Nalpeiron Tech Support Utility Training

An advanced course for
Technical Support Staff

Previous use and support of
Nalpeiron products advisable

Visit the training video:
http://www.nalpeiron.com/cust_ctr/videos/Support_Utility_Training/
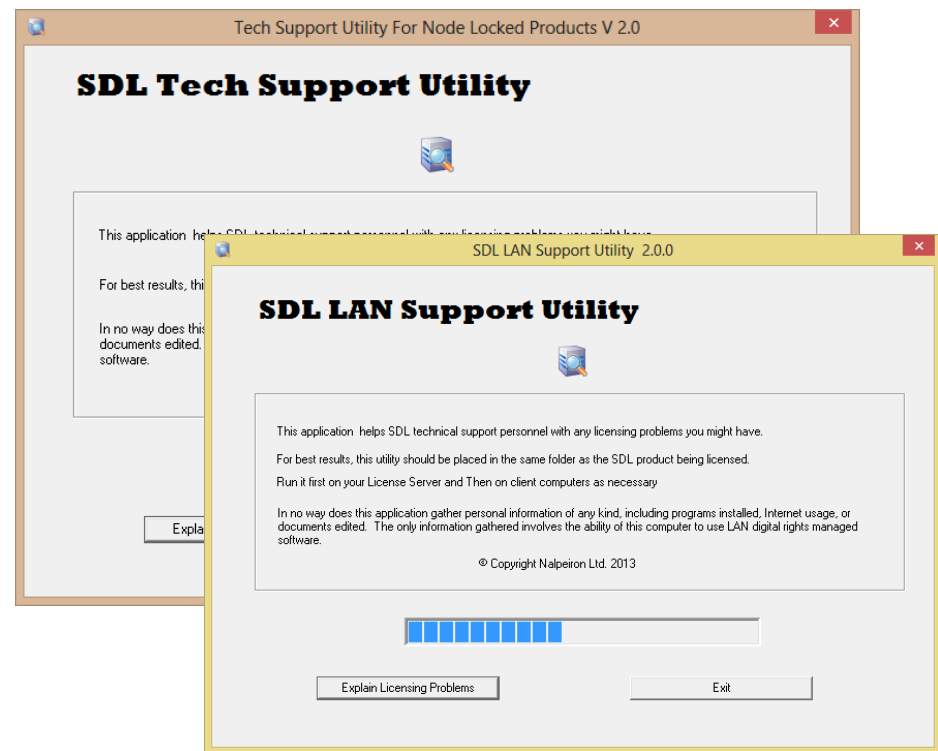
Useful Facts About Nalpeiron Licensing

- We use a Service/Daemon like most security companies
  - No tricks — no shortcuts — no direct memory hooks or calls — and no function calls or anything that is not fully supported by Microsoft
  - We use standard ports for all communications (80)
  - All our Services are clearly named, visible to the user and signed
- A "license" consists of a mark on the HDD and two security processes managing that unique ID, with the service
- The license will survive most Windows formats, so a re-install on these machines will still work (not low level)
- As well as the client, the server-side records all activity
- Over 10 million users have Nalpeiron DRM on their machines!

What Is The Nalpeiron Tech Support Utility?

- A tool that augments your technical support capability – customized for you on request
- This is an end-user diagnostics tool run on user Windows PCs
  - by them or you remotely
- The "Tech Support Utility" outputs a report on the licensing status of user installations (on the client)
- There are 2 versions, for node & network

The utility provides you with the "truth" of what's really happening on your customer deployments – helping solve issues and catch license "cheats"

Tech Support Utility For Node Locked Products V 2.0

SDL Tech Support Utility

This application helps SDL technical support personnel with any licensing problems you might have.

For best results, thi

In no way does this
documents edited.
software.

Expla

SDL LAN Support Utility 2.0.0

SDL LAN Support Utility

This application helps SDL technical support personnel with any licensing problems you might have.

For best results, this utility should be placed in the same folder as the SDL product being licensed.

Run it first on your License Server and Then on client computers as necessary

In no way does this application gather personal information of any kind, including programs installed, Internet usage, or documents edited. The only information gathered involves the ability of this computer to use LAN digital rights managed software.

