Axis companion user guide

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Quickly search through recordings and share them easily.











Axis companion system requirements.

Axis Communications strives to apply cybersecurity best practices in the design, development, and testing of our devices, and the services it supports requires active participation by the entire vendor supply chain, as well as the end-user organization. A secure environment depends on its users, processes, and technology. The purpose of this guide is to support you in securing your network, devices, and services. The most obvious threats to an Axis device are physical sabotage, vandalism, and tampering. To protect a product from these threats, it is important to select a vandalresistant model or casing, to mount it in the recommended manner, and to protect the cables. From an IT/network perspective, the Axis device is a network device does not have users visiting potentially harmful websites, opening malicious email attachments, or installing untrusted applications. Nevertheless, a network camera is a device with an interface that may expose risks to the system it is connected to. This guide focuses on reducing the exposure to these risks. The guide provides technical advice for anyone involved in deploying Axis solutions. It establishes a baseline configuration as well as a hardening guide that deals with the evolving threat landscape. You may need the product's user manual to learn how to configuration The guide refers to modifying device settings within the web interface of the Axis device according to the following instructions: AXIS OS versionWeb interface configuration path < 7.10Setup > System > Security>= 10.9System > Secur hardening guide The hardening instructions outlined in this guide are written for, and can be applied to, all AXIS OS-based products that are running an AXIS or active track firmware. Legacy products running 4.xx and 5.xx firmware are also in scope. It is recommended to subscribe to Axis Security Notification Service to receive information about newly discovered vulnerabilities in Axis products, solutions and services and other security-related technical information that contribute to operating Axis devices in a secure manner. As a means of structuring our recommendations in the context of a cybersecurity framework, Axis has chosen to follow the methods outlined in Center for Internet Safety (CIS) Controls - Version 8. The CIS controls, previously known as SANS Top 20 Critical Security Controls, provide 18 categories in an organization. This guide refers to the Critical Security Controls by adding the CSC number (CSC #) for each hardening item. For more information on the CSC categories, see . Axis devices are delivered with predefined default protection settings. There are several security controls that you do not need to configure. of Enterprise Assets and SoftwareThe Axis device will not operate until the administration password is set. For more guidance on how to configure device access, see . After setting the administration password is set. For more guidance on how to configure device access, see . not recommended to enable e.g. anonymous viewer and/or always multicast video/audio functionality, which would allow for the opposite. CSC #4: Secure Configuration of Enterprise Assets and SoftwareOnly a minimum number of network protocols and services are enabled by default in Axis devices. In the table below you can see which these are.ProtocolPortTransport CommentsHTTP80TCPGeneral HTTP straffic such as web interface access, VAPIX and ONVIF API interface or Edge-to-edge communication.RTSP554UDPUsed by the Axis device for video/audio streamingRTPEphemeral port range*UDPUsed by 3rd party applications to discover the Axis device via mDNS discovery protocol (Bonjour)SSDP1900UDPUsed by 3rd party applications to discovery protocol (Bonjour)SSDP party applications to discover the Axis device via SSDP (UPnP)WS-Discovery3702UDPUsed by 3rd party applications to discover the Axis device via WS-Discovery protocol (ONVIF)* Allocated automatically within a predefined range of port numbers according to RFC 6056. More information can be found here. It is recommended to disable unused network protocols and services whenever possible. For a complete list of services that are used by default or can be enabled before use in Axis video surveillance-oriented products, such as the network cameras. In Axis intercoms and network speakers on the other hand, where audio in/out and microphone functionality are main features, audio capabilities are enabled by default. CSC #2: Inventory and Control of Software AssetsAll Axis firmware is signed from version 