Rexx and Rexx extensions in a heterogeneous environment

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Rexx and Rexx extensions
in a
heterogeneous environment

- Developer tools
  - Rexx/Trans - build once; run on many Win32 interpreters
  - Rexx/Pack - external function packages made easy
- Using Rexx extensions
  - Client/Server application using RxSock, Rexx/SQL, Rexx/Curses
Rexx/Trans
build once;
run on most Win32 interpreters

• Rexx/Trans and Rexx interpreters

<table>
<thead>
<tr>
<th>Supported</th>
<th>Not supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regina</td>
<td>uni-REXX</td>
</tr>
<tr>
<td>Object Rexx</td>
<td></td>
</tr>
<tr>
<td>WinRexx</td>
<td></td>
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<tr>
<td>Personal Rexx</td>
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</table>

• What is it?
• Why write it?
• What's in it?
A Window 95/98/NT DLL that translates generic Rexx API calls into specific interpreter API calls.
Rexx/Trans - Why?

- THE for Win32 required 4 different versions.
- Rexx/SQL 2.2 and 2.3 was released with 25 different DLLs

Regina
Object Rexx
WinRexx
Personal Rexx
uni-REXX

Oracle
DB2
ODBC
SQL Anywhere
Solid Server

- Reduces maintenance for any developer
• The runtime portion
  ◆ rextrans.dll
    The translation DLL.
  ◆ rextrans.ini
    A configuration file to control how the DLL determines which interpreter to use and for logging.

• The development portion
  ◆ rextrans.lib
    Import library for rextrans.dll
  ◆ rextrans.h
    Header file defining all Rexx API functions

• Free; Distributed under GNU General License
• Demo of THE (different interpreters)
Set of files that facilitate building of Rexx external functions

- Provides wrappers for *standard* Rexx API
  - WinRexx loads their DLL each time an external function is called; no persistence of data.
  - REXX/6000 uses different names for APIs

<table>
<thead>
<tr>
<th>Interpreter</th>
<th>C Function</th>
<th>Platform</th>
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</thead>
<tbody>
<tr>
<td>Regina</td>
<td>free()</td>
<td>All</td>
</tr>
<tr>
<td>Object Rexx</td>
<td>free()</td>
<td>AIX, Linux</td>
</tr>
<tr>
<td>Object Rexx</td>
<td>GlobalFree()</td>
<td>Win32</td>
</tr>
<tr>
<td>Object Rexx</td>
<td>DosFreeMem()</td>
<td>OS/2</td>
</tr>
<tr>
<td>WinRexx</td>
<td>GlobalFree()</td>
<td>Win32</td>
</tr>
</tbody>
</table>

- Memory allocated by RexxVariablePool() needs to be deallocated differently
• GNU autoconf templates to build external function packages on Unix platforms with Regina, REXX/ime, Object Rexx, uni-REXX and REXX/6000
• template makefiles for OS/2, Win32 (all interpreters and Rexx/Trans)
• internal function package runtime debugging
• a loader program to load the external function package as an executable program rather than a dynamic library.
  ♦ Makes debugging easier
  ♦ Provides access to function package on platforms that don't have dynamic loading capabilities. eg DOS, QNX
• Demo of THE (logging)
Demo of client/server application written in Rexx using Rexx extensions.

- Client running on Win98 and updating a database (mSQL) on Linux.
- Client running on Linux and updating a database (SQL AnyWhere) on Win98.
- Client and server code on each platform identical.
- Multiple clients allowed.
What was used

- **Server**
  - RxSock - for communication
  - Rexx/SQL - to connect to, and update database
- **Client**
  - RxSock - for communication
  - Rexx/Curses - Rexx interface to Curses text based library
• First public release (beta) of Rexx/Tk 0.0.3 for Win32, Unix (X11)
• Written by Roger O'Connor (also wrote XRexx)
• Uses Rexx/Trans (on Win32) and Rexx/Pack
• OS/2 port waiting for Illya Vaes to port Tk 8.0 (in alpha)
• Mac port waiting for someone to port a suitable Rexx interpreter ;-) 
• Free; Distributed under GNU General License 
• Home page: http://www.metronet.com/~ocon/rexxtk/
• SpecTcl/Tcl/Tk available from: http://www.scriptics.com/