS |
| SEAPATH-00181 | Check perf_event_paranoid is set to 2 | PASS |
| SEAPATH-00182 | Check randomize_va_space is set to 2 | PASS |
| SEAPATH-00183 | Check sysrq is set to 0 | PASS |
| SEAPATH-00184 | Check unprivileged_bpf_disabled is set to 1 | PASS |
| SEAPATH-00185 | Check panic_on_oops is set to 1 | PASS |
| SEAPATH-00186 | Check kernel.yama.ptrace_scope is set to 2 | PASS |
| SEAPATH-00187 | Check suid_dumpable is set to 0 | PASS |
| SEAPATH-00188 | Check protected_fifos is set to 2 | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00189 | Check protected_regular is set to 2 | PASS |
| SEAPATH-00190 | Check protected_symlinks is set to 1 | PASS |
| SEAPATH-00191 | Check protected_hardlinks is set to 1 | PASS |
| SEAPATH-00082 | /var/log is mounted on a separate partition | PASS |
| SEAPATH-00085 | syslog-ng can not acquire new privileges | PASS |
| SEAPATH-00086 | syslog-ng capabilities are bounded | PASS |
| SEAPATH-00087 | syslog-ng system calls are filtered | PASS |
| SEAPATH-00199 | No systemd service failed | PASS |

- number of tests: 115
- number of failures: 0

Tests hypervisor for virtu-ci3

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00044 | Check /etc/syslog-ng/cert.d/clientcert.pem permissions | PASS |
| SEAPATH-00045 | Check /etc/syslog-ng/cert.d/clientkey.pem permissions | PASS |
| SEAPATH-00003 | libvirtd service is running | PASS |
| SEAPATH-00035 | ovs-vswitchd service is running | PASS |
| SEAPATH-00035 | ovsdb-server service is running | PASS |
| SEAPATH-00038 | lspci 3.6.2+ is available | PASS |
| SEAPATH-00018 | KVM device available | PASS |
| SEAPATH-00019 | Qemu for x86-64 available | PASS |
| SEAPATH-00020 | Libvirtd service is running | PASS |

- number of tests: 10
- number of failures: 0

Tests hypervisor iommu for virtu-ci3

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00030 | iommu enabled in passthrough mode | PASS |
| SEAPATH-00031 | iommu is loaded | PASS |
| SEAPATH-00032 | iommu is populated | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : INTEL_IOMMU is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : AMD_IOMMU is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : AMD_IOMMU_V2 is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : IOMMU_IOVA is enabled | PASS |

- number of tests: 8
- number of failures: 0

Tests hypervisorsecurity for virtu-ci3

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00033 | /etc/group is consistent | PASS |
| SEAPATH-00033 | /etc/gshadow is consistent | PASS |
| SEAPATH-00034 | /etc/group does not include extra group | PASS |
| SEAPATH-00034 | /etc/gshadow does not include extra group | PASS |
| SEAPATH-00008 | Slab merging is disabled on cmdline | PASS |
| SEAPATH-00009 | Kernel Page Table Isolation is always enabled on cmdline | PASS |
| SEAPATH-00010 | SLUB redzoning and sanity checking enabled on cmdline | PASS |
| SEAPATH-00047 | /etc/passwd is consistent | PASS |
| SEAPATH-00048 | /etc/passwd does not include extra user | PASS |
| SEAPATH-00046 | /etc/shadow is consistent | PASS |
| SEAPATH-00015 | Vulnerabilities sysfs entry exist | PASS |
| SEAPATH-00017 | System is not vulnerable to : meltdown | PASS |
| SEAPATH-00017 | System is not vulnerable to : l1tf | PASS |
| SEAPATH-00017 | System is not vulnerable to : spectre_v1 | PASS |
| SEAPATH-00017 | System is not vulnerable to : spectre_v2 | PASS |
| SEAPATH-00012 | admin user exists | PASS |
| SEAPATH-00013 | admin has a password | PASS |

- number of tests: 17
- number of failures: 0

Tests common for virtu-ci2

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00078 | no paging error | PASS |
| SEAPATH-00079 | no rcu stall | PASS |
| SEAPATH-00080 | no backtraces | PASS |
| SEAPATH-00075 | kernel is PREEMPT RT | PASS |
| SEAPATH-00076 | kernel is realtime | PASS |
| SEAPATH-00081 | kernel is >= 4.19.106 | PASS |
| SEAPATH-00083 | syslog-ng service is running | PASS |
| SEAPATH-00084 | syslog-ng is configured to send log on network | PASS |