9.20.1. When upgrading the device with a new firmware the device will check the integrity of the firmware and reject tampered firmware. For more information about Axis signed firmware. For more information about Axis signed firmware. For more information about Axis devices have secured the boot sequence. This secures the integrity of the device by ensuring that only untampered devices can be deployed. For more information about secure boot, see the Cybersecurity features in Axis products white paper. CSC #6: Access Control ManagementAxis Edge Vault (AEV)Selected Axis devices have a dedicated hardware security module for secure key storage, sensitive login credentials as well as more secure features. Trusted platform module (TPM)Selected Axis devices have a dedicated hardware security module for secure key storage. This increases the protection of encryption keys stored on the device. For more information about trusted platform modules in Axis products, see the Cybersecurity features in Axis products white paper. CSC #3: Data ProtectionHTTPS is enabled by default with a self-signed certificate since AXIS OS 7.20. This enables setting the device password in a secure way. In AXIS OS 10.10 and higher, the self-signed certificate has been replaced by the IEEE 802.1AR secure device ID certificate.AXIS OS versionWeb interface configuration path < 7.10Setup > System > Network > HTTPs = 7.10Setup > System > Security > HTTPS = 7.10Settings > System > Network > HTTP and HTTPS >= 10.9System > Network > HTTP and HTTPS >= 10.9Syst use Digest authentication only instead of Basic or Basic & Digest. This reduces the risk of network sniffers getting hold of the password. AXIS OS versionWeb interface configuration path< 7.10Setup > System > Plain config > Network > Ne Network HTTP Authentication policy>= 10.9System > Plain config > Network > Network HTTP Authentication policy CSC #3: Data ProtectionReplay attack protection is a standard security feature enabled by default in Axis devices with the purpose to ensure that ONVIF-based user authentication is sufficiently secured by adding an additional security header, which includes the UsernameToken, valid timestamp, nonce and password digest is calculated from the password digest is used to both validate the user and to avoid replay attacks, and due to this digests are cached. It is recommended to keep this setting enabled.AXIS OS versionWeb interface configuration path< 7.10Setup > System > Plain config > System > Pla #3: Data ProtectionWhen decommissioning an Axis device, a factory default should be executed. After the factory default, all data is erased by overwriting/sanitization. Axis devices use both volatile memory, and while the volatile memory is erased by overwriting/sanitization. made available again at start-up. To securely delete persistent, sensitive data on the device, a factory default needs to be performed. To read about what information and user configuration is deleted in the non-volatile memory when performed. To read about what information and user configuration is deleted in the non-volatile memory when performing a factory default, see OS versionWeb interface configuration path< 7.10Setup > System Options > Maintenance > Default>= 7.10Settings > System > Maintenance > Default>= 10.9Maintenance > Default>= 10.9Maintenanc dependencies to any 3rd party network infrastructure, video or evidence management systems (VMS, EMS), or other 3rd party equipment or application. CSC #4: Secure Configuration of Enterprise Assets and SoftwareBefore starting, make sure that the device is in a known factory default state. The factory default is important when decommissioning devices as well as clearing user-data. For more information, see . AXIS OS versionWeb interface configuration path< 7.10Settings > System > Maintenance > Default>= 10.9Maintenance > Default>= 7.10Settings > System > Maintenance > Default>= 7.10Settings > System > Maintenance > Default>= 10.9Maintenance > Default>= 10.9Ma firmware is an important aspect of cybersecurity. An attacker will often try to exploit commonly known vulnerabilities, and if they gain network access to an unpatched service, they may succeed. Make sure you always use the latest firmware may explicitly mention a critical security fix, but not all general fixes. Axis maintains two types of firmware tracks: the active tracks do not include new features in order to minimize the risk of compatibility issues. Axis provides a forecast for upcoming releases outlining important new features, bug fixes and security patches at . Firmware for AXIS OS-capable devices up to date.AXIS OS versionWeb interface configuration path< 7.10Setup > System Options > Maintenance > Upgrade Server>= 7.10Settings > System > Maintenance > Firmware upgrade CSC #4: Secure Configuration of Enterprise Assets and Software CSC #5: Account ManagementThe device root account is the main device administration account. The device password needs to be set before it becomes operational. Make sure to use a strong password and limit the usage of the root account to administration tasks only. It is not recommended to use the root account in daily production. When operating Axis devices, using the same password simplifies management but lowers the security in case of breach or data leak. Using unique passwords for each single Axis device provides high security but comes with an increased complexity to device management. Password rotation is recommended. It is recommended. It is recommended to implement sufficient password shorter than 8 characters. are considered weak.AXIS OS versionWeb interface configuration path< 7.10Setup > Basic Setup > Users>= 7.10Settings > System > Users= 7.10Settin tasks. It is recommended to create a client user account with limited privileges for daily operation. This reduces the risk of compromising the device administrator password. For more information about identity and access management in video surveillance systems, see the following white paper. AXIS OS versionWeb interface configuration path< 7.10Setup > Basic Setup > Users >= 7.10Settings > System > Users >= 10.9System > Users CSC #5: Account ManagementAxis devices have a web server that allows users to access the device using a standard web browser. The web interface is intended to be used for daily operations, i.e. as a client to view video. The only clients that should be allowed to interact with Axis devices during daily operations are video management tools, such as AXIS Device Manager. System users should never be allowed to access Axis devices directly. Disable web interface access outlines the possibility to disable the web interface of the Axis device. CSC #4: Secure Configuration of Enterprise Assets and SoftwareFrom AXIS OS 9.50 and onwards, the web interface of Axis devices can be disabled. After an Axis device is deployed into a system (or added to AXIS Device Manager), it is recommended to prevent people within the organization from using a web browser to access the device. This adds protection if the device account password is spread within the organization. AXIS OS versionWeb interface configuration path < 7.10N/A> = 7.10Settings > System > Web Interface Disabled >= 10.9System > Web Interface Disabl CSC #12: Network Infrastructure ManagementThe device IP configuration, such as IPv4/IPv6, static or dynamic (DHCP) network address, subnet mask and default router. It is recommended to use static IP address configuration on Axis devices to ensure network reachability and disentangle the dependency to e.g. a DHCP server in the network that might be a target for attacks.AXIS OS versionWeb interface configuration path< 7.10Setup > Basic Setup > TCP/IP>= 7.10Settings > System > TCP/IP>= 10.9System > Network CSC #8: Audit Log ManagementFrom a security perspective, it is important that the date and time are correct so that, for example, the system logs are time-stamped with the right information, and digital certificates such as HTTPS, IEEE 802.1x, and others may not work correctly. It is recommended that the Axis device clock is synchronized with a Network Time Protocol (NTP) server, a public NTP server, a public NT information about NTP in Axis devices, see OS versionWeb interface configuration path < 7.10Setup > Date and time >= 7.10Settings > System > Date and time >= 10.9System > Date and time >= 7.10Settings > System > Date and time >= 7.10Settings > System > Date and time >= 10.9System > Date and time >= 7.10Settings > System > Date and time >= 10.9System > Date and time >= 7.10Settings > System > Date and ti recommended to apply encryption. This will prevent unauthorized individuals from being able to play the stored video from a removed SD card. To learn more about SD card encryption in Axis devices, see . AXIS OS versionWeb interface configuration path< 7.10Setup > System > Storage>= 10.9System > StorageNetwork share (NAS) If a Network Attached Storage (NAS) is used as a recording device, it should be protected in a locked area with limited access and have hard disc encryption enabled. Axis devices utilize SMB as network protocol for connecting to a NAS in order to store video recordings. While earlier versions of SMB (1.0 and 2.0) do not provide any security or encryption, later versions (2.1 and higher) do, which is why later versions are recommended to use during productionTo learn more about proper SMB configuration when