Supportability Topics for the SAP Mobile Platform
An Introduction

SMP Enterprise Grade Mobility – Webinar Series

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On SCN pages and a series of webinars, we drill down into Enterprise Readiness aspects of the SAP Mobile Platform (SMP).


- Webinars complement these published resources. The Webinar schedule is also published on SCN. http://scn.sap.com/docs/DOC-43425
Supportability Topics for the SAP Mobile Platform
An Introduction
SMP Enterprise Grade Mobility – Webinar Series
Purpose this presentation

To provide an overview of topics pertaining to the area of Supportability for the SAP Mobile Platform. The topics include:

1. Tools provided by the Mobile Platform
2. Additional tools
3. SMP and Solution Manager
4. Troubleshooting
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1. Introduction
2. Tools Provided by the Mobile Platform
3. Additional tools
4. SMP and Solution Manager
5. Troubleshooting
6. More Information
What is Supportability for SMP

**Supportability** is the capability to monitor the SAP Mobile Platform to find errors or exceptions, trace or debug to identify the errors, and provide hardware and/or software solutions to resolve the issue or error.

Once a system or application is running in a production mode, it becomes important to make sure that it stays running efficiently. So once you identify an anomaly in the system you can make identify, trace and resolve the issue.

**NOTE:** The day to day operation, configuration, and monitoring can be found under the Life Cycle Management topic on SCN.
SAP Mobile Platform
Customer Expectation: Seamless support for whole mobile platform sold by SAP!
Platform note

This presentation is applicable to the **SMP 2.3** release as well as previous versions of the **Sybase Unwired Platform** (SUP).

It does not take into account the **Agentry** platform from **Syclo** or the Sybase **Mobilizer** platform.
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Monitoring with the Sybase Control Center

In the Sybase Control Center the current and past activity and performance indicators can be accessed via the “Monitoring” section. For monitoring to be active the default profile on the “General” tab needs to be enabled.

To view the activity for a specific application using replication, choose the replication tab.
Another section of the SCC monitoring is the messaging area which shows the activity for the native messaging applications.

For both Replication & Messaging, the steps are similar. Choose performance and select current start and end date. The press “retrieve”

After receiving the data, especially the rows “Total Errors” and “Average Synchronization Time” are important to check, to know how many things went wrong and how much time synchronization took.
Another important step is to check the log of the SUP server for errors. For this expand the “Servers” node and expand the SUP service.

To filter the logs, check “Show filter”.

At this point the log level can be selected, so that only specific logs will be shown.

For example log level “ERROR” will only show all logs which are stated as an error.
SUP Logs

Database error log: errorlog.txt
Unwired Server log:*-server.log.*
MobiLink Server error log :mlsrv_err.log
client trace: *mocalog.txt
AGENT LOG: agent.log.*
GATEWAY LOG : gateway.log.*
REPOSITORY LOG: repository.log.
OUTBOUND ENABLER LOG  *RSOE*.log
DEVICE MANAGEMENT LOG: \DeviceManagement *.txt
AMP TRANSFORMER LOG: \AMPTransformer *.txt
APNS PLUGIN PROXY LOG: \APNSPluginProxy *.txt
AUTO UPGRADE LOG : \AutoUpgrade *.txt
BB NOTIFIER LOG: \BlackBerryNotifier *.txt
DROPPED MESSAGES LOG \DroppedMessages *.err
HTTPDSYNC LOG :HttpdSync *.txt

INBOX MULTIPLEXER LOG  \InboxMultiplexer *.txt
JMS BRIDGE LOG: \JmsBridge *.txt
MO LOG: \MO *.txt
MOLOGMISC LOG: MOlogMisc *.txt
MOLOGMOBILEOBJECT LOG: MOlogMobileObjects *.txt
MOLOGMOBILESYSTEM LOG : \MOlogSystem .txt
MOLOGMOBILEOFFICE LOG: \MOlogMobileOffice *.txt
NOTIFICATIONENGINE LOG: \NotificationEngine *.txt
OBSERVICEMANAGER LOG: \ObServiceManager *.txt
ROUTER LOG : \Router *.txt
SETTINGSEXCHANGE LOG: \SettingsExchange *.txt
SUPBRIDGE LOG: \SUPBridge .txt
SYNCENGINE LOG: \SyncEngine *.txt
TM LOG: \TM *.txt

NOTE: Most (not all) logs can be found in <Drive>: \Sybase\UnwiredPlatform\Servers\UnwiredServer\logs
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Monitor SMP with MobiLink Monitor

To pinpoint performance bottlenecks in synchronization based applications, it is necessary to trace and drill down into synchronizations. MobiLink Monitor provides the insight into where the response time is spent on the server side, and provides a good indicator on where the bottleneck may lie in.

