service integrity
signal integrity
remote monitoring

Consolidator™ - Network Management System

Overview

Consolidator, an enterprise-class network management platform, is the ultimate end-to-end solution for digital television broadcasters of all types to centrally monitor and control their broadcast operational performance in real time.
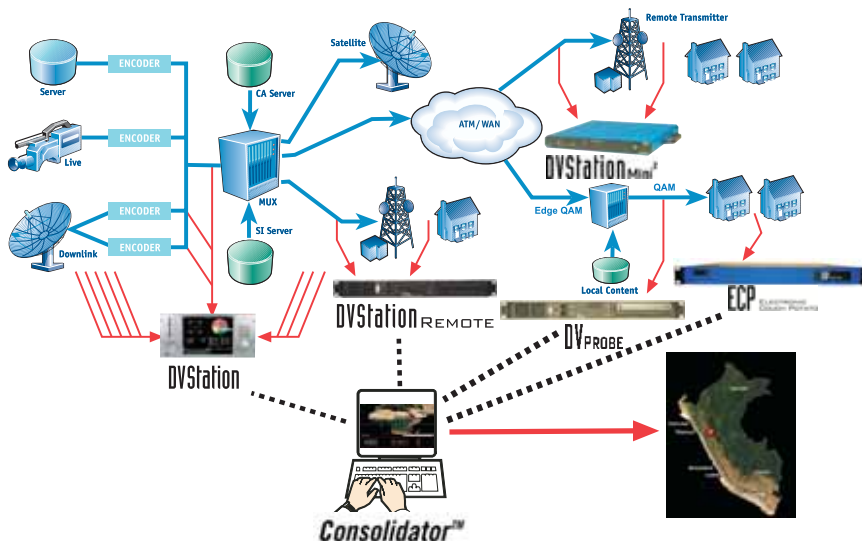
Leveraging a core NMS framework, Consolidator enables direct feedback, display, remote control and configuration of thousands of probes and millions of data points. Probes are tracked in real time – facilitating faster response time and fault isolation, therefore improving overall Quality of Service.

Connecting via any standard web browser, the multi-user Consolidator can provide any number of different views for different teams. For example, a monitoring view for operators, a simple dashboard for management, and full diagnostics and troubleshooting for engineers.

The system is easy to set up and configure, providing the option to maintain it in-house. Alternatively, simply leave it to our Professional Services team for full design and maintenance services.

Key Features

- Flexible, multi-level presentation of fault and performance information
- Advanced QoS/QoE trending
- Multi-screen drill down helps pinpoint problems
- Rapid deployment
- Low initial cost
- Low maintenance overhead
- No driver development required
- Easy to modify/upgrade
- Complete turnkey solution
- Secure enterprise-grade Linux-based system
- Unlimited Web browser access, no special software required
- User-defined alarms and trigger thresholds
- Northbound SNMP interface
- Multi-user, role-based access security
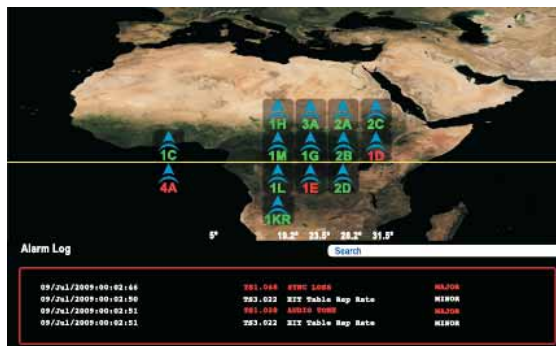- Powerful alarm trigger configuration

Management & Monitoring Challenges

Today's subscribers demand faultless and uninterrupted television, a huge channel plan and numerous value-added services. Fewer truck rolls, reducing churn while limiting OPEX is a tremendous challenge. Getting improved Quality of Service and Quality of Experience requires greater visibility of service affecting issues, and that visibility can only be achieved through comprehensive, end-to-end monitoring along the complete transmission chain.

The Pixelmetrix Consolidator provides unparalleled visibility into network health with comprehensive built-in support for Pixelmetrix probes. Multiple views and multiple presentations, combined with the ability to drill down into problems, allow support teams to quickly get to the root of any error, thus improving customer response time.

Built on enterprise grade server, database and Linux platform components, Consolidator advances with your monitoring system to keep in step with broadcast network expansions.

Pixelmetrix
corporation

Key Benefits

Fault Isolation
Complete network visibility allows customer service operators to quickly pinpoint faults and focus on resolving those.

Real-Time Visibility
Resolving faults quickly means root cause identification must be as fast as possible. Consolidator tracks all probes in real time with a combination of push notifications and information pull mechanisms. The faster engineers address the problem, the sooner subscribers can resume viewing the program.

Monitor Network Service Health
The depth of a monitoring system expands in conjunction with the number of monitoring points. Consolidator translates these multiple points of failure into meaningful data through a layered view approach.

