

Mobile Data Collection for SAP[®] Warehouse Management



Introduction

Companies that have deployed SAP® warehouse management (WM) software have come to rely on its flexibility and capabilities in managing increasingly complex and time-sensitive shipping, receiving and warehousing tasks. Extending the capabilities of SAP WM software to mobile workers increases the ability of managers to gather data and direct operations in a seamless and efficient manner.

Understanding the requirements and capabilities of mobile terminals in an SAP environment can help managers make the right decisions at the right time.

SAPConsole, WebSAPConsole and ITSMobile

SAP offers multiple options for connecting RF-linked mobile terminals to the SAP mainframe: SAPConsole and WebSAPConsole, and now ITSMobile are the most common methods in use today. Each of these solutions is designed for within-the-four-walls applications and assumes an always-on RF link back to SAP R/3.

SAPConsole translates SAPGUI pages into text-only pages for character-based terminals.

WebSAPConsole and ITSMobile provide a similar interface but maintain the SAPGUI look for mobile terminals running Windows CE or other graphics-capable operating systems.

These solutions are all shipped with SAP R/3, offering companies a single source of standards-based support for both text and graphical display terminals that are standards-based. Being standards-based, they provide vendor-independent support for a variety of RF devices.

SAP's ERP Warehouse Management functionality offers a number of "pre-configured" RF transactions that are accessible by SAPConsole, WebSAPConsole and ITSMobile. These transactions include the most common transactions and simplify the set-up and configuration of mobile terminals.

Since each application is different and pre-configured modules cannot be provided to cover every contingency, each option supports transaction development using SAP's standard Advance Business Application Programming (ABAP) and SAP Graphical User Interface (GUI). This provides a single source program for efficient testing and maintenance of programs and transactions on both mainframe and mobile terminals. It also allows testing of programs on desktop terminals before deployment to RF-linked terminals.

User-created transactions (or "dialog programs") are linked to existing transaction codes and organized on a special RF menu that is created and maintained in the SAP configuration area (the "IMG"). The RF menu can contain both SAP's pre-configured as well as user-defined RF transactions.

[Note: WebSAPConsole should not be confused with "Web Console" which is part of SAP NetWeaver, SAP's Mobile Engine / Mobile Infrastructure.]

Client access to SAP WM

SAPConsole

Client terminals connect through a standard RF access point to a dedicated WindowsNT/2000 server running both SAPConsole and Telnet protocol. Each client has a unique log-in ID that is established in SAP R/3 but which can be maintained via RF once it has been established.

SAPConsole includes an administrative function (SAPConsole Administrator) to create and manage connection profiles that link the mobile terminals to an SAP module. The SAPConsole server translates SAPGUI screens to suitable text-only screens for character-based mobile terminals and receives input from the terminals for transmission to the SAP module.

SAPConsole is not limited to use on character-based mobile terminals. It can also be used with graphics capable terminals to provide a consistent look and feel, particularly in environments where character-based and graphics-capable terminals may be used in the same application.

Once the connection has been established, the mobile terminal can provide the same functionality as a desktop terminal running the SAP WM module software.

WebSAPConsole

Access to WebSAPConsole is essentially the same as with SAPConsole except that server is a web server, running Microsoft IIS or SAP's own Web Application Server (WAS). The same capabilities and procedures are used for terminal ID and communication between the mobile terminal, the WebSAPConsole server and the SAP WM module.

The significant difference, in terms of the user experience, is that WebSAPConsole maintains the graphical look of standard SAPGUI screens. It should be noted that in 2007, WebSAPConsole is moving into maintenance status in favor of the newly enhanced ITSMobile technology.

ITSMobile

Similar to WebSAPConsole, ITSMobile produces web-based screens for display on graphical mobile terminals. Unlike WebSAPConsole, however, the translation of SAPGUI screens is completed at development time, rather than runtime. As the ITS engine is embedded in the SAP NetWeaver Application server, there is no need for a separate web server, making ITSMobile a truly direct connect solution for an SAP environment. The development methodology of transactions in SAP for ITSMobile is identical to SAPConsole.

Benefits of Web-based solutions versus SAPConsole

Quantifying the benefits of Web-based technology versus SAPConsole in your specific environment depends on a variety of factors: existing equipment, user comfort level, training requirements, and screen design.

For companies where character-based terminals are in the majority, SAPConsole is an obvious choice. And, if character-based and graphics-capable terminals may be used in the same application, maintaining a consistent look and feel to the screens may be most advantageous.

In workplaces with a more tenured workforce, employees may be more comfortable with text-based screens. Even though it is commonly believed that GUI interfaces appear more intuitive and user friendly, long term employees may benefit from old-style text displays for legibility or simply because of the "comfort factor" of something familiar.

Graphical displays provide greater flexibility in screen layout, color, function and design. These elements can assist in rapid visual recognition of screens, fields and tasks and reduce the need to concentrate on reading a text prompt.

The use of a Web-based solution is particularly beneficial if employees switch between graphics-based desktop terminals and mobile devices for the same application. A consistent graphic interface reduces the possibility for confusion or having to mentally "switch gears" between mobile and desktop applications.

New employees may also be more comfortable and familiar with graphic interfaces -- whether through exposure to Windows or Macintosh programs or through video games. Walking employees through a training program where "buttons" look like buttons simplifies training and helps ensure proper operation.

When should I upgrade from SAPConsole to Web-based Technology?

There's no hard-and-fast rule about upgrading from text-based displays to graphic displays. The benefits noted above should provide some indication of when it may be advantageous to offer graphic interfaces versus text-based screens. This decision is further complicated as there are roughly ten different approaches to developing mobile applications in SAP, some of which are not well suited for developing solutions running in a warehouse environment.

It should be noted, however, that even graphics-capable devices do not have to run graphics screens for all applications. There may be applications where graphics screens are highly desirable and others where it makes little difference and character-based screens are the best option. Selection of a technology should be driven by the goals and circumstances of each company, not by merely going with the latest and greatest innovation.

Windows-based mobile terminals can support both applications with equal ease. The ultimate decision is how it affects your workers and overall productivity.