

## Barrow Arctic Science Consortium

Protecting and Preserving Research Data in a Remote Arctic Environment with Software Solutions from Symantec and Advanced Internet Security



A scientific research organization on Alaska's remote North Slope, Barrow Arctic Science Consortium (BASC) needs to protect and preserve data generated by visiting researchers. Tight budgets, geographical isolation, and harsh weather mean that the two-person IT staff must protect its infrastructure with no local support resources. Visiting researchers add to the challenge by connecting their private, unprotected laptops to the consortium's networks. BASC relies on Symantec and its business partner, Advanced Internet Security (AIS), to address these issues with information security and data protection solutions. Results include zero disruptions from viruses and a greater than 90 percent reduction in backup and restore times.

### Managing IT at the top of the world

The Barrow Arctic Science Consortium (BASC), founded to support research into all aspects of Alaska's North Slope, sits on the shore of the Arctic Ocean just 1,000 miles from the North Pole. Winter temperatures as low as -40° can freeze a tape cartridge and bring a spinning hard disk to a dead stop. Travel in and out can be difficult in the winter, and even in the mild summer, Seattle is 12 hours away by jet—with plane changes in Anchorage and Fairbanks.

The two-person BASC IT team is part of an eight-person staff that works at the research station year round. Users, however, number in the hundreds and flock to BASC in the warmer months to conduct research on everything from ocean currents and the ozone layer to the culture and languages of the region's indigenous peoples.

### Providing security for temporary users

The challenge facing the IT team is to support this research, connecting the visiting users to the outside world via the Internet while preserving their data and protecting it from viruses and other electronic threats. Working with tight budgets in a remote area, the team must be as self-sustaining as possible. CIO Bob Bulger and one assistant must manage the entire environment—often with as many as 250 concurrent users—and do it without adding new staff.

Bulger has placed special focus on protecting and preserving data. For BASC to meet its responsibilities and maintain its funding, accurate research data must be available both to visiting researchers and scientists at other facilities around the world.

The visiting researchers complicate the task of keeping the BASC environment secure. Some researchers use BASC workstations and research tools, while others connect their own laptops to one of BASC's local networks. The researchers' laptops are not

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Chief Technology Officer  
BASC

### COMPANY PROFILE

The Barrow Arctic Science Consortium ([www.arcticscience.org](http://www.arcticscience.org)) is a nonprofit organization dedicated to the encouragement of research and education pertaining to Alaska's North Slope and the adjacent Arctic Ocean. Located within the Arctic Circle in Barrow, Alaska, BASC is fully funded by the National Science Foundation.

### INDUSTRY

Education and Research

### SOLUTION

Comprehensive Threat Management, Data Protection, System Management

Symantec software blocks up to 1,000 electronic threats each day

always equipped with adequate security or backup software. They also use a variety of applications, including proprietary programs created by their home labs and specific to their areas of research. It's also not uncommon for temporary users of BASC networks to bring or download their favorite games, music files, and other entertainment programs.

### Finding the right vendor and partner

Bulger has worked from early in his tenure at BASC to identify the best security and data protection solutions to meet the consortium's demanding security and data availability requirements. As part of that process, he established a relationship in 2003 with Advanced Internet Security, Inc. (AIS), a value-added reseller and Symantec Platinum Business Partner based in Colorado Springs, Colorado. AIS worked with BASC and spent 10 days on site to analyze the organization's needs and replace a mix of point products with a comprehensive set of integrated software solutions from Symantec.

"AIS showed us how Symantec solutions could work together to meet our security and availability requirements, while also streamlining the management of our IT infrastructure," says Bulger. "There are so many advantages to being a Symantec-based shop that I don't even look at security and availability solutions from other vendors anymore."

### Protection at every point of vulnerability

The Symantec threat management solution uses an array of integrated software and hardware products to protect BASC's networks and systems at every point of vulnerability.

A Symantec™ Gateway Security 5600 appliance monitors and protects the Internet gateway to BASC local networks, which include an administrative network, a scientific research network, and a wireless network offering only Internet connectivity to visitors using their own laptops. The Symantec solution combines a full inspection firewall with multiple detection technologies to

identify and block viruses, spam, adware, spyware, and previously unknown or "zero-day" attacks and worms.

The fast throughput of the Symantec Gateway Security solution is especially valuable to researchers who need to receive large files from their home universities over the Internet through an FTP site. The Symantec appliance screens these files for viruses and other malware without interrupting their flow.

"The Symantec Gateway Security 5600 appliance protects our networks at the Internet gateway without creating a bottleneck," says Bulger. "It has the throughput and complete detection technologies we need to keep information secure without obstructing or slowing down research."

### Blocking thousands of threats per day

BASC also uses the integrated combination of Symantec™ Mail Security software and Symantec Premium AntiSpam™ add-on subscription service to protect its Microsoft Exchange email gateway. "Even here in the Arctic, spam is a nuisance that can get in the way of research," says Bulger. "Symantec Premium AntiSpam helps us block 6,000-10,000 spam per day."

Symantec AntiVirus Corporate Edition keeps BASC workstations and servers virus-free and ensures that any laptops lacking antivirus software are protected before they connect to BASC networks. BASC also deploys Symantec™ Client Security to provide extra layers of integrated security technologies on its workstations—adding client firewall and intrusion prevention to antivirus and antispymware technologies.

