TINE Release 4.0 News

(June 8, 2012: That was the month that was !)

“What a long, strange trip it’s been ….”

Release 4.2.10

From last time …

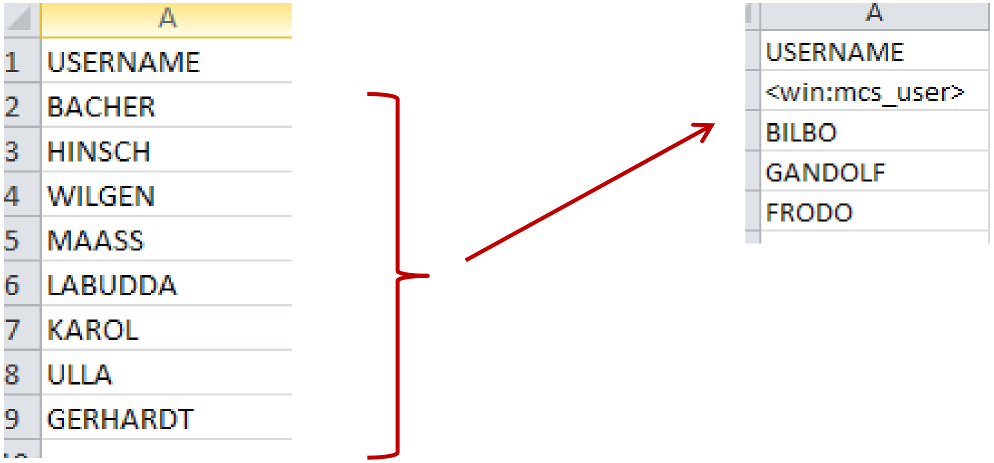
- Improvements in version 4.2.10
  - *save-and-restore* properties now handle *exotic* (i.e. non-primitive) data types !
    - (i.e. those properties declared with CA_SAVERESTORE)
    - CF_STRUCT, CF_SPECTRUM, CF_ASPECTRUM, CF_IMAGE, CF_AIMAGE are still *not allowed*, BUT …
    - everything else is !
    - property must still be either *scalar* or *MCA* type.
      - (*future*: allow trace arrays of primitive types !)
  - of course: RestorePropertyValues() and SavePropertyValues() are still available for specific use!
  - this feature introduces 4.2.9
    - but there were no meetings in January/February

Release 4.3.0

- Improvements in version 4.3.0
  - *save-and-restore* properties can now accept/return an *array of primitives*
    - e.g. save a reference pulse or trace, etc.
  - ACLs now accept groups
  - *device object* has several new fields
  - several new stock and meta-properties
  - new utilities
  - authorization tweaks
  - TINE cache location

Release 4.3.0

- ACLs and *groups*
  - The '*allowed*' users list can now simply specify a '*group*'
    - Windows: ask the domain for the members
    - Unix: ask the directory services (nis/ldap) for the members

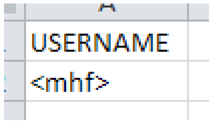


	A
1	USERNAME
2	BACHER
3	HINSCH
4	WILGEN
5	MAASS
6	LABUDDA
7	KAROL
8	ULLA
9	GERHARDT

A
USERNAME
<win:mcs_user>
BILBO
GANDOLF
FRODO

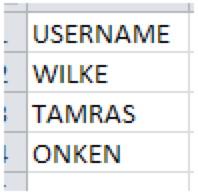
Release 4.3.0

- ACLs and *groups*
  - Can also ‘*create*’ local groups.
    - Omit the ‘*domain*’ qualifier
      - Look for local db file ‘<*group*>-members.csv’

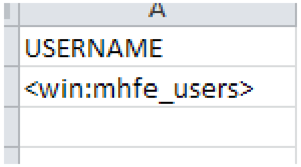


A
USERNAME
<mhf>

looks for mhf-members.csv →



USERNAME
WILKE
TAMRAS
ONKEN



A
USERNAME
<win:mhfe_users>

Asks the ‘win’ domain for the members list

Release 4.3.0

- ACLs and *groups*
  - No domain?
    - 1st check local group
    - not found => check domain
      - Windows: use USERDOMAIN environment variable.
  - UNIX:
    - domain variable is ignored !
      - BUT: if present then don’t even look for a ‘local’ group members database file.

