

RADview



Carrier-Grade Network Management

RADview



data communications
The Access Company



The task of effectively managing communications networks is now more complex than ever, as network managers must administer an evolving mix of applications delivered by diverse equipment from different vendors.

Yet additional challenges stem from user demand for low-cost services backed by clear and binding SLAs (service level agreements) and from operators' need for stringent control over their CapEx (capital expenditures) and OpEx (operating expenditures) in a volatile economic climate.

This complexity requires carrier-class network management solutions that deliver multi-layer reach with operational simplicity.

Simplicity

Carrier-Grade Network Management

The RADview network management portfolio simplifies real-time monitoring and control of multiservice networks.

Conforming to ITU-T Telecommunications Management Network (TMN) specifications, the RADview platform provides end-to-end visibility and standards-based interoperability to help carriers and IT managers lower their operating costs, consolidate management systems and reduce time-to-market for NGN (next generation) services and new deployments, with scalable solutions that fit small installations as well as growing networks.



Who benefits?

Carriers optimize network operations, improve SLA assurance and minimize MTR (mean time to repair) with seamless OSS (operations support systems) integration, robust support tools for NOC (network operations center) applications, advanced monitoring capabilities, and carrier-grade failover mechanisms.

Enterprises are able to support process automation, lower their OpEx and improve performance for distributed networks with end-to-end network management and service provisioning, remote configuration and real-time diagnostics.

Powerful capabilities

- Visual network representation with an intuitive GUI: Map topology per region, network links, zoom-in to individual devices, and more
- Fault monitoring and troubleshooting to minimize network and service downtime
- Inventory management capabilities provide an up-to-date view of all network assets
- Smart configuration and provisioning tools for trouble-free network expansion, including automatic distribution of device updates
- A range of northbound and southbound API (application programming interface) channels for integration with third party systems
- High availability support to ensure business continuity and optimize disaster recovery

RADview-EMS

RADview-EMS is a Java-based, carrier-class element management system for Windows and UNIX environments.

Featuring an embedded Oracle/Informix database, it manages RAD's TDM and next-generation devices using a variety of access channels, including CLI, SNMP, HTTP, and TFTP. In addition, RADview-EMS features third party device monitoring capabilities

to ensure device health and congestion control. Designed for high scalability, it also allows easy addition of new network elements and optimized load sharing.

Advanced FCAPS Functionality

RADview-EMS features advanced FCAPS (Fault, Configuration, Accounting, Performance, and Security) capabilities, accessible via a Web- or an SNMP-based agent. Among others, these capabilities provide actual device shelf view to allow easy configuration, troubleshooting, diagnostics, and statistics reporting by remote operators:

Fault management

- Detects and isolates faults in network devices
- Initiates remedial actions
- Distributes alarm messages to other management entities in the network

Configuration management

- Enables operators to install and distribute software and configuration files to all devices across the network
- Tracks version changes and maintains configuration history for backup and recovery

Accounting management

- Manages individual and group user accounts and passwords
- Generates network usage reports to monitor user activities

Performance management

- Supports real-time monitoring of QoS (Quality of Service) and statistics reporting
- The RADview statistics collector compresses data to minimize bandwidth use for management traffic and exports CSV files to OSS or third party management systems

Security management

- Allows network administrators to track user activities
- Controls the access to network resources with a choice of security features, including SSH (secure shell), Web-based SSL (secure socket layer), SNMPv3, RADIUS, and ACL (access control list)

