



# > Sun Microsystems: Solutions to Bridge Healthcare's Digital Divide

## Introduction

At Sun, we believe access to quality healthcare is job number one in the Participation Age. Accelerating this vision is our commitment to sharing technology. In regional and national health information networks, our technology links together payers, employers, and caregivers. And in hospitals around the world, we enable secure, compliant access to patient data. Sun technology is helping to reduce costs, improve efficiency, and bridge the healthcare digital divide — for all. Cooperation is the cure.

To this end, Sun and our partners foster sharing and innovation through the development and support of IT Solutions to solve some of healthcare's most pressing problems. As a demonstration of our commitment to healthcare, Sun is highlighting the following innovative solutions at HIMSS 2006:

### **Sun Java™ Composite Application Platform Suite**

The Sun Java™ Composite Application Platform Suite (SJCAPS) is a fully integrated platform comprised of nine modules which delivers a rich set of composite application and integration capabilities, including Business Process Management (BPM), industry leading messaging, Java-based and XSLT-based transformation, and a broad and deep array of connectors. The SJCAPS also features: Business Activity Monitoring (BAM) for development of sophisticated dashboards and issuing alerts; a portal server for collecting and personalizing content, Extraction, Transformation, and Loading (ETL) capabilities for moving bulk data; extensive business-to-business (B2B) support; and an advanced facility for enabling the development of a single master index for common entities such as customer, patient, product, or supplier. These capabilities are unified through a common design environment, with the Enterprise Designer, a common runtime environment utilizing the Enterprise Manager for monitoring, the Integration Server as the runtime container, the Message Server as the persistence layer, and a single repository shared across the entire SJCAPS.

### **Sun Identity Manager**

HIPAA, Sarbanes-Oxley (SOX), employee turn-over, trading partner access, supply chain needs, and challenging internal business requirements are just a few of the challenges facing the healthcare industry. To meet these demands, Sun and Neogent together offer

the healthcare industry's most complete and integrated suite of tools designed to secure and manage user identities. Sun's identity and access management tools provide all of the core functions and services needed to use, share, and manage identity information, including: password management, profile management, identity synchronization, access control, single sign-on, federation and failover, audit and compliance (SOX, HIPAA) reporting, and more.

### **Neogent, Inc.**

Neogent, Inc. is a leading professional services firm specializing in reselling and implementing Sun's Identity Management solutions. Neogent brings patent pending Accelerator tools (velocity packages) that speed the implementation of Sun's Identity Management solutions and dramatically decrease overall project costs. Neogent also provides global technical and sales training specifically designed to train Sun's partners and customers on Sun's identity solutions. Neogent brings a proven track record of success with over 40 implementations worldwide and a specialized practice in the healthcare industry.

### **Sun Ray Caregiver Mobility with Security**

Sun's Caregiver Mobility with Security offering gives healthcare customers a new way to enable mobility within a hospital setting. Based on the Sun Ray™ ultra-thin client desktop featuring SmartCards for identity management, this solution improves caregiver productivity by taking the headache

out of constantly logging into and out of hospital systems. It features a “hot-desking” capability so that the session automatically logs in and out, and follows the caregiver throughout their hospital rounds. One Sun hospital customer is on record saying that “each of its doctors saves 45 minutes per day” thanks to this technology.

### Sun™ Continuity of Care Record

Healthcare payers and providers seeking to improve patient care and safety, while creating process efficiencies at the point of care, will benefit from the Sun™ Continuity of Care Record (CCR), a composite application built on the award-winning SJCAPS. The Sun CCR can provide better clinician access to required medical data, resulting in fewer medical errors and more timely patient care. The Sun CCR provides summary details on patients’ demographic and insurance information, data, and appropriate security, following federal mandates. Further, the Sun CCR composite application is standards-based, helping provide the flexibility and scalability to deliver care across regional or extended networks.