Release 4.3.0

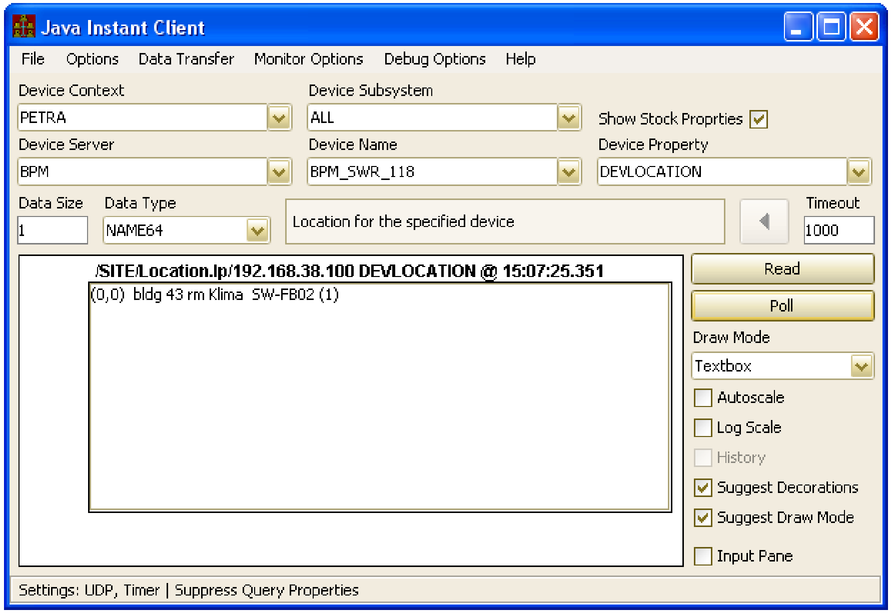
- Device Object New Fields
  - **Location**
    - Straight text or redirection to locator
  - **Mask**
    - Corresponds to doocs ‘sys_mask’
  - **Offline**
    - Software ‘offline’ flag
  - **Z-Position**
    - Z (longitudinal) position if relevant

Release 4.3.0

- Device *Location*
  - 64 character string
  - returned via stock property "DEVLOCATION"
  - BUT if begins with '*redirection*' character '<'then will redirect to specified target
    - e.g.
      - "</SITE/Location.Ip/131.169.9.102[Location]" redirects to server /SITE/Location.Ip.
      - "<$TINE_LCTR/131.169.9.102" looks at environment variable TINE_LCTR and uses the 'default' "Location" property.
      - "bldg 46 rm 103 rack 5 slot 3" returns this string
      - "" (empty string) returns the registered FEC location

Release 4.3.0

- Device *Location*

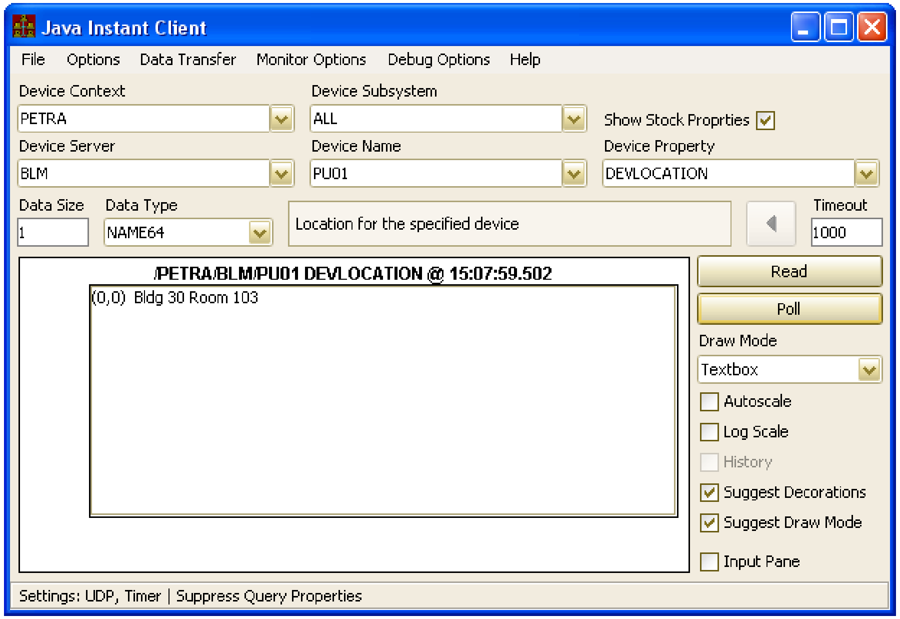

Java Instant Client
File Options Data Transfer Monitor Options Debug Options Help
Read
Poll

Device Context: PETRA
Device Subsystem: ALL
Show Stock Propries ☑
Device Server: BPM
Device Name: BPM_SWR_118
Device Property: DEVLOCATION
Data Size: 1
Data Type: NAME64
Location for the specified device
Timeout: 1000

```
/SITE/Location.Ip/192.168.38.100 DEVLOCATION @ 15:07:25.351
(0,0)  bldg 43 rm Klima  SW-FB02 (1)
```

