



TINE Release 4.0 News

(March 9, 2012: That was the month that was !)

“What a long, strange trip it’s been”

[Release 4.2.10]

- **Bug Fixes** in version 4.2.10
 - the “**ADDUSER**” bug fixed! (thank you, Hilda!)
 - memory overwrite when toggling from ‘*small*’ list to ‘*large*’ list
 - problems with *large* (> ~.5 MB) *input* payloads fixed!
 - long packet assembly duration colliding with check against *dangling* clients.
 - transaction timeout > 1000 msec not properly respected at the server.
 - etc. ...
 - problems with *local alarm* lists fixed.
 - **CAS** identity not properly determined at startup
 - false application of *link error text* to more recent alarm texts.

[Release 4.2.10]

■ Bug Fixes in version 4.2.10

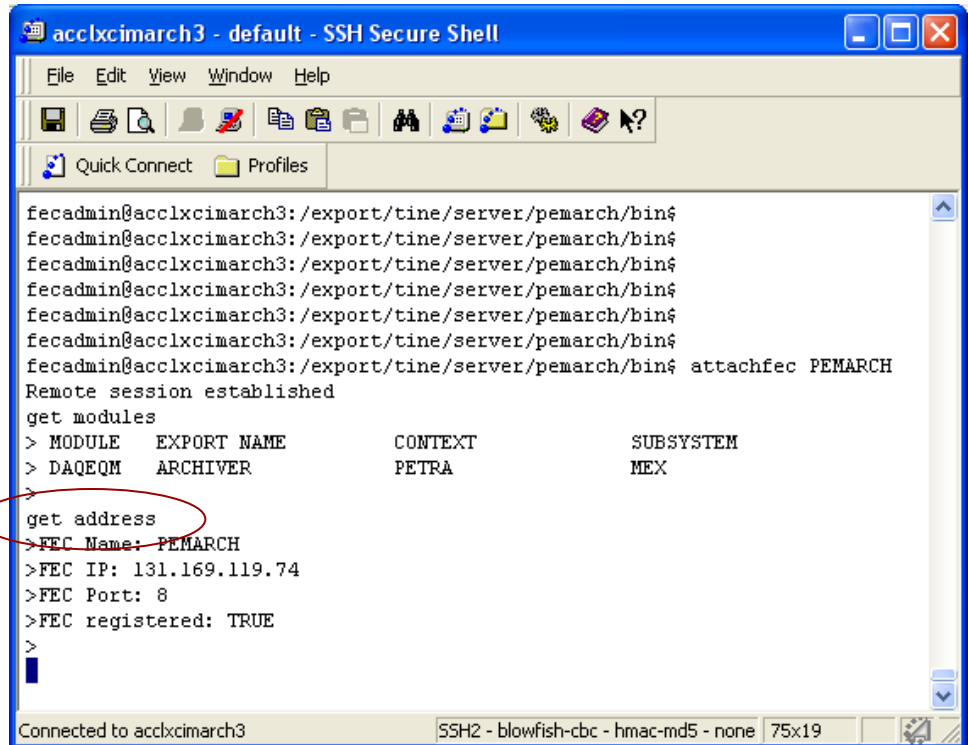
- (*java only*): problem recognizing difference between formats `CF_WINDOW` (`CF_TTII`) and `CF_ADDRESS` (`CF_III`) fixed. (thank you, Juergen!)
- (*linux only*): problem *shutting down* when a thread is waiting on a *blocking* socket.
 - `recvfrom()`, `recv()`, `select()` do not return with an error if the target socket goes *bad*. (Thank you Arthur !)

[Release 4.2.10]

- **Embellishments** in version 4.2.10
 - **local alarms**
 - removal blocked no longer than heartbeat (20 minutes) if alarm not read by canonical CAS.
 - (*unix builds*) **local pipes**
 - debug and service pipes now allow access to *everyone* (was *owner* and *group* only).
 - (*VxWorks builds*) **RDATE**
 - VxWorks server now synchronizes its clock with the TINE *time server* (if available) in preference to an RDATE server.
 - (*C library*) **microsleep()**
 - Calls to *microsleep()*, *Get/SetCycleMicroDelay()* are now available
 - will delay for given amount micro seconds (best effort).
 - **Windows**: good to usec level (but spins)
 - **Unix** (posix): good to ~40 usec

