ownCloud Infinite Scale

Identity, Roles and Permissions

Agenda

1. oCIS core concepts
2. Permissions Graph
3. Grants
4. Permissions API

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Security Engineer

oCIS Core concepts

User

Group

Role

Permission

File

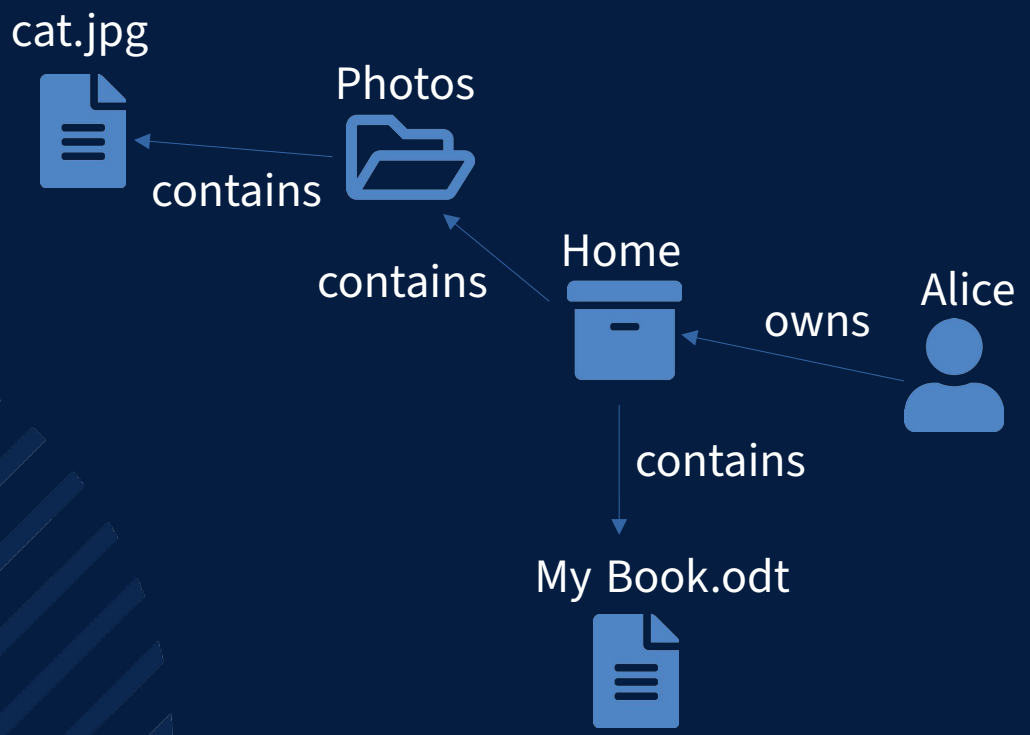
Folder

Space

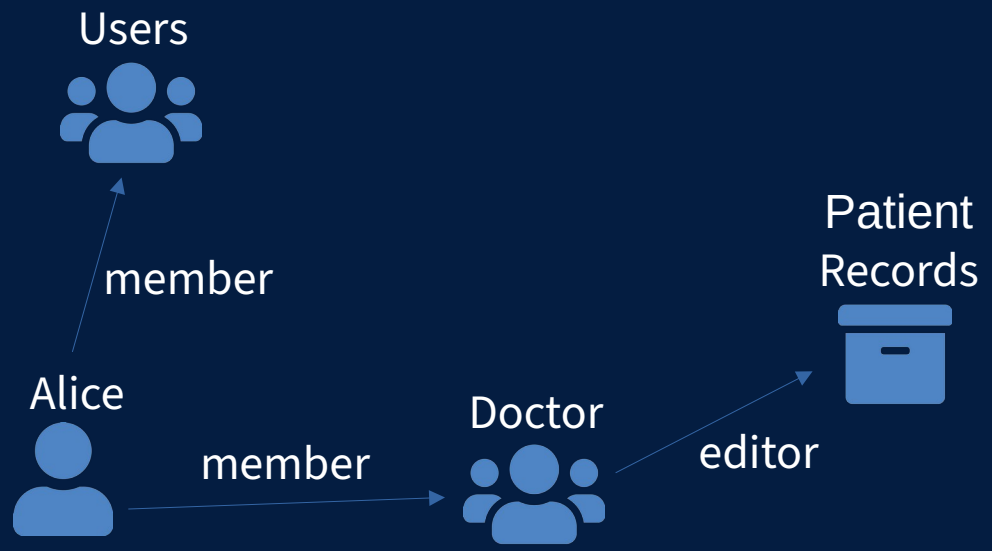
Share

Extension

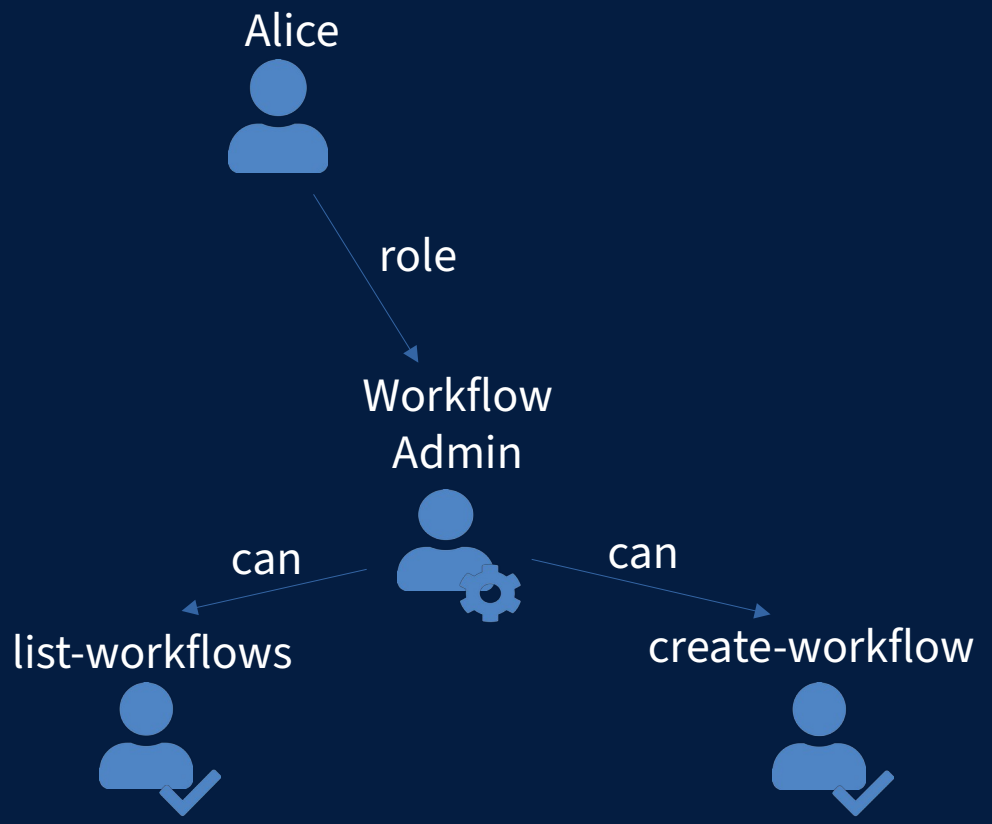
Permission Graph



Permission Graph



Permission Graph



Permission Graph

Solution: Grants

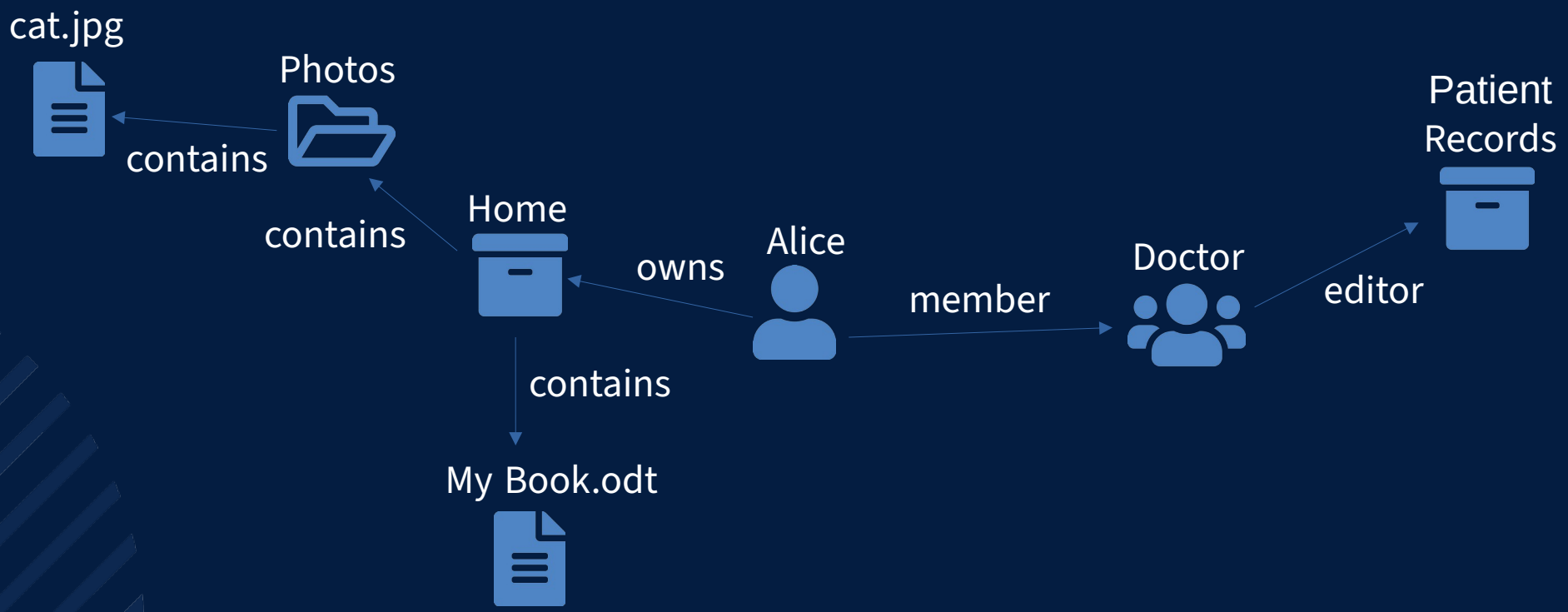
