

Python Policy Framework

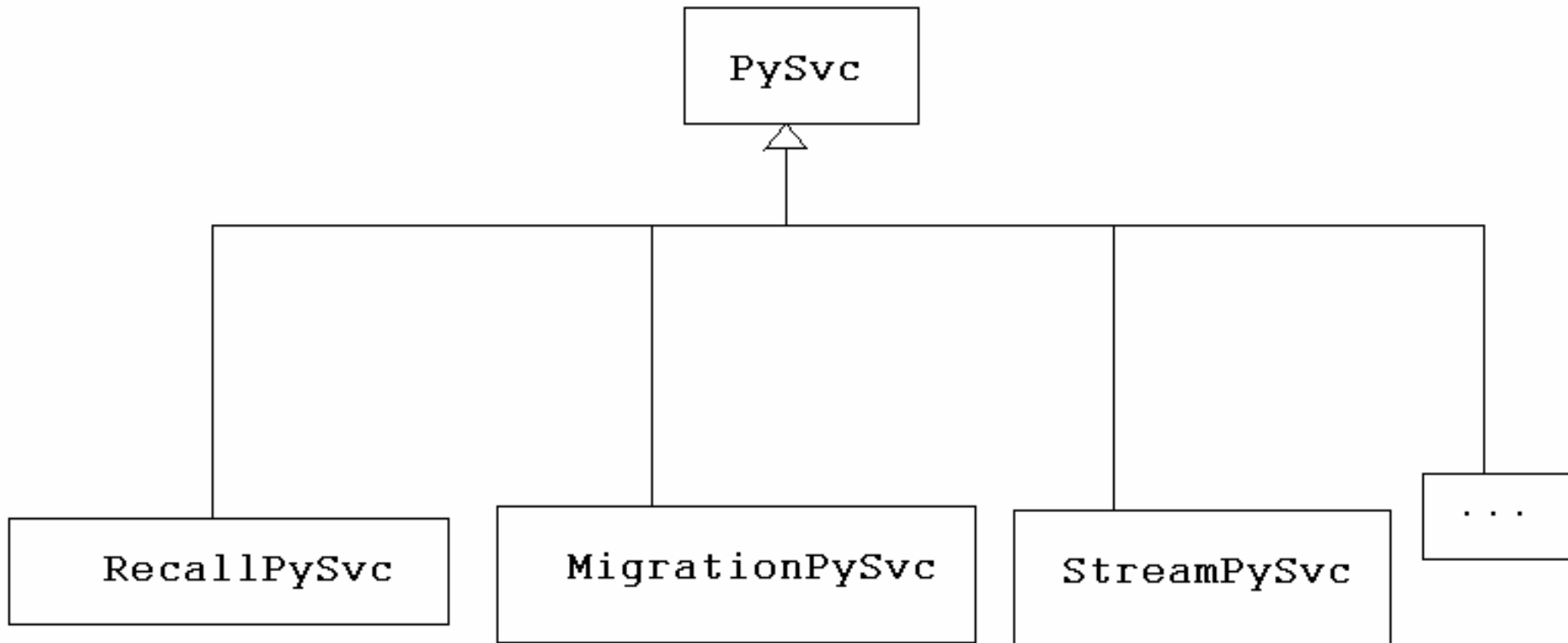
Outline

- Bug report #21431
- Brief description of the architecture
- Recall Policy classes
- RecHandlerDaemon description
- Example of a recall policy

Bug report #21431

<https://savannah.cern.ch/bugs/index.php?21431>

Class Diagram



PySvc

```
Public:  
  PySvc()  
  PySvc(std::string moduleName)  
  virtual bool applyPolicy(PolicyObj*)=0  
Protected:  
  bool callPythonPolicy(std::string fun, PyObject* input)  
  PyObject *m_module  
  PyObject *m_pyDictionary
```

Constructor:

- initializes the interpreter
- opens the python module in the file specified
- imports the module namespace
- gets the dictionary

callPythonPolicy:

- initializes the interpreter
- gets the dictionary
- calls PyObject with the given PyObject
- converts the returned value into a bool