connecting an Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path<7.10Setup > System Options > Storage>= a Axis device to a network share, see . AXIS OS versionWeb interface configuration path > Storage>= a Axis device to a Ax 7.10Settings > System > Storage >= 10.9System > Storage CSC #3: Data ProtectionFrom AXIS OS 10.10 and onwards, Axis devices have support for encrypted export of edge recordings. This is recommended to use since it will prevent unauthorized individuals from being able to play the export of edge recordings. This is recommended to use since it will prevent unauthorized individuals from being able to play the export of edge recordings. This is recommended to use since it will prevent unauthorized individuals from being able to play the export of edge recordings. configuration path< 7.10N/A>= 7.10N/ used. O3C is a service used to deploy Axis devices to cloud-based video management services. Pressing the control button on the Axis device registers the device and provides the correct Owner Authentication Key (OAK) to claim the Axis device. To prevent the Axis device from connecting to the dispatcher when the physical control button is pressed, consult the user manual.AXIS OS versionWeb interface configuration path< 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Basic Setup > Services > Enable AVHS>= 7.10Setup > Services > Servic with several Axis and/or 3rd party applications (ACAPs), which can be enabled and used depending on use-case, some examples being video motion detection or license plate recognition. The applications can either add further system functionality or provide a user interface for interacting with a certain feature. It is recommended to only use trusted applications, and to remove all unused applications..AXIS OS versionWeb interface configuration path< 7.10Settings > Apps>= 10.9Apps Discovery, are support services that make it easier to find the Axis device and its services on the network. After deployment, once the Axis device IP address is known and the Axis device is added to the VMS, it is recommended to disable the discovery protocol to stop the Axis device from announcing its presence on the network. AXIS OS versionWeb interface configuration path < 7.10Setup > System Options > Advanced > Plain Config > Network > Network Bonjour Enabled, Network UPnP Enabled, Network VPnP Enabled, Network VPnP Enabled, Network VPnP NATTraversal Enabled, Network VPnP E Mode>= 10.9Settings > Plain config -> Network Bonjour Enabled, Network ZeroConf Enabled, Network December 2010, Network ZeroConf Enabled, Network Ze disabled before the product is put in production. The outdated versions are usually disabled per default, but Axis devices offer the possibility to and party applications that have not yet implemented TLS 1.2 and TLS 1.3.AXIS OS versionWeb interface configuration path < 7.10Setup > System Options > Advanced > Plain Config > HTTPS > Allow TLSv1.0 and/or Allow TLSv1.0 and/or Allow TLSv1.1 It is recommended to make sure that the script editor environment access is disabled. The script editor is used for troubleshooting and debugging purposes only.AXIS OS versionWeb interface configuration path< 7.10N/A>= 7.10Settings > System > Plain config > must be enabled before use in Axis video surveillance-oriented products, such as the network cameras. In products where audio in/out and microphone functionality are main features, such as Axis intercoms and network speakers, audio capabilities are enabled by default. It is recommended to disable audio capabilities if not used.AXIS OS versionWeb interface configuration path < 7.10Setup > System Options > Advanced > Plain Config > Audio > Allow Audio >= 10.9Audio > Device settings Axis devices usually have support for at least one, but possibly more SD cards, to allow for local edge storage recording of video footage. It is recommended to disable the SD card slot entirely if no SD card is used. This option is available from AXIS OS 9.80 and onwards. For further reading, see OS versionWeb interface configuration path< 7.10N/A>= 7.10Settings > System > Plain config > Storage > SD Disk Enabled It is recommended to make sure that the FTP access is disabled. FTP is an insecure communication protocol used for troubleshooting and debugging purposes only. For more guidance on the debugging purposes only. Plain config > Network > FTP Enabled >= 10.9System > Plain config > Network > FTP Enabled SSH is a secure communication protocol used for troubleshooting and debugging purposes only. For more guidance on the debugging possibilities using SSH, see OS versionWeb interface configuration path < 7.10Setup > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > System > Plain