EnvoyARexx - Version 1.0

ARexx-service for Envoy

by Alexander Stirmlinger

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2 Overview

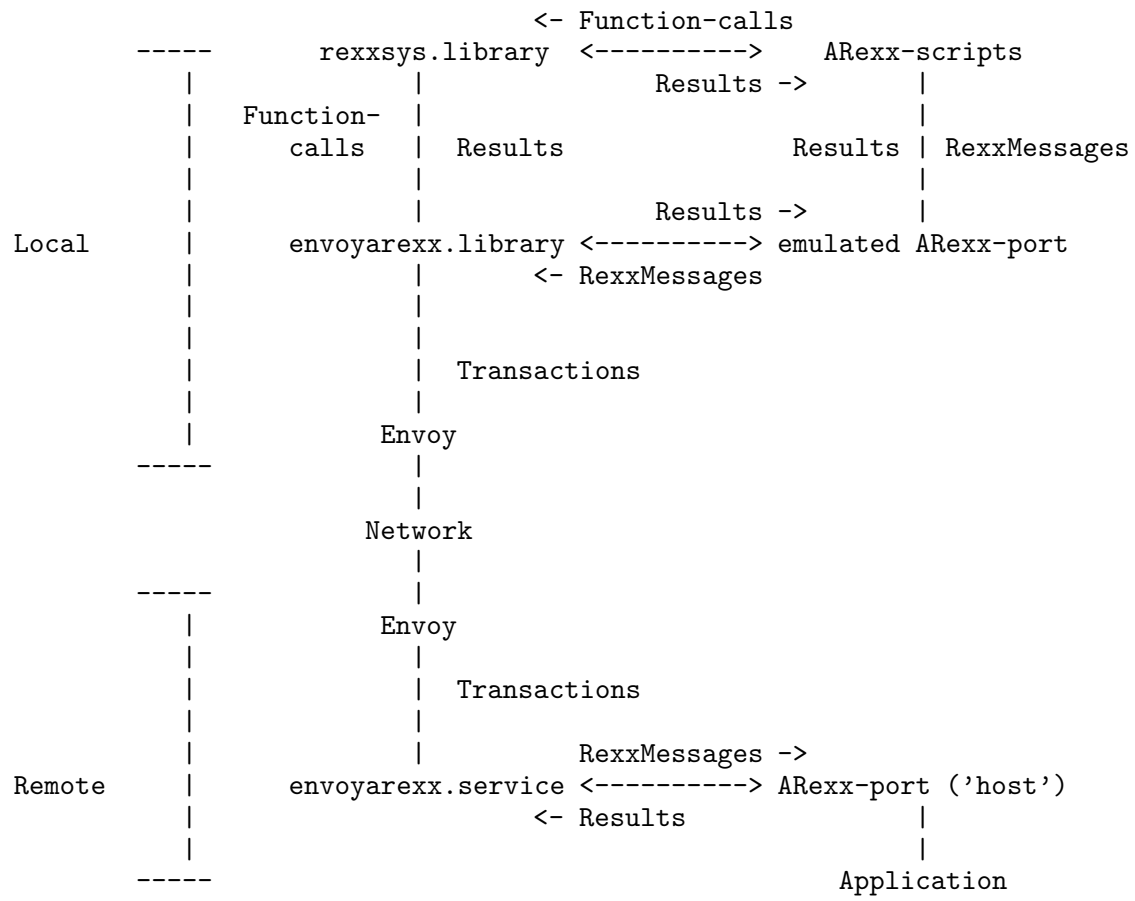
The purpose of `EnvoyARexx` is to transmit ARexx-commands (and thus execute whole ARexx-scripts) over an Envoy network.

`EnvoyARexx` is able to create ARexx-ports on the local machine. Any incoming message will be converted to an Envoy-transaction and sent to the appropriate remote machine. The service running on the remote will convert the transaction to an ARexx-message and forward it to the ARexx-port of the real application. The result of the messages (returned by the application) will be converted back to an Envoy-transaction and replied to the local machine. The library on the local machine will convert the result for use within the ARexx-message and replies the message. See also Chapter 3 [Archive overview], Page 5.

Additionally, you can 'connect' to the *COMMAND*-'port'[1] of a remote machine. Thus, you can easily run commands on a remote machine in the network.

[1] This port isn't actually a port, but can be accessed just like a port by ARexx-scripts.

