

## Case studies



### ANTARCTIC ICE CAP MONITORING SYSTEM 📄

The **British Antarctic Survey (BAS)** is a component of the Natural Environment Research Council. Based in Cambridge UK, it has, for almost 60 years, undertaken the majority of Britain's scientific research on and around the Antarctic continent.



### THE SOLUTION 📄

For this project we used a two box solution. The first box contained the processing power. Housed in a 4U Industrial Rackmount chassis, the server comprised of Dual Intel Xeon 3.066GHz processors chosen for their speed and overall performance, this machine was effectively a number cruncher so speed was essential. For this project we also chose an Intel Server board because of it's compatibility with Windows 2000, an impressive 4GB ECC Registered RAM was also essential. The operating system was installed on an 80GB IDE hard drive, a Zippy MRW-6400P Dual Redundant 400+400 Watt power supply was specified to give redundancy to the system, limiting down time was also high on the priority list. To connect to the storage unit an Adaptec 2120S U320 Single channel RAID controller and an Adaptec 29160 U160 Dual channel RAID controller were used and connected via a SCSI Cable to the second box. The second box was an industrial 2U chassis housing the storage for the British Antarctic Survey's data. We installed six 147GB U320 SCSI hard drives configured as a RAID 5 array, chosen for their speed and efficiency in transferring data and their well documented reliability. Another Zippy MRW-6400P Dual Redundant 400+400 Watt Power supply was also specified.



Before shipping the system it was taken to our EMC test facility to be put through its paces. The system was tested for emissions and immunity to the relevant standards. The system passed through testing without any modification to the original specification. We only specify components that we know to have good EMC characteristics, but this does not negate the importance of testing.



The system was to be installed into a rackmount enclosure in the back of a de Havilland Twin Otter aircraft. To ensure complete functionality of the machines the IPC's would have to withstand the and vibration created by the engines, to compensate for this we used chassis with specially shock mounted hard drive bays enclosed in ruggedised chassis. Although the aircraft is heated, so the operating temperature would be normal, the machines had to withstand adverse storage conditions of up to  $-20$  degrees C.

This project was the result of a rapid response from our sales team. From taking the first call, regarding the urgent requirement, and receiving the order from the customer only 6 days elapsed. The first system was delivered 3 weeks later and tests began. It was Amplicon's 30 years of engineering experience and our long-standing relationship with British Antarctic Survey that gave us the edge over our competitors for this solution.

Before long it was apparent that finer tuning was going to be necessary in order to have a perfectly functional data collection and storage solution ready for the next trip to the Antarctic, which was scheduled imminently. In order to ensure everything was perfect we invited British Antarctic to our offices in Brighton where we dedicated an engineer to spend the day helping fine tune the system.