® Copyright Nalpeiron Ltd. 2013

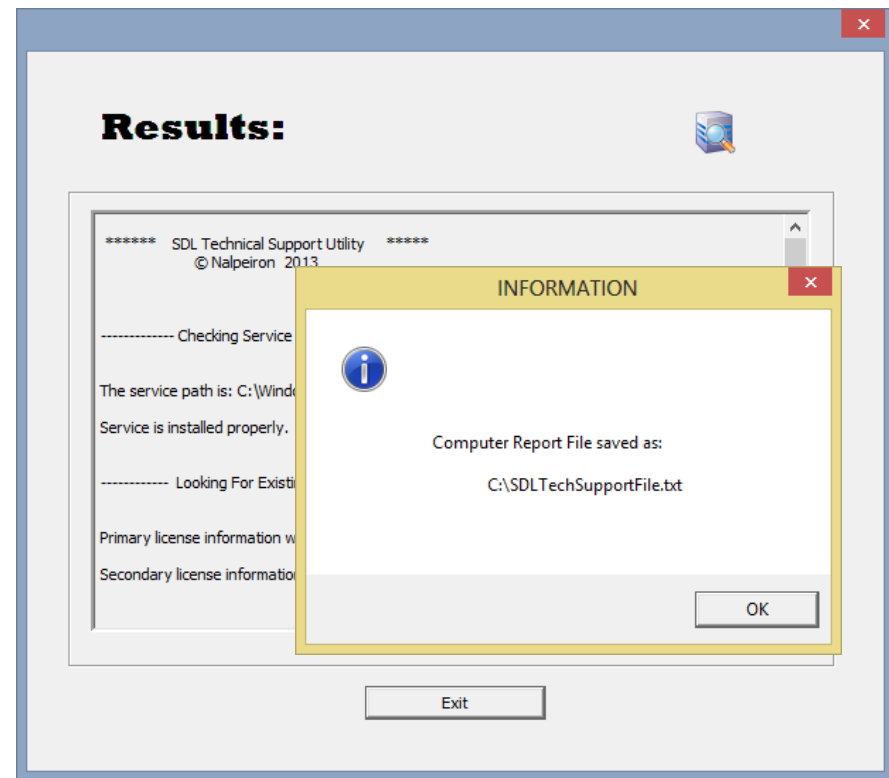Explain Licensing Problems   Exit

Why Use The Nalpeiron Tech Support Utility?

- Licensing/DRM support is not like normal support
  - Users "lie" to try and get around licensing controls e.g. my PC "crashed"
  - Use the tools to help decide if you give "extra" licenses to users
- Licensing is a complex security product and needs additional skills to interpret some user cases
- Many users are not very "savvy" and can't pass along complex support details easily
- Larger users have complex issues around licensing, especially on networks and with "policies" that impact deployments
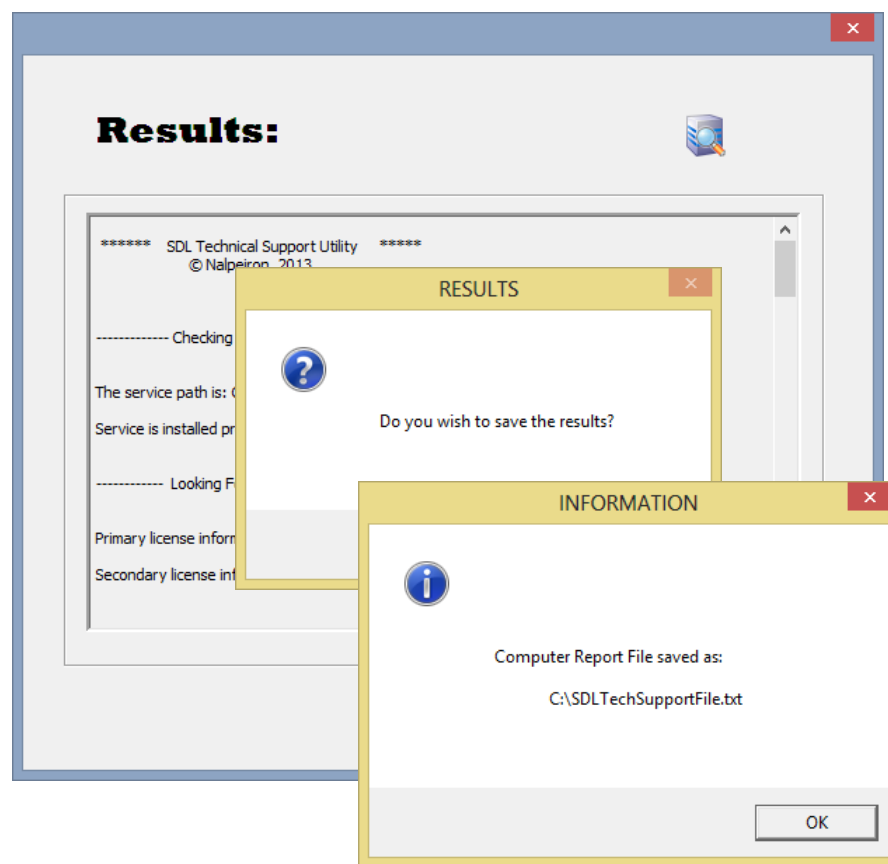
How To Use The Nalpeiron Tech Support Utility

- Download the utility from Nalpeiron
- Ask the user to run the tool on their machine or setup a remote session
  - Use the version per your use case: the Node or LAN version
- Ensure the Support Utility files are placed in your application folder at the end user
- Gather the text file generated from the C: drive of the end user machine or use a remote session to review the output
- Review the outputs to get a complete picture of what's "really" happening on a remote PC
- Compare the "truth" with what feedback you get from the user, then decide.