Draw Mode: Textbox
☐ Autoscale
☐ Log Scale
☐ History
☑ Suggest Decorations
☑ Suggest Draw Mode
☐ Input Pane

Settings: UDP, Timer | Suppress Query Properties


Java Instant Client
File Options Data Transfer Monitor Options Debug Options Help
Read
Poll

Device Context: PETRA
Device Subsystem: ALL
Show Stock Propries ☑
Device Server: BLM
Device Name: PU01
Device Property: DEVLOCATION
Data Size: 1
Data Type: NAME64
Location for the specified device
Timeout: 1000

```
/PETRA/BLM/PU01 DEVLOCATION @ 15:07:59.502
(0,0)  Bldg 30 Room 103
```

Draw Mode: Textbox
☐ Autoscale
☐ Log Scale
☐ History
☑ Suggest Decorations
☑ Suggest Draw Mode
☐ Input Pane

Settings: UDP, Timer | Suppress Query Properties

Redirected to /SITE/Location.Ip/<device IP>

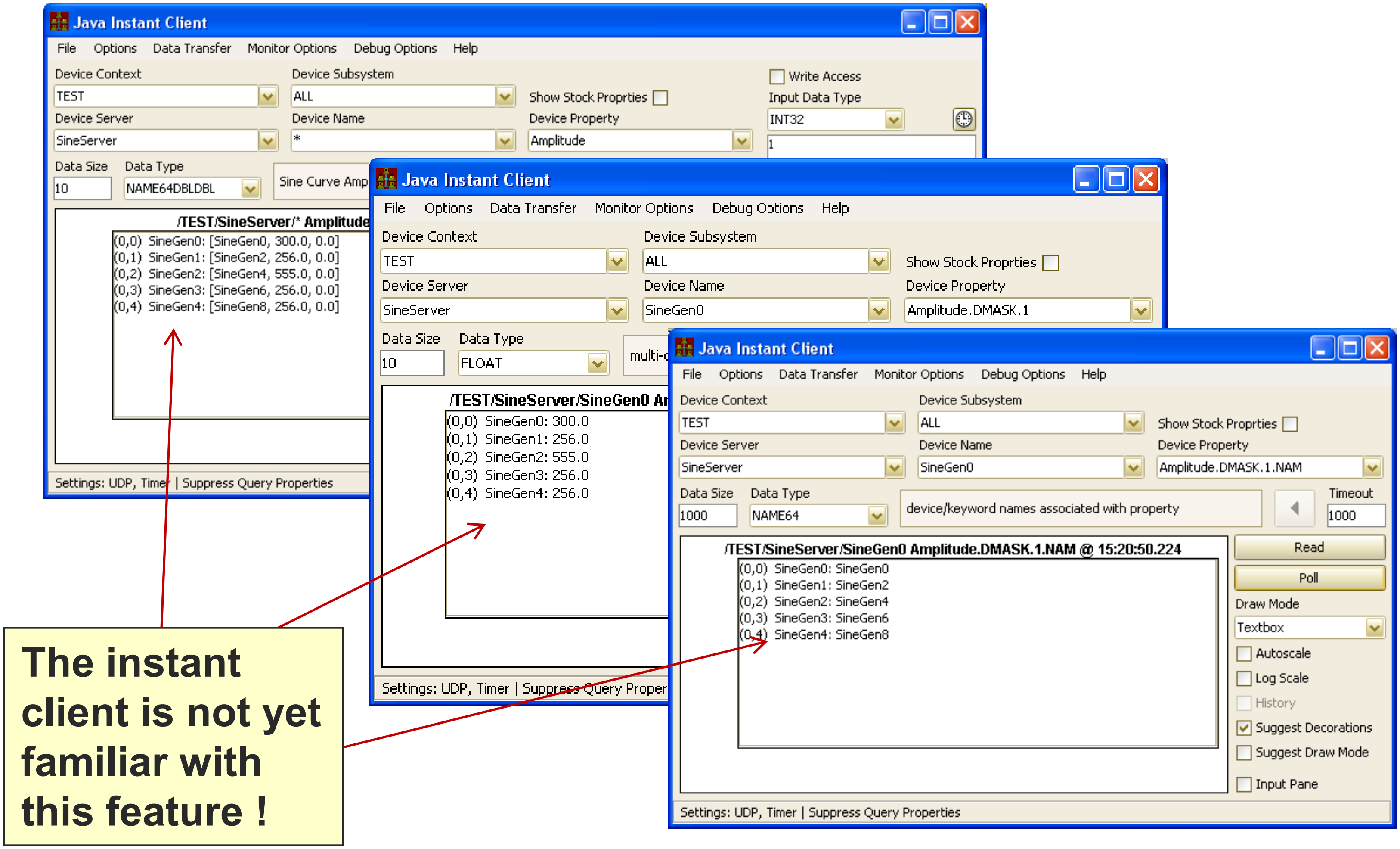
No redirection: just uses the registered FEC location