- number of tests: 9

- number of failures: 0

Tests common_security for virtu-ci2

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00197 | Only official apt repositories configured | PASS |
| SEAPATH-00198 | No unrecognized packages installed | PASS |
| SEAPATH-00106 | Check /etc/shadow permissions | PASS |
| SEAPATH-00107 | Check /etc/passwd permissions | PASS |
| SEAPATH-00108 | Check /etc/syslog-ng/cert.d/clientkey.pem permissions | PASS |
| SEAPATH-00049 | Check /etc/ssh/ssh_host_ed25519_key permissions | PASS |
| SEAPATH-00090 | Check /etc/ssh/ssh_host_rsa_key permissions | PASS |
| SEAPATH-00192 | All files have a known owner and group | PASS |
| SEAPATH-00193 | All directories writable by all users have the sticky bit | PASS |
| SEAPATH-00194 | All directories writable by all users are owned by root | PASS |
| SEAPATH-00195 | Ceph OSD are owned by ceph | PASS |
| SEAPATH-00196 | No unexpected file has setuid/setgid enabled | PASS |
| SEAPATH-00088 | root password was randomized at boot | PASS |
| SEAPATH-00089 | root password is randomized at each boot | PASS |
| SEAPATH-00091 | root password is encrypted with a crypto at least equivalent as sha512 | PASS |
| SEAPATH-00092 | bash timeout is set read-only to 300s | PASS |
| SEAPATH-00093 | sshd forbids setting environment variables | PASS |
| SEAPATH-00094 | sshd server time-out is set to 300s of client inactivity | PASS |
| SEAPATH-00095 | shadow encrypts passwords with SHA512 by default | PASS |
| SEAPATH-00096 | shadow encryption uses at least 65536 rounds | PASS |
| SEAPATH-00097 | pam password authentication uses sha512 with 65536 rounds or yescrypt | PASS |
| SEAPATH-00098 | password set to expire after 90 days | PASS |
| SEAPATH-00099 | su is denied | PASS |
| SEAPATH-00100 | /etc/securetty is empty | PASS |
| SEAPATH-00101 | PAM securetty module is active in <i>login</i> policy | PASS |
| SEAPATH-00202 | grub root superuser is set in /boot/grub/grub.cfg | PASS |
| SEAPATH-00203 | grub root superuser is password protected | PASS |
| SEAPATH-00204 | main menuentry is unrestricted in /boot/grub/grub.cfg | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SECURITY_YAMA is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : DEBUG_WX is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SECURITY_DMESG_RESTRICT is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : PAGE_TABLE_ISOLATION is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : RETPOLINE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : LEGACY_VSYSCALL_NONE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SLAB_FREELIST_RANDOM is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : SLAB_FREELIST_HARDENED is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : HARDENED_USERCOPY is enabled | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00050 | Linux kernel <i>hardening</i> : FORTIFY_SOURCE is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>hardening</i> : PAGE_POISONING is enabled | PASS |
| SEAPATH-00170 | Wipe slab and page allocations enabled on cmdline | PASS |
| SEAPATH-00174 | Randomize kstack offset in on | PASS |
| SEAPATH-00175 | Disable slab usercopy fallback | PASS |
| SEAPATH-00201 | LSM Yama is enabled | PASS |
| SEAPATH-00163 | sudo policy is installed for group ansible (ansible) | PASS |
| SEAPATH-00164 | sudo requires password for group operator (operator) | PASS |
| SEAPATH-00165 | sudo requires password for group maintenance-N1 (maint-n1) | PASS |
| SEAPATH-00166 | sudo requires password for group maintenance-N3 (maint-n3) | PASS |
| SEAPATH-00167 | sudo requires password for group administrator (admincluster) | PASS |
| SEAPATH-00168 | sudo requires password for group super-administrator (adminsyz) | PASS |
| SEAPATH-00169 | sudo requires password for group ansible (ansible) | PASS |
| SEAPATH-00103 | /usr/bin/sudo exists | PASS |
| SEAPATH-00104 | /usr/bin/sudo belongs to group privileged | PASS |
| SEAPATH-00105 | /usr/bin/sudo has permissions 4750 | PASS |
| SEAPATH-00148 | /etc/sudoers include env_reset directive | PASS |
| SEAPATH-00150 | /etc/sudoers all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers /etc/sudoers is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/admin all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/admin EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/admin rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/admin commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/admin no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/admin /etc/sudoers.d/admin is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/ansible all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/ansible EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/ansible rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/ansible commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/ansible no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/ansible /etc/sudoers.d/ansible is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/Debian-snmpp all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/Debian-snmpp EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/Debian-snmpp rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/Debian-snmpp commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/Debian-snmpp no command is specified with wildcard argument | PASS |

