



### Problem

The Network Environment: A 5,000 node, hub-and-spoke network connecting Orbital Sciences' Arizona and Virginia facilities. Orbital has standardized on routers and switches from a leading provider.

### Challenge

To proactively ensure efficient network operations between the two major networks and to provide reactive troubleshooting during satellite and missile development and post flight processing.

### Solution

Sniffer Distributed and Sniffer Application Intelligence are running on a continuous basis, ready to be used to isolate and identify the cause of any network traffic anomaly. During mission development, Sniffer Portable helps solve issues that may occur on the Ethernet network that connects the boost vehicle with the re-entry vehicle housing the launch's payload.

## Orbital Sciences Reaches for Sky-High Network Performance with NetScout's Sniffer Enterprise Solution

### Introduction

Orbital Sciences is the world's leading developer and manufacturer of small space and rocket systems, used by its customers to defend the United States, provide global communications, study the Earth, and explore the solar system and the universe beyond. The company has delivered more than 480 satellites, launch vehicles and other space-related systems to customers since 1982. Orbital's network plays an essential role in the company's ongoing success, providing full connectivity across the continental US and periodically to various remote launch sites. To proactively keep the company's networks performing optimally, and to troubleshoot complex issues when they occur, Orbital employs a full complement of NetScout Systems Sniffer Distributed, Sniffer Portable and Sniffer Application Intelligence.

### Maintaining Core Connectivity Is a Top Priority

Orbital maintains two major networks, one each at its Dulles, Virginia headquarters and at its Launch Systems Group facilities in Arizona. "We have roughly 5,000 nodes on our network, and a lot of data and applications running between these two locations," explains John Vogt-Nilsen, senior manager of technical operations at Orbital Sciences. He maintains a Sniffer Distributed device at each site, each with two monitors. The Arizona monitors observe all Internet traffic and all internal wide area network (WAN) traffic.

"Our usage of internal networks is the same as any other company; we have a lot of file sharing going on between the two major sites, as well as financial applications, drive mapping, etc.," Vogt-Nilsen says. "Because of the high levels of traffic between the two major sites, I often hear the classic complaint of, 'Something must be wrong with the network, it's running slow.'" He is intimately familiar with the networks' bandwidth pattern and, indeed, if there is an anomaly, his first tool of choice is Sniffer Distributed.

A long-time Sniffer Solutions user, Vogt-Nilsen says, "Sniffer Distributed is an invaluable proactive tool that gives me a comprehensive snapshot of what's going on over the network at any point in time. It has a powerful toolset that allows me to dispel the complaint that 'something must be wrong with the network.' With Sniffer Distributed I can very quickly identify what the problem is, such as a user or service consuming a disproportionately high amount of resources. It also puts the data into an easy-to-understand picture, which is useful when speaking with non-technical executives."

If a network anomaly spikes into a true abnormality, Vogt-Nilsen turns to Sniffer Application Intelligence to identify which services from which users are potentially causing the problem. "I now rely on Sniffer Application Intelligence almost as much as Sniffer Distributed. It has quickly become an indispensable tool," he says. "I keep Sniffer Application Intelligence running in the background and whenever there's a problem, I just have to open it up to isolate it. From that point it's only a few minutes until I pick up the phone and call a user to say, 'Your video traffic doesn't appear to be business-related – it's out of compliance,' or, if it is business-related, I'll tell him, 'You have a process run amok.'" Orbital's software engineers, in fact, use the network to write and test the flight code used to launch satellites.

### Sniffer Portable Enables Mission-Critical Troubleshooting During Launches

Orbital's launches of commercial satellites and military missiles are tightly choreographed events, with no room for network problems. During launches, Orbital uses an Ethernet LAN to connect the boost vehicle with the re-entry vehicle that houses the launch's payload. "It's just an Ethernet network where everything is connected to a switch," Vogt-Nilsen says. With a smile he adds, "Just how high and fast does your packet fly?"

"This is the reactive piece of our work," he continues, relaying an anecdote of how a recent launch was almost delayed because of an elusive network problem. "Without Sniffer Portable, we wouldn't have been able to find and solve the problem, and keep the launch on track." Orbital would not attempt to develop flight code without the Sniffer product line.

Although Vogt-Nilsen has been using Sniffer tools for over a decade, he acknowledges that continued innovation in the core product set, and new solutions like Sniffer Application Intelligence, present abundant opportunities to extend his skills, and his ability to efficiently manage Orbital Sciences' network. "Our network shop is lean and mean, so I need high end tools that allow me to identify and solve problems quickly. With Sniffer Distributed and Sniffer Application Intelligence, I can now solve problems that used to take me four days in just half a day. I've been using Sniffer products a long time and have watched it mature – there's nothing better. Sniffer Application Intelligence just extends and augments the powerful capabilities I get from NetScout."

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**Senior Manager  
of Technical Operations  
at Orbital Sciences**



#### About NetScout Systems

NetScout Systems provides advanced network and application service assurance solutions that deliver complete visibility into real-time, packet/flow-based operational intelligence. IT operators at the world's largest enterprises, government agencies, and service providers use the Sniffer and *nGenius* solutions to troubleshoot service degradations faster and more efficiently in order to reduce MTTR.

#### Our world-renowned Sniffer and *nGenius* solutions include:

- Intelligent Data Sources for high capacity, deep-packet recording and monitoring
- Analysis Software for real-time and historical network and application performance management, troubleshooting, capacity planning, and reporting
- Advanced Intelligence for early detection and in-depth analysis of complex or specialized application services

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