



Solution Brief: ITSmobile – Web-based SAP data collection solution

JANUARY 2010

INTRODUCTION

Since the introduction of the Internet and Web Browser in the mid to late 1990s, a passion has developed for creating “web-based” software, often leading to misguided and unstable applications. Data collection was one such casualty in the rush to incorporate this new technology, once completely dominated by the ubiquitous character-based RF terminal. Experience and technology improvements have led to viable web-based data collection solutions that seem to equally delight and confound the user community. Users love the modern graphical user interface, but are less enthusiastic about performance.

This product brief provides a basic understanding of the “web-based” SAP data collection solution referred to as ITSmobile. The paper focuses on the business perspective and does not delve into the technical details of the solution. For people interested in technical details, please refer to the companion to this document, the PEAK ITSmobile Primer available on the PEAK Internet. <http://www.peaktech.com/sapwp>

WHAT IS ITSMOBILE?

ITSmobile stands for **I**nternet **T**ransaction **S**erver for **M**obile devices, and is one of several approaches that companies might use to create an SAP data collection solution. At a conceptual level, solutions created using ITSmobile are very similar to WebSAPConsole and SAPConsole, with some exceptions noted later in this paper. Basically think of ITSmobile as “an enhanced WebSAPConsole” (the first generation web-based RF solution from SAP).

ITSmobile is a relatively new solution that became available to SAP customers in Q3 2007, and replaces WebSAPConsole, which will no longer be supported for SAP systems based on SAP NetWeaver 7.10 or higher and provides a simple migration path for those companies using that solution. It is very important to understand that ITSmobile is a relatively new solution, but is built from SAP technology that has a long history going back many years.

The Internet Transaction Server (ITS), now referred to as “Integrated ITS”, is the backbone of WebGUI, the web-based equivalent of the ubiquitous SAPGUI client. ITS (and hence ITSmobile) comes in two very different flavors depending on which version of SAP a company is using. Companies running ERP5 or greater have “Integrated ITS”, meaning it is built into the SAP core software. Companies running earlier versions need to obtain and use “stand-alone ITS” (which essentially requires a separate server and development environment). Although ITSmobile solutions using stand-alone ITS are technically possible, PEAK strongly encourages the use of SAPConsole in this case (due to the increased complexity involved with this approach). Using Integrated ITS for an ITSmobile solution is the better approach.

The ITSmobile solution is available to SAP customers along with their SAP software licensing agreement (there is no explicit charge for its use like there is for example the SAP Auto-ID Infrastructure). However, both ITSmobile and SAPConsole require every user that accesses the SAP system to have a proper SAP user license.

ITSMOBILE FAST FACTS

<p>Availability</p>	<p>ITSmobile is available for all SAP versions starting with 4.6C – however PEAK recommends only companies on version 5 (SAP ECC 5) or higher uses ITSmobile, as previous versions require using a separate ITS server. Companies also must have specific patch levels to enjoy the full feature set.</p>
<p>Cost</p>	<p>The use of ITSmobile is included with SAP licensing. However every user must have a unique SAP user license (just like SAPConsole).</p>
<p>Device Support</p>	<p>Technically, ITSmobile supports any device capable of running a web browser with JavaScript support. However – every device type must be tested, as web-based applications have a tendency to not operate uniformly across different devices.</p> <p>PEAK strongly recommends using an industrial browser (Wavelink, Naurtech, iBrowse, etc.) designed exclusively for data collection solutions in order to ensure a solid user experience.</p>
<p>Primary Attractions (Why use it)</p>	<ul style="list-style-type: none"> • Solution supported by SAP - No Middleware required • Real-time connection • Does not require separate server (for SAP ECC 5 and above) • Web based (graphical) screens • Use of JavaScript allows greater flexibility for creating advanced solutions • Better suited for RFID applications
<p>Estimated Implementation Costs</p>	<p>Generally, implementing an ITSmobile solution requires only slightly more effort than SAPConsole. Typical items that can increase the cost are device compatibility issues and special advanced requirements that require development knowledge of web concepts such as CSS, HTML and JavaScript. Do not trivialize these extra required skill sets!</p>

WHY MIGHT COMPANIES NEED ASSISTANCE WITH ITSMOBILE?

There are various reasons companies might need assistance when implementing an ITSmobile solution. Some scenarios are identified below:

1. Company can't decide whether to implement SAPConsole or ITSmobile or other SAP solution (Mobile Web Dynpro, etc.)
2. Migrating from WebSAPConsole
3. An ITSmobile solution (actually any web based solution) works best with the use of an industrial browser designed for data collection applications. PEAK understands the nuances of industrial browsers in this environment and can provide a total package of mobile device, browser, and SAP integration expertise.
4. Data collection solutions are about business processes, not technology. PEAK specializes in these processes and can recommend the correct technology approaches that best fit the overall business objectives, and can provide many mobile business transactions not available in the standard system such as Goods Receipt to purchase order, bin to bin movement, etc.
5. Companies can become overconfident since ITSmobile seems easy to setup and use in a lab environment. (*Note: This principle applies to any RF solution with any technology*). PEAK's involvement with an ITSmobile project safeguards the implementation and eliminates misguided efforts.
6. Client wishes to start a multi-phased project either starting with SAPConsole and migrating to ITSmobile or running both simultaneously. PEAK understands how to safely design such projects and avoid costly oversights such as incorporating incompatible features or poor mobile device selection.

HOW DOES ITSMOBILE COMPARE WITH SAPCONSOLE?

At a high level, data collection solutions built using SAPConsole and ITSmobile are very similar. Companies should not over-analyze when selecting one solution over the other. There is tremendous value in engaging PEAK as a trusted advisor for any such analysis. Unless an ITSmobile solution is built using some features only available with ITSmobile, it is completely feasible to switch between SAPConsole and ITSmobile. However, ITSmobile **does** require more technical skills to implement than SAP Console (or WebSAPConsole).

In general, ITSmobile transactions are created by first writing an RF program in ABAP™, then converting all the screens to “ITSmobile templates”. The ITSmobile templates are the screens displayed on the RF terminals. Each screen however still refers back to the original ABAP program for the business rules and flow logic. As an example, picture an RF program as two related components – a user interface (screens, buttons, fields, etc.) and business functions (validations, database updates, etc.). With SAPConsole, both components are only ABAP. With ITSmobile both components start off as ABAP, but the user interface for ITSmobile is converted (during development) to HTML and JavaScript, which is required to become accessible from a web browser.

Is ITSmobile is better than SAPConsole? There is no correct answer, as it depends on many factors. It is true that ITSmobile is more flexible, but it requires more skill sets to implement. SAPConsole is easier to implement and well known. The most attractive feature of ITSmobile from a business perspective is it does not require a separate server like SAPConsole and it provides a graphical user interface.

The key element that both solutions share is that all the business logic is still created in the ABAP programming language. The tables below indicate other key similarities and differences between the two solutions.

Key Similarities	Key Differences
<ul style="list-style-type: none"> • Both approaches can be used for creating SAP data collection solutions • Application logic written in ABAP • Real-time • Requires individual SAP user logins • Works best with client software designed for data collection (e.g. Wavelink, etc.) 	<ul style="list-style-type: none"> • SAPConsole has a long history, ITSmobile is a relatively new approach • SAPConsole requires a separate windows server - ITSmobile does not • SAPConsole is text-based, ITSmobile is web-based • SAPConsole transactions are ABAP only - ITSmobile transactions are written in ABAP and then converted to HTML and JavaScript • Patch levels are a larger consideration with ITSmobile and it requires a deeper understanding of the “Web Server” functionality in SAP NetWeaver®

SUMMARY

We hope this paper has been useful for understanding more about ITSmobile and what services PEAK can offer clients to ensure a successful implementation. It is important to remember that the ITSmobile solution is still evolving and many of the critical features are only available in later patch level releases.

ABOUT PEAK TECHNOLOGIES, INC.

PEAK Technologies is a systems integrator of supply chain automation and inventory management solutions delivering tangible return on investment to some of the world's largest corporations. PEAK's primary applications include solutions for warehousing, manufacturing, and distribution operations. PEAK's portfolio of solutions and services include business process consulting, enterprise resource planning (ERP) systems integration, wireless professional services, project management, printing/media solutions, and life-cycle support services. PEAK Technologies has locations throughout North America providing a comprehensive "foot print" for national, multi-site life cycle service and support.

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INTRODUCTION

This primer presents a technical overview of ITSMobile, the web-based RF solution provided by SAP AG, along with information related to activating and using it as an RF solution. This document is primarily intended as a reference for technical personnel, so feel free to skip over any sections that may already cover a familiar topic.

