



10 Tricks for Accessing Your Data

Demonstrated Live, at Great Personal Risk, by Dan Allan
With preparations by Eugene Matviychuk*

*who should bear no blame for whatever happens here

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I might not have time to cover all 10

We'll show a link and QR code at the end with all the presentation materials.

This is not a tutorial

- You will learn some things are *possible*.
- You may not pick up enough to actually *try* them...but you will pick up enough to know to *ask* about them.
- This is a **conversation starter**.

Then what?

- Max and I are reviving software office hours, every **Friday 2:30–3:30** in Bldg 741 Rm 156.
 - Cassandra will distribute a calendar invitation.
 - On some weeks we will announce specific programming / tutorials.
 - Otherwise, bring us your software problems!
- Talk to the **Data Engineering group** members on your DSSI teams.

Data Engineering Group Members



Jun Aishima



Dan Allan

Group Leader



Kari Barry



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Seher Karakuzu



**Juan
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Nate Maytan

Tip #1: What is a proposal directory and how can I access it?

```
/nsls2/data/{beamline}/proposals/{year}-{cycle}/pass-{proposal ID}
```

- Created when a proposal is "in allocation"
- Commissioning proposals are weird special because they don't always have a cycle associated with them in PASS. (Lisa and I plan to fix this.)
- "Mounted" on...
 - Workstations
 - Data Transfer Workstation in 741 for USB transfers
 - Virtual Remote Desktops "VDI" (vdi.nsls2.bnl.gov)
 - JupyterHub (jupyter.nsls2.bnl.gov)
 - Data Transfer Nodes (read on...)

Demo:
Let's look at how
the permissions work....

Tip #2: SFTP and Globus

```
> sftp dallan@sftp.nsls2.bnl.gov
```

```
sftp> cd /nsls2/data/smi/proposals/2026-1/pass-317473
```

```
sftp> get projects/pushpin/user_data/scan_xzp_1060174.npz
```

```
Fetching /nsls2/data/smi/proposals/2026-1/pass-  
317473/projects/pushpin/user_data/scan_xzp_1060174.npz to scan_xzp_1060174.npz  
scan_xzp_1060174.npz
```

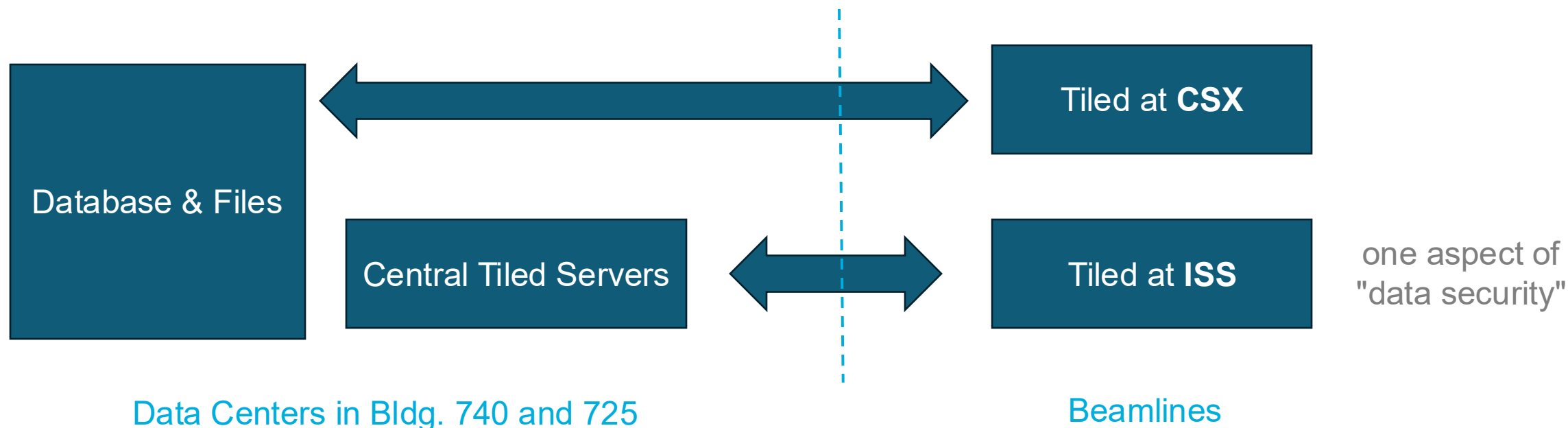
Highlighting BMM's excellent guide on this for Windows, Mac, and Linux:

<https://nsls2.github.io/bmm-beamline-manual/data.html#sftp-client>

Globus: <https://globus.nsls2.bnl.gov/>

Tips #3–10 involve *Tiled*

These days, **all beamlines that use *Bluesky* are using *Tiled***, though it may not be obvious.



Databroker and Tiled

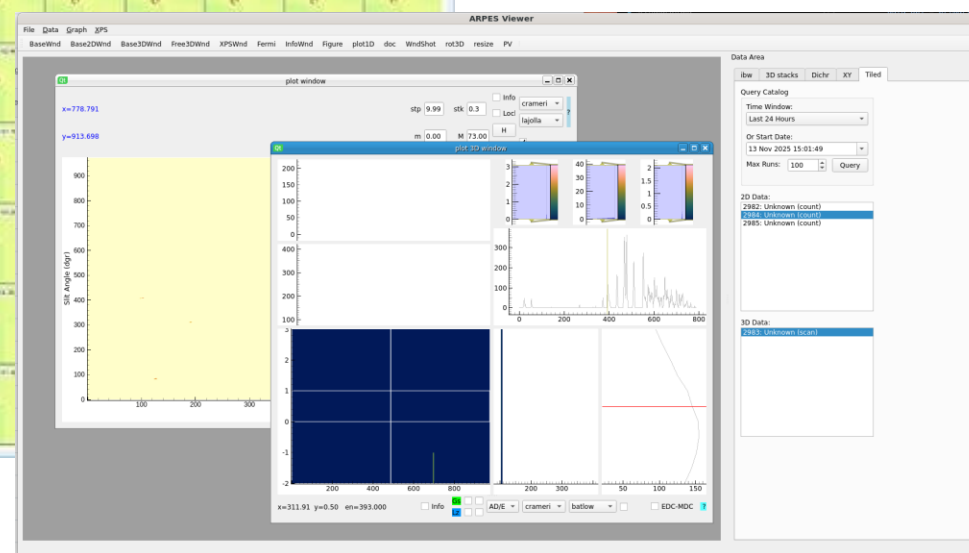
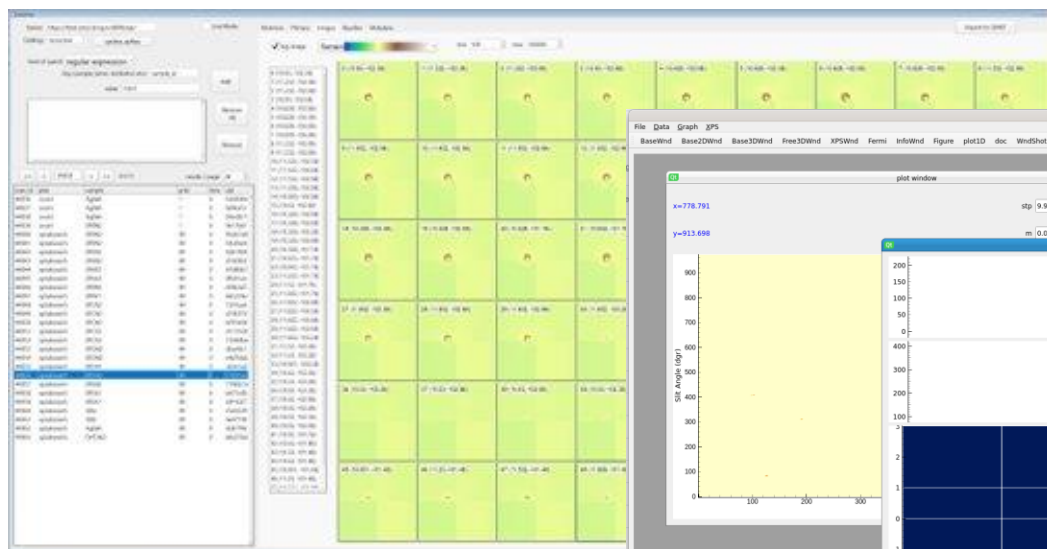
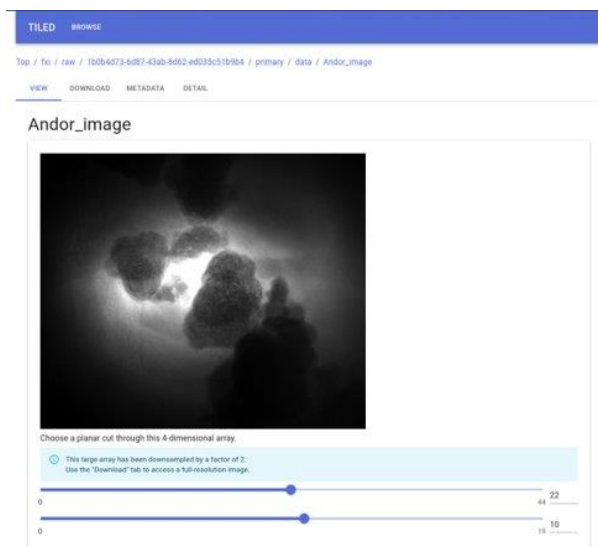
- We used to use *Databroker* (vintage 2015)
- Now we use *Tiled* (vintage 2021)
- You can still use *Databroker*, but **modern *Databroker* is just a wrapper around *Tiled*.**

