AUS Engineering Innovation Day

Research & Project Topics

Engineering Open Innovation Day

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1 Software Release Compatibility Checker:

OEMs/Manufacturers develop a certain number of software releases throughout the year to manage its products more effectively. These software releases are tested globally in various countries and with different customers, according to their specific requirements. Based on the feedback received, issues and improvements are categorized, and interim releases are created to ensure more stable software versions. The records of these processes are documented in release notes as raw data listing the resolved problems. Checking this data for each project is a very labor-intensive and time-consuming process. If not thoroughly checked, it may lead to critical problems emerging in later stages of the project, resulting in the need to redo all verification processes, which creates significant time and cost impacts.

Training this data within an AI system and leveraging it to analyze releases based on the specific details of products customized to meet customer requirements, with AI assistance in selecting the most appropriate release, would significantly enhance efficiency and reduce both time and costs.

2 Data Center Fabric Auto-Configurator:

In small data center deployments, customer would like to quickly deploy and configure data center networks but lacks experience and knowledge of CLI(Command Line Interface) of different OEMs/manufacturers.

We would like to have a Data center network auto-configurator , lightweight engineering web application designed to help customers rapidly deploy and configure small data center networks using a simple, user-friendly interface.

The application may use GenAI, Intend Based Networking ideas and other functionalities to eliminates the need for deep CLI knowledge or extensive software configurations by allowing users to input basic parameters, after which the system automatically generates the necessary network configurations after getting very simple inputs from customer and generate configurations for :

- Leaf and Spine Switches.
- Underlay and Overlay Fabric Services
- Edge Interfaces

3 AI/ML Powered Peering Traffic Optimization:

Routers used in peering and exchange points for peering with other ISPs and hyperscalers (youtube, meta..) indeed, it is very important function for internet traffic.

Develop an AI/ML-based solution that continuously analyzes traffic patterns, understands prefix usage trends or take inputs from external system to dynamically optimizes prefix distribution across peering and exchange points. The system will minimize manual intervention, improve load balancing, and enhance peering efficiency with ISPs and hyperscalers.

4 3D Visualization of Customer Sites

In large-scale network deployments, managing multiple customer sites can be complex.

Develop a 3D interactive web application that provides a geographical view of customer sites, displaying hardware details, used capacities, and power consumption in real-time.

This tool will help our engineers and customers plan site visits efficiently by offering a virtual overview of network infrastructure on customer physical sites.

5 Network Capacity Analyzer:

As data centers and networks continue to evolve, managing fabric performance becomes increasingly critical.

Develop a web-based service that connects to a data center fabric, monitors real-time traffic, and analyzes historical trends to predict potential congestion. Using machine learning models , the application should proactively recommend fabric expansion to prevent bottlenecks, trigger early alerts when congestion predicted, suggests network capacity upgrades.


NOKIA