For a more general overview on ITSMobile, please refer to the *ITSMobile Solution Brief* and the PEAK white paper, *Selecting an Approach when Implementing an SAP data collection solution in Industrial Environments*, located on the PEAK Internet. <http://www.peaktech.com/sapwp>

ITSMOBILE AS AN RF SOLUTION

At the most basic level, building an ITSMobile RF solution involves taking a bunch of RF transactions (custom or standard LMxx) that were originally created for SAPConsole, converting them into ITSMobile Internet Services (by using an automated SAP utility which is described later in this document), and accessing those services from a web browser. Nothing could be easier.

Now comes the hard part. It's quite possible that many of the RF transactions will not work as expected on any given mobile device. Unlike with SAPConsole and Terminal Emulation, there are many factors involved when building web-based solutions and ITSMobile is no exception. Some of the factors are:

- Many of the critical features of ITSMobile requires certain patch levels or OSS notes be applied.
- Different devices and browsers may work differently and certainly work differently than desktop browsers (e.g. don't just test on a desktop!)
- Web server errors and user experience
- Secure connections using SSL and HTTPS
- Debugging the ITSMobile web components
- Customization of user interface
- Devices going into sleep mode and disconnecting from the web server

The next sections and the remainder of this paper examine the components of an ITSMobile RF solution and ITSMobile RF transaction, activating ITSMobile and building out the solution.

COMPONENTS OF AN ITSMOBILE RF SOLUTION

The figure below provides a visual representation of an ITSMobile solution. Each component is explained further in the pages that follow. Note that the SAP NetWeaver Application Server can be the same server running the ERP software (e.g. SAP ECC 6) or completely standalone (Typically, ITSMobile would run on the same instance as the ERP system).

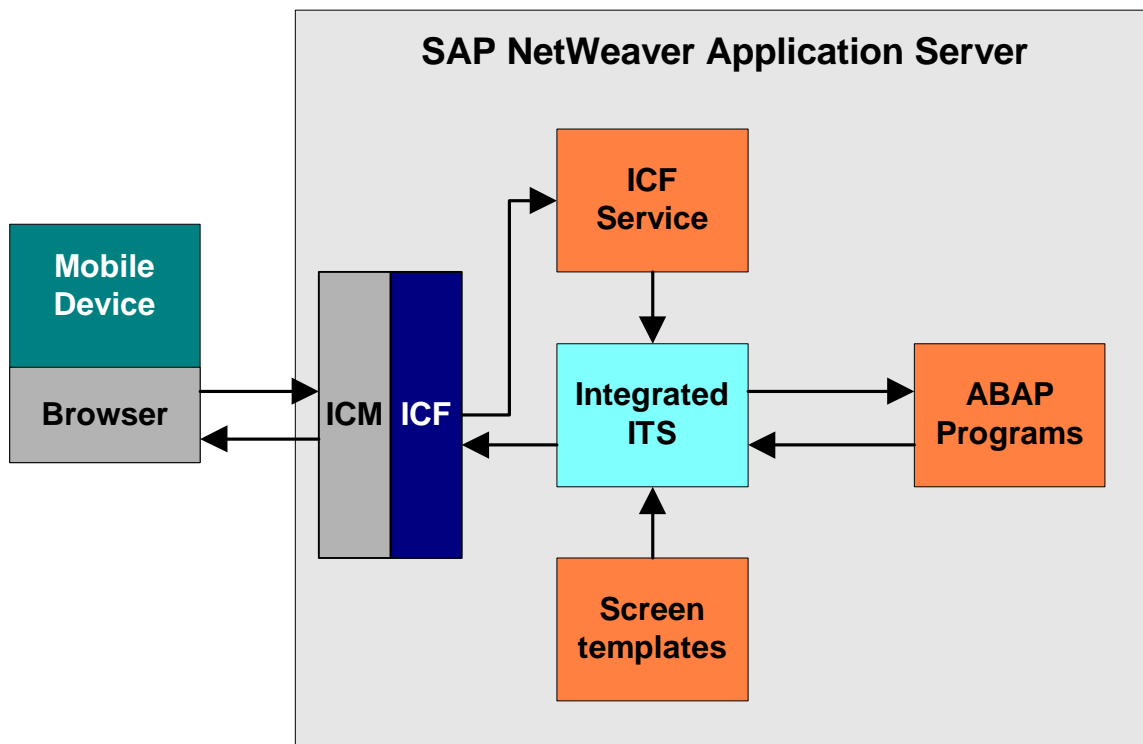


Figure 1 - ITSMobile Components

An ITSMobile RF Solution consists of 6 components.

1. SAP NetWeaver Application Server
2. ICM (Internet Communication Manager)
3. ICF (Internet Communication Framework)
4. Integrated ITS (Internet Transaction Server)
5. ITSMobile RF Transactions
6. Client device and browser

Component	Description
<p style="text-align: center;">SAP NetWeaver Application Server</p>	<p>The SAP NetWeaver Application Server is the software platform that runs almost all SAP software (ERP, PI, AII, SCM, etc.) as of release 4.7.</p>
<p style="text-align: center;">ICM</p>	<p>The ICM is the run-time application within the SAP NetWeaver Application Server that is responsible for managing access to the SAP system from web-based clients.</p> <p>Together the ICM, ICF and Integrated ITS can be thought of as the “SAP web server” embedded inside an SAP NetWeaver application server, and basically offers capabilities similar to Microsoft IIS or Apache web server, but contained completely inside an SAP environment.</p>
<p style="text-align: center;">ICF</p>	<p>The ICF receives and processes HTTP/HTTPS calls (requests) from a client (e.g. a web browser). The ICF forwards the request to the relevant SAP application, where one or more ABAP programs are run, in order to compile the requested data. The data is sent back to the client through the ICF and can be displayed there, in the browser.</p>

<p>Integrated ITS</p>	<p>The Integrated ITS is the original method of communicating with an SAP environment from a web browser, and is now one of several methods of web-based communication available (along with BSP, Web Dynpro, etc.).</p> <p>The ITS basically manages the run-time operation of ITS user sessions and dynamically builds web pages at runtime using various design-time elements (images, HTML documents, style sheets, JavaScript, etc.).</p> <p>ITSMobile applications are one type of web-based applications that are based on the ITS.</p>
<p>ITSMobile RF Transaction</p>	<p>An ITSMobile RF transaction is a collection of development objects (ABAP programs, HTML templates, etc.) that comprise the transaction. The individual components are examined in the next section.</p>
<p>Client device and browser</p>	<p>The client device and browser are important since different devices and browsers can support varying functionality. It is unwise to assume an ITSMobile RF transaction (or any web transaction) will run perfectly on all devices and browsers or if it works on one device it will work on a different device.</p>

An ITSMobile “RF transaction” consists of 6 distinct components:

1. ICF Service
2. Internet Service
3. MIME Objects
4. HTML^{Business} Templates
5. JavaScript Objects
6. ABAP Programs

Component	Description
<p style="text-align: center;">ICF Service</p>	<p>In order to be “invoked” from a client browser, an RF transaction must be linked to an ICF service created using transaction SICF. ICF services dictate the service’s url, login rules, and other related runtime behavior.</p> <p>In general, only one ICF service is needed for transaction LM01 (the RF menu), and then transactions invoked from the RF menu do not require a separate ICF service.</p>
<p style="text-align: center;">Internet Service</p>	<p>The Internet service is basically a collection of HTML screens and related ITSMobile objects. A service can contain one or several screen templates for different RF transactions, allowing them to be grouped together into one single collection.</p> <p>Internet Services are maintained in the SAP development workbench (SE80) and are unique within a development package (e.g. very similar to a function group).</p>

Component	Description
<p>MIME Object</p>	<p>MIME objects are icons, images, sound files, style sheets, and other static objects. MIME objects typically reside in a central repository and can be used by all ITSmobile transactions. New MIME objects can be created using the SAP development tools.</p>
<p>HTML^{Business} Templates</p>	<p>HTML^{Business} Templates are basically the ITSmobile screens and have a one-to-one relationship to each ABAP program screen. Inside each template is the entire screen rendering and processing logic for the screen. Note, screen templates are not the end result you see in a web browser, they are used by the ITS engine to produce the actual HTML page at run-time.</p> <p>The programming language used for these templates is a combination of HTML, HTML^{Business}, and JavaScript. HTML^{Business} is SAP's version of HTML that contains special SAP keywords.</p> <p>These templates can be generated automatically using tools in SE80 or created manually. Either way, they can be edited directly to influence functionality.</p>
<p>JavaScript Objects</p>	<p>JavaScript objects (functions) enable all the good stuff to be possible within an ITSmobile transaction like function key and field processing.</p> <p>Technically, SAP treats JavaScript functions as a MIME object; so “stock” JavaScript functions get copied into HTML templates automatically when using SE80. However, JavaScript can be added anywhere in a template to influence its functionality.</p>

Component	Description
ABAP Programs	<p>ABAP programs can range from existing RF transactions used for SAP Console applications – e.g. LM01, LM05, ZMIGO, etc. to a loose collection of ABAP function modules with screens that are callable from HTML^{Business} templates.</p> <p>The most straightforward option is to generate templates for existing SAP RF transactions using a special utility in SE80 call “create templates”</p>

BUILDING AN ITSMOBILE SOLUTION

ACTIVATING ITSMOBILE

The following steps describe setting up ITSmobile from scratch on a new server.

