



TINE Release 4.x.x News

(May 25, 2016: That was the month that was !)

“What a long, strange trip it’s been”

[Release 4.5.9]

■ C-Library: Noteworthy Bugs and Bug-fixes

- Avoiding a 'spinning problem' in TCP connect() timeouts led to 'brake' in *any* new TCP link => up to 1 Second !
 - Magnet Middle Layer uses TCP WRITE calls => Sequencer was suddenly 'slow'
 - XCOMM MatLab scripts using synchronous TCP calls suddenly 'slow'

FIXED !

■ C-Library 'gotcha' ...

- Synchronous calls (i.e. ExecLink()) will execute synchronously
 - will not return until the call has completed with data and/or a link status.
 - BUT: callbacks on active asynchronous links can still be fired !

New API call: SetSuspendCallbacks()

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```
void mycallback(int id, int cc)
{
    if (WaitForMutex(myMutex,-1) == 0)
    {
        // now I have the mutex !
        doSomething();
        ReleaseSystemMutex(myMutex);
    }
}

int myeqm(char *devName,char *devProperty,DTYPE *dout, DTYPE *din,short access)
{
    int pid = GetPropertyId(MYEQM_TAG,devProperty);

    switch (pid)
    {
        case MY_PID:
            if (WaitForMutex(myMutex,-1) == 0)
            { // now I have the mutex !
                int cc = ExecLink("/XFEL/MAGML/SomeMagnet","SomeProperty",&d,NULL,CA_WRITE);
                // ... do something if cc != 0
                ReleaseSystemMutex(myMutex);
            }
            return 0;
        default:
            return illegal_property;
    }
    return illegal_property;
}
```

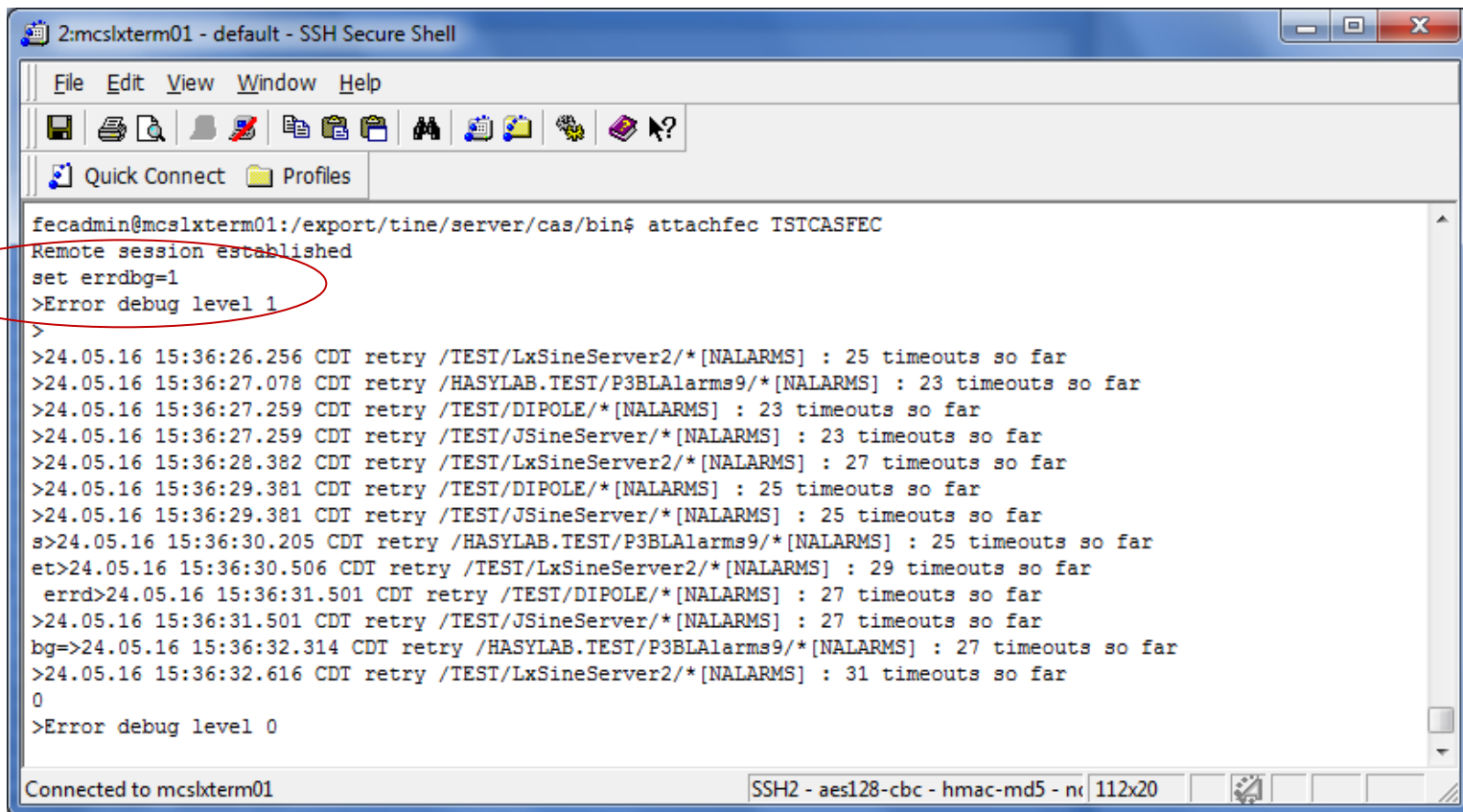
What happens if mycallback() gets fired during the 'ExecLink()' ?

Solution:
SetSuspendCallbacks(TRUE);
ExecLink(...);
SetSuspendCallbacks(FALSE);

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■ Embellishments: C-Lib

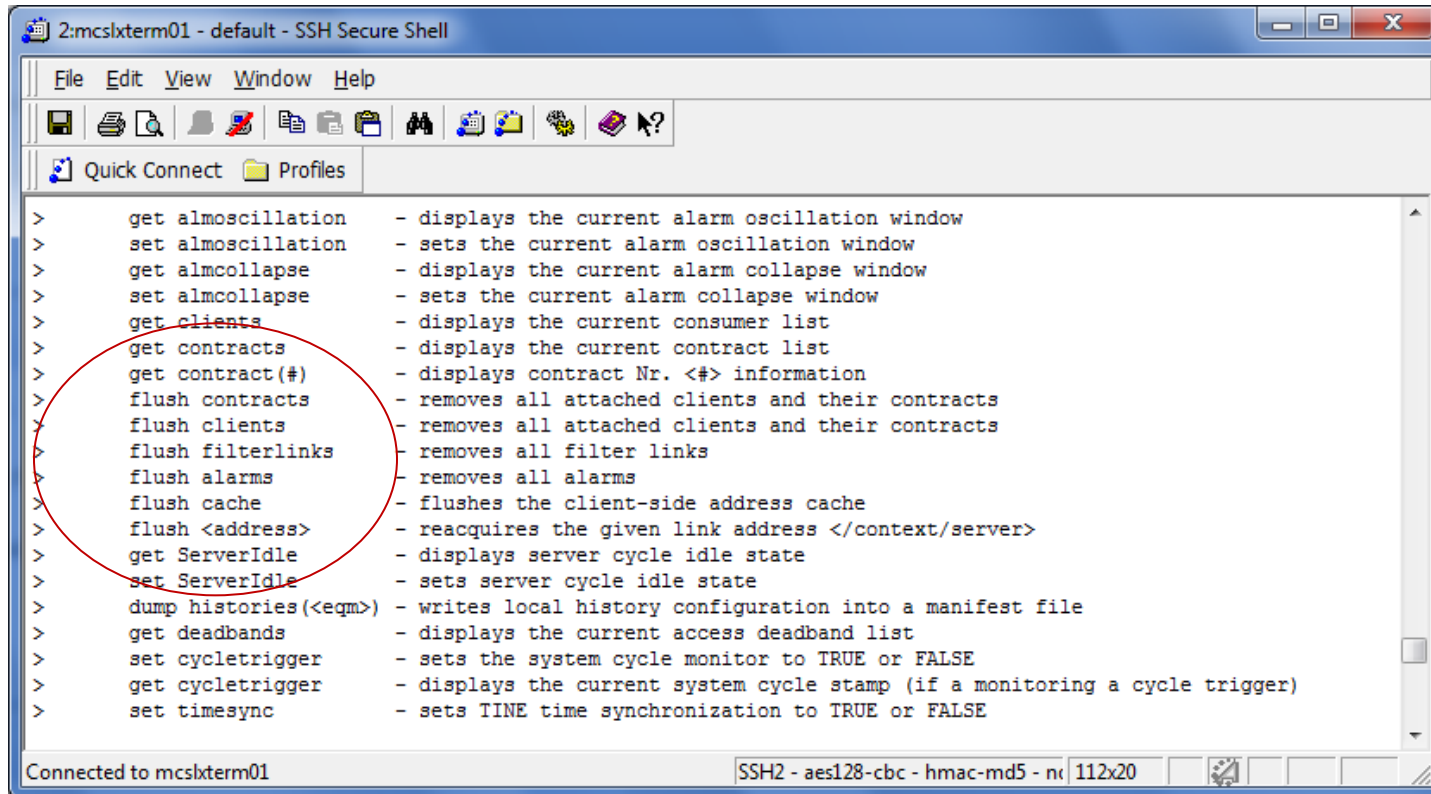
- New console command: **errdbg** only displays 'errors' ...



