

Sun Debuts Its First RFID Software

The computer and software maker releases middleware designed to process streams of data coming from RFID readers and deliver that data to enterprise applications.

By Jonathan Collins

June 1, 2004—[Sun Microsystems](#) is announcing today the release of its first RFID software product: Sun Java System RFID Software. The offering comprises the Sun Java System RFID Event Manager and the Sun Java System RFID Information Server middleware designed to process streams of data coming from Electronic Product Code (EPC) readers and deliver that data to enterprise applications.

“This is a scalable, robust middleware offering able to operate in hostile environments,” says Juan Carlos Soto, Sun’s director of advanced technology.

Sun’s offerings will be competing against existing products from [OATSystems](#) and [GlobeRanger](#), among others, but the Santa Clara, Calif.-based computer and software maker believes it has a clear edge over its rivals because of its use of Sun-developed Java and Jini technology to make its systems robust, as well as its experience testing the software in its own operations and at its new Dallas test center. Sun claims that its Java System RFID Software, which the company has been developing during the past two years, is the industry’s only highly available RFID solution that can automatically adapt to changing operating environments without requiring system down time or special administration.

The new middleware will be available within the next three weeks, in line with the company’s regular quarterly software releases. According to the company, pricing for the software will be set later in the month, but the offering will be available for a flat rate per distribution center or warehouse, regardless of the number of readers and servers within the location. Pricing will include the software, upgrades and customer support. Initially, Sun will only support Java System RFID Software for Sun’s Solaris version of Unix, but the company plans to release the software with support for Linux in about three months.

Sun’s Java System RFID Event Manager is the company’s Savant middleware offering designed to process streams of tag or sensor data coming from EPC readers and other devices. The application has the ability to filter and aggregate data at the reader prior to sending it to a requesting application, so that redundant data reads are not transmitted over the local network and clog network bandwidth as well as computing resources.

“Readers are constantly reading events. They can read an individual tag hundreds of times a minute, but Event Manager filters these reads so that only the meaningful reads—such as a tag entering or leaving an area—are transmitted across the network,” says Soto. RFID Event Manager applications deployed at different geographically remote sites within a company or supply chain can also filter the amount of local data to be distributed over the Internet or corporate network.

In addition, Sun’s Event Manager provides the ability to log information collected at the reader to share either by file system, XML or other application-interface standards. The middleware’s enterprise gateway component enables Event Manager to connect directly to enterprise applications such as warehouse management system (WMS), enterprise resource planning (ERP) and customer relationship management

(CRM). Although Event Manager's gateway component lets the middleware exchange data directly with those enterprise applications, the company maintains that its Sun's RFID Information Server, deployed between those two application layers (the Event Manager and the enterprise application), provides increased flexibility and robustness.

Data collected and processed by Event Manager feeds into the RFID Information Server, which stores time-stamped transaction and association data (such as which cases belong to which pallets) in PML format and can serve up that information when requested to whichever enterprise applications need the data.

According to Sun, its RFID Information Server prevents the creation of so-called information silos, where the data collected by an EPC network becomes linked and available only to specific applications or operations within a company and not integrated across a company's IT infrastructure and accessible by other applications and operations. The existence of those specific links can make it difficult to adjust the EPC network to changes in business requirements.

Key to the flexibility of the company's offerings, Sun believes, is its own Java and Jini (Java INference engine and networked Interactor) programming platforms. Software that operates using Jini helps glue together software components and Java objects in networked client-server applications, as well as through Java applets over the Web. According to Sun, Jini enables the Event Manager to automatically reconfigure the EPC network when readers get damaged or when new readers and other equipment are added to the network. Jini technology helps provide the RFID system's self-healing and self-managing capabilities by enabling the distributed system to assemble itself on the fly, and to keep running even as it continuously adapts to accommodate changing operating environments such as component failures or operational interruption.

"During pilots, we have seen how readers and network equipment can literally be taken out by forklifts and the like. These systems are not deployed in the data center, and there aren't the same IT professionals around to fix systems when they get damaged," says Soto.

In the distributed services architecture of Sun's RFID Event Manager, RFID readers and other devices are represented as Jini services. Each reader service consists of a reader, an intelligent Jini service proxy that runs elsewhere on the RFID system network, and a network connection between the two. Installing a new Jini reader service involves installing each of these components. Once installed, the service can be automatically detected by the RFID Event Manager and incorporated into the running RFID system.

Some RFID readers are capable today of running a full Jini service implementation on the reader itself. Installing Jini reader services that have been implemented in this way is as easy as plugging the device into the RFID system network, says Soto.

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