IMaster
NCE-CampusInsight-G

■▪ Product Overview

Nowadays, high-quality network services have become an integral part of business operations. From mobile working to high-definition video conferencing to guest reception, the quality of the Internet experience is closely linked to employee productivity and customer satisfaction. However, as organizations grow in size, so does the complexity of the application scenarios, making an already difficult to measure network environment more complex than ever. Traditional O&M methods are difficult to proactively detect problems, and the efficiency of fault repair is low, which brings a heavy burden to IT O&M personnel.

The IMaster CNE-CAMPUSinsight-G (hereinafter referred to as CampusInsight-G) is a campus network analyzer. It subvert the traditional monitoring method focusing on resource status and collects network data in real time through Telemetry. It uses big data analysis and machine learning algorithm to learn network behavior and identify fault modes, helping operation and maintenance personnel to proactively find 85% of potential network problems. Create end-to-end intelligent operation and maintenance of Wi-Fi LAN-WAN for major usage scenarios such as campus network health, user experience, application assurance, and intelligent tuning.

Product Composition

CampusInsight-G is divided into basic package and value-added package according to functional characteristics, the basic package mainly includes the following functions:

Features	Feature Description
Network Multi-dimensional State Visible, the User's Whole Journey Experience Perception	· KPI indicators are displayed based on the network health view overlay, and the O&M personnel can set thresholds for key monitoring indicators and objects to see whether network KPI indicators are deteriorating; · Based on the historical network data reported by the device, the device that needs to save energy and the energy saving period are calculated. The controller powers on and off the AP. The power consumption analysis is displayed in the network health view; · You can view statistical views of multidimensional data based on hierarchical areas; · Supports user-defined views and displays key statistics about the network and users through large-screen wheel casting; · You can view network access problems, network congestion problems, device status problems, and network packet errors from the building perspective; · Support building perspective combined with wired and wireless health problems, network problems are simple and visual; · It supports user retrieval based on the building perspective and presents the building information passed by the user in a period of time; · You can import topologies and plan AP points to view fault distribution based on location; · You can automatically discover the topology of a physical network and display network information in a topology view to visually monitor the entire network in real time; · View the RF heat map based on AP points; · Imports the planned data based on the network regulations and compares it with the actual network running data to show the differences between the planned data and the actual network running data; · Supports device portraits to view the health status of switches, aps, and routers; · Support for spectrum analysis based on AP, including all-channel status monitoring, Wi-Fi interference sources and non-Wi-Fi interference sources; · Displays the advantages and disadvantages of Wi-Fi network experience through the terminal APP dial test, and generates real-time dial test reports for network comparison among multiple vendors; · Allows users to see the full journey experience, see who, when, which AP to connect to, how the experience, what happened; · You can view playback of the network access process of a single user, including protocol details of association, authentication (802.1x authentication, Portal authentication, MAC authentication, HACA authentication, and PSK authentication), and DHCP, including the interaction result and time spent. If a user fails, the failure causes are displayed; · Supports correlation analysis for users with poor quality: When user experience deteriorates, quantified correlation indicators can be identified through the KPI similarity analysis algorithm to effectively improve the identification accuracy of problem root causes; · The full stack of service and management planes, including device management, southbound interconnection, installation, upgrade, and expansion, supports IPV6.
Automatic Identification of Network Problems, Active Prediction	· Support automatic identification of common network problems based on big data analysis and machine learning algorithm: connection class, air interface performance class, roaming class, as well as device environment, device capacity, network performance, network status and network protocol problems, including authentication failure, weak signal coverage, non-5G priority, network congestion, etc; · Support dynamic baseline-based anomaly detection to identify anomalies in the early stages of network deterioration; · Support intelligent analysis of second-level reported data, and establish network health evaluation system from multiple dimensions. Through the comprehensive evaluation of index weights, regional rankings are given to drive the continuous improvement of experience from "poor" to "good", and gradually improve the quality of the entire network. Each indicator can see the comparison between the dynamic baseline of the region and the whole region, and give the radar map of the associated root cause indicators, in-depth root cause analysis. In addition to the comparison analysis at different times or in different regions, the network health analysis report can be sent to the administrator in real time or periodically by email.
Intelligently Delimit Network Problems and Analyze Root Causes	· Support problem distribution view, view the number of problems occurring on different devices and the number of people affected, and quickly focus on high-incidence devices and problems high incidence period; · Support the problem affected analysis view, through multi-dimensional correlation analysis, fast fault demarcation, layer by layer drill root cause; · Support accurate root cause analysis and repair suggestions based on rule engine, fast problem closed-loop.
Open Northbound API Interface, Providing Rich Intelligent Analysis Data	· Support according to the characteristics of the data to provide different secondary development capabilities, through the 3 types of interfaces can be the original data and the analysis of the data comprehensive. Open to third party systems, including network operation and maintenance systems, IT business systems, etc., to provide more intelligent analysis data. (1) Northbound API: open resource data (devices, interfaces, links, and boards), health data (health issues, health evaluations), and terminal session data; (2) SNMP Northbound: Reports alarm data to a third-party system based on SNMP; (3) Kafka Northbound: Collects CampusInsight-G from Kafka through the Consumer API provided by Kafka Telemetry data.