```
2:mcslxterm01 - default - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles
fecadmin@mcslxterm01:/export/tine/server/cas/bin$ attachfec ISTCASFEC
Remote session established
set errdbg=1
>Error debug level 1
>
>24.05.16 15:36:26.256 CDT retry /TEST/LxSineServer2/*[NALARMS] : 25 timeouts so far
>24.05.16 15:36:27.078 CDT retry /HASYLAB.TEST/P3BLAlarms9/*[NALARMS] : 23 timeouts so far
>24.05.16 15:36:27.259 CDT retry /TEST/DIPOLE/*[NALARMS] : 23 timeouts so far
>24.05.16 15:36:27.259 CDT retry /TEST/JSineServer/*[NALARMS] : 23 timeouts so far
>24.05.16 15:36:28.382 CDT retry /TEST/LxSineServer2/*[NALARMS] : 27 timeouts so far
>24.05.16 15:36:29.381 CDT retry /TEST/DIPOLE/*[NALARMS] : 25 timeouts so far
>24.05.16 15:36:29.381 CDT retry /TEST/JSineServer/*[NALARMS] : 25 timeouts so far
s>24.05.16 15:36:30.205 CDT retry /HASYLAB.TEST/P3BLAlarms9/*[NALARMS] : 25 timeouts so far
et>24.05.16 15:36:30.506 CDT retry /TEST/LxSineServer2/*[NALARMS] : 29 timeouts so far
errd>24.05.16 15:36:31.501 CDT retry /TEST/DIPOLE/*[NALARMS] : 27 timeouts so far
>24.05.16 15:36:31.501 CDT retry /TEST/JSineServer/*[NALARMS] : 27 timeouts so far
bg=>24.05.16 15:36:32.314 CDT retry /HASYLAB.TEST/P3BLAlarms9/*[NALARMS] : 27 timeouts so far
>24.05.16 15:36:32.616 CDT retry /TEST/LxSineServer2/*[NALARMS] : 31 timeouts so far
0
>Error debug level 0
Connected to mcslxterm01
SSH2 - aes128-cbc - hmac-md5 - nc 112x20
```

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- Embellishments: C-Lib
 - Several new console 'flush' commands:



```
2:mcslxterm01 - default - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles
> get almoscillation - displays the current alarm oscillation window
> set almoscillation - sets the current alarm oscillation window
> get almcollapse - displays the current alarm collapse window
> set almcollapse - sets the current alarm collapse window
> get clients - displays the current consumer list
> get contracts - displays the current contract list
> get contract(#) - displays contract Nr. <#> information
> flush contracts - removes all attached clients and their contracts
> flush clients - removes all attached clients and their contracts
> flush filterlinks - removes all filter links
> flush alarms - removes all alarms
> flush cache - flushes the client-side address cache
> flush <address> - reacquires the given link address </context/server>
> get ServerIdle - displays server cycle idle state
> set ServerIdle - sets server cycle idle state
> dump histories(<eqm>) - writes local history configuration into a manifest file
> get deadbands - displays the current access deadband list
> set cycletrigger - sets the system cycle monitor to TRUE or FALSE
> get cycletrigger - displays the current system cycle stamp (if a monitoring a cycle trigger)
> set timesync - sets TINE time synchronization to TRUE or FALSE
Connected to mcslxterm01 SSH2 - aes128-cbc - hmac-md5 - nc 112x20
```

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- e.g. flush <address>

```
2:mcslxterm01 - default - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles
fecadmin@mcslxterm01:/export/tine/server/cas/bin$ attachfec TSTCASFEC
Remote session established
set filter=TempStrom
>debug text filter TempStrom entered
>
which /PETRA/TempStrom
>/PETRA/TempStrom -> TEM001 @ TempStrom.12
>TempStrom.12 -> 131.169.151.132 @ port offset: 12
>
set debug=1
>Debug level 1
>
flush /PETRA/TempStrom
>24.05.16 15:58:52.611 CDT[TSTCASFEC] Re-acquire address for connection 40: FEC TempStrom.12
>24.05.16 15:58:52.611 CDT ENS: asynchronous query /PETRA/TempStrom
>24.05.16 15:58:52.611 CDT Attach ENSEQM/PETRA TempStrom (500 msec): SINGLE
>24.05.16 15:58:52.611 CDT connect to /(null)/ENSEQM/PETRA[TempStrom]
>
>24.05.16 15:58:52.611 CDT subs //ENSEQM/PETRA[TempStrom] (200 519 0 767 1 of 1) [ENS#0] (500 ms): SINGLE
>24.05.16 15:58:52.612 CDT UDP (p6 1 of 1)-> ENSEQM TempStrom [131.169.120.41] (+1) 200 vals (519)<0>

