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How Financial Institutions Can Leverage Thin Clients

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Financial organizations exist to serve their customers. Whether professionals are trading stocks or underwriting loans, they depend on their company's computing infrastructure for reliable access to real-time data in order to meet their clients' needs.

But as financial businesses have diversified, technological capabilities have evolved, and complexities have increased, a common by-product has resulted: data explosion. The impact has been massive. Many of the more pervasive problems that plague financial companies, including diminished workstation performance and degraded security, can be directly attributed to lack of data management in the wake of the increasing scale.

This has impacted IT personnel too, with the management of hundreds or even thousands of PC workstations regularly requiring administrators to perform routine maintenance chores manually.

Happily, solutions exist for improving data management: thin clients in conjunction with data center centralization and app virtualization. Replacing PC workstations with thin clients offers financial companies the opportunity to dramatically reduce total cost of ownership. Implementing a thin client solution provides security enhancements by protecting data within a central server. Centralized management and thin clients can save IT administrators countless hours and headaches in operations and management.

This white paper describes how thin clients make centralization easier to manage. It will also discuss the joint Fujitsu and Citrix solution as well as the benefits of improved performance, security and flexibility for financial organizations.

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Business Challenge Summary

IT data centers, including all sorts of software, hardware and other technologies, have spread out to support branch offices, implement failover and business continuity plans, and generally have become complex and costly to manage. It can be a nightmare to manage multiple data centers while deploying hundreds or thousands of workstation PCs, and keeping all apps upgraded in a timely fashion.

Solving the workstation problem, however, is quite simple: replace PCs with thin clients. Thin clients provide users with all the features and capabilities of PCs, but they do not come with the management hassles. They also ease the transition to centralization and app virtualization.

Deployment of thin clients can dramatically reduce the complexity of managing endpoint devices such as workstations, all-in-ones and desktop PCs in an enterprise setting. Financial enterprises that have multiple locations and a fleet of endpoint devices can manage all with the help of just one or two administrators. Thin clients can also perform workloads equivalent to traditional endpoint devices without the downside of having a burgeoning complex IT infrastructure that comes about as a result of the expansion and diversification.

And the user experience is not diminished a single whit by the transition from PC workstations to thin clients. Users retain all the capabilities that PCs provided, but they do not experience the frequent downtime

and clunky performance of aging machines. Thin clients even offer ergonomic advantages that can ease usability issues and enhance employee satisfaction and productivity.

Financial institutions considering the implementation of thin clients should assure that the chosen solution offers the following features:

- Cost savings at the front end and endpoints resulting from greater energy efficiency
- Cost and effort savings in IT operations, along with increased flexibility and scalability resulting in a more agile IT
- Micro-sized IT footprint and noise reduction that promote user ergonomics

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Overview of Fujitsu

Fujitsu FUTRO Thin Clients deliver software that helps companies deploy and manage dynamic infrastructures that enable improved service quality, increased flexibility and enhanced efficiency. FUTRO Thin Clients are designed for the virtualized and automated environments that help drive business agility.

Thin clients can help companies with a strategic IT outlook deploy just about any number of endpoint devices they want without a risk to the overall security. For example, having thin clients as an endpoint device for your organization's computing needs can help provide the flexibility of scaling up or down. In the event of moving location there is no risk of data loss from misplaced or stolen devices since all the data resides in the data centers.

Fujitsu FUTRO Thin Clients fulfill many of the key objectives of the Citrix Ready Financial Solutions Program such as:

- **Security:** Fujitsu FUTRO Thin Clients provide scalability, flexibility and ease of management without compromising security. Indeed, thin client computing can substantially enhance security, providing powerful protection against threats such as Trojans and viruses. A thin client network also offers substantial protection against physical threats such as power failures. Since company data is stored on a central server, proprietary and sensitive organizational data is safer from all types of threats. Upgrades and patches can be applied centrally. Data security can be further enhanced, if desired, by disabling the copying of data with thin client external storage devices.

