SAP Technical Brief

SAP® MOBILE INFRASTRUCTURE: AN OPEN PLATFORM FOR ENTERPRISE MOBILITY

Because business extends outside of corporate boundaries, companies need to optimize their IT landscapes for mobile business. SAP® Mobile Infrastructure helps you mobilize your workforce quickly and easily, leveraging your existing IT infrastructure. As a building block of SAP NetWeaver™, SAP Mobile Infrastructure provides an open architecture that protects your investment for the future, delivers a low cost of ownership, and helps your people in the field access mission-critical business resources anywhere, anytime.

Get the most out of your IT infrastructure. Optimize your existing investment for maximum competitive value. Extend critical enterprise resources to mobile devices that connect your global organization into a single team and empower your representatives in the field to serve your customers better than ever before. Today, that's how leading companies stay ahead – and no technology helps you leverage what you already have for immediate business value better than SAP® Mobile Infrastructure. As a building block of SAP NetWeaver™, SAP's comprehensive application and integration platform, SAP Mobile Infrastructure provides an open standards-based platform for multichannel access to information, data, and business processes. SAP Mobile Infrastructure is the technology behind mySAP™ Mobile Business, the industry-leading enterprise mobility solution that delivers the power of mySAP™ Business Suite solutions to your mobile devices. mySAP Mobile Business provides complete business capabilities in connected and disconnected environments.

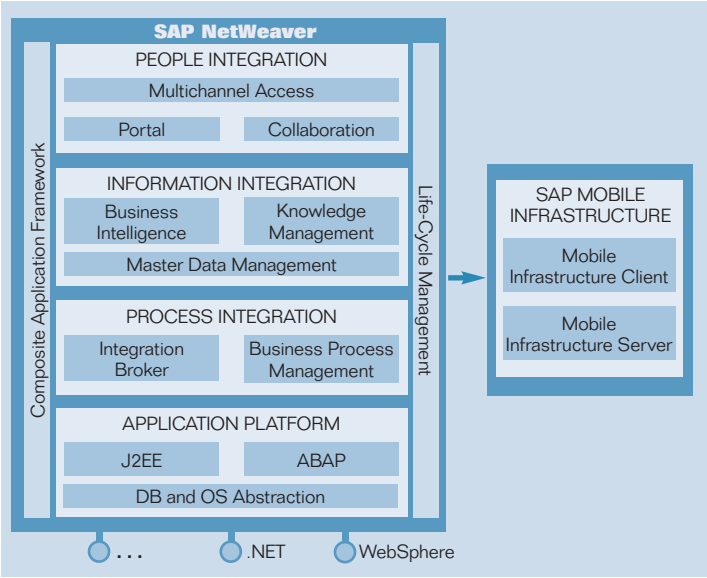

Figure 1: SAP NetWeaver and SAP Mobile Infrastructure

SAP Mobile Infrastructure serves as the universal platform for mobilizing your enterprise applications and powering the benefits of mySAP Mobile Business. SAP Mobile Infrastructure is embedded within SAP NetWeaver, which provides the technology foundation for mySAP Business Suite (see Figure 1).

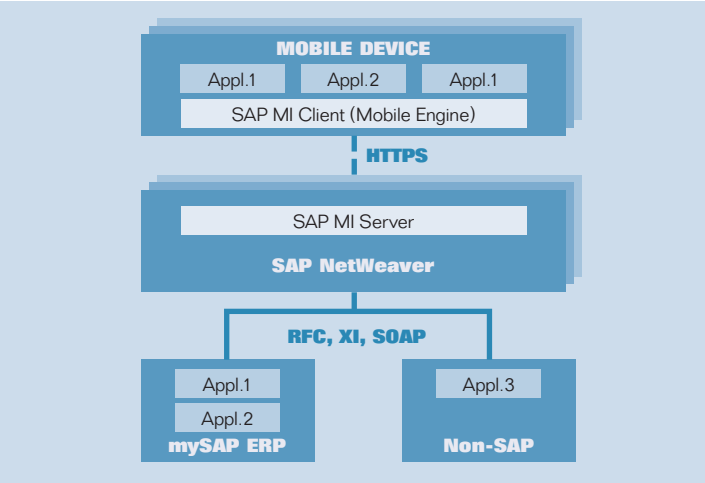

Figure 2: SAP Mobile Infrastructure

Installed locally on each mobile device, the SAP Mobile Infrastructure client (see Figure 3) includes its own Web server, database layer, and business logic – all part of a light-installation runtime environment that extends enterprise capabilities to users whether or not they're connected to the network. For data manipulated in the field, SAP Mobile Infrastructure provides a synchronization and replication layer that resolves enterprise-level data redundancy by synchronizing mobile devices with back-end systems using a specially configured middleware server. SAP Mobile Infrastructure also includes a centralized, role-based deployment console that simplifies deployment tasks in a global, multiple-device IT environment.