which /PETRA/TempStrom
>>/PETRA/TempStrom -> TEM001 @ TempStrom.12
>TempStrom.12 -> 131.169.151.132 @ port offset: 12
>
Connected to mcslxterm01 SSH2 - aes128-cbc - hmac-md5 - nc 107x25
```

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- **Embellishments: C-Lib**
 - New API calls:

void SetDieOnAddressInUse (int *value*)

Determines whether a server will exit() if an 'address in use' message is delivered by the ENS upon registration.

Parameters:

value is the desired setting (default = TRUE)

See also:

[GetDieOnAddressInUse\(\)](#)

OR: set FEC_DIE_INUSE=TRUE

void SetDieOnSocketError (int *value*)

Determines whether a server will exit() if there are continuous socket errors on important server sockets.

Parameters:

value is the desired setting (default = TRUE)

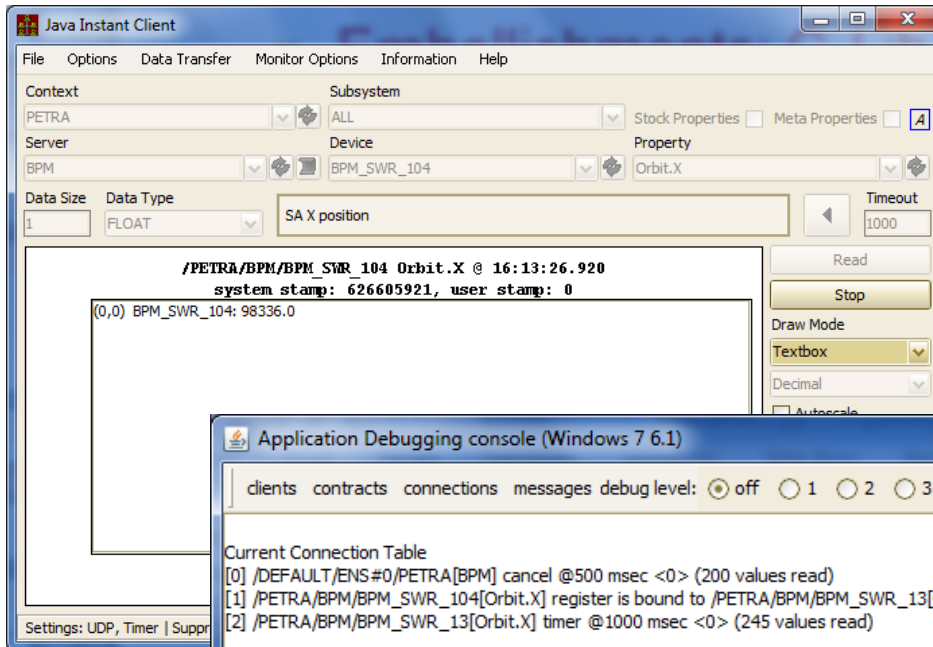
See also:

[GetDieOnSocketError\(\)](#)

OR: set FEC_DIE_SOCKETERROR=TRUE

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- **Embellishments: C-Lib and Java**
 - *Format Elevation in Multi-Channel Array element acquisition ...*



Server does 1 thing: prepare and send an array of 245 FLOAT values !

[Release 4.5.9]

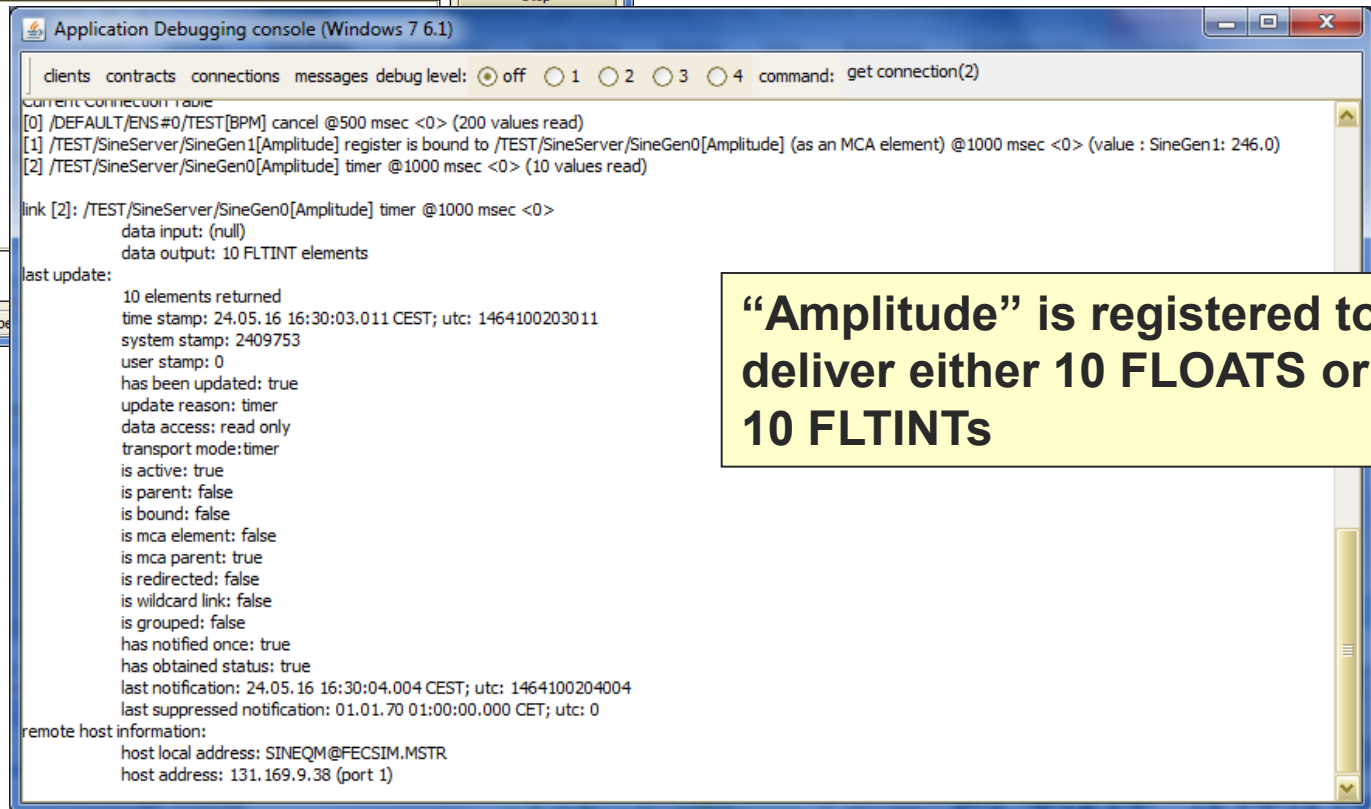
