



# TEST REPORT SEAPATH YOCTO

Receiver: SEAPATH

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# List of supported equipment

- SFL
  - [SEAPATH CI](#)

# Testing Setup

## Setup Information

- Retrieve system information:
  - Kernel version and configuration
  - Boot options
  - CPU information
  - Memory information
  - Network interfaces

## System Capabilities

- Virtualization:
  - Check processor support for hardware virtualization technologies (Intel VT-x or AMD-V)
  - Ensure hardware virtualization is enabled in UEFI settings
  - Verify KVM kernel module is enabled
- Network:
  - Ensure network drivers are operational
  - Verify SEAPATH's network infrastructure tools, such as OpenVSwitch, are operational
- Real-time:
  - Employ Cyclictest to measure real-time system latency:
    - Run on isolated CPUs
    - Determine worst-case latencies
- Clustering:
  - If the machine is part of a cluster
- Update:
  - Ensure that the system is upgradable using SWUpdate

## Hardening & ANSSI-BP28 Compliance

- Launch SEAPATH cybersecurity tests
- Verify compliance with ANSSI-BP28 requirements
- Complete lists of requirements on SEAPATH [on the wiki](#).

# Virtual Machine Deployment

- Deploy and test two VMs:
  - One real-time and isolated
  - One non-real-time and non-isolated
- Use VMs for:
  - Real-time (cyclic test)
  - SV IEC61850 packet network latency tests

## IEC61850 Sampled Value Latency Testing

- Perform SV IEC61850 packet network latency tests
- Compute latency between publisher and userspace of VM



## SEAPATH CI

### Setup Information

- **kernel version:** Linux-6.1.80-rt26-mainline-rt-x86\_64-with-glibc2.35 #1 SMP PREEMPT\_RT Fri Mar 1 20:27:44 UTC 2024
- **boot options:** BOOT\_IMAGE=/bzImage root=PARTUUID=387b3639-104b-440c-a934-a77c36a384c6 efiruntime rootwait console=ttyS0,115200 console=tty0 systemd.unified\_cgroup\_hierarchy=0 audit=0 slab\_nomerge slub\_debug=ZF rootfstype=ext4 init=/sbin/init.sh default\_hugepagesz=1G hugepagesz=1G skew\_tick=1 rcutree.kthread\_prio=10 kvm.halt\_poll\_ns=0 isolcpus=4-N nohz\_full=4-N rcu\_nocbs=4-N
- **CPU architecture:** x86\_64
- **Number of physical CPUs:** 8
- **RAM:** 65588872 kB
- **Network interfaces:**
  - **Interface Name:** lo
  - **Capabilities:**
    - *Speed:* Unknown
    - *Duplex:* Unknown
    - *Auto-negotiation:* Unknown
    - *Hardware PTP:* Not supported
  - **Interface Name:** enp5s0
  - **Capabilities:**
    - *Speed:* Unknown!
    - *Duplex:* Unknown! (255)
    - *Auto-negotiation:* on
    - *Hardware PTP:* Supported
  - **Interface Name:** enp6s0
  - **Capabilities:**
    - *Speed:* Unknown!
    - *Duplex:* Unknown! (255)
    - *Auto-negotiation:* on
    - *Hardware PTP:* Supported
  - **Interface Name:** enp7s0
  - **Capabilities:**

- *Speed*: Unknown!
- *Duplex*: Unknown! (255)
- *Auto-negotiation*: on
- *Hardware PTP*: Supported

◦ **Interface Name:** enp8s0

◦ **Capabilities:**

- *Speed*: Unknown!
- *Duplex*: Unknown! (255)
- *Auto-negotiation*: on
- *Hardware PTP*: Supported

◦ **Interface Name:** enp1s0

◦ **Capabilities:**

- *Speed*: 1000Mb/s
- *Duplex*: Full
- *Auto-negotiation*: on
- *Hardware PTP*: Supported

◦ **Interface Name:** enp2s0

◦ **Capabilities:**

- *Speed*: 1000Mb/s
- *Duplex*: Full
- *Auto-negotiation*: on
- *Hardware PTP*: Supported

◦ **Interface Name:** enp3s0

◦ **Capabilities:**

- *Speed*: 1000Mb/s
- *Duplex*: Full
- *Auto-negotiation*: on
- *Hardware PTP*: Supported

◦ **Interface Name:** enp4s0

◦ **Capabilities:**

- *Speed*: Unknown!
- *Duplex*: Unknown! (255)
- *Auto-negotiation*: on
- *Hardware PTP*: Supported

◦ **Interface Name:** gre0

- **Capabilities:**
  - *Speed*: Unknown
  - *Duplex*: Unknown
  - *Auto-negotiation*: Unknown
  - *Hardware PTP*: Not supported
- **Interface Name:** gretap0
- **Capabilities:**
  - *Speed*: Unknown
  - *Duplex*: Unknown
  - *Auto-negotiation*: Unknown
  - *Hardware PTP*: Not supported
- **Interface Name:** erspan0
- **Capabilities:**
  - *Speed*: Unknown
  - *Duplex*: Unknown
  - *Auto-negotiation*: Unknown
  - *Hardware PTP*: Not supported
- **Interface Name:** sit0
- **Capabilities:**
  - *Speed*: Unknown
  - *Duplex*: Unknown
  - *Auto-negotiation*: Unknown
  - *Hardware PTP*: Not supported
- **Interface Name:** ovs-system
- **Capabilities:**
  - *Speed*: Unknown
  - *Duplex*: Unknown
  - *Auto-negotiation*: Unknown
  - *Hardware PTP*: Not supported
- **Interface Name:** obr0
- **Capabilities:**
  - *Speed*: Unknown
  - *Duplex*: Unknown
  - *Auto-negotiation*: Unknown
  - *Hardware PTP*: Not supported



- **Interface Name:** obr0P0
- **Capabilities:**
  - *Speed:* 10Mb/s
  - *Duplex:* Full
  - *Auto-negotiation:* off
  - *Hardware PTP:* Not supported
- **Interface Name:** obr0P1
- **Capabilities:**
  - *Speed:* 10Mb/s
  - *Duplex:* Full
  - *Auto-negotiation:* off
  - *Hardware PTP:* Not supported
- **Interface Name:** obr0P2
- **Capabilities:**
  - *Speed:* 10Mb/s
  - *Duplex:* Full
  - *Auto-negotiation:* off
  - *Hardware PTP:* Not supported
- **Interface Name:** obr0P3
- **Capabilities:**
  - *Speed:* 10Mb/s
  - *Duplex:* Full
  - *Auto-negotiation:* off
  - *Hardware PTP:* Not supported
- **Interface Name:** obr0P4
- **Capabilities:**
  - *Speed:* 10Mb/s
  - *Duplex:* Full
  - *Auto-negotiation:* off
  - *Hardware PTP:* Not supported
- **Interface Name:** ptp
- **Capabilities:**
  - *Speed:* 1000Mb/s
  - *Duplex:* Full
  - *Auto-negotiation:* on