- **Compliance:** The security enhancements enabled by Fujitsu thin clients serve to protect organizations' systems and data. With all the data and apps in the data center, it is easier to comply with regulatory requirements as the audit footprint is reduced.

- **Flexibility:** Thin client deployment makes IT management easier by orders of magnitude. IT teams are made far more agile and are able to accomplish much more with far fewer resources. From the perspectives of both IT administrators and end users, workplace flexibility is substantially enhanced.
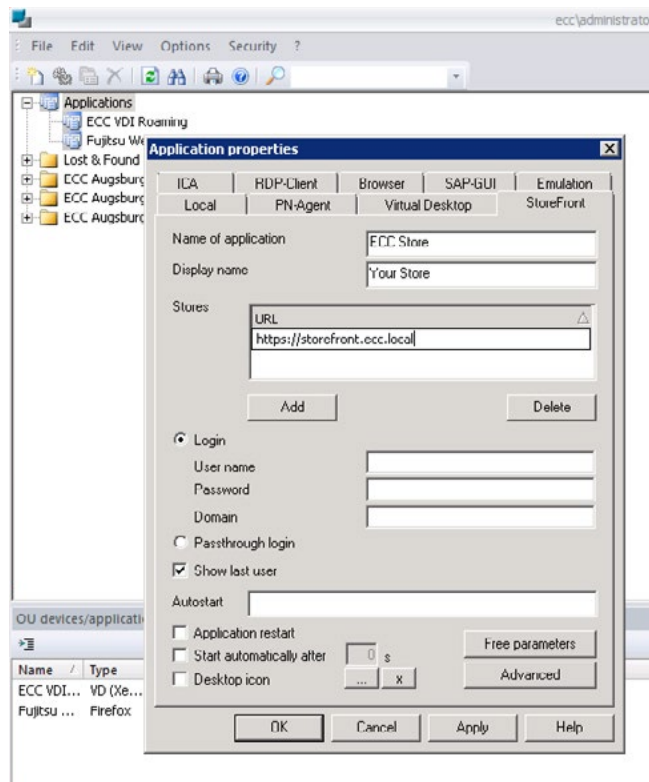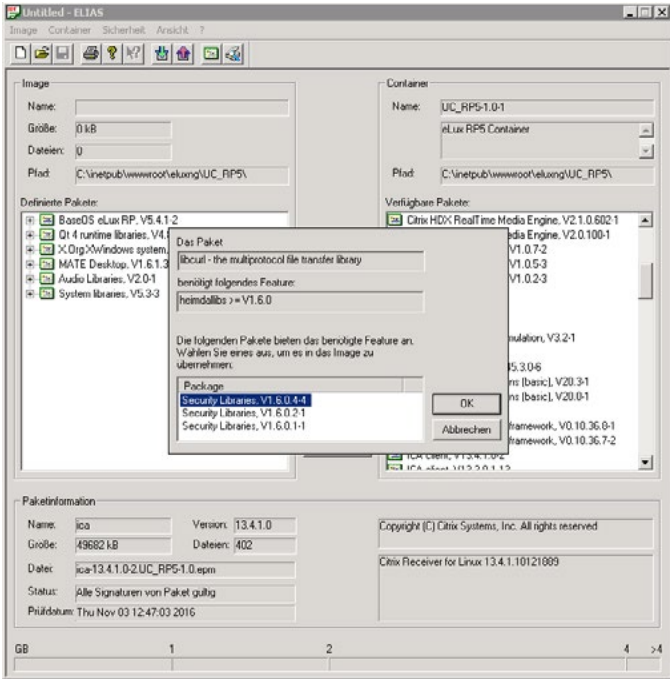
Fujitsu FUTRO Thin Clients are designed to interface seamlessly with Citrix solutions, leveraging the mobility and flexibility benefits of applications and desktop virtualization offered by XenDesktop and XenApp. These devices remotely access applications and desktops while the workload is handled at the server back end.