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00156 | /etc/sudoers.d/Debian-snmp /etc/sudoers.d/Debian-snmp is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/ceph-osd-smartctl all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/ceph-osd-smartctl EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/ceph-osd-smartctl rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/ceph-osd-smartctl commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/ceph-osd-smartctl no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/ceph-osd-smartctl /etc/sudoers.d/ceph-osd-smartctl is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00150 | /etc/sudoers.d/virtu all commands require authentication | PASS |
| SEAPATH-00152 | /etc/sudoers.d/virtu EXEC option is not used | PASS |
| SEAPATH-00153 | /etc/sudoers.d/virtu rules are not defined by negation | PASS |
| SEAPATH-00154 | /etc/sudoers.d/virtu commands are not specified without arguments | PASS |
| SEAPATH-00155 | /etc/sudoers.d/virtu no command is specified with wildcard argument | PASS |
| SEAPATH-00156 | /etc/sudoers.d/virtu /etc/sudoers.d/virtu is owned by root:root with 0440 permissions | PASS |
| SEAPATH-00171 | Check coredumps are disabled | PASS |
| SEAPATH-00172 | Check kexec is disabled | PASS |
| SEAPATH-00173 | Check binfmt_misc is disabled | PASS |
| SEAPATH-00176 | Check kptr_restrict is set to 2 | PASS |
| SEAPATH-00177 | Check dmesg_restrict is set to 1 | PASS |
| SEAPATH-00178 | Check pid_max is set to 4194304 | PASS |
| SEAPATH-00179 | Check perf_cpu_time_max_percent is set to 1 | PASS |
| SEAPATH-00180 | Check perf_event_max_sample_rate is set to 1 | PASS |
| SEAPATH-00181 | Check perf_event_paranoid is set to 2 | PASS |
| SEAPATH-00182 | Check randomize_va_space is set to 2 | PASS |
| SEAPATH-00183 | Check sysrq is set to 0 | PASS |
| SEAPATH-00184 | Check unprivileged_bpf_disabled is set to 1 | PASS |
| SEAPATH-00185 | Check panic_on_oops is set to 1 | PASS |
| SEAPATH-00186 | Check kernel.yama.ptrace_scope is set to 2 | PASS |
| SEAPATH-00187 | Check suid_dumpable is set to 0 | PASS |
| SEAPATH-00188 | Check protected_fifos is set to 2 | PASS |
| SEAPATH-00189 | Check protected_regular is set to 2 | PASS |
| SEAPATH-00190 | Check protected_symlinks is set to 1 | PASS |
| SEAPATH-00191 | Check protected_hardlinks is set to 1 | PASS |
| SEAPATH-00082 | /var/log is mounted on a separate partition | PASS |
| SEAPATH-00085 | syslog-ng can not acquire new privileges | PASS |
| SEAPATH-00086 | syslog-ng capabilities are bounded | PASS |
| SEAPATH-00087 | syslog-ng system calls are filtered | PASS |
| SEAPATH-00199 | No systemd service failed | PASS |

- number of tests: 115

- number of failures: 0

Tests hypervisor for virtu-ci2

| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00044 | Check /etc/syslog-ng/cert.d/clientcert.pem permissions | PASS |
| SEAPATH-00045 | Check /etc/syslog-ng/cert.d/clientkey.pem permissions | PASS |
| SEAPATH-00003 | libvirtd service is running | PASS |
| SEAPATH-00035 | ovs-vswitchd service is running | PASS |
| SEAPATH-00035 | ovsdb-server service is running | PASS |
| SEAPATH-00038 | lspci 3.6.2+ is available | PASS |
| SEAPATH-00018 | KVM device available | PASS |
| SEAPATH-00019 | Qemu for x86-64 available | PASS |
| SEAPATH-00020 | Libvirtd service is running | PASS |

- number of tests: 10
- number of failures: 0

Tests hypervisoriommu for virtu-ci2

| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00030 | iommu enabled in passthrough mode | PASS |
| SEAPATH-00031 | iommu is loaded | PASS |
| SEAPATH-00032 | iommu is populated | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : INTEL_IOMMU is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : AMD_IOMMU is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : AMD_IOMMU_V2 is enabled | PASS |
| SEAPATH-00050 | Linux kernel <i>iommu</i> : IOMMU_IOVA is enabled | PASS |