- *Hardware PTP*: Supported

# System Capabilities and Hardening

## Tests common security for yoctoCI

Test ID	Tests	Results
SEAPATH-00106	Check /etc/passwd permissions	PASS
SEAPATH-00107	Check /etc/shadow permissions	PASS
SEAPATH-00108	Check /etc/syslog-ng/ca.d/cacert.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-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-00088	root password was randomized at boot	PASS
SEAPATH-00089	root password is randomized at each boot	PASS
SEAPATH-00091	root password is encrypted 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	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-00157	PATH env. variable is correctly set	PASS
SEAPATH-00050	Linux kernel 'hardening' : SECURITY_YAMA is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : DEBUG_WX is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SECURITY_DMESG_RESTRICT is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : PAGE_TABLE_ISOLATION is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : RETPOLINE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : LEGACY_VSYSCALL_NONE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : STATIC_USERMODEHELPER is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : USERFAULTFD is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : X86_VSYSCALL_EMULATION is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : MODIFY_LDT_SYSCALL is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : DEVMEM is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : USELIB is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : KEXEC is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : BIN_FMT_MISC is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : ALLOW_DEV_COREDUMP is disabled	PASS

Test ID	Tests	Results
SEAPATH-00050	Linux kernel 'hardening' : PROC_KCORE is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : KALLSYMS is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLUB_DEBUG_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLAB_FREELIST_RANDOM is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLAB_FREELIST_HARDENED is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLUB_DEBUG_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : HARDENED_USERCOPY is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : FORTIFY_SOURCE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : PAGE_POISONING is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : RANDOMIZE_KSTACK_OFFSET_DEFAULT is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : INIT_ON_ALLOC_DEFAULT_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : INIT_ON_FREE_DEFAULT_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_LATENT_ENTROPY is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_RANDSTRUCT is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_STRUCTLEAK_BYREF_ALL is enabled	PASS
SEAPATH-00158	sudo policy is installed for group operator (operator)	PASS
SEAPATH-00159	sudo policy is installed for group maintenance-N1 (maint-n1)	PASS
SEAPATH-00160	sudo policy is installed for group maintenance-N3 (maint-n3)	PASS
SEAPATH-00161	sudo policy is installed for group cluster administrator (admincluster)	PASS
SEAPATH-00162	sudo policy is installed for group system administrator (adminsys)	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 (adminsys)	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-00143	/etc/sudoers include noexec directive	PASS
SEAPATH-00144	/etc/sudoers include requiretty directive	PASS
SEAPATH-00145	/etc/sudoers include use_pty directive	PASS
SEAPATH-00146	/etc/sudoers include umask=0027 directive	PASS
SEAPATH-00147	/etc/sudoers include ignore_dot directive	PASS
SEAPATH-00148	/etc/sudoers include env_reset directive	PASS
SEAPATH-00149	/etc/sudoers include passwd_timeout=1 directive	PASS
SEAPATH-00150	/etc/sudoers - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers - EXEC option is not used	PASS

Test ID	Tests	Results
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/privileged - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/privileged - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/privileged - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/privileged - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/privileged - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/privileged - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/privileged - /etc/sudoers.d/privileged is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/maint-n3 - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/maint-n3 - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/maint-n3 - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/maint-n3 - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/maint-n3 - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/maint-n3 - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/maint-n3 - /etc/sudoers.d/maint-n3 is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/maint-n1 - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/maint-n1 - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/maint-n1 - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/maint-n1 - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/maint-n1 - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/maint-n1 - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/maint-n1 - /etc/sudoers.d/maint-n1 is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/admin - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/admin - no rule target root user	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/operator - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/operator - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/operator - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/operator - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/operator - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/operator - no command is specified with wildcard argument	PASS

Test ID	Tests	Results
SEAPATH-00156	/etc/sudoers.d/operator - /etc/sudoers.d/operator is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/cockpit - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/cockpit - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/cockpit - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/cockpit - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/cockpit - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/cockpit - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/cockpit - /etc/sudoers.d/cockpit is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/emergadmin - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/emergadmin - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/emergadmin - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/emergadmin - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/emergadmin - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/emergadmin - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/emergadmin - /etc/sudoers.d/emergadmin is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/adminsys - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/adminsys - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/adminsys - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/adminsys - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/adminsys - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/adminsys - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/adminsys - /etc/sudoers.d/adminsys is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/admincluster - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/admincluster - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/admincluster - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/admincluster - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/admincluster - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/admincluster - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/admincluster - /etc/sudoers.d/admincluster is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/ansible - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/ansible - no rule target root user	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

Test ID	Tests	Results
SEAPATH-00150	/etc/sudoers.d/snmp - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/snmp - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/snmp - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/snmp - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/snmp - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/snmp - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/snmp - /etc/sudoers.d/snmp is owned by root:root with 0440 permissions	PASS
SEAPATH-00109	sysctl-hardening - kernel.modules_disabled is set properly	PASS
SEAPATH-00109	sysctl-hardening - dev.tty.ldisc_autoload is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_fifos is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_regular is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_hardlinks is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_symlinks is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.suid_dumpable is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.dmesg_restrict is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.kptr_restrict is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_event_paranoid is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.randomize_va_space is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.sysrq is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.unprivileged_bpf_disabled is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.yama.ptrace_scope is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_event_max_sample_rate is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_cpu_time_max_percent is set properly	PASS
SEAPATH-00109	sysctl-hardening - vm.mmap_min_addr is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.pid_max is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.panic_on_oops is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.log_martians is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.rp_filter is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.secure_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.send_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.shared_media is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.log_martians is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.rp_filter is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.secure_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.send_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.shared_media is set properly	PASS

Test ID	Tests	Results
SEAPATH-00109	sysctl-network - net.ipv4.icmp_echo_ignore_broadcasts is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.icmp_ignore_bogus_error_responses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_invalid_ratelimit is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_max_syn_backlog is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_rfc1337 is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_syn_retries is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_synack_retries is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_syncookies is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_timestamps is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.ip_local_port_range is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_challenge_ack_limit is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra_defrtr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra_pinfo is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.autoconf is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.dad_transmits is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.forwarding is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.max_addresses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.router_solicitations is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.use_tempaddr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra_defrtr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra_pinfo is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.autoconf is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.dad_transmits is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.forwarding is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.max_addresses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.router_solicitations is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.use_tempaddr is set properly	PASS
SEAPATH-00109	sysctl-network - net.netfilter.nf_conntrack_max is set properly	PASS
SEAPATH-00109	sysctl-network - net.netfilter.nf_conntrack_tcp_loose is set properly	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



