APPLICATION NOTE

Testing Over the Internet with RDS

Overview

RDS Intranet hosts test plans, test data, and other data on a single SQL Server that can be accessed from multiple test clients. While RDS Intranet is essentially a website, it was designed for LAN access within a site. Nevertheless, customers have pushed for extending it to multiple-site, global operations. For example, a company with fabs in California and Taiwan might use RDS Intranet to access the same test plans from a common server, and engineers at design and fab sites could examine data from any site.

There was concern that communication speeds might prevent effective global operation. That is because dealing with slower Internet access times was not a design consideration. To get a handle on what might be required for a global operation, tests were run using the Internet as the communication link between an RDS Intranet server and an emulated test system
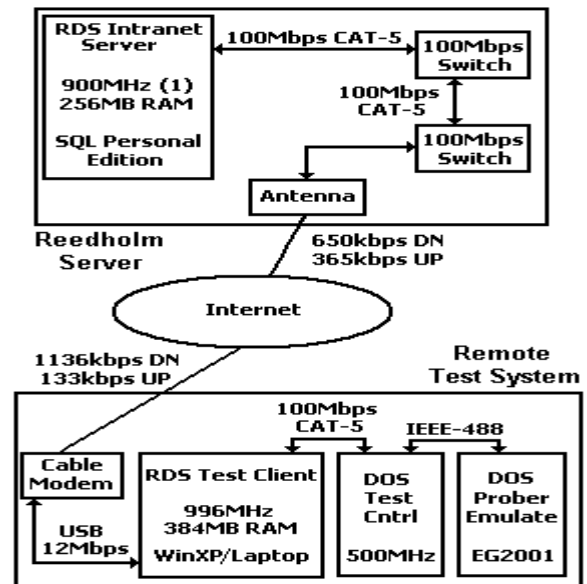
Test Configuration

With an RDS Intranet Server based at the Reedholm Georgetown, TX facility; a remote location was set up to emulate a test system. That is, a test client, test controller, and an EG2001 prober emulator PC were set up several miles away. Different ISP's were used for each site. Prober communication matched that of an EG 2001 prober using IEEE-488 interface boards.

Using the VPN (Virtual Private Network) illustrated in figure 1, a test client was connected to the RDS Intranet server. To slow down transmission, the remote test emulation was connected through a cable modem. The server at Reedholm accessed the Internet through a high-band wireless link.

Timing Measurements

Throughput for each connection was measured using the speed test at www.speakeasy.net. As shown in figure 1, the slowest flow was the upload rate of 133kbps (bits-per-second) from the emulated tester in Georgetown to a Speak Easy server in Dallas.

Figure 1 – Server to Client Connection Route

Test Results

Numerous wafer lots were emulated with 1167 die per wafer. There were no problems: no data loss, no interruptions, etc. Testing was robust and fairly fast. However, editing and moving between screens was noticeably slower than when the test client was tied to the server through a LAN. Maintenance jobs to backup to the database, the transaction log, and optimize the DB were run while testing and there were no errors.

Testing errors did occur when the network connection was unplugged for around 15 seconds in order to simulate intermittent communication. Testing had to be re-started after re-connection.

In summary, using an RDS Intranet server over the Internet is feasible with a stable connection path.