

**Sun's Tarantella
Acquisition Changes the
Game in Network Computing**

Sun's
Secure
Global
Desktop
Software

January 2006

White
Paper



Table of Contents

Sun's Secure Global Desktop Software

Sections	Section 1	Market Positioning	3
	Section 2	Competitive Positioning	4
	Section 3	Sun's Secure Global Desktop— The Environment and Related Infrastructure	5
	Section 4	Summary Observations	10
Figures	Figure 1	The Evolution of Client Hosted Applications to Network Delivered Applications	4
	Figure 2	Sun's Global Desktop Software Components and Connectors	7

NOTE: This report is based upon information believed to be accurate and reliable. Neither Summit Strategies, Inc. nor its agents make any warranty, express or implied, as to the accuracy of the information or the opinions expressed. We shall have no liability for any errors of fact or judgment or for any damages resulting from reliance upon this information.

Trademarked names appear throughout this report. Rather than list the names and entities that own the trademarks or insert a trademark symbol with each mention of the trademarked name, Summit Strategies uses the names only for editorial purposes and to the benefit of the trademark owner with no intention of infringing upon that trademark.

©2006. Reproduction in whole or in part is prohibited except with the written permission of the publisher.

Sun's Secure Global Desktop Software

In July 2005, Sun Microsystems bought Tarantella Inc., a leading provider of secure application access software. This acquisition undeservedly received only passing notice in the analyst community and moderate coverage in the press. But it is of enormous strategic importance to Sun Microsystems and its customers as each seeks to build and deploy next generation network computing architectures.

The Tarantella acquisition provides Sun with critical access technology that enables a wide variety of heterogeneous client devices to gain access to a wide variety of heterogeneous back-end servers and services. The Tarantella technology provides virtually all types of clients—including, laptops, desktops, wireless PDAs, pocket PCs, etc.—with virtualized network access to applications which would typically run locally on a client device but instead are hosted on back-end servers residing in a data center. This architecture completely decouples applications from the client operating systems enabling a single client to gain transparent and secure access to a wide variety of disparate applications running on Windows, Solaris, Linux, AIX and HP-UX and main-frame and midrange systems.

By using this approach Sun is hoping to redefine how “client computing” will take place in the future—moving application execution to very powerful, highly-integrated back-end systems rather than geographically-distributed, front-end clients. By so doing, IT buyers gain greater management control over their information systems environment—control that translates into reduced support costs, lower equipment costs and improved mobile client support.

The Tarantella acquisition becomes even more interesting as part of the larger Sun strategic picture. The Tarantella product (now referred to as

Sun Secure Global Desktop Software) enables Sun to directly leverage its infrastructure portfolio to deliver a next generation network-driven desktop solution using:

- *Advanced Sun server products.* Sun recently introduced a new series of Opteron-based and SPARC-based servers. Combining the price/performance of these new servers with the Sun Secure Global Desktop Software strengthens the case to host more client applications on servers in the data center versus spending money on upgrading desktop PCs with faster processing.
- *Advanced Sun operating system support.* Sun just released a new version of its Solaris operating environment that supports dynamic tracing for troubleshooting, containers for improved utilization/virtualization, secure execution and predictive self-healing extensions. The battle-hardened qualities of Solaris have been further modernized with the latest software in open source desktop software including GNOME, Mozilla and StarOffice. When combined with Sun Secure Global Desktop Software, a virtualized desktop experience can be delivered via the network from a Solaris-based data center.
- *Integrated Sun infrastructure components.* Sun Secure Global Desktop Software is part of Sun's newly announced Solaris Enterprise System. The Solaris Enterprise System includes the Solaris operating environment described in the previous bullet plus Sun's Java Enterprise System, the Sun N1 management environment, and integrated Sun and open source development tools. This environment is described in greater detail within this report.
- *Integrated Sun applications.* Applications such as the Sun StarOffice office suite.

When combined with Sun's hardware, operating environment, infrastructure components, and applications, Sun Secure Global Desktop software becomes the key ingredient which enables "the network delivered desktop". Just as Sun re-defined computing with their strategy of "the Network is the Computer", Sun is now re-defining the desktop.

This White Paper examines the Sun Secure Global Desktop environment. It starts by examining market trends and positioning in the evolving client infrastructure on the back-end marketplace. It then looks at Sun's competitive position vis-à-vis Citrix (also a close Sun partner), Hewlett-Packard and IBM. The competitive section is followed by a closer look at the Sun Secure Global Desktop Software product, surrounding environment and related infrastructure. This section is followed by a look at how the Sun Secure Global Desktop Software may serve mobile users. It wraps up with a summary, as well as our observations and conclusions.