Test ID	Tests	Results
SEAPATH-00181	Check perf_event_paranoid is set to 3	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-00192	Check modules_disabled 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-00050	Linux kernel 'misc' : EFI_PARTITION is enabled	PASS
SEAPATH-00050	Linux kernel 'reporting' : EDAC is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_OHCI_HCD is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_EHCI_HCD is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_XHCI_HCD is enabled	PASS
SEAPATH-00171	no RT throttling triggered	PASS
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	/var/log/syslog is used as log target	PASS
SEAPATH-00102	no systemd services have failed	PASS
SEAPATH-00170	no systemd syntax warning	PASS

- number of tests: 195
- number of failures: 0

### Tests hypervisor functionality for yoctoCI

Test ID	Tests	Results
SEAPATH-00027	auditd is inactive	PASS
SEAPATH-00028	Current CPU supports 'no-execute'	PASS

Test ID	Tests	Results
SEAPATH-00028	Current CPU supports 'Intel virtualization'	PASS
SEAPATH-00028	Current CPU supports 'hugepages'	PASS
SEAPATH-00028	Current CPU supports '64bit'	PASS
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-00030	iommu enabled in passthrough mode	PASS
SEAPATH-00031	iommu is loaded	PASS
SEAPATH-00032	iommu is populated	PASS
SEAPATH-00050	Linux kernel 'iommu' : INTEL_IOMMU is enabled	PASS
SEAPATH-00050	Linux kernel 'iommu' : AMD_IOMMU is enabled	PASS
SEAPATH-00050	Linux kernel 'iommu' : AMD_IOMMU_V2 is enabled	PASS
SEAPATH-00050	Linux kernel 'iommu' : IOMMU_IOVA is enabled	PASS
SEAPATH-00050	Linux kernel 'iommu' : DMAR_TABLE is enabled	PASS
SEAPATH-00050	Linux kernel 'ovs' : OPENVSWITCH is enabled	PASS
SEAPATH-00050	Linux kernel 'ovs' : OPENVSWITCH_GRE is enabled	PASS
SEAPATH-00050	Linux kernel 'ovs' : OPENVSWITCH_VXLAN is enabled	PASS
SEAPATH-00050	Linux kernel 'ovs' : OPENVSWITCH_GENEVE is enabled	PASS
SEAPATH-00050	Linux kernel 'ovs' : TRIM_UNUSED_KSYMS is disabled	PASS
SEAPATH-00050	Linux kernel 'ovs' : NET_IPGRE is enabled	PASS
SEAPATH-00050	Linux kernel 'dpdk' : UIO is enabled	PASS
SEAPATH-00050	Linux kernel 'dpdk' : VFIO_PCI is enabled	PASS
SEAPATH-00050	Linux kernel 'hardware' : IGB is enabled	PASS
SEAPATH-00050	Linux kernel 'hardware' : TIGON3 is enabled	PASS
SEAPATH-00050	Linux kernel 'hardware' : R8169 is enabled	PASS
SEAPATH-00050	Linux kernel 'hardware' : E1000 is enabled	PASS
SEAPATH-00050	Linux kernel 'hardware' : E1000E is enabled	PASS
SEAPATH-00050	Linux kernel 'hardware' : X86_PKG_TEMP_THERMAL is enabled	PASS
SEAPATH-00050	Linux kernel 'ceph' : AIO is enabled	PASS
SEAPATH-00050	Linux kernel 'ceph' : TMPFS is enabled	PASS
SEAPATH-00050	Linux kernel 'ceph' : MD is enabled	PASS
SEAPATH-00050	Linux kernel 'kvm' : KVM is enabled	PASS
SEAPATH-00050	Linux kernel 'kvm' : KVM_INTEL is enabled	PASS
SEAPATH-00050	Linux kernel 'kvm' : KVM_VFIO is enabled	PASS
SEAPATH-00003	libvirtd service is running	PASS
SEAPATH-00035	openvswitch service is running	PASS
SEAPATH-00038	lspci 3.6.2+ is available	PASS
SEAPATH-00140	rootfs is readonly mounted	PASS
SEAPATH-00141	/etc is mounted as overlayfs	PASS
SEAPATH-00141	/home is mounted as overlayfs	PASS
SEAPATH-00141	/usr/lib/python3.10/site-packages/pycache is mounted as overlayfs	PASS

Test ID	Tests	Results
SEAPATH-00141	/var/cache is mounted as overlayfs	PASS
SEAPATH-00141	/var/lib is mounted as overlayfs	PASS
SEAPATH-00141	/var/spool is mounted as overlayfs	PASS
SEAPATH-00142	Kernel OVERLAY_FS is set	PASS
SEAPATH-00018	KVM device available	PASS
SEAPATH-00019	Qemu for x86-64 available	PASS
SEAPATH-00020	Libvirtd service is running	PASS
SEAPATH-00021	IPv4 NAT is available	PASS
SEAPATH-00022	IPv6 NAT is available	PASS

- number of tests: 51
- number of failures: 0

### Tests hypervisor security for yoctoCI

Test ID	Tests	Results
SEAPATH-00033	/etc/group is consistent	PASS
SEAPATH-00034	/etc/group does not include extra group	PASS
SEAPATH-00006	Audit subsystem is disabled on cmdline	PASS
SEAPATH-00008	Slab merging is disabled on cmdline	PASS
SEAPATH-00009	Kernel Page Table Isolation is enabled on kernel configuration	PASS
SEAPATH-00010	SLUB redzoning and sanity checking enabled on cmdline	PASS
SEAPATH-00004	libvirtd can not acquire new privileges	PASS
SEAPATH-00005	libvirtd capabilities are bounded	PASS
SEAPATH-00125	libvirtd system calls are filtered	PASS
SEAPATH-00039	openvswitch user is created and locked	PASS
SEAPATH-00040	openvswitch user is part of hugepages group	PASS
SEAPATH-00041	openvswitch user is part of vfio-net group	PASS
SEAPATH-00042	ovs-vswitchd is running as user openvswitch	PASS
SEAPATH-00043	ovsdb-server is running as user openvswitch	PASS
SEAPATH-00126	ovs-vswitchd system calls are filtered	PASS
SEAPATH-00127	ovsdb-server system calls are filtered	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

Test ID	Tests	Results
SEAPATH-00013	admin has a password	PASS
SEAPATH-00014	admin is sudoers	PASS
SEAPATH-00023	SPICE protocol is not installed	PASS