Release 4.3.0

- Device *Mask*
  - can assign 31-bit mask to a device
  - ‘0’ is identical to *ALL* bits !
  - *wildcard* calls can specify a mask
    - Only those devices which mask to ‘true’ are returned (‘0’ always matches!).
    - (the doocs way)
  - meta property <*P*>.DMASK.<*mask*> returns a multi-channel array with those devices with the mask.
    - <P>.DMASK.<mask>.NAM returns the device names with the mask

Release 4.3.0

- Device Mask



Java Instant Client
File Options Data Transfer Monitor Options Debug Options Help

Device Context: TEST
Device Subsystem: ALL
Show Stock Proprties □
□ Write Access
Input Data Type: INT32
1
Device Server: SineServer
Device Name: *
Device Property: Amplitude
Data Size: 10
Data Type: NAME64DBLDBL
Sine Curve Amp

/TEST/SineServer/* Amplitude

```
(0,0)  SineGen0: [SineGen0, 300.0, 0.0]
(0,1)  SineGen1: [SineGen2, 256.0, 0.0]
(0,2)  SineGen2: [SineGen4, 555.0, 0.0]
(0,3)  SineGen3: [SineGen6, 256.0, 0.0]
(0,4)  SineGen4: [SineGen8, 256.0, 0.0]
```

Settings: UDP, Timer | Suppress Query Properties

Java Instant Client
File Options Data Transfer Monitor Options Debug Options Help

Device Context: TEST
Device Subsystem: ALL
Show Stock Proprties □
Device Server: SineServer
Device Name: SineGen0
Device Property: Amplitude.DMASK.1
Data Size: 10
Data Type: FLOAT
multi-c

/TEST/SineServer/SineGen0 Am

```
(0,0)  SineGen0: 300.0
(0,1)  SineGen1: 256.0
(0,2)  SineGen2: 555.0
(0,3)  SineGen3: 256.0
(0,4)  SineGen4: 256.0
```

Settings: UDP, Timer | Suppress Query Proper

Java Instant Client
File Options Data Transfer Monitor Options Debug Options Help
Read
Poll

Device Context: TEST
Device Subsystem: ALL
Show Stock Proprties □
Device Server: SineServer
Device Name: SineGen0
Device Property: Amplitude.DMASK.1.NAM
Data Size: 1000
Data Type: NAME64
device/keyword names associated with property
Timeout: 1000

/TEST/SineServer/SineGen0 Amplitude.DMASK.1.NAM @ 15:20:50.224

```
(0,0)  SineGen0: SineGen0
(0,1)  SineGen1: SineGen2
(0,2)  SineGen2: SineGen4
(0,3)  SineGen3: SineGen6
(0,4)  SineGen4: SineGen8
```

Draw Mode: Textbox
□ Autoscale
□ Log Scale
□ History
☑ Suggest Decorations
□ Suggest Draw Mode
□ Input Pane

Settings: UDP, Timer | Suppress Query Properties

The instant client is not yet familiar with this feature !

Release 4.3.0

- Device *Offline* flag
  - wildcard calls do not return devices marked ‘off line’
    - (doocs way)
  - Meta-property <P>.ONLINE returns with a multi-channel array of those devices not marked off-line
    - <P>.ONLINE.NAM returns the on-line device list

Release 4.3.0

- Device *Z Position*
    - stock property “ZPOSITION” returns the registered Z Position of the device
    - (so far, no one has registered this information)

Release 4.3.0

- How to register this information?
  - Configuration file:
    - devices.csv or fec.xml under “DEVICE” tag
      - “DEVICE_LOCATION”, “DEVICE_MASK”, “DEVICE_OFFLINE”, “DEVICE_ZPOS”
  - API:
    - e.g. *SetDeviceMask*() (C Lib)
    - e.g. *TDevice.setMask*() (Java Lib)

