NQ NetQuest
Monitoring Access Solutions

NetQuest WAN Signal Monitoring Solution

A Mission-Grade Access Platform for Optical Transport Networks

Gain full visibility into IP traffic traversing complex OTN and SDH WAN infrastructure without the complexity, delay, or cost of legacy tools.

The Challenge: Accessing IP Traffic Across Complex Transport Networks

Government defense missions often require monitoring access to international communication links and standard telco protocols including Optical Transport Network (OTN) and legacy SDH/SONET.

Passive monitoring of IP packets carried over these transport protocols introduces a significant challenge for typical ethernet-based cyber tools:

- IP traffic is **encapsulated in nested, containerized transport layers** (e.g., within OTU2/OTU4, STM64, or STM16 signals)
- Monitoring requires **manual configuration, trial-and-error, and reverse engineering,** often using combinations of spectrum analyzers, standard telco equipment, and protocol analyzers
- This fragmented, labor-intensive approach **slows response times, increases operational risk,** and drives up both **CAPEX and OPEX**

The Solution: Single-Platform Access to Mission-Critical WAN Traffic
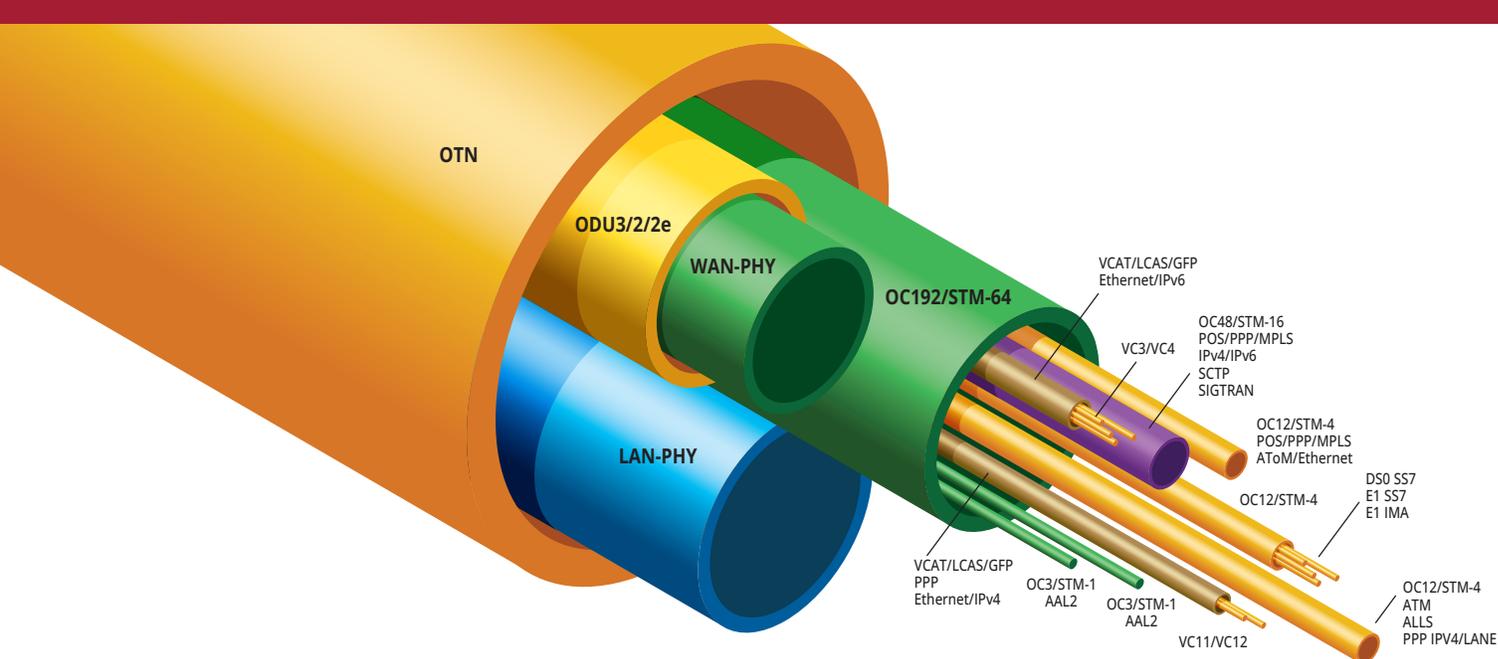
The **NetQuest WAN Signal Monitoring Solution** provides a turnkey appliance designed to address the access challenge within optical WAN transport networks.

