

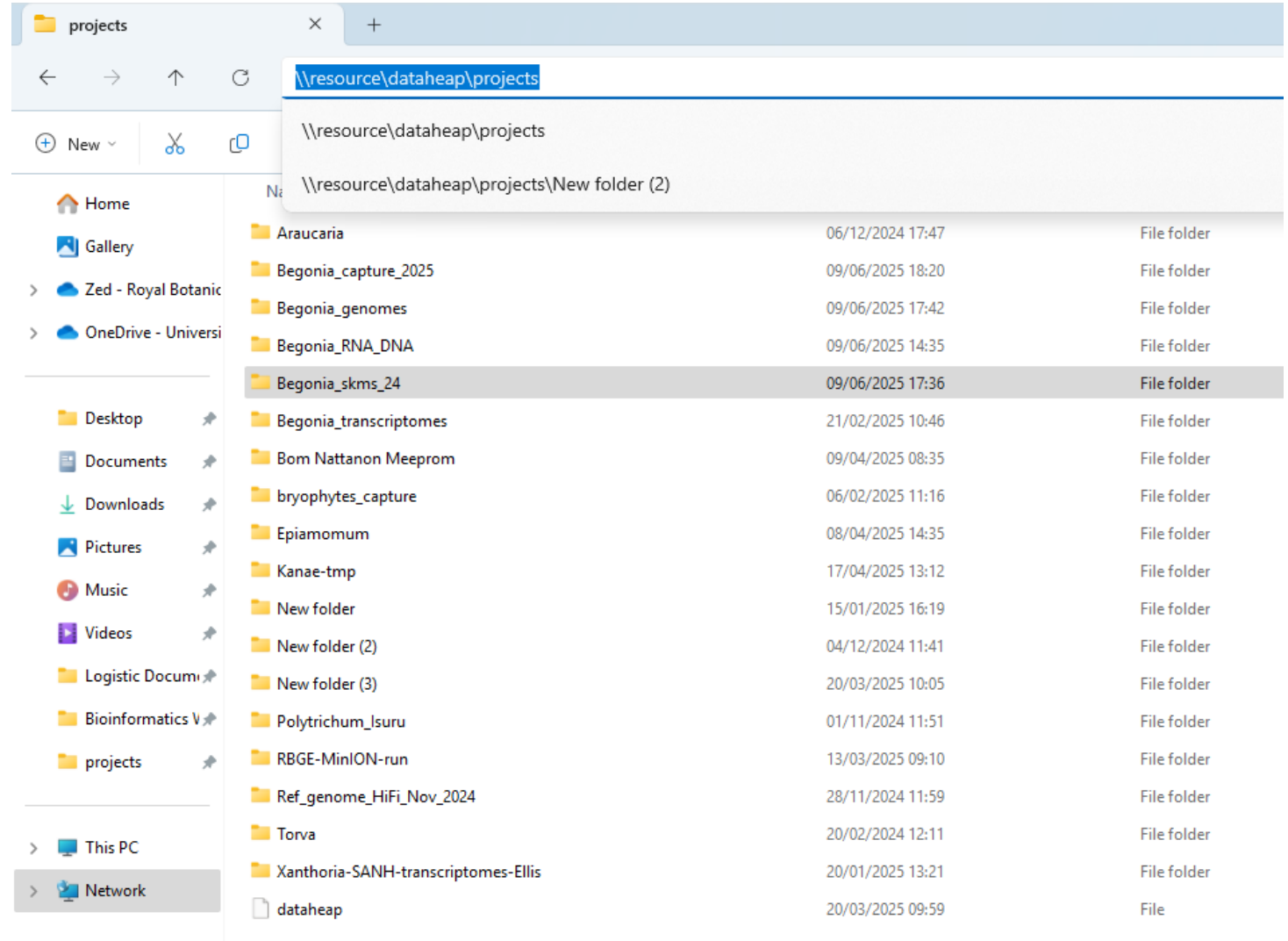
Load data directly from Cropdiversity server to Dataheap

