



**HIGH-AVAILABILITY**

**RSF-1**

**SITS:VISION**

# **Success Story**



## **The world never stops...**

The University of Sunderland is a dynamic, modern university with a growing reputation for teaching quality and leading edge research. It has some of the UK's best higher education facilities and resources. Recognised by The Guardian as England's best new university in 2001, and rated best new university in the UK for the overall quality, range and quantity of its research, Sunderland is making a major contribution to the North East economy.

Investment in the award-winning Sir Tom Cowie Campus at St Peter's continues and work has started on the first phase of a £20m centre which will be home to subject areas such as journalism, TV, video and radio production, film studies and cultural studies.

With a graduate employment record of 94 per cent and strong links with business, industry and the community, the University of Sunderland has established an enviable reputation as the university of enterprise and employment. Distance learners throughout the UK and overseas have access to a range of information and support services, including a variety of electronic sources, document delivery and postal loans.

The student records system, formerly CHA, which has run for a number of years on a DEC VAX Cluster, has been replaced by e-vision from SITS [www.sits.co.uk](http://www.sits.co.uk), running on a SunFire Cluster provided by Sun Specialists Esteem.

"Essentially, we were moving from a character-based user interface running on VAX to a new multiplatform GUI system on Sun," says University of Sunderland systems manager David Conway. "The University had a clear idea of how we wished the application to work and we recognised the need to maintain very high availability in a resilient environment for student access - 24 hours a day, seven days a week. We selected the RSF-1 solution because it was effective, simple, and flexible, and HAC demonstrated their ability to provide a close partnership relationship".

"We employ Oracle as our relational database, and also use Uniface, the language in which the SITS student records system had been written. To eradicate the need to roll out application elements to users desktops, we also use Samba, allowing us to present NT shares from the Unix environment," says Conway. "In this way we move away from the typical fat-client approach and have a flexible n-Tier approach allowing us to move elements of the application from location to location or machine to machine."

"The University philosophy is to provide resilient systems, considering all elements of disaster recovery. This means we look to house systems in physically separate locations, and this means different buildings with separate power feeds, with multiple resilient connections to our network".

"We looked at the option of developing our own clustering solution but discarded the idea because of the complexity of managing scripts, upgrades and database migrations. It would just have consumed too much resource. An option was to run without clustering, and look at simply mirroring storage and a second backup server. However, the University required near instantaneous failover to a secondary system in the event of the total failure of the first system".



# Perpetual Education @



SITS:VISION

University of  
Sunderland



The university considered other proprietary options and eventually decided on High Availability. Com's RSF-1 solution. HAC designed and developed the first high-availability solution for Sun Unix servers in 1995. The company has been leading the mission-critical market ever since with innovative products to maximise availability of customers' business IT and Internet-facing functions. Solutions span the range of requirements by today's market to ensure completely undisturbed environment uptime, and the company sells and supports products to customers throughout world.

RSF-1 ensures critical applications and services keep running in the event of system failures. Typically, it sits between the storage volume management and application layers of Web, application, firewall and database servers. It provides support for most leading applications. The system offers a simple, powerful configuration and management framework that allows customers to deploy high-availability solutions in hours rather than days.

With optional monitoring agents for many popular databases, middleware and end-user software, RSF-1 is able to switch critical applications from servers with network, hardware, OS, or application failures to alternative servers in the cluster to minimise downtime. Incorporating feature-rich command-line and GUI interfaces, RSF-1 allows manual and automated fail-over of up to 200 critical applications and services within a 2-64-node cluster.

"Cost was not the prime factor - other prospective solutions were about the same price. But we really wanted a complete solution that was as much to do with supplier relationship as product excellence and simplicity. On all counts, HAC had the right answers. Key selection factors were simplicity and reliability. We particularly liked the way the solution works around scripts that we can modify ourselves, with full support from HAC".

Due to HAC co-ordinating with the University and partners, installation was accomplished in just one day, "including initial handover testing" says Conway. "The University then spent another few days familiarising ourselves with the software and running formal failover tests - from network elements to individual disks. Scenarios included Oracle failure and application failure among others - and RSF-1 worked in every case. A particular requirement was that if we lost connections to our Oracle database on the primary machine we didn't want to fail all services across to the secondary without trying to restart Oracle first".

Benefits? "Since we implemented the system we have had no unplanned downtime. The combination of our systems philosophy, Sun and SITS supported by RSF-1 does exactly what we want it to do. For SITS users it means their system is always available no matter if we lose connectivity to a server or have application problems. Because SITS-eVision is to be our main interface for students that is a major accomplishment".

"If a problem occurs we want immediate failover - we don't want to learn about it the next morning. A feature that impressed us is that as well as having a simple command line interface, there is also a GUI for people who are unfamiliar with Unix. This provides additional security because you have the option to give control of the cluster to other support staff without passing across unix root passwords".

