

The Designer Hosting Solution



Design Council

The Design Council has been championing design for more than 60 years, helping businesses to become more successful, public services to be more efficient and designers more effective. It serves a diverse range of organisations, from small businesses to schools, helping to transform the way in which they operate.

The Design Council is instrumental in supporting and strengthening the UK's economy and society. It helps those that drive new ideas and new thinking, using design and creativity to generate innovative solutions to complex problems.

The challenges

The Design Council is funded by the UK Government and promotes the use of design throughout business and public services. Their complex hosting solution had to be secure, highly available and support their new website.

"It was time to look at our network infrastructure. We were pleased with the stable managed hosting Claranet had provided over the past four years and we wanted to update our infrastructure to support our new website. It was vital that the site could be accessed 24/7 with as little downtime as possible," said Victoria Rogers, Web Infrastructure Manager at the Design Council.

Michael Bouguenon, Claranet's Key Account Manager agrees, "It was essential that the solution kept downtime to a minimum. From our experience with the Design Council we understand that it has multiple audiences, ranging from public sector organisations to small businesses and entrepreneurs. Each have different needs and purposes for accessing the site, but the availability of the site is of paramount importance."

The solution

In response to the needs of the Design Council, Claranet created a solution with multiple fail safes; from a backup secondary router providing redundant internet feeds to load balancing web-servers at the systems level, Claranet attempted to minimise the impact and visibility of any potential service-affecting faults.

Resilience

The first layer of redundancy is provided at network level via use of the Hot Standby Routing Protocol (HSRP).



"In the event of network failure the HSRP protocol provides backup through a secondary router. Several routers can be connected to the same Ethernet network and work together to present the appearance of a single 'virtual' router to the host. In the event that a router fails, hosts on the LAN are able to continue forwarding packets to a consistent IP and MAC address. This process of transferring routing responsibilities from one device to another is transparent to the user and host," explains Michael Bouguenon.

At a systems level, application availability is ensured by load balancing the front-end web servers. Some load balancer implementations consider every HTTP response a sign of good health. This can even include HTTP error return codes such as '404', giving a false indication of uptime. It is standard practice for Claranet to monitor host integrity using HTTP 'keep-alives'. In the case of the Design Council's hosting, this involved configuring words or phrases in an HTTP keep-alive document, ensuring that the host is not only 'up', but that it is also functioning correctly and keeping downtime to a minimum.

A 2-node, single quorum Microsoft SQL cluster was also deployed to provide the Design Council with a highly available database back-end.

A single quorum cluster maintains configuration data on a storage device connected to all nodes. In this instance Claranet has recommended the use of the HP MSA500 disk array.

In a 2-node active/passive cluster only the active server serves client requests. The passive node remains dormant, exchanging state information with the active node over a 'heartbeat' link. In the event of a catastrophic system failure, the second server 'fails-over' to become the active node, assuming responsibility for serving client requests in the process.

Monitoring

Claranet's 'N-Able' product was selected to provide advanced, granular monitoring of the Design Council's system services and resources.

To facilitate these extended monitoring options, a small application known as a 'probe' was installed on each machine in the solution.

Not only were hosts monitored for connectivity issues using standard ICMP checks (Ping), Claranet also configured the installed probes to monitor CPU utilisation, Disk Space capacity checks at a 5 minutes interval and a Memory swap test designed to gather metric information regarding both physical and virtual memory usage on the server.

Backup

A robust backup solution with a thirty day data retention period was put into place to give the Design Council peace of mind. The system performs backups with daily incremental changes and a weekly tape rotation ensuring the capture and integrity of data. In the event of serious data loss the Design Council can rapidly achieve recovery with minimal to no data loss.

The result

Claranet built and implemented a highly available and resilient hosting solution which supports the Design Council's website, offering fast reliable access for visitors to the site 24 hours a day, 7 days a week. Multiple fail safes are in place to safeguard the integrity of all critical data, giving complete peace of mind that downtime will be kept to a minimum. The Design Council are able to focus on their core business leaving Claranet to deliver a high quality, professional service.

For further information, please visit :

www.design-council.org.uk/

www.clara.net