- number of tests: 8
- number of failures: 0

Tests hypervisorsecurity for virtu-ci2

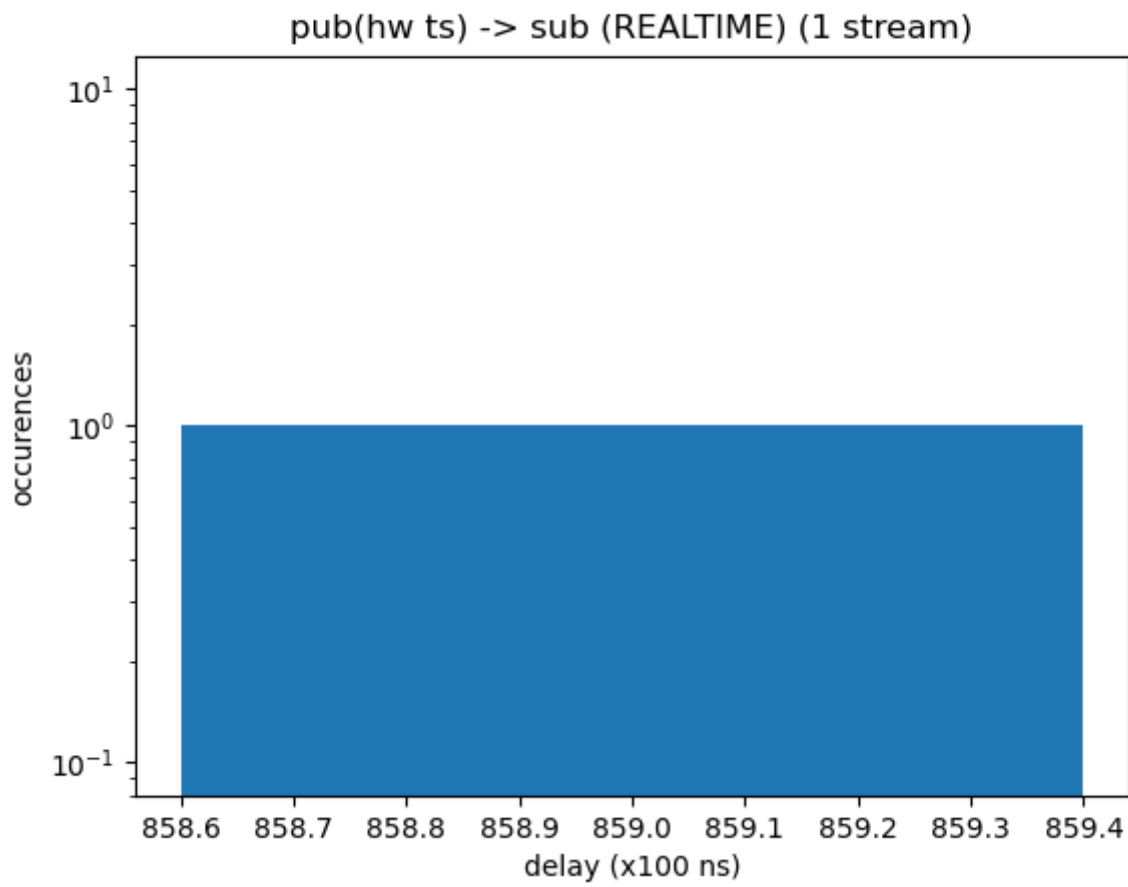
| Test ID | Tests | Results |
|---------------|---|---------|
| SEAPATH-00033 | /etc/group is consistent | PASS |
| SEAPATH-00033 | /etc/gshadow is consistent | PASS |
| SEAPATH-00034 | /etc/group does not include extra group | PASS |
| SEAPATH-00034 | /etc/gshadow does not include extra group | PASS |
| SEAPATH-00008 | Slab merging is disabled on cmdline | PASS |