Release 4.3.0

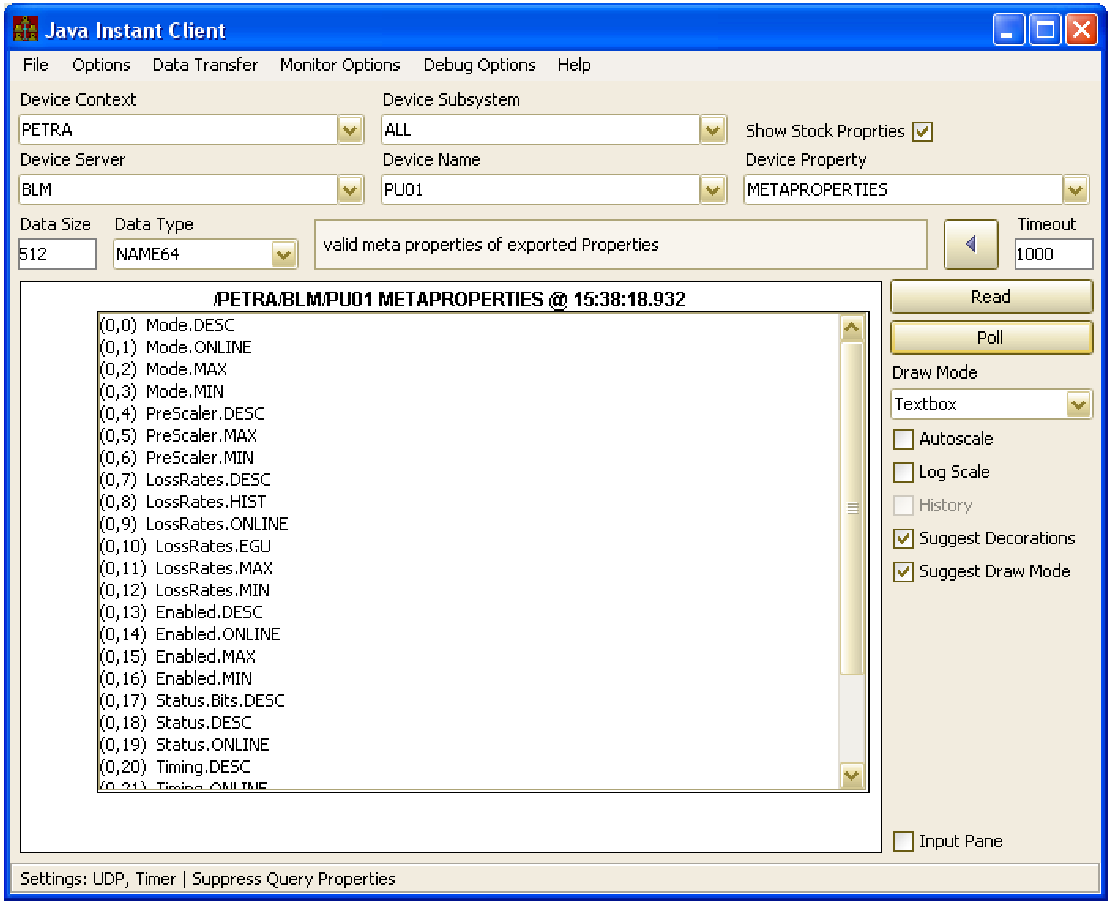
- New Meta-Properties
  - “<P>.DMASK.<mask>
  - “<P>.ONLINE

Release 4.3.0

- New Stock Properties
  - “DEVLOCATION”
  - “DEVMASK”
  - “DEVONLINE”
  - “ZPOSITION”
  - “METAPROPS”, “METAPROPERTIES”
    - Returns a list of ‘filled’ meta-properties
      - e.g. <P>.HIST is in the list if a call to <P>.HIST has a chance of returning useful information.

Release 4.3.0

- "METAPROPS"



Device Context: PETRA

Device Subsystem: ALL

Show Stock Proprties ☑

Device Server: BLM

Device Name: PU01

Device Property: METAPROPERTIES

Data Size: 512

Data Type: NAME64

valid meta properties of exported Properties

Timeout: 1000

/PETRA/BLM/PU01 METAPROPERTIES @ 15:38:18.932

```
(0,0)  Mode.DESC
(0,1)  Mode.ONLINE
(0,2)  Mode.MAX
(0,3)  Mode.MIN
(0,4)  PreScaler.DESC
(0,5)  PreScaler.MAX
(0,6)  PreScaler.MIN
(0,7)  LossRates.DESC
(0,8)  LossRates.HIST
(0,9)  LossRates.ONLINE
(0,10)  LossRates.EGU
(0,11)  LossRates.MAX
(0,12)  LossRates.MIN
(0,13)  Enabled.DESC
(0,14)  Enabled.ONLINE
(0,15)  Enabled.MAX
(0,16)  Enabled.MIN
(0,17)  Status.Bits.DESC
(0,18)  Status.DESC
(0,19)  Status.ONLINE
(0,20)  Timing.DESC
(0,21)  Timing.ONLINE
```