Fujitsu FUTRO Thin Client solutions coupled with Citrix and eLux by Unicon offer several advantages that help customers maximize on their investments such as:

- **Investment Protection:** Customers saddled with existing endpoint devices in the IT infrastructure such as Desktop PCs and all-in-ones can effectively convert them to thin clients by making use of the eLux operating system. Unicon Software helps customers migrate the same eLux license once those devices reach their end-of-life and the company goes for new Thin Clients.

- **Hardware Agnostic Approach:** Unicon Software, makers of eLux OS and Scout Enterprise Management Suite offer solutions that prevent vendor lock-in by following a hardware-agnostic approach maximizing value and protecting customer investments with ease of license management and migration.

- **Improved Ergonomics:** Office space constraints are no longer a major challenge owing to the small footprint, low noise and heat emissions and fanless designs available in some FUTRO models.
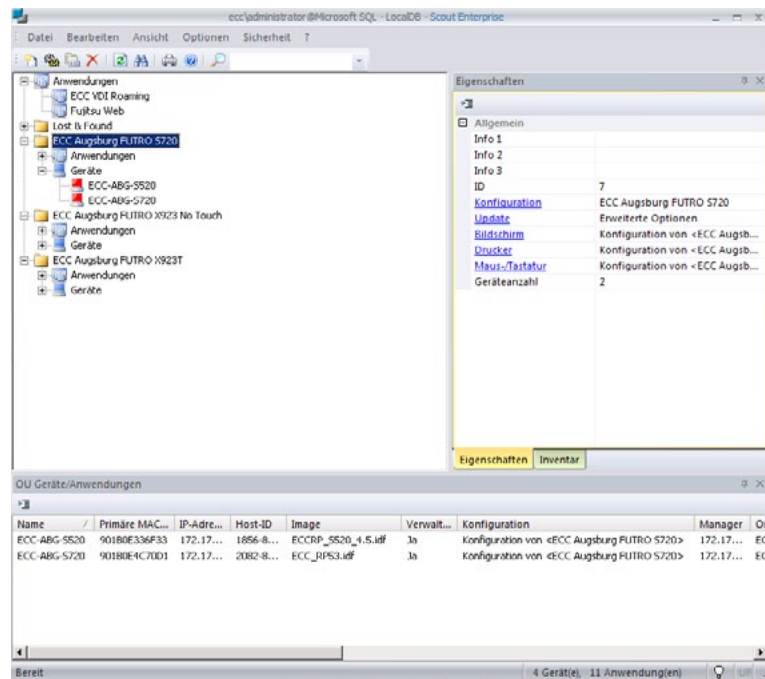
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Fujitsu Solution Detail

Fujitsu has been selected to participate in the Citrix Ready Financial Solutions Program because Fujitsu FUTRO Thin Client solutions provide value that is particularly relevant to companies in the financial services industry.

Fujitsu FUTRO Thin Clients work in perfect symbiosis with Citrix applications, providing financial institutions with the flexibility and capability necessary to enable secure server-based computing and desktop virtualization.

