HOW TO.

AXIS Installation Verifier: Analyze and understand the report.

March 13, 2018
Rev. 1.0

Contents

Introduction

AXIS Installation Verifier is a tool, embedded in AXIS Camera Station 5.02 and above. It verifies that your system is working as it should by running a series of tests once you've completed the system installation and configuration.

The AXIS Installation Verifier mimics the recording part of the AXIS Camera Station server. The tool performs one test with the current settings, one test with emulated low light test and then also a stress test in order to find the system's bottlenecks.

A verification report is generated in PDF format and can be handed-over to the customer.

Prerequisites

AXIS Camera Station 5.16

Axis Network cameras with H.264 support

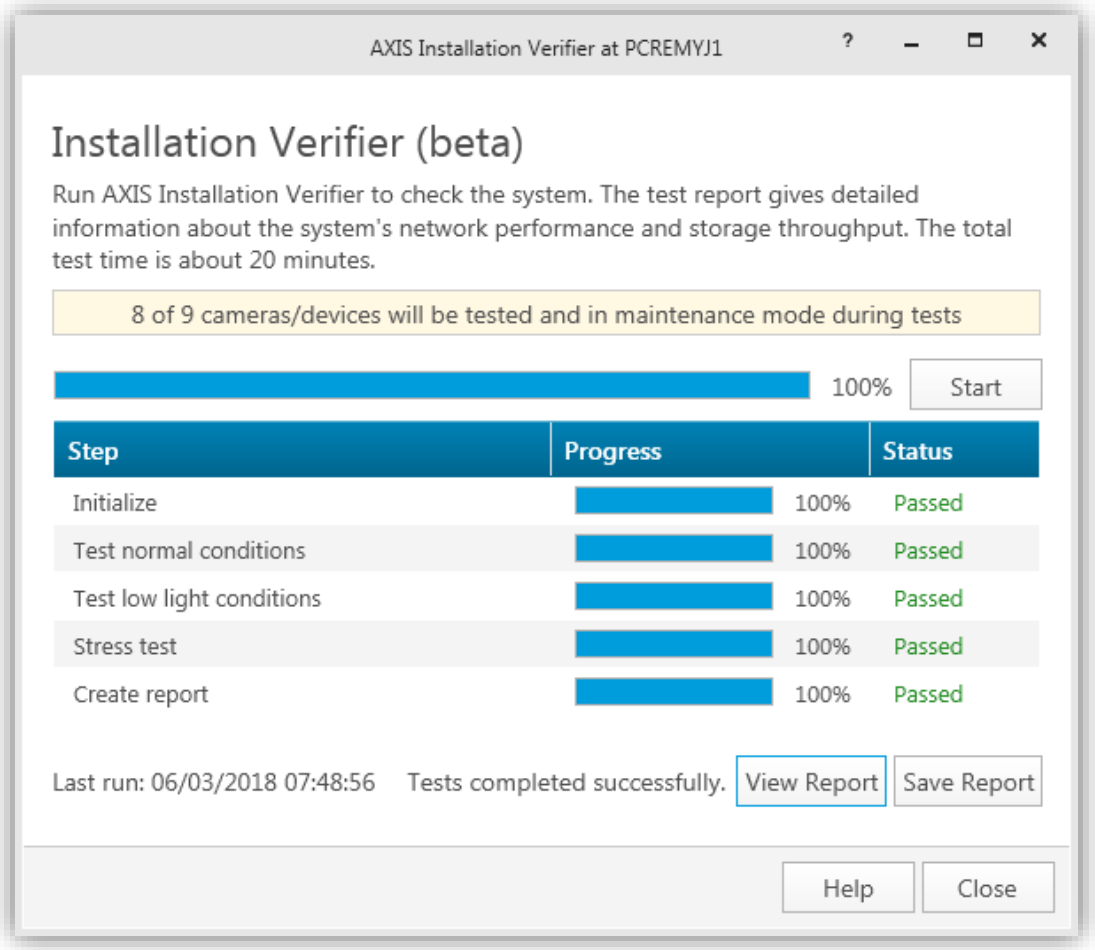
Please note that Axis doesn't take any responsibility for how this configuration may affect your system. If the modification fails or if you get other unexpected results, you may have to restore the settings to default.

Run AXIS Installation Verifier

After you've completed the installation and configuration, run AXIS Installation Verifier from the main menu icon > Help. The tests will take approximately 20 minutes.

> **NOTE**
>
> During the tests, the devices will be set to maintenance mode and won't provide a video stream for live view or recording.

Once all tests are completed, click **View Report** to open the report or **Save Report** to download it on the Client PC.

