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Cisco Extends Intent-Based Networking Strategy to IoT Edge Customers

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IDC's Quick Take

By announcing a blend of IoT edge network appliances, developer tools, and deployment blueprints, infused with intent-based networking (IBN), Cisco has further shifted from a manual network installation and upkeep model to providing IoT customers with a simplified, single-pane, and policy-driven network approach at the enterprise edge. In addition, the full-set solution is designed to address pain points associated with IoT projects, such as security, flexibility, and scale, regardless of vertical. In IDC's opinion, underpinning its IoT edge network solutions with intent-based networking marks a distinct shift in how Cisco supports its IoT customers, with a leading goal to empower enterprise customers to achieve desired business outcomes by enabling more control and programmability with their IoT edge network investment. Coupled with developer tools and blueprints, customers will find an easier path forward in building their IoT solutions.

Product Announcement Highlights

On January 29 at its Cisco Live EMEA conference in Barcelona, Cisco announced a comprehensive IoT solution consisting of new ruggedized, IoT edge network platforms, including the IE3x00 Series of Switches and Cisco IR1101 Integrated Service Routers (ISR). Both are purpose built for IoT projects and will run IOS XE, enabling IBN to stretch across the branch and WAN. In addition, the platform will be managed by Cisco DNA Center, supporting a single-pane approach to IoT projects.

In addition, Cisco's IoT Developer Center takes much of the lead time out of building IoT applications by featuring a new set of developer tools to help developers build IoT applications at the edge.

Perhaps most notably, Cisco's new IoT solution introduces a set of validated designs across utilities and manufacturing verticals and in cases where remote and mobile assets are connected. Indeed, providing proof of concept by vertical will make it easier for specific vertical stakeholders to accelerate IoT projects, if and when they decide to do so.

Finally, Cisco will enhance its IoT partner program, which includes a global ecosystem of IoT partners supporting training and specialization programs.

IDC's Point of View

IDC forecasts capex outlays at the enterprise IoT edge will continue to ramp over the next several years. As such, it is not surprising that Cisco is bringing its IBN suite of capabilities to bear to address this fast-rising opportunity. While spending in this domain will continue to rise, IDC recognizes that IoT at the enterprise edge across all verticals remains hindered by commonalities such as complexity, security, and scalability. Simply deploying IoT infrastructure without aligning to a concise business goal has proven to siderail a number of projects. However, Cisco's IBN-centric set of IoT solutions and validated designs should help to smooth market adoption.

Along with the new infrastructure components and developer tools, a major aspect of these announcements is Cisco's goal of expanding its IBN strategy to help drive enterprise IoT initiatives. IBN has emerged in the network management market in the past 18–24 months as a way for advanced levels of visibility, automation, and assurance tools to implement the network operator's desired state of the network and for the IBN management platform to dynamically maintain that intent even as conditions on the network change. Doing so allows for the automation of a wide range of network management tasks that otherwise would need to be done manually.

Enterprises have begun using these IBN processes, also referred to in the industry as autonomous networks or self-driving networks. Cisco first introduced its IBN strategy in 2017 and has since added new tasks that can be automated, and it has extended its IBN management from the datacenters to the enterprise campus and remote and branch offices. With these announcements, Cisco is looking to extend these IBN management controls to the edge of the enterprise network to control IoT devices. Doing so could have a handful of benefits for enterprise IoT deployments, including:

- **Visibility into what devices are connected to the network and how they're performing.** This can be particularly useful for inventory management and identifying quality of service degradations.
- **The ability to centrally create and execute policies for users and devices across multiple disparate networks.** This includes policies for onboarding users and devices onto the network, managing how they can behave on the network, what other devices on the network they can communicate with, and placing common devices on the same virtual networks with both micro- and macro-segmentation policies.
- **Verification that the policies outlined by a network manager have been successfully implemented, and that those policies are automatically and dynamically maintained, even if conditions in the network change (because of a troubleshoot or significant changes to the number of devices on the network).** This verification component is critically important for security because, combined with the pervasive visibility tools, assurance platforms can flag anomalous network activity and potentially quarantine it.

With Cisco's newly announced switches and routers running IOS XE and being controlled by DNA Center — the company's central platform for managing IBN capabilities — these advantages will increasingly be extended to IoT deployments too.

One key to the successful rollout of IBN management being applied to IoT deployments will be increased levels of integration between IT and operational technology (OT) initiatives. In many enterprises, IoT deployments rely on technologies managed by both IT and OT teams. Cisco's blueprints and validated designs for incorporating IoT devices into IBN management is a good first step to ensuring success, but it will require additional work by Cisco and its customers to ensure alignment between potentially disparate groups within the enterprise.

Cisco's IoT messaging in the past 24 months has undergone a dramatic shift. Following the acquisition of Jasper in 2016, the IoT business was housed in Cisco's software organization. In 2018, the business was shifted back to the networking business and this IBN announcement indicates that, going forward, the networking capabilities are core to Cisco's IoT proposition. Yet coupling it with a set of developer tools, blueprints, and setting up a partner support program, Cisco is looking to create a packaged go-to-market offer that will resonate with IT. They are solving for network scalability, security, and management

concerns that IT managers are struggling with today. At the same time, Cisco sees the OT and line-of-business users as equally important in the equation and are offering them the tools to design and create applications that leverage the IoT data.

Indeed, Cisco's IBN approach is not necessarily new, but introducing this approach to IoT customers should serve to deconflict some of the barriers to adoption at the IoT edge, translating into stronger sales.

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