RecallPySvc

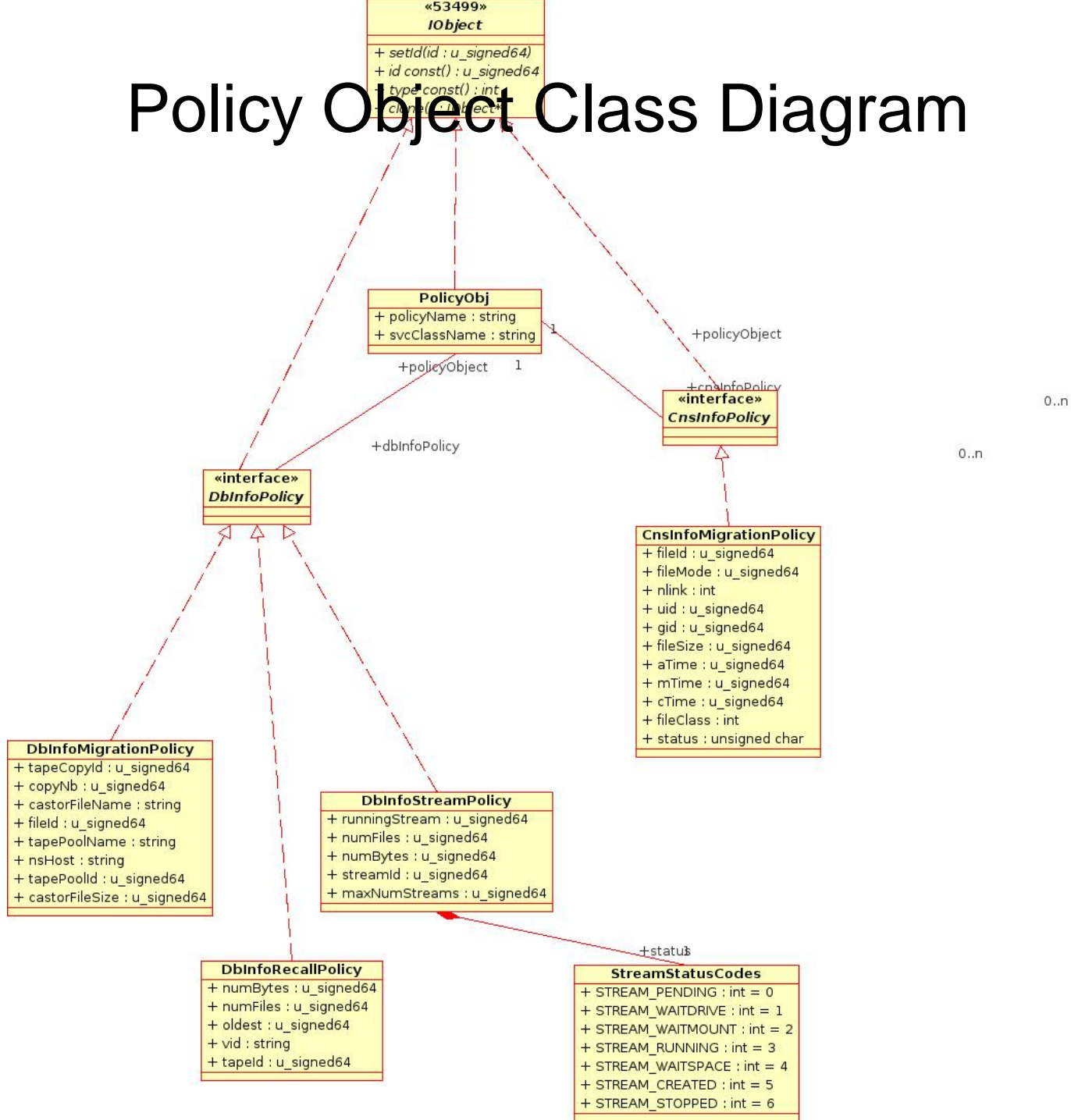
Public:

```
RecallPySvc():PySvc(std::string module)
virtual bool applyPolicy(PolicyObj*)
```

applyPolicy

- Converts the input into a PyObject and calls PySvc::callPythonPolicy with the name of the policy and the created input.

Policy Object Class Diagram



rechHandlerDaemon

rechHandlerDaemon [-f][-t sleepTime] listSvcClass

The daemon:

- Creates the OraPolicySvc
- Creates the RecallPySvc using the policy module name from castor.conf
- Starts the thread

The thread for each service class:

- Calls the `inputForRecall` function to get the candidate tapes and all the database statistics
- Applies the policy to all of them keeping the id of the eligible ones.
- Puts the eligible tapes into a pending state in the database

Modifications to existing components

- Rtcpclientd will not ask for the tape if a policy is specified in the svcclass (new tape status)
- A New link was added between tape-tapepool in the db to be able to associate the tape to a svcclass

e.g. Recall Policy

In castor.conf :

the path with the file which contains all the recall policies:

Policy Recaller /etc/castor/recallerPolicies.py

In the file:

```
def myPolicyName (vidString, numFiles, dataVolume,oldestTime):
```

```
    # Take the decision
```

```
    return 1 # or zero
```

In the database:

RecallerPolicy entry in the SvcClass table should contain the name of the function (e.g. myPolicyName)

Questions?