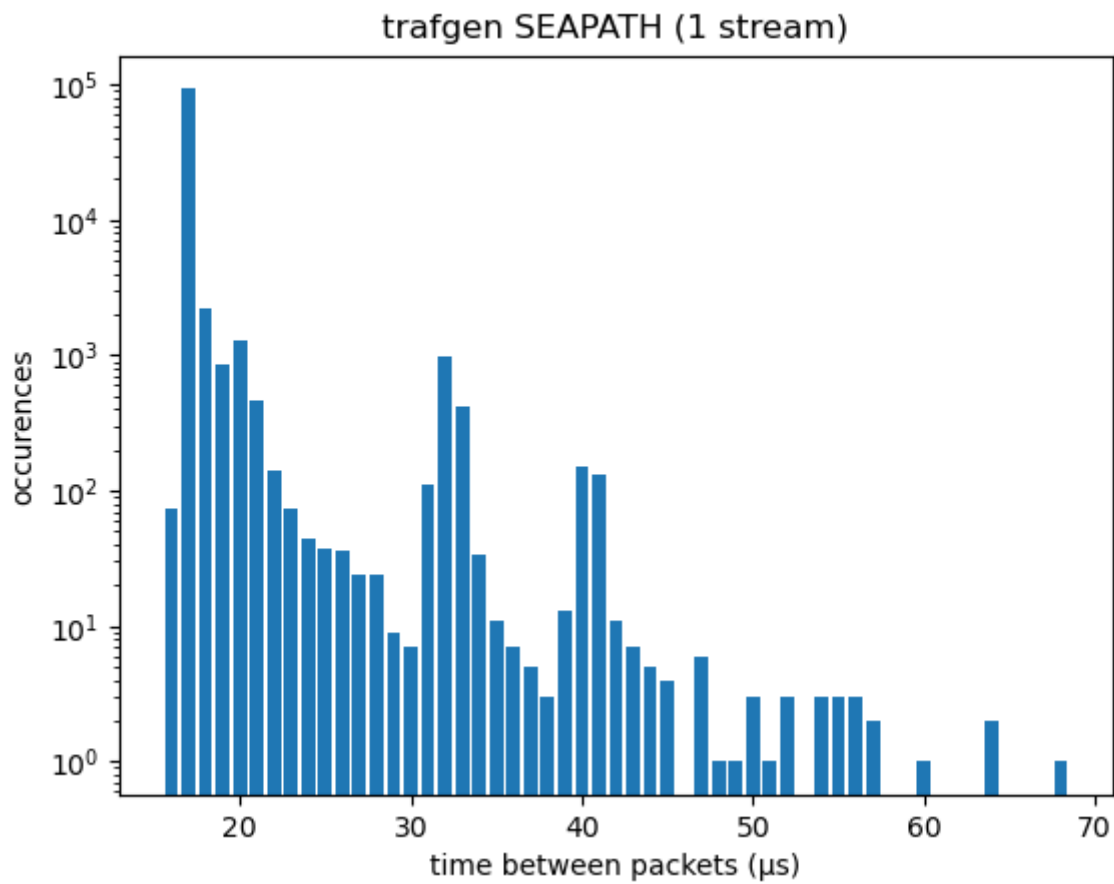
| Test ID | Tests | Results |
|---------------|--|---------|
| SEAPATH-00009 | Kernel Page Table Isolation is always enabled on cmdline | PASS |
| SEAPATH-00010 | SLUB redzoning and sanity checking enabled on cmdline | PASS |
| SEAPATH-00047 | /etc/passwd is consistent | PASS |
| SEAPATH-00048 | /etc/passwd does not include extra user | PASS |
| SEAPATH-00046 | /etc/shadow is consistent | PASS |
| SEAPATH-00015 | Vulnerabilities sysfs entry exist | PASS |
| SEAPATH-00017 | System is not vulnerable to : meltdown | PASS |
| SEAPATH-00017 | System is not vulnerable to : l1tf | PASS |
| SEAPATH-00017 | System is not vulnerable to : spectre_v1 | PASS |
| SEAPATH-00017 | System is not vulnerable to : spectre_v2 | PASS |
| SEAPATH-00012 | admin user exists | PASS |
| SEAPATH-00013 | admin has a password | PASS |