Draw Mode: Textbox

□ Autoscale

□ Log Scale

□ History

☑ Suggest Decorations

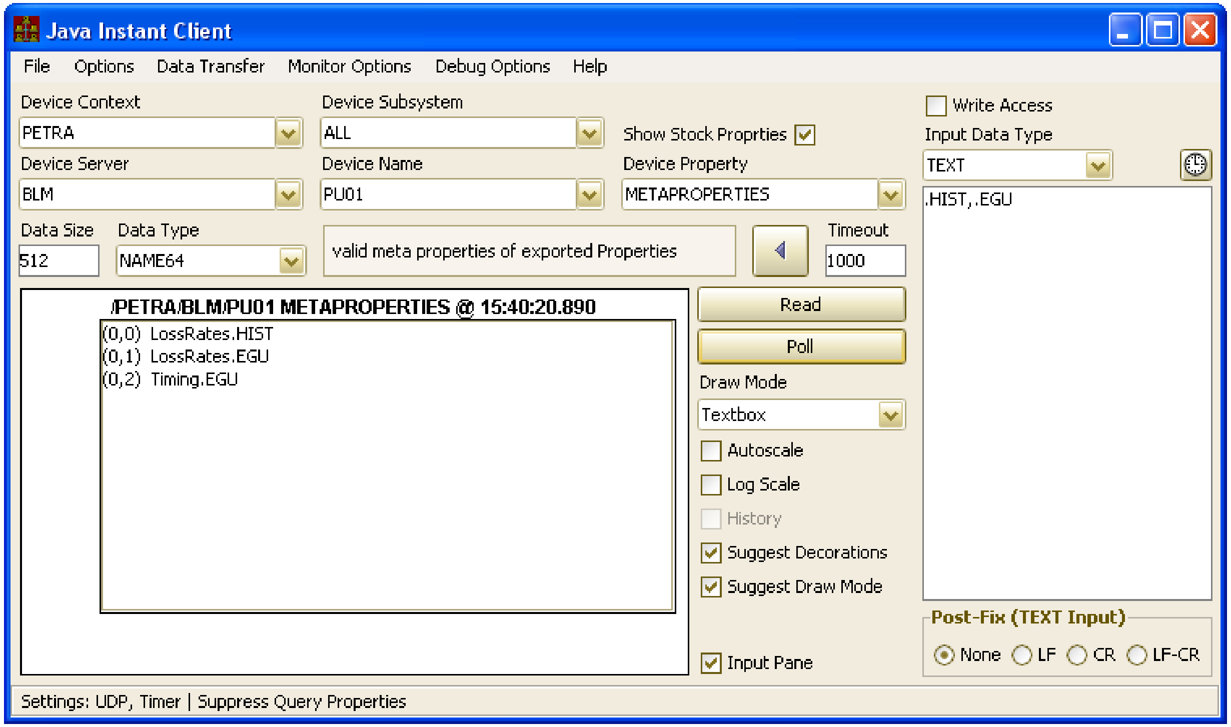
☑ Suggest Draw Mode

□ Input Pane

Settings: UDP, Timer | Suppress Query Properties

Release 4.3.0

- more “METAPROPS”:
  - Can ‘*tune*’ to a desired subset:



Device Context: PETRA
Device Subsystem: ALL
Show Stock Proprties ☑
☐ Write Access
Input Data Type: TEXT
Device Server: BLM
Device Name: PU01
Device Property: METAPROPERTIES
Data Size: 512
Data Type: NAME64
valid meta properties of exported Properties
Timeout: 1000

```
/PETRA/BLM/PU01 METAPROPERTIES @ 15:40:20.890
(0,0)  LossRates.HIST
(0,1)  LossRates.EGU
(0,2)  Timing.EGU
```

```
.HIST,.EGU
```

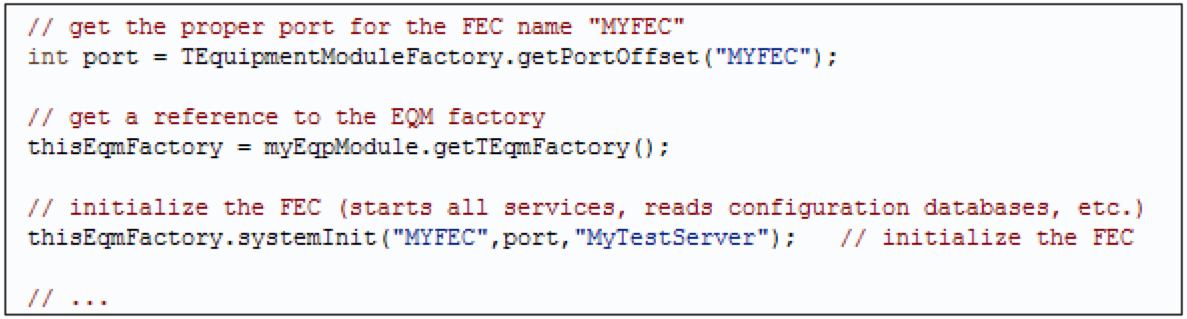
Draw Mode: Textbox
☐ Autoscale
☐ Log Scale
☐ History
☑ Suggest Decorations
☑ Suggest Draw Mode
☑ Input Pane