Results:

```
******  SDL Technical Support Utility  ******
              © Nalpeiron  2013

------------- Checking Service

The service path is: C:\Windo
Service is installed properly.

------------- Looking For Existi

Primary license information w
Secondary license informatio
```

INFORMATION

Computer Report File saved as:

C:\SDLTechSupportFile.txt

OK

Exit

Running The Tech Support Utility

- The Tech Support Utility is simple for users to run:
  1. Users double click "Tech Support Utility.exe" located in a folder with your app. on the client end
  2. Click the "Explain…" button on the app, it runs for a few seconds, and then displays a dialog box
  3. Review this output (remote session)
  4. Or click "Exit"
     - It asks if you want to save the results
     - If you click "yes" a dialog shows you the path name to the text file.
     - Get the user to send you the text file for review

```
******    SDL Technical Support Utility    ******
            © Nalpeiron   2013


------------ Checking Service Installation -------------


The service path is: C:\Windows\SysWOW64\nlssrv32.exe

Service is installed properly.


------------  Looking For Existing Licenses  ------------


Primary license information was found.

No secondary license information was found.


------------ Collecting Computer Information ------------


Not running under VMWare or Virtual PC environment.

64 bit OS

Windows is on drive: C

Windows drive number is: 0
```

(1) (2) (3)

```
-------------- Hard Drive SN Results ---------------------

Windows actual HD Serial Number is: 00000000103402FCEC14

Secondary License Table HD SN is: 00000000103402FCEC14

Hard Drive SN Stored In Registry: 00000000103402FCEC14


---------------- Computer ID Results: --------------------


Primary License Computer ID is: 37195525355103644540

Secondary License Computer ID is: No stored computer ID

Secondary License Validation ID is: 4264618934

The  list of actual short Computer IDs are:

488204909
488204909
488204909


-------------- Test Internet Activate Capability: ---------

Product activation through the Internet will not be a problem,
unless the license number is invalid, has already been used,
there is some other license management issue, or the Computer ID
is invalid.
```

(4) (5) (6)

The "Tech Support Utility" Output

1. **Service Installation**: Is the service installed correctly? If not, why?

2. **Existing Licenses**: Do master and secondary license files exist?

3. **Computer information**:
   - Is the computer virtual or physical?
   - What version of the operation system is installed?
   - Is the PC drive normal numbering?

4. **HDD serial number** as well as the serial numbers stored in our license files and registry. Is this working?

5. **Computer ID** results. Has this machine been licensed before? Does this data match?

6. **Internet Activation**: Can the user activate a license over the internet? explains any problems encountered.

Example Output "Tech Support Utility" - Licensing

```
-----------------Test Read And Write To HD: --------------

Hard drive reads properly.

Hard drive writes properly.


|---------------------- Product  List ----------------------

*****     Primary License Table:     *****


*****     Secondary License Table:     *****

Studio Single User:     Never Authorized        Last used:6-10-13 @ 11:03


--------- Collecting DLL & service Information  ---------

The filechck.dll version is: 7.0.0

The service version is: 7.3.1
```

(7) (8) (9)

```
-------------   License Management Report:  --------------

Last Product Activated successfully on 5-24-2013

License Number used: 234600462530678151


--------------

No License Return attempted


--------------

No short key unlocking attempt attempted


--------------

No long key unlocking attempt attempted


--------------

License removal was not attempted


--------------

License Certificates activation was not attempted


--------------

License Export was not Attempted
```

(10) (11) (12) (13) (14) (15) (16)

Example Output "Tech Support Utility" - Licensing

7. **HDD read/write**: Checks the ability to read and write the hard drive properly, singling out worn or failing drives.

8. **Licenses**: Displays a list of all your company's products installed on both the master and backup license file.

9. **DLL/Service versions**: If used in conjunction with the product's custom DLL, it displays 'DLL version, service version and the Computer ID.

    – Are these current/correct?

It also pulls and displays the most recent **License Management Data.**

• It displays the last license number use and if an activation succeeded or failed. **If it failed it shows why.**

• Unlocking code information in the form of the Installation ID, the Unlocking Key used, and if an unlocking key was rejected, **why the unlocking code was rejected.**

10. Activation history and number
11. Was the license returned/de-activated?
12. Has a short offline key been used?
13. Has a long offline key been used?
14. Has a license been "removed"?
15. Activation/offline via certificates?
16. Has the license been exported?

How Does This Data Help Support?

- Use the real data about whats happening to help the user understand…**the utility will test most known issues and give you details on them in plain language**.
  - Tech Support Utility displays the last license code used and if an **activation succeeded or failed**
- Many support issues are "emotive" issues where users are hitting the protection methods in the licensing preventing use – **you will be able to see this happening**
- Most more detailed support revolves around common issues:
  - A user "lost" a license, but "losing" a license means a lot of things
  - A user can't activate the product
  - A user can't start the service
  - A user can't "return" a license
  - Other errors, some of which are not Nalpeiron codes
- LAN customers have all the same potential tech support issues as node locked customers plus potential problems connecting to the license server from across the network – **the utility will highlight connectivity issues**.