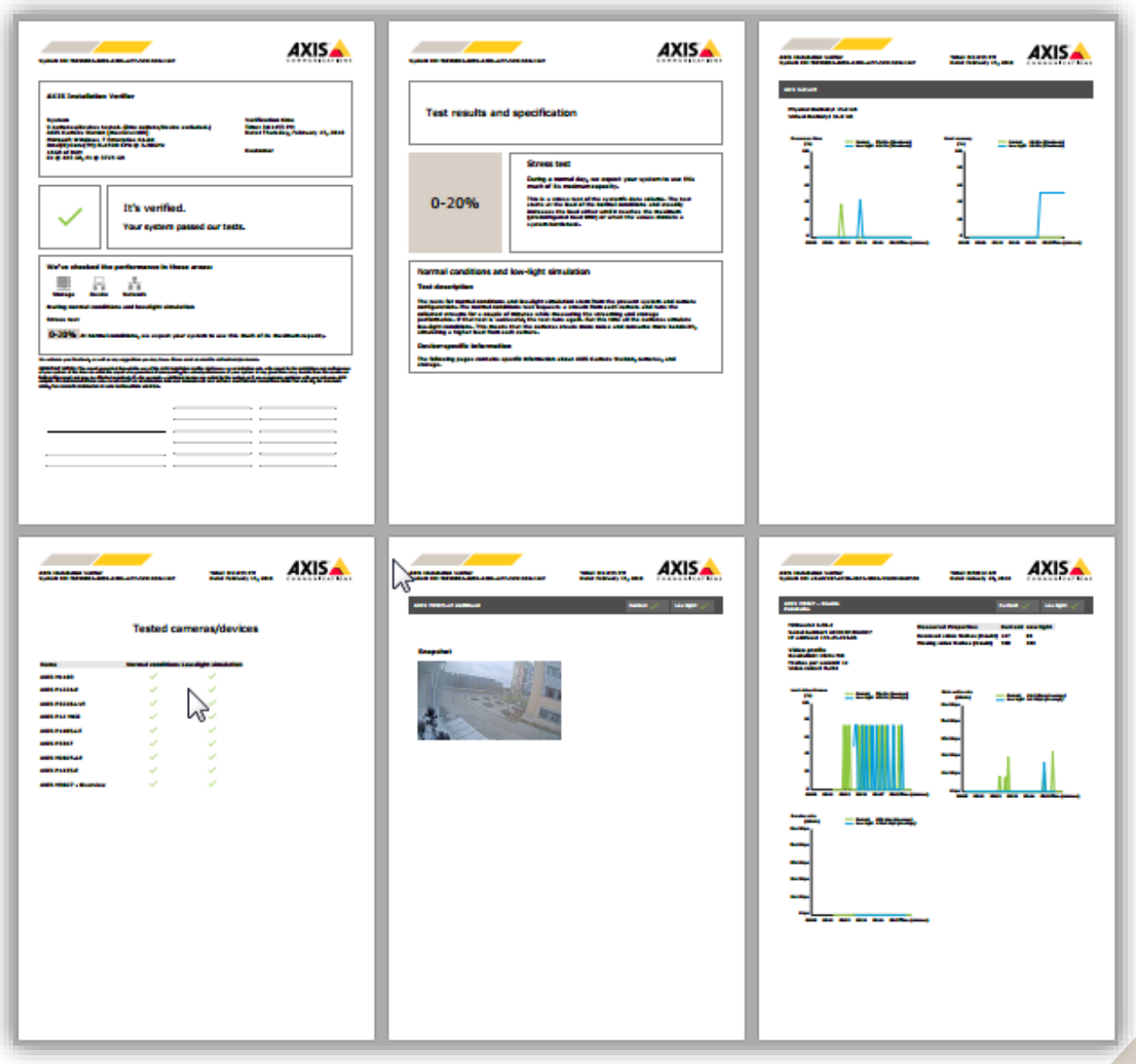


The status of the different tests can be:

- **Running:** The test is ongoing, please wait.
- **Passed:** All testable devices passed the test. See report for details.
- **Not passed:** Not all testable devices passed the test. See report for details.
- **Failed:** The test couldn't be finalized and therefore no report will be generated. It is recommended to take a snapshot of the test window, generate an AXIS Camera Station system report and contact Axis Support via the online helpdesk.

Test results: general information

The report is a PDF file which can be handed-over from the system integrator to the end customer once the installation is complete and the system validated.



The first section of the first page contains information about the system, such as hardware, operating system, date and time the tests were executed. There is also an area where you can write the customer's name.

AXIS Installation Verifier

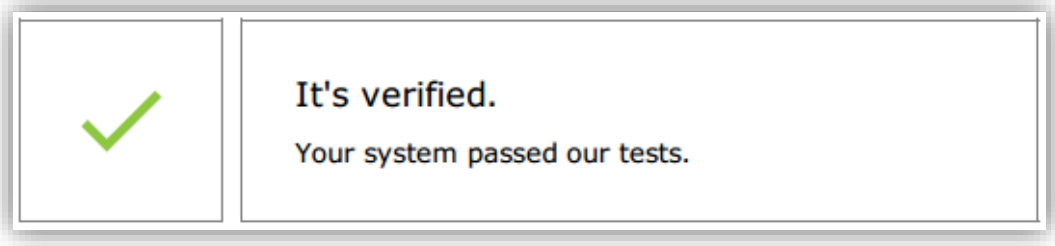
System
31 cameras/devices tested. (12 cameras/devices excluded.)
AXIS Camera Station [master-1408]
Microsoft Windows 7 Enterprise 64-bit
Intel(R) Core(TM) i5-4590 CPU @ 3.30GHz
16GB of RAM
C: @ 465 GB, E: @ 3725 GB

Verification time
Time: 8:16:51 AM
Date: Friday, February 16, 2018

Customer

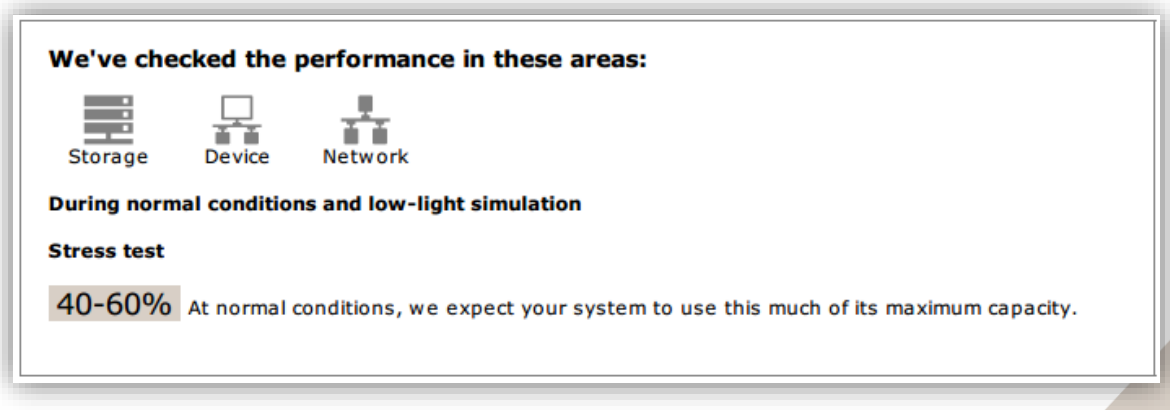
The second section indicates the results of the tests. Each test (normal conditions, low-light and stress test) has a duration of 5 minutes. Storage, devices and network are the three areas tested by the tool. There are two possible outcomes to the verification:

1. The system has passed the tests and is verified. The system should be able to cope with the load and the current configuration. You can also see the expected load during the low-light simulation, which is usually the most resource consuming scenario.



