

Initial Device Access Changes

This document describes the current and future behaviour of the initial device access in AXIS network products. The initial device access only applies to products in a factory defaulted state.

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1 Current Initial Device Access

AXIS network devices shipped from production and in its factory defaulted state have their VAPIX and ONVIF interfaces activated for easy and fast out-of-the-box access on the network for clients connecting to them. In practice this means that a client such as an application or video management system can access the AXIS network device via anonymous ONVIF calls as well as the default VAPIX user "root" with the default password "pass" prior to having anything configured on the AXIS network device itself.

The current initial device access is supported by all AXIS network devices and their corresponding latest firmware version.

2 New Initial Device Access

AXIS has decided to modify the initial device access by disabling the VAPIX and ONVIF interfaces for factory defaulted products shipped from production. This means that the ONVIF and VAPIX interfaces are inactive per default, allowing no client to access or configure the device out-of-the-box prior to activating the VAPIX or ONVIF interface. Interface calls that do not require authentication (=anonymous) are still allowed (e.g. ONVIF get capabilities, VAPIX get brand information)

The new initial device access will be supported by **all active selling AXIS network devices** and their corresponding latest firmware version on the following firmware platforms below.

Estimated Release Date: Week 37/38 2019

- Firmware 5.51.6
- Firmware 8.40.3 LTS
- Firmware 9.40.1 ACTIVE Track

Estimated Release Date: Q3/Q4 2019

- Firmware 6.50.4 LTS
- Firmware 1.65.x
- Firmware 1.8x.x
- Firmware 5.75.x
- Firmware 6.53.x
- Firmware 6.55.x
- Firmware 7.15.x

As illustrated above, the main product portfolio located on our ACTIVE and LTS track releases will get the update first followed by updating smaller releases with fewer products directly after and during Q3/Q4 2019.

Release Notes

Products and their firmware receiving this update will have the following in their release notes:

"Removed the root users default password in factory defaulted firmware. The password of the root user must be set first in order to initialize VAPIX and ONVIF interfaces to allow further configuration. This change only affects products in its factory defaulted state, products that are already deployed in production systems are not affected by this update until factory defaulted."

2.1 VAPIX Interface Access

The VAPIX interface is activated when the VAPIX “root” user password is set, the following options are available to do so:

- **VAPIX System Settings API**, set the VAPIX “root” user password via `pwdgrp.cgi` as described in the [AXIS VAPIX System Settings API](#).
Example: <http://ip-address/axis-cgi/pwdgrp.cgi?action=add&user=root&pwd=pass&grp=root&sgroup=admin:operator:viewer:ptz>
- **Web-Interface**, set the VAPIX “root” user password via installation wizard in the web-Interface of the AXIS network device.

2.2 ONVIF Interface Access

The activation of the ONVIF interface is a 2-step process as the VAPIX interface needs to be initialized first before the ONVIF interface initialization can be performed.

Step 1 – Initiate VAPIX Interface

The VAPIX interface is activated when the VAPIX “root” user password is set. The following options are available to do so:

- **VAPIX System Settings API**, set the VAPIX “root” user password via `pwdgrp.cgi` as described in the [AXIS VAPIX System Settings API](#).
Example: <http://ip-address/axis-cgi/pwdgrp.cgi?action=add&user=root&pwd=pass&grp=root&sgroup=admin:operator:viewer:ptz>
- **Web-Interface**, set the VAPIX “root” user password via installation wizard in the web-Interface of the AXIS network device.

Step 2 – Initiate the ONVIF Interface

After the VAPIX interface has been initiated, a separate dedicated ONVIF user needs to be created to activate the ONVIF interface:

- Create a ONVIF user via web-interface of the AXIS network device.*
- Create a ONVIF user via “ONVIF Create Users” request, documented in the [ONVIF Profile S Specifications](#). The request to create an ONVIF user is channeled through the `/vapix/services` API which is available once the VAPIX interface is initialized.**

**In order to create a ONVIF user account, the initial installation wizard of the AXIS network device need to be passed which in return will already activate the VAPIX interface. Then, a new ONVIF user account can be created in Settings -> System -> ONVIF.*

***An example of adding a ONVIF user channeled through the `/vapix/services` can be found below*

```

POST /vapix/services HTTP/1.1
<SOAP-ENV:Envelope xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:tds="http://www.onvif.org/ver10/device/wsdl"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:onvif="http://www.onvif.org/ver10/schema"
  xmlns:tt="http://www.onvif.org/ver10/schema"
  xmlns:SOAP-ENV="http://www.w3.org/2003/05/soap-envelope">
<SOAP-ENV:Body>
  <tds:CreateUsers xmlns="http://www.onvif.org/ver10/device/wsdl">
    <User>
      <tt:Username>admin</tt:Username>
      <tt>Password>admin</tt>Password>
      <tt:UserLevel>Administrator</tt:UserLevel>
    </User>
  </tds:CreateUsers>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

2.3 Identification

A product will respond in their HTTP response header with “AXIS-Setup:vapix” when a API call is made that would require authentication while at the same time no root password has been set on the product yet. This is illustrated in the screenshot below:

```
▼ Response Headers    view parsed
HTTP/1.1 401 Unauthorized
Date: Thu, 19 Sep 2019 18:15:20 GMT
Server: Apache/2.4.39 (Unix) OpenSSL/1.1.1c
Axis-Setup: vapix
```

This is the preferred method in identifying a product that supports the new initial device access.

3 Conclusion / Impact

The below summary shall give an overview of how the initial device access modification may affect AXIS software applications as well as 3rd party applications.

3.1 AXIS Firmware Upgrade

The user will not notice any change in behavior regardless of firmware upgrade or downgrade since the new initial device access is only applicable in factory defaulted state.

3.2 AXIS Web-Interface

The web-interface is not affected by the new device access and supports it out of the box without the user noticing any difference.

3.3 AXIS Camera Station

AXIS Camera Station will be adapted by the end of September when releasing ACS 5.28. Until then, a user needs to set the root password via web-interface or use AXIS Device Manager prior to adding the device onto AXIS Camera Station.

3.4 AXIS Device Manager

AXIS Device Manager will be prepared prior to the new initial device access update in order to adapt to the changes.

3.5 AXIS Companion

AXIS Companion will be prepared prior to the new initial device access update in order to adapt to the changes.

3.6 AXIS IP Utility

AXIS IP Utility will be prepared prior to the new initial device access update in order to adapt to the changes.

3.7 AXIS Guardian

AXIS Guardian will be prepared prior to the new initial device access update in order to adapt to the changes.

3.8 AXIS Wireless Installation Toolkit

AXIS Wireless Installation Toolkit will be prepared prior to the new initial device access update in order to adapt to the changes.

3.9 ONVIF Clients

ONVIF-based clients such as the ONVIF Device Manager or an ONVIF-only communicating VMS that relied on anonymous ONVIF access previously on AXIS network devices need to have an ONVIF user created to allow proper communication. This is done by initializing the VAPIX interface and finally creating a ONVIF user account.

3.91 Other 3rd party application

If the 3rd party application does not support setting the initial root password, AXIS recommends initializing the VAPIX/ONVIF interface using the device web interface or AXIS Device Manager.