Post-Fix (TEXT Input)
● None ○ LF ○ CR ○ LF-CR

Settings: UDP, Timer | Suppress Query Properties

Release 4.3.0

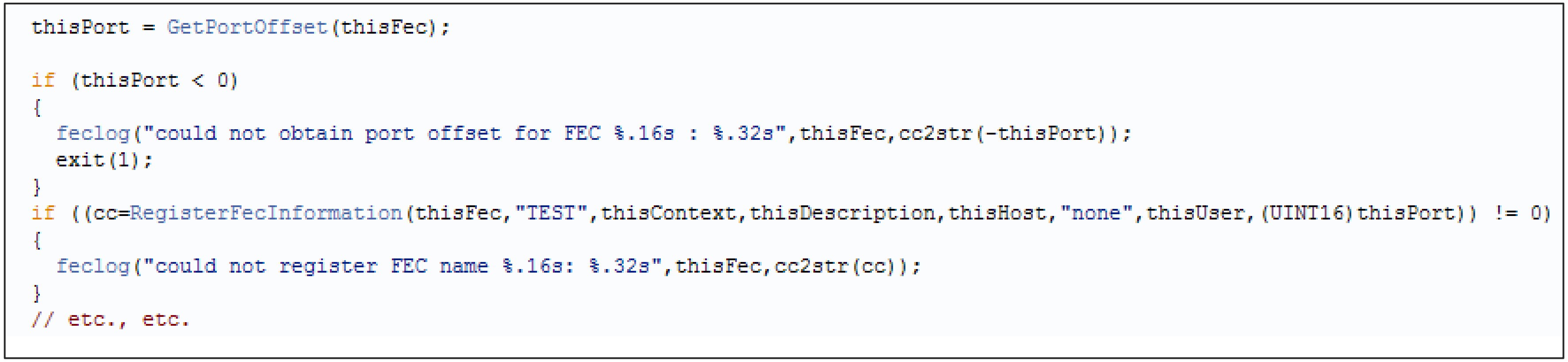
- New Utilities
  - GetPortOffset()
    - Returns a valid port offset for the FEC name given.



```
// get the proper port for the FEC name "MYFEC"
int port = TEquipmentModuleFactory.getPortOffset("MYFEC");

// get a reference to the EQM factory
thisEqmFactory = myEqpModule.getTEqmFactory();

// initialize the FEC (starts all services, reads configuration databases, etc.)
thisEqmFactory.systemInit("MYFEC",port,"MyTestServer");   // initialize the FEC

// ...
```

e.g. java

e.g. C



```
thisPort = GetPortOffset(thisFec);

if (thisPort < 0)
{
  feclog("could not obtain port offset for FEC %.16s : %.32s",thisFec,cc2str(-thisPort));
  exit(1);
}
if ((cc=RegisterFecInformation(thisFec,"TEST",thisContext,thisDescription,thisHost,"none",thisUser,(UINT16)thisPort)) != 0)
{
  feclog("could not register FEC name %.16s: %.32s",thisFec,cc2str(cc));
}
// etc., etc.
```

Release 4.3.0

- Other Configuration Features
  - ‘exports.csv’ now accepts columns “MAX_VALUE”, “MIN_VALUE”, “UNITS”
    - and “XMAX_VALUE”, “XMIN_VALUE”, “XUNITS”
    - “ACCESS” string can contain “HIST”
      - Includes the property in the local history subsystem
        - Uses the ‘default’ local history parameters

        (10 minutes short term, 1 month long term, 1000 polling and archive intervals, etc.)
      - access parameter in RegisterPropertyInformation() can also supply CA_HIST for same purpose.

Release 4.3.0

- Authorization *tweaks*
  - user name now determined via system API (where possible).
    - windows: GetUserName()
    - unix/macos: getpwuid(getuid())
    - (n.b. ‘Ruediger’s backdoor is still there)
    - Java: still uses system property “user.name”
  - calls to DOOCS server now *always* use the logged in user name