Solving Common Issues

Using the Tech Support Utility

Things to Remember…when using Nalpeiron

- DRM requires the following to work reliably:
  - The Service to be operational and up to date
  - The Service version must match the DLL version
  - The Service must be in the correct directory
  - The system clock must be operational
  - Service Event logging must be active
  - The Windows Registry needs to be writable
  - The HDD must be writable and it keep its "state" after reboot
    - Watch out for: Clean Slate, Drive Vaccine, SmartShield & Microsoft Windows SteadyState
  - VMs/Emulators/Sandboxing etc can cause odd results (due to above)
    - Watch out for: Horizon DataSys RollBack Rx, fsprotect (for Ubuntu, Debian based systems), HDGUARD, Returnil Virtual System, Sandboxie,Shadow Defender & System Revert

The "Lost License" User Complaint

These issues revolve Around the following issues:

- The product being originally installed on a different computer:
    - Wrong Computer or - 84 errors
- A corrupted license / cloning issues
    - Damaged license table errors or -115 errors
- The service won't re/start or is blocked
- The service is having other issues
- The computer will not read or write reliably
- Other issues related to DRM running properly (see things to remember)

Example Use Cases: - 84 errors

- Error = "*this install is not the computer on which the product was originally licensed*"

- Indicator of either piracy or a change in HDD at the user

- This license check/option can be disabled by the developer when stamping the DLL to avoid these issues

- Re-activating fixes the issue but requires a decision on whether to issue a "free" activation

- See KB: http://support.nalpeiron.com/customer/portal/articles/742994--84-cprot_wrong_computer

Example Use Cases: - 84 errors

Example #1:

```
-------------- Hard Drive SN Results ---------------------

Windows actual HD Serial Number is: WB984937235
Primary stored Serial Number is: 6VE39EBF
Secondary Stored HD SN is: 6VE39EBF
Hard Drive SN Stored In Registry: 6VE39EBF

----------------- Computer ID Results: --------------------

Primary License Computer ID is: 571965400484374423520
Secondary License Computer ID is: 5719654400489774371900

The list of actual short Computer IDs are:

1167057324
1572725682
57196540
```

This means the hard drive was bit copied to create a backup.

- Windows actual HD Serial Number is different from all of the stored serial numbers.
- Also, notice that the Primary and/or Secondary License Computer IDs are <u>identical</u>
- AND the first 10 digits of the Computer ID <u>match</u> the last short computer ID.

- Your product is running on the same computer on which it was licensed, therefore reactivating the product is justified.

Example Use Cases: - 84 errors

Example #4:

-------------- Hard Drive SN Results ---------------------

Windows actual HD Serial Number is: 97311421500017
Primary stored Serial Number is: 6VE39EBF
Secondary Stored HD SN is: 6VE39EBF
Hard Drive SN Stored In Registry: 6VE39EBF

----------------- Computer ID Results: --------------------

Primary License Computer ID is: 98745642309835967896
Secondary License Computer ID is: 98745642309835967896
Primary Validation ID is: 987456423
Secondary License Validation ID is: 987456423

The list of actual short Computer IDs are:

1167057324
1572725682
57196540

This means the hard drive was bit copied to create a backup.

- The Computer IDs and the Validation IDs <u>DON'T match</u> any of the short Computer IDs.

- The actual Windows hard drive serial number <u>does not match</u> any of the stored hard drive serial numbers.

- It shows the result of bit copying the hard drive and then placing the copy on a new computer.

- In this example, reactivating the license (by allowing more activations on the publisher center) will result in giving the end user a free license.

Example Use Cases: -115 errors

- Error = "*The license status in the redundant license areas do not match*".

- A difference in license status (such as leased license and lease period expired) between our primary and secondary license tables.

- This is a copy protection function, preventing cloning
  - A cloning example is where a user de-activates a license and then restores a partition from an earlier point when the product was licensed to get a "free" license – we prevent that from happening and alert -115.

- Re-activating the license will always fix any -115 error.
  - You have to decide to issue a free activation (server side) to allow this process.

- Using Unlocking Keys or Internet Activation (again) totally rewrites both of the license tables, correcting any errors in the process.

Example Use Cases: -115 errors

Example #2

-------------- Hard Drive SN Results ----------------------

Windows actual HD Serial Number is: 97311421500017
Primary stored Serial Number is: 6VE39EBF
Secondary Stored HD SN is: 6VE39EBF
Hard Drive SN Stored In Registry: 6VE39EBF

----------------- Computer ID Results: --------------------

Primary License Computer ID is: 98745642309835967896
Secondary License Computer ID is: 98745642309835967896
Primary Validation ID is: 987456423
Secondary License Validation ID is: 987456423

The list of actual short Computer IDs are:

1167057324
1572725682
57196540

---------------------- Product List ----------------------

*****   Primary License Table: *****

Studio Single User: Demo Uses Limited   Last used: 4-3-11 @ 10:03
Expired: 4-23-11

*****   Secondary License Table: *****

Studio Single User: Unlimited Usage Last used: 4-20-11 @ 13:15

--------- Collecting DLL & service Information ---------

This means the partition was copied and restored on a new machine.