Section 1

Market Positioning

In the 1960s through the mid-1980s the dominant information systems architecture was based on a timesharing model where a central processor hosted the intelligence to execute workloads—and terminals displayed the processing results and gathered input from end users. This model worked very well from an IT management perspective because all computing resources were under the local control of the IT department—making it easy to control and allocate resources, as well as secure the computing environment.

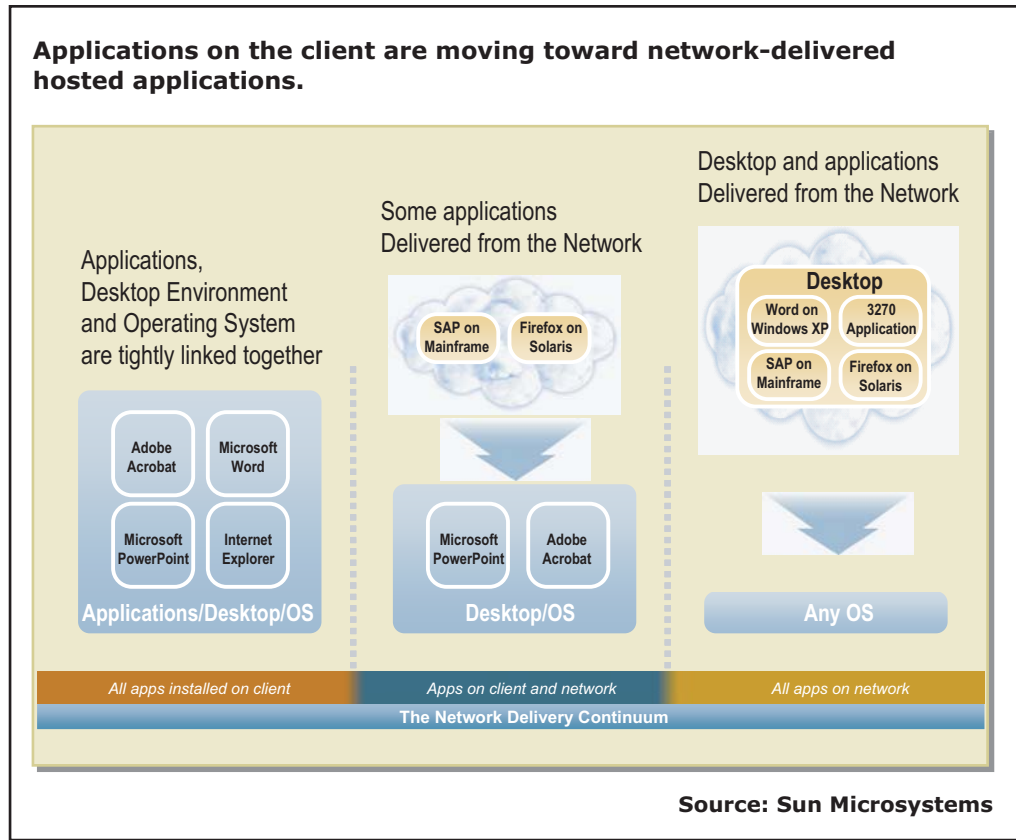
But as user demands grew for new applications that were unavailable on timesharing systems (such as spreadsheets, word processing, presentation graphics, etc.), and as departments became tired of waiting for the applications that they needed to be deployed in centralized host environments, a new computing model gained ground—the client/server architecture. This model brought productivity applications to the end-users' desktop, and used back-end servers as repositories for files, hosts for enterprise-class applications, as well as for communications and print servers. Users and departments gained access to the applications they wanted and needed—but at a big cost: IT managers lost control of their computing environments. Managing distributed intelligence, distributed data, updating firmware, patching operating environments, and so on has added tremendously to the cost to manage and secure enterprise computing resources.

With the Internet's pervasiveness, IT vendors encouraged IT buyers to move back to a computing model that offered end users the applications that they needed—while providing IT managers with the management controls they desired. Web browsers accessing resources via Web and application servers enabled enterprises to centralize and mobilize some of their assets but did not remove the dependency on traditional desktop computing. At this time there was a move toward a “thin client” model which was met with some success (as evidenced by the growth of Citrix and Microsoft's Terminal Server environment). But thin clients did not take the market by storm due to some critical limitations (primarily limited operating environment/application support, communications bandwidth issues for remote end users as well as intrusiveness and deployment costs). These barriers have since been removed as client devices can now access widely deployed high-speed Internet connections—both wireline and wireless.