- number of tests: 17
- number of failures: 0

Latency tests results

virtu-ci1

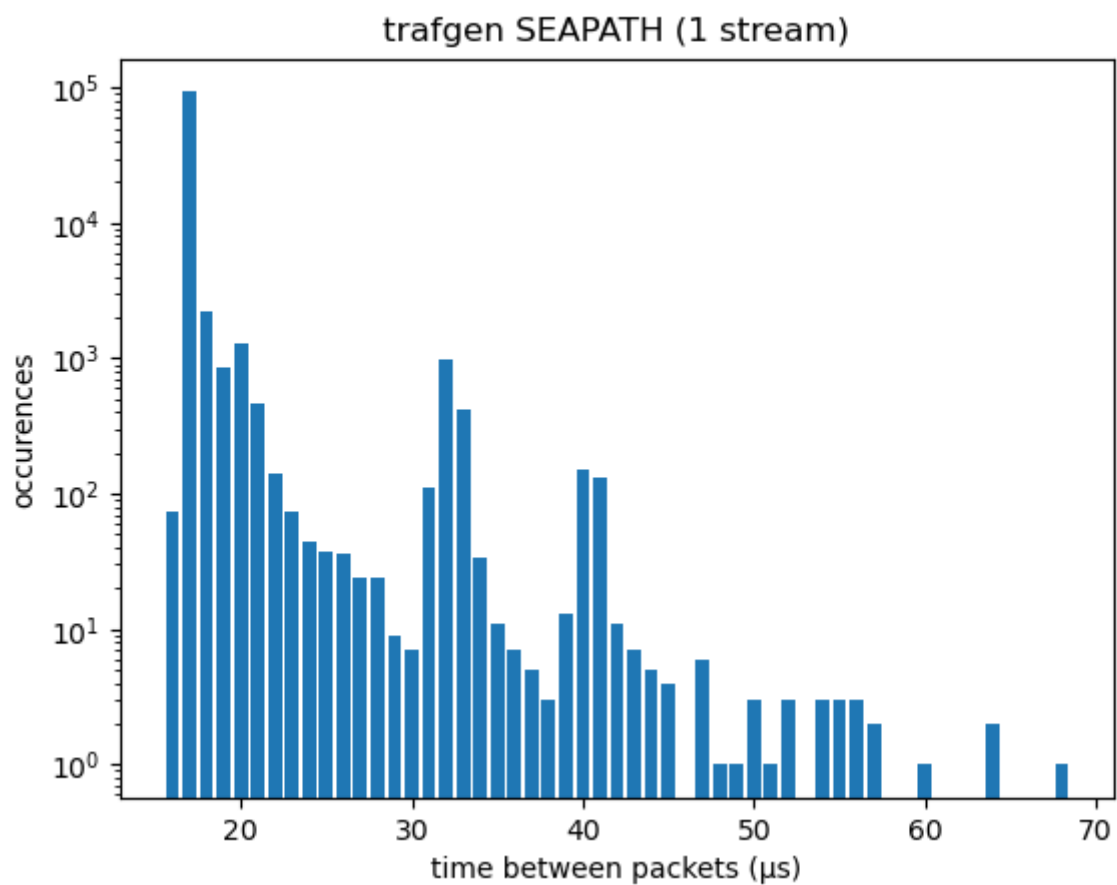
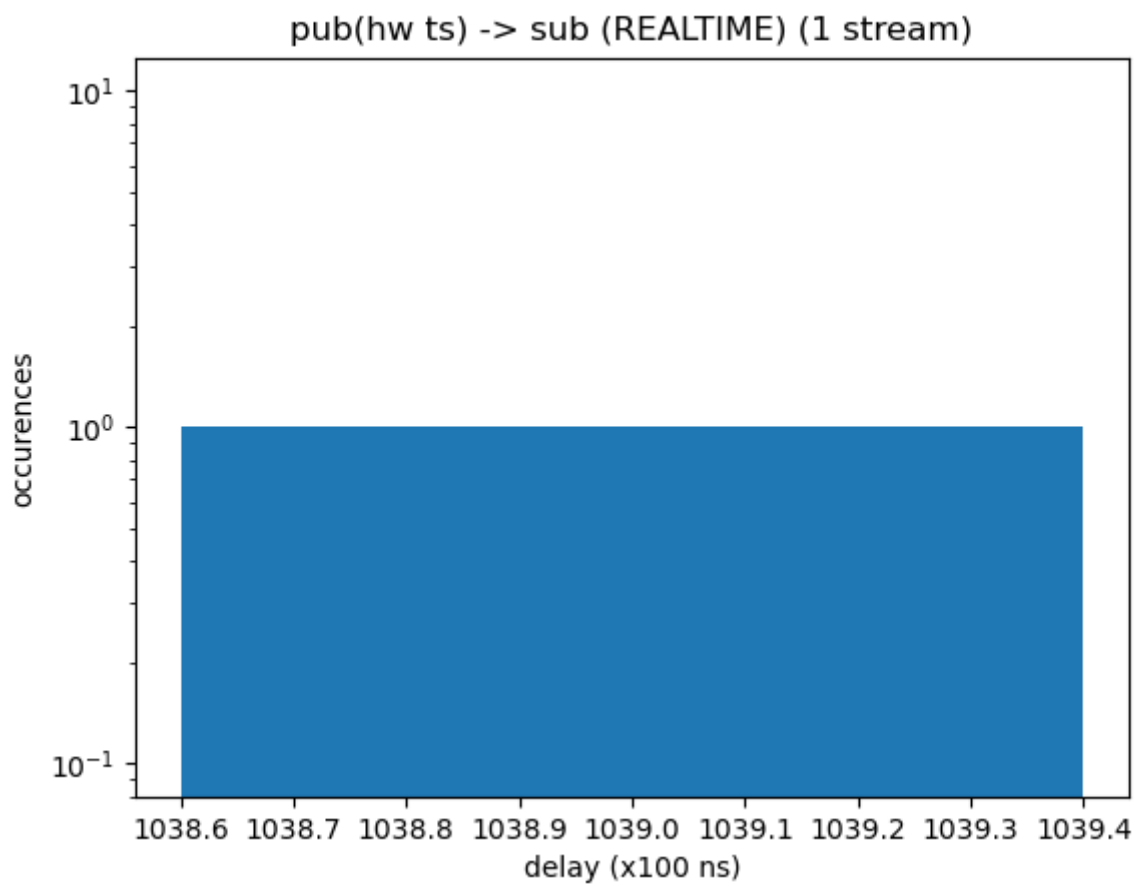