MOBILIZING ANY BUSINESS SCENARIO

With capabilities that support cross-industry applications, such as customer relationship management (CRM), human resources, supply chain management, business intelligence, and product life-cycle management, SAP Mobile Infrastructure lets you mobilize any business scenario in both SAP and non-SAP application components. And with support for targeted applications designed specifically for the service provider, chemical, pharmaceutical, and utilities industries, SAP Mobile Infrastructure ensures you gain immediate business value focused on your particular requirements.

From the specialized needs of particular industries to the everyday activities of workers tracking their time and expenses on the road, SAP Mobile Infrastructure powers a new level of business mobility, extending the enterprise beyond traditional boundaries with remote access to the full array of organizational resources.

OPEN STANDARDS AND PLATFORM INDEPENDENCE

Based on SAP NetWeaver, SAP Mobile Infrastructure is based on open industry standards Java, eXtensible Markup Language (XML), and Simple Object Access Protocol (SOAP). Fully deployable in Web services environments, SAP Mobile Infrastructure comes prepackaged with a Java virtual machine and provides an open programming model that allows developers to build applications with JavaServer Pages (JSP) or the Java 2 Platform, Micro Edition (J2ME). This open platform architecture provides true device independence and network independence, supporting mobile devices, such as personal digital assistants (PDAs), laptop computers, and smart phones, as well as such networks as wireless LANs, Bluetooth, and General Packet Radio Service (GPRS).

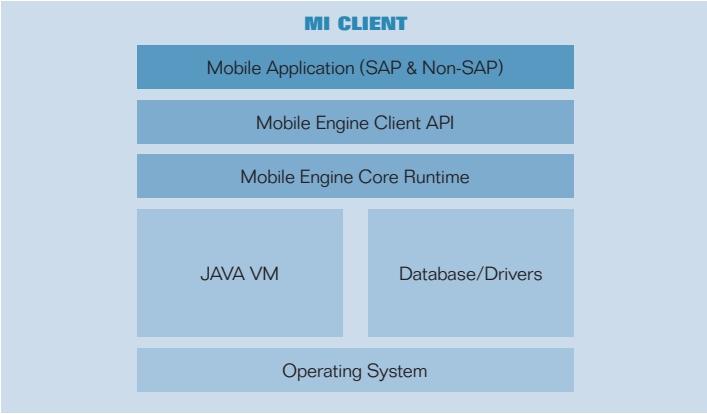

Figure 3: SAP Mobile Infrastructure Client

SAP Mobile Infrastructure works with either a standard browser or a native user interface. Browsers offer maximum flexibility, and with native applications support developers can optimize solutions for screen size and user-interface controls.

SAP Mobile Infrastructure comes prepackaged with SAP Mobile Development Kit. This tool kit contains all the documentation, examples, and tools that developers require to build your mobile solution quickly and efficiently or to enhance an SAP standard application with mobile capabilities to optimally suit your business.

ACCESSING BUSINESS-CRITICAL RESOURCES ANYWHERE, ANYTIME

Because SAP Mobile Infrastructure enables local business logic on the end-user mobile device, your employees working remotely never have to wait for a network connection to complete mission-critical business transactions. That's a huge benefit, especially in areas where wireless coverage is often sparse at best, such as in remote regions, congested buildings, elevators, basements, and tunnels.

Transactions – such as taking orders, making deliveries, generating invoices, creating service notifications, performing CRM activities, and performing opportunity management tasks – are processed directly on the mobile device, which also stores the results. All data is later reconciled with the enterprise system at a convenient time or when the business process requires it.

SYNCHRONIZATION AND REPLICATION: FULL ENTERPRISE CAPABILITIES AND DATA UNIFORMITY

Mobile devices provide the local transaction logic, whereas SAP Mobile Infrastructure includes the synchronization and replication components that connect mobile users to the complete range of resources available in the enterprise IT landscape (see Figure 4).

Synchronization provides secure, encrypted, and compressed data transfer between mobile devices and any back-end server via SAP Mobile Infrastructure and its middleware server. Executed over HyperText Transfer Protocol with Secure Sockets Layer (HTTPS), synchronization uses standard connection types such as Global System for Mobile Communications (GSM), GPRS, LAN, wireless LAN, and cradles.

The replication component – which includes an extensive tool kit for building objects and monitoring user synchronization and replication processes – uses SAP® Web Application Server to provide automatic delta determination and data assignment to users and user groups.