It's verified.

Your system passed our tests.



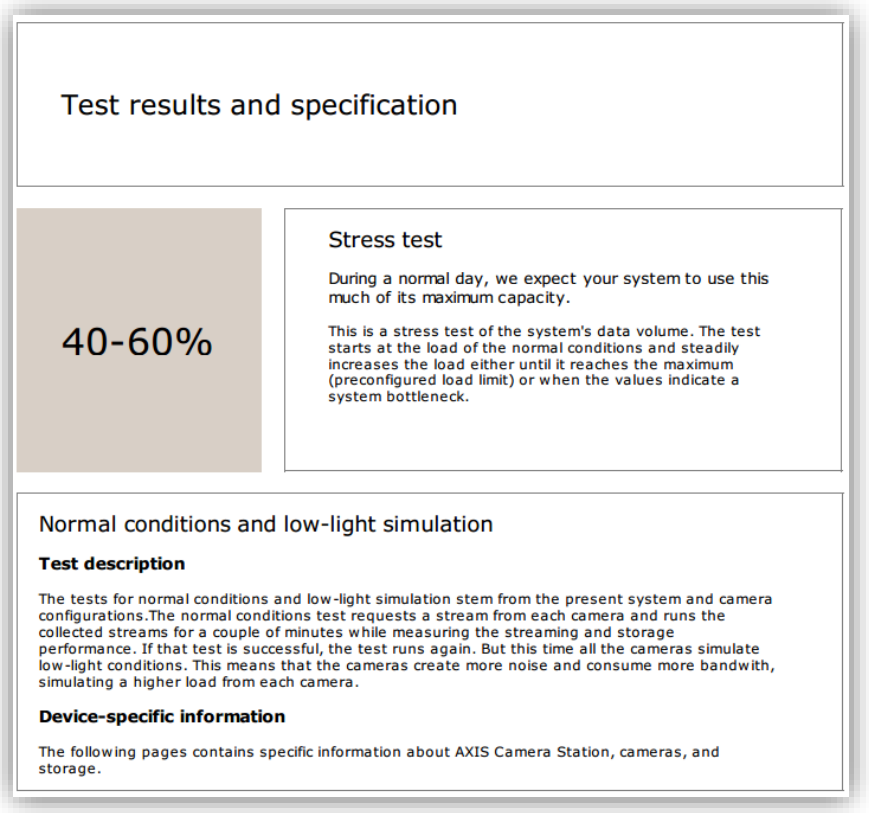
We've checked the performance in these areas:

Storage Device Network

During normal conditions and low-light simulation

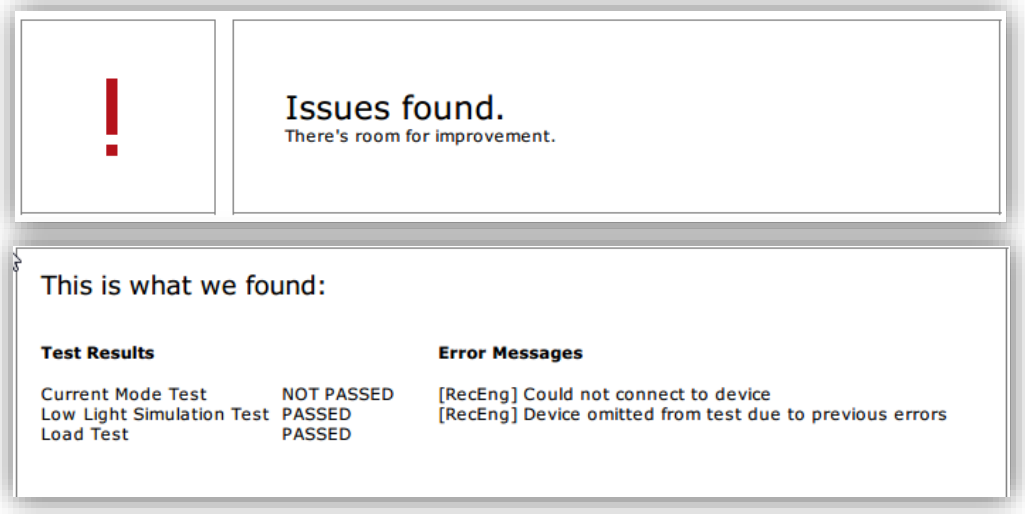
Stress test

40-60% At normal conditions, we expect your system to use this much of its maximum capacity.



In the example above, the stress test has determined the limits of the system and concluded that normal and low-light conditions are expected to use 40-60% of the resources.

2. Issues have been found and some things need to be changed to improve the stability of the system. The result of each test and the issues found are listed together with the error messages. More details can be found in the next pages of the report.



In the example above, one of the devices was not accessible during the test. The most probable reason for that is a network problem, or overloaded device, not being able to respond.

At the bottom of the first page, there is an area available to enter customer information, comments on the test or anything the system integrator judges necessary to mention.

Test results: AXIS Camera Station server

The physical and virtual memory is indicated at the top of the page.

- Random access memory (RAM) is physical memory that holds the applications, documents and procedures on the server.
- Virtual memory is a storage area that holds the files on your hard drive for retrieval when the server runs out of RAM. The virtual memory is much slower than the physical one and should never be used.