config > Network > SSH Enabled >= 7.10Settings > Network > SSH Enabled > 5.50. It is recommended to make sure that the Telnet access is disabled. Telnet is an insecure communication protocol used for troubleshooting and debugging purposes only. AXIS OS versionWeb interface configuration path < 5.50Instructions can be found here < 7.10N/A> = 10.9N/A ARP/Ping was a method for setting the Axis device IP address using e.g. AXIS IP Utility. The functionality was removed in AXIS OS 7.10 and it is recommended to disable the feature in Axis devices running lower AXIS OS versions. AXIS OS versions. AXIS OS versionWeb interface configuration path < 7.10Setup > System Options > Advanced > Plain Config > Network > ARP/Ping>= 7.10N/A>= 10.9N/A CSC #1: Inventory and Control of Enterprise Assets CSC #4: Secure Configuration of Enterprise Assets and SoftwareCSC #13: Network Monitoring and DefenseEnabling IP filtering only for authorized clients will prevent the Axis device from responding to network traffic from any other clients. It is recommended to either allow or block the IP addresses of network hosts to ensure that only hosts that are authorized can access the Axis device. Make sure to add all authorized clients (VMS server and administrative clients) to your allowlist.AXIS OS versionWeb interface configuration path < 7.10Setup > System > TCP/IP > IP address filter>= 10.9Settings > Security > IP address filter CSC #4: Secure Configuration of Enterprise Assets and SoftwareCSC #13: Network Monitoring and DefenseAxis devices feature a prevention mechanism to identify and block brute-force delay protection is available from AXIS OS 7.30 and onwards. For detailed configuration examples and recommendations, see . AXIS OS versionWeb interface configuration path < 7.10N/A> = 7.10Settings > System > Plain config > System > System > Plain config > System > Plain conf have HTTP and HTTPS enabled by default since AXIS OS 7.20. While HTTP access is insecure with no encryption at all, HTTPS for all administrative tasks on the Axis device. Please follow the instructions below to configure the Axis device properly for HTTPS and corresponding cipher settings. It is recommended to configure the Axis device for HTTPS only (no HTTP Strict Transport Security) to further enhance device security. While a self-signed certificate is not trusted by design, it is adequate for secure access to the Axis device during initial configuration and for when no public key infrastructure (PKI) is available at hand. If available, the self-signed certificates of the PKI-authority of choice.AXIS OS versionWeb interface configuration path< 7.10Setup > System Options > Security > HTTPS >= 7.10Settings > System > Security > HTTP and HTTPS >= 10.9System > Network > HTTP and HTTPS according to the configuration of the firmware the Axis device is running. Please refer to the below list of secure and strong ciphers only, which should be configured and used during production (as of February 2022):TLS 1.2 and lowerECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-CHACHA20-POLY1305:ECDHE-RSA-AES128-GCM-SHA384AXIS OS versionWeb interface configuration path< 7.10Setup > System Options > Advanced > Plain Config > HTTPS > Ciphers>= 7.10Settings > System > Plain config > System > Plain config > System > Plain conf Ciphers>= 10.9System > Plain config > HTTPS > CiphersTLS 1.3 Per default, only strong ciphers according to the TLS 1.3 specification will be selected. These are not user configurable. Currently (as of February 2022) these ciphers are:TLS AES 128 GCM SHA256:TLS AES 128 GCM SHA256:TLS AES 256 GCM SHA384 CSC #1: Inventory and Control of Enterprise AssetsCSC #8: Audit Log ManagementEnabling the access towards the Axis device, which will simplify audits and access towards the Axis device can send its logs to a central logging environment, which simplifies storage of log messages and their retention time. For more information about device logging in Axis devices, see OS versionWeb interface configuration path< 7.10Setup > System > Access log>= 7.10Setup > System > Plain config > System > Access log>= 7.10Setup > System > Plain config > System > Access log>= 7.10Setup > System > Access log>= 7.10Setup > System > Plain config > System > Access log>= 7.10Setup > System > Access log>= 7 log>= 10.9System > Plain config > System > Access log CSC #1: Inventory and Control of Enterprise AssetsCSC #12: Network Infrastructure ManagementAxis offers physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion and/or tampering accessories in order to enhance the physical intrusion accessories intrusion accessories intrusion acce trigger an alarm that enables the Axis device to send out a notification