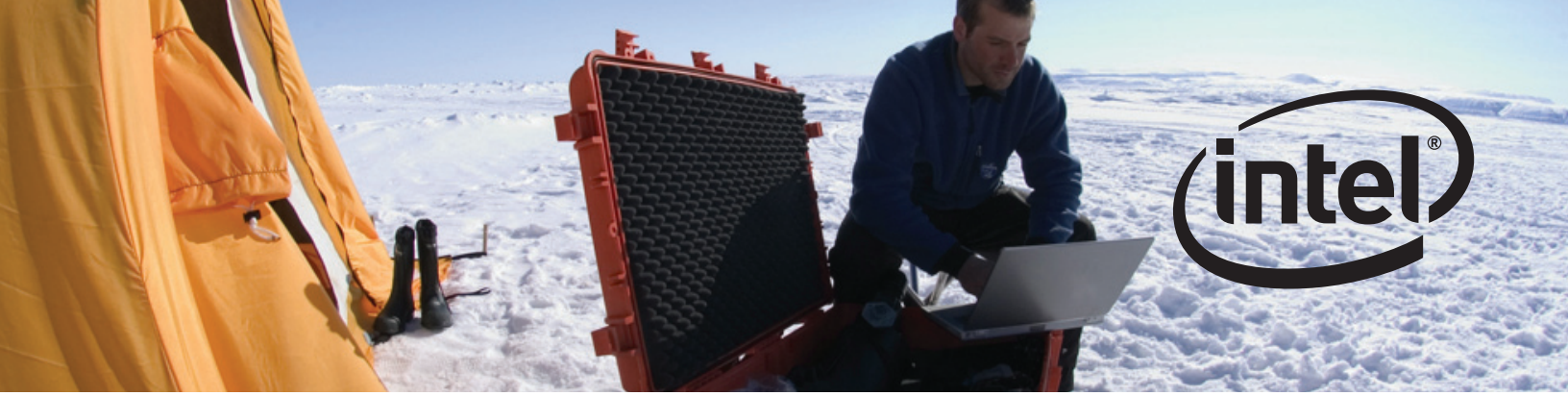

Case Study

Intel® Core™ 2 Duo P8800
Quad-Core Intel® Xeon® E5540

ARCTIC KINGDOM
MARINE EXPEDITIONS INC.

"Technology really is everything for us. We are one of the non-intuitive internet businesses," says Dickson. "How we work, how we collaborate, how we market and how we run in the field all depends on technology."

Arctic Kingdom Connects From Far North With Intel

Arctic Kingdom depends on mobile technology solutions, supported by a dependable network server infrastructure powered exclusively by Intel, to keep expedition leaders and travelers informed and safe

Arctic Kingdom Marine Expeditions Inc.* started in 1999 when Graham Dickson led the first expedition to dive with walruses and bowhead whales in the arctic. Within a few short years, the tourism company expanded from offering land-based arctic tours and dive trips to supporting film and television crews working in the North, including location management for Disneynature*'s Oceans*.

In addition, Arctic Kingdom works with specialists in polar science from around the world including managing research campaigns for the Alfred Wegner Institute* in Germany, Environment Canada*, the National Oceanic Atmospheric Administration* and the University of Alberta*.

To ensure ongoing communication links with head office and other emergency services, Arctic Kingdom sets up its own IT infrastructure in the camps to support satellite phones, GPS data, ice mapping, SMS messages and even blog or Twitter* updates. They have also set up post-production blackout tents for precise colour-corrected monitors.

Arctic Kingdom uses a combination of in-house servers for its CRM solution Maximizer*, online store and photo library, and HP* ProLiant* servers with Quad-Core Intel® Xeon® E5540 processor technology hosted by Apptix* to power its email and Blackberry* network. The company's infrastructure is further supported by a SAN storage solution, powered by Dual-Core Intel Xeon processors.

For seamless communication around the world, Arctic Kingdom uses Enhanced VOIP Communications Inc*'s Easy Office Phone Service*, a VOIP PBX system powered by an Intel® Xeon® 2.8 GHz processor, to support the company's eight full-time and 50 contract staff.

"We need our network to be bulletproof and reliable," says Dickson. "We have redundancy in everything we do."

