



Making NFSv4 ACL inheritance work despite mode bits

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Open mode

Linux files can't be created without setting a mode:

- `open(path, flags, mode)`
- `creat(path, mode)`

umask: ---rw-rw-



open: rw-rw-rw-



mode: rw-----

Umask

The umask can express simple default policies like:

- `-----rw-`: share my files with group members but not others
- `---rw-rw-`: share my files with nobody but me

Inheritable ACLs can express more policies.

OWNER: rw-

bfields: rw-

steved: r--

GROUP: r--

admins: rw-

backup: r--

OTHER: ---

umask: ---rw-rw-



open: rw-rw-rw-



mode: rw-----

OWNER: rw-

bfields: rw-

steved: r--

GROUP: r--

admins: rw-

backup: r--

OTHER: ---

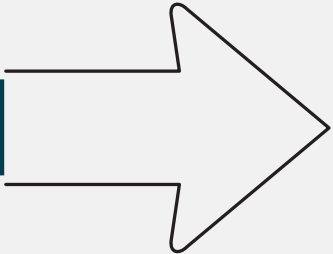
umask: ---rw-rw-



open: rw-rw-rw-



mode: rw-----



OWNER: rw-

bfields: ---

steved: ---

GROUP: ---

admins: ---

backup: ---

OTHER: ---

Solution: ignore umask

In the presence of inheritable ACLs, ignore the umask.

- Open mode is usually permissive
- Copies “POSIX” ACL behavior
- Easy to implement

umask: ---rw-rw-



open: rw-rw-rw-



mode: rw-----

OWNER: rw-

bfields: rw-

steved: r--

GROUP: r--

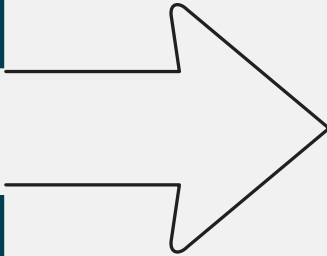
admins: rw-

backup: r--

OTHER: ---

umask: ---rw-rw-

open: rw-rw-rw-



OWNER: rw-

bfields: rw-

steved: r--

GROUP: r--

admins: rw-

backup: r--

OTHER: ---



Questions?

<https://tools.ietf.org/html/draft-bfields-nfsv4-umask-01>
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