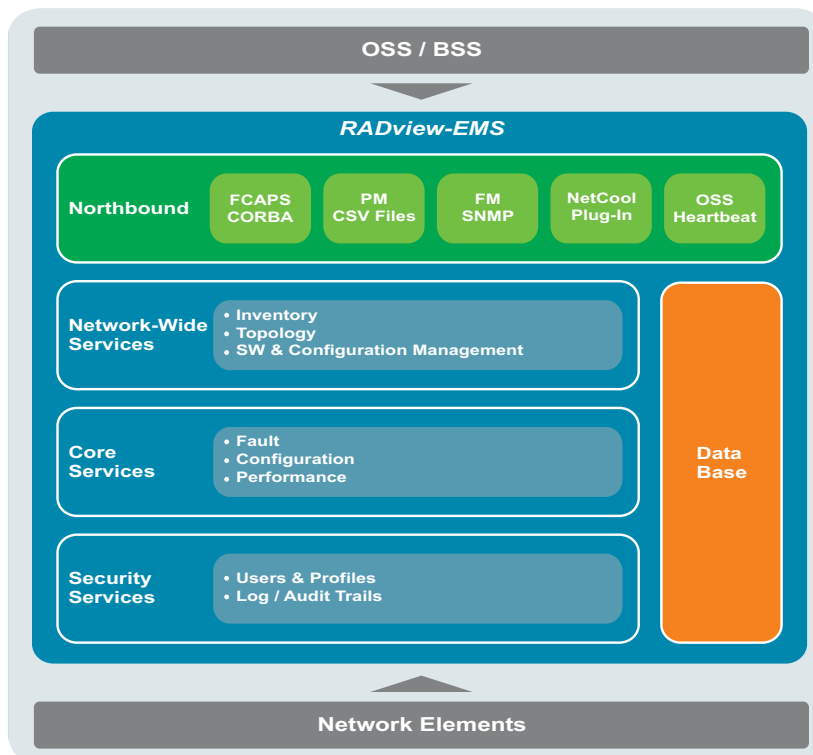


Easy OSS Integration

As a modular management system, RADview-EMS is equipped with a number of standard northbound interfaces for easy integration with OSS and umbrella systems. In addition to featuring a plug-in for connecting to IBM Tivoli's Netcool®/OMNIBus™ fault management program, the system allows seamless communication with the following network-wide platforms:

- Inventory (resource) management
- Performance management
- Carrier's proprietary OSS
- Service provisioning

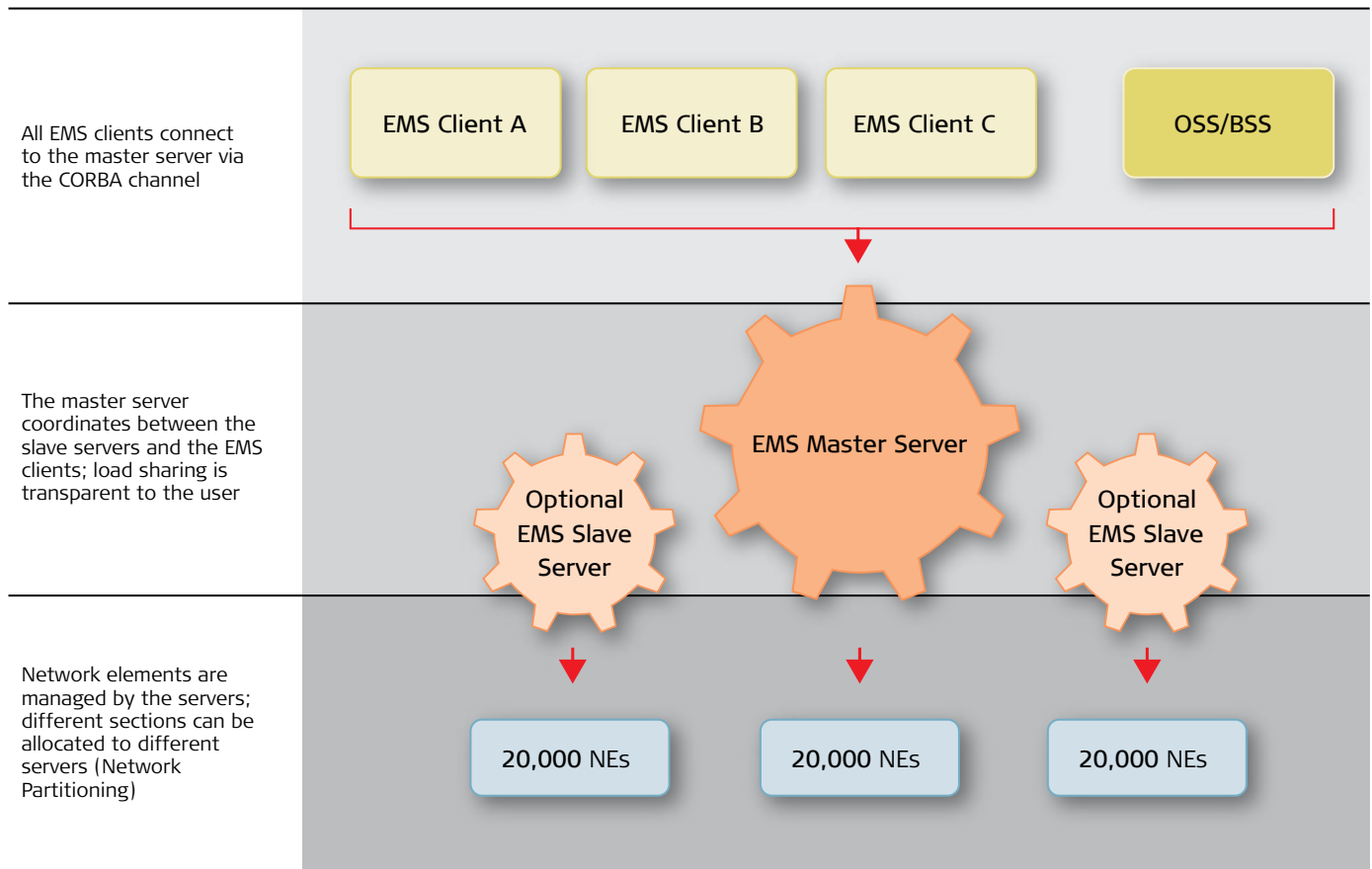
Supporting various API channels, such as CORBA, MTOSI, SNMP, CSV, and OSS heartbeat, RADview-EMS smoothly interacts with higher management levels to communicate essential network information to service, operations and business management functions. By serving as a mediation layer between the various network elements (NEs) and the umbrella system, RADview-EMS minimizes the integration costs associated with new NE additions.