### Sun's Intelligent Data Storage Archive

StorageTek IntelliStore™ archive solution from Sun enables you to capture, manage, and use your archive data while reducing your risk and cost. IntelliStore archive solution does the following:

- > Minimizes IT intervention via a sophisticated policy management system, not only reducing costly manual tasks, but reducing the chance of human error
- > Supports tiers of storage enabling information lifecycle management by storing your data on the lowest cost tier that maintains your service level requirements
- > Delivers automated technology refresh that allows you to lower or eliminate migration costs when the underlying storage technology evolves
- > IntelliStore archive has the combination of performance, capacity, and file scalability to address enterprise-wide archive consolidation requirements

- > Its advanced architecture delivers the following:
  - > Seamlessly expandable capacity that scales as your storage needs grow
  - > File system scalability into the billions of objects, while still enabling rapid discovery through the separation of metadata search from object storage
  - > Support for multiple enterprise content management (ECM), e-mail, and native archive applications

A new class of compliance solution, IntelliStore archive solution combines several functionalities, such as policy-based management, role-based security, and remote replication. In addition, IntelliStore archive equips you with capabilities such as write once, read many (WORM) disk, non-repudiation of data, data serialization, and automated audit trails to demonstrate that data has not been modified. With high-speed ingest capability, massively scalable file system, near endless capacity, and flexible classification and policy engine, IntelliStore archive can easily accommodate your needs today and as they evolve over time.

### Sun Network-Attached Storage

The Sun StorEdge™ NAS Appliances (with its 5210 and 5310 models) deliver the benefits of storage consolidation and centralized backup up to multi-protocol IT environments. With support for UNIX®, Linux, and Windows clients, the appliance simplifies file sharing between disparate platforms. The NAS Appliance offers advanced business-continuity functions to help protect your data and keep your business running smoothly. It features file system journaling, checkpointing, remote mirroring, remote monitoring, and a clustering option, combined with a completely fault-tolerant, backend RAID array to deliver very high levels of availability and performance. Set up as a single-head or as a dual-clustered NAS server configuration, the appliance provides quick deployment, simple manageability, seamless integration, and flexible policy-based services. The optional Sun StorEdge Compliance Archiving Software enables the appliance to store and protect regulated and reference information to help reduce legal risk and meet

regulatory and business compliance, including SEC 17a-4 requirements. The software provides WORM functionality for file systems that allow the specification of minimum retention periods, and administrative “lockdown” facilities that ensure that files marked as WORM cannot be inadvertently removed prior to their retention period. To provide for disaster recovery situations over distance, the optional File Replicator provides remote data mirroring between NAS systems. In the event of a source system failure or disaster, the mirrored file system on the target appliance can be promoted to continue delivering data during the failure.

### StorageTek StreamLine™ SL500 Modular Library System

As data volumes continue to grow, backup windows continue to shrink — so most storage libraries in midrange backup environments quickly hit their capacity and performance limits. The StorageTek StreamLine™ SL500 modular library system offered by Sun addresses these challenges with the most scalable rack mounted tape automation solution in the market today. You can start with a cost-effective configuration that meets your current backup requirements, and add modules as necessary without increasing administrative complexity or reducing reliability. The modular, flexible SL500 library system scales from 30 cartridge slots to over 500 slots with a capacity of more than 100 terabytes of uncompressed data. It accommodates up to 18 tape drives with an uncompressed data throughput of more than 5 terabytes per hour. This gives you the performance you need for the shrinking backup windows in your high-availability environments. The expandable drive capacity and use of the latest Linear Tape Open (LTO) Ultrium tape drive technology are also ideal for critical server applications with fast rates of data growth, such as e-mail servers, database applications, and enterprise file servers. The rack mountable approach and dense cartridge slot design make the SL500 modular library system a good fit in environments where space is at a premium. You can configure a stand-alone tape automation rack or combine the SL500 in a rack with servers and disk storage arrays.

The SL500 expands to higher slot count and drive counts using the same robotics and library automation architecture. You can add capacity with simple library upgrades, extending the useful life of the equipment and preserving your investment. In addition, standard interfaces and the StorageTek library control software enable you to easily share resources by connecting to other devices across multiple Windows or UNIX environments. The fast streaming performance and larger cartridge storage sizes make the SL500 an ideal choice for a wide range of backup environments, from small remote sites to corporate data centers. The SL500 modular library system gives you a very adaptable platform that can accommodate your current and future storage consolidation and data protection needs.