Data: 1 frames
std dev pub-sub time: 0.0 ns
median: 85892 ns
mean: 85892 ns
min: 85892 ns
max: 85892 ns

Data: 99999 frame pairs
std dev of frame-to-frame time: 2.473664632063598 μs
median: 17 μs
mean: 17.44879448794488 μs
min: 16 μs
max: 68 μs

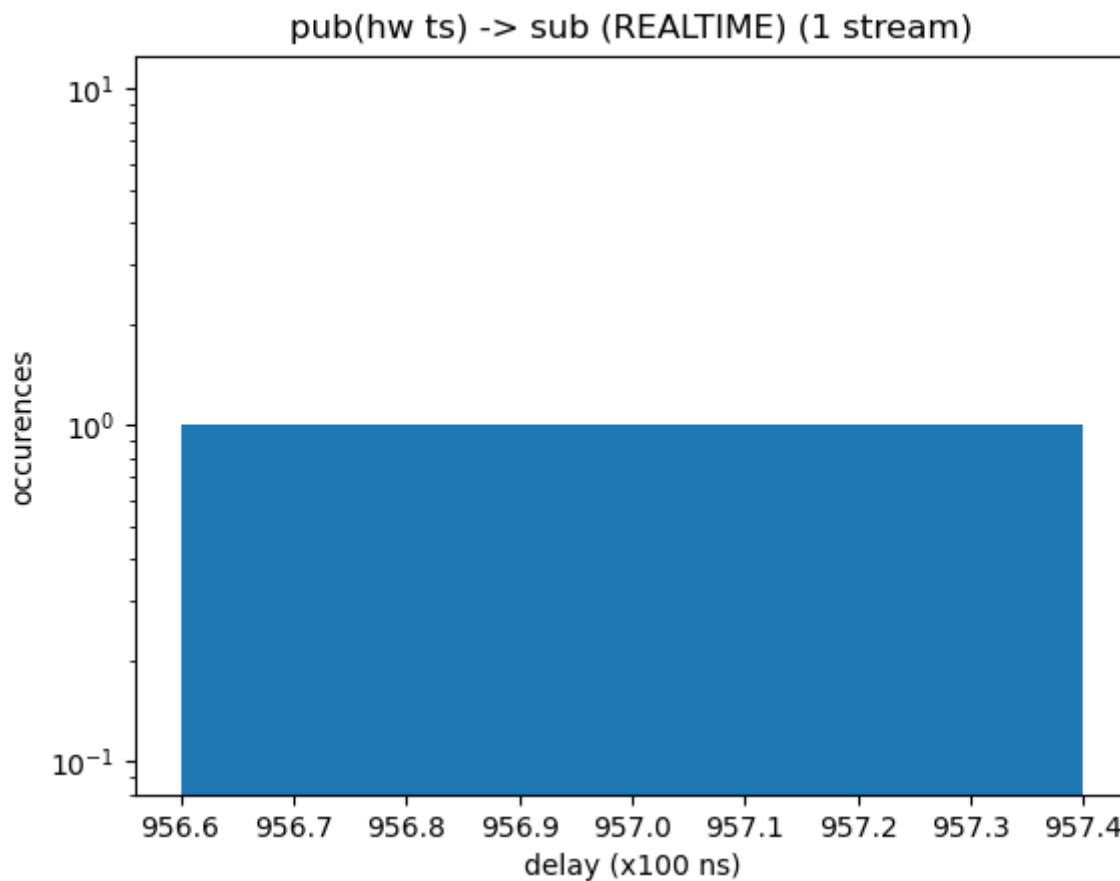
virtu-ci2

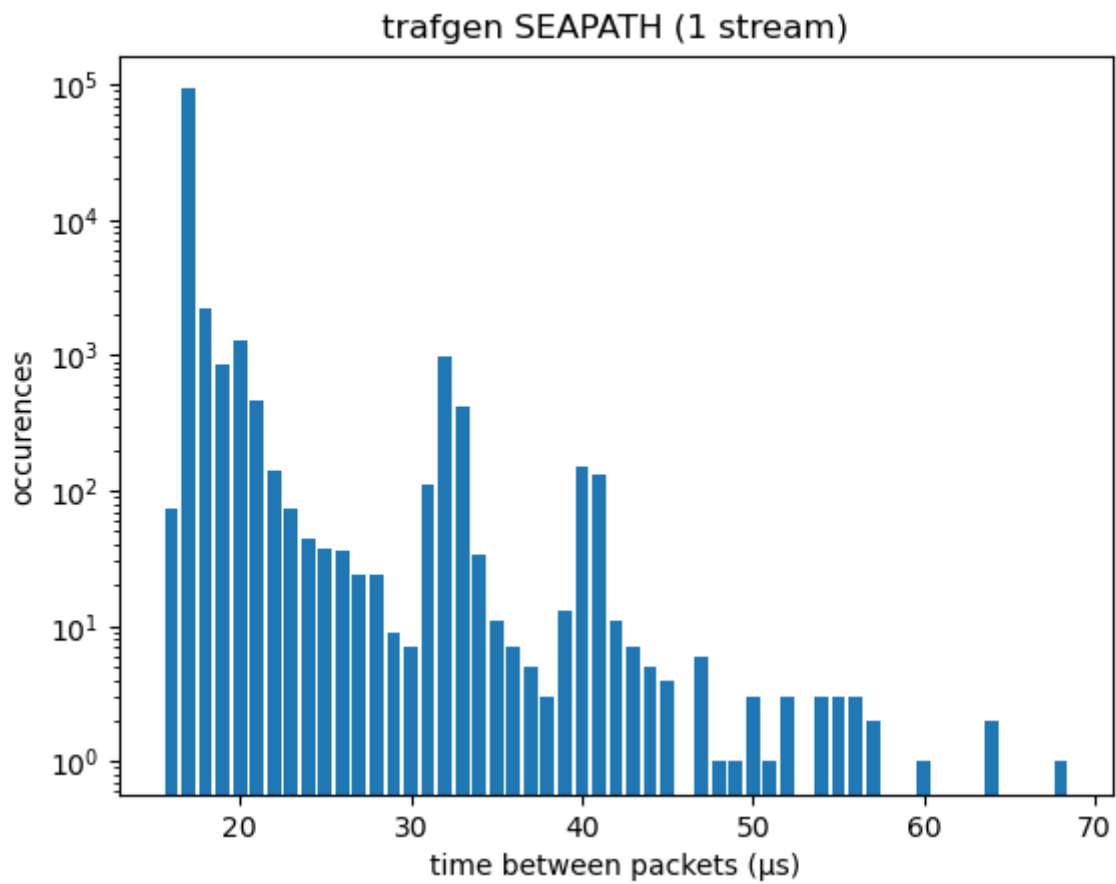


Data: 1 frames
std dev pub-sub time: 0.0 ns
median: 103869 ns
mean: 103869 ns
min: 103869 ns
max: 103869 ns

Data: 99999 frame pairs
std dev of frame-to-frame time: 2.473664632063598 μ s
median: 17 μ s
mean: 17.44879448794488 μ s
min: 16 μ s
max: 68 μ s

virtu-ci3





Data: 1 frames
std dev pub-sub time: 0.0 ns
median: 95712 ns
mean: 95712 ns
min: 95712 ns
max: 95712 ns

Data: 99999 frame pairs
std dev of frame-to-frame time: 2.473664632063598 μs
median: 17 μs
mean: 17.44879448794488 μs
min: 16 μs
max: 68 μs

About this documentation

This documentation uses the AsciiDoc documentation generator. It is a convenient format that allows using plain-text formatted writing that can later be converted to various output formats such as HTML and PDF.

In order to generate an HTML version of this documentation, use the following command (the asciidoc package will need to be installed in your Linux distribution):

```
$ asciidoc main.adoc
```

This will result in a README.html file being generated in the current directory.

If you prefer a PDF version of the documentation instead, use the following command (the dblatex package will need to be installed on your Linux distribution):

```
$ asciidoctor-pdf main.adoc
```