Optimize Operational Efficiency
Consolidator provides a clear presentation of monitoring results by geographic segregation or business logic. Hence, reducing time to arrive at conclusions and implement follow-up actions.
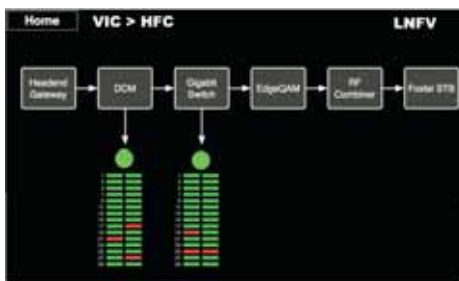
Reduce OPEX
Network visibility and operational efficiency allow operators to spend less time on understanding and resolving problems, thus minimizing truck rolls and overhead.

Reduce Churn
Fault isolation reduces response time. Improved network visibility enables OSS team to promptly respond to affected subscribers.

Customizable Data Representation

Rich graphics capability lets you present information as desired. Whether it is a network topology, geographic map or an organizational chart, Consolidator supports it.
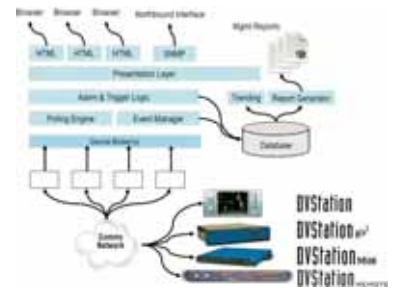

Multi-level Screen Design

Consolidator can provide role-specific views of service quality information. Multi-level screen design helps to partition and present data according to customers, channels or geographic regions. While engineers can look at the status of monitoring probes, support teams can view service delivery status, and management teams can review the overall network health and trends.
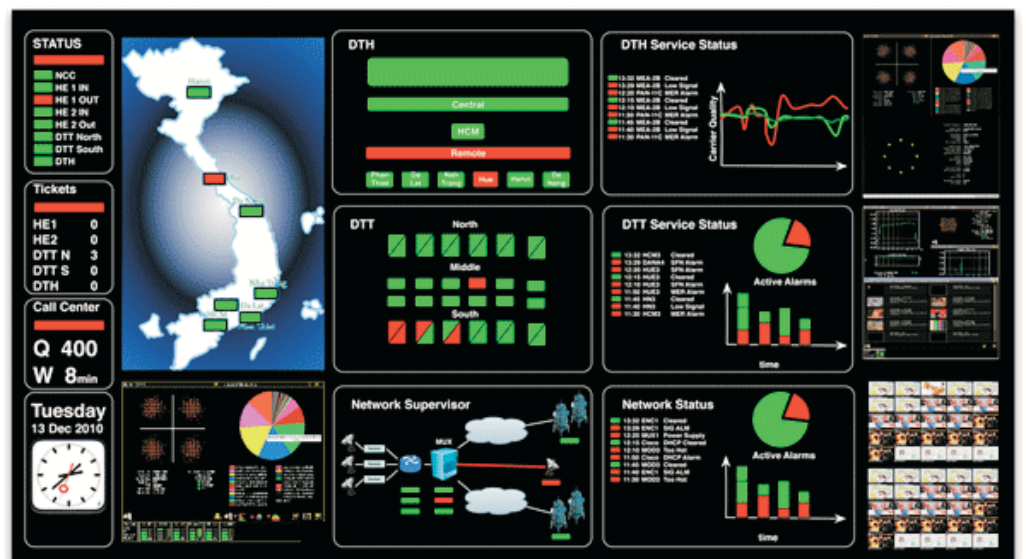
Made for Each Other

The DVStation family of preventive monitoring equipment provides comprehensive network visibility at the edge and within the network. Available in several different form factors, DVStation supports all common TV interfaces including ASI, QAM and L-Band satellite.

The Electronic Couch Potato™ (ECP) monitors the audio and video output of the STB. Monitoring the end of the broadcast network, the ECP reports quality parameters as the subscriber views it.

The DVStor provides mission-critical transport stream recording for delayed playback and content archival. The DVShift, on the other hand, provides frame-accurate time-shifting to enable seamless ethnic rebroadcasting services.

Consolidator supports all Pixelmetrix equipment. With its comprehensive SNMP interfaces and the expertise of our Professional Services team, Consolidator can be easily integrated with any Pixelmetrix equipment.

Secure & Reliable

Consolidator is based on a secure, robust open source platform. Running on Linux configured for enterprise-level security, Consolidator will be every IT administrator's favorite. Consolidator also ships preloaded on a server with dual-redundant power supplies and storage systems.

Consolidator has comprehensive support for SNMP v1 and v2c. Remote administration and control is available over secure terminal and VNC access. Comprehensive user access control allows engineers in the field to connect over a VPN without affecting monitoring operations in the NOC. Easy backup and restore allow quick recovery from system failure, reducing downtime and loss of productivity.

Comprehensive SNMP Query Mechanism

Consolidator can be configured to retrieve, store and track trending of any parameter in any SNMP MIB. Simply enter the OID, sampling interval, and thereafter, everything is automatic.

