#### **TINE Release 4.0 News**

(April 9, 2010: That was the month that was!)

"What a long, strange trip it's been ...."

#### **Exclusive Read**

- Use same security for READ calls as for WRITE calls for selected properties.
- Register a Property with CA\_XREAD
  - CA\_READ|CA\_XREAD
    - Exclusive READ only when an ACCESSLOCK is in place
  - CA XREAD
    - Exclusive READ always in force
      - Conditions given by users and nets security determine access
- Otherwise: everyone has READ access.

#### Related bug-fixes:

- Access Lock *helper* routines:
  - int SetAccessLock(context, server, lockType, lockDuration)
  - int FreeAccessLock(context, server)
    - Now behave synchronously!
- Access Lock with Exclusive Read now terminates any pre-existing links!

- Access applies to WRITE or Exclusive READ
- Access control via both *User* and/or *Network Address*
  - At the equipment module (i.e. device server) level!
  - At the property level!
  - At the device level!

- User Access Restriction
  - via File (in [FEC\_HOME]/<EQM>)
    - users.csv
    - property>-users.csv
      - property-default-users.csv
    - <device>-users.csv
      - device-default-users.csv
  - via API
    - AppendRegisteredUsers(eqm, userlist, listsize)
    - AssignPropertyAccessList(eqm, prp, users, nusers)
    - AssignDeviceAccessList(eqm, prp, users, nusers)

Equivalent methods in java (TEquipmentModule) ...

- Network Address Access Restriction
  - via File (in [FEC\_HOME]/<EQM>)
    - ipnets.csv
    - property>-ipnets.csv
      - property-default-ipnets.csv
    - <device>-ipnets.csv
      - device-default-ipnets.csv
  - via API
    - AppendRegisteredNetsList(eqm, iplist, listsize)
    - AssignPropertyNetsList(eqm, prp, ipnets, nipnets)
    - AssignDeviceNetsList(eqm, prp, ipnets, nipnets)

Equivalent methods in java (TEquipmentModule) ...

### Practical Example

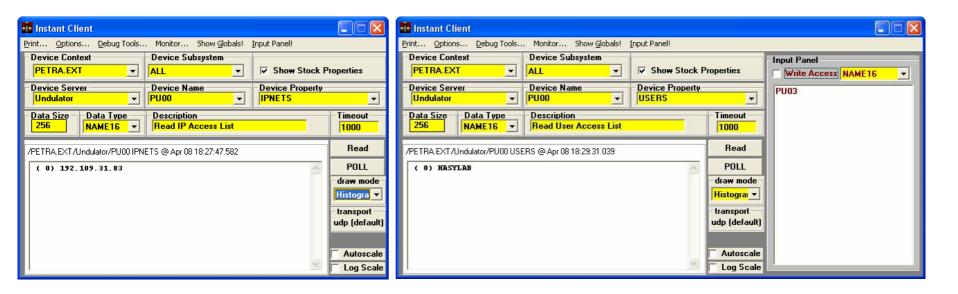
- tine Repeater Server(s) for the PETRA Undulators:
  - double repeater pair for EMBL-Hamburg <-> DESY
  - Command line:
    - tineRepeater PETRA Undulator /c=PETRA.EXT /s=Undulator /p=11
  - EMBL is 'allowed' to control Undulator X but not the others!

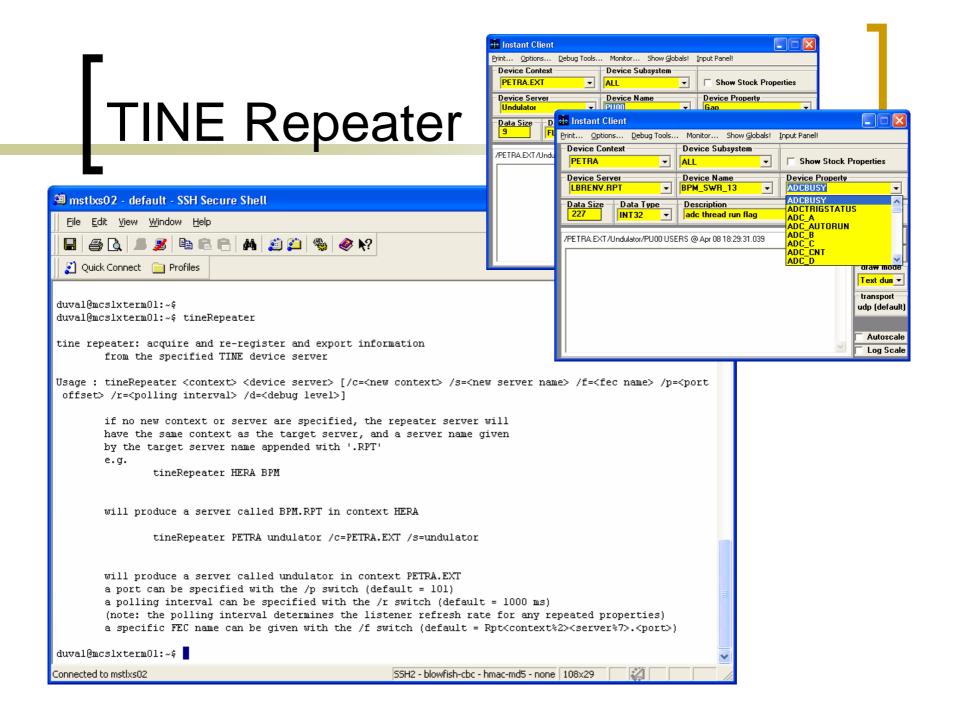
#### Practical Example

```
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin/RPTEQM$
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin/RPTEQM$
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin/RPTEOM$ ls
device-default-users.csv PU00-users.csv
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin/RPTEOM$(cat device-default-users.csv
USER NAME
HASYLAR
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin/RPTEOM$/cat PU00-users.csv
USER NAME
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin/RPTEOM$ ls
device-default-users.csv PU00-users.csv
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin/RPTEQM$ cd ..
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin$ ls
fec.bak fec.log ipnets.csv RPTEOM
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin% cat ipnets.csv
SUBNET
192.109.31.83
fecadmin@acclxcsfacil01:/export/tine/server/peund/bin$
```