When deployed as a joint solution with Citrix, Fujitsu FUTRO Thin Clients help financial services companies achieve and maintain **security and compliance** critical in their vertical. The joint solution of Fujitsu and Citrix helps ensure that host systems and applications adhere to applicable laws and regulatory mandates.
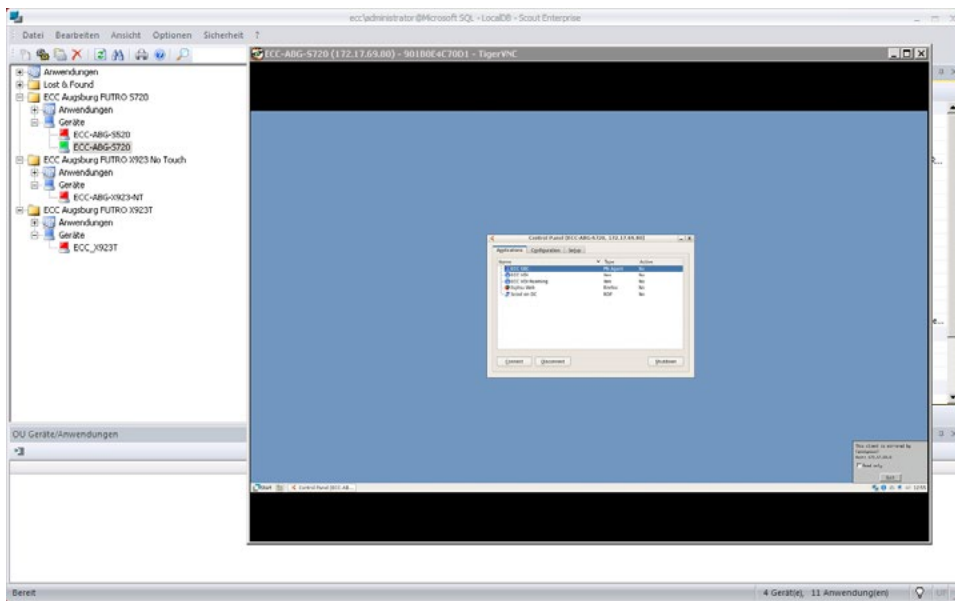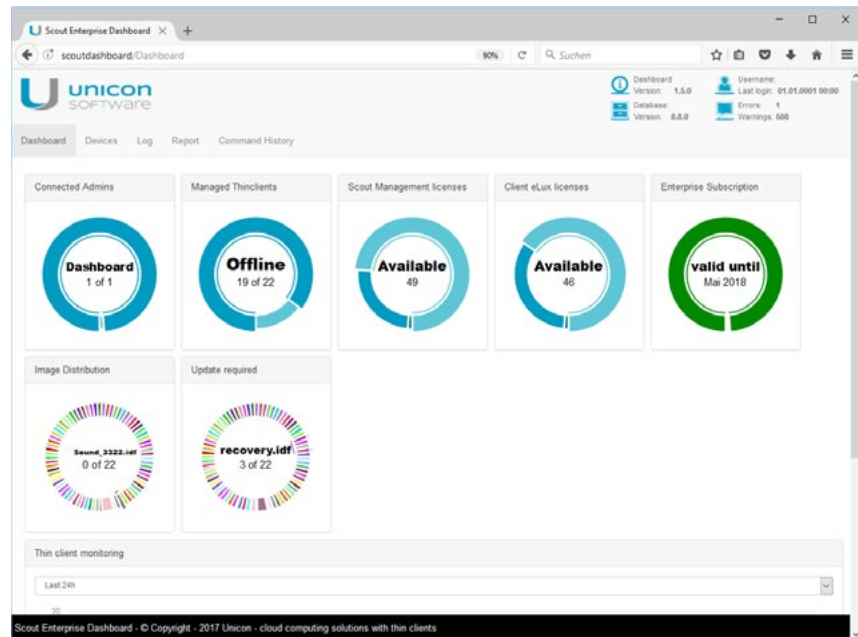
Fujitsu FUTRO Thin Client solutions provide many layers of security, including:

- **Data Security:** Combined with Citrix for SBC and VDI scenarios, eLux for device management along with features such as a write-protected file system helps prevent cyberattacks that might compromise critical data, protect against malware while ensuring business continuity.

- **Central Administration:** IT teams can manage large fleets of endpoint devices with greater ease and provides them greater control while increasing end user support experiences remotely helping them save on time and effort.

- **Increased Productivity:** Users have options of connecting multiple monitors (up to four displays) for various requirements in addition to using Unified Communications and Collaboration (UC&C) for their daily work environments.

Perhaps the single most important security benefit provided by a joint Citrix/Fujitsu thin client solution is the protection offered by the centralization of data. Data is not saved on the endpoint device. Instead, data processing only occurs within the highly secure environment of the data center.

