Secure your installation with live testing

AXIS
COMMUNICATIONS

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1. Introduction

You have thoroughly defined your system requirements and carefully analyzed your design, but there is always a risk that you will encounter some issues the first time you run your new system Even if it runs smoothly, it is almost impossible to tell how close to its operational limit it is working. In addition, you cannot tell how it will perform when exposed to large loads, such as all cameras triggering at the same. This will happen if an alarm goes off at night and all cameras start recording at the same time since the lights are turned on.

2. Surprises come as no surprise

Prior to installation, a surveillance system is basically unproven. Any experienced installer can testify that the larger and more complex a system, the more surprises you are likely to encounter the first time the system goes live. This is also very much true for surveillance systems that have to share a network with other applications.

However, design flaws and similar shortcomings are no less costly in small and mid-size installations. On the contrary, recurring customer visits to deal with different kinds of issues can soon waste the installer's entire profit margin.

Test bench runs can be used to improve operations. Normally they are performed in a very undemanding environment, for example, with the camera facing a single-color wall. In most cases, this is far from the complex and challenging scenes at the actual surveillance site. Consequently, test bench results tend to lead to a poor match between system components and true needs.

Once everything is in place, final testing is often limited to a simple verification of functionality. The outcome of such a test will only show that the cameras were online at the time and that they sent a video stream. It will not take into account such fundamental changes as the shift between day and night, or the drastic switch from no recording to all devices recording at the same time.

3. Eliminating uncertainties

AXIS Installation Verifier eliminates this kind of uncertainties. The test program simulates bandwidth consumption and storage needs in different operation conditions. Through a specially designed system stress test, it can also identify the first probable bottleneck in the overall system setup.

The tests not only verify that the installation is working as intended. Documentation of the system capacity at the time of installation will help the installer give the end customer appropriate assistance and make future troubleshooting easier. In addition, an installation report can resolve a dispute between the installer and customer about whether the system was changed in any way after it was handed over.
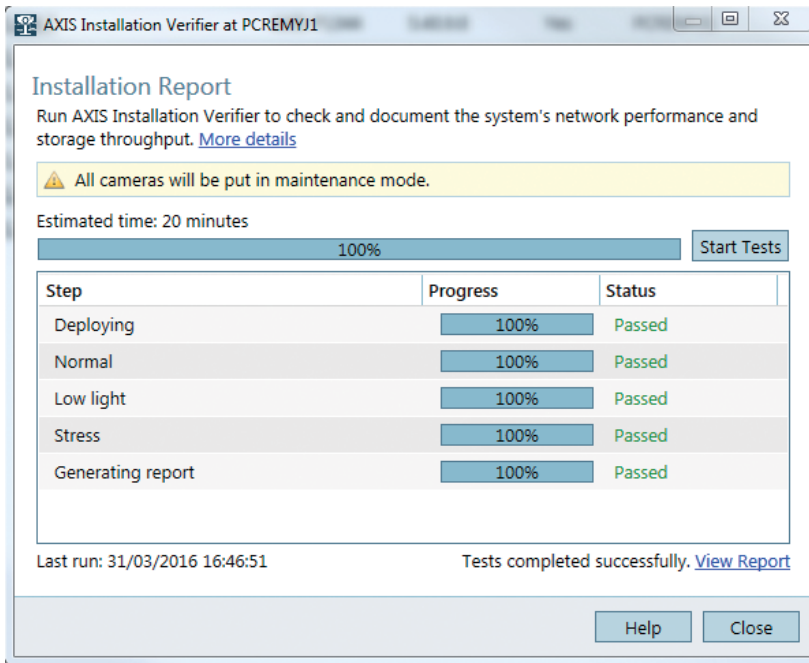
AXIS Installation Verifier provides valuable information about system performance in normal operation, low-light conditions as well as how your system will behave in more extreme situations.

4. The need for bandwidth

In an IP surveillance system, performance degradation and system failures are typically caused by network-related issues, such as a lack of bandwidth. Not only the cameras and encoders consume bandwidth. Components such as cables, switches, routers and storage devices also have significant impact on system behavior and system uptime. Finally, bandwidth is affected if the network is simultaneously used by other applications.

Many of these issues can be resolved by careful calculations, analysis and preparations. Testing can further improve reliability and functionality. Nevertheless, more than one installer has learnt that performance reality is something completely different from simulations or test bench runs.

5. Verifying day-to-day operability

AXIS Installation Verifier is a three-tier test that will confirm whether all parts of a system are operating together as planned. When the setup is complete, an initial test is performed with all camera configuration settings in normal operation modes. This is necessary because different settings, such as camera resolution, event triggers and retention time, will affect system performance. For example, great increases in activity in the actual scene will lead to a demand for more bandwidth.

Without changing any settings, the test is run a second time with all the cameras in simulated night mode. This is an important test since low-light scenarios create more noise and therefore consume more bandwidth. This part of the test will reveal if there is, for example, any need for more bandwidth, storage, extra lighting or IR illuminators.

A successful test will verify that the system is ready, and that is has the right configuration to handle day-to-day operation.

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6. Testing 'til it hurts

The third and final part is a stress test during which the data volume in the system is steadily increased until the maximum load is reached. This way, it is possible to identify the weakest link or system bottleneck, which for example could be a switch or a router. Knowledge about possible system weaknesses enables proactive upgrading of insufficient components before real-life problems arise.

The result of the stress test also gives a good indication of the spare capacity of the system, making it useful for pinpointing the possibility of system expansion. This makes the test more versatile than a standard health-monitoring program, which can determine whether the system is within the limits of its capacity, but which cannot tell how close in time a system breakdown might be. Furthermore, testing ensures the installer that the system was installed properly and is performing as intended.

7. Diagnostic tests for routine maintenance

It is also possible to use the described tests for maintenance purposes. The results of the tests performed at installation can be kept as a reference for comparison with a later situation. A new test will indicate whether any major changes have been made to the installation, such as the addition of new cameras or other bandwidth consuming applications.

The test will not provide any definite answers, but it can serve as a good starting point for further investigation.

8. Summary

Apart from the obvious advantage of knowing how the system will work during normal operation – both day and night – and under extreme stress, Axis Installation Verifier has several benefits for both installer and end customer. The knowledge gained from the three-tier test can be used to:

> Eliminate performance issues
> Show spare capacity for system expansion
> Verify that the system performs as intended prior to end customer handover
> Conduct proper testing, eliminating the need for costly customer visits after installation and final delivery

About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 2,100 dedicated employees in more than 50 countries around the world, supported by a global network of over 80,000 partners. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ Stockholm under the ticker AXIS.

For more information about Axis, please visit our website www.axis.com.

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