Evidian

Systel

Profile

- Systel (www.systel-fr.com) is an integrator specialized in solutions for fire and emergency services.

Users

- Firefighters and EMS use Systel's suite in call centers of 42 administrative departments in France, where speed of response can be life-saving.

Challenges

- Deploying a Windows and Linux high-availability solution with Systel's application suite in France

Benefits

- Integrated software high availability solution based on SafeKit,
- Clustering solution independent of the hardware,
- Standard servers, without shared disks, placed in separate rooms for fire protection.

A software integrator deploys Evidian's SafeKit high-availability solution in firefighter and emergency medical services call centers.

Making a multi-platform application suite highly available

Systel needs high availability for its critical solutions:

- Ensuring 24x7 availability of its application suite meant for EMS and firefighters' emergency call centers,
- Having the same multi-platform clustering solution for its software solutions in Windows and Linux,
- Being able to isolate the servers in distinct rooms so as to protect them from fire-induced damage, for example.

To solve these constraints, Systel has chosen SafeKit, Evidian's software-only clustering solution.

Integrated high-availability solution

Systel deploys its application suite on two standard Windows or Linux servers without shared disks, as follows:

- Systel's software suite, including either Oracle Standard Edition or Microsoft SQL Server, is installed on each server,
- SafeKit, the software clustering solution, is installed on each server,
- A customized SafeKit module for Systel: real-time application data replication over the network, failure recovery and automatic change of virtual IP address.

Thus, with SafeKit, the emergency call centers (fire departments, EMS, etc.) equipped by Systel have a user-friendly, failure-tolerant solution. Moreover, Systel's customers save the cost of shared disks and Business editions of operating systems and databases.

Deployment of a SafeKit cluster at Systel

Phase 1. Normal status.

Server 1 runs the application. SafeKit replicates on server 2, in real time over the network, the files opened by the application. Only the modifications made by the application are replicated, thereby limiting the traffic.

There are no prerequisites in terms of server organization. For example, the files may be on a RAID5 disk on server 1 and on a simple disk on server 2.

Thanks to the synchronous replication of write operations on both servers, no data is lost in case of failure. Therefore, any set of data committed by a transactional application like Oracle is stored on the secondary server. (This possibility is not offered by products that implement asynchronous replication)..

### Phase 2. Switchover in case of failure.

If server 1 fails, SafeKit ensures switchover to server 2. SafeKit switches the cluster's virtual IP address and starts the application on server 2. The application retrieves the replicated files: no write operation on the disk is lost between server 1 and server 2.

Switchover timeout is equal to the failure detection timeout (30 seconds by default) plus the application restart time. (There is no timeout for returning or recovering the file system on the secondary server, as is the case with disk replication solutions).

Phase 3. Failure recovery.

When server 1 is restarted, SafeKit re-synchronizes the files automatically. Only the files modified on server 2 when server 1 was inactive are resynchronized. Server 1 is resynchronized without stopping the applications on server 2.
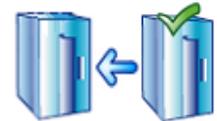
After this re-synchronization, the system is again highly available. The files are again in mirror mode; the only difference is that the application runs on server 2, with server 1 as backup.

If the administrator wants his or her application to rather run on server 1, he or she makes the switchover manually, with a simple mouse click, or automatically.

"SafeKit perfectly meets the needs of a software vendor. Its main advantage is that it brings in high availability through a software option that is added to our own multi-platform software suite. This way, we are not dependent on a specific and costly hardware clustering solution that is not only difficult to install and maintain, but also differs according to client environments. With SafeKit, our firefighter call centers are run with an integrated software clustering solution, which is the same for all our customers, is user friendly and for which we master the installation up to after-sales support."

Marc Pellas,
CEO,
Systel.

For more information: www.evidian.com