REXX at Simware

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by

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Software Developer
Multiple Scripting Uses

- 2 products
  A2B, REXXWARE

- 3 platforms
  Windows, Macintosh, NetWare

- presentation, automation, reports
A2B BIFs

- terminal emulation
  type, press, waitfor, checkfor, whenever

- views (presentation)
  openview, closeview
  addelement, additem
  getelement, getitem
  setelement, selectelement
  readelement, writeelement
REXXWARE BIFs

- 140 calls into the CLIB interface
  GetObjectID, GetVolumeInformation,
  LoginObject, NWQAttachServer

- RCCs and client job scheduler

- utility functions
  currentpath, listfile, readscreen
History of Development

- 18 months to develop a 4.0 kernel
- grammar defined with LEX/YACC
- written in 'C'

Microsoft C, MPW C, WATCOM C/386
Multiple Personalities

- ported to the Macintosh in days
- ported to NetWare in weeks
- abstraction of OS interfaces to file system and memory
Adapting REXX to an O/S

- Windows and Macintosh
  hard issues to ADDRESS

- NetWare
  a console and a prompt

- multi-threading
  the infernal data queue
The Way to an Easy Port

- **SIMWARE.h**
  ```c
  typedef signed short SHORT
  typedef SHORT FAR *gpSHORT
  ```

- **SIMSTR.h**
  ```c
  #define strupr(a,b) AnsiUpper(a,b)
  #define memcpy(a,b,c) _fmemcpy(a,b,c)
  ```
The Way to an Easy Port

- SIMFILE.c
  fhOsOpen, fhOsClose
  lOsRead, lOsWrite, lOsSeek...

- SIMMEM.c
  OsGPtrAlloc, OsGPtrFree

- #ifdef Hungarian_notation
YACC... What Is This?

call : RX_CALL symbol opt_blank parm_list
{   if (fInterpret == TRUE)
    GenExternal(P_CL_OUT_SYM, $2, $4);
else if (wLabel = wIsInternal($2))
    GenInternal(P_CL_INTERNAL, --wLabel, $4);
else if (wRoutine = wIsBuiltIn($2))
    GenBuiltIn(P_CL_BUILTIN, wRoutine, $4);
else
    GenExternal(P_CL_EXTERNAL, $2, $4);
OsUPtrFree($2);
}

• output is portable 'C' code
Simware Conventions

- pointers in REXX
  passing a symbol as a literal

  call GetObjectID "Luc", "OT_USER", "objectID"

- arrays in REXX
  passing the name of a stem

  call listcreen "array."  /* array.0 holds count */
REXX at Simware

- commitment to REXX
  - substantial development investment
  - ANSI committee nomination
  - big push at Novell

- future directions
  - integration of products / third parties