Zed Chen

10/06/2025

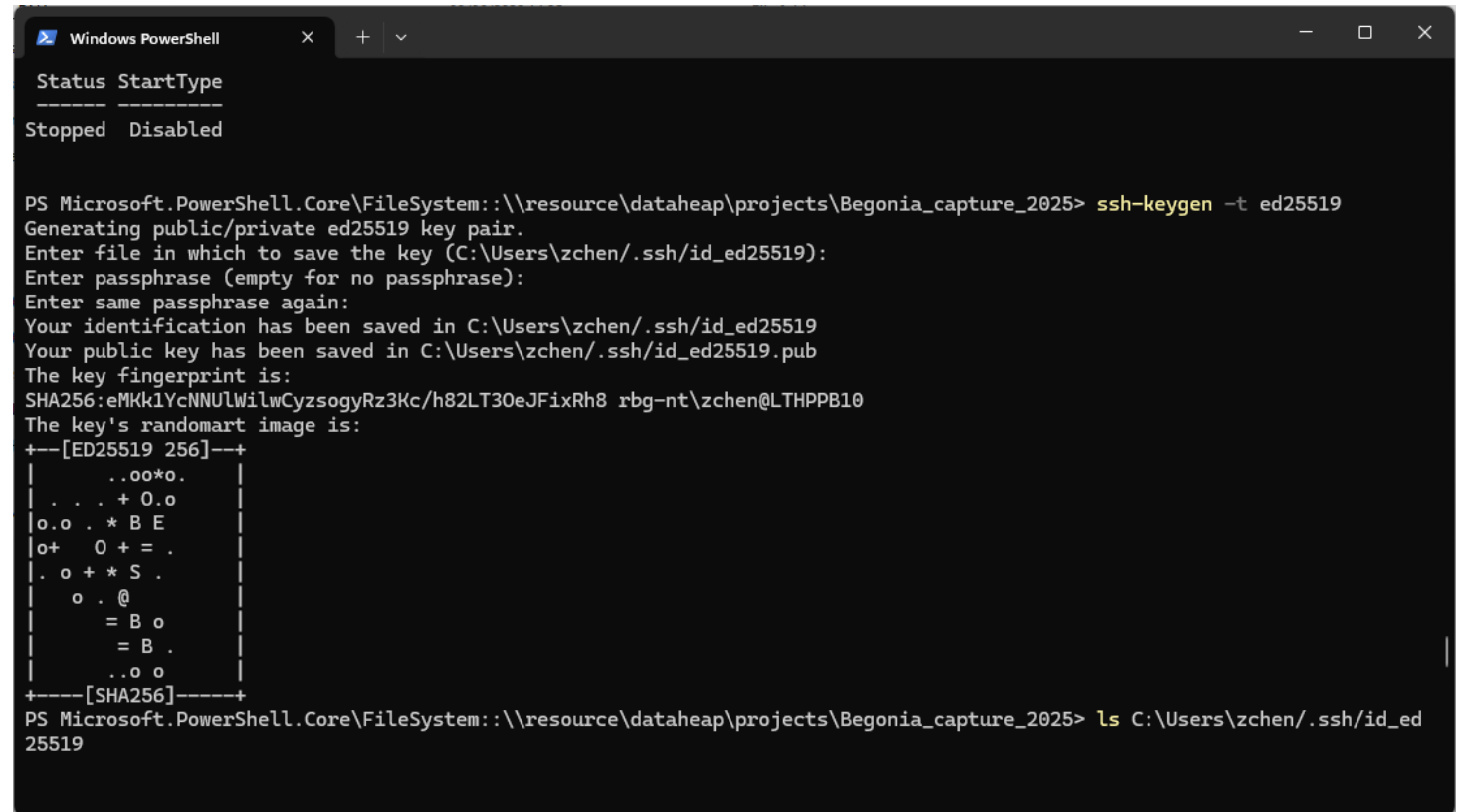
Navigate to Dataheap

- Open file explorer and enter:
`\\resource\dataheap\projects`



Open a terminal window within Dataheap

- Right click → Open in Terminal
- You will see a Windows PowerShell



```
Windows PowerShell
Status StartType
-----
Stopped Disabled

PS Microsoft.PowerShell.Core\FileSystem::\\resource\dataheap\projects\Begonia_capture_2025> ssh-keygen -t ed25519
Generating public/private ed25519 key pair.
Enter file in which to save the key (C:\Users\zchen/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\zchen/.ssh/id_ed25519