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The data that financial professionals need to perform their jobs is readily available from the server at all times. But the data is not stored on the endpoint device the employee uses. The centralization of data also makes it easier for IT administrators to design, deploy and maintain an entire fleet while also ensuring that they maintain security and compliance requirements while scaling up.

Verification by the Citrix Ready program adds yet another layer of security. The Citrix Ready Financial Solutions Program recognizes that financial institutions must conform to a number of government and industry

regulations and that they must also provide employees with reliable access to information at all times. The thin client and virtualization solutions verified by the Citrix Ready program facilitate centralized management and real-time data delivery.

A joint Citrix/Fujitsu thin client solution also facilitates **centralizing, streamlining and securing** of IT operations. The result is reduced operational and management costs and complexities, with increased performance, availability and security of apps and data delivered to users at endpoints.

The centralized management model that is enabled with a joint Citrix/Fujitsu Thin Client solution is scalable to any size and deployable across geographic locations. Centralized management offers even the largest organizations the opportunity to do less with more. Consider this: the customer deploying the largest Fujitsu Thin Client installation requires only three administrators to serve and maintain the entire system — a strong testimony to the benefits of centralized management.

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A Successful Deployment

Centralized management and the standardized software structure utilized by Fujitsu FUTRO Thin Client solutions provide an unbeatable array of benefits. Fujitsu FUTRO Thin Clients are part of one of the world's largest centrally managed fleet of thin client installations comprising of more than 60 percent of the total endpoint devices deployed by a financial services customer through its IT service provider. Currently, the IT service provider centrally manages and operates more than 230,000 thin clients for the entire banking network spread across Germany.

The financial services customer first explored moving to a thin client solution in order to consolidate and virtualize its IT infrastructure. Prior to the conversion to a thin client solution, the IT service provider for the BFSI customer

managed around 360,000 users in more than 15,000 locations across hundreds of banks. The client-server infrastructure was primarily PC-based, incorporating more than 25 different types of hardware.

The planned objectives of the adoption of the banking network's thin client solution included the following:

- Enabling a comprehensive management solution
- Ensuring the ongoing high availability of banking operations
- Establishing the centralized hosting of applications

Upon completion, the project became the largest thin client network ever deployed. The

conversion enabled the financial services customer to enjoy all the above benefits of thin clients. Security was further enhanced by utilizing read-only file systems in the banking network's thin clients, providing excellent prevention against viruses and malware.

The extensive thin client implementation also substantially reduced service and support costs, providing a much lower cost of ownership than the PC workstations they replaced.

Employees even enjoyed some aesthetic benefits with the transition. The thin clients were smaller and less obtrusive than the bulky PCs they replaced, and the lack of rotating parts meant that a welcome silence replaced the ever-present whine of fans and disk drives.

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Citrix Ready Technical Details
Fujitsu FUTRO S920

Thin Clients	Feature Details
Link to Request Information or Demo	https://citrixready.citrix.com/fujitsu-technology-solutions-gmbh/fujitsu-futro-s920.html
Client Model	Fujitsu FUTRO S920
Client OS / Arch	Linux / x86 Windows / x64
CPU Options	AMD G-Series • GX-415GA (1.50 GHz, Quad Core, 2 MB, AMD Radeon™ HD 8330E) • GX-424CC (2.40 GHz, Quad Core, 2 MB, AMD Radeon™ R5E) • GX-222GC (2.20 GHz, up to 2.4 GHz, Dual Core, MB, AMD Radeon™ R5E)
Tested firmware version	eLuxRP 4.9.0* Windows Embedded Standard 7
Citrix Receiver version	13.1.4*
Central Management Software if available, its name	Scout Enterprise Management Suite
Does the client allow applications to be installed?	No. All applications are run remotely through the datacenter.
Does the client allow access to local files?	No
Does the client allow data to be cached/stored locally?	There is some private space on the system that can hold user accessible local files,but the OS itself is write protected. Local USB mass storage devices can be fully accessed of course.
Does the client include its own local browser?	Yes
Citrix HDX RealTime Media Engine Version available in firmware	v1.8*, supporting 640 X 368 @15FPS video resolution
Smart card(s) Tested (Lab)	SCM SCR3310 (Solo3)
Printer(s) Tested (Lab)	Canon MP620
Additional features customers would love	Automated FW update via PXE, HTTP or FTP, Screen Mirroring for HelpDesk Support and many more others

*For updates of the supported versions of Citrix and its components, refer to the product page at Citrix Ready Marketplace linked above.