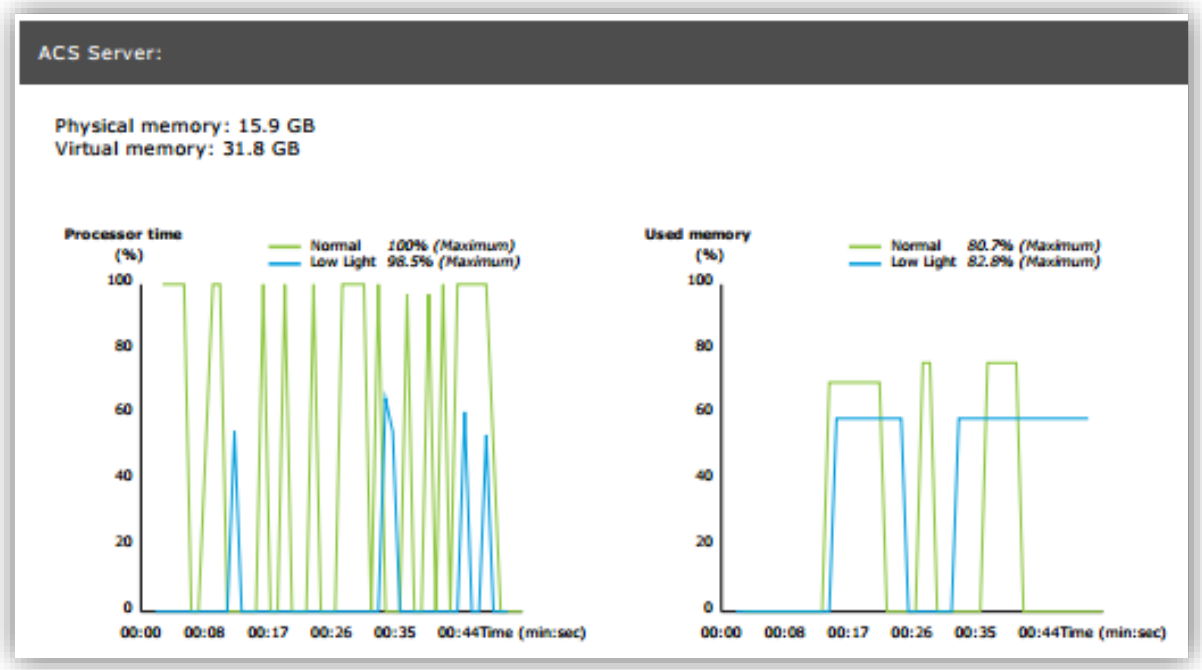
The AXIS Camera Station server is tested against two metrics:

Processor time

This measures the percentage of elapsed time the processor spends executing a non-idle thread. If the percentage is greater than 85 percent, the processor is overwhelmed and the server may require a faster processor or the configuration should be adjusted.

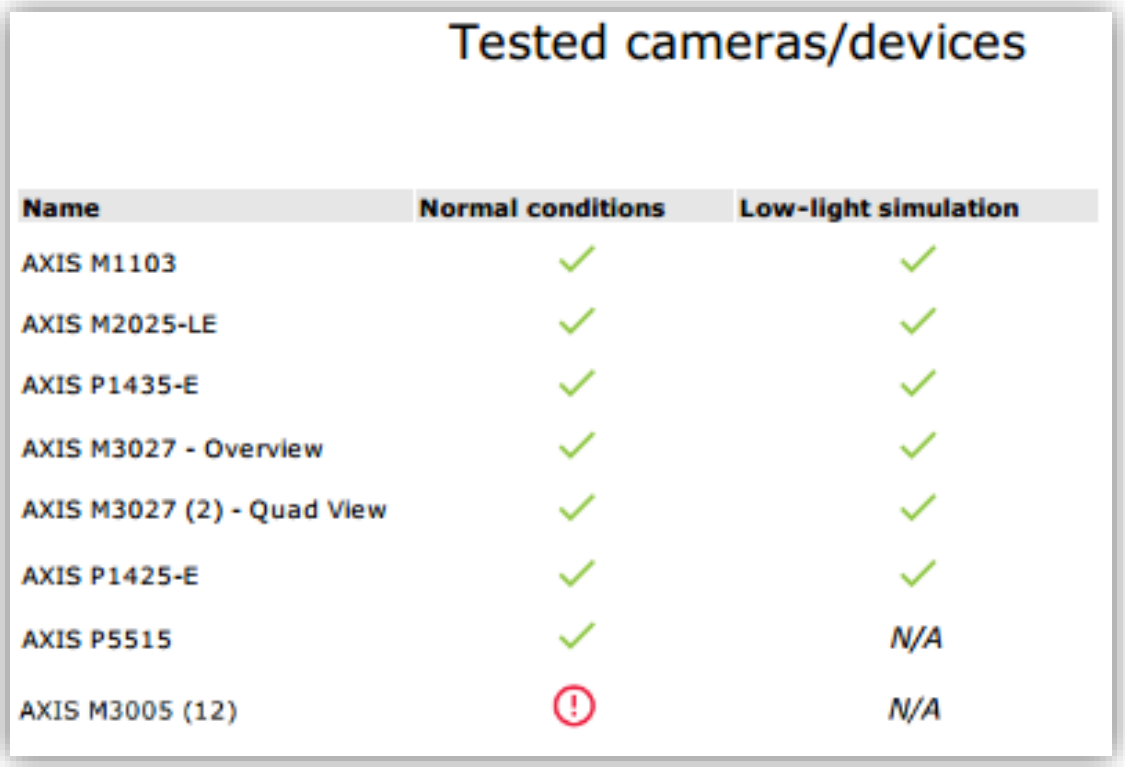
Used memory

This measures the percentage of physical memory used by all running processes. If this value is higher than 85 percent, that means there is insufficient memory, and paging activity can increase. Add more memory to the server to resolve this problem or limit the number of applications running on the server.



Test results: tested cameras/devices

The list of tested cameras and devices is presented on the next page. A device can contain several cameras. Example: multi-sensor devices or multi-channel encoders are counted as one device but 3, 4, or even 16 cameras (one camera per sensor/channel).