1. Confirm HTTP is active (ICM transaction SMICM)
 - a. Typically the default is active, and you don't need to check this unless the test ITSmobile service does not work.

Press SHIFT+F1 to see the services screen

ICM Monitor - Service Display

No.	Log	Service Name/Port	Host Name	Keep Alive	Proc. Timeo	Actv	External	Bind
1	HTTP	8000	pro-service	30	60	✓		
2	SMTP	0	pro-service	30	60	✓		

Figure 2 - Services Screen in Transaction SMICM

2. Confirm Integrated ITS is enabled

Use transaction SITSPMON. The parameter itsp/enable must be set to 1, indicating the Integrated ITS engine is active. This is typically the default setting.

Internal ITS: Status

The screenshot shows the 'Internal ITS: Status' configuration window. At the top, there are tabs for 'Parameter', 'Memory statistics', 'Template & Mime Cache', 'Mutex Locks', 'HTML Template Direct.', 'Feature List', and 'BHTML Runtime'. Below the tabs, there are input fields for 'Status' (0), 'ITSPE_OK' (OK), and 'Feature Set' (19). The main area contains a table of 'Profile Parameters'.

Name	Value
itsp/SAPjulep/Profiling	0
itsp/SearchhelpResultPerPage	100
itsp/Security/allow_designs_from	
itsp/Traces/SAPagi/TraceLevel	1
itsp/Traces/SAPautom/TraceLevel	2
itsp/Traces/SAPdiag/TraceLevel	2
itsp/Traces/SAPdp/TraceLevel	1
itsp/Traces/SAPjulep/TraceLevel	1
itsp/Traces/SAPplugin/TraceLevel	2
itsp/Traces/SAPxgdk/TraceLevel	2
itsp/TreeNodeesPerPage	100
itsp/cachecontrol/maxage	43200
itsp/devmode/contextdump	0
itsp/enable	1
itsp/ignorefromurl	
itsp/max_eg_mem_percent	80
itsp/memory_check	1
itsp/sessionid_path_position	1
itsp/startokcode	0

Figure 3 - Profile Parameter itsp/enable in Transaction SITSPMON

3. Activate public ICF services related to ITSmobile (need list)

Run transaction SICF and activate the following “public” services. These allow public access to certain web pages in the event of errors, etc., and must be activated for ITSmobile to operation correctly.

- /default_host/sap/public/bc/its/mobile
- /default_host/sap/public/bc/its/mimes
- /default_host/sap/public/bc/icons
- /default_host/sap/public/bc/icons_rtl
- /default_host/sap/public/bc/ur
- /default_host/sap/public/bc/webicons

Maintain service

Create Host/Service External Aliases System Monitor Inactive

Filter Details

Virtual Host: Service Path:

Service:

Description:

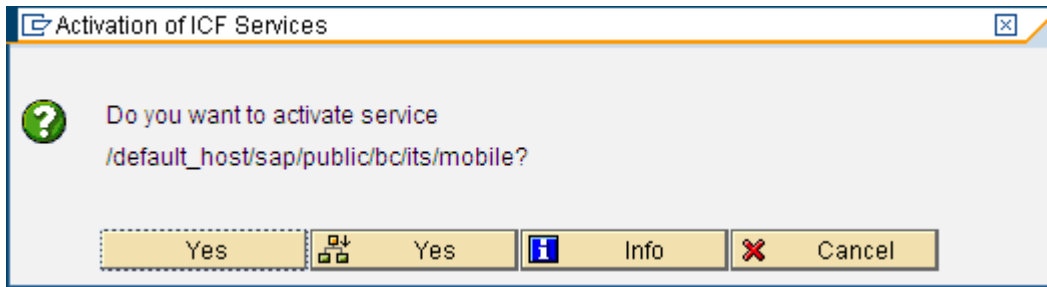
Lang.: English Ref.Service:

Filter Reset Detail

Virtuelle Hosts / Services	Documentation	Referenz Service
default_host	VIRTUAL DEFAULT HOST	
sap	SAP NAMESPACE; SAP IS OBLIGED NOT T...	
option	RESERVED SERVICES AVAILABLE GLOBA...	
public	PUBLIC SERVICES	
bc	Basis Tree (Basis Functions)	
icons	SAP Icons	
icons_rtl	Icons RTL	
its	Internet Transaction Server (ITS)	
designs	Service for MIME Repository	
mimes	MIME Repository	
mobile	ITS Mobile Start Services	
rfid	RFID Support for Mobile Devices	
start	Start Service for ITS-Based Mobile Services	
test	Test Service for ITS-Based Services	
pictograms	Pictograms	
sicf_login_run	Test for ICF System Logon	
trex	TREX	
ur	Unified Rendering	
wdtracetool	Web Dynpro Trace Tool	
webdynpro	Web Dynpro MIME Handling	
webicons		
workflow	Business Workflow - Public Services	

Figure 4 - SICF Transaction - Public node

To activate – right click on the service and then select activate service.



Select Yes with the “Tree Icon” to activate all the sub-services or Yes to activate just the specific service.

4. Activate and test sample ITSmobile transaction

In SICF, navigate to node /default_host/sap/bc/gui/sap/its/test/mobile/ and activate each service you wish to test - itsmobile00 is sufficient for a test.

Maintain service

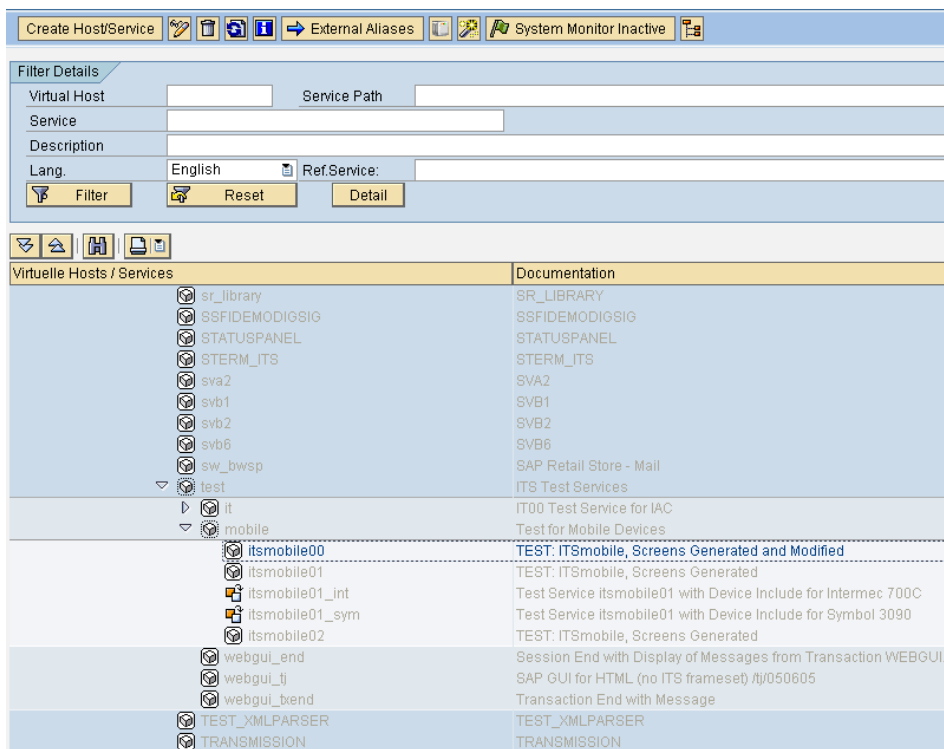


Figure 5 SICF - itsmobile00 test service

To test service, right click on the service and select “test service”. This will bring up your desktop browser and test the service.