- number of tests: 27
- number of failures: 0

#### Tests update for yoctoCI

Test ID	Tests	Results
SEAPATH-00115	/dev/upgradable_bootloader exists	PASS
SEAPATH-00116	/dev/upgradable_rootfs exists	PASS
SEAPATH-00117	/dev/upgradable_bootloader points to inactive bank	PASS
SEAPATH-00118	/dev/upgradable_rootfs points to inactive bank	PASS

- number of tests: 4
- number of failures: 0

## ANSSI-BP28 Compliance

Matrix include/ANSSI-BP28-M-Recommendations.csv

Requirement	Test id	Status
ANSSI-BP28-R30	SEAPATH-00033	PASS
	SEAPATH-00034	PASS
	SEAPATH-00046	PASS
	SEAPATH-00047	PASS
	SEAPATH-00048	PASS
ANSSI-BP28-R31	SEAPATH-00088	PASS
	SEAPATH-00089	PASS
	SEAPATH-00091	PASS
ANSSI-BP28-R54	SEAPATH-00193	PASS
	SEAPATH-00194	PASS
	SEAPATH-00195	PASS
ANSSI-BP28-R68	SEAPATH-00091	PASS
	SEAPATH-00095	PASS
	SEAPATH-00096	PASS
	SEAPATH-00097	PASS
ANSSI-BP28-R80	SEAPATH-00003	PASS
	SEAPATH-00020	PASS
	SEAPATH-00035	PASS
	SEAPATH-00083	PASS
	SEAPATH-00125	PASS
	SEAPATH-00126	PASS
	SEAPATH-00127	PASS

Matrix include/ANSSI-BP28-MI-Recommendations.csv

Requirement	Test id	Status
ANSSI-BP28-R1	SEAPATH-00015	PASS
	SEAPATH-00017	PASS
	SEAPATH-00028	PASS
	SEAPATH-00030	PASS
	SEAPATH-00031	PASS
	SEAPATH-00032	PASS
	SEAPATH-00050	PASS
ANSSI-BP28-R11	SEAPATH-00050	PASS
	SEAPATH-00109	PASS
	SEAPATH-00186	PASS
ANSSI-BP28-R12	SEAPATH-00109	PASS
ANSSI-BP28-R13	SEAPATH-00109	PASS

Requirement	Test id	Status
ANSSI-BP28-R14	SEAPATH-00109	PASS
	SEAPATH-00187	PASS
	SEAPATH-00188	PASS
	SEAPATH-00189	PASS
	SEAPATH-00190	PASS
	SEAPATH-00191	PASS
ANSSI-BP28-R28	SEAPATH-00082	PASS
	SEAPATH-00140	PASS
	SEAPATH-00141	PASS
ANSSI-BP28-R32	SEAPATH-00092	PASS
	SEAPATH-00094	PASS
ANSSI-BP28-R34	SEAPATH-00033	PASS
	SEAPATH-00034	PASS
	SEAPATH-00046	PASS
	SEAPATH-00047	PASS
	SEAPATH-00048	PASS
ANSSI-BP28-R35	SEAPATH-00033	PASS
	SEAPATH-00034	PASS
	SEAPATH-00039	PASS
	SEAPATH-00046	PASS
	SEAPATH-00047	PASS
	SEAPATH-00048	PASS
ANSSI-BP28-R39	SEAPATH-00143	PASS
	SEAPATH-00144	PASS
	SEAPATH-00145	PASS
	SEAPATH-00146	PASS
	SEAPATH-00147	PASS
	SEAPATH-00148	PASS
ANSSI-BP28-R40	SEAPATH-00151	PASS
ANSSI-BP28-R42	SEAPATH-00153	PASS
ANSSI-BP28-R43	SEAPATH-00154	PASS
	SEAPATH-00155	PASS
ANSSI-BP28-R44	SEAPATH-00156	PASS

Requirement	Test id	Status
ANSSI-BP28-R50	SEAPATH-00044	PASS
	SEAPATH-00045	PASS
	SEAPATH-00049	PASS
	SEAPATH-00090	PASS
	SEAPATH-00106	PASS
	SEAPATH-00107	PASS
	SEAPATH-00108	PASS
	SEAPATH-00156	PASS
ANSSI-BP28-R52	SEAPATH-00040	PASS
	SEAPATH-00041	PASS
ANSSI-BP28-R79	SEAPATH-00004	PASS
	SEAPATH-00005	PASS
	SEAPATH-00023	PASS
	SEAPATH-00085	PASS
	SEAPATH-00086	PASS
ANSSI-BP28-R9	SEAPATH-00109	PASS
	SEAPATH-00176	PASS
	SEAPATH-00177	PASS
	SEAPATH-00178	PASS
	SEAPATH-00179	PASS
	SEAPATH-00180	PASS
	SEAPATH-00181	PASS
	SEAPATH-00182	PASS
	SEAPATH-00183	PASS
	SEAPATH-00184	PASS
	SEAPATH-00185	PASS

**Matrix include/ANSSI-BP28-MIE-Recommendations.csv**

Requirement	Test id	Status
ANSSI-BP28-R10	SEAPATH-00109	PASS
	SEAPATH-00192	PASS
ANSSI-BP28-R36	SEAPATH-00146	PASS
ANSSI-BP28-R37	SEAPATH-00005	PASS
	SEAPATH-00084	PASS
	SEAPATH-00085	PASS
	SEAPATH-00086	PASS
	SEAPATH-00125	PASS
	SEAPATH-00126	PASS
	SEAPATH-00127	PASS
ANSSI-BP28-R38	SEAPATH-00104	PASS

Requirement	Test id	Status
ANSSI-BP28-R41	SEAPATH-00152	PASS
ANSSI-BP28-R64	SEAPATH-00004	PASS
	SEAPATH-00005	PASS
	SEAPATH-00085	PASS
	SEAPATH-00086	PASS
ANSSI-BP28-R7	SEAPATH-00030	PASS
	SEAPATH-00031	PASS
	SEAPATH-00032	PASS
	SEAPATH-00050	PASS
ANSSI-BP28-R71	SEAPATH-00082	PASS
	SEAPATH-00083	PASS
	SEAPATH-00084	PASS
	SEAPATH-00102	PASS
ANSSI-BP28-R78	SEAPATH-00039	PASS
	SEAPATH-00040	PASS
	SEAPATH-00041	PASS
	SEAPATH-00042	PASS
	SEAPATH-00043	PASS
	SEAPATH-00085	PASS
	SEAPATH-00086	PASS



