One of the most interesting and yet little understood aspects of modern 5G-based telco networks is that they're software-based. After decades of being limited to specialized hardware from a limited set of companies, telecom companies and communications service providers (CSPs) now have the freedom to build their network infrastructure with general purpose computing engines—such as Dell Technologies PowerEdge servers—and a variety of software tools. In fact, many of the traditional network equipment providers have created software solutions of their own to run on COTS (commercial off-the-shelf) hardware.

Along with the biggest players, however, there’s also been an explosion of startups and new initiatives at existing software companies to take advantage of this new level of flexibility. Leveraging the promise of 5G to deliver new types of products and services, many organizations are working to build innovative solutions. Simultaneously, the telcos and CSPs are eagerly looking for ways to generate new revenues opportunities, particularly in light of the multi-billion-dollar investments many of them made to acquire access to the radio frequency (RF) spectrum they needed to run their new 5G networks.
On top of that, there’s important industry momentum towards a technology standard known as Open RAN (Radio Access Network). As its name suggests, Open RAN is designed to break the previously proprietary connections between certain hardware elements of a telecom network and open it up to allow software and hardware components from multiple vendors to work in concert.

Put it all together and it sounds like a match made in technological heaven, where eager product and service creators have a willing audience of wireless network operators who want to advance the capabilities of their networks with new offerings. The challenge is, the requirements for reliability and stability of operation in a telco network are extremely high—much higher than most enterprise workload scenarios. The bottom line is that wireless networks are incredibly essential infrastructure—part of the reason they’re state-owned in many countries around the world—and they have to work all the time.

As a result, testing and interoperability requirements for software that runs on these networks are very demanding. For many of the smaller ISVs (independent software vendors) working in this area—and even some of the larger ones—this represents a real challenge. To address that issue, Dell Tech’s Telecom System Business Strategic Alliances team worked with Dell’s own Open Telecom Ecosystem Lab (OTEL) to create an automated certification program for telco-focused ISVs. The program, which is free to any interested parties, allows ISVs to self-certify that telco workloads using their applications run reliably on Dell’s telco-grade hardware. If the tests are completed successfully, the ISV earns a certification badge from Dell that can be used as part of their marketing and messaging. In addition, products that pass the verification tests will be listed on a Dell Technologies web site and included in a Self-Certification Portfolio Catalog.

Because many telcos use different platforms as part of their infrastructure, Dell’s testing methodology includes the ability to test RAN, Edge or Network Core-focused workloads as well as services edge and next-gen ops applications with servers running either RedHat OpenShift, VMWare or Dell’s own Bare Metal Orchestrator. This range of options not only lets more traditional applications and workloads be tested, but also more service and operations-focused offerings. Many of these types of services and tools are particularly challenging to test without being connected to a real-world type of telecom production environment that the OTEL lab offers. As an important point of clarification, the initial suite of verification tests is primarily for independent workloads and isn’t specifically targeted at Open RAN certification. However, future versions may be able to provide some level of ORAN verification as well.
Underlying the testing mechanism is Dell-built automation software called the Solution Integration Platform (SIP) that makes the process as low-touch for ISVs as possible. SIP offers a simple dashboard-based interface and generates detailed pass/fail reports for each of the tests that are run.

For software companies that don’t have access to the full range of hardware necessary to fully their offerings in a production-type environment, this clearly represents a great opportunity. Not only can they verify the reliable operation of their software on all the latest generation Dell Technologies hardware, but they also get access to the expansive presence that Dell Tech has already built in the telecom world. In fact, part of the reason why this certification process is appealing to telcos and CSPs who’ve been briefed on it is that Dell servers, switches and storage have a large and well-respected presence in their existing networks. Because of the trust that Dell Tech has earned with the service providers, software solutions that are certified through Dell’s new self-certification program are likely to gain a new level of respect.

In addition to the core testing, the new self-certification program covers the basics of validating participating ISVs, setting up lab and marketing agreements and signing NDAs. For Dell, the creation of the program reflects a further investment into the telco business and a desire to drive innovation in this area at a faster rate. Because of the enormous reliability demands that are expected in the telco and CSP market, a great deal of time and money is often spent by ISVs to try and test their software in real-world type environments. By offering a free service to these companies, Dell can help direct more of their development efforts towards innovative new capabilities. In addition, of course, it allows Dell Technologies to help bring more complete solutions to their telco and CSP customers.

The evolving world of software-defined 5G networks is an enormously complex, fast-moving entity that requires the efforts of multiple vendors coming together in order for real progress to be made. By taking a step towards easing and improving the reliability of the software integration process with telco-grade hardware, Dell’s self-certification program for telco-focused ISVs offers the potential for driving important innovations at a time when the industry is ready and hungry for change.

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