

Rclone on Power

All about building and using Rclone on AIX and IBM-I

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Rclone is written in GO – install GO on AIX

- Install Open SSL and SSH
 - scp upload openssl-1.1.1.1201
 - gzip -d openssl-xxx
 - cd openssl
 - smit install_all
- [SSL & SSH Download](#)

Rclone is written in GO – install GO on AIX

- Add to .profile
 - `PATH=$PATH:/opt/freeware/bin:/opt/freeware/lib:/opt/freeware/sbin`
 - Export PATH
- `Export PATH=$PATH:/opt/freeware/bin:/opt/freeware/lib:/opt/freeware/sbin`
- Yum update
- Yum install wget
- Run DNF setup script with `-n` option
 - [Get script here](#)
- `dnf update`

Rclone is written in GO – install GO on AIX

- Download and install the GO RPM
 - [golang RPMs](#)
- Then
 - `dnf install /path-to-the.rpm`

Building Rclone on AIX

- Git the current version of Rclone
 - Unzip and cd into
 - Butcher the code somewhat
 - Go build -o rclone -work

Butchering the code, somewhat

- AIX mostly behaves like linux – except when it doesn't
 - Some of the modules need AIX included, or excluded
 - Some required coding changes – most notably malloc
 - ./backend/all/all.go
 - ./cmd
 - ./cmd/all/all.go
 - ./fs/log/redirect_stderr.go
 - ./fs/log/redirect_stderr_unix.go
 - ./go.mod
 - ./go.sum
 - ./rclone
 - ./runtime
 - ./runtime/lfstack_64bit.go
 - ./runtime/malloc.go
 - /backend/all/all.go is the list of filesystems/endpoints
 - /cmd/all/all.go – removed ncdu (text user interface)

Malloc changes for AIX

- `diff --git a/src/runtime/malloc.go b/src/runtime/malloc.go`
- `index 8435f96532..e3d98382b8 100644`
- `--- a/src/runtime/malloc.go`
- `+++ b/src/runtime/malloc.go`
- `@@ -302,7 +302,7 @@ const {`
- `//`
- `// On other platforms, the user address space is contiguous`
- `// and starts at 0, so no offset is necessary.`
- `- arenaBaseOffset = 0xffff800000000000*sys.GoarchAmd64 + 0x0a00000000000000*sys.GoosAix`
- `+ arenaBaseOffset = 0xffff800000000000*sys.GoarchAmd64 + 0x0700000000000000*sys.GoosAix`
- `// A typed version of this constant that will make it into DWARF (for viewcore).`
- `arenaBaseOffsetUintptr = uintptr(arenaBaseOffset)`
-
- `@@ -539,7 +539,7 @@ func mallocinit() {`
- `// to avoid collisions with others mmaps done by non-go programs.`
- `continue`
- `}`
- `- p = uintptr(i)<<40 | uintptrMask&(0xa0<<52)`
- `+ p = uintptr(i)<<40 | uintptrMask&(0x70<<52)`
- `default:`
- `p = uintptr(i)<<40 | uintptrMask&(0x00c0<<32)`

lfstack_64 changes

- `diff --git a/src/runtime/lfstack_64bit.go b/src/runtime/lfstack_64bit.go`
- `index 4812dd1156..bce6450689 100644`
- `--- a/src/runtime/lfstack_64bit.go`
- `+++ b/src/runtime/lfstack_64bit.go`
- `@@ -53,7 +53,7 @@ func lfstackUnpack(val uint64) *lfnode {`
- `return (*lfnode)(unsafe.Pointer(uintptr(int64(val) >> cntBits << 3)))`
- `}`
- `if GOARCH == "ppc64" && GOOS == "aix" {`
- `- return (*lfnode)(unsafe.Pointer(uintptr((val >> aixCntBits << 3) | 0xa<<56)))`
- `+ return (*lfnode)(unsafe.Pointer(uintptr((val >> aixCntBits << 3) | 0x7<<56)))`
- `}`
- `return (*lfnode)(unsafe.Pointer(uintptr(val >> cntBits << 3)))`
- `}`

Installing GO on IBM-I

This might actually be possible, ***but not today***

Today we will run in PASE

Since we are using the compiled executable from AIX we don't need GO

We just ssh or call qp2term and type rclone – right ?

Yeah, no.

A few things are missing from PASE, or aren't where they would be on AIX

Fixin PASE

- /etc/resolv.conf doesn't exist

- Create it

```
domain test.net
nameserver 208.67.222.222
nameserver 8.8.4.4
```

- /var/ssl is an AIX construct and doesn't exist (on linux this would be /etc/ssl)
 - Create a soft link to the appropriate locations
 - `ln -s /QOpenSys/etc/ssl /var/ssl`

DEMO

```
/QOpenSys/usr/bin/-sh

#
> rclone listremotes
azblob:
azurite:
ijump:
skysync:
#
> rclone lsd azblob:
-1 2022-07-25 16:32:39      -1 m2aix2
-1 2022-08-25 12:33:49      -1 m2ibmi
#
> rclone ls azblob:m2ibmi
272496 QIMGCLG
#

===> _____
_____
_____

F3=Exit    F6=Print  F9=Retrieve  F11=Truncate/Wrap
F13=Clear  F17=Top   F18=Bottom  F21=CL command entry

MA*  A
```