A diagram may elucidate thoughts:



3 Archive overview

- '`envoyarexx.library`': ARexx function-library. Interface between ARexx and Envoy. Adds functions to ARexx when added to your system. Creates local ARexx-ports and forwards incoming ARexx-messages, receives the results from the remoted machines and sends them back to their reply-port. In the network-language you would call this library a client.
- '`envoyarexx.service`': Envoy-alike service. Receives messages from a client, converts them to ARexx-messages an forwards them to the desired destination port. Sends back the result to the appropriate client. This Envoy-service is a server.
- '`ConnectHost`': Creates a communication-path from the local *envoyarexx.library* to a remote *envoyarexx.service*. Opens an ARexx-port on the local machine, ready to receive and forward ARexx-messages.[1]
- '`DisConnectHost`': Removes a commnuication-path which was previously created by *DisConnectHost* or by the appropriate ARexx-function of the library. Causes the *envoyarexx.library* to close the local ARexx-port.
- '`Install_EnvoyARexx`': Automatic installation-script for `EnvoyARexx`.
- '`EnvoyARexx.(guide|dvi)`': This manual. :-)

[1] Please note that the *envoyarexx.library* provides compatible functions for ARexx-scripts.

4 Installation

4.1 Automatic installation

For automatic installation of `EnvoyARexx` you can (should) use the script for Commodore's Installer[1]

4.2 Manual installation

If you want to install `EnvoyARexx` by hand (for what reason ever) you should copy:

- '`envoyarexx.library`' in your LIBS: directory or wherever your scripts will find this file. The library is only needed on those machines which should run ARexx-scripts and/or run the *ConnectHost* command for example.
- '`envoyarexx.service`' in your Envoy/Services directory. The service is only needed on target-machines which actually run a ARexx-application. Please make sure to enable the service with the *Services Configuration* program.
- '`ConnectHost`' and '`DisConnectHost`' are the CLI-equivalents of the *envoyarexx.library*'s functions and thus only needed if you want to establish connections-paths 'by hand' or via batch-files. The *ConnectHost* and *DisConnectHost* commands need the *envoyarexx.library*.
- '`EnvoyARexx.guide`' should - of course - be installed on every machine in your network, to come handy when you need it and to disturb you when you don't. ;-)

[1] Installer and Installer project icon (c) Copyright 1991-93 Commodore-Amiga, Inc. All Rights Reserved. Reproduced and distributed under license from Commodore.

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5 Rexx function description

The following functions are implemented in the *envoyarexx.library* for usage within ARexx-scripts. Please note that there are compatible[1] CLI commands of these functions. See also Chapter 6 [CLI commands], Page 11.

Please remember that you have to CALL ADDLIB('envoyarexx.library', 0, -30), before you can use these functions within ARexx-scripts.

5.1 CONNECTHOST()

`NAME` CONNECTHOST() - Establish an `EnvoyARexx`-connection to a remote ARexx-port

`SYNOPSIS` CALL CONNECTHOST (Remote_Machine,Remote_ARexxPort,Local_ARexxPort)

`FUNCTION` Creates a connection to a public port on a remote Amiga. Invokes the `EnvoyARexx`-service on the remote machine. No connection will be made, if the desired port can't be found on the remote machine. After usage, the connection should be removed with the DISCONNECTHOST() function or the *DisConnectHost* CLI command.

`EXAMPLE`

```
CALL CONNECTHOST ("RIKER","Ed")
CALL CONNECTHOST ("CORE","COMMAND","COMMAND.CORE")
```

`INPUTS`

1. Remote_Machine: Hostname of the remote Amiga.
2. Remote_ARexxPort: Case-sensitive name of the public port you wish to connect to on the remote machine. The remote port must be findable via *FindPort()* and should be an ARexx-port, of course.
3. Local_ARexxPort: Name of the appropriate public port that should be opened on the local Amiga. This argument is optional[2] and defaults to the name of *Remote_ARexxPort*. This name is case-sensitive, too.

`RESULTS` The ARexx-variable *RC* contains a specific error-code. See also Chapter 8 [Errorcodes and -messages], Page 15.

[1] compatible means that it's possible to remove connections with the CLI command *DisConnectHost*, which were originally established by using the ARexx-function CONNECTHOST() and vice versa.

[2] However, this argument is required for *COMMAND* remote ports. You can never open a local port named *COMMAND*!

5.2 DISCONNECTHOST()

NAME DISCONNECTHOST() - Remove a connection to a remote ARexx-port

SYNOPSIS CALL DISCONNECTHOST (Local_ARexxPort)

FUNCTION Closes the connection to the remote port, removes the local port from Exec's list and frees it. Ports, that were not created by the CONNECTHOST() function or the *DisConnectHost* CLI command, won't be touched.

EXAMPLE

```
CALL DISCONNECTHOST ("Ed")
CALL DISCONNECTHOST ("COMMAND.CORE")
```

INPUTS

1. Local_ARexxPort: Case-sensitive name of the public port, whose connection to the remote port should be removed.

RESULTS The ARexx-variable *RC* contains a specific error-code. See also Chapter 8 [Errorcodes and -messages], Page 15.