If you have forgotten to activate any mandatory services, you will likely see a message in the browser instructing you to activate more services. Once everything is activated you should expect a logon screen to appear in the browser –

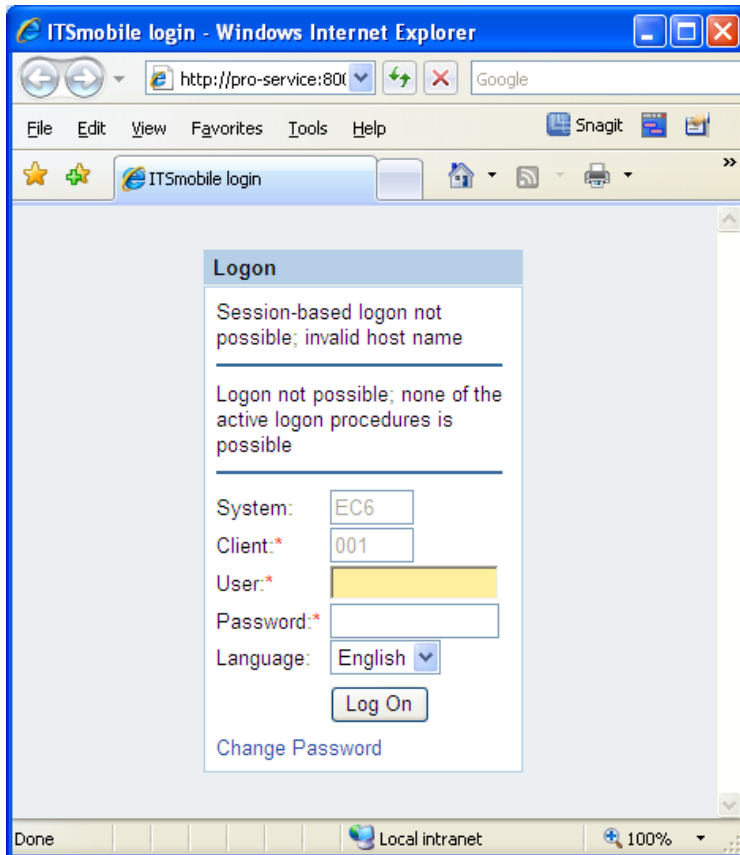


Figure 6 - itsmobile00 service login screen

Enter your SAP username and password and click the Log On button.

If you see a screen similar to the one below – the test is successful and ITSmobile is active.

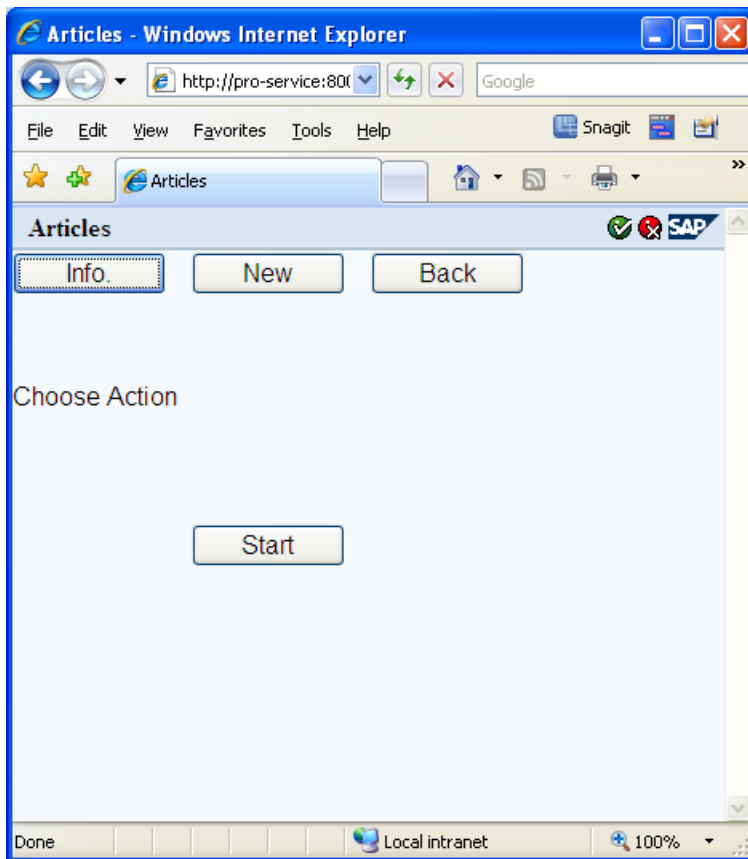


Figure 7 - itsmobile00 screen in browser

If you do not see this screen or a dump, then the most likely issue is that the screen templates were not generated.

To access this service directly from a browser or mobile device, use the following URL:

<http://hostname:8000/sap/bc/gui/sap/its/test/mobile/itsmobile00?sap-client=001>

Note: You will need to replace the hostname with the actual name of your SAP NetWeaver Application Server's hostname and the client number with your client number.

Once ITSMobile is active, we can create the screen templates for each RF transaction to be used in the project. The steps are as follows:

HIGH LEVEL STEPS FOR CREATING ITSMOBILE TRANSACTIONS

1. Create or identify the ABAP dialog program used for the transaction
2. Create a PEAK Internet Service in SE80
3. Generate the screen templates for program RLMENU (e.g. transaction LM01)
4. Create an ITSMobile ICF Service for transaction LM01
5. Create (or identify an existing) the RF transaction
6. For each RF transaction, create a screen template for every screen used by the transaction (or program or function module)
7. Invoke the new ITSMobile service on a browser

PUBLISHING THE DEFAULT ITSMOBILE SERVICES

ITSMobile provides several “stock” screen templates and mime objects (CSS, JavaScript, etc.) that are delivered in one or more Internet Services. These services need to be published, otherwise you may get short dumps when initially trying out an ITSMobile test program.

To publish the services, use SE80 and navigate to the Internet service ITSMobile. Right click on the service and select publish all. Please also check OSS note 1273367, as additional services might need to be published depending on your patch level.