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- **Embellishments** in version 4.2.10
 - new console commands
 - get address :



```
acclxcimarch3 - default - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles
fecadmin@acclxcimarch3: /export/tine/server/pemarch/bin$
fecadmin@acclxcimarch3: /export/tine/server/pemarch/bin$
fecadmin@acclxcimarch3: /export/tine/server/pemarch/bin$
fecadmin@acclxcimarch3: /export/tine/server/pemarch/bin$
fecadmin@acclxcimarch3: /export/tine/server/pemarch/bin$
fecadmin@acclxcimarch3: /export/tine/server/pemarch/bin$
fecadmin@acclxcimarch3: /export/tine/server/pemarch/bin$ attachfec PEMARCH
Remote session established
get modules
> MODULE EXPORT NAME CONTEXT SUBSYSTEM
> DAQEQM ARCHIVER PETRA MEX
>
get address
> FEC Name: PEMARCH
> FEC IP: 131.169.119.74
> FEC Port: 8
> FEC registered: TRUE
>
Connected to acclxcimarch3 SSH2 - blowfish-cbc - hmac-md5 - none 75x19
```

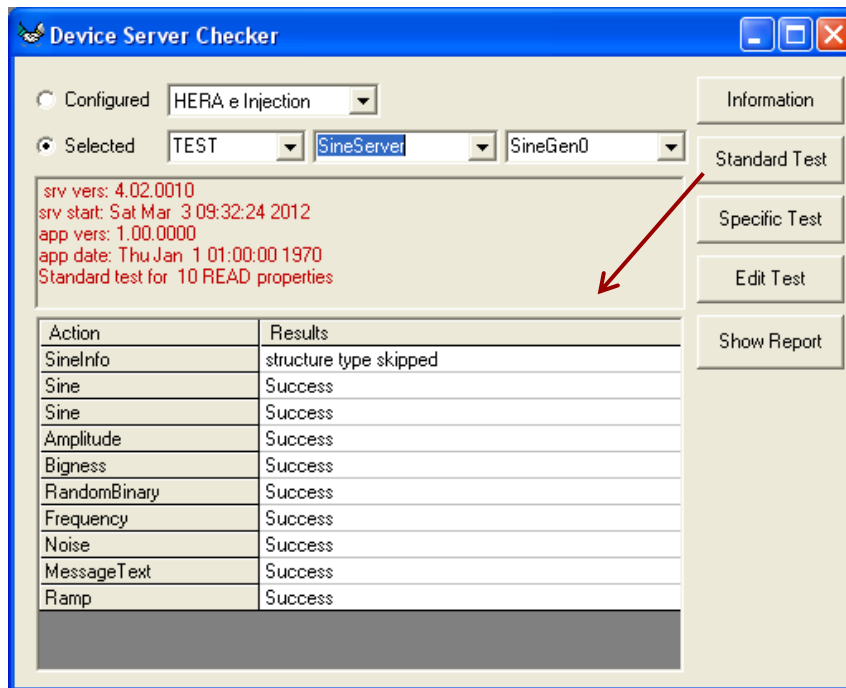
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- **Embellishments** in version 4.2.10
 - new console commands
 - get / set microdelay :

```
Z:\Projects\Service\vc++\tine32R4\SineGen\fec__Win32_Debug_MT\fec.exe
>
>get microdelay
>Cycle Micro Delay set at 0
>
>set microdelay=10
>Cycle Micro Delay set to 10
>
>get settings
>Server Settings :
>Server Work Area : 65536 bytes
>System Cycle interval: 10 msec
>Min Polling interval: 50 msec
>Contract tbl capacity: 1000 items
>Contract renewal len : 60 items
>Client tbl capacity : 100 items
>Req ack. on change : yes
>Retard cont. removal : yes
>Server Burst Limit : 1000 packets
>Burst Cycle Delay : 0 msec 10 usec
>Server Packet MTU : 1472 bytes
>TCP maximum msg size : 100000000 bytes
>TCP tbl capacity : 32 items
>Server Send Buffers : 64000 bytes
>Server Recv Buffers : 500000 bytes
>Server Scheduling : eager
>Scheduler interval : 0 msec
>Server tasks : not re-entrant
>Server cycle thread : separate
>Transport thread : separate
>Transport Ceiling : 120000 bytes
>Allow remote exit : yes
>Allow remote init : yes
>Allow remote reset : yes
>Client Settings :
>Client Work Area : 65536 bytes
>Connect. tbl capacity: 1000 items
>Client Burst Limit : 1000 packets
>Client Send Buffers : 64000 bytes
>Client Recv Buffers : 1000000 bytes
>Client Recv Queue : 10 items
>use loopback addr : no
>use watchdog links : yes
>allow common links : yes
>retry on timeout : yes
>
>
```