#### **Sun SeeBeyond eIndex™ Single Patient View**

The Sun SeeBeyond eIndex™ Single Patient View global identifier is an enterprise master patient index (EMPI) composite application built upon the SJCAPS. eIndex creates a cross-reference of patient information that is kept current by rules to identify, match, and update data from multiple-source applications. The Web-based components of eIndex Single Patient View are highly configurable, allowing healthcare organizations to create a custom patient indexing application suited to their specific needs.

#### **Sun Claims Lifecycle Manager**

For businesses pursuing claims workflow initiatives designed to minimize manual processes, the Sun Claims Lifecycle Manager (CLM) is an adaptive IT solution that can help healthcare customers realize dramatic cost savings. Sun's CLM solution gives healthcare customers the capability to enhance compliance efforts with the Health Insurance Portability and Accountability Act (HIPAA) and other regulatory processes. It does this by offering a unified business view of bi-directional transaction activity across the enterprise that supports message tracking and activity reporting.

#### **Sun iProvider Global Identifier**

To help healthcare customers rapidly and cost effectively meet NPI requirements, Sun developed the iProvider Global Identifier composite application, built with the SJCAPS. By using iProvider, healthcare organizations can cleanse, standardize, match, and integrate

disparate provider databases to create a single record. iProvider allows organizations to leverage existing legacy databases with the completeness and accuracy required to achieve NPI compliance.

#### **Sun Java™ Composite Application Platform Suite Secure Messaging**

Electronic communication between general practitioners, physicians, and healthcare enterprises of varying sizes is gaining increasing importance. To satisfy confidentiality and legal requirements, this communications must be secure and trustworthy. AS2 protocol-based communications infrastructure linking general practitioners/physicians, laboratories, hospitals, EHR repositories, and health authorities will be demonstrated as a solution for the healthcare marketplace.

#### **Verizon Secure Mail solution**

Verizon Secure Mail is an enterprise-grade e-mail encryption product that is easy to use and gives subscribers the ability to encrypt e-mail without having to change their e-mail application. Simply download a plug-in, and a new "secure" button will appear in the compose screen.

Subscribers can send e-mail containing patient records, files, and other confidential information to anyone, even if they are not a Verizon Secure Mail subscriber. The e-mail and all attachments are encrypted right on the desktop, and opened or decrypted by the intended recipient. Healthcare professionals, particularly those who conduct business online, need to ensure that they are implementing security measures to comply with the HIPAA. Verizon Secure Mail is powered by Echoworx encrypted e-mail software, and a fully hosted managed service from Sun.

#### **EDS Practice Management Bundle**

The EDS Practice Management Bundle is a managed services offering for caregivers who want to use IT to improve patient care — without necessarily wanting to become computer experts. Fully hosted and managed by EDS in their state-of-the-art data center, the Practice Management Bundle leverages Sun's end-to-end suite of hardware and software technology featuring SmartCards for identity management running on Sun Ray ultra-thin client desktop.

#### **Mak-system Blood Management Solution**

MAK-SYSTEM International Group is a leading medical information technology company providing a broad portfolio of information management systems to healthcare organizations worldwide. Since its inception, MAK-SYSTEM has specialized in designing innovative software solutions that deliver superior functionality to the blood banking and blood transfusion sector. Blood banks and hospital transfusion services need proven software systems that can help them track products through the complex supply chain, monitor the manufacture and the testing of blood components and derivatives, supervise expensive and short-lived inventories, and deliver safe products to patients.

With more than 850 installations in almost 30 countries, among which are 18 national implementations, MAK-SYSTEM is uniquely positioned to provide blood banks and hospital transfusion services with the most comprehensive combination of software functionality, support services, and technology solutions to safeguard and optimize the entire blood management process.