Tested cameras/devices

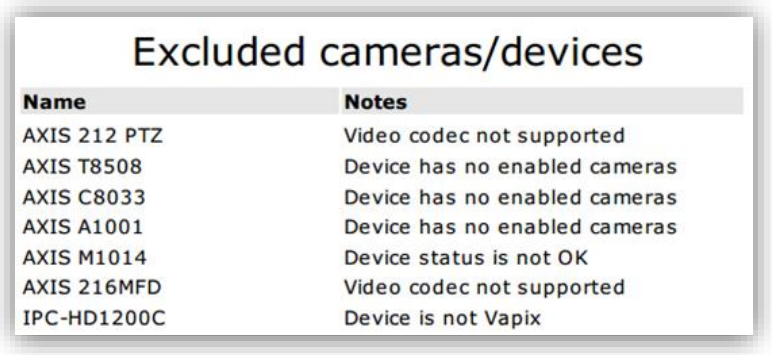
Name	Normal conditions	Low-light simulation
AXIS M1103	✓	✓
AXIS M2025-LE	✓	✓
AXIS P1435-E	✓	✓
AXIS M3027 - Overview	✓	✓
AXIS M3027 (2) - Quad View	✓	✓
AXIS P1425-E	✓	✓
AXIS P5515	✓	*N/A*
AXIS M3005 (12)	ⓘ	*N/A*

- ✓ A green checkmark indicates that the camera passed the related test.
- **N/A** means that the test couldn't run for the camera, for example the camera doesn't support the ExposureValue parameter for the low-light simulation.
- ⓘ A red sign is displayed if the camera did not pass the test. More details can be found in the camera specific results, in the following pages.

Test results: excluded cameras/devices

If a device does not support any of the tests, it will be excluded. The following devices will not be tested:

- **Device is not Vapix®**: Third party devices are not tested.
- **Device has no enabled cameras**: Devices with no video sensor, such as network switches, audio devices, door controllers, I/O modules…
- **Video codec not supported**: Devices with no H.264 support (usually firmware 4.x).
- **Device status is not OK**: Devices in maintenance mode, inaccessible, wrong credentials.



Excluded cameras/devices

Name	Notes
AXIS 212 PTZ	Video codec not supported
AXIS T8508	Device has no enabled cameras
AXIS C8033	Device has no enabled cameras
AXIS A1001	Device has no enabled cameras
AXIS M1014	Device status is not OK
AXIS 216MFD	Video codec not supported
IPC-HD1200C	Device is not Vapix

Test results: camera specific results

All camera information such as firmware, serial number, IP address and the video profile used for recording is listed. There is also a summary of the received and missing video frames for each of the tests.

> **NOTE**
>
> If a device is configured to record with two different video profiles (e.g. Medium for Continuous and High for Motion Detection), only the highest profile will be tested, regardless of the schedules configured.
> If both, Continuous and Motion recording are disabled, the profile selected for Manual recording will be used for the tests, even if is currently not active.

The graphs show the three metrics measured during the duration of the test, for normal and low-light conditions.

Lost video frames

The quota of missing video frames per one second interval. A high average value indicates a network bottleneck or that the device is overloaded. The average of lost video frames is usually below 1%.

Storage buffer

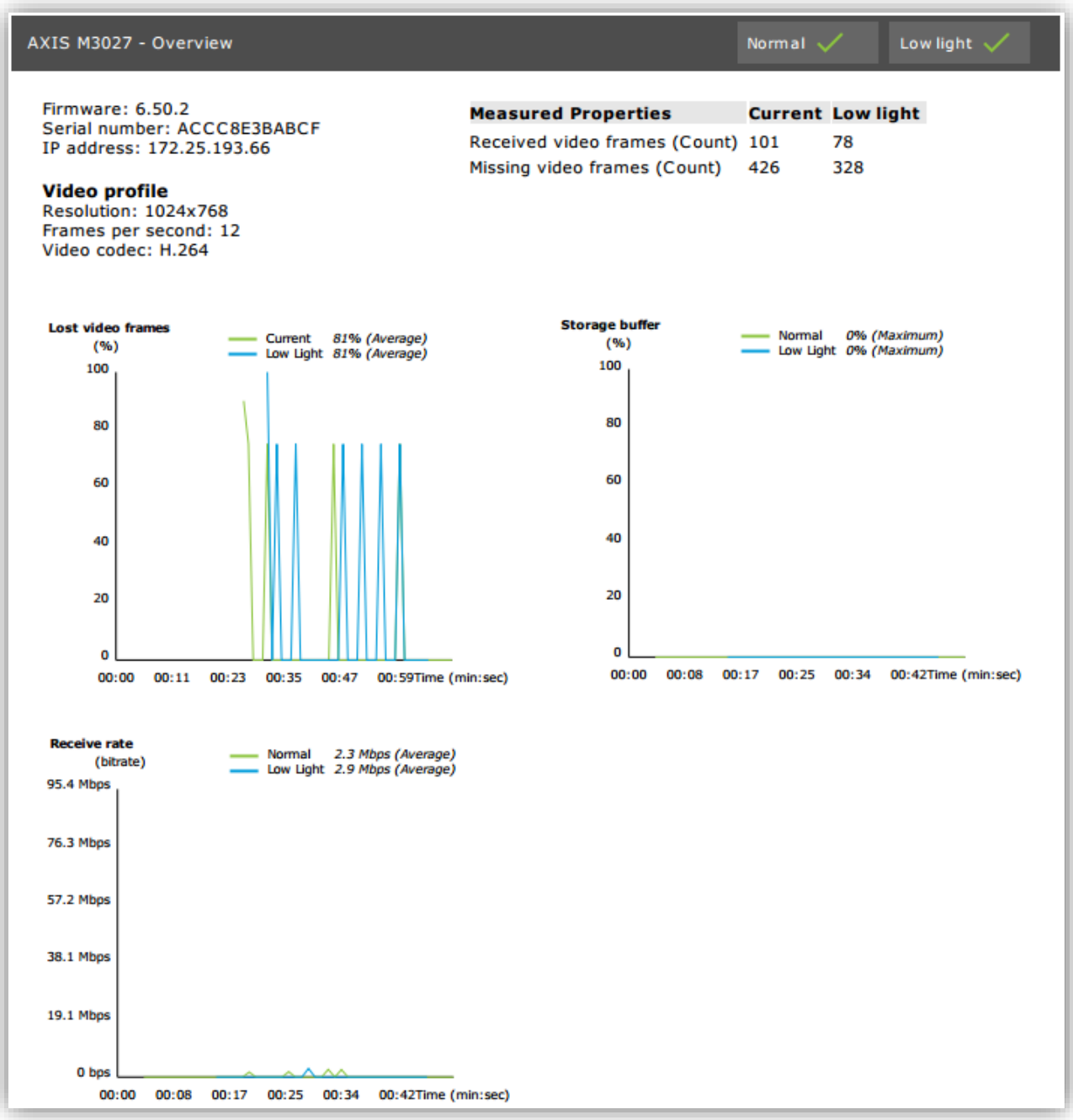
Utilization of the storage buffer per one second interval. A high peak value indicates a problem with the storage. The storage buffer is usually below 20%.

