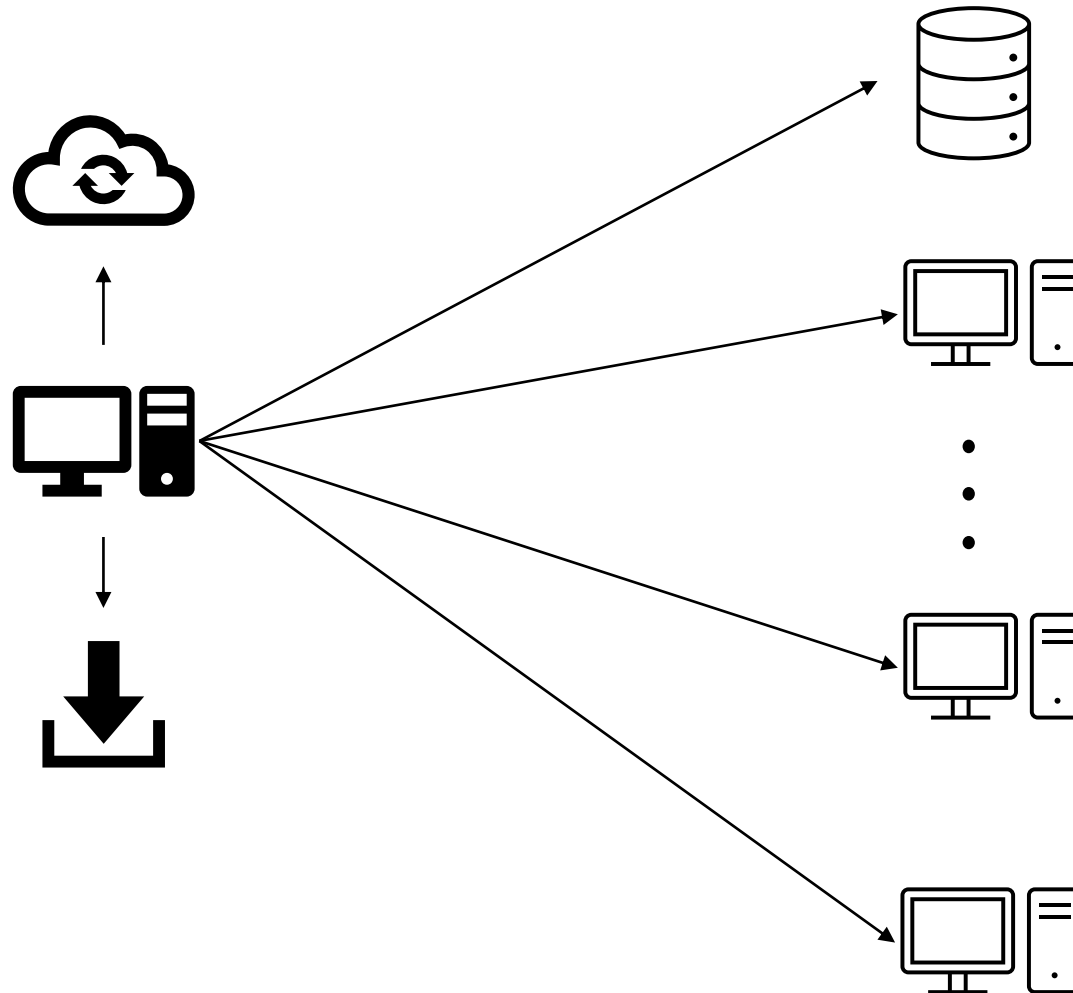


# Data Management for CRAC

Some examples

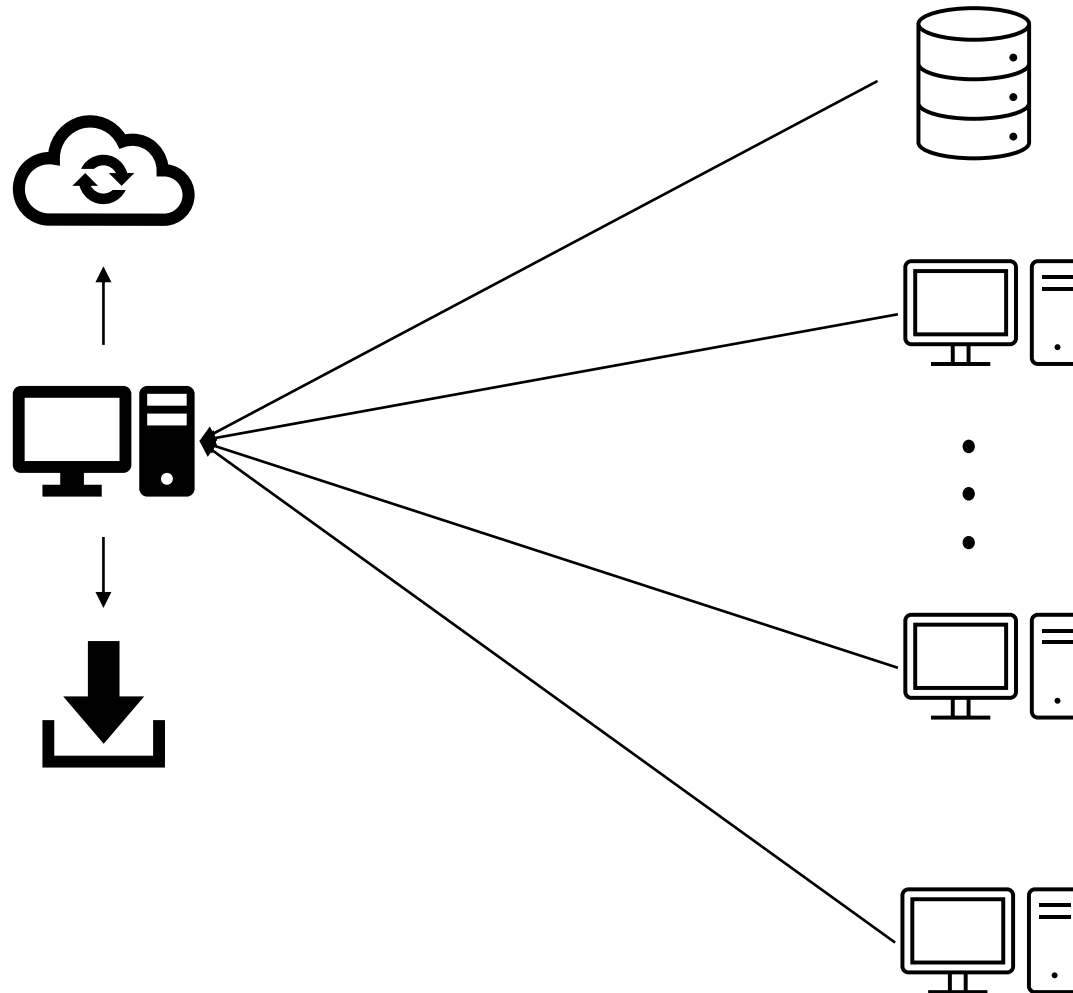
## Option 1: Data in workstation/logger



1. Access from script to individual workstation or logger via SSH (Fabric, Paramiko)
