

SAP How-to Guide,
SAP Mobility

Afaria / Relay Server

How To... Integrate the Relay Server Outbound Enabler with Afaria

A Branded Service provided by SAP Customer Solution Adoption

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Afaria 6.6 & 7.0

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Document History

Document Version	Description
1.10	
1.00	First official release of this guide

Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
< Example text >	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons





Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

Table of Contents

1.	Business Scenario	1
2.	Background Information	1
3.	Prerequisites	1
4.	Relay Server Outbound Enabler (RSOE)	1
4.1	RSOE Configuration within Afaria.....	2
4.2	Launching the Outbound Enabler	3
4.3	Outbound Enabler Connection Diagram.....	4
4.4	Outbound Enabler Connectivity to Backend and Relay Servers	5



1. Business Scenario

In order to connect mobile devices to a server located within company's intranet, a Relay Server is a landscape component that is used to add this functionality in a safe and secure way. Relay Server typically sits in a corporate De-Militarized Zone, often called as DMZ in network terms, which is secured by two layers of Firewalls, internal and external.

Relay Server Outbound Enablers are the established communication channels and the way Relay Server functions and communicates with the backend, in this case Afaria.

This document covers technicalities around RSOE, Relay Server Outbound Enabler.

2. Background Information

The intent of this document is to outline the communication between the Relay Server Outbound Enabler (RSOE) and the Afaria component servers. This will cover what connections are established when a RSOE process, or service, is started to initiate connection to Afaria component servers on the backend. This will also cover the RSOE configurations specific to Afaria and its additional components that are supported with using the Relay Server:

- Afaria Server
- Provisioning (Enrollment) Server
- Certificate Authority server
- Afaria filter for Access Control (ISAPI)
- Portal Package Server

3. Prerequisites

Following are the pre-requisites to be met:

- Afaria server is installed
- Relay Server is installed
- rs.config file is created and farm IDs etc. are known

4. Relay Server Outbound Enabler (RSOE)

The Relay Server Outbound Enabler is a special connector which facilitates all communication between the backend server and the Relay Server using HTTP or HTTPS. Given all communication with the Relay Server is established on an outbound connection from within the internal corporate firewall, there are no required ports to be open on the internal corporate firewall. This provides increased security as the internal corporate firewall remains intact, without the requirement of opening inbound ports for communication.

4.1 RSOE Configuration within Afaria

In the Afaria web console, there exists an option to start the outbound enabler with the Afaria Server service. If this option is selected, an `rsoe.config` file is created within the `<AfariaInstallDir>\bin\RSOutboundEnabler` folder on the Afaria Server. Each Afaria component (i.e. Provisioning Server, Package Server, etc.) should have its own RSOE instance locally on the machine where the component is installed.

Outbound enabler

Start the outbound enabler with the Afaria service.

Farm ID

Farm token

Server address

Server port

RS address

RS port

RS URL suffix

Maximum restarts

Client URL prefix

Use HTTPS

Certificate path

1. Farm ID – name of the Afaria Server farm.
2. Farm token – value must match the corresponding value in the `rs.config` file.
3. Server address and Server port – the Afaria Server address and HTTP port that the Afaria Server is using for client communications.
4. Server port – must match the corresponding port value under `Server configuration > Properties > Client communication > HTTP` in the Afaria Administrator.
5. RS address and RS port – the Relay Server address and port that the Outbound Enabler service uses to connect with the Relay Server.
6. RS URL suffix – the text string used as an IIS parameter for invoking the Relay Server's Afaria Web service it requires; as per the Relay Server installation instructions for creating the IIS application pool.
7. Maximum restarts – the maximum number of times the Outbound Enabler attempts to start per Afaria Server service restarts.
8. Client URL prefix – the test string used as an IIS parameter for invoking the Relay Server's Afaria Client Web service. This string is also required as a configuration value on the Afaria Client.
9. Certificate Path – the path on the Afaria Server for its certificate file. The certificate contains the Afaria Server's identity and public key for the Relay Server to view.
10. Use HTTPS – enables the Relay Server to receive HTTPS communication from the Afaria Clients. Afaria Clients must be appropriately configured to also use the HTTPS protocol.

