Getting Data into Atlantis: JiveXML

- JiveXML: A family of Athena package which retrieve ATLAS data and dump it into output files in xml-format, to be loaded into Atlantis itself.
- In any Athena jobOptions which use the general Reconstruction (RecExCommon), xml-files will be produced when the switch `rec.doJiveXML=True` in enabled.
- One file per event produced in run directory, format:
  `JiveXML_RunNumber_EventNumber.xml`
  with run number and event number taken from Athena
- Instructions collected on Wiki page, quite regularly updated, so check those first, it's linked Atlantis Website under 'JiveXML Wiki':
  https://twiki.cern.ch/twiki/bin/viewauth/Atlas/JiveXMLWithAODorESD

JiveXML-file for a certain event (1)

- Most common use-case: *"I want to produce an event display for a certain event which my analysis or colleague tells me is worth it."*
  - Run and event number(s) need to be known (e.g. from D3PD or AOD analysis).
  - Use event-picking (ELSSI infrastructure) on the Grid to access RAW (data11) which contains all the necessary details (calo cells etc). Note that the data11 ESDs have been deleted from the Grid
  - When you get a message that the dataset is only available on DATATAPE, follow the instructions given then (DaTri request).
  - Note: Check release used for your data on AMI (e.g. AtlasProduction-17.0.4.7). Best to use lxplus for pathena commands, or a well-maintained local kit installation.
- Method described in:
  https://twiki.cern.ch/twiki/bin/view/Atlas/Atlantis#Get_the_xml_file_for_Atlantis_fr

JiveXML-file for a certain event (2)

- Format is:

```
pathena JiveXML/JiveXML_jobOptions_PhysicsRAW.py
--eventPickEvtList rrr.txt
--eventPickDataType ESD
--outDS user.gridname.AtlantisTutorial.test1
--extOutFile "JiveXML_*.xml"
```

  with:

  - rrr.txt containing run and event number, also works with long lists e.g.:

    180164 103089933
    180164 103091782
    180164 103098839

  - jobOptions need to contain rec.doJiveXML=True, JiveXML/JiveXML_jobOptions_PhysicsRAW.py
  - Insert your own Grid name at 'gridname'
  - Get the output back from the Grid as usual with dq2-get
  - JiveXML files will be tar-gzipped. To unpack them:
    tar –xzcf user.gridname.AtlantisTutorial.test2.EXT0._00001.JiveXML_XYZ.xml.tgz
    (Note: you need to do this for each file, as tar doesn't accept wildcard * !)

Running JiveXML from AODs

- Instructions also collected on Wiki page:
  https://uimon.cern.ch/twiki/bin/view/Atlas/JiveXMLWithESDorAOD
- To produce xml-files from any jOs based on RecExCommon (e.g. 'master.py' in the Offline tutorial): One can just apply the flag **`rec.doJiveXML=True`**
- If you don't have jOs, try those, run them, then replace input file at 'FilesInput' with your input:

```
get_files JiveXML_jobOptions_PhysicsAOD.py
athena JiveXML_jobOptions_PhysicsAOD.py
```

- Add JiveXML options into your analysis package, e.g. in UserAnalysis/AnalysisSkeleton_topOptions.py, add right at the end:
  `include( "AnalysisJiveXML/AnalysisJiveXML_DataTypes.py" )`
  Note that AODs contain seriously less data ! The display may look disappointing. E.g. no calo cells and inner detector hits. Running from ESD or RAW is required to see such details. Recent work on Legoplot to improve it for AOD-only.
- Do contact us in case of problems / comments:
  Atlas Hypernews forum: Atlantis Event Display:
  hn-atlas-atlantisdisplay@cern.ch

Exercise: Produce xml-files from ESD-MC

- Find here a sequence of commands you can execute on lxplus to see how JiveXML works:
  - /afs/cern.ch/user/j/jpthomas/public/AtlantisTutorial/README (or when on lxplus: ~jpthomas/public/AtlantisTutorial/README)
- This goes through the following steps:
  - Setup Athena (valid lxplus login is required)
  - Run Athena with JiveXML to write-out xml-files from a MonteCarlo ESD (ttbar)
  - Setup pathena (valid Grid certificate required)
  - An example on how to produce the xml-files for a chosen set of events from data11 via a Panda Grid job

Quick fix for computers without Java

- Only necessary if you don't have Java at all.
  Most OS including SLC5/6 should be ok !
- Ubunto: Would need manually installation of (Oracle)Java.
  For this tutorial, OpenJDK should be sufficient. To install, do:

```
sudo apt-get install openjdk-7-jdk
```

- There is a Java version temporarily available here:
  `http://www.ep.ph.bham.ac.uk/user/thomas/java/`
  - For i686 (Intel): `java_i686.tgz`
  - For x64 (AMD 64bit): `java_x64.tgz`
- Download and unpack:
  - `tar -xzvf java.tgz`
- When you click on Java Webstart (from Website), DON'T start it with the default application the browser has set, but do 'browse for application' and look for 'javaws' in the 'bin' directory, e.g.
  `jre-6u26-linux-x64/bin/javaws`