



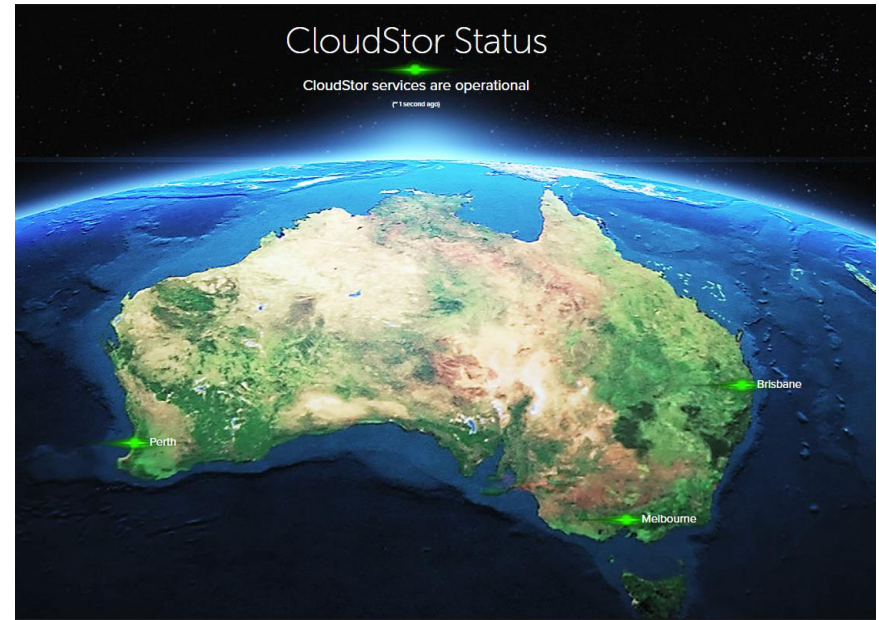
CONNECTING CLOUDS

Crystal Chua, AARNet

28 Jan 2019

CLOUDSTOR: 2019

- **3 (soon to be 4) major sites**
 - We're adding a new cluster in Canberra!
- **650TB+ of data, 188 million objects**
- **62,000+ users**
- **100 institutions**



CLOUDSTOR USER PROFILE

- The majority of the data belongs to groups and institutions
- Only 2 out of our top 30 users are individuals
- Biggest group owns over 100TB of data!
- How do we manage all of these groups and users?

