

# SAM for Minerva

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# SAM deployment on Minerva

- Minerva now has a development instance of SAM
  - with database
  - SAM db server
  - SAM station
- Files with metadata, location on disk

# Example SAM session

On IF cluster:

```
$ setup sam -q dev
```

List some files by metadata:

```
$ sam list files --dim="run_number 9800000-9909999 and  
data_tier raw and online.triggertype=MTM"
```

Files:

```
    MN_00000981_0001_numib_v04_0912182051_RawEvents.root  
[...]  
    MN_00000990_0001_numib_v04_0912211405_RawEvents.root
```

```
File Count:          51  
Average File Size:  427.30MB  
Total File Size:    21.28GB  
Total Event Count:  71578
```

# Example SAM session

## Look at file metadata:

```
$ sam get metadata --file=MN_00000981_0002_numib_v04_0912182154_RawEvents.root
ImportedDetectorFile({
  'fileName' : 'MN_00000981_0002_numib_v04_0912182154_RawEvents.root',
  'fileId' : 1997778L,
  'fileType' : 'importedDetector',
  'fileFormat' : 'root',
  'fileSize' : SamSize('469.90MB'),
  'crc' : CRC('1416841616L', 'adler 32 crc type'),
  'fileContentStatus' : 'good',
  'eventCount' : 1500L,
  'dataTier' : 'raw',
  'firstEvent' : 4942826L,
  'lastEvent' : 4944325L,
  'startTime' : SamTime(1261195008.0),
  'endTime' : SamTime(1261198879.0),
  'applicationFamily' : ApplicationFamily(appFamily='online', appName='v04',
appVersion='v05-14-00'),
  'group' : 'minerva',
  'params' : Params({
  'online' : CaseInsensitiveDictionary({
  'triggerconfig' : 'unknown',
  'triggertype' : 'MTM',
  })),
  'datastream' : 'alldata',
  'filePartition' : 1,
  'lumBlockRangeList' : LumBlockRangeList([LumBlockRange(4942826L, 4944325L)]),
  'runDescriptorList' : RunDescriptorList([RunDescriptor(runType='mtm',
runNumber=9810002)]),
  })
})
```

# Example SAM session

See where a file is located:

```
$ sam locate
MN_00000981_0002_numib_v04_0912182154_RawEvents.root
[ 'minerva_bluearc:/minerva/data/rawdata/downstream/raw/numi
b/00/00/09/81' ]
```

Create a dataset definition for these files:

```
$ sam create dataset definition --defname=rai_test_2
--dim="run_number 9800000-9909999 and data_tier raw and
online.triggertype=MTM" --group=minerva
DatasetDefinition saved with definitionId = 3523
```

# Example SAM session

Request files from SAM. In this case just use a null shell command.

```
$ sam get dataset --defname=rai_test_2 --group=minerva
--station=minerva --downloadPlugin=:
[...]
```

Requesting first file...

```
: /minerva/data/rawdata/downstream/raw/numib/00/00/09/81/MN
_00000981_0002_numib_v04_0912182154_RawEvents.root .
```

Requesting next file...

```
: /minerva/data/rawdata/downstream/raw/numib/00/00/09/81/MN
_00000981_0001_numib_v04_0912182051_RawEvents.root .
```

[...]

Requesting next file...

```
: /minerva/data/rawdata/downstream/raw/numib/00/00/09/90/MN
_00000990_0001_numib_v04_0912211405_RawEvents.root .
```

Requesting next file...

```
No more files
```

# Example SAM session

Look at the results of the SAM project:

```
$ sam get project summary --project=illingwo_20100119143600
Project Name: illingwo_20100119143600   ID: 5231
No of files in snapshot: 51   Snapshot ID: 7347
Dataset definition name: rai_test_2   ID: 3523
Station Name: minerva   ID: 18
Username: illingwo   ID: 106
Work Group Name: minerva   ID: 5
```

```
Consumer ID: 5472
Username: illingwo   ID: 106   Work group Name: minerva   ID: 5
Number of consumer processes: 1
  Consumer process ID: 11455
    Process description: Consumer Process
      Process status           : completed
      Number of files consumed  :          51
      Number of files delivered :           0
      Number of files failed    :           0
      Number of files skipped   :           0
      Number of files unknownStatus :           0
      Last consumed file       :
MN_00000990_0001_numib_v04_0912211405_RawEvents.root
      Last consumed file status : consumed
Number of files consumed      :          51
Number of files delivered    :           0
Number of files failed       :           0
Number of files skipped      :           0
Number of files unknownStatus :           0
```

# Future work

- Finalize metadata and scripts to declare it and add file locations
- Integration with experiment framework
- Move to production