Your public key has been saved in C:\Users\zchen/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:eMKk1YcNNULWilwCyzsogyRz3Kc/h82LT30eJFixRh8 rbg-nt\zchen@LTHPPB10
The key's randomart image is:
+--[ED25519 256]--+
|      ..oo*o.      |
|      . . . + 0.o   |
|o.o . * B E        |
|o+  0 + = .        |
|. o + * S .        |
|   o . @           |
|      = B o        |
|      = B .        |
|      ..o o        |
+-----[SHA256]-----+
PS Microsoft.PowerShell.Core\FileSystem::\\resource\dataheap\projects\Begonia_capture_2025> ls C:\Users\zchen/.ssh/id_ed25519
```

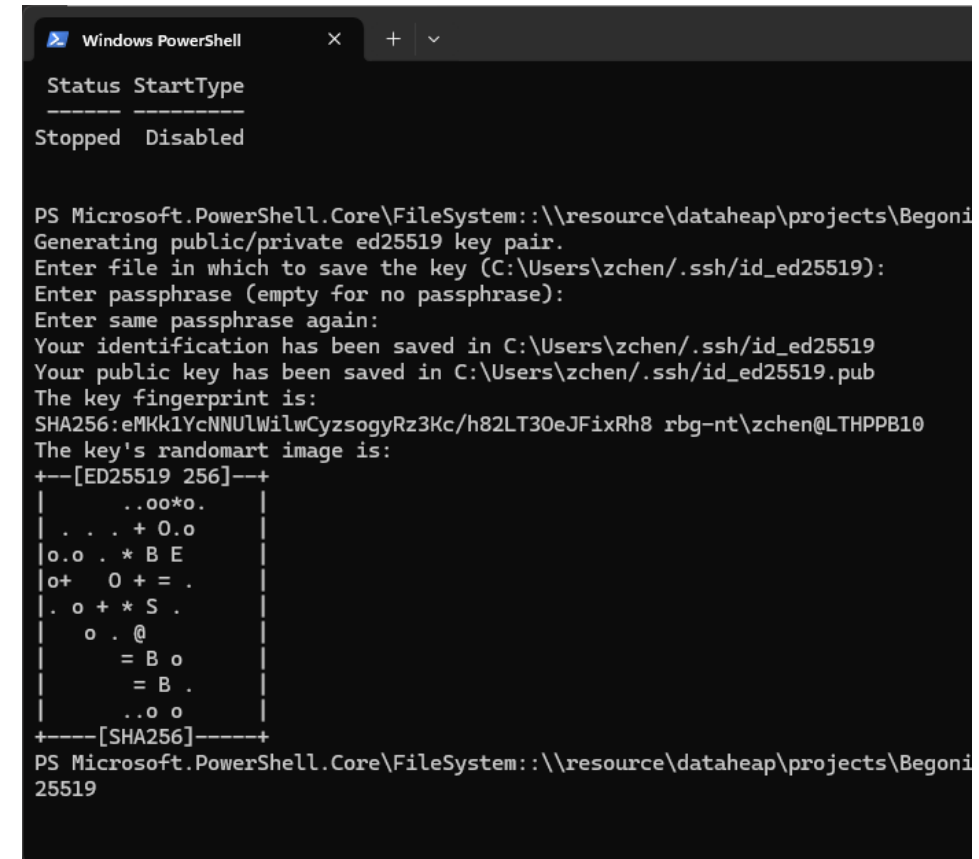
For the first time: Key authentication with **SSH key pair**.