EMS

Distributed System Architecture

The RADview-EMS platform is based on distributed client-server architecture to simplify network maintenance and optimize the use of available resources, while improving overall system performance and resilience. Further scalability is achieved by implementing load sharing among master and slave servers, flexibly allocating management tasks according to specific needs without affecting user experience. The RADview-EMS client-server architecture offers an adaptable management solution that fits diverse network sizes, performance requirements and user volumes.



Business Continuity

RADview-EMS provides various scalable tools for disaster recovery to ensure carrier-grade, high availability.

Cold Standby

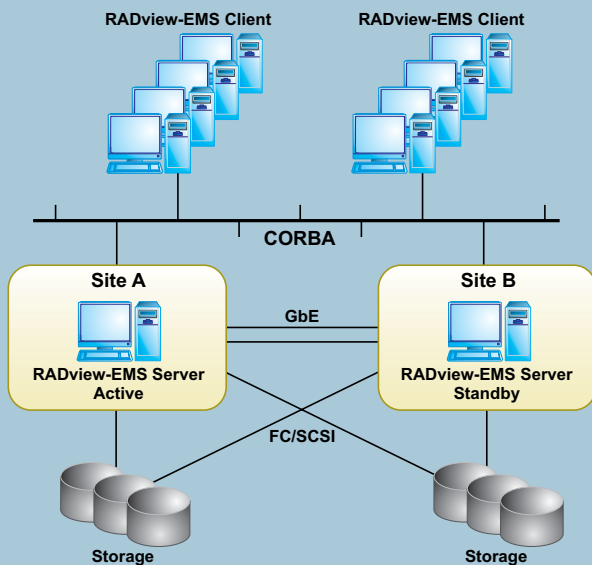
The simplest and most cost-effective solution is achieved via system redundancy using master and slave NMS stations and the RADview-EMS Backup and Restore functions. All current data is periodically written to a compressed backup file and transferred to the slave NMS without affecting the service.

In the event of failure on the master NMS station, the data is restored on the slave station. This solution does not involve additional software tools and eliminates the need for expensive storage equipment.