- [User|Group] can [Read|Write] Resource
- Handled by the storage
  - Closer to the files
  - Faster checks
- Limited permissions

ResourcePermissions

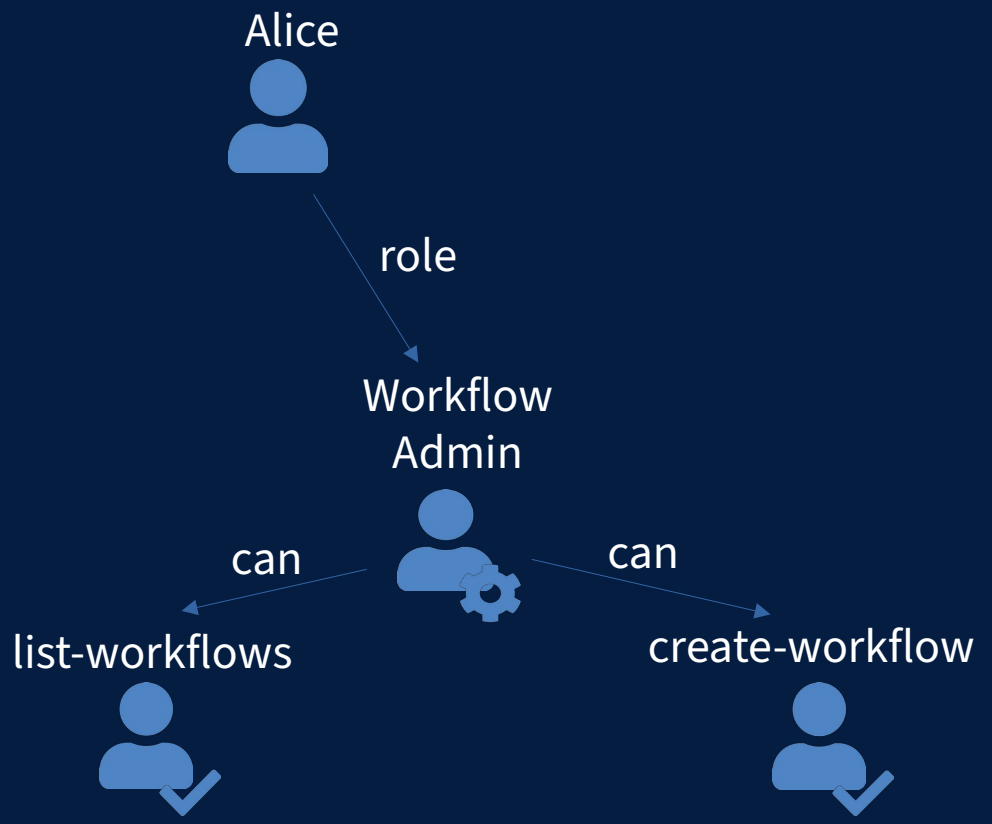
The representation of permissions attached to a resource.