To access files from Cropdiversity via a remote server, you need to establish a connection first, ideally with **SSH key pair**.

With the same method, you can also access files on Cropdiversity servers from Toby

Guides for key authentication

- [Useful link for more detailed explanation:](#)
- [Getting Connected — Crop Diversity HPC Help documentation](#)
 - → Getting Connected → Key authentication (with 2FA) → Terminal Clients Connection Guide (Keys)
- In the terminal window, type:
 - `ssh-keygen -t ed25519`
 - Set your passphrase (or just type enter for 'blank' passphrase)
 - Once the key pairs are generated, you'll see the key's randomart image in the terminal:

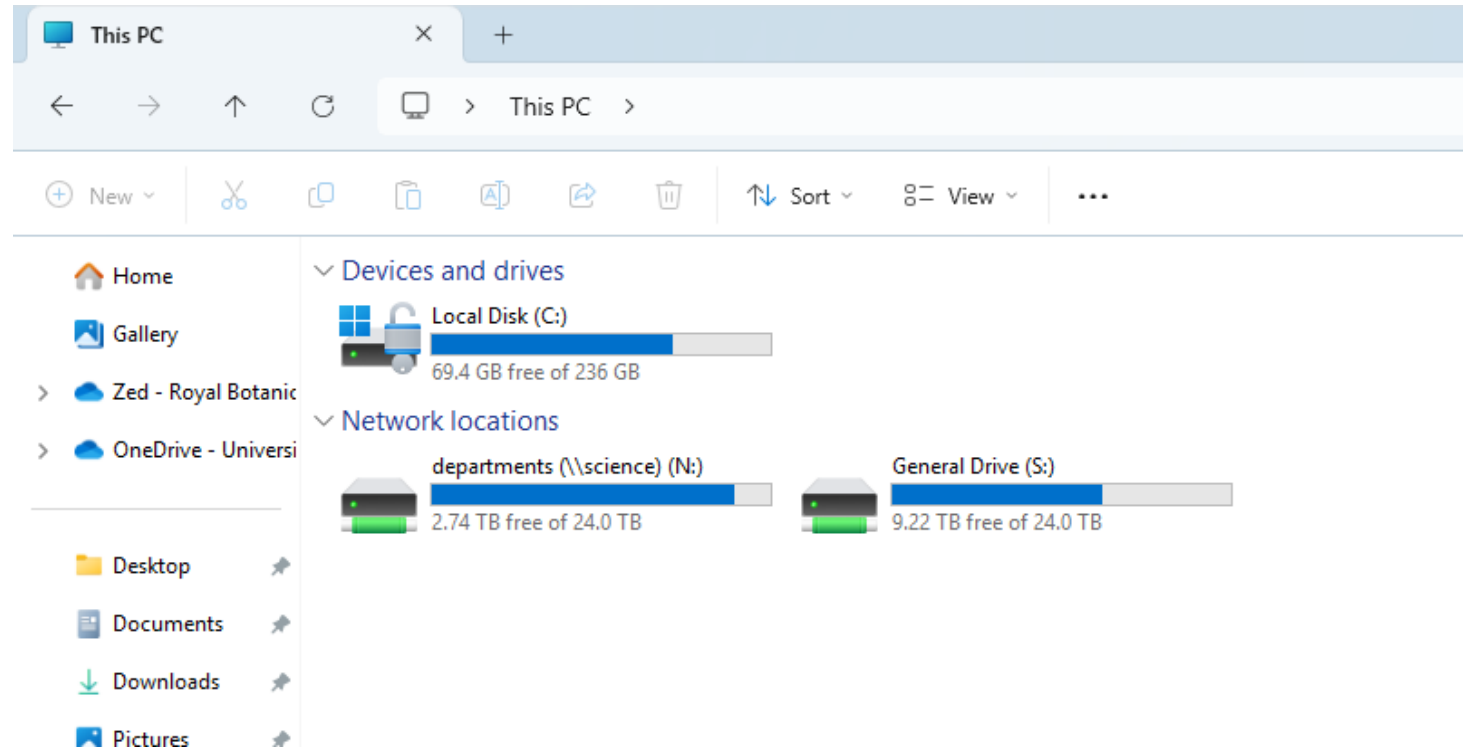


```
Windows PowerShell
Status StartType
-----
Stopped Disabled

PS Microsoft.PowerShell.Core\FileSystem::\\resource\dataheap\projects\Begoni
Generating public/private ed25519 key pair.
Enter file in which to save the key (C:\Users\zchen/.ssh/id_ed25519):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in C:\Users\zchen/.ssh/id_ed25519
Your public key has been saved in C:\Users\zchen/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:eMKk1YcNNULwIlwCyzsogyRz3Kc/h82LT30eJFixRh8_rbg-nt\zchen@LTHPPB10
The key's randomart image is:
+---[ED25519 256]---+
|          ..oo*o.          |
|      . . . + O.o         |
|o.o . * B E               |
|o+  O + = .               |
| . o + * S .              |
|    o . @                 |
|      = B o                |
|      = B .                |
|      ..o o               |
+---[SHA256]-----+
PS Microsoft.PowerShell.Core\FileSystem::\\resource\dataheap\projects\Begoni
25519
```