# Virtual Machine Deployment

## Tests common security for guest0

Test ID	Tests	Results
SEAPATH-00106	Check /etc/passwd permissions	PASS
SEAPATH-00107	Check /etc/shadow permissions	PASS
SEAPATH-00108	Check /etc/syslog-ng/ca.d/cacert.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-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-00088	root password was randomized at boot	PASS
SEAPATH-00089	root password is randomized at each boot	PASS
SEAPATH-00091	root password is encrypted 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	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-00157	PATH env. variable is correctly set	PASS
SEAPATH-00050	Linux kernel 'hardening' : SECURITY_YAMA is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : DEBUG_WX is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SECURITY_DMESG_RESTRICT is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : PAGE_TABLE_ISOLATION is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : RETPOLINE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : LEGACY_VSYSCALL_NONE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : STATIC_USERMODEHELPER is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : USERFAULTFD is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : X86_VSYSCALL_EMULATION is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : MODIFY_LDT_SYSCALL is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : DEVMEM is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : USELIB is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : KEXEC is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : BINFORMAT_MISC is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : ALLOW_DEV_COREDUMP is disabled	PASS

Test ID	Tests	Results
SEAPATH-00050	Linux kernel 'hardening' : PROC_KCORE is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : KALLSYMS is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLUB_DEBUG_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLAB_FREELIST_RANDOM is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLAB_FREELIST_HARDENED is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLUB_DEBUG_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : HARDENED_USERCOPY is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : FORTIFY_SOURCE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : PAGE_POISONING is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : RANDOMIZE_KSTACK_OFFSET_DEFAULT is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : INIT_ON_ALLOC_DEFAULT_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : INIT_ON_FREE_DEFAULT_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_LATENT_ENTROPY is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_RANDSTRUCT is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_STRUCTLEAK_BYREF_ALL is enabled	PASS
SEAPATH-00158	sudo policy is installed for group operator (operator)	PASS
SEAPATH-00159	sudo policy is installed for group maintenance-N1 (maint-n1)	PASS
SEAPATH-00160	sudo policy is installed for group maintenance-N3 (maint-n3)	PASS
SEAPATH-00161	sudo policy is installed for group cluster administrator (admincluster)	PASS
SEAPATH-00162	sudo policy is installed for group system administrator (adminsys)	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 (adminsys)	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-00143	/etc/sudoers include noexec directive	PASS
SEAPATH-00144	/etc/sudoers include requiretty directive	PASS
SEAPATH-00145	/etc/sudoers include use_pty directive	PASS
SEAPATH-00146	/etc/sudoers include umask=0027 directive	PASS
SEAPATH-00147	/etc/sudoers include ignore_dot directive	PASS
SEAPATH-00148	/etc/sudoers include env_reset directive	PASS
SEAPATH-00149	/etc/sudoers include passwd_timeout=1 directive	PASS
SEAPATH-00150	/etc/sudoers - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers - EXEC option is not used	PASS

Test ID	Tests	Results
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/emergadmin - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/emergadmin - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/emergadmin - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/emergadmin - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/emergadmin - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/emergadmin - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/emergadmin - /etc/sudoers.d/emergadmin is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/operator - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/operator - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/operator - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/operator - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/operator - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/operator - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/operator - /etc/sudoers.d/operator is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/privileged - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/privileged - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/privileged - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/privileged - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/privileged - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/privileged - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/privileged - /etc/sudoers.d/privileged is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/admincluster - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/admincluster - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/admincluster - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/admincluster - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/admincluster - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/admincluster - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/admincluster - /etc/sudoers.d/admincluster is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/maint-n1 - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/maint-n1 - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/maint-n1 - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/maint-n1 - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/maint-n1 - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/maint-n1 - no command is specified with wildcard argument	PASS

Test ID	Tests	Results
SEAPATH-00156	/etc/sudoers.d/maint-n1 - /etc/sudoers.d/maint-n1 is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/ansible - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/ansible - no rule target root user	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-00151	/etc/sudoers.d/admin - no rule target root user	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/adminsys - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/adminsys - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/adminsys - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/adminsys - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/adminsys - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/adminsys - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/adminsys - /etc/sudoers.d/adminsys is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/maint-n3 - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/maint-n3 - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/maint-n3 - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/maint-n3 - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/maint-n3 - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/maint-n3 - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/maint-n3 - /etc/sudoers.d/maint-n3 is owned by root:root with 0440 permissions	PASS
SEAPATH-00109	sysctl-hardening - kernel.modules_disabled is set properly	PASS
SEAPATH-00109	sysctl-hardening - dev.tty.ldisc_autoload is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_fifos is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_regular is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_hardlinks is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_symlinks is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.suid_dumpable is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.dmesg_restrict is set properly	PASS

Test ID	Tests	Results
SEAPATH-00109	sysctl-hardening - kernel.kptr_restrict is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_event_paranoid is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.randomize_va_space is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.sysrq is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.unprivileged_bpf_disabled is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.yama.ptrace_scope is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_event_max_sample_rate is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_cpu_time_max_percent is set properly	PASS
SEAPATH-00109	sysctl-hardening - vm.mmap_min_addr is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.pid_max is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.panic_on_oops is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.log_martians is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.rp_filter is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.secure_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.send_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.shared_media is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.log_martians is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.rp_filter is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.secure_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.send_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.shared_media is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.icmp_echo_ignore_broadcasts is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.icmp_ignore_bogus_error_responses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_invalid_ratelimit is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_max_syn_backlog is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_rfc1337 is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_syn_retries is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_synack_retries is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_syncookies is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_timestamps is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.ip_local_port_range is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_challenge_ack_limit is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra_defrtr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra_pinfo is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_redirects is set properly	PASS

Test ID	Tests	Results
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.autoconf is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.dad_transmits is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.forwarding is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.max_addresses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.router_solicitations is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.use_tempaddr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra_defrtr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra_pinfo is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.autoconf is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.dad_transmits is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.forwarding is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.max_addresses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.router_solicitations is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.use_tempaddr is set properly	PASS
SEAPATH-00109	sysctl-network - net.netfilter.nf_conntrack_max is set properly	PASS
SEAPATH-00109	sysctl-network - net.netfilter.nf_conntrack_tcp_loose is set properly	PASS
SEAPATH-00176	Check kpтр_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 3	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-00192	Check modules_disabled 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



Test ID	Tests	Results
SEAPATH-00087	syslog-ng system calls are filtered	PASS
SEAPATH-00050	Linux kernel 'misc' : EFI_PARTITION is enabled	PASS
SEAPATH-00050	Linux kernel 'reporting' : EDAC is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_OHCI_HCD is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_EHCI_HCD is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_XHCI_HCD is enabled	PASS
SEAPATH-00171	no RT throttling triggered	PASS
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	/var/log/syslog is used as log target	PASS
SEAPATH-00102	no systemd services have failed	PASS
SEAPATH-00170	no systemd syntax warning	PASS