or an alarm to selected clients. For more information about available anti-tampering accessories for Axis devices, go to: The hardening instructions outlined in this section are an extension that build on the default and basic hardening described in previous sections. While the default and basic hardening can be configured and enabled directly in the Axis device, the extended hardening of Axis devices require active participation by the entire vendor supply chain, as well as the end-user organization and the underlying IT- and/or network infrastructure. CSC #12: Network Infrastructure ManagementIt is not recommended to expose the Axis device as a public web server or public network access of any kind, allowing unknown clients to gain network access to the device. Axis recommends using AXIS Companion for individuals and small organizations that do not operate a VMS nor need to access video from remote locations. AXIS Companion employs Windows/iOS/Android client software, is free of charge, and provides an easy way to access video in a secure way without exposing the Axis device to the Internet. More information about AXIS Companion. All organizations that use a VMS should consult the VMS vendor for their best practices regarding remote video access. CSC #12: Network Infrastructure Management It is recommended to segment and place Axis devices and corresponding infrastructure/applications, such as the video management system (VMS), network video recorders (NVR) and other types of surveillance equipment, on an isolated local network that is decoupled from the production and business network. Physical and virtual isolation is a common and recommended counter measure to reduce exposure and risks. As for basic hardening, the local network and its infrastructure (router, switches) should be access-protected by a multilayer of network-security mechanism, such as VLAN segmenting, limited routing capabilities, virtual private network (VPN) for site-to-site or WAN access, as well as network layer 2/3 firewalling and access control lists (ACL). To extend the basic hardening, it is recommended to apply more advanced network layer 2/3 firewalling and access control lists (ACL). threat protection within the network. Extended network hardening requires dedicated software and/or hardware appliances. CSC #1: Inventory and Control of Enterprise AssetsCSC #12: Network Infrastructure ManagementIt is recommended to perform regular vulnerability assessments of the infrastructure the Axis device is part of as well as of the Axis device itself. These vulnerability assessments are usually performed by network security scanners. The purpose of a vulnerabilities and misconfigurations. Please make sure that the Axis device being tested is updated to the latest available LTS or active track firmware before starting the scan. It is recommended to review the scanning remarks that are left should be submitted in a helpdesk ticket to Axis support. CSC #3: Data ProtectionCSC #12: Network Infrastructure ManagementIt is recommended to deploy web server and client certificates in Axis devices that are trusted and signed by a public or private Certificate whose trust chain can be validated helps to remove browser certificate warnings when connecting over HTTPS and ensures the authenticity of the Axis device when deploying a Network Access Control (NAC) solution. This mitigates the risk of an attacking computer impersonating an Axis devices. CSC #6: Access Control ManagementCSC #13: Network Monitoring and DefenseAxis devices have support for IEEE 802.1x portbased network access control utilizing the EAP-TLS method. For optimal protection, authentication of Axis devices must utilize client certificates signed by a trusted Certificate signed by a IEEE 802.1x>= 10.9System > Security > IEEE 802.1x CSC #13: Network standard IEEE 802.1AR, which allows for automated and secure onboarding of Axis devices into the network via the Axis device ID, a globally unique certificate installed in the device during production. For more information, see the Cybersecurity features in Axis products white paper. The Axis devices can be downloaded here: . CSC #8: Audit Log ManagementAxis devices support the following SNMP v1: supported for legacy reasons only, should not be used.SNMP v2c: may be used on a protected network segment.SNMP v3: recommended for monitoring MIB-II and AXIS Video MIB can be downloaded here: . For more guidance on how to configure SNMP in AXIS OS, see OS versionWeb interface configuration path < 7.10Setup > System Options > Network > SNMP>= 10.9System > Network > SNMP>= 10.9System > Network > SNMP CSC #8: Audit Log ManagementAxis devices can be configured to send all log