CREATING AN INTERNET SERVICE

Run SE80 and create a new Internet Service – e.g. ZLM01

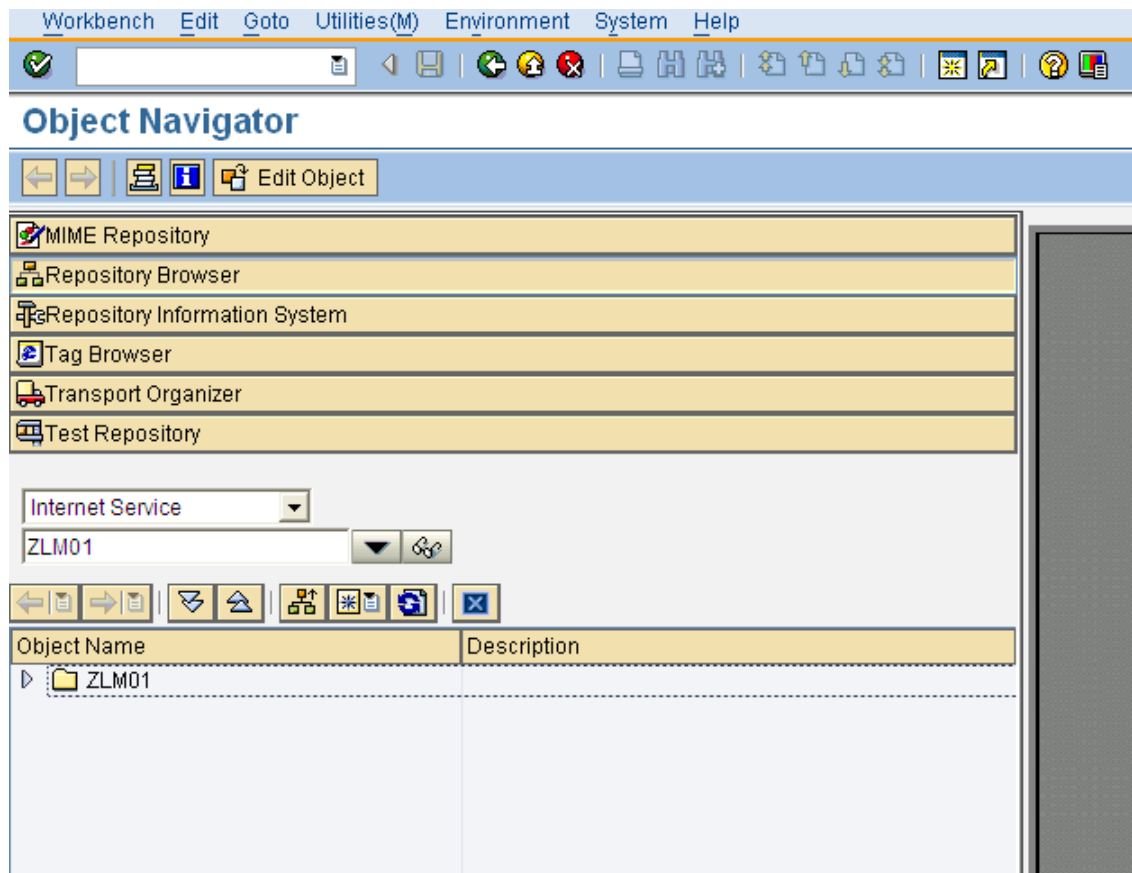


Figure 8 - Internet Service ZLM01

GENERATE THE SCREEN TEMPLATES FOR PROGRAM RLMENU

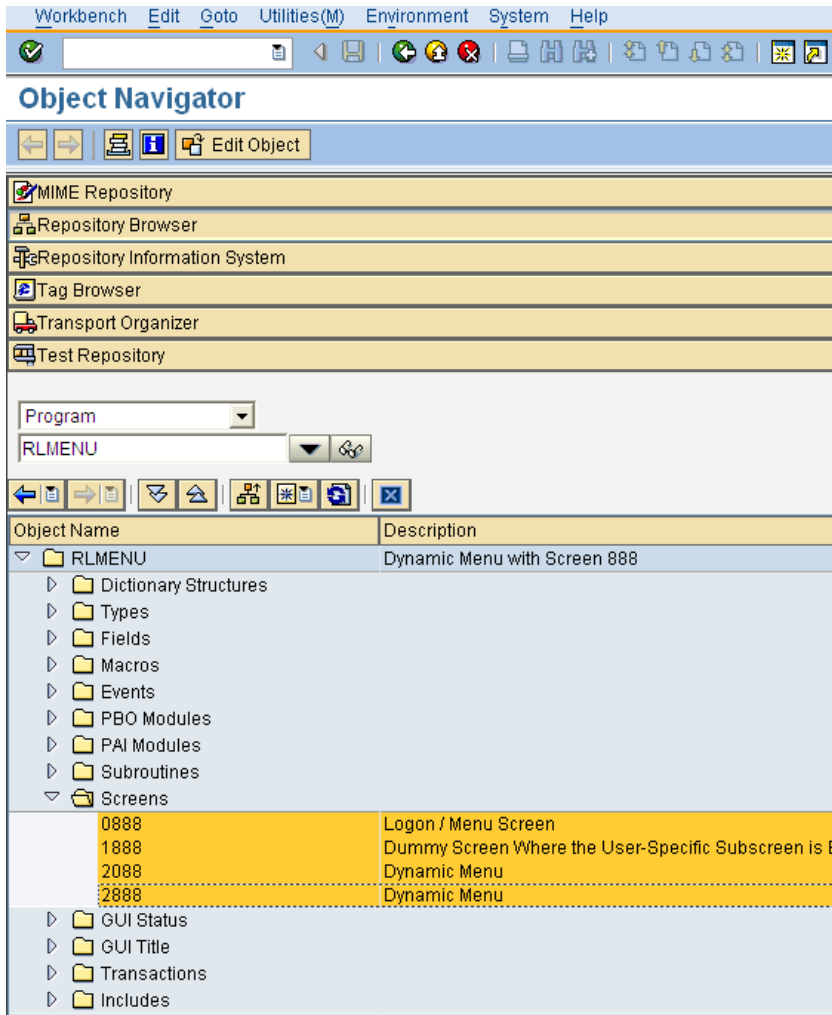
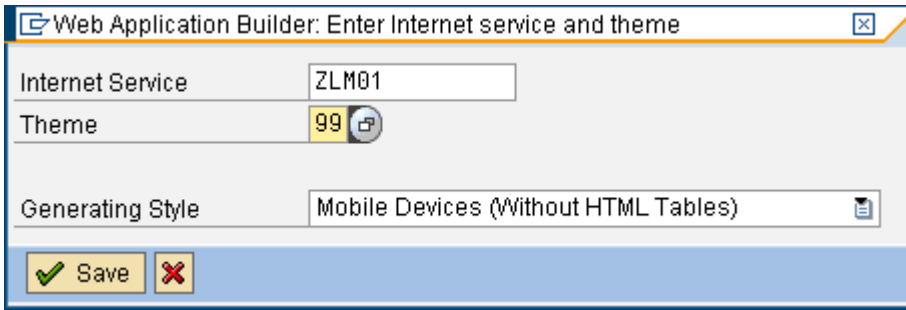


Figure 9 - Generating Screen Templates for RLMENU

Load the RLMENU program (The program behind transaction LM01 – e.g. the RF Menu) into the workbench and select each screen needing a template, right click and select “create template”.



Enter the name of the Internet Service (created in the first step above), “99” for the theme (this is the default theme) and select the desired generating style – there may be more than one depending on the patch level, but they will all indicate mobile devices. Select a development package on the next dialog box and then the generation is complete.

To see the results, go back to the Internet Service to see the screen templates.

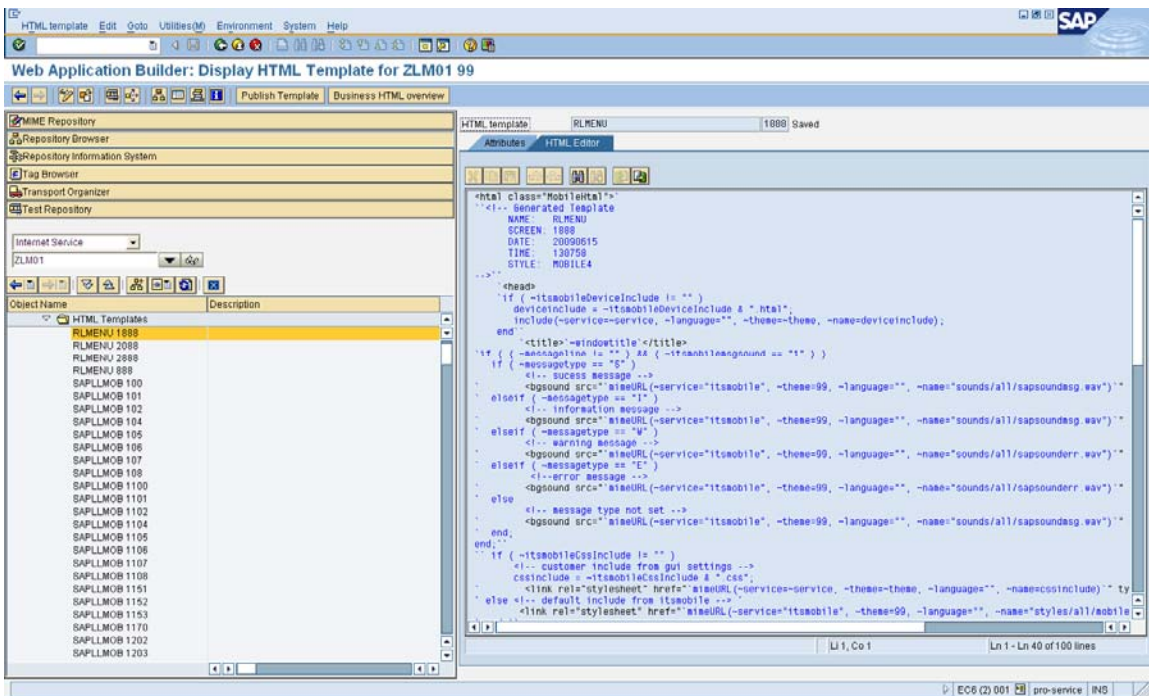


Figure 10 - ZLM01 Service after Screen Generation

Next the screen templates need to be activated (published in ITSMobile lingo). To publish – which means they will become active the next time someone requests the screen in ITSMobile. Publishing can be done for individual templates by selecting it and pressing the “Publish Template” button or right clicking on the Internet Service and selecting “Publish -> Complete Service” (meaning all screen templates in the service will be published).