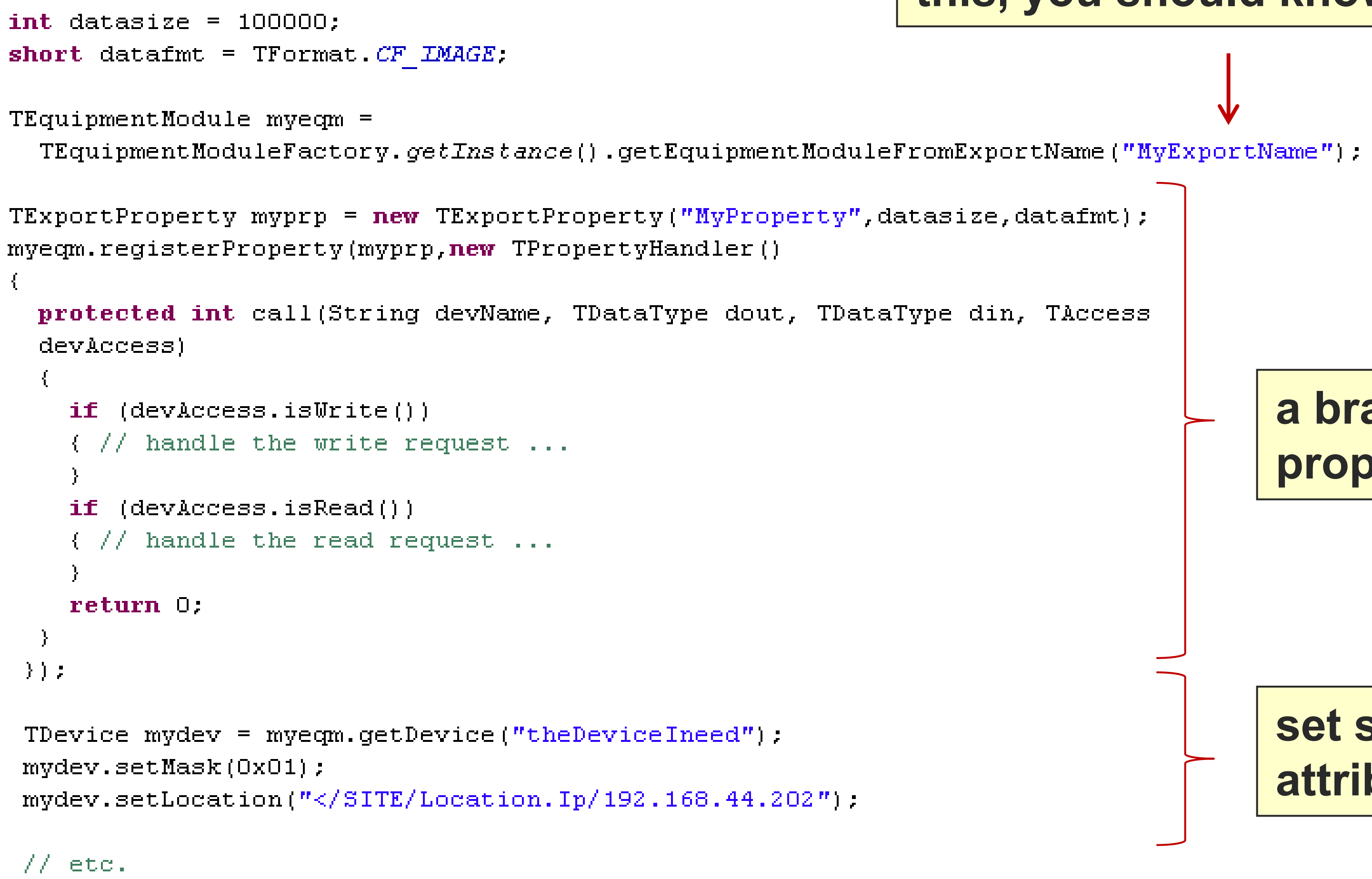
Release 4.3.0

- TINE cache location
  - is now settable via the environment variable TINE_CACHE
  - server *manifest* and dynamic address cache are written under %TINE_CACHE%/tine/…
  - default:
    - windows: %SystemDrive%
    - unix: /var/lib
      - if /var/lib/tine cannot be created then use : /var/tmp
      - => setup/install procedure should create /var/lib/tine with “a+w”

Tip of the Month

- How to ‘*sneak*’ past the java device server wizard
  - e.g. to register a property and handler to work with *non-trivial* scenarios
  - get a reference to the equipment module instance and go from there !
    - follow the TINE documentation

Tip of the Month



```
int datasize = 100000;
short datafmt = TFormat.CF_IMAGE;

TEquipmentModule myeqm =
  TEquipmentModuleFactory.getInstance().getEquipmentModuleFromExportName("MyExportName");

TExportProperty myprp = new TExportProperty("MyProperty",datasize,datafmt);
myeqm.registerProperty(myprp,new TPropertyHandler()
{
  protected int call(String devName, TDataType dout, TDataType din, TAccess
  devAccess)
  {
    if (devAccess.isWrite())
    { // handle the write request ...
    }
    if (devAccess.isRead())
    { // handle the read request ...
    }
    return 0;
  }
 });

 TDevice mydev = myeqm.getDevice("theDeviceIneed");
 mydev.setMask(0x01);
 mydev.setLocation("</SITE/Location.Ip/192.168.44.202");

 // etc.
```

this, you should know !

a brand new property !

set specific attributes …