- Like previous examples the IDs don't match
- Also, the primary/secondary tables don't match either
- The only logical deductions in this case are the end user copied a computer's licensed partition and restored it to a <u>different computer</u>.
- This could be a Corporate image deployment issue, a backup restore or piracy

Lost Licenses - Principles Learned

- You can compare the user's case note vs. the "truth"

- What do they say happened vs. the facts in the Support Utility?

- Use this data to decide what course of action to take – give another activation or deny it

- Remember the fix is easy: the user re-activates the license (again) after you increased the limit on the Nalpeiron server-side

- Questions:
  - Does the original license data match the changes?
    - If it appears like the copied license is still on the SAME machine then its safe to issues more activations.
    - If it appears the user has copied the drive or partition onto a new PC (cloning) then it's a risk of piracy
  - You have the data, you can now decide the best course of action

Service Issues At User

- Service (or Daemon) installations are a big source of user issues

- A service requires the user to elevate permissions

- Many corporations lock down PCs to prevent elevated permissions

- The services need to be updated to ensure compatibility with OS releases and installed correctly
  - https://support.nalpeiron.com/customer/portal/articles/754536-windows-platform-resources

- Users remove or damage service installations

- Microsoft updates can affect older service versions
  (http://support.nalpeiron.com/customer/portal/articles/1170069---80-errors-after-win-7-patch-may-2013-)

Example Use Cases: Service Issues

```
------------ Checking Service Installation ------------


The service path is: C:\Windows\SysWOW64\nlssrv32.exe

The file nlssrv32.exe does not exist in the correct folder.
In a 32 bit OS, it should be in the system32 folder.
a 64 bit OS, it should be in the SysWOW64 folder


------------ Looking For Existing Licenses ------------
```

This means the service is installed in the wrong folder.

- The Tech Support Utilities will sort out common issues and explain how to repair the problem.

- The Nalpeiron *Service Repair Utility* is a tool that will repair most service installation problems automatically.

- Also, Nalpeiron supplies a *Service* Installer that will not only repair most service related problems, it also installs the version of the service file itself in the correct folder.

- Here is what the utility will show if the service file was not installed in the correct folder.

Principles Learned - Service Issues

- Most Service issues are easy to fix

- Nalpeiron provide tools to automate service installation

  - Have the user visit: www.updatemyservice.com for a self serve option

  - Use pre-built tools and installers to ensure that the process works correctly, including updating the registry etc

  - https://support.nalpeiron.com/customer/portal/articles/754536-windows-platform-resources

Activation Issues

- License "disappears" on reboot

- User errors or misunderstandings

- Hardware issues

- End user miscommunication
  - This is a big part of the support burden, useful facts are often scarce
  - That why we use belarc and this utility to get solid data
  - Watch for hidden info. such as:
    - the corporate policy on locking down PCs, or "deepfreeze" type utilities
    - did they use utilities that block/remove the Nalpeiron service,
    - firewalls, proxy servers and anything that will block communications

Activation Issues: Error Codes

- It is absolutely critical to understand that the call to
  "*InternetActivation*" does not return any of the following
  errors:
  - Wrong computer -84
  - License table damaged -85
  - License table altered1 -114
  - License table altered2 -115
  - License table altered3 -116
  - License must be reactivated -117

Example Use Cases: License "disappears" on reboot

- For a license to completely disappear, 3 separate sets of files have to simultaneously disappear:
  - the primary license table,
  - the secondary license table,
  - and the license management log
- Check that the service is not being blocked on reboot – see note:
  http://support.nalpeiron.com/customer/portal/articles/1170069---80-errors-after-win-7-patch-may-2013-
- The most likely cause of this problem are security apps that are designed to protect the hard drive from being changed

- Check for corporate lockdown policies using:
  - Deepfreeze, cleanslate, smartshield or MS Steadystate
  - Also, check for "sandboxing" and VM type apps like Rollback, HDGuard, Sandboxie, etc
  - These need to be set to allow a permanent license
  - Many businesses and education users do this and users don't know

User Errors Or Misunderstandings

- This is huge topic but the tools can easily help
  - With this Tech Support Utility you now can easily see exactly what a user did on a machine and usually the answer to the issue
- Use the client side tools as well as the server-side records to see if a user has activated or de-activated (returned) a license
- Many users "forget" they have de-activated or removed a license, you can verify this now
- Watch out for the universal "crash" technique for getting a free license – this is where they claim the PC no longer has a license record due to a problem like a crash
  - You can now test the remote machine and prove it removing this problem!

