Türk Telekom selects Arista Networks to deliver cloud networking based on modern Leaf-Spine architectures and automation principles

Highlights

Challenge

Türk Telekom needed to move to a cloud networking approach to gain the operational efficiency required to meet growing demand and to strengthen its portfolio of advanced products and services.

Solution

- Innovative spine and leaf architecture to provide flexible deployment options
- Arista 7000 series delivering 100GB core with advanced wire speed layer 2 and 3 capabilities
- Open architecture including Arista EOS® and CloudVision® to enable extensive automation capabilities

Results

- Underpins a Tier III data centre rating including ISO 27000, 27001 and LEED Gold compliance
- Simplified network operation through extensive telemetry and automation capability
- Improved network and application performance and reliability within high energy efficiency

As Turkey's largest and most established telecommunication provider, Türk Telekom has been at the forefront of technological innovation; with its most recent strategy realigning its new services and infrastructure based on best practice cloud networking principles. To meet this goal, it has deployed Arista Networks as the foundation for its state-of-the-art Esenyurt-Istanbul data centre and as the benchmark for its ongoing transformation.

Türk Telekom
Değerli Hissettirir

Company Background

Türk Telekom is the leading communication and convergence technology provider in Turkey offering integrated telecommunication services from PSTN and GSM to broadband internet. As of June 2021, Türk Telekom has 16.5 million fixed access lines, 13.8 million broadband, 23.4 million mobile and 3.0 million TV subscribers. The wider group is also a leading telecommunications operator in the wider region with operations across 19 countries in Central and Eastern Europe, Turkey, Middle East and the Caucasus. From its multiple data centres in Istanbul and Ankara; Türk Telekom delivers a range of IT and communications services for 1200 large enterprises across Turkey including the biggest media conglomerates, e-commerce portals and public institutions.

Challenge

Türk Telekom has experienced rapid growth over the last decade and has a stated vision to "...lead the digital transformation of our country and carry Turkey into the future." As such, it has continually invested in its core infrastructure including the expansion and modernisation of its data centre capacity. Alongside its core telecommunication functions, it has also continued to expand its services portfolio to include virtual servers, server hosting, server leasing, storage, backup, replication and access.

Although Türk Telekom already owned the widest portfolio of data and cloud services through its multiple data centres in Istanbul and Ankara, due to continued growth of the Turkish economy and digitalisation of commerce, Türk Telekom decided to introduce further efficiencies and performance by modelling its new services and infrastructure based on modern cloud networking principles.

As Mehmet Fatih Bekin, Data Center and Cloud Services Director at Türk Telekom explains, "We turned to technologies that can be scaled easily and provide high reliability and survival time, taking into account the service scope and requirements. In addition to the needs of existing systems, services and users, we also considered the rapidly increasing data center demand and traffic volumes."

Another important requirement was for a solution that could be implemented quickly and easily with a focus on software-based interfaces to support advanced automation capabilities.

"In this context, an integrated structure that can enable the creation of virtual networks on the Leaf-Spine physical topology, which is a modern network architecture, came to the fore. Instead of proprietary models dependent on manufacturers, the new design needed to be compliant with open standards along with high interoperability – this has become one of our most important criteria," Fatih Bekin adds.

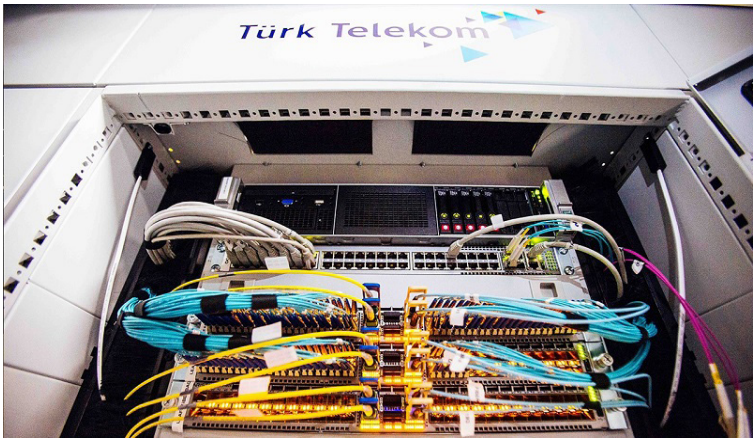
Solution

The first implementation of this innovative approach would be at a new, state of the art data centre in Esenyurt-Istanbul as the initial phase of a wider scale modernisation of its cloud, hosting, and collocation services. The new centre would house hundreds of racks of server and storage capacity and would be interconnected internally through multiple 100Gbps Spine Leaf architectures.

As part of the design and tendering processes, Türk Telekom evaluated critical networking technology from all prominent vendors in the space including deep technical testing and longer-term roadmap evaluations. Following this 6-month highly technical and very detailed process, Türk Telekom selected Arista based on several factors.

As Fatih Bekin explains, "As a result of our studies and tests with the leading manufacturers of the sector, we concluded that Arista Networks is the provider that meets our needs in the most appropriate way. We have successfully tested and approved this solution, which is used by many data centres in similar architectures around the world. Testing that there is no packet loss, especially at very high traffic levels, has increased our confidence in the solution. Arista also scored in several criteria including very high resiliency, programmability and automation at multiple layers, deep buffers for demanding applications alongside significant other advantages such as scalability, energy efficiency and operational cost savings."

The build-out of the new data centre took place over a 6-month period and included hundreds of Arista 7280R switches as universal leaf switches, Arista 7500R as spines and Arista CloudVision® configured in a Virtualised L3 Leaf Spine (with VXLAN) design across the 10.400 sq/m facility. The Arista switches with EOS offer significant benefits including zero touch provisioning, automated workflows, operator and customer portals, and integration to other components such as its IP Address Management platforms.



Conclusion

As Fatih Bekin explains, "The new network design has helped us to deploy significant automation capabilities that have simplified the management of complex workflows and improved our productivity. Türk Telekom now delivers all the routine and daily tasks, such as new customer provisioning and service parameter changes in an automated fashion using this model."

All these automations were created in line with Türk Telekom workflows and processes with elements such as CloudVision delivering advanced telemetry and change control functions to enable the Esenyurt DC Network to truly operate using best practice cloud networking principles.

Although the datacentre has significantly increased capacity, Fatih Bekin notes that the power efficiency of the Arista technology has not required additional power or cooling. Today, the Türk Telekom Esenyurt Data Center is rated as a Tier III facility based on its design and operational sustainability levels. It is also stands out as compliant with high-level international standards such as ISO 27000, 27001 and LEED Gold.

"The overall system we have built at Türk Telekom is unmatched, in terms of its automation, reliability, and integration, not only among the service providers of Turkey, but among all data centre implementations that are on-going in Turkey," says Fatih Bekin. "With demand still growing for IT and communications services, the selection of Arista as our core networking technology for future expansion provides a stable, reliable and highly efficient foundation to serve the needs of our customers for now and into the future," he concludes.

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