Guides for key authentication

- Keep you private key safe!!!
- But we need to share the public key to set up access
- Where to find:
- The keys are on local disk C:
- But we can access the key from the terminal as well



Guides for key authentication

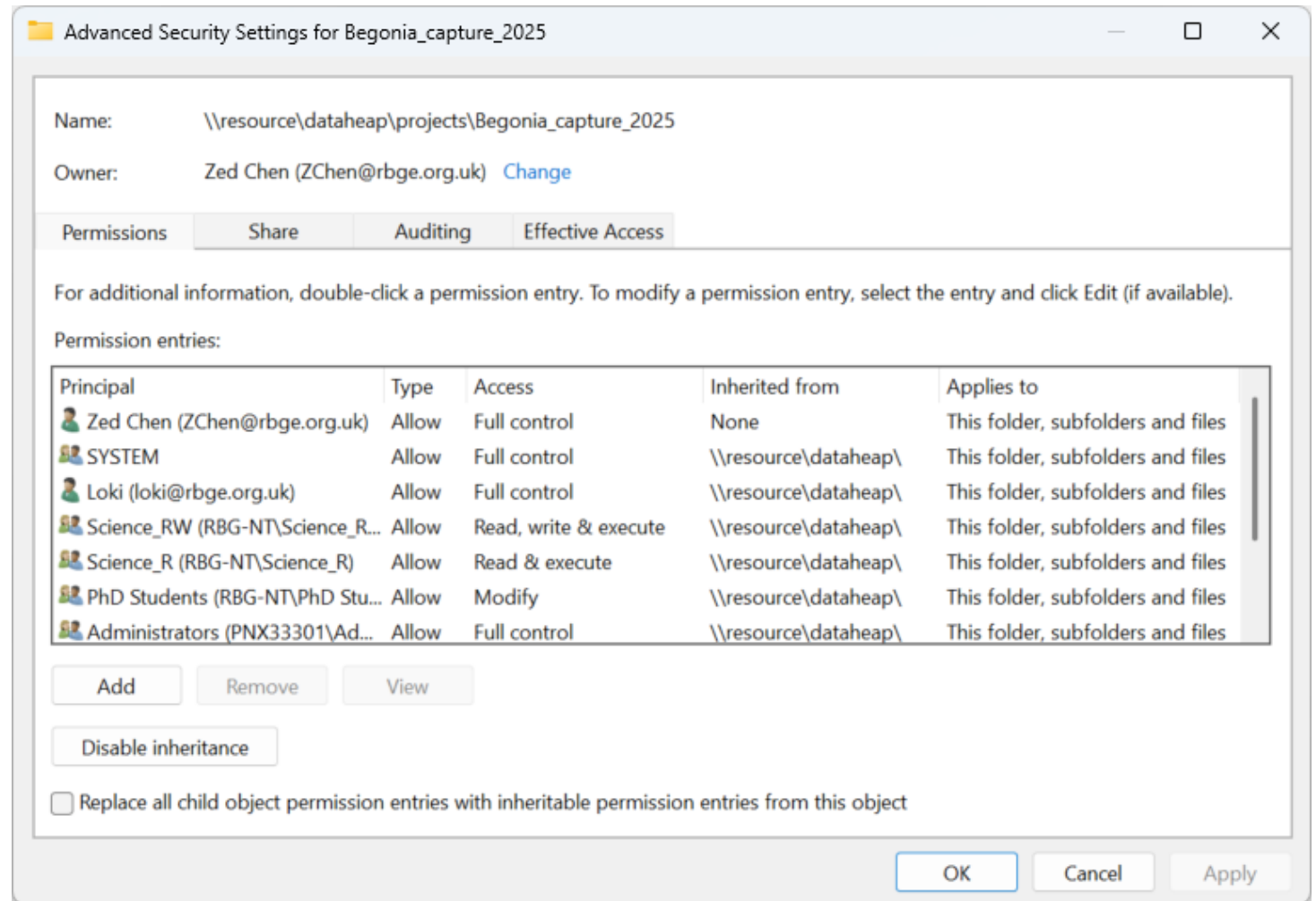
- The keys are saved on a 'hidden' directory called .ssh
- In terminal, type:
 - `ls C:\Users\xxxx/.ssh`
 - Replace xxxx with your actual rbge username
 - Now you can see all the files in .ssh, including the key pairs
- To view the public key, type:
 - `cat C:\Users\xxxx/.ssh/id_ed25519.pub`
- You will see something like this in the window:
 - `ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIFQ3CTmAhHATjayqAA8OjYp6z3XVTSZROn8QIWjQ7fxq rbg-nt\zchen@YOURMACHINE`
 - YOURMACHINE is the actual ID of the machine/server you are using to connect to Cropdiversity