- number of tests: 181
- number of failures: 0

### Tests common security for guest1

Test ID	Tests	Results
SEAPATH-00106	Check /etc/passwd permissions	PASS
SEAPATH-00107	Check /etc/shadow permissions	PASS
SEAPATH-00108	Check /etc/syslog-ng/ca.d/cacert.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-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-00088	root password was randomized at boot	PASS
SEAPATH-00089	root password is randomized at each boot	PASS
SEAPATH-00091	root password is encrypted 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	PASS

Test ID	Tests	Results
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-00157	PATH env. variable is correctly set	PASS
SEAPATH-00050	Linux kernel 'hardening' : SECURITY_YAMA is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : DEBUG_WX is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SECURITY_DMESG_RESTRICT is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : PAGE_TABLE_ISOLATION is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : RETPOLINE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : LEGACY_VSYSCALL_NONE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : STATIC_USERMODEHELPER is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : USERFAULTFD is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : X86_VSYSCALL_EMULATION is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : MODIFY_LDT_SYSCALL is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : DEVMEM is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : USELIB is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : KEXEC is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : BINFORMAT_MISC is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : ALLOW_DEV_COREDUMP is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : PROC_KCORE is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : KALLSYMS is disabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLUB_DEBUG_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLAB_FREELIST_RANDOM is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLAB_FREELIST_HARDENED is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : SLUB_DEBUG_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : HARDENED_USERCOPY is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : FORTIFY_SOURCE is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : PAGE_POISONING is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : RANDOMIZE_KSTACK_OFFSET_DEFAULT is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : INIT_ON_ALLOC_DEFAULT_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'hardening' : INIT_ON_FREE_DEFAULT_ON is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_LATENT_ENTROPY is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_RANDSTRUCT is enabled	PASS
SEAPATH-00050	Linux kernel 'gcc_plugins' : GCC_PLUGIN_STRUCTLEAK_BYREF_ALL is enabled	PASS
SEAPATH-00158	sudo policy is installed for group operator (operator)	PASS
SEAPATH-00159	sudo policy is installed for group maintenance-N1 (maint-n1)	PASS
SEAPATH-00160	sudo policy is installed for group maintenance-N3 (maint-n3)	PASS
SEAPATH-00161	sudo policy is installed for group cluster administrator (admincluster)	PASS
SEAPATH-00162	sudo policy is installed for group system administrator (adminsys)	PASS



Test ID	Tests	Results
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 (adminsyst)	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-00143	/etc/sudoers include noexec directive	PASS
SEAPATH-00144	/etc/sudoers include requiretty directive	PASS
SEAPATH-00145	/etc/sudoers include use_pty directive	PASS
SEAPATH-00146	/etc/sudoers include umask=0027 directive	PASS
SEAPATH-00147	/etc/sudoers include ignore_dot directive	PASS
SEAPATH-00148	/etc/sudoers include env_reset directive	PASS
SEAPATH-00149	/etc/sudoers include passwd_timeout=1 directive	PASS
SEAPATH-00150	/etc/sudoers - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers - no rule target root user	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/emergadmin - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/emergadmin - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/emergadmin - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/emergadmin - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/emergadmin - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/emergadmin - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/emergadmin - /etc/sudoers.d/emergadmin is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/operator - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/operator - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/operator - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/operator - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/operator - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/operator - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/operator - /etc/sudoers.d/operator is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/privileged - all commands require authentication	PASS

Test ID	Tests	Results
SEAPATH-00151	/etc/sudoers.d/privileged - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/privileged - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/privileged - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/privileged - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/privileged - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/privileged - /etc/sudoers.d/privileged is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/admincluster - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/admincluster - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/admincluster - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/admincluster - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/admincluster - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/admincluster - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/admincluster - /etc/sudoers.d/admincluster is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/maint-n1 - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/maint-n1 - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/maint-n1 - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/maint-n1 - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/maint-n1 - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/maint-n1 - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/maint-n1 - /etc/sudoers.d/maint-n1 is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/ansible - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/ansible - no rule target root user	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-00151	/etc/sudoers.d/admin - no rule target root user	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/adminsys - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/adminsys - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/adminsys - EXEC option is not used	PASS

Test ID	Tests	Results
SEAPATH-00153	/etc/sudoers.d/adminsys - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/adminsys - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/adminsys - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/adminsys - /etc/sudoers.d/adminsys is owned by root:root with 0440 permissions	PASS
SEAPATH-00150	/etc/sudoers.d/maint-n3 - all commands require authentication	PASS
SEAPATH-00151	/etc/sudoers.d/maint-n3 - no rule target root user	PASS
SEAPATH-00152	/etc/sudoers.d/maint-n3 - EXEC option is not used	PASS
SEAPATH-00153	/etc/sudoers.d/maint-n3 - rules are not defined by negation	PASS
SEAPATH-00154	/etc/sudoers.d/maint-n3 - commands are not specified without arguments	PASS
SEAPATH-00155	/etc/sudoers.d/maint-n3 - no command is specified with wildcard argument	PASS
SEAPATH-00156	/etc/sudoers.d/maint-n3 - /etc/sudoers.d/maint-n3 is owned by root:root with 0440 permissions	PASS
SEAPATH-00109	sysctl-hardening - kernel.modules_disabled is set properly	PASS
SEAPATH-00109	sysctl-hardening - dev.tty.ldisc_autoload is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_fifos is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_regular is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_hardlinks is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.protected_symlinks is set properly	PASS
SEAPATH-00109	sysctl-hardening - fs.suid_dumpable is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.dmesg_restrict is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.kptr_restrict is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_event_paranoid is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.randomize_va_space is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.sysrq is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.unprivileged_bpf_disabled is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.yama.ptrace_scope is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_event_max_sample_rate is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.perf_cpu_time_max_percent is set properly	PASS
SEAPATH-00109	sysctl-hardening - vm.mmap_min_addr is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.pid_max is set properly	PASS
SEAPATH-00109	sysctl-hardening - kernel.panic_on_oops is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.log_martians is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.rp_filter is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.secure_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.send_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.all.shared_media is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.accept_source_route is set properly	PASS