From trips with two people (the expedition leader and customer) to large groups of up to 50 people on a film crew in two to three different camps, Arctic Kingdom needs to bring in all its food, fuel, vehicles and communications infrastructure.

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Connected From Remote Locations

While working in the field, Arctic Kingdom selects one of four methods to connect to the internet: a northern town's wide area Qiniq network; in-camp satellite dish; Inmarsat* satellite for ISDN; or the IRIDIUM* global satellite network providing slower bandwidth speeds but is available worldwide.

"Setting up connectivity in the north is challenging because of the horizon. The IRIDIUM network works everywhere but is slow and the Inmarsat system is faster and more portable but costs more per megabyte," says Dickson. "Bandwidth management is critical so we strip out headers and attachments to make messages much more bandwidth efficient."

With accessibility costly and challenging in remote communities, Arctic Kingdom needs software solutions that can be easily accessed from the field.

Dickson's laptop has Intel® Virtualization Technology (VT) which allows him to create separate profiles for field work "that strips out software program updates and dramatically cuts bandwidth needs."

"We need software that has a client side solution so we can work online and offline easily," says Dickson, noting Maximizer gives them the flexibility to access customer, supplier and partner data from anywhere.

"We also use Microsoft* Exchange and Blackberry* Enterprise Server through Apptix," he says, adding they rely on the dependability of Apptix's servers powered by Intel Xeon processor technology to ensure high availability.

Performing In Rugged Environments

Arctic Kingdom puts its technology through the paces. Expedition leaders choose PC or Mac* laptops with Intel processors for the reliability they need in severe environments. Louise Murray, an expedition leader and professional photojournalist says "there's no other choice than a Mac as far as I'm concerned." Her Mac laptop powered by the Intel® Core™ 2 Duo processor works easily with the programs needed to edit and handle professional photographs. It's also built to handle the extreme climate. "My Mac has travelled the arctic on snowmobiles, sleds and in backpacks in extreme temperatures down to minus 30," she adds.

Dickson travels with a Dell* Latitude featuring the Intel Core 2 Duo P8800 processor and a back up netbook with a large hard drive to back up files in the field.

"Generally ruggedness and speed of computers is important for us," says Dickson. "They tend to be subject to vibrations and are being used extensively in conditions where cold, moisture and even salt water can be a factor. We generate power through solar and quiet inverter generators with built-in power conditioning so being able to support electronics is a big deal."

In this environment, battery life is important, especially in the cold climate which can sap battery life, adds Dickson.

While laptops are used to let people follow an expedition online through Twitter or blog updates, they are also critical to monitor weather, ice data and other factors required for field safety.

"We work with Noetix*, an Ottawa-based company, to download and interpret the best routes through the ice," says Dickson, noting they also work with Richmond, BC's RadarSat-2*, to access real-time satellite imagery and talk with scientists from the field to confirm what they are seeing on the ground. Expedition leaders also use satellite imagery from the Canadian Ice Services* and NAV Canada aviation weather charts to keep people safe and plot the best air or ground routes.

"Three years ago, I was in a base camp in the Northwest Passage and got a request from another expedition 600 km south of me. They needed advice on a safe route around an ice pack that was moving," recalls Dickson. "I was able to download ice imagery for the area and send them SMS messages with navigation details."

Virtualization Allows Environmental Control

With internet connectivity costing as much as $8 a megabyte, Arctic Kingdom tightly controls uploads and downloads. Every laptop that is brought into the field is configured to minimize bandwidth use. Dickson's laptop has Intel® Virtualization Technology (VT) which allows him to create separate profiles for field work "that strips out software program updates and dramatically cuts bandwidth needs."

Dickson has also used VT to create a testing environment for software they are considering, such as geo-mapping or photography and planning software without having it impact his main work machine.

About Arctic Kingdom Marine Expeditions Inc.

Since 1999, Arctic Kingdom Marine Expeditions Inc equips guides and supports expeditions to the logistically demanding Arctic and more recently Antarctic regions. The company has run more than 20 significant projects involving more than 50 remote locations, including all arctic location management for Disneynature's Oceans, released in 2010. Arctic Kingdom continues to develop, test and prove cutting-edge technologies, to improve safety, navigation and understand and react to the ever changing polar environment.

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