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A Proven Partnership that Provides a Great Thin Client Solution for Financial Enterprises

Many financial institutions continue to rely on a model that has become decidedly anachronistic: using PCs for endpoints.

The tide is turning, however, with many of the world's largest financial institutions opting for large-scale thin client installations. One such example is the massive transition from hundreds of thousands of desktop PCs to thin clients as illustrated in the case of the German-based financial services entity.

The lower TCO enabled by thin clients is certainly a major factor in fueling the transition from PCs. But the drive to lower costs, shared universally by virtually every financial organization, is not the only motivation for companies transitioning to thin clients. Security is also a major driver.

The benefits of centralization also extend to IT administrators. Transitioning from PC workstations to thin clients enables centralized management. No longer are administrators forced to physically attend to every single PC workstation within an organization. Instead, all thin clients can be managed centrally. And the benefits of central management can be astounding.

Fujitsu FUTRO Thin Client solutions uniquely deliver all of the potential benefits of thin client computing and have been proven to integrate seamlessly and easily with the Citrix environments so commonly deployed by financial organizations worldwide.

Fujitsu's selection to the Citrix Ready Financial Solutions program provides financial organizations with a proven, reliable solution for enabling the many benefits of thin client solutions.

For more information about Fujitsu, please visit: http://www.fujitsu.com/fts/products/computing/pc/thin-clients/

To learn more about Fujitsu's thin client solutions, please visit: http://www.fujitsu.com/fts/FUTRO

For more information about Citrix application and desktop virtualization, please visit: https://www.citrix.com/virtualization/

Appendix

Learn more about the Citrix Ready Marketplace for Financial Institutions at: https://citrixready.citrix.com/info/financial-services.html

To learn more about the Citrix Ready program partnership with Fujitsu thin clients, please visit: https://citrixready.citrix.com/fujitsu-technology-solutions-gmbh/fujitsu-futro-s920.html

To learn more about security and performance solutions for financial enterprises, contact Citrix and Fujitsu.

Citrix Ready Financial Solutions Program Overview

The Citrix Ready Financial Solutions Program has been launched with the sole objective of building and sharing a library of white papers and case studies that portray the best integrated joint solutions for Financial Services and related industries. Each of these documents illustrates the teaming of a Citrix partner and Citrix solution in helping financial institutions to secure instant access to apps, data and communications on any device, over any network and cloud.

Through this program, we identify and showcase partner technologies such as applications, peripherals and endpoints that are essential needs for financial institutions. Our joint white papers illustrate how Citrix and partners work in symbiosis to address one or many of these use cases to customers' satisfaction:

- Workplace Flexibility
- Virtualizing and securing Business critical apps
- Centralizing, streamlining and securing IT
- FSI security and compliance

About Citrix Ready

Citrix Ready identifies recommended solutions that are trusted to enhance the Citrix Delivery Center infrastructure. All products featured in Citrix Ready have completed verification testing, thereby providing confidence in joint solution compatibility. Leveraging its industry-leading alliances and partner ecosystem, Citrix Ready showcases select trusted solutions designed to meet a variety of business needs. Through the online catalog and Citrix Ready branding program, you can easily find and build a trusted infrastructure. Citrix Ready not only demonstrates current mutual product compatibility, but through continued industry relationships also ensures future interoperability. Learn more at citrixready.citrix.com.

About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Approximately 156,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers. Fujitsu Limited (TSE: 6702) reported consolidated revenues of 4.7 trillion yen (US$41 billion) for the fiscal year ended March 31, 2016. For more information, please see http://www.fujitsu.com.