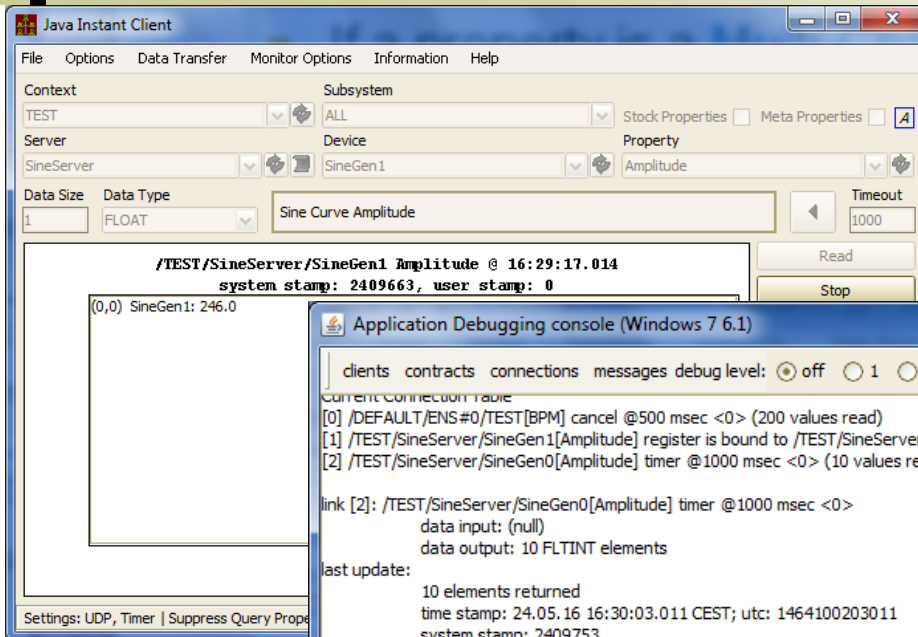
■ Format Elevation

- *Problem*: What if one of the elements has an error (e.g. **hardware_error**)?
- Either the *whole array* says '**hardware error**' or the *whole array* says '**success**'
 - *Java Server Wizard*: *the whole array* says '*hardware error*' ...
- *Solution*: Format Elevation

[Release 4.5.9]

- If a property is a **Multi-Channel Array** and is *overloaded* to deliver either an array of *values* (e.g. FLOAT, INT32, ...) or *value-status pairs* (e.g. FLTINT, INTINT, ...) then a **single element value access** will acquire the **MCA** of *value-status pairs* and apply the status as needed !

Release 4.5.9 : Format Elevation



“Amplitude” is registered to deliver either 10 FLOATS or 10 FLTINTs

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■ Python News

- **IMAGE** datatype now decoded via [pytinevideo](#)
 - S. Weisse & Davit Kalantaryan
- Please avoid using PyTine and PyDoocs in the same application !
 - PyDoocs includes its own (duplicate) code set of the TINE library modules and starts its own 'cyclor'.
 - needs to link to the same shared TINE library as PyTine !
 - And it won't work on windows ...