

White Paper

SAP Integration using All

How to Automatically Print BarTender Labels
using SAP's Auto-ID Infrastructure

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Introduction

This white paper explains how the SAP Auto-ID Infrastructure (AII) can be integrated with BarTender to automatically print labels.

Overview

BarTender Integration with SAP AII

SAP AII is a logistics management software system that allows for automatic label printing when used with the right external software products, such as BarTender from Seagull Scientific.

There are two primary tasks that must be completed in order to implement this label printing integration:

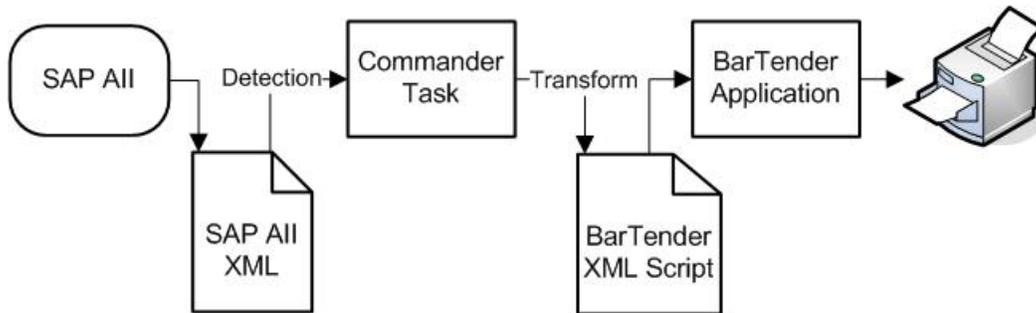
- **Configuring the SAP AII Application.** Label printing integration with SAP AII is based on the generation of an XML file containing all of the information needed to describe an RFID label print job. This application must be configured to create the desired XML file and send it over a specified TCP/IP port. The steps to do this are not documented here but can be found in your SAP documentation. SAP is responsible for helping users get to the point where they are properly generating these XML messages. For additional information on SAP AII and label integration, please see the AII-DC-RFID 1.0.doc file from SAP.
- **Configuring Commander and BarTender.** To handle XML label requests, Commander must be configured both to monitor the port in which the XML files will be received and then respond by executing the desired print job. This white paper documents the steps necessary to accomplish this.

Initial Setup

- Using BarTender, the label designer creates a label format using BarTender. The content of the format directs the printer to print a label that includes the values of several variables from the master list. The format also directs the printer to write the value of the EPC variable to the RFID tag.
- A Commander SAP AII task is created and a TCP/IP port is specified. The default port is 5171.
- SAP AII is configured with the same port as specified in the Commander task, the name of the printing format, and the associated list of variable names.

Print Process

A Commander XSL transform transforms the incoming SAP AII data into BarTender XML Script. The print cycle is illustrated in the diagram below and defined in the following bulleted steps:



- SAP AII selects the printer and printer format, and evaluates the associated data variables, including a unique ID value. A WriteTagData command message is sent to the Commander using the specified TCP/IP port.
- Commander listens on the specified port and receives the incoming SAP AII message. Sample SAP AII code is displayed below:

```
<?xml version="1.0" encoding="UTF-8"?>
<Command xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="Command.xsd">
  <WriteTagData readerID="Writer_Device">
    <item>
      <FieldList format="C.LABEL.PL"
        jobName="Writer_Device20040929165746"
        quantity="1">
        <Field name="EPC">
          30740242220403B80000000008</Field>
        <Field name="EPC_TYPE">SGTIN-96</Field>
        <Field name="EPC_URN">
          urn:autoid:tag:sgtin-96:3.5.0037000.065774.8</Field>
        <Field name="PRODUCT">SGPROD</Field>
        <Field name="PRODUCT_DESCRIPTION">Test product</Field>
      </FieldList>
    </item>
  </WriteTagData>
</Command>
```

- Commander transforms the data into BarTender XML Script.
- Commander processes the BarTender XML Script data.
- BarTender sends the format and data to the RFID printer.
- The RFID printer prints a label and writes the ID to the RFID tag embedded in the label.

Configuring Commander and BarTender

To handle XML label requests, Commander must be configured both to listen on the TCP/IP port and then respond by executing the desired print job. The following sections document the steps necessary to configure Commander.

Seagull Scientific's Commander Utility

The Enterprise Print Server edition of Commander is the only edition that can be used with SAP AII. Commander is a utility that allows BarTender to automatically print label jobs in response to certain triggering events from other software. Commander can be set to monitor a TCP/IP socket and begin processing data when triggered. When a trigger event is detected, Commander reads commands and/or data from that trigger and passes them on to BarTender, which executes the print job.

For more extensive information about using the Commander utility, please see the Commander white papers at:

<http://www.seagullscientific.com/asp/whitepapers.aspx>

Note: Performance in heavy utilization environments is improved with the Enterprise Print Server edition of Commander, as it can launch and communicate with multiple instances of BarTender.

Included Files

Samples files, located at “My Documents\BarTender\Formats\SAP AII”, are installed with the Enterprise Print Server edition of BarTender as examples of how BarTender can be integrated with SAP AII.