Received rate

The data rate (excluding overhead) sent by the camera and received by the AXIS Camera Station server.

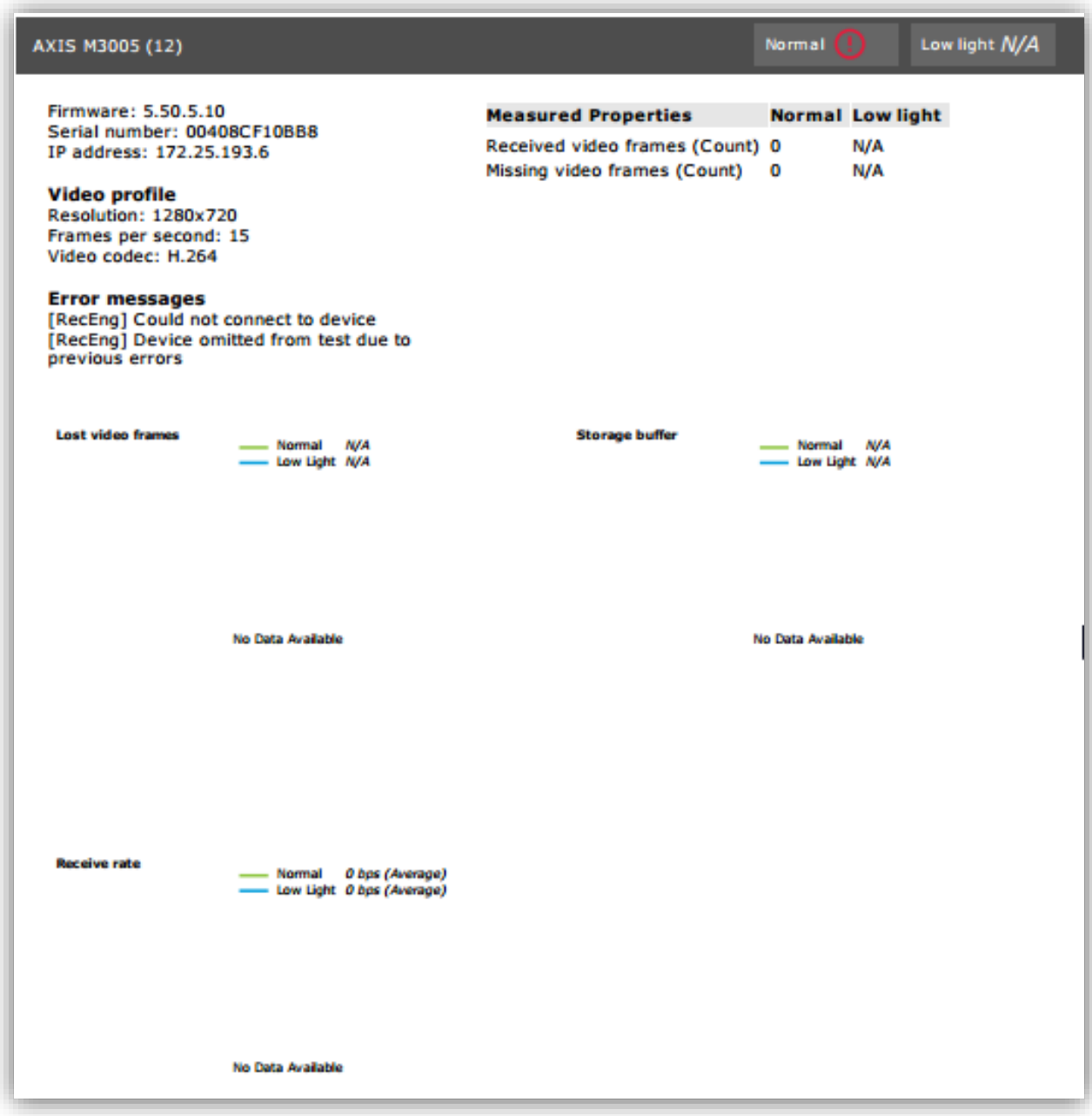
In the graph below, the lost video frames quota is high. The most likely reasons for this are:

- The camera is overloaded, maybe because too many view areas are in use (360 degrees cameras for example) or too many streams are pulled.
- Bottleneck on the network, between the camera and the AXIS Camera Station server.
- Faulty or poor quality network cable.
- Insufficient or unreliable power source, including PoE.