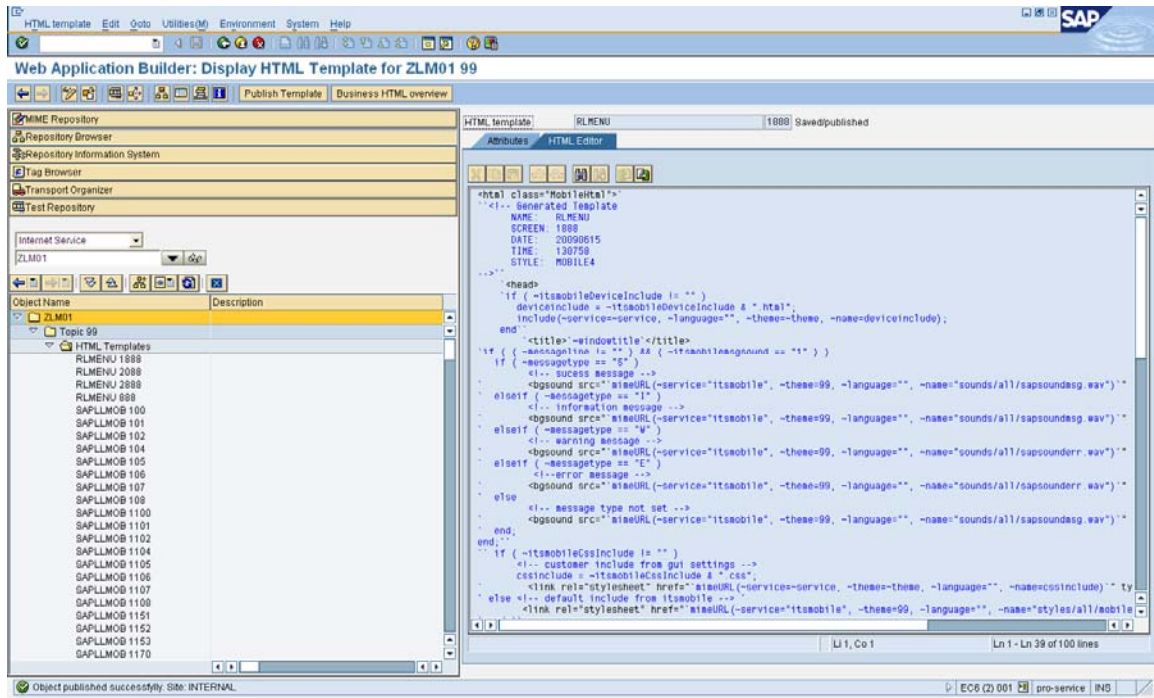
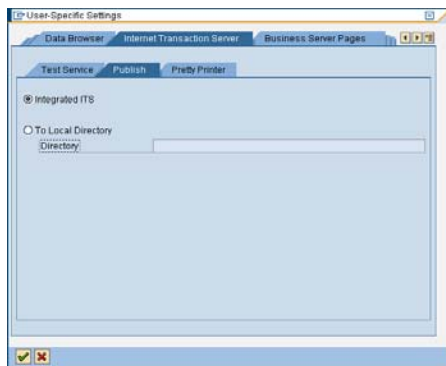


Figure 11 - RLMENU Screen Templates - Published to INTERNAL

Notice the screen template know indicates Saved/published, indicating it has been published. A message in the status line shows whether the publishing to the INTERNAL site was successful. All templates should be published to location “INTERNAL” which is defined in the SE80 user settings menu option.



Please note that the Integrated ITS runtime caches pages, so to ensure a newly changed page is used by every user the next time they request it, it is good practice to refresh the cache using transaction SITSPMON. You cannot select specific screens, this will refresh all screens.

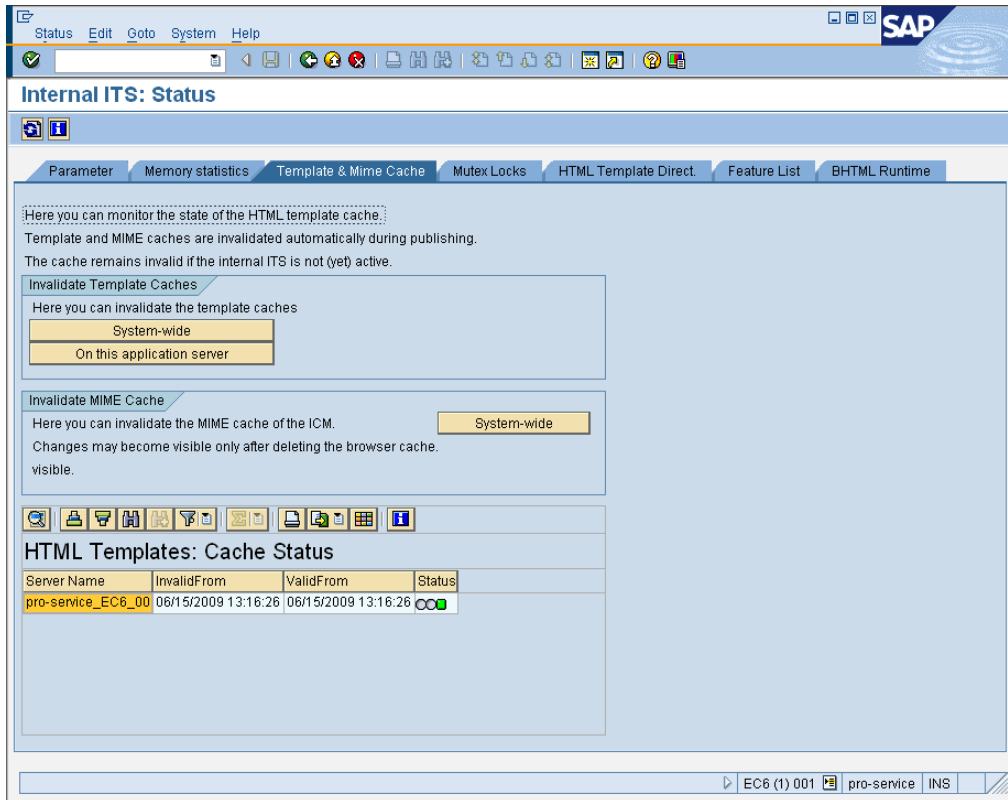


Figure 12 - Clear Cache feature in Transaction SITSPMON

CREATE AN ITSMOBILE ICF SERVICE FOR TRANSACTION LM01

Run transaction SICF and navigate to the sap node (or wherever in the path you decide to create the object) and create a new service (in our example it is called ZLM01. **it is important that this name exactly matches your Internet Service from the previous step – otherwise you cannot utilize certain ITSMobile ICF parameters like ~ITSMOBILECSSINCLUDE**) and provide a relevant description. Once this is created we can test running transaction LM01 from a browser. Remember that the position in the tree dictates the URL used to invoke the service.

Maintain service

Virtual Host: Service Path:

Service:

Description:

Lang.: English Ref.Service:

Filter Reset Detail

Virtuelle Hosts / Services	Documentation	Referenz Service
default_host	VIRTUAL DEFAULT HOST	
sap	SAP NAMESPACE; SAP IS OBLIGED NOT T...	
option	RESERVED SERVICES AVAILABLE GLOBA...	
public	PUBLIC SERVICES	
ap	Application Platform	
bc	BASIS TREE (BASIS FUNCTIONS)	
bic	SERVICE FOR BIC DOCUMENT	
bw	BW	
ca	Cross-Application Components	
meData	meData synchronization Service	
xi	Exchange Infrastructure (XI)	
ZLM01	ITSMobile service for LM01	
sap_java	VM Container Engine for Java Applications	
SAPconnect	SAPCONNECT (E)SMTP	

Figure 13 - SICF - displaying ZLM01 service in tree

On the Service Data Tab, set GUI Link to Yes and click on “GUI configuration”.

Create/Change a Service

Path

Service Name Service (Active)

Lang. [Other Languages](#)

Description

Description 1

Description 2

Description 3

Service Data | Logon Data | Handler List | Error Pages | Administration

Service Options

Do Not Include Inherited Settings

Load Balancing

SAP Authoriz.

Session Timeout (HH:MM:SS)

Compression

Interactive Options

GUI Link [GUI Configuration](#)

Support Accessibility

Figure 14 - SICF - Create Service

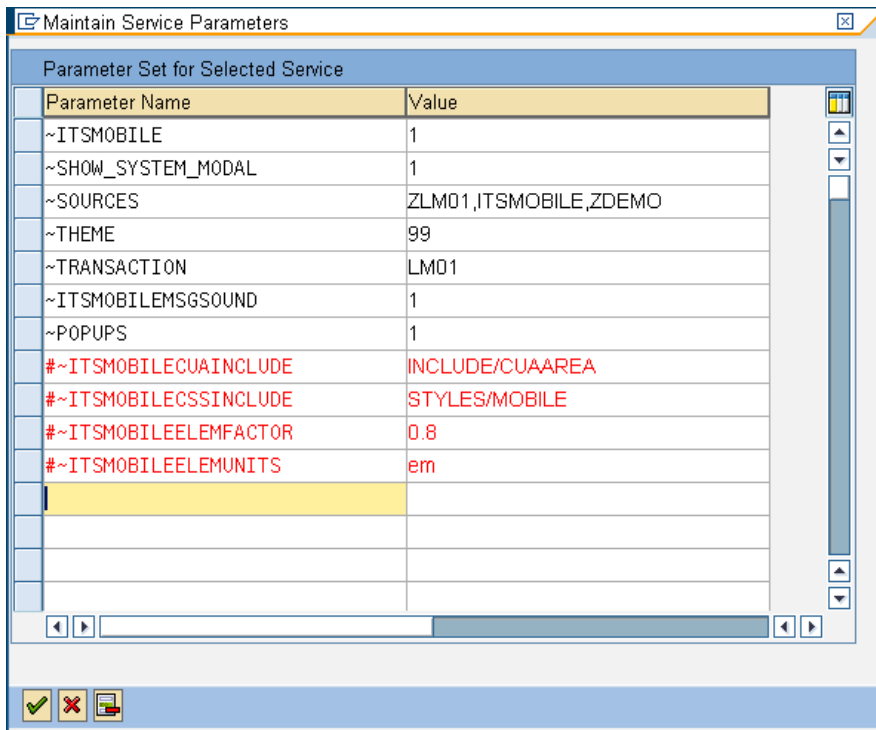


Figure 15 - GUI Configuration screen

The service must contain the following minimum parameters:

Parameter	Value	Comment
~ITSmobile	1	Must be '1'
~THEME	99	Must match your Internet Service – by convention is '99'.
~TRANSACTION	LM01	LM01 is the RF menu or replace with your custom transaction code
~SOURCES	ZLM01,ITSmobile	Must contain your Internet Service name and ITSmobile
~POPUPS	1	Must be '1' to allow F8-Logoff to work from RF Menu

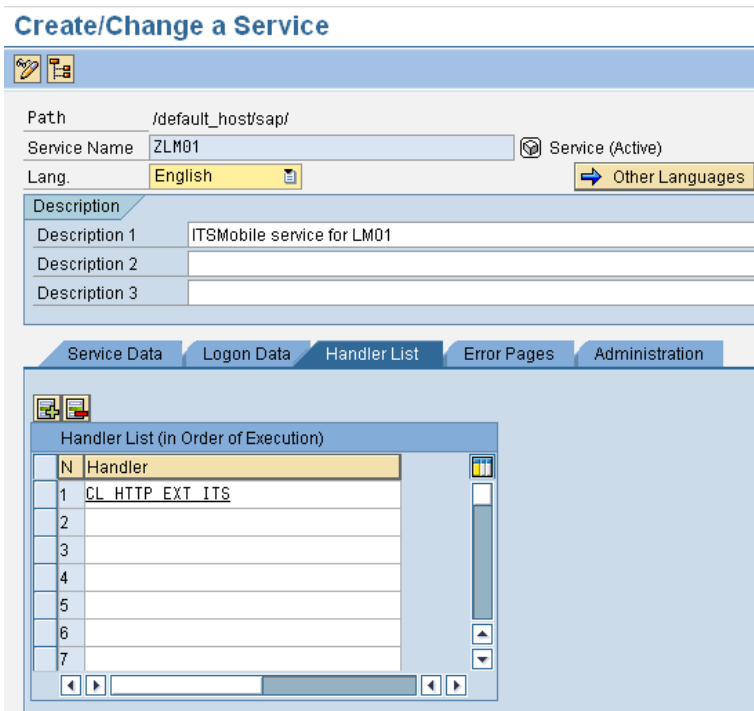
~ITSMobileSOUND	1	Must be '1' to allow sounds
-----------------	---	-----------------------------

The ~sources parameter instructs ITS where to find the screen templates. Since some of our screen templates use objects (images, JavaScript, system screens, etc.) from the default ITSMobile Internet Service, we also tell it to look there if it cannot be found in our service by listing out ZLM01 first and then ITSMobile second separated by a comma

Other parameters affect different capabilities and features. The best documentation of these parameters can be found on the ITSMobile Wiki on SDN.

Save settings by pressing the green check box.

Next navigate to the Handler Tab and set the **CL_HTTP_EXT_ITS** handler as shown.



Next select the Error Pages Tab.

Create/Change a Service

Path /default_host/sap/

Service Name ZLM01 Service (Active)

Lang. English

Description

Description 1	ITSMobile service for LM01
Description 2	
Description 3	

Service Data Logon Data Handler List Error Pages Administration

Logon Errors Appl. Errors Logoff Page Not Accessible

Explicit Response Time

Explicit Response Page Header

Header Page

Explicit Response Page Body

Body Page

Redirect to URL Status 2

Redirect

W/o Form Fields Form Fields (Text Form)
 Form Fields (Base64)

System Logon

Select the "System Logon" radio button and click the Configuration button.

Figure 16 - SICF - Logon for Mobile devices Setup

Select “Define Service-Specific Settings”, which allows other fields to become open.

- In the Select display area, select what fields you want to see on the logon screen – the less the better – but for testing you might want to display more.
- In the Actions During Logon area, set the protocol to “Do Not Switch” – this allows logon with regular HTTP (using SSL and HTTPS is a separate discussion).
- In the Default area, set the client so the user does not have to specify it on the login screen – unless they need to select a client at login.
- In the Logon Layout and Procedure Area, set the User Specific class as shown.

Save and return to the main screen.

Select the Logon Data Tab. In the “Procedure” field, select Alternative Logon Procedure, which opens up a list at the bottom of the screen.

Create/Change a Service

The screenshot shows the 'Create/Change a Service' configuration page. At the top, there are fields for Path (/default_host/sap/), Service Name (ZLM01), and Language (English). Below these are three description fields. A tabbed interface is visible with 'Logon Data' selected. In the 'Logon Data' section, there are fields for Client, User, Password (masked), Language, and Password Status (Initial). Below this are sections for Security Requirement (Standard selected) and Authentication (Standard SAP User selected). At the bottom, a 'Logon Procedure List (in Order of Execution)' is displayed, showing a single entry 'N Logon Procedure'.

Figure 17 - SICF - Logon Data Screen

In the Logon Procedure list, remove all entries except *fields authentication*. This allows the mobile login screen to function properly and not allow a user to return to an SAP screen without logging in again.

Note: this login procedure must have a certain patch level release to function properly; otherwise a different technique described in OSS can be used.

Create/Change a Service

Path: /default_host/sap/

Service Name: ZLM01 Service (Active)

Lang.: English

Description

Description 1: ITSMobile service for LM01

Description 2:

Description 3:

Service Data | **Logon Data** | Handler List | Error Pages | Administration

Password Status: Initial

Security Requirement: Standard SSL

Authentication: Standard SAP User Internet User

Default

Logon Procedure List (in Order of Execution)

N	Logon Procedure
1	Fields Authentication

Figure 18 - SICF - Logon Procedure

Save the service and return to the main SICF screen to activate and test the service.

Right click on the ZLM01 service and select “Test Service”. A new web browser screen will open with the Mobile login screen displayed.

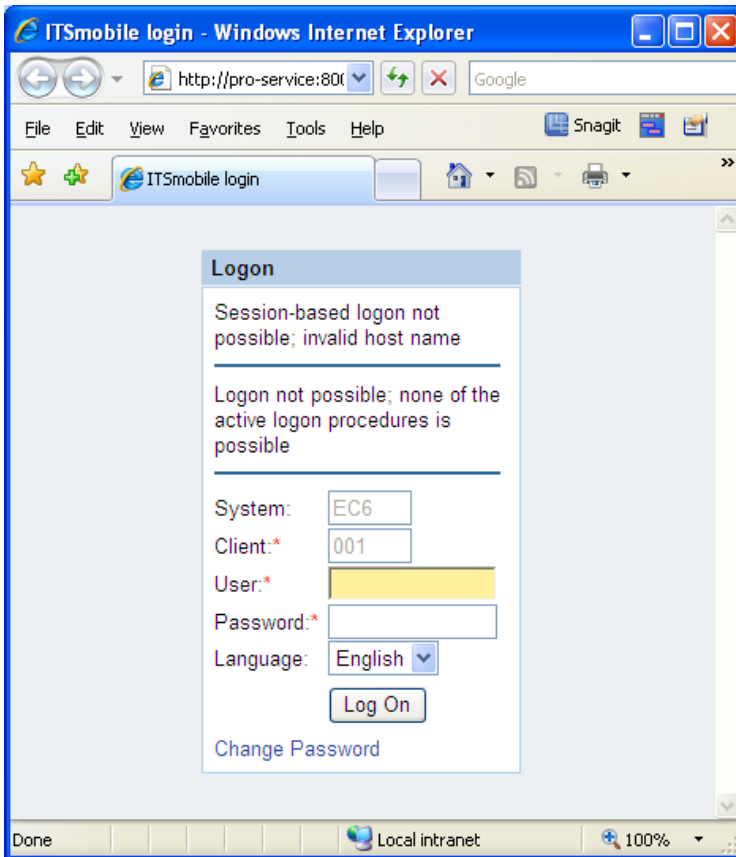


Figure 19 - ZLM01 Service Login Screen

Login using your SAP username and password.