#### **Kodak Medical Imaging Management Solution**

Kodak Health Group offers high quality imaging and information management solutions that improve care and lower costs for hospitals, clinics, communities, and countries. Sun and Kodak are worldwide Alliance Partners that collaborate to optimize solution performance and delivery. Sun and Kodak have successfully sold solutions to hospitals and government projects such as the RATU project in Finland and NHS in Scotland.

KODAK Carestream Web Software provides anywhere, anytime image and information access for clinicians and other authorized healthcare providers. Images and clinical reports can be distributed for viewing with equipment ranging from sophisticated workstations to personal computers. KODAK VIPArchive, a revolutionary platform that powers KODAK Carestream Information Management Solutions, offers intelligent consolidation, control, and continuity for all archived data across the enterprise.

### Vignette Proficiency Patient Solution

Vignette delivers image processing and workflow for the complete electronic healthcare record by digitizing paper-based patient records and automatically linking them to the customer's patient records system. Vignette's Enterprise Content Management (ECM) Healthcare solutions help healthcare organizations:

- > Improve the quality, safety, and efficiency of care by securely delivering the complete electronic healthcare record which includes digitized paper-based information
- > Leverage structured data, unstructured information, images, and Web content to deliver valuable insights to clinicians at the point-of-care
- > Significantly reduce operational costs while improving the care that they provide through proven solutions

### eClinicalWorks Ambulatory Care System

eClinicalWorks is a leading provider of ambulatory clinical information systems. eClinicalWorks' award-winning unified Electronic Medical Record and Practice management solution manages patient flow from check-in to check-out and instantly streamlines the medical billing processes for any solo, small, medium, or large practice with single or multi-specialty and single or multi-location practices.

### InstantDX e-Prescribing Solution

InstantDx's OnCallData system improves the safety and efficiency of the medication prescribing process by allowing providers to send prescriptions electronically, through the Internet, from desktop or wireless handheld computers. OnCallData performs a real-time check of patient insurance eligibility and the formulary status of medications prescribed. Automatic clinical edits are performed on each prescription

including drug-to-drug and drug-patient allergy interactions. Each provider will also receive electronic refill requests from pharmacies, eliminating countless telephone calls and faxes, which can be responded to in less than five seconds.

### OCIE Fixed-Content Managed Service Solution

OCIE fixed-content managed services provide reliable and economical solutions for managing and distributing healthcare information assets.

Net-centric, online report management, data extraction and transformation, and scanned document processing satisfy goals ranging from paperless archive and process automation to revenue cycle improvement, compliance, security, audit control, and operational cost savings.

### Summary

Healthcare providers today face major challenges including rapidly rising costs, expanding regulations, and the pressure to improve patient safety. Sun's vision for the future of healthcare means combining the right technologies for a rapid return on investment with the delivery of equal access to high-quality care. Finding ways to reduce the cost of care, while improving access to need-to-know information is the number one imperative for Sun and its partners.

Offering a fully integrated and highly extensible healthcare solution, Sun provides all the tools and infrastructure that healthcare organizations need to transform the way they record, track, and access critical business information. Sun is the solution for healthcare information exchange initiatives that need to find a more cost-effective way to standardize and exchange critical information between their entities.

Sun's healthcare solutions are based on a modular approach that enables organizations to implement the functionality they need, while future-proofing for growth and new initiatives. Our healthcare solutions are supported by a network of independent software vendors, value-added resellers, and systems integrators who understand the specific requirements of the healthcare industry and can help healthcare providers select and implement the solutions that will deliver the most benefit to their operations. Sun is used in more than 2000 healthcare sites around the world, including leading health plans, hospitals, ministries of health, clinics, and long-term care facilities.

Sharing has always been at the core of Sun's business strategy, operating principles, and philosophy. Sun technologies enable broader access in the healthcare industry and are available today, built upon open standards and designed for interoperability. Sun and its partners deliver the technology solutions that can help the healthcare industry reduce costs and medical errors, as well as improve efficiency and patient care — all key to equal participation and access to quality healthcare.