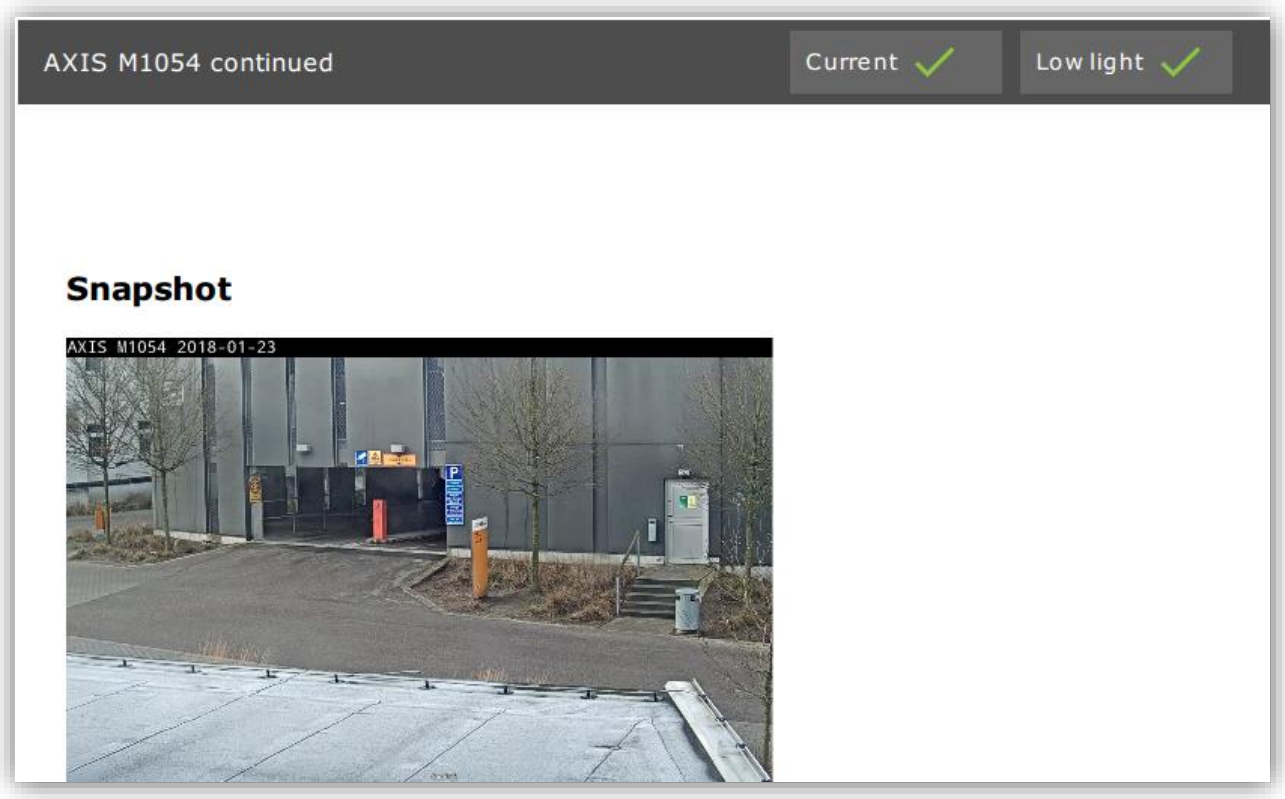


The graph below shows an example of a test which couldn't complete. The most likely reasons for this are:

- The camera was disconnected or the network was interrupted during the test.
- The power source couldn't cover the camera needs during the test.
- The camera was overloaded and took too long to respond to the server's requests.

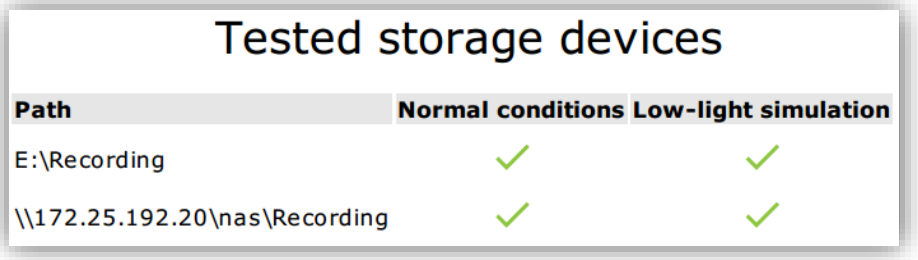


After the camera's test results, a snapshot from the camera is displayed:



Test results: Storage devices

Storage devices are tested against the same conditions.



Tested storage devices

Path	Normal conditions	Low-light simulation
E:\Recording	✓	✓
\\172.25.192.20\nas\Recording	✓	✓

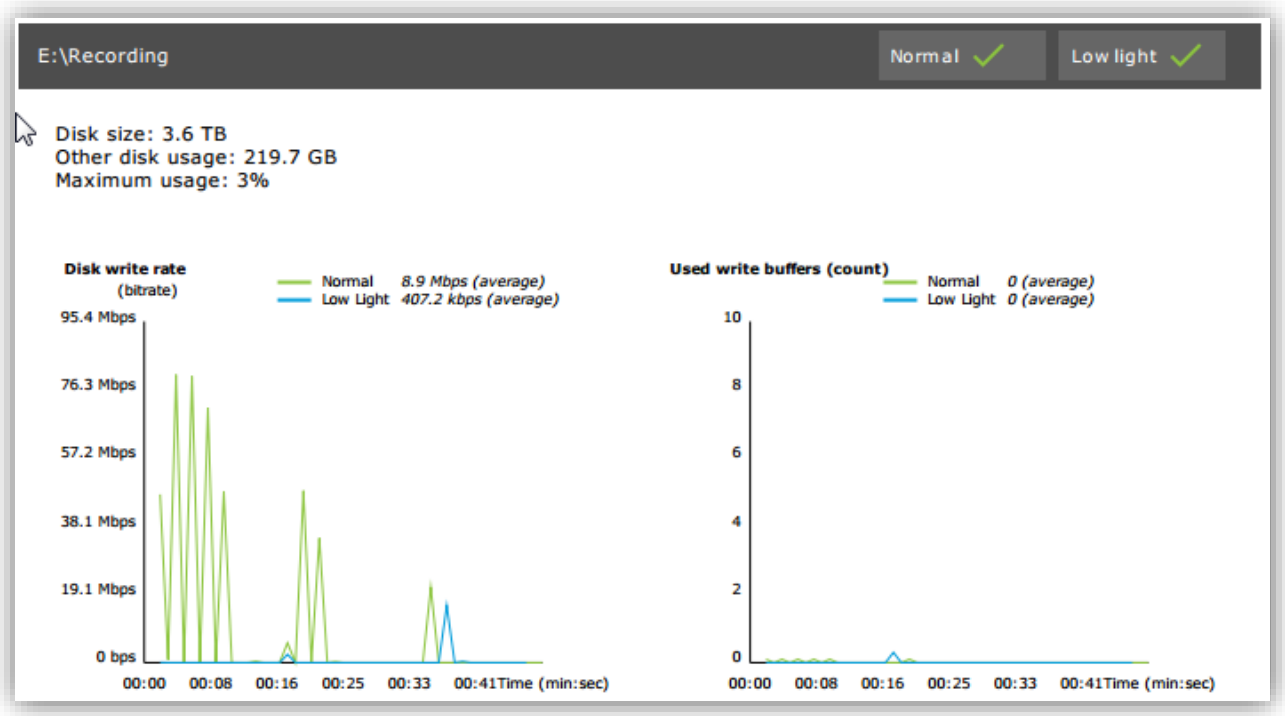
The tool tests local hard drives against two metrics:

- **Disk write rate:** The total data rate written to this storage representation per one second interval.
- **Used write buffers (count):** Utilization of the storage buffer (300 samples) per one second interval. A high peak value indicates a problem with the storage. In general, this value should be below 1 or 2.

