Case Study:
Cloud File-Sharing Solutions

PROMISE® TECHNOLOGY, INC.

TaTung University

Solution Summary

Challenges
- A suitable cloud file management solution is needed for internal file-sharing between staff, professors and students.
- A cloud solution suitable for use on mobile devices is needed.
- Large email attachments caused bandwidth and server issues, so the solution must include email integration

The Promise Solution
- Deployed FileCruiser, an Enterprise File Sync and Sharing (EFSS) Solution that includes all the hardware, software and mobile apps businesses need to create their own private cloud.

FileCruiser VR2600 Pros
- Each host machine in the FileCruiser VR2600 system can support 3000 users, and four can be installed to work together and provide file sync and sharing services for a school of over 10,000.
- High usability and back-up support for all data
- Capacity can be expanded to a maximum of 320TB
- Effectively integrates with existing Active Directory index service and supports flexible access authority settings.

PROMISE FileCruiser Allows TaTung University to Focus 110% on Education

Li Xing-Han, Director of TaTung University's Calculations Center, chose to build their cloud file sharing system with PROMISE Technology's FileCruiser VR2600.

About TaTung University
TaTung Industrial School was established in 1956 and became TaTung Industrial Academy in 1963 before changing its name to TaTung University in 1999. The school has been in operation for over half a century and has spent that time cultivating the scientists, engineers and business people that have shaped Taiwan.

TaTung Co. was established in 1918 and is a major global brand. TaTung Group stocks are worth over 100billion NTD and it is involved in a diverse range of industries from photoelectronics, resource management, system integration, industrial systems, brand channeling, production development and more. TaTung University and TaTung Co. have always had a close working relationship.
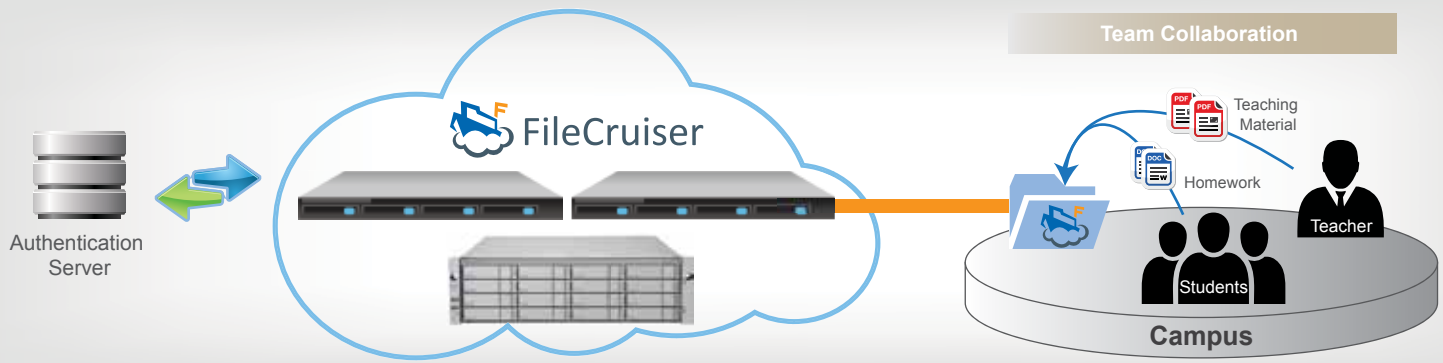
TaTung University's educational motto is 'Cooperative Education, Research and Development' and they aim to minimize the gap between what is taught and what is used. The university received a 30 million NTD subsidy from the Ministry of Education for 'Subsidies for The Third Excellence in Teaching Plan' for two years in a row.

Challenges
TaTung University used network hard drives to provide file sharing services between professors and students; however supported interfaces and vehicles were limited to a browser environment which was impractical for mobile access, making it an inconvenient system. When the school received recognition for Excellence in Teaching from the Ministry of Education they set up a Virtual Machine (VM) and a Virtual Desktop Interface (VDI) but the potential for these remained unfulfilled as access to the storage and sharing framework was only available on campus.

In addition, students may use the network hard drives, TaTung's 'Internet University', and email to download files, but it's much harder for them to upload files to share with others. It's also worth noting that sharing of information between professors and students usually takes the form of large files, and with the proliferation of smartphones more and more students and teachers are using mobile devices to receive messages. If large files are sent via e-mail attachment, it not only uses a large amount of bandwidth but is also impractical to download the files on a mobile device.