Label Formats

When the Enterprise Print Server edition of BarTender installs Commander, it installs a label format that implements SAP AII. The format name is SGTIN-96.btw.

Commander Task Lists

Commander installs **SAP-AII.tl** which is used by the Enterprise Print Server edition and provides reception of SAP AII XML messages through the TCP/IP port 5171.

Configuring Commander for Integration with SAP AII

To integrate Commander with SAP AII:

1. Install BarTender Enterprise Print Server edition.
2. When BarTender installation is complete, use the Windows Explorer to browse to the SAP AII samples folder, which should be located at “My Documents\BarTender\Formats\SAP AII”.
3. Open the “SAP-AII.tl” task list in the SAP AII folder. Commander will launch automatically.
4. A task appears in the Commander screen named **SAP AII (Socket port 5171)**. When you select the SAP AII task check box and click the **Start Detection** button in Commander’s tool bar, Commander starts listening for SAP AII messages on port 5171.

Testing the Commander Configuration

In order to confirm that you have Commander properly configured, perform the following test:

1. Configure SAP AII to send label print messages on port 5171.
2. Send a SAP AII message/print job specifying the RFID printer and the BarTender label format.
3. BarTender should respond to the message by automatically printing the label to the printer specified in your SAP AII message.

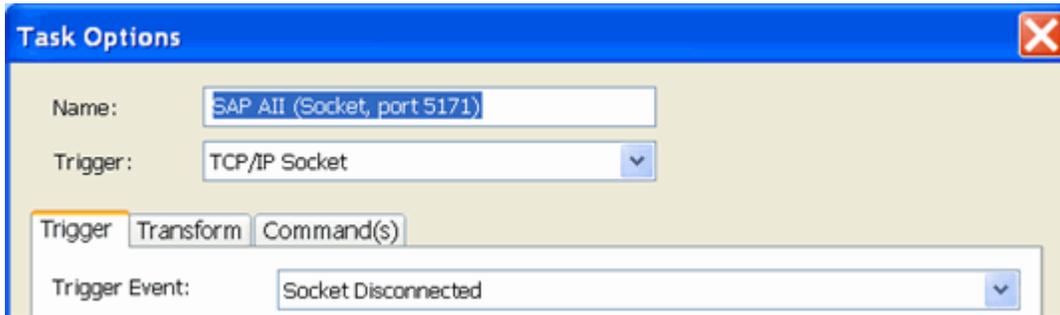
Creating a Custom Task in Commander for SAP AII

Note: This procedure describes only the steps necessary for creating a task that monitors a TCP/IP Socket for SAP AII files. For a complete description of all of the following screens and their available options, see the **Commander Online Help**.

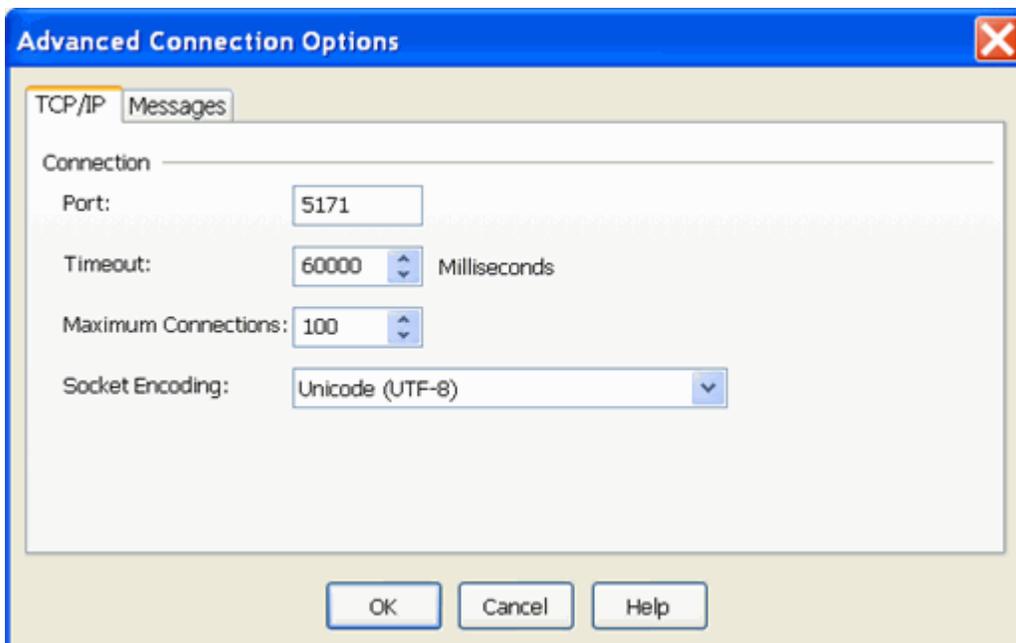
Step-by-step Instructions

To create your own TCP/IP Socket Task to accept XML from AII:

1. Open **Commander**.
2. Select **Add** from the **Task** menu. The **Task Options** dialog appears.



3. Create a name for the new task, if desired.
4. Select **TCP/IP Socket** from the **Trigger** drop-down menu.
5. Click the **Trigger** tab, if it is not already selected.
6. Select the **Socket Disconnected** option. (Commander will save any collected data when the client disconnects from the socket.)
7. Click the **Socket Options** button . The **Advanced Connection Options** dialog appears.