4.2 Launching the Outbound Enabler

Launch the outbound enabler from a command prompt on the server component machine. The following prerequisites are needed:

- On your Afaria Server, copy the entire directory
<AfariaInstallDir>\bin\RSOutboundEnabler
- Import the folder to the machine hosting the server component.

The outbound enabler is the Relay Server's agent on a server component, such as the Provisioning Server and the Afaria Server. It initiates an outbound connection with the Relay Server. The executable file for the outbound enabler is `rsoe.exe`. Sybase recommends matching the versions of the RSOE and the Relay Server.

1. From the command prompt of the machine hosting the server component, navigate to the `RSOutboundEnabler` directory that you copied from the Afaria server.
2. Edit the `rsoe.config` file to specify the parameters to start the RSOE process:
 - o `-cr` – parameter for the Relay Server connection.
 - o `-f` – server component farm ID, as defined in the Relay Server configuration file (`rs.config`)
 - o `-id` – unique ID identifying the server component, as defined in the Relay Server configuration file.
 - o `-cs` – parameter for the backend server (Afaria component server) connection.

For a complete list of command line switches and their meanings, you can either enter `rsoe` at the command prompt then press Enter, or you can double-click the `rsoe.exe` file within the `RSOutboundEnabler` directory.

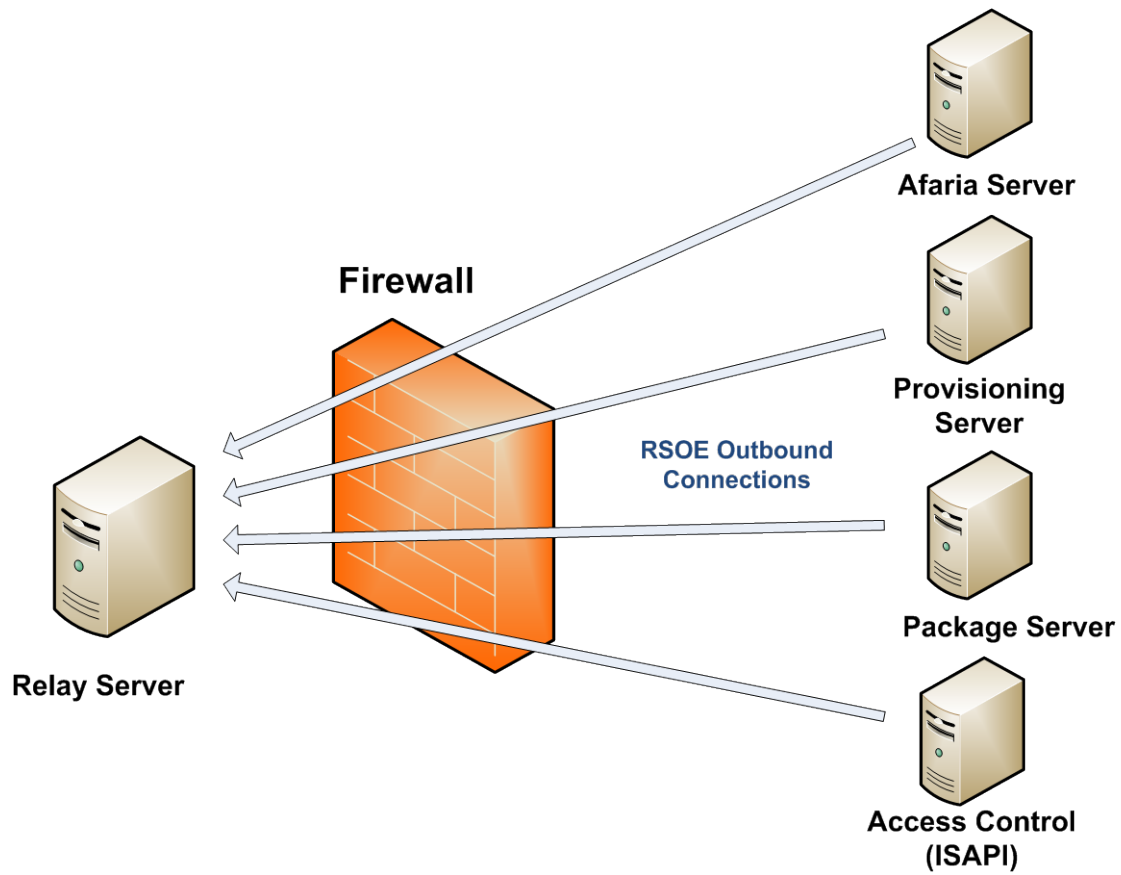
If a security token is specified when you defined the `[backend_server]` entry in the Relay Server configuration file, you must use the `-t` switch when launching the RSOE.