Note: 'empty' <device>-users.csv or csv or cproperty>-users.csv are
equivalent to 'allow ALL' !!!

- Stock properties: USERS, IPNETS are by default server-specific
- Can specify Property or Device as Input!





## Feature-of-the-Month AWARD

## EMBL

For providing this new Use Case!



- Note: 'doocs2tine' is the translation layer (client and server) embedded in the doocs kernel ('tine2doocs' is implied).
- Various 'concurrency' issues fixed
  - ddd use-cases starting numerous 'wild-card' links 'simultaneously'
- Meta-Property ".DESC" now supports data type CF\_USTRING
- New status code: 'information\_static'.

- 'Overridden' meta-properties:
  - All meta properties can be overridden by registering the corresponding property explicitly.
    - property>.HIST, .EGU, .DESC, .NAM, etc.
  - If not overridden, then handled as a TINE stock metaproperties.
  - o property>.DESC and property>.EGU are static!
    - The property information given with the registration are always used.
  - If a non-overridden meta property is 'polled' then status code CE\_SENDDATA + information\_static is returned!

- An aside concerning ipv6 and java
  - o IPv4
    - 4 bytes
    - e.g. "131.169.151.171"
  - IPv6
    - 16 bytes
    - e.g. "affe3301:3410acce::4212a456ef:83a997ab"
  - Possible mappings
    - No 'standard' mapping
    - Java does: IPv4 -> IPv6 : 8 bytes '0', 4 bytes '0xff', 4 bytes IPv4 address
      - "131.169.151.171" -> "0:0::ffffffff:83a997ab"

Note: DESY doesn't use IPv6. Control systems don't use IPv6 (TINE doesn't, DOOCS doesn't, EPICS doesn't, TANGO doesn't, and nobody else you've heard of does!).

- What does java do?
  - Java socket API independent of IP version!
  - If java 'sees' both IPv4 enabled and IPv6 enabled it opens sockets for both!
    - TCP: a connection with a peer establishes which version to use and the secondary socket is automatically closed.
    - UDP: no connection! -> both left open, but the JVM must channel traffic to the appropriate socket correctly!
      - Windows (doesn't enable both versions) JVM and gets it right!
      - Linux JVM gets this right!
      - Solaris JVM gets this right!
      - MACOS JVM does NOT get this right!
        - Must disable IPv6 !!

## Weirdness-of-the-Month AWARD

# MCS-4

- For exposing this!



# Related News (epics2tine)

- epics2tine is the translation layer which runs embedded on an epics ioc
  - tine server/epics client
- tine2epics is the translation layer which runs (independently) on an epics ioc.
  - tine client/epics server
- Both now in use and working fine!
- Connectivity @desy now managed by MKK

## Related News (tango2tine)

- tango2tine is a gateway (not embedded!) which translates a tango server (tango classes) into a tine server.
  - tango client/tine server
  - currently: a single instance running @hasylab
    - Gateway on same network as tango servers : GOOD!
- tine2tango is a gateway (not embedded!) which translates a tine server into a tango server.
  - tine server/tango client
  - currently: many instances (at each beamline)
    - Gateway on hasylab net/servers on mcs net : NOT SO GOOD!
  - Needs some 'tweaking'.
    - synchronous polling to be replaced with asynchronous 'listeners', etc.

#### Alarm Database Manager