messages encrypted to a central syslog server. This simplifies audits and prevents log messages from being deleted in the Axis device either intentionally/maliciously or unintentionally. It also allows for extended retention time of device logs depending on company policies. For details about how to enable remote syslog server in different AXIS OS versions, see OS vers TCP/IP>= 10.9System > Logs CSC #3: Data ProtectionFrom AXIS OS 7.40 and onwards, Axis devices support secure video streaming over RTP, referred to as SRTP or RTSPS. It is recommended to enable SRTP/RTSPS if the video management system (VMS) supports it. The Axis device's video stream will then be received via a secure end-to-end encrypted transportation method by authorized clients only. If available, SRTP should be used in favor over unencrypted RTP video streaming.Note that SRTP/RTSPS is only encrypting the video streaming.Note that SRTP/RTSPS is only encrypted RTP video streaming.Note that SRTP/RT communication.AXIS OS versionWeb interface configuration path < 7.10Setup > System Options > Advanced > Plain config > Network > RTSPS = 7.10Setup > System Axis Edge Vault can add a signature to its video stream to make sure the video is intact and to verify its origin by tracing it back to the Axis device. For more information, see the Cybersecurity features in Axis products white paper. The Axis root certificates used to validate the signed video authenticity can be found here: . AXIS OS versionWeb interface configuration samples on how to harden the Axis device according to the corresponding items in Basic hardening. The list includes all basic hardening configuration settings are not present in the AXIS OS version your device is running since some functionality has been removed to increase security. Receiving an error while issuing the VAPIX call would be an indication of the functionality no longer being present in the Axis device FTP discovery protocol UPnP discovery protocol UPnP discovery protocol WebService discovery protocol UPnP discovery protocol maintenance access ARP-Ping IP address configuration Exception Exception and TLS 1.2 and TLS 1.3 only 1.2 secure cipher configuration brute force attack protection brute force attack protection and TLS 1.3 only 1.2 secure cipher configuration brute force attack protection and TLS 1.3 only 1.2 secure cipher configuration brute force attack protection and TLS 1.3 only 1.2 secure cipher configuration brute force attack protection brute force attack protec anonymous viewer and PTZ access After 10 failed login attempts within 30 seconds, the client IP address gets blocked for 10 seconds. Every following failed request within the 30 seconds, the client IP address gets blocked for 10 seconds. Device Manager and AXIS Device Manager Extend according to the corresponding items in Basic hardening. The configuration settings are not present in the AXIS OS version your device is running since some functionality has been removed to increase security. AXIS Device Manager and AXIS Device Manager Extend will automatically remove settings from the hardening configuration setting set All other company names and products are trademarks or registered trademarks of their respective companies. We reserve the right to introduce modifications without notice.

AXIS Camera Station user manual. AXIS Companion — Video management software for small systems. AXIS Companion user manual. For more information, ... where 0 is the most sensitive and 100 the least sensitive. Use the activity indicator as a guide when you set the sound level. When you create events, you can use the sound level as a condition ... Note that Axis devices updated the user interface in firmware versions 7.10 and 10.9. ... Changelog for AXIS OS Hardening Guide. Date & time Version Changes; March 2022: 2.0: ... AXIS Companion employs Windows/iOS/Android client software, is free of charge, and provides an easy way to access video in a secure way without exposing the Axis ... AXIS Companion solutions not including AXIS S3008 Recorder support Axis cameras and encoders with firmware 8.40 and later. Do you need AXIS Companion: if you have devices with a firmware older than 8.40, if your site has no internet access, if you ... GravGrip is a gravity operated hydraulic gimbal for your Cell Phone and Action Camera. The perfect mix between a gimbal and a JIB device. GravGrip features a battery-free, mechanical design. The Technical guide to network video provides a complete overview of network video surveillance. It explores recent development in areas such as thermal cameras, access control, network audio systems and analytic software.

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