



1. Jill Scott, System/Network Administrator, Lauder.
2. Afa Logovae, PC/LAN User Support Specialist, Wellington.
3. Stuart Pigneguy, Unix System/Network Administrator, Wellington.
4. Colin Tinker, System/Network Administrator, Wellington.
5. Ivan Vari, System/Network Administrator, Wellington.
6. Matthieu Castellazzi, System/Network Administrator, Wellington.
7. Inside Kupe, our Cray T3E supercomputer.

# Shiny kit – for the planet’s sake

Real computing grunt comes when a company has smart analytic capability and the best tools for the job.

“We don’t have shiny kit for the sake of it,” says Arian de Wit, NIWA’s General Manager, Information Systems. “Our scientists are trying to understand and solve complex questions. And that science is fundamental to a sustainable future. I think that’s why most people work here – environmental sustainability – it makes the job worthwhile.”

In 2007–08 NIWA spent around \$1 million on IST (Information, Systems, & Technology) capital investment. Planned expenditure in the coming year is \$2.4 million.

A new Storage Area Network (SAN), for example, will increase the company’s central data storage fourfold. At 200 Terabytes, that’s equivalent to about 200 million novels. Scientists will use the SAN to store ever-growing datasets

such as those from New Zealand’s only high data-rate X-band satellite receiver (at NIWA Lauder) and New Zealand’s only regional climate model (run on the supercomputer at NIWA Wellington).

NIWA science has distinct IST needs, especially in supercomputing, environmental monitoring, and vessels.

The SAN purchase decision, for instance, is taking into account the needs of a new supercomputer. “We’ve had great mileage out of our Cray T3E. Excellent science continues to be done on a 9-year-old machine but our scientists would love to tackle bigger problems,” says Arian. The current supercomputer’s theoretical peak performance is 638 gigaflops (638 x 10<sup>9</sup> operations per second), but NIWA is considering options for a replacement which is likely to be 100 times more powerful.

2007–08 saw the company pass the mid-way point in a 3-year programme to upgrade NIWA’s environmental monitoring networks to fail-safe standards. “Our environmental forecasting models ‘assimilate’ real

time data to improve forecast accuracy. Reliable systems are a critical contributor to forecasts that can help protect property and save lives,” says Arian.

At sea, the push is on to continuously improve IST facilities for science and vessel operations. This year, an IST specialist has spent 126 days at sea, mostly on *Tangaroa*. “Stephen [Robbins] has streamlined systems, like installing new satellite connectivity [for email and data transfer from ship to shore] – jobs that can’t be done in a 2-day turn-around in port.”

And that’s not the half of it. NIWA’s IST staff of 33 are run off their feet. Arian grimaces: “If we weren’t a science organisation, our IST would be much simpler. But if I wanted that kind of job, I’d work for a bank.”