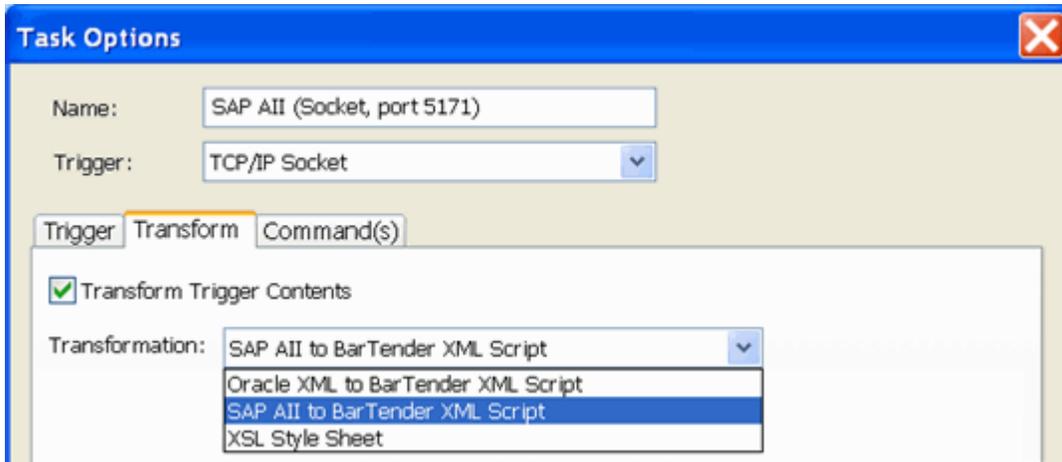


8. Specify the port in the **Port** text box. You can set your task to any desired port.

Note: In order for SAP AII and Commander to communicate properly, the port specified in SAP AII and the port specified here must match.

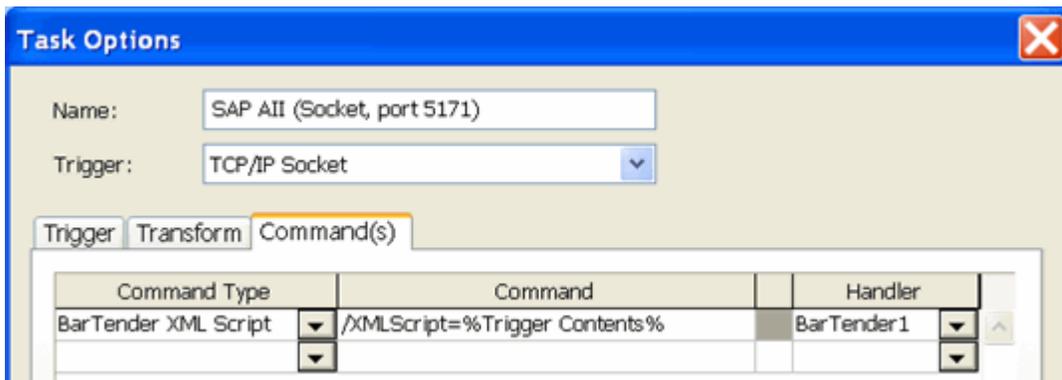
9. Click **OK** to close the dialog.

10. Click the **Transform** tab and select the **Transform Trigger Contents** checkbox.



11. Select **SAP AII to BarTender XML Script** from the **Transformation** drop-down menu.

12. Click the **Command(s)** tab.



13. Select **BarTender XML Script** from the **Command Type** drop-down menu. The **Command** and **Handler** columns will fill automatically.

14. Click **OK** to close the Task Options dialog and return to the Commander main screen.

You have now configured the task to listen for SAP AII data.

Available Seagull White Papers

General White Papers

- The Advantage of Drivers by Seagull
- Choosing the Right BarTender Edition
- Label System Security

Companion Applications

- Printer Maestro, Part 1: Enterprise Print Management
- BarTender Security Center
- BarTender Web Print Server

Recent Upgrades

- What's New in the Latest BarTender

Integration White Papers

- Integration Overview
- Commander
- Commander Examples
- BarTender's .NET SDKs
- BarTender's ActiveX Automation Interface
- Exporting Printer Code Templates
- Using BarTender with Terminal Services and Citrix MetaFrame
- XML Integration with Oracle's WMS and MSCA

Integration With SAP

- SAP Integration Methods
- Reading SAP IDocs
- SAP Auto Infrastructure Integration with BarTender

Miscellaneous White Papers

- BarTender Enterprise Licensing
- Printing International Characters Using BarTender
- BarTender Software Activation
- Using BarTender's Application Identifier Wizard
- Optimizing Label Printing Performance
- Status Monitor Overview
- Silent Install