As a result of line speed improvements and of new, very attractively priced back-end servers—a new server-centric/multi-client model is now gaining momentum: a “client infrastructure model”. This model moves the infrastructure needed to support client applications to a back-end server and relies on the network to deliver application services to end-user devices (see Figure 1). The Sun Secure Global Desktop Software fits into this newly evolving, network-focused, client infrastructure market segment.

Figure 1

The Evolution of Client Hosted Applications to Network Delivered Applications



Section 2

Competitive Positioning

Sun's former client infrastructure strategy focused on selling Sun Rays (an ultra-thin desktop environment that has no operating environment and is 100% driven by the network) that makes use of the GNOME graphical user interface to provide a view of back-end applications to customers who desired a very secure environment that could operate under tight management controls. Government agencies, in particular, have been among Sun Rays' strongest supporters. But with the Tarantella acquisition, Sun has broadened its client infrastructure strategy considerably to include secure access for a multitude of devices to numerous heterogeneous back-end servers and application environments. Sun's new strategy positions it as a supplier of secure client access to Sun Rays as well as any other client device whether it be a PC, mobile device or other thin client computing terminal.

Summit Strategies believes that Sun's primary competitors in network computing are Citrix/Microsoft, Hewlett-Packard and IBM:

- In Sun's view, Citrix is a strong partner that helps move Sun hardware and software. Like Sun, Citrix can boast products that provide access from many devices to many back-end servers over many networks. But these

two products primarily differ in heterogeneous environment support (edge to Sun with Unix, Windows and mainframe support); depth of back-end infrastructure offerings (edge to Sun with N1, identity manager, portal manager, et al); and depth of Windows integration (edge to Citrix at present). For Windows environments, Citrix relies on Microsoft's "Terminal Services" to provide basic networking services. Citrix then adds value-added client infrastructure extensions to complete the offering. Microsoft does not offer a product set that competes directly with the Sun Secure Global Desktop Software.

- HP partners with Microsoft to provide Terminal Services to its Windows customers—and with Citrix to provide client infrastructure on its servers. Like Sun, HP can build a powerful back-end infrastructure, but Sun may have an edge because it can tightly integrate its own server infrastructure components with the Sun Secure Global Desktop Software (rather than having to integrate third-party components like HP does).
- IBM provides its own client infrastructure product known as its "Virtualized Hosted Client Infrastructure". This offering is based on software products from Citrix and from VMware that run on xSeries and BladeCenter servers that provide back-end infrastructure for multiple thin client devices—and, like Sun, allows connection to multiple heterogeneous systems environments (including Windows, Unix, Linux and z/OS). Additionally, IBM offers identity management, privacy and systems management software packages similar to those offered by Sun (although in some cases these are third-party products).

Section 3

Sun's Secure Global Desktop— The Environment and Related Infrastructure

This section examines the Sun Secure Global Desktop Software (SSGD) in greater detail—and it also explores the relationship of SSGD to Sun's other infrastructure components (such as Sun's portal, identity, and management components). Finally, it looks at Sun Secure Global Desktop Software's relationship to certain related third-party products (such as those from Wyse and VMware).

Sun's Secure Global Desktop Software

The Sun Secure Global Desktop Software consists of three components:

- A client component;
- A server component (supported server platforms include Sun UltraSPARC and Opteron-based servers—as well as other x86-based servers running Solaris or Linux); and
- A group of optional connectors that link the server to various heterogeneous server environments.

Companies can take two approaches to secure client access to a Secure Global Desktop server, via a:

1. “Standard client” which utilizes a Java technology enabled Web browser to access the system; or
2. “Native client” that does not require a Web browser or Java.

In general, when using SSGD, full desktop PCs use the standard client approach, while systems with more modest capabilities such as mobile devices and many thin clients can run the native client.

On the back end, Sun Secure Global Desktop Software can be installed on servers running: Solaris 8, 9, and 10 OS (SPARC); Solaris 10 OS (x86 or Opteron); SUSE Linux Enterprise Server 8 and 9 (x86); Red Hat Enterprise Linux 3 and 4 (x86); or Fedora Linux Core 3 and Core 4 (x86).