Example Use Cases: User misunderstandings

Example #1

```
-------------  License Management Report:  -------------

Last Product Activated successfully on 3-13-2012
License Number used: 9999000015219522215

--------------

Last product license was successfully returned on 8-3-2012

--------------
```

```
--------------------- Product List ---------------------

*****    Primary License Table:    *****

Studio Single User:      License Returned To Server  Last used:  8-3-12 @ 10:16

*****    Secondary License Table:    *****

Studio Single User:      License Returned To Server Last used:  8-3-12 @ 10:15

Expires: 9-13-11

-------- Collecting DLL & service Information --------
```

- The user reports: *"no license" or losing a license*
- Use the report in two places to double check the facts
  - License Management Report
  - Product List
- In the example a user has successfully activated and then de-activated their license
- Activated March 13, 2012 and the license Number used was 15100001521952215. Later, August 3rd, 2012, the license was returned (de-activated)

Example Use Cases: User misunderstandings

```
-------------- License Management Report:  --------------

Last Product Activated successfully on 3-13-2012
License Number used: 9999000015219522215

--------------

Last License Return failed on 10-31-2012
Return license failed because:    Retrieving HD Data Failed.-115

--------------

No short key unlocking attempt attempted

--------------

No long key unlocking attempt attempted

--------------

License removal was not attempted

--------------

License Certificates activation was not attempted

--------------

License Export was not attempted

------------------     End of Report   ------------------
```

- The end user complains that he *can't **activate** the license because of -115 errors*.

- As was stated earlier, Internet Activate cannot return any type of license errors such as -115 or -84.

- In this example, the end user encountered a -115 error and attempted to return the license (de-activate) (see 2nd line of data and relative dates)

- They simply need to re-activate to fix the issue.

Example Use Cases: User misunderstandings

```
-------------- License Management Report:  --------------

No Internet Activation attempted.
--------------

No License Return attempted
--------------

Unlock with short key failed on5-13-2013
Installation ID used: 568544331119
Unlocking Key used: 572316705582981
Reason for failure:  Unlocking Key for different Installation ID.
--------------

Unlock with long key failed on 5-13-2013
Installation ID used: 568544331119
Unlocking Key used: 3575464055819817
Reason for failure:    Unlocking Key checksum failed.
--------------

License removal was not attempted
--------------

License Certificates activation was not attempted
--------------

License Export was not attempted

------------------     End of Report   ------------------
```

- The end user can't unlock the product because the *unlocking key is not accepted*.

- When unlocking a product is not successful with short keys, long keys, or License Certificate, the Installation ID is saved along with the unlocking key used.

- In addition, the reason for the error is explained.

- So the tool tells you the problem clearly: "*Unlocking Key for different Installation ID.*" i.e. the key is for a ***different machine***, not this one.

Example Use Cases: Hardware Issues

```
-------------- License Management Report: --------------

No Internet Activation attempted.
--------------
No License Return attempted
--------------
No short key unlocking key attempted.
--------------
Product successfully installed with long key on 2-19-2013
--------------
Product license removal failed on 3-1-2013
Storing license data failed with error #: -55
--------------
License Certificates activation was not attempted
--------------
License Export was not Attempted

-------------------   End of Report   ------------------
```

- Other cases involving "returning a license", more unusual errors are reported as standard error codes.
- In this case, it is necessary to look up error code -55 in support.nalpeiron.com.
- The license failed because of an intermittent hard drive write failure or a computer RAM failure.
- When NLS writes a license to the hard drive it also reads back the data written. If the license data read back does not match what was written, then a -55 error is generated.
- *This is purely a hard drive error and requires the computer be repaired.*

Example Use Cases: Other errors

- If the Service is not working correctly it can cause all sorts of odd errors, beware!
  - Just start by running the tool and checking the service first…
- Drivers and other software (such as antivirus or firewall) software can cause DRM failures that are hard to find.
  - For example some older AV software targets services & registry entries
  - Some AV and other software block port 80 preventing activation
  - Some users forget they are using VPN/Proxy servers preventing activation
- Some users have very odd HDD drive setups and drive numbers, preventing the DRM from working – the utility checks this too.

Principles Learned - Other Issues

- License "disappears" on reboot – this is always down to something preventing the license from keeping a steady state, whats on the PC preventing that? Could be a patch blocking the Service or a Utility?

- The user has done something different than reported – you can now check and verify

- The user is trying to use the wrong license between machines – either innocently (or not)

- There is something wrong with their machine setup/hardware – now you can see that too

- Even if the user has forgotten their license code, you can now even find what that is…

Network Licensing Troubleshooting

The previous tests apply along with
the following additional testing

Network Licensing Troubleshooting

LAN support issues separate into these basic types:

- Licensing problems on the server itself

- Client computers failing to connect with the server

- netNLS showing more concurrent users than actually exist

- Errors in license/module state (appearing to report incorrect data) due to "over-polling" of the license server causing delays and random problems with DRM

- Other types of apparent failures almost always fall back to one of the first 2.

