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General description of actions with respect to directories

I) access to an object in a directory

in general, access is a 2 step procedure. An object is first obtained from a directory in a closed state. This action will be the same for all kinds of objects. The closed form of the object can then be opened, and this action will vary for different kinds of objects.

The closed form of an object will be a special type ecs capability. (a different type for each kind of object) The option bit field of the ecs capability will carry the options for the opened form of the object. The data field (a full word) carries sufficient information to describe the object. This will be the identical data carried in the object portion of an ownership entry in a directory.

The option bit field is that associated with the appropriate access key in the access list. (or the implicit options bits)

The implicit options are accessed when a "null" access key is presented and the directory capability has the ownership bit on.

II) entry construction and object creation

A) ownership entry

an ownership entry and the object itself are created simultaneously. This action will vary for different kinds of objects. The scratch bit is set at this time also.

B) hard link entry

This action will be common to all kinds of objects, and is accomplished by presenting the closed version of the object

C) soft link entry

This action is not really related to the object at all. It is accomplished by presenting the closed version of a directory, a closed version of an access key, and a text name,

In all of these cases, of course, a directory (open) to contain the entry and a text name for the entry must be presented, [redacted]

Also, no ownership entry can be made in a directory without proper option bit, and this bit must differ from that giving implicit access to owned objects in a directory. This is to permit subprocesses to construct scratch objects without giving them access to

all objects in the directory. Thus it would seem that if an ownership entry is ~~[illegible]~~ constructed with the scratch bit on, An entry in the access list must be made simultaneously. It would appear that there are 2 creation actions for each kind of object. One creates a non scratch entry, and the other creates a scratch entry with a non empty access list.

III) entry and object destruction

A) ownership entry

destroys both the entry and the object.
can always be done via the implicit access key, whether or not the scratch bit is on. Can also be done via any access key with the proper associated option bit on.

B) Hard link entry

destroys only the entry. Needs a directory capability with ownership bit on.

C) soft link entry

same as B.