

# Telecommunications Monitoring



## Monolith – Delivering Next Generation Monitoring for Operations

### The Challenge

Telecommunications organizations (Telco's) are the ultimate service oriented businesses. Success as a business is contingent upon the ability to deliver services 24 hours a day, seven days a week, 365 days of the year. A Telco's infrastructure, comprised of an elaborate array of Muxes, Dacs, SONET/SDH Rings, fibre and cable, is the core enabler of service delivery.

The network operations center (NOC) is the nerve center, from which administrators supervise, monitor and maintain their infrastructure with a goal of continuous availability and a high level of quality of service.

Precise, effective and efficient monitoring and management in this environment is an absolute requirement. Around the clock, NOC staff must monitor the network, troubleshoot problems, and coordinate with other departments in order to provide high grade service delivery to customers. In times of failure, staff must work quickly to isolate and fix the problem. To do so, they rely on access to critical information to quickly identify all affected customers, know which circuits are down at any point in time, and correlate this information into meaningful business terms to enable efficient and rapid recovery.

In the past, Telco's were able to rely upon their telecom equipment vendor(s) to provide monitoring tools for their environment. Today, with the advent of new devices, technologies and services and the necessity of maintaining multi-vendor infrastructures, Telco's are facing a much more challenging monitoring and management environment. Telecommunications monitoring has become more complex, more difficult and increasingly more important.

Unfortunately, current monitoring efforts and tools in the operations center are fractured, fragmented and dated in their approach. This lack of a cohesive and complete monitoring solution drives up costs, causes operational inefficiency and impacts the ability of businesses to quickly recover in times of failure.

Many solutions today simply cannot handle devices that are not directly IP accessible or receive messages from devices that are not formatted as SNMP traps or Syslogs.

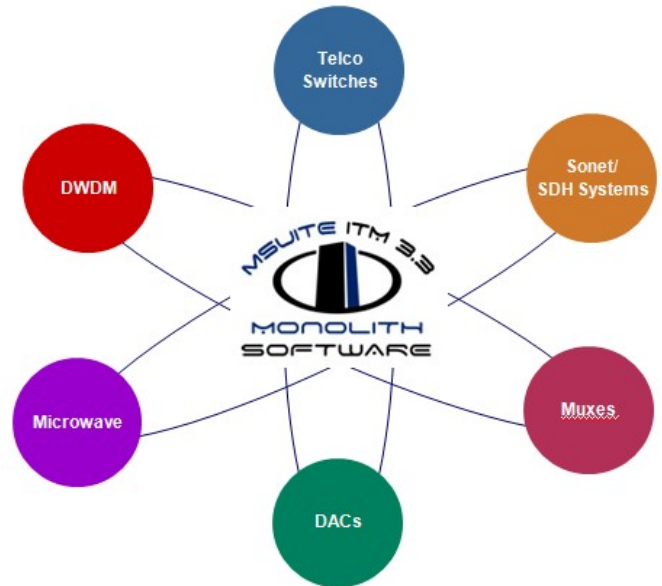
### The Solution

Network Operation Centers (NOCs) need a single, consolidated monitoring and management solution that serves as a 'Manager of Managers' for all alarming and performance related information. This provides the benefit of consolidating services/circuits, technologies and devices into a single management portfolio to provide vital correlation between customers, events, devices and circuits.

Monolith's Telco monitoring and management software offering provides a cutting edge solution capable of serving Operations needs today and in the future. Unlike other monitoring/management solutions that are limited to either legacy telecom devices or restricted to monitoring only IP, VOIP or other new technologies, Monolith Software provides a consolidated approach to Telco monitoring, enabling Operations to monitor legacy gear still in deployment as well as the new technologies driving next generation service offerings.

Monolith is highly flexible. Capable of managing and monitoring the complete portfolio of telecommunications technologies found in today's corporate or service provider environment: from legacy devices and technologies such as ASCII feeds, digital switching technologies and synchronized optical networks to new services and technologies such as VOIP, video on demand and IPTV.
















Monolith Software is more than just a telecommunications monitoring/management solution. We deliver additional value by taking an open and expansive approach to technology management. Monolith brings together fault, availability and performance monitoring for networks, applications and other systems -- all within a single solution. With Monolith Software, Operations centers can achieve greater levels of operational efficiency by consolidating management and monitoring efforts into one technology platform; thereby providing a single, cost-effective, operationally focused solution from a proven technology vendor.



# Monolith for Telecommunications Monitoring

## Easily Monitor Any Vendor and Any Device Type

Monolith Software's Telco platform is extremely adaptable and flexible – a critical attribute for your monitoring your environment. There is no need for a different collection engine for each vendor – or even device type – in order to effectively monitor your telecommunications environment. Monolith provides the monitoring ease and flexibility to manage the most diverse and heterogeneous environments. Our software includes vendor-agnostic, multi-headed and multi-threaded collection support for the traditionally challenging Transaction Language 1 (TL1) management protocol. This flexible TL1 capability provides very high scalability. The Monolith TL1 aggregator connects to any TL1 gateway as well as the multiple devices behind it. Monolith also provides flexible components for data collection from any device type such as PDUs, Nortel DMS and Titan 5500s through their ASCII formatted message streams.

