



The self-driving era: What to look for in next-generation network capabilities

Not so sci-fi: The self-driving network is here

It's 2026 and a network that can self-optimize and self-heal with little to no human intervention is no longer futuristic. These features are emerging right now. Just as autonomous cars have evolved from manual operation to assisted driving and now driverless operation, networks are following a similar trajectory.

A self-driving network uses AI to move operations from manual, reactive work to predictive analytics and autonomous remediation. This can help you to:

- Enhance efficiency and efficacy
- Improve performance and user experiences
- Scale faster
- Keep every connection more secure

For some, a self-driving network sounds promising. Others may not be so immediately sure. The key to success is collaborating with a vendor that recognizes you won't want to adopt everything at once, or everything at all. A phased approach where you can add features one at a time based on the needs of your enterprise is most important.

If you're keen to journey toward a self-driving network, here are some important things to consider and look for.

1. Do you have confidence that the AI solution continuously learns from new data, becoming smarter and more precise over time?

To feel comfortable with a self-driving network, your organization first needs to trust the AI running it. You then need to be able to continually depend on that AI to be as accurate and precise as possible. To deliver this trust, a vendor's time in market and AI maturity matters.

The solution should provide:

- Explainable AI tools that show why the AI made a recommendation or automated an action
- Transparent views into root-cause analysis, reasoning steps, or confidence levels
- Integration of data science teams into customer support operations to build the knowledge base from real-world data
- Model efficacy with closed-loop feedback, analysis, and refinement



2. Do you have infrastructure capable of running AI-driven operations?

Since self-driving features run on AI, your infrastructure needs to be AI-ready.

The solution should provide:

- Cloud-native or microservices-based platforms that scale telemetry, analytics, and automation
- Domain expertise across wired, wireless, switching, routing, clouds, and security that share context and data
- An agentic framework that operates across network domains to solve complex problems autonomously
- A path to adopt automation gradually—feature by feature—so teams build trust over time

3. Do you have access to exceptional and vast data sets for AI to work properly?

Self-driving networks need high-quality data collected from the network in real time to provide the necessary inputs for thoroughly trained AI/ML algorithms. That's how it generates insights and recommendations to optimize performance or resolve issues.

The solution should provide:

- A large data lake with the right data for accurate, real-world recommendations and actions
- Real-time, full-fidelity streaming telemetry—not sampled data
- Clean, structured datasets from access points, switches, routers, and firewalls
- A data model that unifies user, device, application, and RF insights

4. Do you have consistent visibility and security across the network?

If you have siloed data and management tools, you're not only leaving your organization open to cyberattacks with blind spots, slow threat detection, and delayed issue resolution, you're also making it more difficult for AI-driven automation to do its job.

The solution should provide:

- Identity-based access, segmentation, and zero trust principles built into the network fabric
- Unified management for network and security telemetry
- AI-native security to analyze threats holistically—not through siloed systems

Collaborating with the right vendor

Self-driving networks promise many benefits: more seamless, high-performing, and secure experiences consistently. But enterprises can't build explainable AI, unified data models, or cloud-native telemetry pipelines on their own. These capabilities must come from the architecture, platform, and AI engine of their vendor.

The path to a self-driving network is ultimately defined by collaborating with a vendor that offers the right:

- Data quality
- AI maturity
- Platform design
- Security integration
- Operational mode (assisted and self-driving)



HPE and the self-driving network

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