With network hard drives, the same group can share from a folder of the same name, meaning that a student uploading their homework has no way to protect their work from plagiarism. Professors can use 'Internet University' to stop students copying each other, but it is a one-way exchange from teachers to students and does not offer any avenue for student to teacher or student to student exchange. The platform is completely unsuitable for file sync and share (FSS) usage, and the school needed to improve this service.

Team Collaboration

FileCruiser

Authentication Server

PDF PDF Teaching Material

DOC Homework

Teacher

Students

Campus

Students can use FileCruiser to upload and share information, improving learning efficiency.

About TaTung University

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•   They have received recognition from the Ministry of Education under the 'Subsidies for The Third Excellence in Teaching Plan' for two years running, and are using this to promote and expand their cloud education services.

Promise Technology's FileCruiser VR2600 Meets TaTung University's Needs for File Sync & Sharing

Li Xing-Han, Director of TaTung University's Calculations Center, acknowledges that the existing network hard drives alone cannot support mobile access and present difficulties if the university wants to provide an efficient file sync and sharing system such as those found in a cloud environment. Therefore, they've decided to employ an on-premises FSS solution.

The file-sharing needs of a school are more complicated than that of an ordinary corporation. Professors need to share materials with their students, lecturers need to share basic content with an unspecified audience, students need to hand in homework, students need to share information amongst themselves, and all meetings need to be recorded and shared appropriately. On top of that, professors and students may sometimes fill multiple roles in different departments, classes, social clubs or other groups, making for a complicated structure. This is why the FSS solution TaTung deploys needs to integrate effectively with Active Directory index services to support flexible access authority settings.

In order to satisfy the multitudes of different usages, Li Xing-Han expects the FSS Solution chosen for TaTung University to support multiple types of sharing.

1.   Group Sharing: Group managers can automatically sync any newly-added file into the group folder, ensuring each member receives the file at the same time - enhancing online learning effectiveness.
2.   Share Links: All email attachments can be sent as a URL link. When converting the file, the user can set password protection and download limits to give others access to the file and maintain the file's security.
3.   Document Search: Allows masses of users to use a keyword search to find files they are authorized to download.

The Promise Solution

TaTung University evaluated several FSS Systems to find one that met all of the demands above. They discovered that most products did not provide a complete framework, could not integrate AD, only provided limited file sharing functions using traditional systems like FTP or Windows Network Neighborhoods, and generally did not meet the school's needs. After careful research only PROMISE Technology's FileCruiser VR2600 met all of the criteria.

FileCruiser VR2600 is part of PROMISE Technology's FileCruiser product line. It uses a FileCruiser server and Vess storage. Each host machine in the FileCruiser VR2600 system can support 3,000 users and four can be installed to work together and create a high availability redundant server and storage solution. Including staff and students, TaTung University's user network has between 4,500 and 5,000 users. They chose to use two FileCruiser servers, both using PROMISE Technology's Vess storage solutions. In the future, JBOD expansion can be used to expand the system's storage capacity to a maximum of 320TB.

FileCruiser VR2600

Promise Technology's FileCruiser VR2600 System

Highlights and Features

- Enhanced cloud applications and strong file synchronization capabilities creates a smooth cloud environment, allowing users to simultaneously save a file to FileCruiser and upload it to the cloud without any additional steps.
- FSS is fully integrated with index services, allowing for group sharing, share links, document search and other file-sharing methods that increase learning efficiency
- Email share links can be used to replace traditional attachments, reducing the load on bandwidth and server facilities and improving communication efficiency.
- Students can download documents found via search, avoiding complicated operation and increasing efficiency
- Capacity can be expanded to a maximum of 320TB as needed

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FileCruiser gives students and teachers a two-way street when it comes to file-sharing with enhanced cloud benefits

The Benefits

Enhanced Cloud Application Benefits

TaTung University has already been recognized for Excellence in Teaching and has established a cloud application environment as one of the main criteria for the Ministry of Education's Excellence in Teaching plan. They've developed a Virtual Machine, a Virtual Desktop Interface and cloud drive programs, but these solutions did not meet the data storage needs of students and teachers and the network drives used in the past were unable to directly sync information with the cloud. This means that users needed to manually upload files from the network drive to the cloud, adding unnecessary steps and necessitating different login interfaces - it's just inconvenient. In addition, network drives can only be accessed over a browser interface, limiting supported interfaces and vehicles and making the system unsuitable for mobile devices.