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- **Embellishments** in version 4.2.10
 - Stock property “**SRVSELFTEST**” searches for file ‘*selftest.csv*’ in equipment module directory.



- acquire selftest.csv from server via “SRVSELFTEST”
- run thru the list ...

[Release 4.2.10]

- **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 4.2.10]

- **Improvements** in version 4.2.10
 - **Scenario:**
 - Client application starts up
 - **ENS1, ENS2, ...** are not available !
 - address resolution resorts to local cache !
 - target address refers to the GENS !
 - **GEN1, GENS2, ...** are also not available !
 - But only the **GENS** knows how to redirect devices !
 - ???

[Release 4.2.10]

- **Improvements** in version 4.2.10
 - *local caching and failover* of **GENS** information ! (*group equipment name server*)
 - *clients* now cache group information in the *dynamic* cache directory
 - `%SystemDrive%\tine\cache`
 - `/var/tmp/tine/cache`
 - upon ENS/GENS failure *clients* now consult the *dynamic* cache and then *static* cache for information !
 - works fine, but there was 1 hiccup ...

[Release 4.2.10]

- **Improvements** in version 4.2.10
 - corollary to Murphy's Law:
 - “*Nature always sides with the hidden flaw*”
 - a trip down Memory Lane ...
 - **1994** : introduced the **ENS**
 - prior to that: only lookups in a static database file
 - keep the static database lookups as fallback
 - ENS only uses a static database !!!
 - ENS is a TINE server, but a very *special* one !
 - **1997** : introduced the **context**
 - but allow lookups to omit the context
 - (think backward compatibility !)
 - This is where the leading “/” comes from !
 - **2009** : introduced auto-removal of entries of non-IMPORTANT servers after long down-time

“**runtime cache**” : address cache maintained *in the client application*

“**static database**”, “**static cache**”: address database *on the local file system*
(TINE_HOME); available to but not updated by the application

“**dynamic cache**” : address database updated *in an OS dependent area*; updated
by all running clients on the local host.

[Release 4.2.10]

- **Improvements** in version 4.2.10
 - a kluge that was harmless for 15 years:
 - *remember*:
 - the **ENS** always uses the *static database* when it needs to be a client !
 - the **ENS** has *special access* to tables not normally exposed
 - an **address search** in the *static database* matches the **target server** (but – *until recently* - not the target context)
 - checks for the entry in the existing *runtime cache*
 - *but here*: also check the **target context** (if given) !!
 - not found:
 - **1)** begin updating the *runtime cache*
 - **2)** but if context given and **not a match**, then **stop** updating the *runtime cache* and continue the search !
 - this is fine for any client except the **ENS** !
 - is also fine for the **ENS** if steps **1)** and **2)** are not interrupted !

[Release 4.2.10]

- **Improvements** in version 4.2.10
 - a kluge that was harmless for 15 years:
 - updating the **runtime cache** will interrupt **1)** and **2)** on the previous slide if server = **GENS** !
 - **ENS**:
 - **pings** all known servers once per hour
 - => is also a **client** !
 - But does NOT **ping** the **GENS** !
 - **runtime cache** = **static database** !
 - never needs to re-read the **static database** anyway !!!
 - problem if a **non-group server name** matches that of a **group server name** !
 - e.g. “/DORIS/PiConditions” will first latch onto “/DESY2/PiConditions” because “PiConditions” matches.
 - “/DESY2/PiConditions” does point to the **GENS** and does not come to step **2)** !
 - the address for “/DORIS/PiConditions” just got dorked !

the ENS is the only server that does this !

[Release 4.2.10]

- TINE Collaboration Meeting in May
 - release 5.0 blueprint
 - what new information in headers needed?
 - what functionality needed?
 - IPv6
 - UTF-8
 - repositories, distribution
 - central services
 - etc.