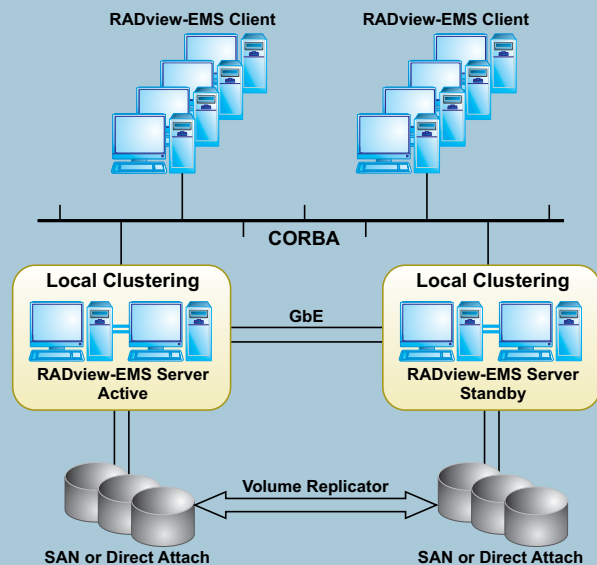
Hot Standby

Local clustering: Ensures the recovery of the RADview-EMS server in the event of operating system or hardware failure in a single site, using a single cluster of two nodes interconnected to two storage devices. The RADview and oracle agents monitor the database and application, alerting the system in cases of operation failure.

Wide-area clustering: Provides the highest protection level for the RADview-EMS server. The architecture supports two clusters located at geographically separated data centers and involves data replication using VERITAS Volume Replicator™. In the event of a service outage at the primary site, all services are automatically moved to the designated backup site, which then becomes available to the client applications.



Local clustering



Wide-area clustering

RADview – Service Center

RADview-SC/Vmux

Service Management for Voice Trunking Gateways

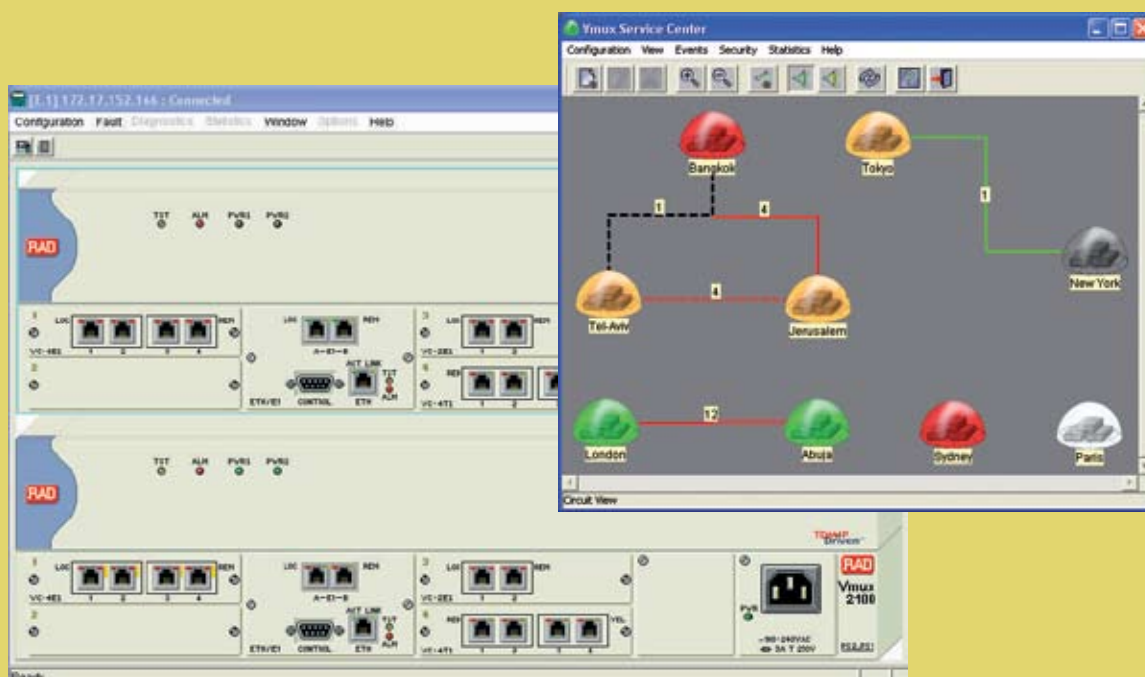
The RADview-SC/Vmux service center application is a powerful tool for automated service provisioning for the Vmux family of voice trunking gateways, including the Vmux-2100, Vmux-110 and Vmux-210, as well as the Gmux-2000 carrier voice trunking gateway. It includes an element management solution with performance analysis to monitor the status, configuration and resource availability of the Vmux gateways, employing a user-friendly graphic display. Running on either HP OpenView Network Node Manager (NNM) or on SNMPc, it enables simple integration with other vendors' management applications. The ability to perform automated service provisioning from a central site, rather than manual activation in the field, improves system uptime, reduces on-site visits and lowers customer support costs.