Field	Type	Label
add_grant	bool	
create_container	bool	
delete	bool	
get_path	bool	
get_quota	bool	
initiate_file_download	bool	
initiate_file_upload	bool	
list_grants	bool	
list_container	bool	
list_file_versions	bool	
list_recycle	bool	
move	bool	
remove_grant	bool	
purge_recycle	bool	
restore_file_version	bool	
restore_recycle_item	bool	
stat	bool	
update_grant	bool	
deny_grant	bool	

Permission Graph

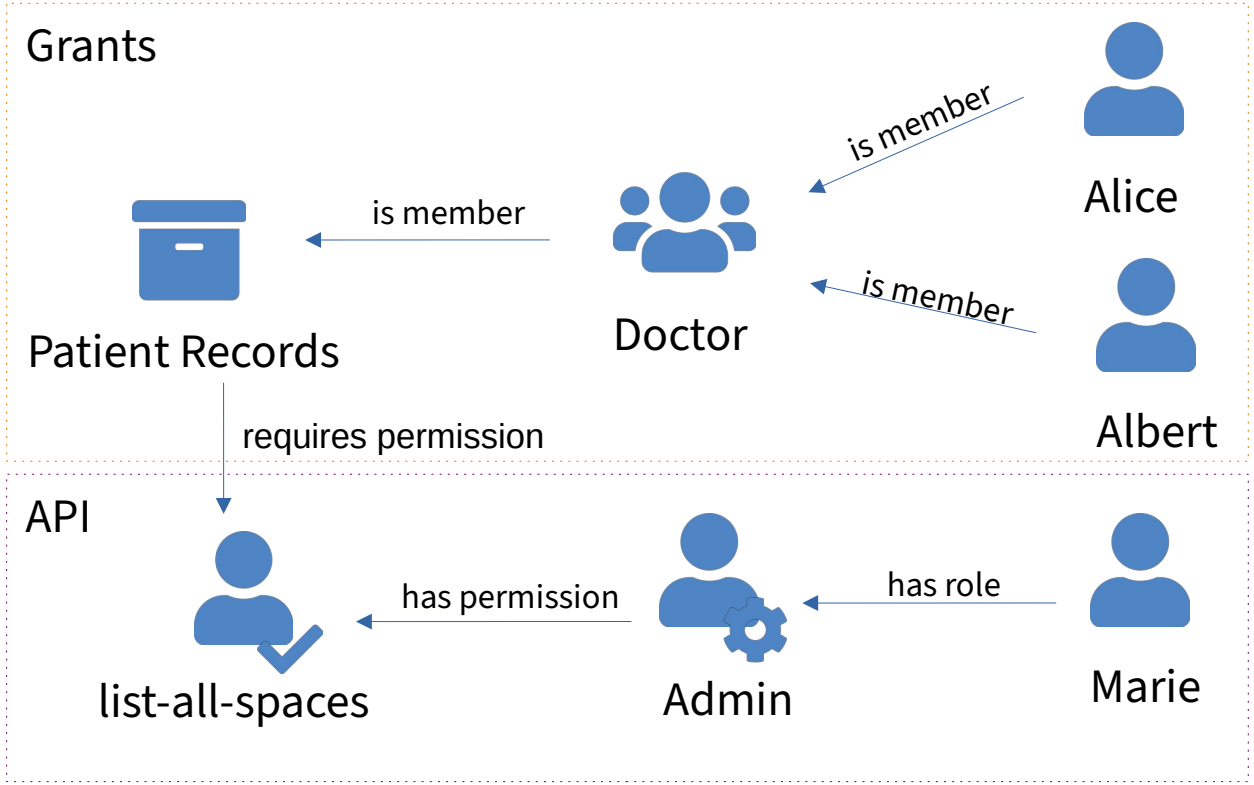


Permission Graph



Solution: Permissions API

- A permission service would:
- Store mappings
  - Permissions <–> Roles
  - Roles <-> User/Group
  - User <-> Group
- Efficiently check if a user has a certain permission



Permissions API

- 3 Primitives
  - Permission
  - Subject
  - Reference
- Eventually
  - Manage roles
  - Manage permissions
  - Namespaces

CheckPermissionRequest

CheckPermissionsRequest is used to check if a user has a certain permission.

Field	Type	Label	Description
permission	string		REQUIRED. The permission to check.
subject_ref	SubjectReference		REQUIRED. The subject holding the permission.
ref	cs3.storage.provider.v1beta1.Reference		OPTIONAL. The target resource of the permission.

[Permissions API CS3 Doc]
[Google Zanzibar Paper]
[Authzed spicedb]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