Licensing problems on the server itself

```
----------------------- LAN Data -----------------------

The license server's name is: OURSERVER
This is only a client computer.
This computer's name is: CLIENT_0001
This computer is properly connected to the License Server.
The License Server's service version is: 7.2.0
The local service version is: 7.2.0

--------------------- Product List ---------------------

*****   Primary License Table:   *****


Passolo Network:     User logged onto LAN     Last used: 3-29-13 @ 11:04


*****   Secondary License Table:   *****


Passolo Network:     User logged onto LAN     Last used: 3-29-13 @ 11:04

--------- Collecting DLL & service Information ---------
```

- In this example, the server name is listed, the report shows the name of the local computer and that it is a client computer.

- Most importantly, it shows that it is properly connected to the license server.

- It also shows the service versions which can be important if the support issue involves out of date components.

- Note especially that the Product List shows that the client computer is logged onto the LAN.

- If it is not logged on, it will show that the product is not licensed.

Client Computers Failing To Connect

Below is a sample from the report of a client computer that is not properly connected to the License Server

------------------------- LAN Data -------------------------

```
The license server's name is: OURSERVER
This is only a client computer.
This computer's name is: CLIENT_0001
Cannot connect to the License Server over the network.
        The path to the License Server is invalid or the server is turned off.
The local service version is: 7.2.0
```

--------------------- Product List ---------------------

------------------------- LAN Data -------------------------

```
The license server's name is: OURSERVEP
This is only a client computer.
This computer's name is: CLIENT_0001
Cannot connect to the License Server over the network.
        The path to the License Server is invalid or the server is turned off.
The License Server's service version is: 7.2.0
The local service version is: 7.2.0
```

--------------------- Product List ---------------------

In this example, show in the report the client computer is not properly connected to the License Server

In the 2nd case the server name (OURSERVER) is misspelled. The end result is exactly the same as if the server was not on the same network

Server Connection Issues

------------------------- LAN Data -------------------------

No Server Name in registry. This cannot connect to the License Server
This is only a client computer.
This computer's name is: HENRYS-ASUS
    Time out attempting to connect to LAN.
    Timeout connecting to server.
    Time out attempting to connect to LAN.
The local service version is: 7.2.0

--------------------- Product List ---------------------

----------------------- LAN Data -----------------------

No Server Name in registry. This cannot connect to the License Server
This is only a client computer.
This computer's name is: HENRYS-ASUS
Cannot connect to License Service over network:
    Time out attempting to connect to LAN.
    Timeout connecting to server.
    Time out attempting to connect to LAN.
The local service version is: 7.2.0

--------------------- Product List ---------------------

- In this example both the License Server and the Client Computer do not have a server name specified

- Notice that Windows repeatedly and incorrectly states "Timeout" as the reason for the connection failure

- In the 2nd example only the client computer does not specify a license server.

- Note that the results are the same

More (LAN) Users Shown Than Actually Exist

- Sometimes more users are shown logged onto the protected LAN than actually exist. This usually is caused by:

  - The client computers hard drives being protected by applications similar to *Deep Freeze* which prevent netNLS from recording local LAN log on information then shutting off the computer instead of shutting down the protected app.

  - End users accessing the protected product through terminal services/Citrix mode then <u>shutting down the remote connection</u> instead of shutting down the app.

  - Keep in mind, that if you just shut down a Terminal Services or other remote connection without closing the app, that user is never logged off

More (LAN) Users Shown Than Actually Exist

Usage Logging on start date: 8-28-2012 Time: 16:45:39

App #:	Computer Name:	Action:	Date:	Time:	Users:
1	PC-0001	START	8-28-2012	17:28:38	1
1	PC-0001	STOP	8-28-2012	17:28:4	0
1	PC-0002	START	8-28-2012	17:29:00	2
1	PC-0001	START	8-28-2012	17:39:15	3
1	PC-0001	STOP	8-28-2012	17:40:10	2
1	OURSERVER	START	8-28-2012	17:30:50	3
1	OURSERVER	START	8-28-2012	18:6:33	4
1	OURSERVER	STOP	8-28-2012	18:6:34	3
1	PC-0002	STOP	8-28-2012	18:8:00	2
1	PC-0001	START	8-28-2012	18:11:15	3
1	PC-0001	STOP	8-28-2012	18:11:17	2
1	OURSERVER	START	8-28-2012	18:12:3	3
1	OURSERVER	STOP	8-28-2012	18:12:32	2
1	PC-0001	START	8-28-2012	18:14:3	3
1	PC-0002	START	8-28-2012	18:40:22	4
1	PC-0002	STOP	8-28-2012	18:40:24	3
1	OURSERVER	STOP	8-28-2012	18:40:37	1
1	PC-0002	START	8-28-2012	18:43:20	2
1	PC-0002	STOP	8-28-2012	18:43:22	1
1	PC-0002	START	8-28-2012	18:43:24	2
1	PC-0002	STOP	8-28-2012	18:43:26	1

The netNLS service 7.2 and above support user logging.