Vmux-2100
Voice Trunking Gateway



Vmux-210
Analog Voice Trunking Gateway (Compressed Channel Bank)



An intuitive point-and-click GUI provides a realistic representation of installed devices

RADview-SC/TDMoIP

Service Management for TDM over IP

The RADview-SC/TDMoIP is a Java-based application providing automated service provisioning and diagnostics for TDM over IP (TDMoIP) gateways, such as the IPmux-24, IPmux-216 and IPmux-1E, as well as the Gmux-2000 hub-site pseudowire access gateway. Using open client-server architecture, the RADview-SC/TDMoIP supports two types of services: regular service, which consists of a hierarchy of central and branch sites; and mesh service, enabling any-to-any connections between gateways. In addition, it can be easily integrated with the NOC systems or third party NMS applications via a CORBA-based API.

The RADview-SC/TDMoIP detects all TDMoIP gateways installed on a specified sub-network, performs site association and defines the links between TDMoIP gateways at corresponding sites. Based on user-defined network parameters, it also suggests optimized configuration.



IPmux-216

TDM Pseudowire Access Gateway



IPmux-24

TDM Pseudowire Access Gateway



Gmux-2000

Hub-Site Pseudowire Access Gateway

Highlights

- Automatic node and configuration discovery
- Service association to network hierarchy level for ease of control and fault isolation
- Provisioning from a central workstation
- Java-based application enables platform independence (Windows or UNIX)
- Configuration data is maintained in application DB, allowing quick reactivation of disconnected circuits
- A user-friendly, intuitive graphical user interface

RADview-SC/TDM

Path Management Multiservice Access Platform

The RADview-SC/TDM enables end-to-end service management of RAD's TDM Multiservice Access Platform (MAP) devices for simplified service provisioning over PDH and SDH/SONET networks. The scalable multi-access management capabilities allow network operators to add new services while minimizing overall operating costs, reducing activation times and maximizing efficiency of the network infrastructure. RADview-SC/TDM offers full interoperability with external element management and OSS applications, using CORBA-based client-server architecture.

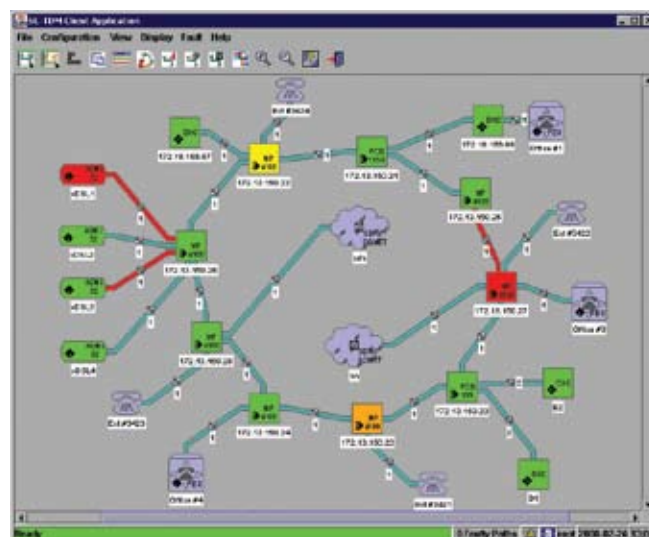
Automated service management features are based on efficient bandwidth resource analysis of user-configurable parameters, such as cost per link, service priority and protection level. Network monitoring capabilities include detailed displays of inventory status, service-affecting alarms, logical PDH rings and SDH/SONET trails, faults on nodes and links, clock source flow, bandwidth utilization, and security authorizations. In addition, network uptime is maximized using PDH ring service protection, SDH/SONET path protection and automatic N:1 service protection.