With FileCruiser, TaTung University can utilize its amazing file synchronization functions to create a smooth cloud application environment, allowing users to simultaneously save a file to FileCruiser and upload it to the cloud without any additional steps. In addition, students and professors can use a variety of devices to easily access files saved in the FileCruiser system, removing previous limitations.

File-sharing between Teachers and Students Improves Learning Efficiency

The adoption of FileCruiser allows TaTung University to completely integrate FSS and indexing services, while also offering group sharing, share links, document search and other different types of file-sharing. No matter whether a teacher wants to simultaneously share a file with a group of students, a student wants to search and access specific teaching materials, or students wish to share learning materials amongst themselves, it's easy as long as you have the correct permissions.

Plus, using FileCruiser, students can submit their homework to a folder designated by the teacher and other students will be unable to access that homework file - this protects students from having their work copied or stolen.

Share Links in Email

Participants in events such as lectures and meetings rarely belong to designated user groups. Event organizers needing to send out notes or administrators needing to share meeting records can simply use e-mail share links. These come with confidentiality features such as passwords and download limits, and provide a safe channel for participants to download the information.

In addition, not all students in a class will be from the same department, making it difficult to assign everybody into the correct user groups. In the past, you needed to manually enter all email addresses to send class information to a great number of students; now, using FileCruiser, you can upload the file to the server, set a password and generate a share link which students can search for using keywords, saving a lot of time for the professor and increasing learning efficiency.

TaTung University is where theory and practice meet. The university is constantly promoting learning productivity, striving for educational excellence, and working towards developing a multicultural, harmonious, innovative and permanently superior learning environment. FileCruiser VR2600 is here to play a pivotal role in helping them achieve that by providing smooth file sharing services across the school to facilitate an environment optimal for fluid information sharing.

Product Specifications

Deployment Architecture	FileCruiser VA2600	FileCruiser VR2600
Product Photo		
Server Model	PROMISE 3U-16 bay Intel Server	FileCruiser 1U Server
Storage Model		Vess R2600 iD (Dual Controllers)
Network Interface	1Gb Ethernet x 4	1Gb Ethernet x 4/ 10Gb Ethernet x 2
Server Expansion	-	Up to 4 servers w HA
Storage Redundancy	-	○ (Dual Controllers)
Storage Expansion	Vess J2600 sD (up to 3 JBOD)	Vess J2600 sD (up to 4 JBOD)
Mobile App		
OS Support	iOS, Android	
Secure Sharing	○	
Photo/Video upload	○	
Search	○ (By file name)	
File Management	○ (Rename, Move, Delete, Copy, Create)	
Open with 3rd App	○ (Open the file with 3rd party App)	
Host Agent		
OS Support	Mac, Windows	
Sync Resume*	○ (Auto data sync with resume)	
New Event Notification	○	
Upload File with Encryption	○	
Bandwidth Control	○ (Download/Upload)	
File Lock	○	
File Versioning	○	
Outlook Plugin – Mail Link	○	
Outlook Plugin – File Convert	○ (Convert and replace the attachment into FileCruiser Share Link)	
Access Permissions		
Share File Access Control	○ (Read/Write or Read only)	
Share Link Search	○	
File Locking	○	
Team Collaboration		
Team Folder	○ (Sharing folders/files between team members)	
Team Share*	○ (With access control)	
Team Sync	○ (Add comment to the specific folder/file)	
Event Notification	○	
Share Link	○ (With password, expiry date)	
Team Comment	○	
Security		
Remote Wipe	○	
Encrypted File Storage	○ (AES-256 Encryption)	
Secure File Transfer	○	
2-factor Verification	○ (4 digital passcode for mobile devices)	
Authorization	○ (Windows AD, LDAP servers or FileCruiser System Build-In, Radius*)	
Audit Trail & Reporting	○ (System, Storage, Admin and User events)	
Central Management		
System Dashboard	○	
Import User Accounts	○ (Using .csv format)	
Group Management	○ (With quota)	
Software/Firmware Upgrade	-	
Data Deduplication	○	
Data Compression	○ (From FileCruiser server to storage)	
System Alert	○ (by mail)	
Backup	○ (Backup to second backup server)	

* Release in SR1 (Q1, 2014)