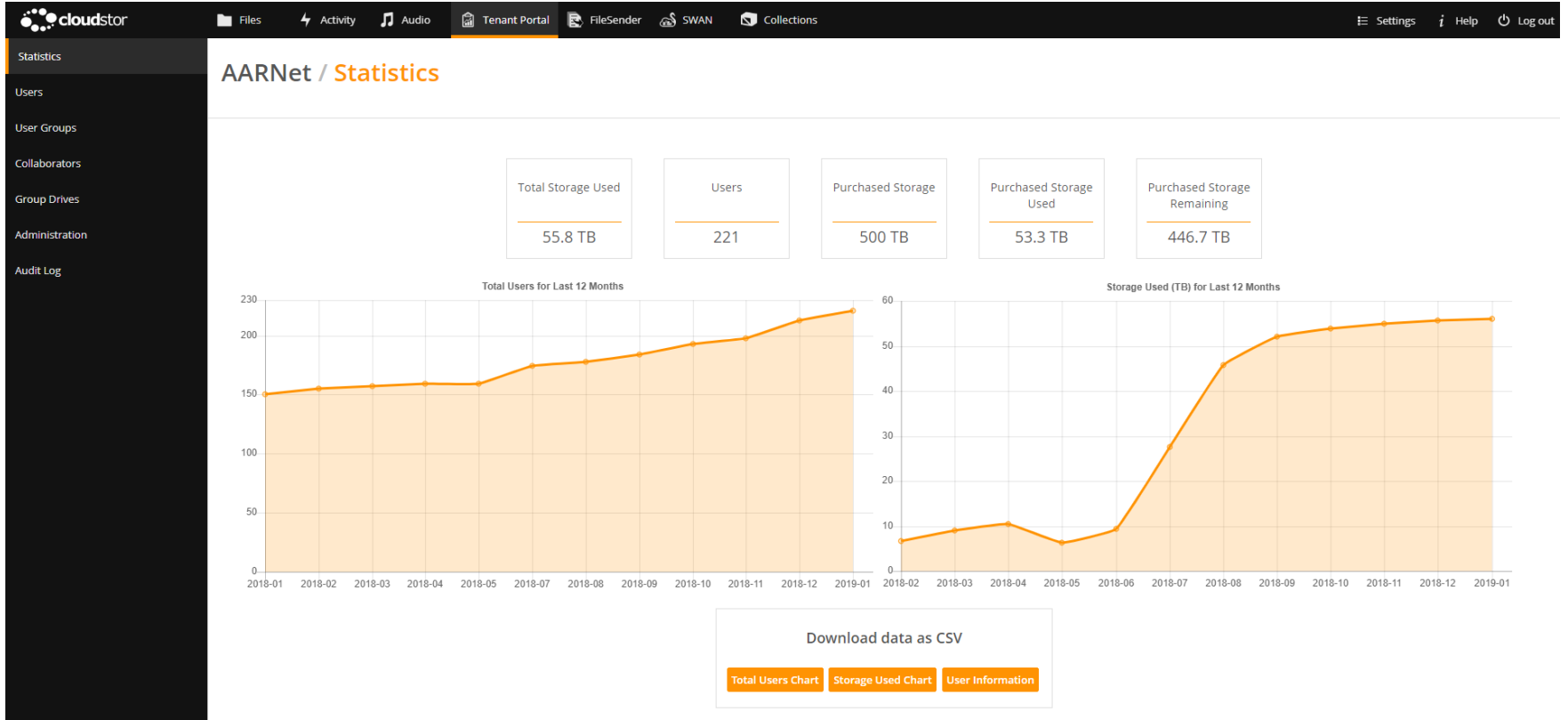


TENANT PORTAL

- ownCloud app developed by AARNet
- It was developed to enable self-support for tenants
- First version displayed user/usage statistics
- Later versions added administration capabilities



TENANT STATISTICS



USER MANAGEMENT

- Each tenant can define their own “authorized users”, or local administrators
- **Authorized users can:**
 - Modify a user’s quota
 - Add collaborators (external users)
 - Impersonate a user
 - Create and manage group drives
- **GROUP DRIVES?**

USER & GROUP MANAGEMENT

AARNet / User Groups

Manage and view all user groups that are currently assigned to this account. All groups will be prefixed with your tenant short code.

Show 100 entries

Group Name


aarnet-test

AARNet / Users

Manage and view all users that are currently assigned to this account.

Show 100 entries

Search:

Username	Display Name	Used Quota	Quota Limit	Last Login	
Crystal.Chua@aarnet.edu.au	Crystal Chua	14.2 GB	1 TB	22-Jan-2019	 

GROUPS vs GROUP DRIVES

- ownCloud Groups are a collection of users
- ownCloud Groups don't have the concept of a shared space for users
- We wanted this functionality, so we created "group drives"



GROUP DRIVES

- Each group drive is created as a user account with a single folder
- When a user is added to the group drive, the group drive account's folder is shared to them
- This additionally allows control of permissions on the share to specific users
- An easier way for a research group to manage their data



GROUP DRIVE MANAGEMENT

AARNet / Group Drives

Manage and view all group drives that are currently assigned to this account.

Create group drive

Show 100 entries

Search:

Name	Used Quota	Assigned Quota	Actions
APL-AA	24.6 GB	10 TB	

APL-AA



Quota:

Group Members

Add Member

Search:

User

Loading...



EXTENDING THE TENANT PORTAL

- We're working on an API that exposes tenant portal functionality
- This will allow us (and others) to create tools that can interface with CloudStor
- Connecting clouds! 😊



GLOBAL KEYS

API Keys [API Documentation](#)

These API Keys can be used for interacting with the Tenant Portal API. As a global API key, these keys will allow the user to interact on another tenant's behalf.

 [Create](#)

Name	Access Key	Created	
Global API Key 1	e76d87e01ad78335	2019-01-23 01:30:44	
Global API Key 2	deaa911aa9f298b2	2019-01-23 01:30:46	

TENANT KEYS

API Keys [API Documentation](#)

These API Keys can be used for interacting with the Tenant Portal API.

