



Reference

“Two cables connected and we are stress-free”

How a simple SCALANCE installation makes the Internet connection of large online live-events redundant and reliable – relieving the stress of everyone in the backstage area.

Although he has been in the profession for more than 20 years, Christian Pellenz is always a little tense when it comes to ensuring that a major online business event runs without a hitch and is live-streamed to the devices of usually several thousand participants. And the demand for hybrid as well as completely digital events streamed over the Internet has literally exploded with the Corona pandemic. Since then, many companies have come to appreciate their sustainability and efficiency over traditional face-to-face formats.

Christian Pellenz is managing director of the internationally operating BESL Eventagentur GmbH & Co. KG based in Berlin. In addition to live and hybrid events, the company has also dedicated itself to sophisticated online live-events and established its own high-performance platform for this purpose –

Advantages of the Siemens solution

- Simple, cost-efficient setup
- Easy integration into existing networks
- Redundancy is plug & playable and hot-swappable
- Consistently high availability of the Internet connection
- Elimination of single point of failure that jeopardizes events
- Smooth online live-events
- Stress-free back office team
- Satisfied customers

with which it realizes individual event solutions for leading companies around the globe. The Berliners see themselves as a full-service agency for live communication and, with a permanent team of around 30 people, offer an all-encompassing portfolio – from formulating event ideas to follow-up. High-end events are in the style of TV talk shows – with presenter(s) and guests “in the studio” as well as speakers/experts who can be connected live from anywhere. Several cameras capture the action, sometimes on several stages, while a video control room coordinates everything and prepares the image and sound into a broadcast-ready live-stream. Optionally, and preferably from their own (beautiful!) “Meistersaal” studio at Potsdamer Platz in Berlin, but basically also from any other location with an Internet connection. “This usually completes a good 90 percent of the work,” says the managing director, “then the material is transmitted via the Internet to our streaming provider, which makes it available to all participants in real time.”

Potential vulnerability

This also puts the spotlight on a potential vulnerability, a possible single point of failure (SPOF): If the Internet connection from the studio to the streaming provider fails, the screens outside remain blank and there is no way to quickly inform the participants about the duration of the disruption. “This puts the events at risk, which is why we have always operated with two Internet providers in parallel,” states the managing director, “but that was not enough, the switching and return times of up to 15 minutes in the worst case were too much for live events.” Experience has shown that half of the viewers are gone after just a ten-minute interruption. Not to mention that any timing of topics or participants on site or externally gets mixed up.

In the end, the process of finding a solution was accelerated by several live-events for the Digital Industries division – the automation division of Siemens. Their event managers stood alongside the BESL team and trusted the Internet connection(s). This articulated the need for action. And industrial network specialists from Siemens set about making the Internet connection “hot-swappable” and redundant. This meant constantly monitoring its availability and automatically switching to the other connection quickly in the event of a connection failure. Ideally, the participants would not notice anything. It would be nice as a special request, if it could somehow be visualized which connection is currently active – as that would relieve stress even more ...

Eliminated simply, discreetly, and cost-effectively via a switch

Ultimately, a combination of two so-called SCALANCE SC-600 Industrial Security Appliances from Siemens proved to be practical and dynamic enough. With a wide range of functions, they normally ensure the highest level of IT security for production cells in industrial environments. In this case,



Typical setting of an online live-event with several stages and cameras, here at BESL's own location in the “Meistersaal” in Berlin.



Redundancy is plug & playable: Two SCALANCE SC-600 Industrial Security Appliances from Siemens provide a simple redundant Internet connection and thus an uninterrupted data transmission from the live location to the streaming provider.

however, it was crucial that the devices could be combined into a logical group – a virtual router; if necessary, also with other routers. They support the so-called Virtual Router Redundancy Protocol (VRRP), i.e., redun-

dancy on Layer 3. This means that in the event of a failure or malfunction of the router defined as the master of the logical group, the other device is switched over immediately and automatically. With two different Internet providers – and ideally diverse transmission technologies behind them (mobile communications '5G', fiber optics, etc.) – a redundant, very reliable Internet connection can be realized with little effort. The decisive advantage here: Once assigned, the IP addresses of the various network participants (cameras, PCs, etc.) on the set are retained in the event of a router failure, i.e., switchover, and do not have to be renegotiated as before. This significantly reduces any downtimes. In several simulations under practical conditions, return times of less than five seconds were achieved. This also meets BESL's high standards and, in conjunction with the usual streaming buffer, is hardly noticed by the participants.



This reduces stress and allows the BESL backstage team to concentrate on their actual tasks.

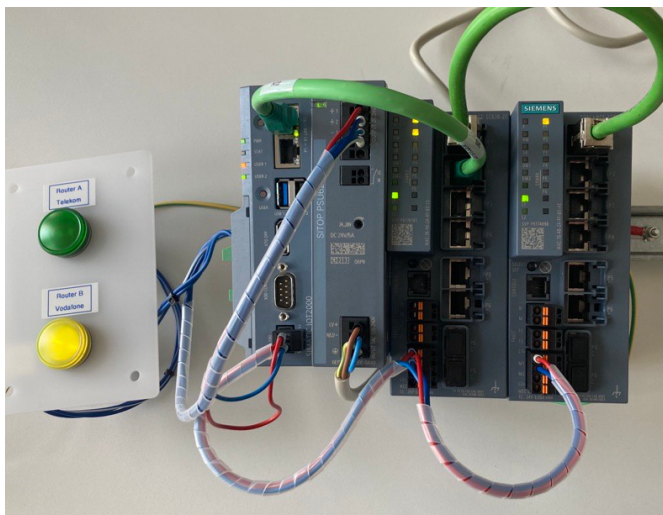
Easy to integrate and replace

SCALANCE SC-600 Industrial Security Appliances can be easily integrated into existing networks without the need to reconfigure participants or set up new IP subnets. Four electrical and two combo ports with a maximum speed of 1,000 Mbps allow additional participants to be connected directly and clustered in virtual LANs (VLANs).

Should a device itself fail, it can be easily replaced without the need for a programming device or special know-how. That is because it backs up its configuration data on a removable medium (C-PLUG), which is immediately available again after replugging.

How to check and visualize connectivity?

For this purpose, the network specialists from Siemens have integrated an Industrial IOT (Internet of Things) gateway – the SIMATIC IOT2050. With the Node-RED graphical development environment, a solution was developed that reads in essential management information from the routers via the Simple Network Management Protocol (SNMP). In the event of a change in value, such as when the backup router is changed to master, an SNMP mechanism is activated. Such changes in value are processed via Node-RED, new output parameters are set, and signaled via two indicator lights. Whereby only the indicator light of the router with the active Internet connection lights up. As long as one light is always on, everything is fine for the crew.



Siemens solution “being set up” and in “flight case”.

A “huge achievement”

For Christian Pellenz, this is a “huge achievement” that safeguards the internet connection redundantly. “Siemens has made the redundancy plug & playable for us, so that we only have to plug in two LAN cables and can then be sure that under normal circumstances one of the two Internet connections will always be available. One of two indicator lights always shows the active connection and signals “GO”. This also takes some of the usual tension away from the team,” says the completely satisfied event professional. Integrated into a robust flight case, the solution is transportable and can be used anywhere – immediately.

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