

“Zero-touch” Network Operations

Turkcell automates Turkey’s largest data center environment with Cisco ACI



The customer summary

Customer name

Turkcell

Industry

Telecommunications and
Technology Services

Location

Istanbul, Turkey

Challenges

- Automate Turkey’s largest data center environment
- Accelerate service innovation and delivery
- Align IT and engineering operations

Solution

- Software-defined network (SDN) spanning four data centers

Results

- Established a “zero-touch” network supporting 3000 switches across four data centers
- Accelerated service delivery from days to less than an hour
- Created self-service portal for internal teams and enterprise customers

End-to-end automation

Since its inception, Turkcell has brought the world's latest telecommunications and technology innovations to the people of Turkey. It established the first mobile phone services within the country in 1994. And it has continuously increased the variety and technological enablement of its offerings ever since, expanding from consumer communications to enterprise cloud and colocation services.

Turkcell now operates the biggest data center environment in all of Turkey. And following years of subscriber growth and service innovation, managing its technology infrastructure had become much more difficult.

"We have four Tier III certified data centers and thousands of switches," says Batur Genc, IP network associate director at Turkcell. "From an operational standpoint, there's no way to manage them all without software-defined automation."

"End-to-end automation," adds Mehmet Erkul, core network planning director at Turkcell, "is the biggest challenge and need for all telco operators."

To address the challenge, Turkcell set out to establish a "zero-touch" data center network. One that provides the highest levels of visibility, automation, and control. Not just for the core network team, but also for internal engineers and enterprise customers.

The new network was built with Cisco® Application Centric Infrastructure (Cisco ACI™), the world's leading SDN solution, and Cisco NSO, which links network automation and orchestration tools with underlying physical and virtual infrastructure. Supporting more than 3000 switches and 30 routers across four data centers, the multi-pod design provides full redundancy and exceptional scalability.

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Core Network Planning Director
Turkcell

Self-service portal

According to Erkul and Genc, the new network has supercharged Turkcell's data center operations. Infrastructure and service deployments that used to take three or four days now take less than an hour. And maintenance tasks can be performed at any time without impacting network availability.

"We used to make changes manually and always at night in case something went wrong," Genc says. "Now we can orchestrate everything from a single pane of glass, and we don't have to wait for maintenance windows."

Configurations, deployments, and changes are now automated using templates, which has improved network consistency and eliminated the human errors associated with command line interfaces (CLIs).

“We’ve automated all of the connectivity and all of the services across all four data centers,” Genc says. “For new deployments, you just select the router, select the service, and the network does the rest.”

“Two years ago, it was very difficult to manage our data center infrastructure,” Erkul adds. “But now everything is more organized and consistent, and the network is more stable as a result.”

The consistency and stability of the network have enabled Turkcell to extend its data center capabilities to internal teams and enterprise customers. Leveraging open APIs and the assistance of Cisco CX, the company created the world’s first self-service portal built with Cisco ACI and Cisco NSO.

“We wanted to give our engineers the ability to launch new services. We wanted to give our support team the ability to easily detect and resolve problems. And we wanted to give our customers the ability to spin up their own infrastructure,” Erkul says.



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A perfect experience

Due in large part to the simplicity and automation of the new network and self-service portal, Turkcell's operations and engineering teams are more aligned and coordinated than ever before. The company's engineering team is even being trained and certified to use Cisco NSO, Python, and other technologies via Cisco DevNet.

"This has been a joint engineering effort with several parties all working as one team," Genc says. "Cisco has been a tremendous partner and it's been a perfect experience."

With its new network in place, Turkcell is well equipped to deliver additional service innovations and sustain its 30 percent year-over-year growth.

"We'll offer a variety of new capabilities and services," says Genc. "Network telemetry, automated troubleshooting, anything you can imagine."

The company also intends to integrate its data center infrastructure with the public cloud and expand its network capabilities and services beyond Turkey, all of which will be enabled by Cisco ACI.

"Automating our corporate data centers is just the beginning of the journey," Erkul says.

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Core Network Planning Director,
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Product list

- [Cisco Application Centric Infrastructure](#)
- [Cisco Nexus® 9000 Series switches](#)
- [Cisco Network Services Orchestrator \(NSO\)](#)
- [Cisco Customer Experience \(CX\)](#)