Role-specific Views

Consolidator offers virtually unlimited user access control. Both individual users and user groups can be defined assigning fine control over access. User and group level access can be set for:
- Login
- GUI access
- API access

Case Study 1: Back-up Site Status Monitoring

Maintaining geographically separated and redundant TV broadcast chains is an ideal disaster protection strategy. For an effective switch-over between sites, it is crucial to ensure that the broadcast chains are identical. Monitoring the outgoing transmission multiplexes round the clock, the operations team can detect discrepancies and outages at both sites in real time.

The Consolidator provides a unified view into the entire network by comparing the main and backup sites. The comprehensive visibility, coupled with in-depth monitoring capabilities of the DVStation, enable parallel analysis of the entire transmission all the way down to service blackout and freeze-frame checks. When integrated with Net Insight Nimbra, Consolidator offers an accurate reflection of the status of all the transport links in conjunction with the Pixelmetrix monitored points.

Drilling down to the monitored probes from the unified screens allows engineering teams to quickly identify non-conformity between the two sites. Thus, restoring the network to an operation-ready state. Historical trending of reported information helps spot error patterns and forecast possible outages based on network usage and stress cycles. The Consolidator can forward derived monitoring operations information for generating management reports.
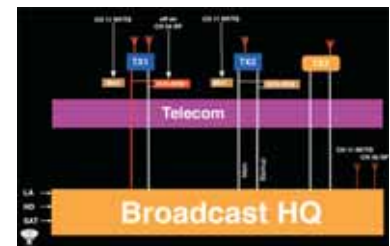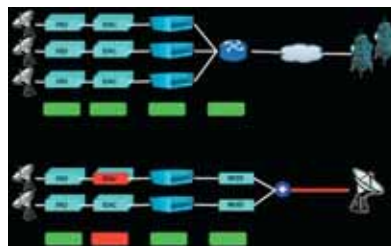

Case Study 2: DTT/DTH Network Health

Managing a nationwide DTT/DTH network can be a challenging task, especially with responsbilities shared across different teams. The headend team needs to monitor and manage performance expectations starting from ingress points, all the way to the transmission network. The transmission team ensures signal coverage and quality of service starting from the headend output all the way to the off-air signal.

The headend team monitors the large number of ingress feeds for fidelity and content. The ingested content is then re-encoded and re-multiplexed before being put out on the transmission networks. This entire workflow chain is visualized and monitored on a dedicated Consolidator, named the NOC system.

The transmission team modulates and puts the DTT/DTH transmission on air, while maintaining an archive of the multiplexes output by the headend. Using video thumbnails generated by the DVStation-Mini[2] DVB-T, the operations team verifies the video services as transmitted. The third party transmitters and the archival systems are monitored by a central Consolidator, named the NCC system.

The NOC Consolidator also reports to the NCC Consolidator through its northbound interface. With its role-specific views, the NCC Consolidator provides for unparalleled visibility into network health. The operators monitor the network on a video wall, while the engineering team can conduct regular maintenance on the system. The management team can use the same portal to review KPIs to ensure network productivity.

Deploying Consolidator

Our professional services team is on standby to work in close consultation with your key stakeholders to define, execute and install any size of end-to-end monitoring system. Whether it is for a compression center, satellite teleport, next-generation cable network or terrestrial central casting, our team works closely with you to create the best system – all without breaking the bank.

Physically, Consolidator comes preloaded on a robust, 1U server featuring RAID-1 protected drives and redundant power supplies for maximum reliability. Alternatively, our team can deploy Consolidator on most standard hardware according to your requirements.

Northbound Interface

Large networks, especially those running multiple services like voice, data and video, often have a hierarchy of network management systems. Separate Network Management Systems can be assigned to different functional network segments (eg headend, core network, uplink) or different business units (eg television, voice, internet). Alarms and fault information from each of those, in turn, can be forwarded to another NMS, which then provides a global summary of all management networks and services.

Since those high-level NMS systems are often bulky, expensive and difficult to modify, Consolidator presents pre-consolidated alarms from its northbound interface – thus saving money and time.

Quick Status At A Glance

Consolidator users can have customizable screens with information of interest. This dashboard quickly focuses user attention to issues under their influence. The dashboard can be set up by any administrator to include graphs, error alerts and instantaneous status indicators.

Consolidator also features a handy slide show mode which circulates through your favorite screens.

Professional Services

Consolidator is a secure, flexible platform that can be extensively customized. From network monitoring to multiple status checking, Consolidator has been successfully deployed in various scenarios around the world.

As experts in preventive monitoring, we have the experience to keep your network working smoothly. Collaborating with broadcasters and video delivery network operators around the globe, we provide unsurpassed knowledge base of monitoring points. We bring our expertise to every project executed, ensuring that you have the best coverage possible.

Working closely with our partners, our professional services team is ready to help solve your problems today. Through close consultation, our suite of technology building blocks and extensive solution prototyping, we ensure that each solution perfectly meets the most demanding requirements.

After delivery, your investment is protected with comprehensive support services tailored to your needs.

Contact your sales representative or send queries to sales@pixelmetrix.com, to learn more about how the Consolidator can help optimize your broadcast operations.

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