Test ID	Tests	Results
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.log_martians is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.rp_filter is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.secure_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.send_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.conf.default.shared_media is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.icmp_echo_ignore_broadcasts is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.icmp_ignore_bogus_error_responses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_invalid_ratelimit is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_max_syn_backlog is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_rfc1337 is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_syn_retries is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_synack_retries is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_syncookies is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_timestamps is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.ip_local_port_range is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv4.tcp_challenge_ack_limit is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra_defrtr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_ra_pinfo is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.autoconf is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.dad_transmits is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.forwarding is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.max_addresses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.router_solicitations is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.all.use_tempaddr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra_defrtr is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_ra_pinfo is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_redirects is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.accept_source_route is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.autoconf is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.dad_transmits is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.forwarding is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.max_addresses is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.router_solicitations is set properly	PASS
SEAPATH-00109	sysctl-network - net.ipv6.conf.default.use_tempaddr is set properly	PASS
SEAPATH-00109	sysctl-network - net.netfilter.nf_conntrack_max is set properly	PASS
SEAPATH-00109	sysctl-network - net.netfilter.nf_conntrack_tcp_loose is set properly	PASS

Test ID	Tests	Results
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 3	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-00192	Check modules_disabled 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-00050	Linux kernel 'misc' : EFI_PARTITION is enabled	PASS
SEAPATH-00050	Linux kernel 'reporting' : EDAC is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_OHCI_HCD is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_EHCI_HCD is enabled	PASS
SEAPATH-00050	Linux kernel 'usb' : USB_XHCI_HCD is enabled	PASS
SEAPATH-00171	no RT throttling triggered	PASS
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	/var/log/syslog is used as log target	PASS
SEAPATH-00102	no systemd services have failed	PASS
SEAPATH-00170	no systemd syntax warning	PASS

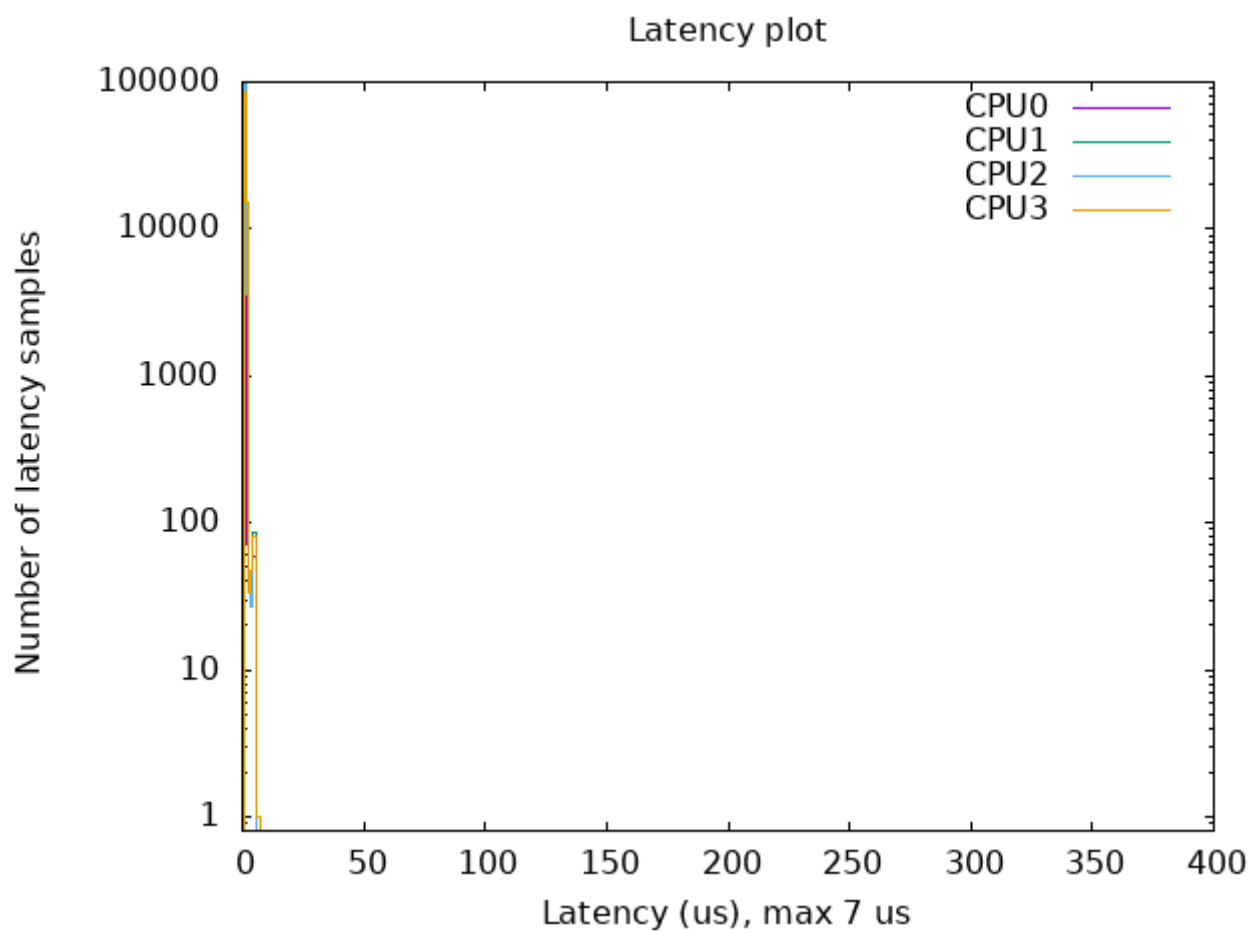
- number of tests: 181
- number of failures: 0

## Real-time testing (Cyclictest)

The following command is launched:

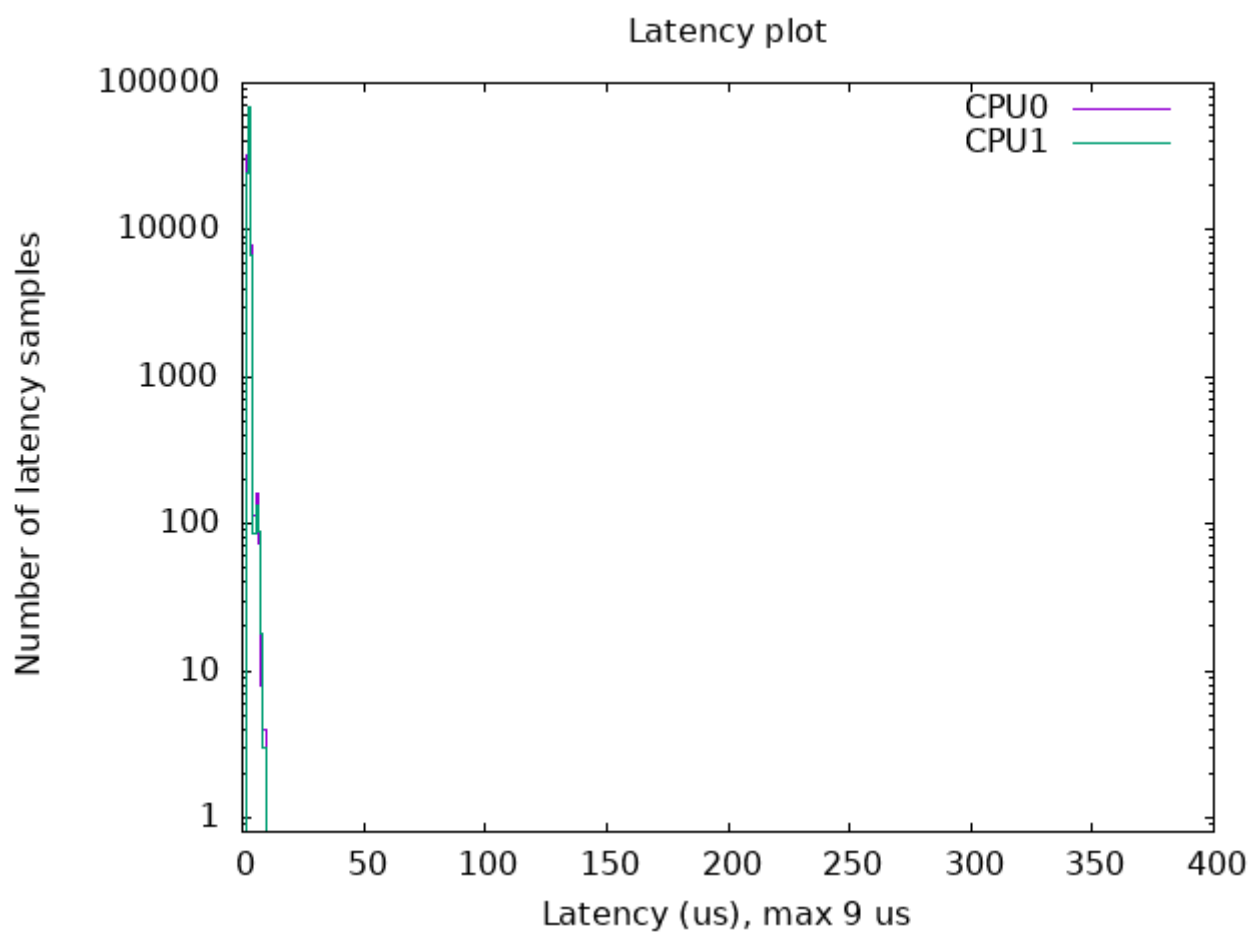
```
cyclictest -l10000 -m -Sp90 -i200 -h400 -q
```

### Hypervisor



## Virtual Machines

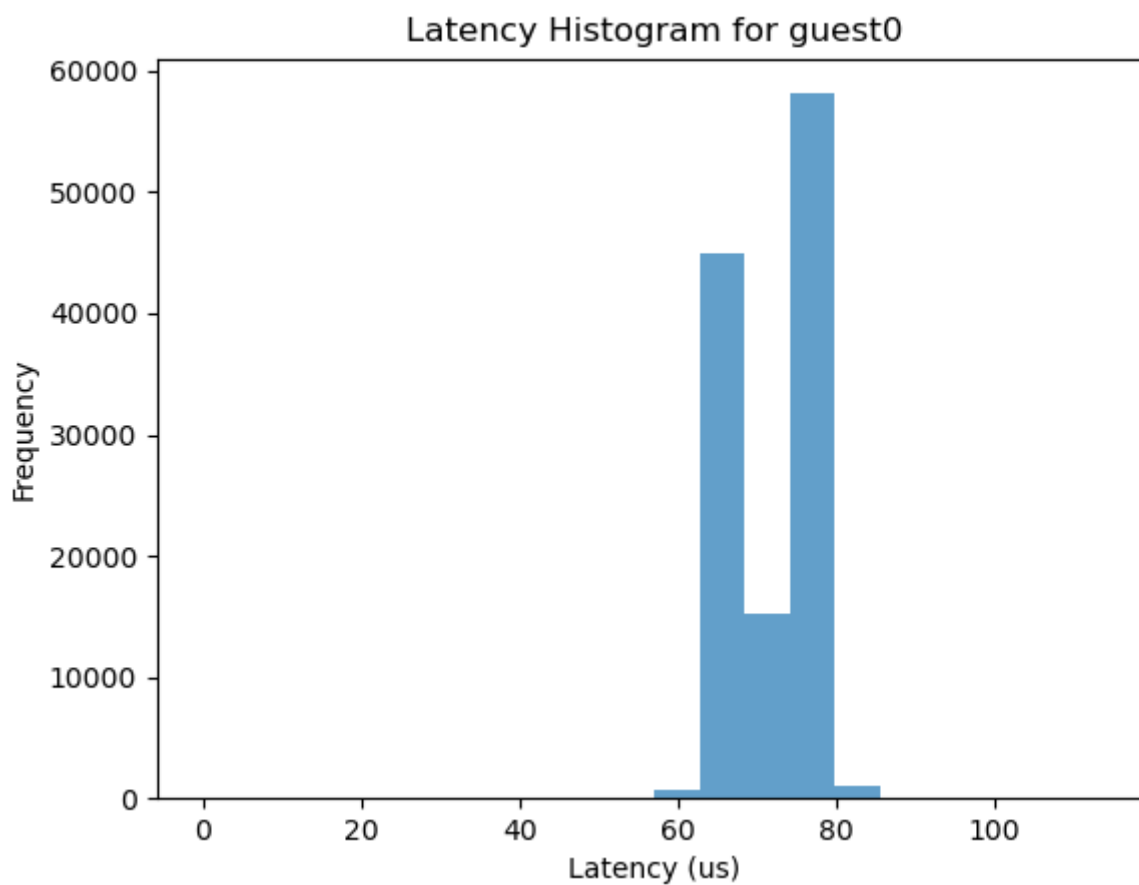
Guest 0



## IEC61850 Sampled Value Latency Testing

### VM guest0

Number of IEC61850 Sampled Value	Minimum latency	Maximum latency	Average latency
1	41.0 us	114.0 us	72.0 us





	<p>PASS ==</p> <p>&lt;&lt;&lt; == About this documentation</p> <p>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.</p> <p>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):</p> <pre>\$ asciidoc test-report.adoc</pre> <p>This will result in a README.html file being generated in the current directory.</p> <p>If you prefer a PDF version of the documentation instead, use the following command (the dlatex package will need to be installed on your Linux distribution):</p> <pre>\$ asciidoctor-pdf test-report.adoc</pre>
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