With support for key transport protocols including **OTN and SDH/SONET,** NetQuest's solution automatically identifies, extracts, and converts IP traffic carried across complex WAN links.

Instead of relying on multiple tools to manually reverse engineer and convert transport-layer signaling, operators can deploy a **single platform** that:

- **Auto-discovers transport signal structures** (e.g., framing, containerization, VCAT)
- **Reveals real-time insights** into tributary/channel mappings, VLANs, and IP flows
- **Converts WAN traffic into standards-based Ethernet/IP** to feed downstream analysis or lawful monitoring tools

OTN
SONET/SDH
Native Ethernet

WAN

WAN Ingest
16 x OTU4
64 x OTU2/2e/1e
64 x OC192/STM64

OMX
OPTICAL MONITORING EXCHANGE

Ethernet

Analytics

Machine Learning

Data Lake

On-premises data Movement

Real-time Data Movement

OTN

ODU3/2/2e

WAN-PHY

OC192/STM-64

LAN-PHY

VCAT/LCAS/GFP
Ethernet/IPv6

VC3/VC4

OC48/STM-16
POS/PPP/MPLS
IPv4/IPv6
SCTP
SIGTRAN

OC12/STM-4
POS/PPP/MPLS
AToM/Ethernet

DS0 SS7
E1 SS7
E1 IMA

OC12/STM-4

VCAT/LCAS/GFP
PPP
Ethernet/IPv4

OC3/STM-1
AAL2

OC3/STM-1
AAL2

VC11/VC12

OC12/STM-4
ATM
ALLS
PPP IPV4/LANE

Use Cases

- International traffic monitoring for national defense missions
- Access layer for lawful intercept applications
- Telco mandate to provide access to government defense agencies
- Monitoring of long-haul or inter-base optical links (OTN/SDH)

CORE CAPABILITIES	
Capability	**Description**
Transport-Layer Auto-Discovery	Automatically identifies signal speed, protocol, and channelization structure on OTN and SDH links. No manual provisioning required.
Deep Channelization Mapping	Extracts payloads from nested layers like GFP, PPP, and PoS within OTN/SDH containers, mapping down to VLANs, IPs, and session-level flows.
Protocol-Aware Metadata Generation	Exports flow-based metadata with protocol-specific insights — layer 7 application classification and encrypted traffic fingerprints.
WAN-to-LAN Media Conversion	Translates optical/TDM interfaces into standards-based Ethernet outputs, enabling seamless integration with existing tools.
High-Density Monitoring	Support for up to 16x OTU4, 64x OTU2/2e/1e, 64x STM64 in 1U appliance.
Advanced Packet Processing	MPLS/VLAN removal, MAC Address Replacement, Ethernet/IP Detunneling, VLAN Insertion (by source WAN tributary/container).

Why NetQuest?

With over 30 years supporting secure and mission-critical monitoring deployments, NetQuest designs purpose-built solutions that address the specific challenges of WAN transport visibility. Our technology is deployed globally in support of government defense initiatives requiring high-fidelity, reliable access to IP traffic at the transport layer.

NetQuest's WAN Signal Monitoring Solution allows agencies and contractors to:

- Reduce time to insight
- Eliminate redundant tools
- Ensure continuous visibility
- Simplify complex infrastructure monitoring

OPERATIONAL VALUE	
Without NetQuest	**With NetQuest**
Multiple test tools (spectrum/ protocol analyzers, standard telco equipment)	Single integrated platform
Manual reverse engineering of signal structures (hours/days)	Automated network survey of signaling and payloads (seconds/minutes)
High operational cost for each WAN tap point	Targeted, scalable visibility at optimal cost
Custom integration with analytic tools	Standards-based Ethernet and/ or IPFIX outputs
Delays in gaining actionable traffic intelligence	Immediate access to IP packet and traffic insights

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Learn More / Contact Us

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Let us demonstrate how NetQuest can streamline your WAN monitoring operations and deliver mission-ready visibility.