Bulger reports that the Symantec software screens out between 600 and 1,000 viruses and other malware objects per day. What's more, BASC has experienced no significant malware disruptions to its research or administration since installing the Symantec software. "Our multiple levels of Symantec security do an amazing amount of work," he says. "Thanks to Symantec, visiting scientists can focus on their research without having to worry about their information being corrupted."

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## Protecting and recovering data faster

BASC uses Symantec Backup Exec™ 10d for Windows and Symantec Ghost™ Solution Suite to protect and preserve research information. Symantec Backup Exec 10d enables Bulger and his assistant to back up as much as 20 terabytes of data from BASC's research and administrative networks directly to disk, where it stays for six months, allowing for fast restores, and then to tape for long term storage.

The IT team now completes daily backups in about one hour, compared with the twelve hours or more that the prior backup solution required—a 92 percent improvement. The Symantec software has also reduced the time to restore a file from two and one half hours to about five minutes, a 97 percent improvement. Bulger comments: “The faster backups free up hours of IT time each week for more critical projects, such as support for a new facility at BASC to study global climate change.”

## Imaging systems preserve and protect data

Symantec Ghost Solution Suite allows BASC to image laptops, workstations, and servers each week at regular intervals as part of a long-range data availability strategy. The Symantec software captures the image of an entire system in less than five minutes, compared to the two hours or more required to build a new system from scratch. The Ghost snapshots are then stored as backups.

If a researcher's laptop or workstation goes down, the IT team can quickly provide a new, fully configured replacement, retaining all files and settings. The team also uses Ghost Solution Suite to rapidly provision laptops for researchers arriving at BASC.

In addition, BASC is now developing a joint system with the University of Alaska at Fairbanks in which the Ghost images will be sent to the university for long-range archiving and access by the research community. The university will manage the archiving process at its data center in Fairbanks, where backups will be handled by Veritas NetBackup™ software from

## SOLUTION AT A GLANCE

### Business Drivers

- Operate within budgetary restraints by avoiding the need for additional IT staff
- Minimize need for expensive outside maintenance intervention in geographically remote location
- Protect and preserve research data as basis for securing government funding

### Technology Challenges

- Maintain secure environment despite frequent guest users
- Maximize information security without disrupting flow of large files and creating communications bottlenecks
- Back up data from visiting users running a variety of proprietary applications from dedicated workstations and their own laptops
- Archive data for long-term access

### Solution

Comprehensive threat management across gateways, servers, and client systems; daily disk-to-disk-to-tape backups; monthly imaging of client systems for backup to long-range tape storage

### Symantec Products

- Symantec AntiVirus™ Corporate Edition
- Symantec™ Client Security
- Symantec™ Mail Security for Microsoft Exchange
- Symantec Premium AntiSpam™
- Symantec™ Gateway Security 5600 Series
- Symantec Backup Exec™ 10d for Windows
- Symantec Ghost™ Solution Suite
- Veritas™ NetBackup™

### Symantec Services

- Symantec Platinum Support

### Symantec Platinum Business Partner

- Advanced Internet Security, Inc. ([www.advintsec.com](http://www.advintsec.com))

### Technology Environment

- Applications: Various scientific research applications, Microsoft Exchange, and other Microsoft Office tools
- Database: Microsoft SQL Server
- Server Platform: 20 HP ProLiant servers running Microsoft Windows 2003, 1 Mac OS X Server
- Storage: HP DL380 G4 and Apple Xserve RAID
- Tape Library: HP StorageWorks 1016
- Workstations: 65 HP PCs running Microsoft Windows 2003, 35 Power Mac

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## BUSINESS VALUE AND TECHNICAL BENEFITS

### Enhanced Information Security

- Zero disruptions to research and administration from viruses and other threats
- 600-1,000 viruses, worms, and other malware blocked per day
- 6,000-10,000 spam messages blocked per day

### Operational Efficiency

- 92% reduction in backup window, from 13 hours to 1 hour
- 97% improvement in file restoration time, from 21/2 hours to 5 minutes
- PCs and servers imaged in minutes rather than hours, for backup, restore and provisioning purposes

### IT Staff Productivity

- Research program expanded and hundreds of users supported without expanding two-person staff

Symantec. “There are no long-range tape storage facilities near BASC, so Ghost gives us a good solution to capture the research data of visiting users and send it where it can be preserved,” Bulger explains. “And the fact that another trusted Symantec product protects the data in Fairbanks gives us peace of mind.”

### A relationship with a secure foundation

With the help of AIS, BASC has recently upgraded its Symantec software to the newest versions. “AIS has helped us successfully roadmap our Symantec solutions to take full advantage of new products and releases,” says Bulger. “And since Symantec products work together so well, AIS has shown us how to distribute the software across servers, and even run multiple products on the same server to improve hardware utilization and reduce costs.”

Bulger also values the fast response he gets 24x7 from Symantec Platinum Support. “In one instance, at a very early hour of the morning, they hand-crafted me a new licensing file within four hours of my request,” he says. “Symantec has always been there when we’ve needed them.”