- The logging function is turned on and off by a variable in the Parameters Key.
- To turn on the logging function, create a string named LoggingPath and store in it the path name and include the first part of the log file name.
  - The actual log name is: <user defined start of name>_LAN_Usage_Log_<date as MM-DD-YYYY>_<time as HH-MM-SS> So the attached log's real name was: LAN_Usage_Log_8-28-2012_16-45-39.
  - Each time the date and time are the time the service is started.
  - This is so if a license server is turned off, on, restarted, or the service restarted, all of the usage logs will be stored and nothing overwritten.

Analyzing The Log To ID Problems

App #:	Computer Name:	Action:	Date:	Time:	Users:
1	OURSERVER	START	8-28-2012	17:30:50	3
1	OURSERVER	START	8-28-2012	18:6:33	4
1	OURSERVER	STOP	8-28-2012	18:6:34	3
1	OURSERVER	START	8-28-2012	18:12:3	3
1	OURSERVER	STOP	8-28-2012	18:12:32	2
1	OURSERVER	STOP	8-28-2012	18:40:37	1

OURSERVER: 3 STARTs   3 STOPS

1	PC-0001	START	8-28-2012	17:28:38	1
1	PC-0001	STOP	8-28-2012	17:28:4	0
1	PC-0001	START	8-28-2012	17:39:15	3
1	PC-0001	STOP	8-28-2012	17:40:10	2
1	PC-0001	START	8-28-2012	18:11:15	3
1	PC-0001	STOP	8-28-2012	18:11:17	2
1	PC-0001	START	8-28-2012	18:14:3	3

PC-0001:   4 STARTs   3 STOPS

1	PC-0002	START	8-28-2012	17:29:00	2
1	PC-0002	STOP	8-28-2012	18:8:00	2
1	PC-0002	START	8-28-2012	18:40:22	4
1	PC-0002	STOP	8-28-2012	18:40:24	3
1	PC-0002	START	8-28-2012	18:43:20	2
1	PC-0002	STOP	8-28-2012	18:43:22	1
1	PC-0002	START	8-28-2012	18:43:24	2
1	PC-0002	STOP	8-28-2012	18:43:26	1

PC-0002   4 STARTs   4 STOPs

To analyze the log, first it is necessary to group each of the compute names together.

- The purpose of analyzing the log is to determine which computers are contributing to the number of concurrent users never reaching zero.

- This happens when something causes a workstation to log on twice without logging off in between times.

- Or it can happen if a workstation never logs off.

- From the example you can see PC-0001 has not logged off correctly

Errors in (LAN) license/module state

- If you are seeing "odd" intermittent errors results in the license state or module states:
  - Check you are not "over-polling" the license server (causing delays and random problems with DRM)
    - Pay particular care when polling the function call GetConcurrentUsers().
  - The license server was designed to be used in a simple way and is not designed to be polled excessively i.e. multiple times a second
  - Remove any such code to stop this happening and retest results
  - If you have to poll the server, do so less frequently and retest results

Wrap up and reference

The following few slides can be used regularly to refresh you on support related links

Hints And Tips For Support (Obvious!)

- Find out EXACTLY what error message or number they are experiencing.
  - If the end user doesn't know, ask him or her to run the program again and tell you exactly what happens when the error occurs. *Without this Nalpeiron support will be of little help to you...*
  - In some cases ask the user to tell you step by step what they were doing when starting and shutting down the computer, as well as what maintenance or security type activities they performed.
- Find out what license code was used to activate your product or was used in an attempt to activate your product.
  - Check the Nalpeiron Dashboard to find out the history of that license number and the Computer ID that was associated with it.
  - Use the Tech Support Utility to coordinate and verify what you are told.
- Find out what other security software is present on the computer, and in the case of activation problems, find out how the firewall is setup.   It is critical to find out if software such *as Deep Freeze* is present.

Quick Fixes To Many Issues

- Any errors with these codes:
  - Wrong computer -84
  - License table damaged -85
  - License table altered1 -114
  - License table altered2 -115
  - License table altered3 -116
  - License must be reactivated -117

Can be repaired by "activating" the license again.

Lists of Error Codes / Useful Docs

- For a quick lookup of error code meaning "search" here
  - support.nalpeiron.com (login required)
- Error Codes for Node Locked Products:
  - DLL Return Codes with detailed explanations KB: https://support.nalpeiron.com/customer/portal/articles/745480-dll-return-codes-with-detailed-explanations
- Error Codes for Network Products:
  - KB: https://support.nalpeiron.com/customer/portal/articles/745080-developers-reference---network-windows-only-
- Troubleshooting Network Installations:
  - KB: https://support.nalpeiron.com/customer/portal/articles/748579-common-problems-and-their-solutions

Nalpeiron Are Here For You!

If you have tried everything then report to us and let us help you:

https://support.nalpeiron.com

customersupport@Nalpeiron.com