> **NOTE**
>
> Currently, Network Attached Storages (NAS) are not tested.

Information about disk usage and capacity is available:

- **Disk size:** The total size of the disk.
- **Other disk usage:** Data which is not indexed by the AXIS Camera Station server. This may be external files such as random documents, Operating system files, files in the recycle bin…
- **Maximum usage:** Recording limit set in AXIS Camera Station. AXIS Camera Station will allocate a maximum percentage of the disk for its recording files. By default, this value is set to 99% for non-OS drives and to *total size-60GB* for OS drives.



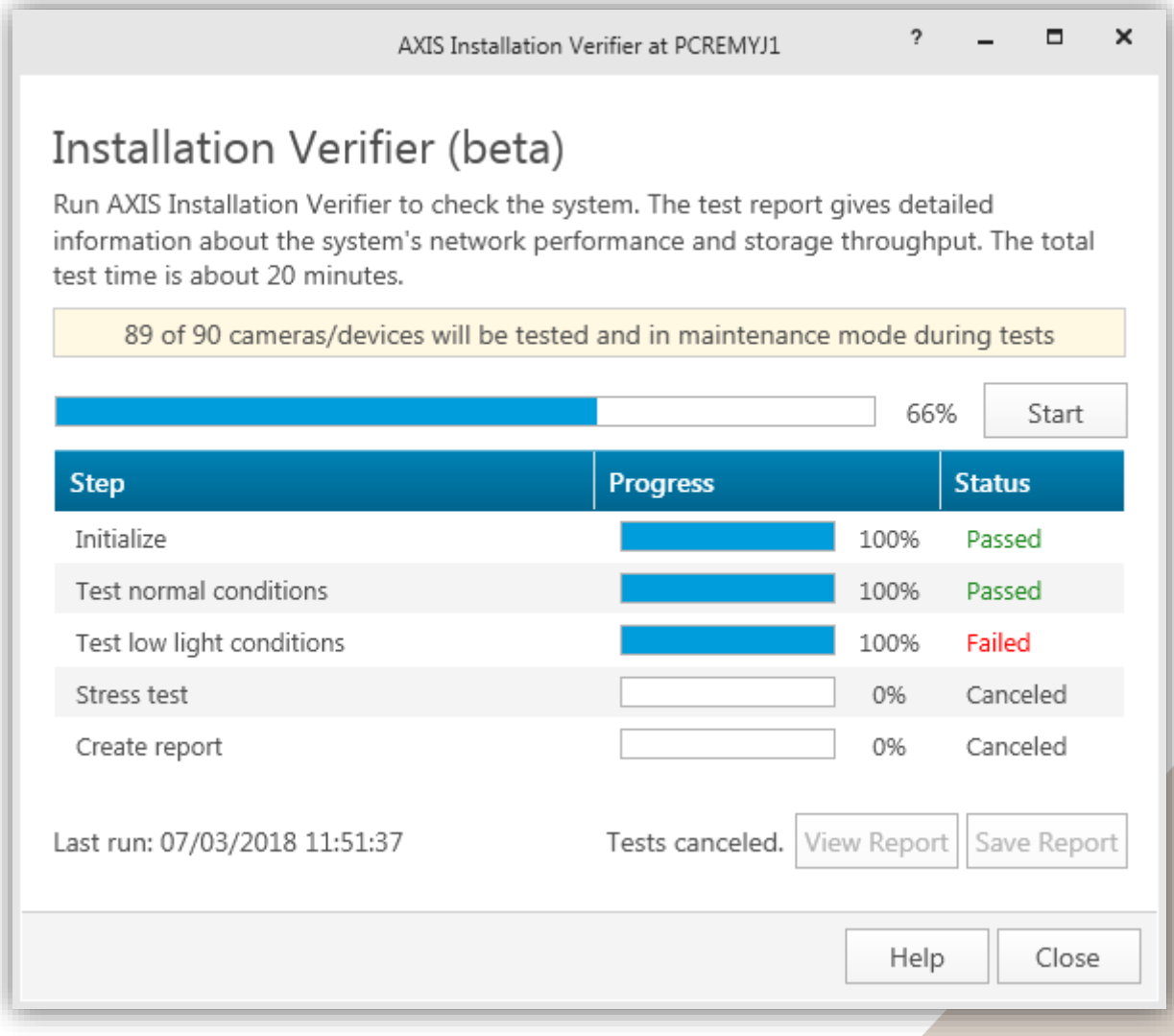
Troubleshooting

If any of the test fails ("failed"), no report will be generated. We recommend to take a snapshot of the test window, generate an AXIS Camera Station system report from the help menu and contact Axis Support via the online helpdesk.

NOTE

There is a difference between **not passed** and **failed**:

- **Not passed** indicates that the server, some devices or the storage didn't fulfil the conditions to pass the test.
- **Failed** means that the test did not complete and no conclusion regarding the system performance is available.



Considerations and limitations

- Only H.264 is supported. Cameras with no support for H.264 will be ignored.
- The low-light test only runs on cameras with support for ExposureValue parameter. N/A will be displayed for cameras without ExposureValue support.
- Low-light test might give the same result as normal conditions on some cameras with WDR support.
- Third party cameras will be ignored.
- Network Attached Storages are not tested but show as validated.