This helpful message is the most common (as indicated by termination type RABAX_STATE) and usually means SAP could not find the screen template. You can see these errors in transaction ST22.

Error when processing your request

What has happened?

The URL `http://pro-service:8000/sap/zlm01` was not called due to an error.

Note

- The following error text was processed in the system EC6 : **Error message occurred.**
- The error occurred on the application server `pro-service_EC6_00` and in the work process 0 .
- The termination type was: RABAX_STATE
- The ABAP call stack was:
START-OF-SELECTION of program RLMENU

What can I do?

- If the termination type was RABAX_STATE, then you can find more information on the cause of the termination in the system EC6 in transaction ST22.
- If the termination type was ABORT_MESSAGE_STATE, then you can find more information on the cause of the termination on the application server `pro-service_EC6_00` in transaction SM21.
- If the termination type was ERROR_MESSAGE_STATE, then you can search for more information in the trace file for the work process 0 in transaction ST11 on the application server `pro-service_EC6_00` . In some situations, you may also need to analyze the trace files of other work processes.
- If you do not yet have a user ID, contact your system administrator.

Error code: ICF-IE-http -c: 001 -u: CSCHULTZ -l: E -s: EC6 -i: pro-service_EC6_00 -w: 0 -d: 20090615 -t: 140304 -v: RABAX_STATE -e: ITS_ERRMSG_EXCEPTION

HTTP 500 - Internal Server Error
Your SAP Internet Communication Framework Team

Figure 20 - RABAX_STATE Termination Error

In this particular case, I forgot to add myself to transaction LRFMD causing SAP to try and display a screen (an error screen) that did not have a screen template. After adding my username to LRFMD, the service is tested again.

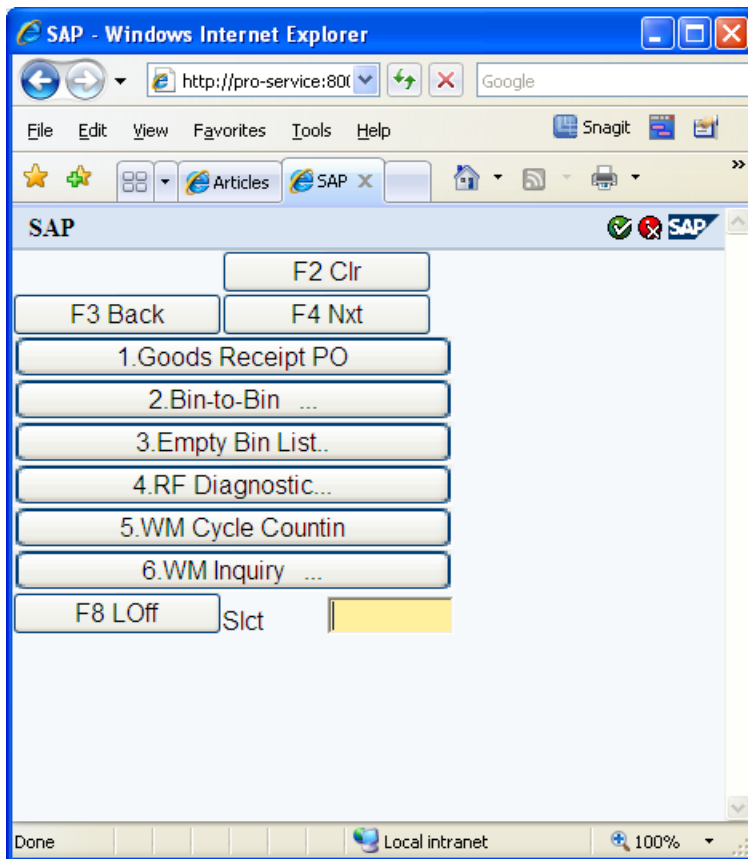


Figure 21 - LM01 using ITSmobile

From this point any other RF transactions can have screen templates created and added into the ZLM01 Internet Service, thus building up the solution with other RF transactions. The LM01 transaction works exactly like using SAPConsole – just remember to generate the screen templates for each transaction in the RF menu or you will get the RABAX_STATE dump.

The URL for running service ZLM01 would be –

<http://hostname:8000/sap/zlm01?sap-client=xxx>

CUSTOMIZING ITSMOBILE

There are two options for customizing an ITSMobile application, depending on the circumstances:

1. Directly modify the generated screen templates

Note: If you modify the resulting screen templates, and you generate them again – you changes will be over-written! Do this only if you understand this concept and creating a custom generator is not feasible.

2. Create or adapt the existing template generator

This technique would affect the output of the SAP template generation utility and is a better approach for mass changes or specific changes that all transactions require for a given project.

ITSMOBILE TECHNICAL INFORMATION

INTEGRATED ITS AVAILABILITY

- Any SAP NetWeaver Application Server 6.40 and later

ITSMOBILE TEMPLATE GENERATOR AVAILABILITY

These are the minimum patch level releases for using ITSmobile:

- SAP NetWeaver7.0 from Basis 7.00 SP11
- SAP NetWeaver04 from Basis 6.40 SP21
- SAP R/3® Enterprise from Basis 6.20 SP63
- SAP R/3 4.6C from SAP 4.6C SP55

As ITSmobile has evolved from its initial release and we suggest you have the latest patch levels or at least the ones listed below since they contain critical features (updated generator, include functionality, etc.) that are better suited for using ITSmobile in a production environment. See ITSmobile Wiki for details.

Integrated ITS

- SAP Web AS 640: Kernel Patch , Basis Support Package: 24 (SAPKB64024)
- SAP Web AS 700: Kernel Patch , Basis Support Package: 18 (SAPKB70018)
- SAP Web AS 710: Kernel Patch , Basis Support Package: 7 (SAPKB71007)

NETWEAVER APPLICATION SERVER SIZING

Refer to OSS Note 1115080 for guidance on server sizing and the ITS Wiki for fine tuning information.

ITS ADMINISTRATION

You can administrate the integrated ITS completely with the following SAP transactions

- SITSPMON (Status of the integrated ITS)
- SICF (Configuration of the ITS-ICF-services)
- RZ10 / RZ11 (Definition of profile parameters)
- ST11 (Error Log Files)
- SM21 (System Log)

There is just one important parameter for Integrated ITS:

em/global_area_MB

This parameter sets the size of the global shared memory which is being used from all work processes and holds the ITS session and template data. (Set with RZ10 / RZ11). **Note: There is no data yet on tuning this parameter for production usage.**

RESOURCES AND FURTHER READING

INTEGRATED ITS WIKI ON SDN

<https://www.sdn.sap.com/irj/sdn/wiki?path=/display/HOME/Internet%2bTransaction%2bServer>

The Wiki contains information on sizing, examining trace files, FAQs and other good information. Also contains the link to the ITSmobile Wiki, which contains a description of the ITSmobile specific ICF parameters. **ALWAYS REVIEW THE ITSmobile WIKI BEFORE STARTING A PROJECT.**

ITSMOBILE HELP PORTAL

http://help.sap.com/saphelp_nw70/helpdata/en/46/668d4b72255de4e10000000a1553f6/frameset.htm

SAP TECHED 2007 PRESENTATION

UP114, Update on Internet Transaction Server (ITS) and ITSmobile

OSS NOTES

There are numerous OSS notes related to login and logoff issues when using ITSmobile, so please review them when working on any ITSmobile project. Search on “ITSmobile”.

Some key OSS Notes are:

- Note 1142337 - Generating program creates slow HTML mobile templates
- Note 1427526 - ITSmobile: added template for SAPMSSY0 screen 1000
- Note 1276337 - ITSmobile: required internet services
- Note 1309633 - ITSmobile: custom OMRT controls auto-recognized at runtime
- Note 1239937 - ITS screen format (revised version) – **Critical if using LMxx transactions**
- Note 1037715 - ITSmobile: Supported screen elements
- Note 1031074 - ITSmobile 1.1: Supplements and improvements
- Note 1316326 - ITSmobile: HTML element size is independent of font size

ABOUT PEAK TECHNOLOGIES, INC.

PEAK Technologies is a systems integrator of supply chain automation and inventory management solutions delivering tangible return on investment to some of the world's largest corporations. PEAK's primary applications include solutions for warehousing, manufacturing, and distribution operations. PEAK's portfolio of solutions and services include business process consulting, enterprise resource planning (ERP) systems integration, wireless professional services, project management, printing/media solutions, and life-cycle support services. PEAK Technologies has locations throughout North America providing a comprehensive "foot print" for national, multi-site life cycle service and support.

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