262		Adtran	55		Preside
18		Badger	3803		Siemens
6		Calix	3		MIB2
36		Cisco 15454	0		Tellabs
0		Cac Mux	0		AFC & Meriton
762		Nortel DMS	114		Unix Syslog
3		Omnitron	3459		Unknown Syslog
			0		Unknown Trap



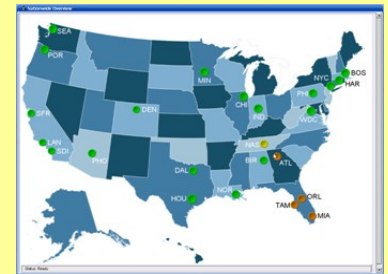
**TL1/PDS DACS**



**Telco Switches**

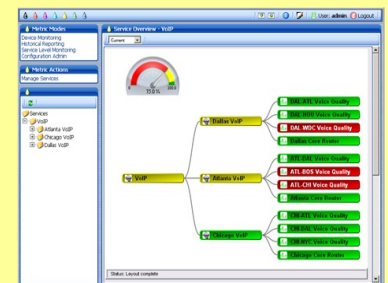
## Event Dashboard Gallery

Geographic



Gauge

SLM



## Key Features and Benefits

### Features:

- Manage across the entire operational chain (facility, network, fiber, generator)
- Manages the entire infrastructure portfolio
- Delivers customer/circuit correlation
- Multi-headed, multi-threaded TL1 aggregation
- Aggregates any ASCII feed from legacy gear
- High availability with automatic failover/failback
- Hierarchy correlation to leverage CMDB/Provisioning/Billing system data

### Benefits:

- Reduction in tools required
- Faster diagnosis and recovery
- Improved operation efficiency and control
- Reduced duplication of effort
- Lower administrative costs
- Lower maintenance / OpEx costs

# Monolith for Telecommunications Monitoring

## Instantly Determine Customer Impact with Customer/Circuit Correlation

When there is a network failure, operations staff must quickly identify affected customers. Unfortunately, this is easier said than done. Most organizations monitoring solutions only indicate the device and the interface experiencing the issue. For too many years, operations team members were forced to comb through multiple databases (e.g. customer, circuit, interface, provisioning) to investigate every false alarm (symptomatic or core) in order to root out the true cause of the failure and the customer(s) impacted by the failure – wasting critical time and resources.

Monolith's customer/circuit correlation capability provides incredibly powerful functionality to deliver massive time savings, allowing organizations to address the root cause of issues in a fraction of the time previously required. Our customer/circuit correlation capability allows you to dynamically model and visualize the complex hierarchies in the environment (e.g. Customer\_to\_Circuit, Circuit\_to\_Interface).

This enables NOC staff to quickly and efficiently pinpoint the issue and respond to impacted customers, improving overall productivity and customer satisfaction levels. Fault information can be correlated on any layer – from dark fibre to DWDM to router to interface to circuit to customer –and to any degree your provisioning system can handle. The value behind the system is the ability to perform associations dynamically at any level (e.g. show me all of the customer impacted by this circuit outage).

The real beauty of this is that Monolith can tap into your billing, provisioning, and customer databases to enable your infrastructure hierarchy to be customer aware thereby automating what was historically a highly manual process. No other monitoring system on the market today offers the benefits of a normalized topology and its ability to model complexity to the nth degree like Monolith and its Hierarchy Storage Engine (HSE).

Service (Circuit) Impacted Events

Device	Event Type	Event Text	Count	First Occurred	Last Occurred
1x-bsd1-atl2-0001	CircuitImpacted	Circuit Down	3	2008-08-26 10:26:31	2008-08-26 10:26:31

Summary: 0 (green), 0 (purple), 0 (blue), 0 (yellow), 0 (orange), 1 (red), [All] 1

Customer Impacted Events

Device	Event Type	Event Text	Count	First Occurred	Last Occurred
ABC Transport	CustomerImpacted	Customer Affected	3	2008-08-26 10:34:58	2008-08-26 10:34:58

Summary: 0 (green), 0 (purple), 0 (blue), 0 (yellow), 0 (orange), 1 (red), [All] 1

## Improve Your Operational Efficiency

Rapidly expanding technologies and multiplying vendor relationships have forced companies to splinter their operational groups and respective monitoring efforts. Operations teams face the problem of managing silos of information, versus a cohesive picture that provides a 'single pane of glass' view into the health and status of the network and its technology environment. This fractured approach impedes productivity, creates duplication of effort and skill sets, and drives up cost and inefficiency. Monolith Software allows you to move away from siloed monitoring solutions to a consolidated and comprehensive platform with a complete view into fault, availability and performance of the infrastructure.

We are unique in our software's ability to span and monitor legacy as well as new technologies and services. Monolith can model the most complex of network hierarchies, tying directly into critical CMDB, provisioning and customer billing systems to build a 360 degree view of business processes to provide greater operational control. A flexible knowledgebase, powerful workflow for intelligent notification and escalation, and seamless integration with trouble ticketing systems also drive efficiency. The solution provides greater context for problem solving, and speeding Mean Time to Respond and Repair (MTRR).

## About Monolith Software

Monolith Software's Topology Manager views provide an eagle's eye view of your technology hierarchy, with dynamic displays showing real-time availability, performance and fault information. Topology Manager can be used to address networks, devices, applications, e-commerce, transactional processes and ERP. The ability to view complex hierarchies in the context of performance allows NOC teams and application owners to immediately locate performance issues, identify root causes and shorten mean time to recovery (MTTR).