Share the public key

- Copy the text from the 'cat' command
- Send it to **Iain Milne**
- Once he set up the public key, the key pair will allow you to access Cropdiversity from the server
- [Useful link for more detailed explanation:](#)
- [Getting Connected — Crop Diversity HPC Help documentation](#)
 - → Getting Connected → Key authentication (with 2FA) → Terminal Clients Connection Guide (Keys)

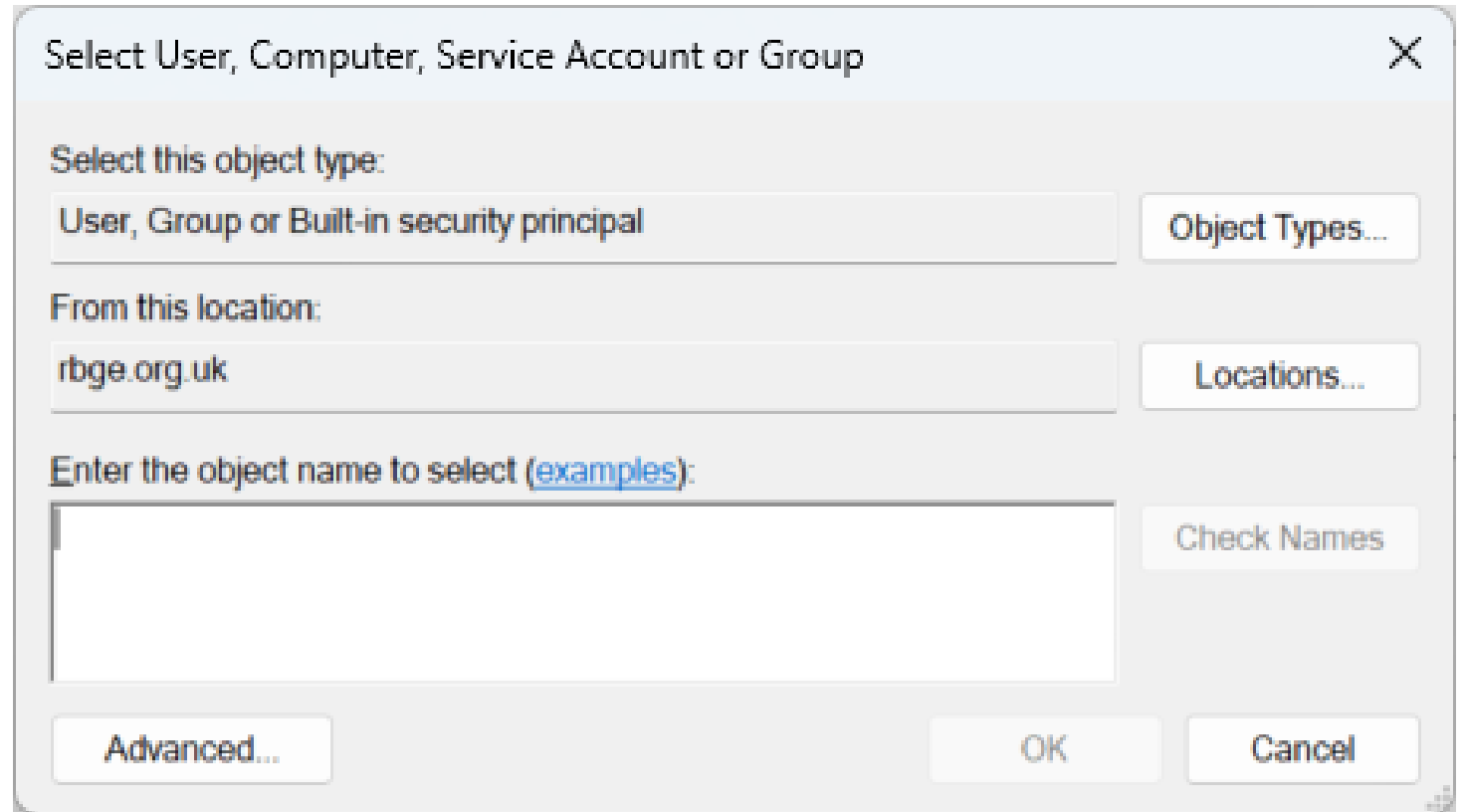
Create a new directory on Dataheap

- Right click to create a new folder
- You'll realize you cannot rename the folder
- Now rightclick on the folder:
Properties → Security → Advanced.