To connect to heterogeneous environments, Sun Secure Global Desktop Software offers connectors that leverage the native protocols of each different operating system. These protocols include Microsoft RDP, X11, IBM 3270 and 5250. It is important to note that by using these standard protocols, Sun Secure Global Desktop Software users are not required to install any software on the servers hosting the applications because the product communicates with the machines in a mode that is native to the target server. In other words, the Secure Global Desktop server provides secure access to server environments without having to install any software in the target application environment, thereby making access to distributed, heterogeneous applications smooth and transparent without disrupting pre-existing IT infrastructure.

These components and connectors are illustrated in Figure 2.

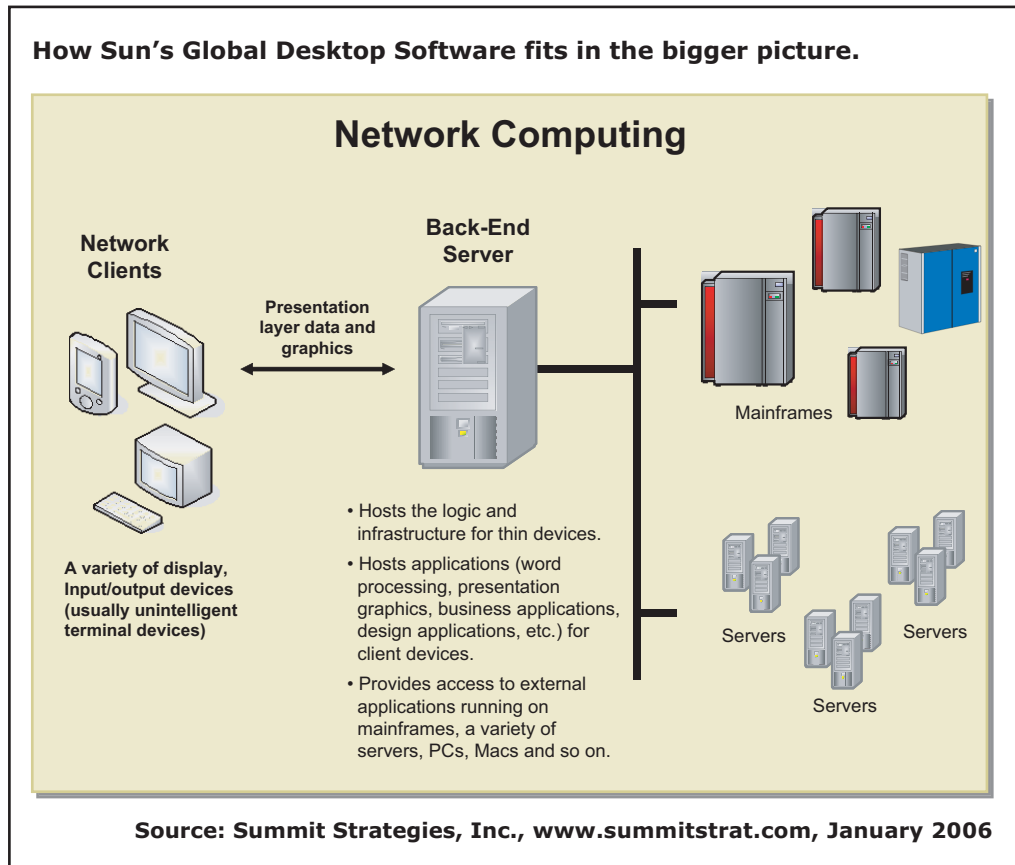
Sun Secure Global Desktop Software and Its Relationship to the Rest of Sun’s Infrastructure Software Products

In and of itself, Sun Secure Global Desktop Software provides a well-integrated environment for hosting client infrastructure on a back-end server—allowing clients to access applications on that server as well as connect to other heterogeneous environments to access applications in those environments. But Sun also offers several other infrastructure and application products that enable Sun Secure Global Desktop Software to be integrated into a much broader, secure, highly-manageable enterprise information systems infrastructure. Some of these additional products include:

- ***Sun’s Solaris Operating Environment.*** In addition to high-availability, reliability, scalability, and management features, this enterprise-class operating system now supports dynamic tracing (for troubleshooting), containers (for improved utilization/virtualization), secure execution and predictive self-healing extensions.