Megaplex-4100
Next-Generation Multiservice Access Node



FCD-155
STM-1/OC-3 Terminal Multiplexer



Detailed displays of inventory status, bandwidth usage, faults and alarms

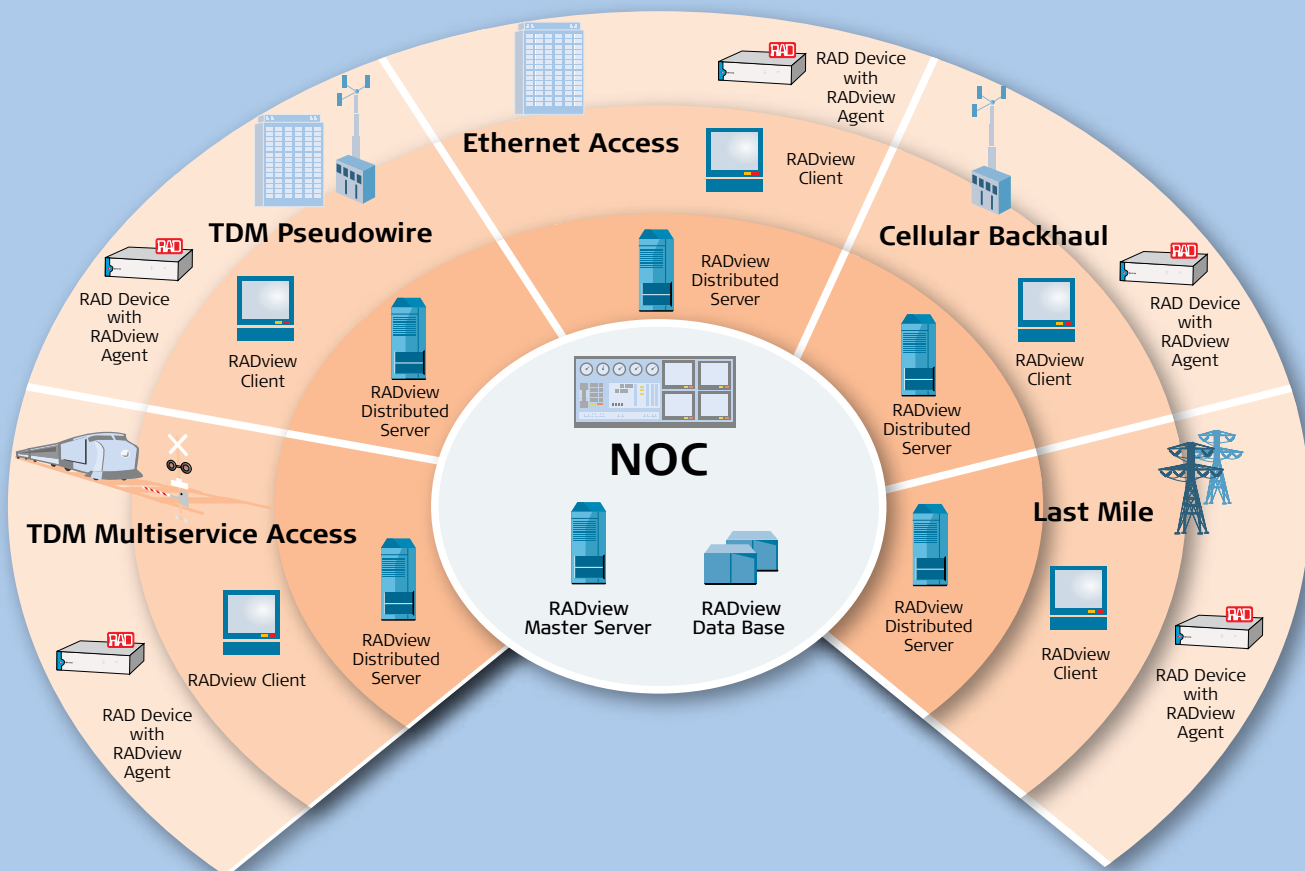
Highlights

- End-to-end management over SDH/SONET and PDH networks
- Network discovery capabilities flag potential configuration conflicts to ensure the best resource utilization and outline easy migration steps
- Automatic and manual fault repair and management
- Access level, device level and user profile authorization
- Discovery and reporting of network services and configuration problems
- Embeds other vendor's devices via sophisticated network cloud
- User-oriented design includes an intuitive GUI, "point-and-click" functionality and easy-to-follow wizards



Broad Perspective. Direct Control.

RAD's comprehensive network management solutions support a wide range of access devices involving a multitude of applications and technologies. Offering carriers and network managers a rich set of tools for resource and service control, RADview solutions extend from the CPE to the NOC with on-device agents and distributed client-server architecture. In addition to providing a unified management platform for various network layers, RADview applications integrate the data received from different network elements and streamline critical information to northbound OSS and BSS systems, thereby simplifying operations and reducing costs.



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