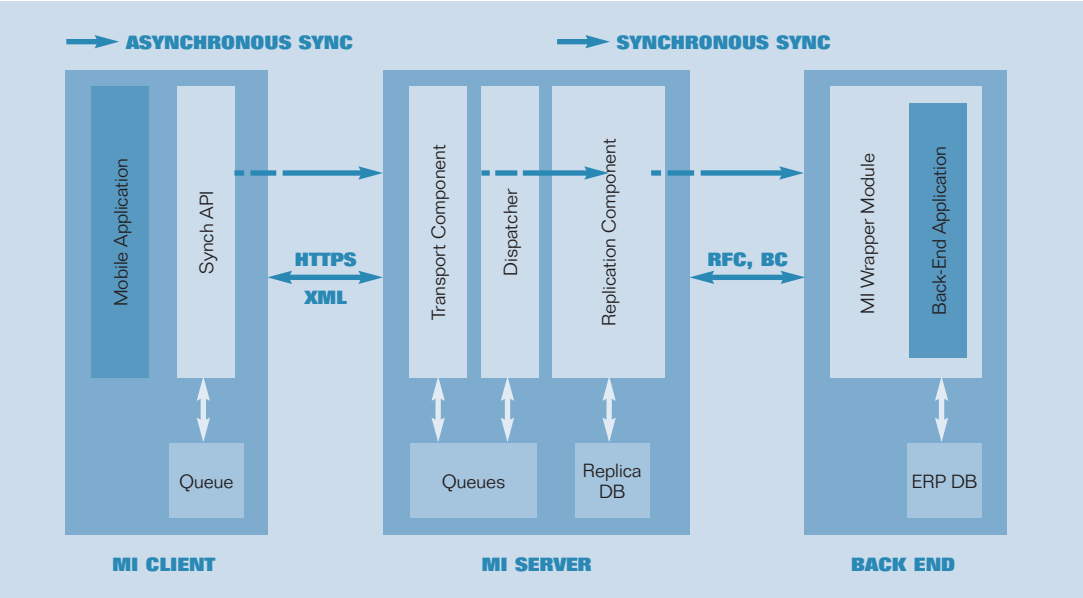

Figure 4: The SAP Mobile Infrastructure Synchronization Architecture

www.sap.com/contactsap

Together, the two vital components of synchronization and replication seamlessly integrate both SAP and non-SAP mobile applications into your existing IT landscape, giving you the power to deliver enterprise-level business functions to your representatives in the field.

To monitor devices in the field, their data flow, usage and error situations, the synchronization and replication processes are fully integrated into SAP's central Computing Center Management System so you have all necessary information to handle whatever situation may arise in the field.

MOBILE AND SECURE

As you extend key business processes beyond the brick-and-mortar enterprise, you want your vital competitive information to be as safe out in the world as it is back home. That's why SAP Mobile Infrastructure provides a secure, encrypted environment that allows you to operate your business with confidence.

Key security capabilities include:
Authentication (user ID with password and X.509 digital certificates), Role-based authorization, Secure network connections (via Secure Sockets Layer), Strong encryption and integrity protection, SecurID support, Integrated user management, and Single sign-on

DEPLOYMENT MADE EASY

For installations, upgrades, and device configuration tasks, SAP Mobile Infrastructure includes a powerful Web-based deployment component that speeds and simplifies these common administrative tasks. Based on the SAP standard role system and integrated into mySAP™ Enterprise Portal, the deployment console provides:

- Central application installation and uninstallation
- Automatic download and deployment of new applications based on roles or device parameters
- Central management capabilities by user, device, application, version, or role
- A central error log to locate and fix potential problems

As the mobile workforce continues to spread across the globe, SAP Mobile Infrastructure provides a centralized deployment mechanism and fast and easy methods to update your wireless organization. The advantages speak for themselves.

SCALABLE FOR THE FUTURE-FOCUSED ENTERPRISE

Companies taking advantage of the mobility revolution today are investing in their future growth. SAP Mobile Infrastructure prepares you with a robust, scalable infrastructure that supports thousands of remote employees concurrently – and thousands more when the need arises. So grow as fast as you like – SAP Mobile Infrastructure can handle the load.

BUSINESS BENEFITS

SAP Mobile Infrastructure pays big dividends, including a low total cost of ownership, investment protection, and a future-proof mobile infrastructure. The technology fueling these business benefits, SAP Mobile Infrastructure, insulates your organization from the complexities of device-level operating systems and wireless networks. This greatly simplifies enterprise mobilization and ensures the future viability of your IT investment.

You can deploy the business scenarios instantly out of the box for rapid return on investment. The open standards-based architecture gives you the flexibility to work with both SAP and non-SAP back-end systems. With SAP Mobile Infrastructure, you can quickly mobilize your business, taking advantage of your existing infrastructure and extending your tried-and-true business processes beyond enterprise boundaries.

The bottom line is that SAP Mobile Infrastructure reduces the overall total cost of ownership and help you focus on what you do best – running your business.

To find out more about SAP Mobile Infrastructure and mySAP Mobile Business contact an SAP representative or visit **www.sap.com/mobile**

50 057 072 (03/07)
© 2003 by SAP AG. All rights reserved. SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. MarketSet and Enterprise Buyer are jointly owned trademarks of SAP AG and Commerce One. All other product and service names mentioned are the trademarks of their respective companies. Printed on environmentally friendly paper.

THE BEST-RUN BUSINESSES RUN SAP