MobiLink Monitor can be found in SMP’s installation directory: `<SMP_Directory>\Servers\SQLAnywhere12\BIN32\mlmon.exe`. The window on the right is the MobiLink monitor’s login window.

MobiLink Monitor shows all the synchronization activities.

See next page for an example:
MobiLink Monitor results
The **System Landscape Directory** (SLD) of SAP NetWeaver is the central directory of system information that is relevant for the landscape description needed as a basis for management of your software’s application life-cycle.

It contains a description gathered from your system landscape (that is, the software components that are currently installed) and a repository of software components that can theoretically be installed in your landscape (such as the software components available from SAP).

Since the system information is updated automatically, the SLD provides reliable and up-to-date information with minimized effort for you. In this way, the SLD acts as a central information provider for SAP and third-party tools that use this data to deliver the services you need to keep your landscape up and running.
SAP SLD Server Configuration Overview

For SAP environments that use Solution Manager for runtime root-cause analysis, configure a destination System Landscape Directory (SLD) server. This configuration allows Unwired Platform to deliver runtime information to a common SAP SLD repository, keeping information about your SAP and Unwired Platform mobility infrastructure complete and current.

<table>
<thead>
<tr>
<th>Task</th>
<th>Frequency</th>
<th>Perform in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure a new destination SLD server</td>
<td>One time</td>
<td>Sybase Control Center</td>
</tr>
<tr>
<td>Add, remove, or edit destination server</td>
<td>Infrequent, required as environment changes</td>
<td>Sybase Control Center</td>
</tr>
<tr>
<td>connection properties</td>
<td>Infrequent</td>
<td>Sybase Control Center</td>
</tr>
<tr>
<td>Export data</td>
<td>Routine</td>
<td>Sybase Control Center</td>
</tr>
<tr>
<td>Enable and disable the schedule</td>
<td>As required</td>
<td>Sybase Control Center</td>
</tr>
<tr>
<td>Edit schedule properties</td>
<td>As required</td>
<td>Sybase Control Center</td>
</tr>
<tr>
<td>Upload XML payloads on demand</td>
<td>As required</td>
<td>Sybase Control Center</td>
</tr>
</tbody>
</table>
CA Wily Introscope is a powerful monitoring tool based on byte-code instrumentation. It can be used to obtain monitoring metrics of SMP servers, such as synchronization time and the duration of the underlying API calls, as well as other useful information. These include

- Java VM heap utilization
- Synchronization response time
- Time spent in Operation Replay
- Tracing API Calls
Monitoring with Wily Introscope

Wily Introscope is a monitoring solution, created and sold by Computer Associates (CA).

SAP licenses it to customers as part of Solution Manager Diagnostics, so SAP customers can get it from the SAP Service Marketplace without additional cost.

The version available from Service Marketplace is adjusted to suit the needs of SAP customers, but it is not identical with the full version available from CA.

A Wily installation consists of a central server aggregating Agent data (Enterprise Manager) and a number of Agents on Satellite systems.
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So You want to set up SUP with Solution Manager

The following prerequisites apply

- Sybase Unwired Platform 2.1.1 or higher (latest version is 2.2)
- SAP Solution Manager 7.1 SP5 and higher for Technical Monitoring
- Diagnostics Agents 7.3 SP2 or higher
- Wily Introscope Enterprise Manager 9.1
- Managed System Configuration for Sybase Unwired Platform has been performed.

The following limitations apply

- For SUP 2.1 only Online Data Proxy (ODP) Scenario performance metrics are available.
- For SUP 2.2 Performance monitoring metrics now are available for the ODP scenario and RBS scenarios as well.
Roadmap Solution Manager Integration for SAP Mobile

- **SM7.1 SP04**  SUP 2.1 / Gateway 2.0
  - E2E Change Analysis
  - E2E Exception Analysis
  - E2E Workload Analysis

- **SM7.1 SP05**  SUP 2.2 / Gateway 2.0
  - E2E Trace Analysis for online scenarios
  - System Monitoring for Mobile
  - Transport and Deployment Management

- **SM7.1 SP05+**  SUP 2.2+ / Gateway 2.0+
  - E2E TA for offline scenarios with SUP
  - Continuous Improvements
What is E2E Change Analysis?

Use Case
- Check all changes in a solution (OS, DB, ABAP parameters, Java parameters, transport requests, Support Packages, and so on)
- Central entry point for Root Cause Analysis

Provides
- Number of changes per system, change category, and day

Best Practice for Investigation / Rules of Thumb
- Drill down into the changes per day
- Click on a row with a green background color to open the Change Report Viewer and check the change history
- If the change was recorded in a transport request, you can find the details in the managed system
What is E2E Exception Analysis?