Here is a sample of text from an `rsoe.config` file used to launch the RSOE on a machine hosting the Provisioning Server:

```
-id ios6 -f ios66 -t 0123456789 -cs "host=10.7.235.202;port=29003"  
-cr  
"host=63.162.4.138;port=80;url_suffix=/ias_relay_server/server/rs_serv  
er.dll"
```

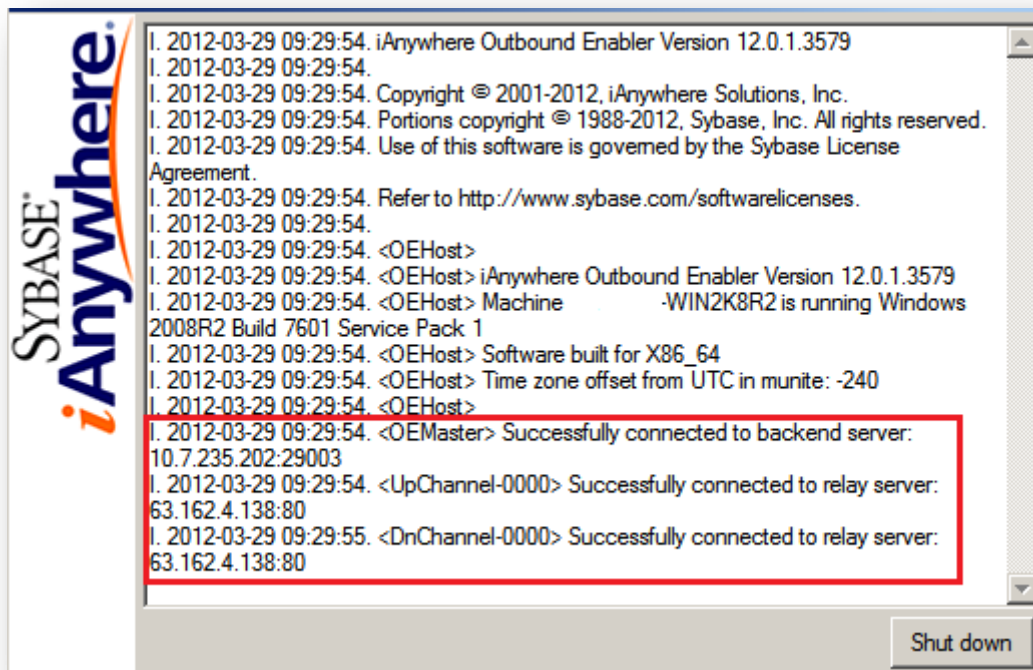
3. To launch the RSOE, use the command line:
`rsoe.exe @<path to rsoe.config file>`
4. (Optional) You can install the RSOE to run as a Windows service. For instructions on how to do this, you can refer to section 3.1 of the [Afaria 6.6 White Paper – Relay Server Installation and Configuration for IIS 7.5](#).

4.3 Outbound Enabler Connection Diagram



4.4 Outbound Enabler Connectivity to Backend and Relay Servers

When starting the outbound enabler, a few connections will be made to establish a connection with both the Relay Server and backend Afaria component server.



1. The outbound enabler will make a connection to the backend server, which would be the Afaria component server (i.e. Afaria Server, Provisioning Server, etc.). This is to establish a connection with the server for routing Afaria traffic to the appropriate port for the connection.
2. The outbound enabler will then make its first connection to the Relay Server. This first connection is known as the "UpChannel". The "UpChannel" is the connection established with the Relay Server for sending packet data from the Relay Server to the outbound enabler.
3. The outbound enabler establishes a second connection to the Relay Server known as the "DnChannel". The "DnChannel" is used for sending packet data down from the outbound enabler back to the Relay Server during the client connection to the Afaria Server.



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