Tiled uses a **client–server** model.

- Tiled enables secure **remote access** and is **not restricted to Python**.
- For those who know: No more "**handlers**"! Tiled performs this function more simply and away from user-facing code (in the server).

Tiled can help in many applications

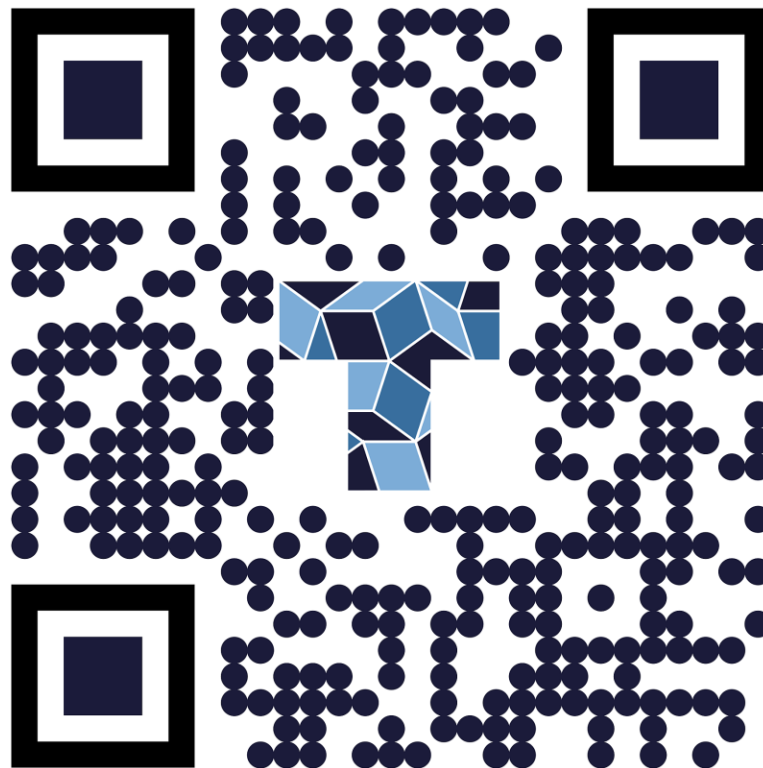
- The rest of this talk shows **Python code**, but there are **web apps** and **GUIs** that do some of this.
- Our groups (and our collaborators at ALS, CLS, ...) are working on more.



Enough stalling.



QR code to all presentation materials



<https://github.com/NSLS2/10-Tricks-for-Accessing-Your-Data>