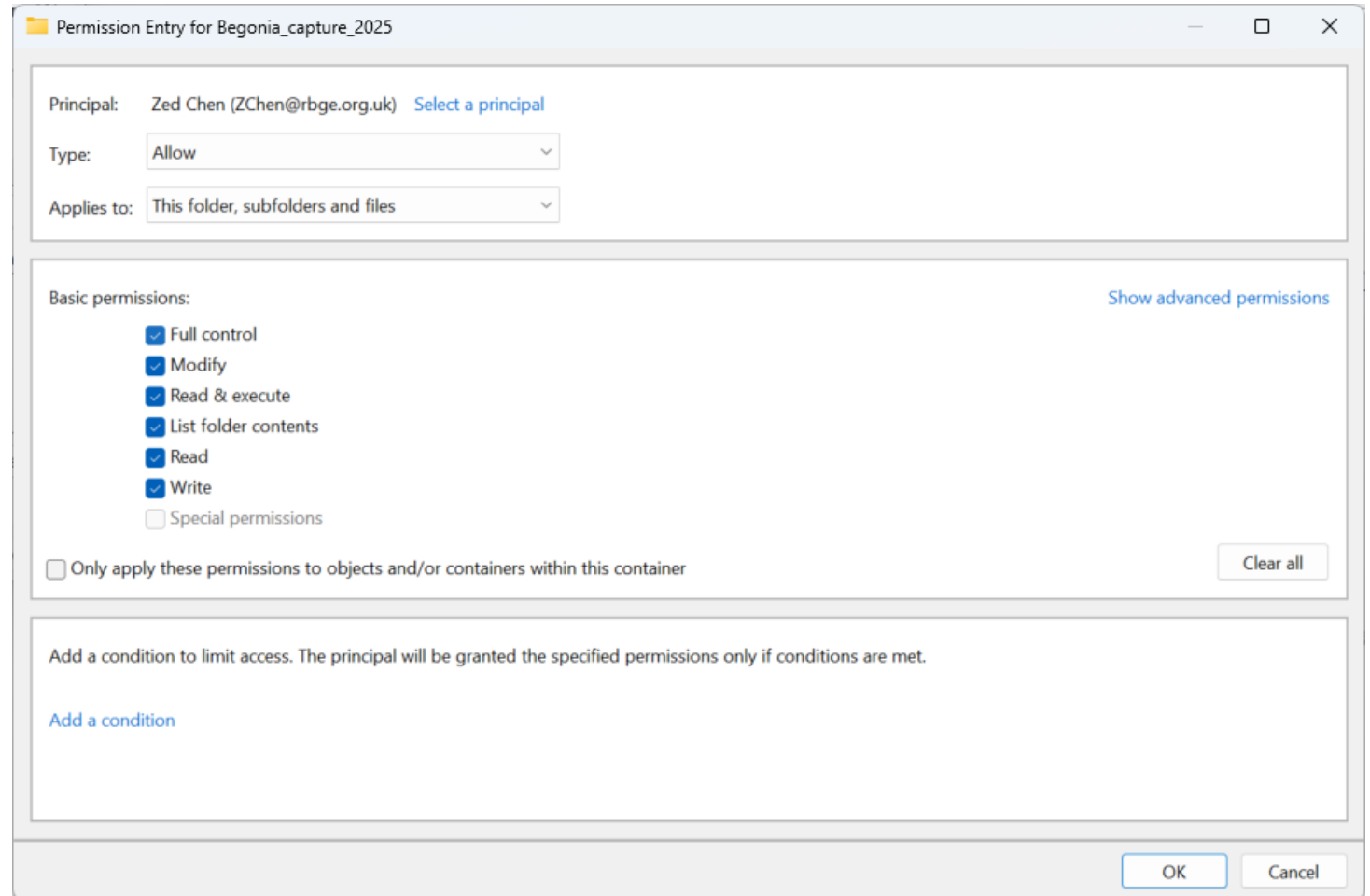
Create a new directory on Dataheap

- Click Add → Select a Principle
- Enter your rbge username
- Click OK



Create a new directory on Dataheap

- Then under basic permissions:
- Select 'Full Control'
- Click OK → Apply → OK → OK
- You are all set! Now you have full control over the directory you just created
- You can rename it and modify its content, including deleting files
- Without changing the permission, you can only upload files to the directory



Backup files from CropDiversity

- Back to the terminal (presumably you are still in `\\resource\dataheap\projects`)
- Navigate to the directory by typing:
 - `cd NAME_OF_YOUR_NEW_DIRECTORY`
- Start safe copy (scp):
 - `scp USERNAME@gruffalo.cropdiversity.ac.uk:/mnt/shared/projects/rbge/FULL_PATH_TO_THE_DIRECTORY/FILE_YOU_WANT_TO_UPLOAD .`
 - Don't forget the ' . ' at the end. It tells scp to put the copied content in the current directory
- Now it should be busy loading content

For instance

```
PS Microsoft.PowerShell.Core\FileSystem::\\resource\dataheap\projects\Begonia_capture_2025> cd ..\R_Camargo\  
PS Microsoft.PowerShell.Core\FileSystem::\\resource\dataheap\projects\R_Camargo> scp zchen@gruffalo.cropdiversity.ac.uk:/mnt/shared/projects/rbge/R_Camargo/* .  
MD5.txt                                100% 62      1.6KB/s  00:00  
X204SC25044452-Z01-F001.csv           100% 629     7.3KB/s  00:00  
X204SC25044452-Z01-F001.tar            0% 48MB    8.9MB/s  1:12:52 ETA
```