6 CLI commands

The following CLI commands are provided for manual use or for usage within AmigaDOS-scripts (batch-files). Compatible ARexx-functions are provided for use within ARexx-scripts. See also Chapter 5 [Rexx functions], Page 9.

6.1 ConnectHost

`NAME` ConnectHost - Establish an `EnvoyARexx`-connection to a remote ARexx-port

`TEMPLATE` HOST/A,REMOTEPORT/A,LOCALPORT,LIBRARY/K

`FUNCTION` *ConnectHost* acts just like the ARexx-function CONNECTHOST(). See also Section 5.1 [CONNECTHOST()], Page 9.

`INPUTS`

1. HOST: Hostname of the remote Amiga in your network.
2. REMOTEPORT: Remote port to connect to.
3. LOCALPORT: Local name for the remote port.
4. LIBRARY: Path/filename of the *envoyarexx.library*. This is optional and useful if the library isn't located in LIBS:.

6.2 DisConnectHost

`NAME` DisConnectHost - Remove a connection to a remote ARexx-port

`TEMPLATE` LOCALPORT/A

`FUNCTION` *DisConnectHost* acts just like the ARexx-function DISCONNECTHOST(). See also Section 5.2 [DISCONNECTHOST()], Page 10.

`INPUTS`

1. LOCALPORT: Name of the local port to remove.

7 First example

'`Example.earexx`' is a very simple example-script for `EnvoyARexx`. Please edit the remote machine's name in the script before you start (rx Example.earexx) it.

The script first attempts to connect the the *COMMAND*-port of the remote, to run the *Ed* editor. After this, the script will send the quit command over the network. As a result, *Ed* will return a warning (20), which is returned over the network.

The output looks like this:

```
Connecting to RIKER port COMMAND
Disconnecting
Connecting to RIKER port Ed
 65 *-* ADDRESS 'LocalEd' 'q';
+++ Command returned 20
Disconnecting
```

8 Errorcodes and errormessages

- 0 - *no error*: everything ok.
- 1 - *unknown error*: error occured, cause not known.
- 2 - *destination port not found*: the destination port was not found on the remote Amiga. Check if the application is running on the remote machine.
- 3 - *no response space*: size of the data to be replied exceeds the reply-buffer size.
- 4 - *reply immediate*: this is not really an error and should never occur.
- 5 - *warning*: generic warning.
- 10 - *generic error*
- 20 - *fatal error*
- 21 - *no child-process*: the library was unable to create the child-process.
- 22 - *no messageport*: unable to create messageport.
- 23 - *no reply-messageport*: unable to create reply-messageport.
- 24 - *no host or service*: service or host not found. May also indicate an Envoy-error.
- 25 - *no file-handles*: unable to open file-handles for SystemTagList().
- 26 - *local port already exists*
- 27 - *port not found or alien*: this error occurs if you try to disconnect a non-existing or a foreign port.

9 Known bugs/problems

The following problem encountered so far: An ARexx-command, which doesn't return a result 'immediately' (a command that waits for user-input, for example) may cause an timeout-error, when the Envoy-timeout span is elapsed.

The timeout for RexxMessage-transactions is currently set to 200 seconds, which should be enough in most cases, but can be too much in some cases, anyway. Future versions of `EnvoyARexx` may provide a function to control the timeout by the ARexx-script dynamically.

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Appendix A History

A.1 EnvoyARexx - Version 1.0

- First public release.

Index

A

Acknowledgements ... 21
Archive overview ... 5
Author information ... 19
Automatic installation ... 7

B

Bugs ... 17

C

CLI commands ... 11
ConnectHost ... 11
CONNECTHOST() ... 9
Copyright ... 1

D

DisConnectHost ... 11
DISCONNECTHOST() ... 10

E

EMail ... 19
Errorcodes ... 15
Errormessages ... 15
Example ... 13
Example.earexx ... 13

F

FidoNet ... 19
First example ... 13
Function description ... 9

H

History ... 23

I

Installation ... 7

K

Known bugs ... 17

L

Legal information ... 1
License ... 1
Limitations ... 17

M

Manual installation ... 7

O

Overview ... 3

P

Problems ... 17

R

Return-codes ... 15
Rexx function description ... 9

S

Shell commands ... 11

T

The indispensable ... 21

W

Warranty ... 1

Table of Contents

1 Copyright and legal information 1

2 Overview 3

3 Archive overview 5

4 Installation 7

4.1 Automatic installation 7
4.2 Manual installation 7

5 Rexx function description 9

5.1 CONNECTHOST() 9
5.2 DISCONNECTHOST() 10

6 CLI commands 11

6.1 ConnectHost 11
6.2 DisConnectHost 11

7 First example 13

8 Errorcodes and errormessages 15

9 Known bugs/problems 17

10 Author information 19

11 Acknowledgements 21

Appendix A History 23

A.1 EnvoyARexx - Version 1.0 23

Index 25