 [Create](#)

Name	Access Key	Created	
Tenant API Key 1	0cbb85c584781b00	2019-01-23 01:36:32	
Tenant API Key 2	4124b6dd60e605e3	2019-01-23 01:36:37	

API ACCESS AND PERMISSIONS (WIP)

Admin / API Keys / Global API Key 1

This page allows you to set the permissions for what parts of the API that each API key can access.

Permissions

Set the permissions per route for this API key. **Permissions Explained**

Name	Permissions
User API	<input type="checkbox"/> Create <input checked="" type="checkbox"/> Read <input type="checkbox"/> Update <input type="checkbox"/> Delete <input type="checkbox"/> Index
Project API	<input checked="" type="checkbox"/> Create <input checked="" type="checkbox"/> Read <input type="checkbox"/> Update <input type="checkbox"/> Delete <input type="checkbox"/> Index

Save

Tenant Access

These are the tenant's that the API key is able to access.

Tenant Name
<input checked="" type="checkbox"/> Tenant 1
<input type="checkbox"/> Tenant 2
<input type="checkbox"/> Tenant 3

Save

API ACCESS AND PERMISSIONS (WIP)

Tenant 1 / API Keys / Tenant API Key 1

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Save

- Computing infrastructure, software and services for researchers
- Built on OpenStack
- We're working with them on a pretty *sweet* project
- Enabling auto-provisioning of CloudStor group drives via Nectar



PROPOSED WORKFLOW

- User creates new Nectar project with storage request
- Nectar passes information (tenant ID, project name) to CloudStor via API
- Storage requested is provisioned on CloudStor as a group drive
- CloudStor returns group drive credentials to Nectar
- Storage mounted on Nectar VM via davfs

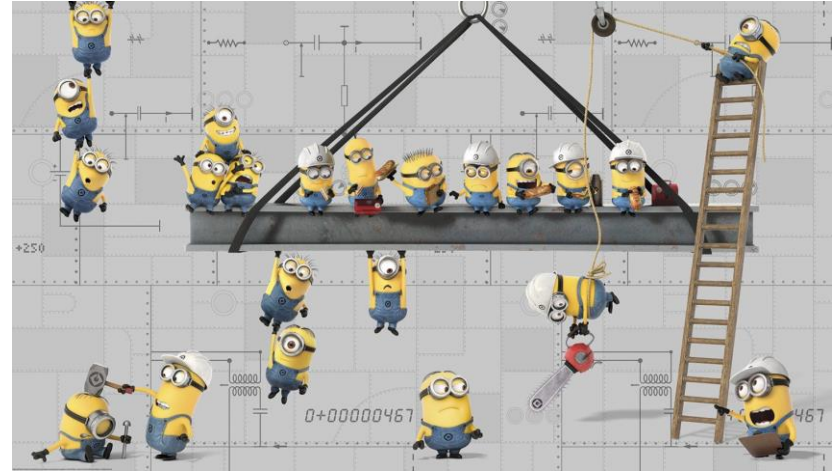
EXAMPLE API RESPONSES

```
{
  "ocs": {
    "meta": {
      "status": "ok",
      "statuscode": 100,
      "message": "success",
      "totalitems": 7,
      "itemsperpage": 7
    },
    "data": {
      "id": 283,
      "project_name": "test master api",
      "quota": "1 TB",
      "sync_folder_name": "test master api",
      "sync_password": "sync_password",
      "sync_username": "p-aarnet-test_master_api",
      "tenant_id": "3"
    }
  }
}
```

```
{
  "ocs": {
    "meta": {
      "status": "ok",
      "statuscode": 100,
      "message": "success",
      "totalitems": 28,
      "itemsperpage": 28
    },
    "data": [
      {
        "id": 162,
        "project_name": "MDU Test Group 13",
        "quota": "5.3 TB",
        "sync_folder_name": "MDU Test Group 13",
        "sync_username": "p-aarnet-MDU_Test_Group_13",
        "tenant_id": "3"
      },
      {
        "id": 164,
        "project_name": "MDU Test Group 14",
        "quota": "3 TB",
        "sync_folder_name": "MDU Test Group 14",
        "sync_username": "p-aarnet-MDU_Test_Group_14", "tenant_id": "3"
      }
    ]
  }
}
```

WHAT'S NEXT?

- **Keep working on API; extending functionality**
 - Propagating groups info between EFSS sites
- **Service provisioning on other platforms**
 - Group drives for *everyone!*
- **Archivematica**
 - Queryable groups info for data provenance record keeping, etc



THANK YOU