2. Search for current file/folder
3. Strip data and metadata to NumPy/PANDAS/list objects
4. Generate NetCDF4/HDF5 structured file
5. Backup to HDD/Cloud



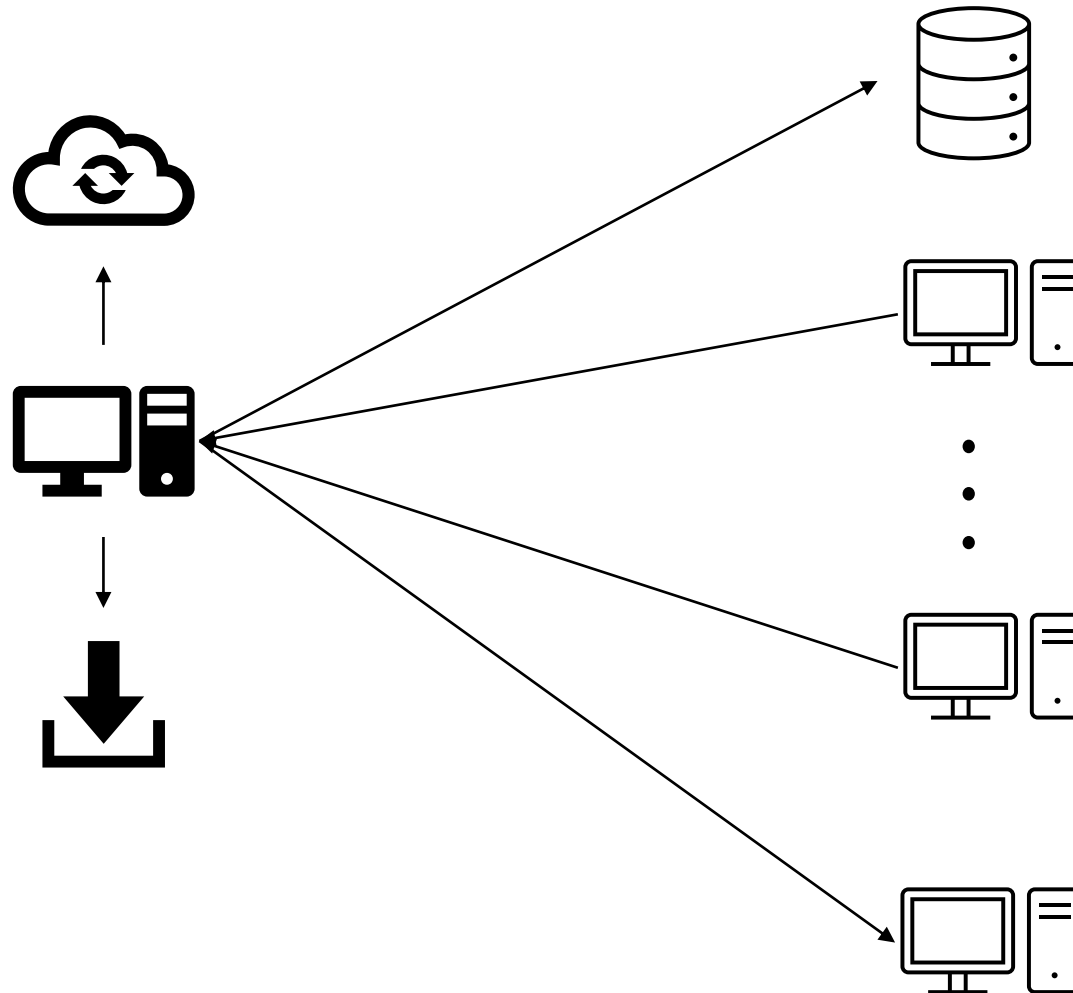
## Option 2: Data uploaded to central workstation



