Halliburton Unit Uses Cloud-Hosting Solution to Eliminate IT Costs for Engineering Schools

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Robello Samuel, Halliburton Fellow, Halliburton

Halliburton already awarded no-cost academic licenses for its engineering software—but wanted to make it even easier for its academic partners to use it. That’s why it’s hosting the software on Windows Azure, eliminating the schools’ costs for on-premises installation, maintenance, and license management. The schools gain flexibility to add or move classes, and students can use the software on their own PCs and tablets.

Business Needs

College students seeking to enter highly technical professions need to learn the latest technologies. But the requirements of installing, configuring, managing, and updating software toolkits that offer those technologies can be a sizable burden for university IT departments, which are often stretched thinner than their corporate counterparts. What’s a university to do?

That is a particular question for the Landmark Software and Services subsidiary of Halliburton. Landmark’s popular, high-end solution for the complex task of designing and engineering oil wells—DecisionSpace® Well Engineering software—is just such a technology. Engineering schools want to introduce DecisionSpace software to their students, and Landmark grants no-cost licenses to its academic partners to help them do so.

But the schools’ IT departments still have to download and install the software on powerful workstations (which they must buy or redeploy from other uses), and then manage both the software and the licenses, consuming valuable IT time and money. Students, meanwhile, can only use the software where it is installed, rather than having it available to them in their dorm rooms, libraries, or other locations. When courses are over, the IT departments have to uninstall the software.

All these factors add to the time, cost, and effort required for engineering schools and their students to use the software, keeping them from using it as freely as they might wish. Landmark wanted to remove these impediments in order to make the software more widely available to them.
Solution
Landmark developed a deployment strategy to make the use of DecisionSpace software relatively effortless for college IT departments and their students and to give the company a standardized, repeatable way to make the software accessible to educational institutions anywhere.

The key to this strategy was migrating from on-premises deployment to deployment in the cloud. By migrating to the cloud, college IT departments wouldn’t be responsible for hardware or software, yet students could access DecisionSpace software from any authorized location. The company chose the Windows Azure platform.

“DecisionSpace Well Engineering software is built on Microsoft technology from end to end,” says Adam Hems, Cloud Strategist at Landmark Software and Services. “Windows Azure gave us all the features and security we needed, so it made sense to stick with technology that was already working for us, using the Windows Azure corporate subscription we already owned.”

To keep things simple, Landmark created a Windows Azure Virtual Machine for each student. Each virtual machine contained an instance of DecisionSpace Well Engineering software and a database running on Microsoft SQL Server 2008 R2 software. Students would access their virtual machines through any client with a remote desktop connection, such as campus PCs or their own PCs or tablets.

For security, Landmark configured the solution to accept IP addresses only from itself and its academic partners, so students would need to be on their school networks (a WiFi connection sufficed) or have VPN connections to them. The final element of the solution was a licensing server, which also is hosted on a Windows Azure Virtual Machine.

Landmark piloted its cloud-based strategy in the fall of 2013 at the University of Houston engineering school. The project supported 50 students in two drilling classes and ran smoothly. A subsequent deployment to a class of 150 students at Pandit Deendayal Petroleum University in India was equally successful. The company now plans to offer DecisionSpace Well Engineering software as a cloud-based service to other institutions.

Benefits
Landmark succeeded in virtually eliminating traditional time and resource requirements for DecisionSpace Well Engineering software deployments. It increased scalability for both its academic partner and itself. And it provided easier and faster access to the DecisionSpace software.

Speeds Deployment
Instead of the days or weeks typically required for university IT departments to complete on-premises deployments of DecisionSpace Well Engineering software, the University of Houston’s IT department spent virtually no time supporting the cloud-based service. The only requirement was that it provide the range of IP addresses to receive authorized access to the solution.

“By hosting DecisionSpace Well Engineering software on Windows Azure, we saved the IT department from the ordeal of dedicating resources to deploy it on 50 machines just before the start of the semester, when the demands on the IT department are the greatest,” says Robello Samuel, a Halliburton Fellow and the professor for the classes that used the cloud-hosted software. “For the first time, and without any significant investment on its part, the school provided its students with the current version of state-of-the-art software.”

By using Windows Azure through its Enterprise Agreement with Microsoft, Landmark also got a great deal for itself. Hems estimates that the company reduced potential hosting costs by 50 percent, compared with likely on-demand costs from another cloud services provider.

Supports Worldwide Scalability
The University of Houston engineering school also gained more flexibility in using DecisionSpace Well Engineering software. It gained the ability to move classes from one room to another without having to uninstall and reinstall software. And it could easily add a class if registration warranted it, without scrambling at the last minute to complete another classroom deployment.

“For our academic partners, the flexibility that we can offer with DecisionSpace software on Windows Azure Virtual Machines is a benefit you can’t put a price on,” says Samuel. “Technology is no longer a limitation to how they choose to use it in their curricula.”

That flexibility will likely prove a great benefit to Landmark, because it can now expand the service to support other schools simply by adding virtual machines. The company can now also consider offering DecisionSpace cloud-hosting as a service to enterprise customers.

Provides More Flexible Use
Students benefited too, of course, by being able to access the software whenever and wherever (on campus) they wanted it. That eliminated the need for trips to the classroom just to work on assignments. For the first time, students could use the software on their own PCs and tablets, alone or in ad hoc study groups in dorms or elsewhere.

“We’re able to give students a better, fuller experience with DecisionSpace Well Engineering software by hosting it on Windows Azure,” says Samuel. “That’s probably the biggest benefit of all.”