The value-added package is divided into network application analysis value-added package, network tuning self-healing value-added package, energy consumption analysis value-added package, and network wireless location value-added package. The value-added package of network application analysis includes the following functions:

Features	Feature Description
Application Visual and Flow Analysis	· Through application recognition technology, accurate identification of 1K+ mainstream applications, including: Teams, Dingding, WebEX, Xiaoyu Yilian, etc; · Support DPI, DFI, AI application clustering, custom rules and other application identification technology, covering mainstream applications and enterprise private applications; · Based on the application, analyze the whole network application traffic/number of users, can play back the user's application usage in the user's journey. Support application traffic statistics restrictions based on interface, device, host and other dimensions: · Supports non-encrypted RTP applications and TCP applications in IPv4 scenarios; · This version supports switch, AC (excluding on-board AC), AP V200R021C00 or later. The devices need to enable application identification or NetStream.
Application Experience Perception and Quality Difference Analysis	· Support LAN&WAN application integration analysis, support to perceive east-west, North-South TCP, non-encrypted RTP applications and their quality; · Through the exclusive iPCA 2.0 technology to achieve network quality detection based on real service flow, real-time display of Wi-Fi->LAN->WAN end-to-end real service flow path, including devices at both ends, devices and ports flowing; through. And superimpose fault mode analysis on the path, quickly and intelligently delimit to the problem device or port · The iPCA3.0 technology is used to detect the quality of the uplink air network. Restriction Restriction: · Supports non-encrypted RTP applications and TCP applications in IPv4 scenarios; · This version supports switch, AC (excluding on-board AC), AP V200R021C00 or later, and the devices need to enable eMDI and iPCA 2.0.

The Network Tuning Self-Healing value-added pack contains the following features:

Features	Feature Description
Capacity tuning	· Recommend the best bandwidth by identifying the deployment density of the network; · Support predictive big data tuning and tuning revenue presentation.
Roaming Tuning	· Through big data analysis, differentiated roaming guidance is provided for different types of terminals to improve the roaming experience of terminals.
Coverage Tuning	· Improve the terminal's network experience by identifying weak coverage aps in the network and recommending the best power.
Interference Tuning	· Intelligent algorithms are used to identify high-load aps in the network, assess the interference impact of high-interference aps, and provide decision data distribution, in the device tuning phase, refer to the decision data delivered by the analyzer to complete the tuning.

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Features	Feature Description
Energy Consumption Visible	· Based on the power data reported by the device, the energy consumption indicator is presented based on the network health view capability, supporting the overall, site, floor, Device energy consumption visibility.
Recommended Energy Saving Strategies	· Intelligent recommendation of energy saving strategy through tide prediction algorithm; · Intelligent identification of dumb terminals (printers /IP phones, etc.) to ensure that dumb terminals do not drop online, and can compare energy-saving gains.

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