1. Access from script to folders (glob/os)
2. Search for current file/folder
3. Strip data and metadata to NumPy/PANDAS/list objects
4. Generate NetCDF4/HDF5 structured file
5. Backup to HDD/Cloud



### Option 3: Mixed setup



1. Access from script to folders (glob/os). Access from script to individual workstation or logger via SSH (Fabric, Paramiko)
2. Search for current file/folder
3. Strip data and metadata to NumPy/PANDAS/list objects
4. Generate NetCDF4/HDF5 structured file
5. Backup to HDD/Cloud



NetCDF/HDF5 structure

Workstation  
name

Variable

HDFView 3.1.3

File Window Tools Help

Recent Files C:\Users\Mixtli\Documents\test2.h5

test2.h5

ALTITUDE

ALTITUDE.BOUNDARIES

ALTITUDE.INSTRUMENT

ANGLE.SOLAR\_AZIMUTH

ANGLE.SOLAR\_ZENITH.ASTRONOM

DATETIME

H2O.COLUMN\_ABSORPTION.SOLAR

H2O.MIXING.RATIO.VOLUME\_ABSO

INTEGRATION.TIME

LATITUDE.INSTRUMENT

LONGITUDE.INSTRUMENT

O3.COLUMN.PARTIAL\_ABSORPTION

O3.COLUMN.PARTIAL\_ABSORPTION

O3.COLUMN\_ABSORPTION.SOLAR

O3.COLUMN\_ABSORPTION.SOLAR\_

O3.COLUMN\_ABSORPTION.SOLAR\_

O3.COLUMN\_ABSORPTION.SOLAR\_

O3.COLUMN\_ABSORPTION.SOLAR\_

O3.COLUMN\_ABSORPTION.SOLAR\_

O3.MIXING.RATIO.VOLUME\_ABSOR

O3.MIXING.RATIO.VOLUME\_ABSOR

O3.MIXING.RATIO.VOLUME\_ABSOR

O3.MIXING.RATIO.VOLUME\_ABSOR

O3.MIXING.RATIO.VOLUME\_ABSOR

PRESSURE\_INDEPENDENT

SURFACE.PRESSURE\_INDEPENDE

SURFACE.TEMPERATURE\_INDEPEI

TEMPERATURE\_INDEPENDENT

fakeDim0

Object Attribute Info General Object Info

Attribute Creation Order: Creation Order NOT Tracked

Number of attributes = 12

Add Attribute

Name	Type	Array Size	Value[50](...)
DIMENSION_LIST	Variabl...	1	(1-33236)
VAR_DATA_TYPE	String, ...	Scalar	DOUBLE
VAR_DEPEND	String, ...	Scalar	DATETIME
VAR_DESCRIPTION	String, ...	Scalar	datetime (UT), modified
VAR_FILL_VALUE	64-bit f...	Scalar	-90000.0
VAR_NAME	String, ...	Scalar	DATETIME
VAR_NOTES	String, ...	Scalar	defined relative to refer
VAR_SIZE	String, ...	Scalar	4640
VAR_SI_CONVERSION	String, ...	Scalar	0.0:86400.0:s
VAR_UNITS	String, ...	Scalar	MJD2K
VAR_VALID_MAX	64-bit f...	Scalar	8000.0
VAR_VALID_MIN	64-bit f...	Scalar	-5000.0

DATETIME at / [test2.h5 in C:\Users\Mixtli\Doc...

Table Import/Export Data Data Display

0-based

0	4682.86...
1	4682.87...
2	4682.88...
3	4703.56...
4	4703.56...
5	4703.60...
6	4703.60...
7	4703.68...
8	4703.68...
9	4703.75...
10	4703.765
11	4703.80...
12	4704.58...
13	4704.59...
14	4704.65...
15	4704.66...
16	4704.69...

Data

Metadata

## Requirements

1. **Naming convention** (universal, by workstation/group/etc).
2. SSH availability, upload script/routine.
3. Period (hourly/daily/weekly,etc.) of accumulation. Time of accumulation (for constant HDF timestamp)
4. Static address/domain or updating list
5. Variable, metadata files to create structured datafile
6. ...