Figure 2

Sun's Global Desktop Software Components and Connectors



- Sun's Java Enterprise Environment. Sun's Java Enterprise Server environment provides integrated infrastructure that includes:
 - Management tools and utilities (Sun's N1 management environment which includes systems management, virtualization and provisioning components);
 - Identity management (including Sun's secure Java card);
 - Mobile and portal components; and
 - Sun's communications suite (for messaging and collaboration).

In addition to providing additional enterprise-class infrastructure offerings, Sun also offers office productivity applications as part of its StarOffice Suite.

All told, Sun Secure Global Desktop Software users can use these infrastructure components and applications to build very sophisticated, enterprise-class network computing environments that are simpler to manage than PC-laden client/server environments, that offer native heterogeneous platform support, and that provide access to a wealth of different application types—all in a secure fashion.

It is especially worthy of note that these benefits are more fully realized with a mixture of Sun Secure Global Desktop Software and Sun Ray. This combination provides the simplest management scenario (because IT managers have the control of almost the entire desktop environment located at the back-end server where it is easy to access and troubleshoot). And, because all of the information used by Sun Ray or thin client users is located on the back-end server—this combo provides the best security.

Sun's Wyse and EMC VMware Relationships

To the naked eye, third parties such as Wyse (a maker of thin client devices) and EMC (the maker of one of the market's most popular systems virtualization software packages) appear to be direct competitors with Sun. However, Sun has structured cooperative relationships with each vendor to help promote the use of their respective products—and the use of the Sun Secure Global Desktop Software.

- Sun and Wyse recently announced an agreement to cooperatively work to deliver end-to-end thin client solutions using each other's products. Wyse will bundle Sun's Secure Global Desktop client software on its S- and V-Class thin clients (which are WinCE, WinXPe and Linux based thin clients)—thus allowing its users to easily access Sun's SSGD environment on back-end Sun UltraSPARC and Opteron-based servers.
- Sun and EMC partner with VMware to enable Secure Global Desktop clients to connect to a set of VMware virtual machines running different applications on centralized servers in a data center. When operating both VMWare and SSGD in the data center, enterprises can exploit VMware's virtualization capabilities (in much the same way that a Windows or Linux client would do so)—but because the solution is completely centrally hosted, IT managers and administrators have a much simpler and more secure authentication model as compared to intelligent desktops.

Sun's Secure Global Desktop Software and Mobility

One of the most exciting elements that Sun gained from its Tarantella purchase is a solid infrastructure on which to offer its "hot desking" functionality. Hot desking enables users to leverage their identity to activate their own personal computing environment regardless of where they are. For instance, a person could be working at home using office productivity applications and then go to an office and authenticate. Then that office location would automatically replicate the computing environment that this person used in his or her home environment—complete with access to the same applications and files used in the home environment.

For IT managers, hot desking enables the set up of generic offices that, when activated by the user's credentials, can become personal offices. Furthermore, this approach saves enterprises from having to provide personal office space for every user on the payroll. Meanwhile, IT managers reap the benefit of being

able to more easily manage user's environments on local back-end servers—rather than making journeys to remote locations to provide support. And the enterprise benefits as it doesn't have to assign physical office space to transient mobile workers.

Prior to the acquisition of Tarantella, Sun already had hot-desking capabilities as part of its Sun Ray thin client offering (using a Sun Ray identity card for hot-desking is one of the core features of Sun Ray Server Software). The Tarantella acquisition essentially allows Sun to expand its hot-desking reach to a wider variety of devices and, maybe more interestingly, across different kinds of devices. For example, with Sun Secure Global Desktop Software a user can indeed be working in a Windows application on a Sun Ray at work, suspend his or her session in the Sun Secure Global Desktop Software environment, then go home to a Macintosh and pick up where they left off in that application.

Also related to mobility, Sun has done a great job of making Java a de facto standard on handsets. But until the Tarentella acquisition, Sun lacked its own technology for extending enterprise applications to handsets and other thin devices—leaving that job to customers and partners. With the Tarantella acquisition, Sun can now leverage the global adoption of the wireless Java platform (over 1 million Java handsets deployed) by delivering a thin client computing solution for these devices.

Putting Sun's Secure Global Desktop to Use: A Customer Scenario

ITOCU TECHNO-SCIENCE Corporation (CTC), a systems integrator of computer networking applications as well as a provider of systems development, operation, management, maintenance, training and outsourcing services, uses Sun's Secure Global Desktop as a means to provide its workers with "the ability to access their personal working environment from any desk using their Java card." For CTC employees, SSGD provides highly secure access and the mobility to an environment that is convenient to use and aids cross-organizational collaboration and knowledge sharing. For CTC systems managers, SSGD provides a secure desktop environment that is flexible to meet employee needs.

