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Milhouse Engineering Manages the O'Hare Airport Project Quickly and Securely with GlobalSCAPE WAFS

Managing large multi-company design projects with GlobalSCAPE WAFS

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In 2005, O'Hare International Airport organized a collaborative effort to relocate and modernize a 2.1 million ft.^{2} runway. The IT/data management was led by Milhouse Engineering and Construction, Inc., with production including four other independent firms. Immediately, Milhouse Engineering's IT Manager Amar Singh began to consider the first challenge of the project—digital collaboration with large and sensitive CAD files among five unique entities.

The Challenge.

In an effort to achieve the optimal final design and construction, O'Hare sought to use the power of collaborative design, harmonizing the best ideas into one outstanding project. The O'Hare Airfield Engineers (OAE) was formed as a joint venture comprised of five world-renowned engineering firms: Milhouse Engineering, Edwards and Kelcey, Carter and Burgess, Delta Engineering, and Earth Tech. Collectively, these five industry leaders were to collaborate as one.

As the leading firm managing and housing data infrastructure for the joint venture, Milhouse Engineering bore the ultimate responsibility for management and dissemination of all project data, including CAD files. Amar was tasked with implementing a feasible system by which five separate companies with dozens of end-users from all over the nation could collaborate on thousands of files. Their data consisted of both Microstation DGN formats and standard office files that together totaled over 12 GB of project files. Furthermore, the solution would require that Amar find a way to work seamlessly within the various file management practices already in place at the other four firms.

Weekly Update from O'Hare

O'Hare

3 hour download

Milhouse

Instant Mirroring
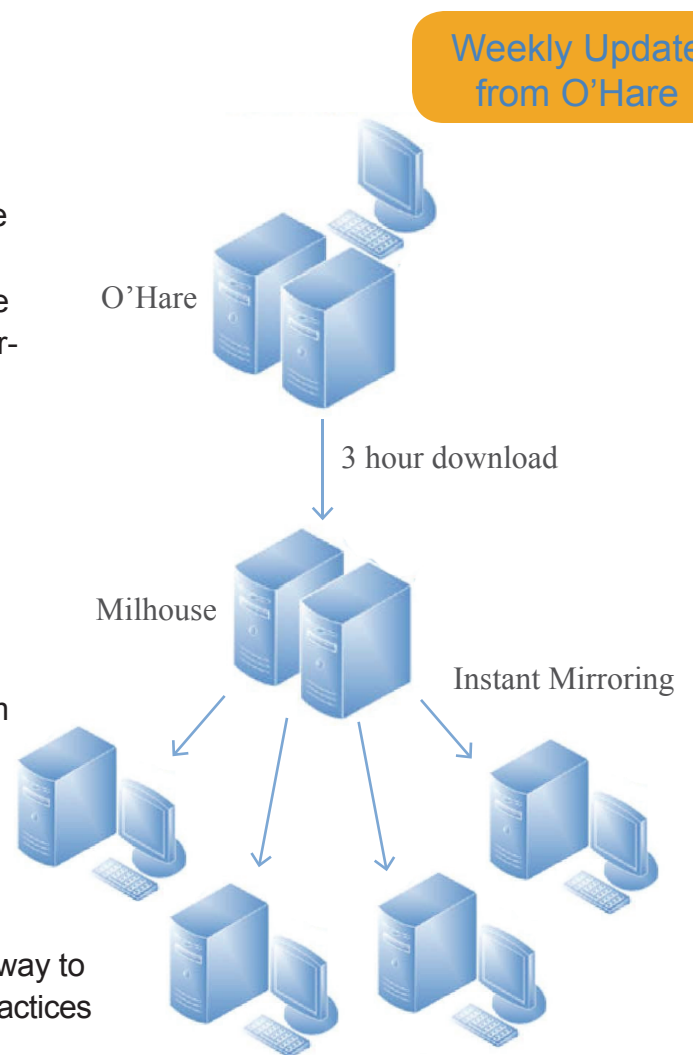
A New Solution.

Historically, projects for the O'Hare International Airport relied on a web-based file sharing and project management program that had been developed by their CAD software provider. However, the OAE joint venture was breaking new barriers in project scope, project team size, and the quantity of data involved. In a given week, Milhouse Engineering spent nearly three hours downloading the latest master files from O'Hare using this web-based sharing program. Then, those files had to be disseminated to four other sites before work could begin. Although O'Hare was resistant to any change, Amar insisted that a new solution must be implemented in order for the OAE joint venture to be successful.

Real-Time Access.

Amar's first and most overwhelming realization with GlobalSCAPE WAFS was the impact of true real-time file access. At each firm's local server, a small 2 MB application called the WAFS Agent was installed. Week after week, this small application allowed Amar to mirror the entire bundle of master files from O'Hare to each site in less than a second each week. "With this kind of file sharing," Amar commented, "the only delay due to data transfer was in the initial download from O'Hare, which was still accomplished through accessing their web-based sharing program." Using WAFS, files were accessible instantly upon download to every user in the entire OAE. And, while full file replication may still be in progress, WAFS' intelligent streaming feature allowed users to access any file before the replication had completed.