Use Case

- Exception trend analysis
- Starting point for analysis of a specific exception

Provides

- Overview of the exceptions in different components of a solution

Best Practice for Investigation / Rules of Thumb

- Do a timeframe selection by day, week, or month to see the exception trend in a solution and its components.
- For analyzing a specific exception, select a timeframe of several minutes around the point in time when the exception occurred.
- Further investigate the components where exceptions occurred.
What is E2E Workload Analysis?

Use Case
- Get workload information on your complete solution
- Analyze overall performance bottlenecks

Provides
- Key performance indicators for different components

Best Practice for Investigation / Rules of Thumb
- Check the workload overview for bad response times
- Scan for parameters that have both high Average Response Times and large Accumulated Response Times.
- Large Accumulated Response Times have the largest overall impact on the performance of a system
- Check the component-specific KPIs for deviation from average values
System Monitoring

- Provide status overview regarding technical system including instances, databases and hosts
- Allow to access landscape information and problem context for technical system
- Drill down from status information to single metrics and events provided by End-to-End Monitoring and Alerting
- Visualize metrics and events including thresholds and current rating / value
- Jump-in capability in metric viewer including zoom functionality in detail information
System Monitoring Metrics for Sybase Unwired Platform

Available with SolMan 7.1 SP05
- Server Availability
- Server Response Time (ODP scenario only)
- Critical exceptions in SUP logs

Planned with SolMan 7.1 SP05+
- MBO processing
- Replication based Synchronization
- Device notifications
- Workflow execution
- Outstanding subscriptions
- Pending items backlogs
- Locked users
- Inactive Queues
System Monitoring for Sybase Unwired Platform
End-to-End Trace for Mobile Apps

Record end user activities

Collect trace data in Solution Manager

Analyze in detail and find root-cause

Understand request flow
How E2E Trace is performed

1. **Administrator enables tracing for involved systems**
   - Systems will react on externally received SAP Passports
   - Trace flags embedded in SAP Passport are evaluated

2. **End user starts trace and performs steps which need to be traced**
   - Steps and requests are detected

3. **After finishing steps the user presses the stop button**
   - Instrumentation is switched off
   - Data from client side are collected and XML is prepared
   - XML is sent to SAP Solution Manager

4. **Administrator starts trace collection in SAP Solution Manager E2E TA**
   - XML is parsed for SAP Passport Information and client side request data
   - Based on Passport information trace fragments written for requests are collected from involved systems
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Troubleshooting

The primary goals of troubleshooting:

• Gather enough information to diagnose the problem, so you can solve it
  AND/OR

• Gather supporting information to document the problem, so you can contact SAP Technical Support for help in resolving it.

Troubleshooting Process

• Collecting Information
  Use Sybase Unwired Platform and other resources to collect information, then use the information to troubleshoot and solve the problem.

• Reporting Errors
  Before reporting problems to SAP Technical Support, collect as much relevant background information as you can.

• Ensuring System Recoverability
  Ensure system recoverability by keeping the platform components in good health.
Troubleshoot Basic Scenarios

**Debugging Replication Synchronization**
Describes the replication synchronization process flow and options available for diagnosing problems at each step of the process.

**Debugging Message Synchronization**
Describes the message synchronization process flow, and options available for diagnosing problems at each step of the process.

**Debugging Hybrid Web Container Development**
Device client and Unwired Server troubleshooting tools for diagnosing Hybrid Web Container development problems.

**Sybase Unwired Platform End-to-End Process Flow**
Understanding SUP processing flow at a high level between the enterprise information system (EIS), Sybase Unwired Platform, and devices is important for troubleshooting, as well as knowing the options available for diagnosing problems at each step of the process.

**Debugging the Cache**
Describes the cache database cache process flow, and options available for diagnosing problems at each step of the process.

**Debugging Data Change Notification**
Describes the data change notification process flow, and options available for diagnosing problems at each step of the process.

**Debugging Android Object API Development**
Device client and Unwired Server troubleshooting tools for diagnosing Google Android development problems.
Troubleshooting Links

Troubleshooting Security, Logins and Authentication

Troubleshooting SMP Device Notifications
http://scn.sap.com/docs/DOC-41488

Troubleshoot the system

Troubleshoot the Relay Server

Efficient SMP Log Analysis
http://scn.sap.com/docs/DOC-42486
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More Info MobiLink monitoring

Infocenter

SAP Community Network
Configuring MobiLink Monitor and connect to SUP 2.x - http://scn.sap.com/docs/DOC-41801
More on Wily Introscope

SAP Community Network - Solution Manager - CA-Wily Introscope Set-UP

Go to:
Choose the platform you are interested in.

Also refer to notes:

• 1634219
• 1126554
More on SMP and Solution Manager Integration

SAP Community Network - Solution Manager Set-Up:
Wiki Home Page
http://wiki.sdn.sap.com/wiki/display/SMSETUP/Home
Thank you

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