



# TEST REPORT SEAPATH YOCTO

Receiver: SEAPATH

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# Table of Contents

List of supported equipment .....	1
Testing Setup .....	2
Setup Information .....	2
System Capabilities .....	2
Hardening & ANSSI-BP28 Compliance .....	2
Virtual Machine Deployment .....	3
Network Latency Testing .....	3
SFL .....	4
SEAPATH CI .....	4

# 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

## Network Latency Testing

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

[network latency test setup] | *setup\_lat.png*

## 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=5e0b678f-34e2-4c7b-9b7a-ac8de123c1cf 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
- **CPU architecture:** x86\_64
- **Number of physical CPUs:** 8
- **RAM:** 65588868 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

## 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/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/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-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/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/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

Test ID	Tests	Results
SEAPATH-00156	/etc/sudoers.d/ansible - /etc/sudoers.d/ansible 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/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/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-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

Test ID	Tests	Results
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.pttrace_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

Test ID	Tests	Results
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 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



Test ID	Tests	Results
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

| Test ID | Tests | Results

| SEAPATH-00027

| auditd is inactive | PASS

| SEAPATH-00028

| Current CPU supports 'no-execute' | PASS

| 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-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-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: 35 * number of failures: 0
==== Tests hypervisor iommu for yoctoCI [options="header",cols="2,6,1",frame=all, grid=all]
===
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 '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

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

## Tests hypervisor readonly for yoctoCI

Test ID	Tests	Results
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
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

| 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

| ovssdb-server is running as user openvswitch | PASS

| SEAPATH-00126

| ovs-vswitchd system calls are filtered | PASS

| SEAPATH-00127

| ovssdb-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

| 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 [options="header",cols="2,6,1",frame=all, grid=all]		
===		
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

# 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-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' : BINfmt_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

Test ID	Tests	Results
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
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



Test ID	Tests	Results
SEAPATH-00156	/etc/sudoers - /etc/sudoers 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/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/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/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/maint-n1 - all commands require authentication	PASS

Test ID	Tests	Results
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/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/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
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

Test ID	Tests	Results
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
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

Test ID	Tests	Results
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
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

Test ID	Tests	Results
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

| 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-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

| 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

| 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/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/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/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/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/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/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/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

| 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

| 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

| 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: 178 * number of failures: 0
==== Network Latency Testing == Latency tests
=== VM guest0
===
Number of stream
Minimum latency
Maximum latency
Average latency
1
40.0 us

138.0 us

72.0 us

=== image::latency\_histogram\_guest0.png[]

== 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 test-report.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 dlatex package will need to be installed on your Linux distribution):

```
$ asciidoctor-pdf test-report.adoc
```