> **" All things considered, byte-level differencing proved to be the real power of the WAFS solution for us. "**
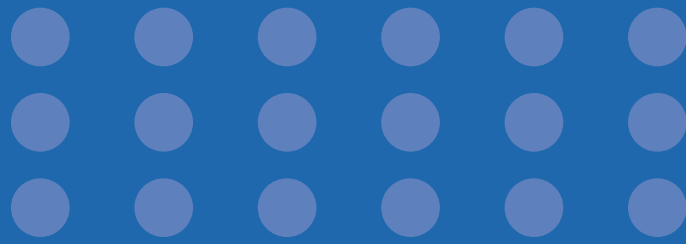
However, real-time file access with newly created files was only the beginning. Once this replication occurred in the first weekly download, subsequent downloads of updated files were mirrored with true byte-level differencing—sending only the small, file-by-file deltas to each server and minimizing bandwidth. As a result, Milhouse Engineering was able to forego the expense of a T1 connection and rely instead on their existing 6.0 Mbps DSL connection to share the 12 GB of project data effectively and efficiently.

> **"In nearly 2 years using this solution in the OAE, we have yet to have an issue with users unknowingly editing the prior version of an updated or in-use file."**

After file replication had completed just once—enabling true LAN speed access at each of the five firms' locations—WAFS also ensured continued file coherence through the same byte-level differencing capability. "All things considered, byte-level differencing proved to be the real power of WAFS for us," Amar noted. While the project DGN files can range from 0.5 to 20 MB, the only bandwidth traffic is the file deltas—the changed portion of the overall file. Amar went on to explain, "In nearly 2 years using this solution in the OAE, we have yet to have an issue with users unknowingly editing the prior version of an updated or in-use file."

Simple, Secure, and Scalable.

For Amar, who also heads up the Milhouse Technology division, the set-up of WAFS was almost disappointingly simple. "What set-up?" Amar remarked. "Usually, when an IT manager is tasked with a challenge of this magnitude it's an opportunity to be a hero, but WAFS was no challenge at all." Amar set up the WAFS Agent on his local server in a matter of hours using a simple firewall and designated port, basic Windows security, and classic HTTP protocol.

> **"Under the scrutiny of all five firms, the WAFS solution was unanimously approved."**
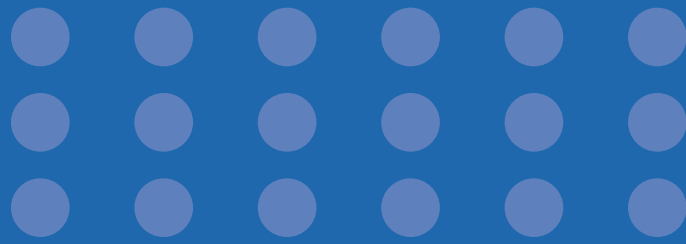
However, for any project that involves an international airport, security measures are obviously of first importance. Considering WAFS' obvious simplistic design, each of the four other firms in the OAE requested that their own IT staff also conduct a review of WAFS to ensure that it met their individual standards for security. Under the scrutiny of all five firms, WAFS was unanimously approved.

> **"The end-user interacts with files exactly as they have been accustomed. "**

In addition to security approval, the GlobalSCAPE solution also had to be compatible with each firm's internal file management practices. While the ultimate responsibility for data integrity lied with Amar and Milhouse Engineering, Amar had limited ability to dictate any alterations to the established internal practices of each individual firm. Fortunately, the WAFS operates unseen to the end-user. Not only was each firm unaffected by the introduction of WAFS, but Amar was also unburdened by any need to train Milhouse Engineering's own users on any new interface or practices. The end-user interacts with files exactly as they have been accustomed.

With WAFS operating in such an unassuming manner, Amar readily forgets about the more advanced features of the product—until they become vital, that is. At one point last year, one OAE member firm experienced an Internet connection outage for several hours. The event was actually so uneventful that Amar could only recollect that "WAFS handled it beautifully." WAFS invisibly switched from online to offline mode while the disconnected engineers continued to work on their local files. When the connection was restored, WAFS automatically managed any potential conflicts while it updated all other servers with the latest files. As a result, Amar had no crisis to speak of.

> **"Even in cases of accidental deletion or inadvertent overwriting, Amar has found no reason for panic. "**

Even in cases of accidental deletion or inadvertent overwriting, Amar has found no reason for panic. He simply restores a previous version of the file from WAFS' consolidated back-up system, which manages file versioning and point-in-time snapshots automatically.

Why WAFS?

"Since the project began, we have used nothing but WAFS for our file sharing." Amar explained. In the early stages of project planning, when Amar first realized the need for OAE to find a new solution for file sharing, he examined several competing packages. After reviewing options such as SharePoint, Robo-FTP, RepliWeb, and a number of web-based solutions, Amar chose GlobalSCAPE WAFS. Amar continued, "WAFS' ability to deliver true byte-level differencing made the choice clear."

Unlike some new technology adoptions that IT managers introduce, Amar has experienced zero resistance from users and received extremely positive feedback from management. "Even O'Hare has taken notice of the productivity that WAFS has enabled us to achieve," Amar remarked. As Milhouse Engineering considers similar projects for the future, Amar is confident in the ability of GlobalSCAPE WAFS to meet whatever demands may lie ahead.

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