

DoyleResearch

Access the Power of Your Network with Intent-Based Networking

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Most IT organizations find it challenging and time consuming to manage their network resources. The typical network is comprised of distinct elements (switches, routers, APs, firewalls) from multiple vendors all with unique management systems. The majority of network changes are still done manually. Intent-Based Networking (IBN) abstracts network complexity and provides increased automation.

What is Intent Based Networking?

The concept of Intent-based Networking is that the intent (desired policy) is translated into simple action to achieve the desired state. Intent-based networking provides a high-level abstraction of the network complexity which allows users to send a simple (natural language) request to the existing physical network. The goal of IBN is to increase automation by reducing the need for manual intervention in network operations.

Network Administrators and Manual Network Configuration

Enterprise networks typically comprise a range of ethernet switches, routers, and network security elements from a variety of suppliers. Each network element has a unique configuration and management system. The complexity of the network makes an environment that is difficult and time consuming to administer, update,

and troubleshoot. Most IT organizations have scripts to help with network configuration and management, but the vast majority of network changes are still manual. These manual network processes present significant risk in terms of network outages and security vulnerabilities.

How Does IBN Improve Network Automation?

Intent-Based Networking enables IT managers to define the desired state of the network and creates software which automatically changes network configurations and verifies the results. For example, IBN takes a stated policy request (e.g. update the network) and translates the required network specific commands (CLIs) to initiate the change. IBN software can continuously monitor the state of the network and provide insights that reduce the time to discover and remediate network issues.

Some examples of how IBN can improve network automation include:

- Expressing an application performance requirement (e.g. video) and having the network respond with appropriate quality of service
- Simple upgrade of all network elements to the current version of the operating system
- Network wide configuration of vLAN profiles for LAN switches and routers
- Automation of compliance tasks by checking for the correct configuration of network elements

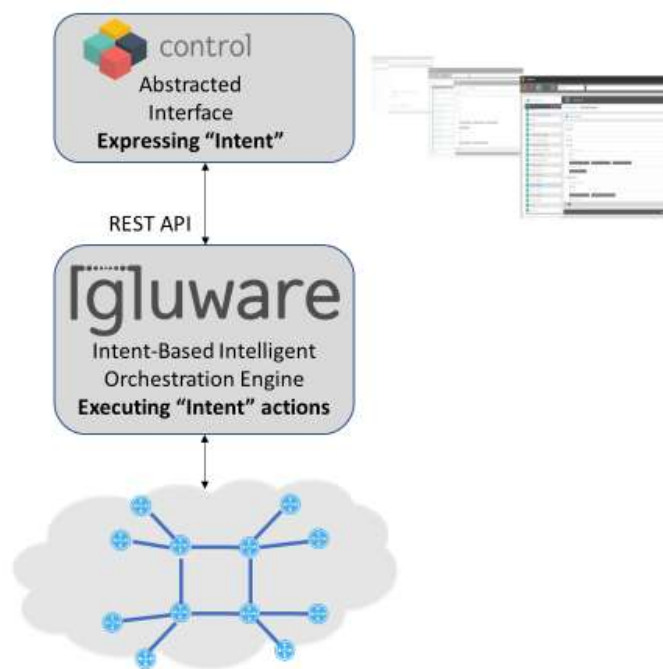
Gluware Provides Network Automation via IBN

Gluware delivers network automation and orchestration solutions that are multi-vendor and support physical and virtual platforms. Gluware Control offers solution packages including Config Modeling (Routing, LAN Switching, Firewall, Load Bal., WAN Op., Wireless LAN Controller), SD-WAN, and Configuration Drift. Gluware technology is based on an intelligent orchestration engine which performs discovery, analysis, and provisioning of network features. When a

network “feature” is added to the Gluware system, it can be converted from low-level vendor specific semantics into a data-model combined with policy. It then uses its data-model to convert it back to the required CLI or API for each device.

Gluware provides pre-packaged solutions to address common IT requirements that simplify configuration and lifecycle management. In addition to the solution packages offered, Gluware is fully extensible and customizable using an Integrated Development Environment (IDE) to customize and develop network feature models and solutions. Gluware helps to eliminate manual errors and reduce time to configure by up to 80%. See Figure 1.

Figure 1



Recommendations for IT Leaders

Deploying and maintaining networks continues to be a largely manual, labor-intensive task. Advances in software networking enable the abstraction of network complexity. Intent-based networking provides for increased automation for many manual network tasks. IT organizations should select IBN solutions that

support multi-vendor network environments, are easy to use, and support a phased migration.

Meet the Author

Lee Doyle is Principal Analyst at Doyle Research, providing client focused targeted analysis on the Evolution of Intelligent Networks. He has over 25 years' experience analyzing the IT, network, and telecom markets. Lee has written extensively on such topics as SDN, NFV, enterprise adoption of networking technologies, and IT-Telecom convergence. Before founding Doyle Research, Lee was Group VP for Network, Telecom, and Security research at IDC. Lee contributes to such industry periodicals as Network World, Light Reading, and Tech Target. Lee holds a B.A. in Economics from Williams College.