



CASE STUDY

Monitoring a highly complex database estate



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The Customer

A public university based in Queensland, Australia, with multiple campuses, and research and teaching facilities.

The Challenge

Monitoring dozens of servers and hundreds of database instances, particularly during extremely high traffic enrolment weeks.

The Solution

A monitoring tool offering a wealth of actionable information about, and insights into, SQL Server instances, availability groups, clusters, and virtual machines.

The Results

Redgate Monitor now plays a key role in helping the IT team handle day-to-day operational issues as well as coping with high traffic periods.

“You can be as good as you can be throughout the whole year, and if you have a bad enrolment experience, that’s what everyone remembers.”

Lindsay Hegarty, Manager Enterprise Applications and Data Management

The Customer

The University of the Sunshine Coast is a public university based in Queensland, Australia. As well as its flagship campus at Sippy Downs, it has campuses at Moreton Bay, Fraser Coast, Caboolture, Gympie, and SouthBank. It also has research and teaching facilities at the Thompson Institute, the Sunshine Coast Health Institute, and the K’gari Research and Learning Centre.

Since it was founded in 1996, USC has grown rapidly – and continues to grow. It’s now the academic home to over 25,000 students, 1,000 permanent staff, and another 1,000 seasonal staff who assist with key academic sessions

In a big organization like USC, core identity information about staff and students, degree subjects and timetables is used by a number of different systems like HR payroll and student administration. To enable this, the university has created a Data Hub to store the active information in one place that is updated in real-time and shared among the systems that need it.



Lindsay Hegarty, Manager Enterprise Applications and Data Management, heads up the two teams which manage the Data Hub and the systems that need to access it. The data management team maintains the Data Hub and its integration with the different systems and the enterprise application team look after the HR payroll and student administration systems.

The university IT environment is very complex with dozens of servers and hundreds of database instances, mostly on-premises, with a small number in the cloud, along with dozens of different applications that access them.



25,000

STUDENTS

2

DATA CENTERS

100S

SQL SERVER INSTANCES

“It's like a Formula One car. You're continually tinkering with it to make it perform as optimal as possible, and that's exactly what we do.”

Lindsay Hegarty, Manager Enterprise Applications and Data Management

The Challenge

The main tasks of the DBAs are the day-to-day monitoring of activities, backups, creating indexes and performance tuning, maintaining security updates, and upgrading the SQL layer of the application stack when the applications themselves are upgraded. This is an ongoing effort and, with four versions of SQL in use, the team also need to apply Microsoft patches to the operating system and the SQL layer on a monthly basis.

Student enrolment is a particularly challenging time and the team at USC are measured on how successful they are at managing the issues that come up. There are generally two core semesters in Australian universities and the big rush, and pressure on the student administration system, is the month before each core semester starts. That's when students choose their classes and book the favored timetable slots.

While this is expected at the beginning of every semester, USC is growing rapidly and, with thousands and thousands of students accessing student applications at the same time, each succeeding semester brings its own challenges.



To provide a clear picture of everything that is happening across the complex IT infrastructure at USC, multiple layers of monitoring are in place. A suite of monitoring applications and processes provide a constant, rolling visual feed on monitors so that the team can spot problems when they arise before the phones start ringing at the helpdesk.

While a database monitoring solution was in use, its features were limited, the user interface was outdated, and it wasn't particularly easy to use. The team decided to look for a new third-party monitoring solution that would be able to handle the day-to-day challenges as well as help monitor and analyze the enrolment process.

“There’s nothing better than a visualization to keep an eye on things. It’s much quicker than trying to understand numbers and stuff buzzing across the screen.”

Lindsay Hegarty, Manager Enterprise Applications and Data Management

The Solution

The team reviewed a number of alternative solutions before deciding on Redgate Monitor. They were initially drawn to its web-based, user-friendly interface, which allows them to view their entire estate on one screen from any location.

They soon found out that it also gave them access to a wealth of information about their SQL Server instances, availability groups, clusters, and virtual machines. They could view the patch status of all of their SQL Servers, for example, which would help with their monthly patching requirement. They could also see the status of SQL Agent jobs, find and fix slow queries, set up pre-configured and customizable alerts, and view and track disk usage.

The real winner for them was being able to pinpoint the causes of performance issues. This is the feature they now use regularly because they can identify what they need to focus their efforts on when it comes to resolving problems and tuning.



It's also where Redgate Monitor came into its own during the regular enrolment process. To handle the rush of thousands of students, the Student Services and IT team at USC split it across three days. At 8am on a Monday morning, the first wave hits the system really hard and then eases off after just 20 minutes if everything goes well. This is repeated on the Wednesday and Friday of that week, and to cope with the surge, the team does both proactive and reactive monitoring.

They prepare as best they can beforehand and, if something changes or is different during the first enrolment day like an indexing issue, they have one day to fix. Using Redgate Monitor, they were able to drill down to the cause of problems that came up, analyze them, find solutions and implement them before the next wave.



The Results

Redgate Monitor has now taken its natural place among USC's monitoring systems. It's particularly useful at very busy times like enrolment, but it's also become invaluable in handling the day-to-day operational issues. It saves the team time when monitoring how the databases are performing, and takes care of the many administrative tasks that are necessary to manage the entire server estate at USC.

Importantly, the estate-wide overview and alerts it offers on a single screen fits in with the way the team works. They like to know the moment a problem arises so that they can get to work and be resolving it before the helpdesk phone calls start coming in.