The CTC systems environment consists of:

- Sun Java System Identity Management Suite (Identity Manager, Access Manager, Directory Server);
- 1,200 Sun Ray 170 Ultra-Thin clients;
- Sun Ray Server Software 3.1 installed on eleven Sun Fire V490 servers running Solaris 10 in the datacenter and nine Sun Fire V440 servers in three corporate branches; and
- Sun Secure Global Desktop Software installed on five Sun Fire V240 servers running Solaris 9.

Through the use of Sun's Secure Global Desktop, CTC states it has been able to achieve company-wide compliance and identity management, improved security through centralization of data/applications and the elimination of notebook PCs, and reduced floor space and maintenance costs through office sharing.

Section 4 Summary Observations

Sun's vision has long been: "the network is the computer." The Sun Secure Global Desktop Software helps deliver on this vision by enabling clients of all types to use the network to gain access to a wealth of applications that reside on Sun servers or other heterogeneous server environments.

Sun's Secure Global Desktop fits into the larger enterprise infrastructure where systems need to be reliable, secure, scalable, available and manageable. As part of Sun's newly announced Solaris Enterprise System infrastructure, SSGD provides an access gateway for intelligent and non-intelligent devices to access network-based applications. As part of the Solaris Enterprise System, it creates a complete infrastructure for enabling a secure access tier. Furthermore, when combined with Sun's Sun Ray thin clients, SSGD provides users with the same view of applications and data that they would normally receive using PC clients. But because the intelligence, logic and processing is conducted at the server back-end, Sun Rays deliver lower cost processing environments that are easier to authenticate, secure and otherwise manage.

The Sun Secure Global Desktop Software delivers benefits to both the end user community as well as information systems managers. Because the infrastructure needed to support end users resides on back-end servers where IT managers and technicians can get easy access to it—end users can expect faster fix times should problems occur. And because Sun's Secure Global Desktop provides easy, secure access to multiple computing environments—end users may find that they can get access to more applications more easily—greatly expanding their application portfolio. Further, due to the hot desking functionality, mobile end users will find that moving from one environment (such as a home) to another environment (such as work) is extremely easy because their applications all run on back-end servers that can be securely accessed from anywhere. This means no longer carrying around heavy portable devices in order to run personal productivity or other business applications.

But quite possibly the biggest payback from deploying Sun Secure Global Desktop Software comes from information systems management. With SSGD, IT managers can regain control of distributed computing resources, security and acquisition costs. SSGD can be used to:

- Reduce desktop-related management costs such as patching, updates, software distribution, help desk support, and so on;
- Reduce desktop acquisition costs since IT buyers can purchase thin terminals as opposed to full-blown PC architectures; and

- Reduce security exposure on the desktop by blocking spam, viruses, worms, loggers, etc. at one location (the server level) rather than across numerous distributed desktop environments.

In short, with a client infrastructure model, IT managers can gain greater control of client environments, reduce demand for help desk support, simplify maintenance, improve security, reduce acquisition costs since not everyone requires a PC to do his/her job and reduce information systems administrative and management costs.

While Sun undersold the Tarantella acquisition to the press and analyst communities, we believe that this acquisition is of great strategic importance to Sun and its customers—if not the industry as a whole. IT buyers interested in evaluating a computing approach that offers broad application access to heterogeneous systems—and that offers IT management the chance to gain control of their computing environments while improving service levels and lowering management costs—should pay closer attention to the combined force of Sun and Tarantella.

Joe Clabby
jclabby@summitstrat.com

This white paper was sponsored by Sun Microsystems.

Summit Strategies is a market strategy and consulting firm focused on helping IT vendors quickly identify and capitalize on disruptive industry inflection points. Since 1984, our breakthrough thinking and one-to-one consulting engagements have provided vendors with objective, hard-hitting insight critical for creating successful market, channel and product strategies in changing markets. Our current focus is on the adoption of dynamic (a.k.a. utility or on demand) computing among enterprise, mid-market and small business customers. For more information, please visit our Website at www.summitstrat.com or contact Ms. Billie Farmer at bfarmer@summitstrat.com or 703-897-5188.