

# **NEXUS LX V4 Release (NASD001D)**

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## **NEW INSTALL**

- 1) Place the NEXUS LX CD into the CD-ROM.
  - \* The setup screen for NEXUS LX should automatically appear.
  - \* If this screen does not then go into Windows Explorer, select the CD-ROM drive then select Setup.exe.
  
- 2) The setup automatically starts in a walk-through installation mode.
  
- 3) The setup program will install the LNS Server, any service packs for LNS, the Lonworks PCC10/PCLTA Network Driver/Interface OR Lonworks SLTA-10 Network Driver/Interface, the NEXUS LX program files (and the Foxpro ODBC Driver Windows XP only).
  - \* Follow the instructions to install the Lonworks applications.
  - \* If you are prompted to restart the computer select No as this will be done on exiting NEXUS LX setup.
  - \* Shut down the computer, install the Interface Device and restart the computer.
  
- 4) To start NEXUS LX select Start, Programs, NEXUS LX, NEXUS LX.
  
- 5) If you have more than one Lonworks network interface card (NIC) installed you will be asked before the program launches which Lonworks NIC to use.
  - \* You will need to be aware which card is the one connected to the network and select this one.

Please refer to the NEXUS LX Manual for installation instructions for the NEXUS LX Software, Lonworks Interface Driver Software and physical installation of the Lonworks Interface Device.

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## **UPGRADING From Older Version of NEXUS LX V4**

- 1) Save your existing database using the Save Database Utility.
  - \* For help on the Save Database utility click on the help menu for the save\_database utility
  
- 2) Run the delete database utility
  
- 3) In Windows Explorer navigate to C:\lnsdb if this folder exists.
  - \*If there is then right click on the folder and select delete.
  - \*If at this stage Windows generates a permissions error message restart the computer and then delete C:\lnsdb.

- 4) Place the NEXUS LX setup CD into the CD-ROM.
  - \* The setup screen for NEXUS LX should automatically appear.
  - \* If this screen does not then go into Windows Explorer, select the CD-ROM drive then select Setup4\_x\_y.exe
- 5) From the setup screen select the Custom Install from the Options Menu.
- 6) Check the version of LNS that is running on the server
  - \* In Windows Explorer navigate to C:\Lonworks\bin and find the file lcaobjsv.ocx
  - \* Right click on the file and select properties
  - \* Click on the version tab
  - \* The file version should be 3.23.40.0 or later
  - \* If the version is anything previous to this then from the setup click LNS Installation to install again.
- 7) Click on NEXUS LX to install the NEXUS LX program files.
- 8) Restart the computer
- 9) Load database using the load\_database utility
  - \* For help on the load\_database utility click on the help menu for the load\_database utility
- 10) Manually copy C:\NEXUSLX V4\foxpro\_DB\configlx.dbf to replace C:\NEXUSLX V4\configlx.dbf
- 11) Run RecoveryLX V4.0.27 or later, goto UTILITY tab, click "Repair Foxpro DB Tables" button
- 12) Start NEXUS LX
- 13) If you have more than one Lonworks network interface card (NIC) installed you will be asked before the program launches which Lonworks NIC to use.
  - \* You will need to be aware which card is the one connected to the network and select this one.

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### **UPGRADING From NEXUS LX V3.2.n (e.g. V3.2.25)**

- 1) Save your existing database using the Save Database Utility.
  - \* For help on the Save Database utility click on the help menu for the save\_database utility
- 2) If the V3 site is pre-V3.2.25 version or is V3.2.25 version but LNS network communication is not good then manually delete C:\lnsdb directory.  
If can't delete this directory then shutdown and restart PC to delete it again.  
If V3 site is V3.2.25 and the LNS network communication is good then no need for the above action.

3) Install new NEXUSLX V4 onto this PC. Refer to "NEW INSTALL" section above for the installation procedure.

4) Run C:\NEXUSLX V4\RecoveryLX.exe to convert Foxpro database from V3 to V4

a) Click button "Convert V3 to V4" to open NEXUSLX V3 to V4 database conversion form.

b) In "STEP 1", browse to V3 database folder which normally is C:\Program Files\NEXUS LX\

c) In "STEP 2", click button "Convert Database" to convert V3 database files to V4 format.

d) Then close RecoveryLX.exe

5) Run NEXUSLX V4 (C:\NEXUSLX V4\NEXUSLX.exe) in offline mode to visually check if any routers, repeaters, channels or groups are missing.

You may need to fix the V3 database then redo the database conversion or contact technical support to modify the just converted V4 database.

When you finish, close NEXUSLX.exe.

6) Run RecoveryLX.exe again

If the V3 site is pre-V3.2.25 version or is V3.2.25 version but LNS network communication is not good then you need to recover the whole site.

a) Click button "Operate on Selected Nodes" to open Routers/Repeaters & Channels Nodes list form.

b) Highlight the fittings to recover trunk first then channel by channel.

Normally the recovery sequence is as following:

1. Trunk Repeaters 2. Trunk Routers 3. Channel Repeaters 3 Channel Nodes

If V3 site is V3.2.25 and the LNS network communication is good then no need to recover the site, only to update all nodes to V4 Type IDs.

a) Click button "Convert V3 to V4"

b) In "STEP 3", click "Apply Type ID" to write V4 Type IDs to all nodes.

When recovery operation finishes, close RecoveryLX.exe

7) Start NEXUSLX V4 again, check the display of all channels and groups and the status of all channel nodes.

NOTE: After the conversion, maintenance group will be cleared out. All channel nodes' Type IDs are converted from V3 to V4 values if V3 values are present and valid. Otherwise all Type IDs are cleared to 0. All GPN alarms need to be redefined. GPN analog IOs need to be partially redefined (Href & Lref values need to be defined).

The above recovery process for the conversion will consume LNS credits. Contact NEXUS LX technical support for any help.

NOTE: Any previously defined GPN alarms or Relay Alarm Modules alarms in V3 need to be redefined in V4.

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## **UPGRADING From NEXUS 2000**

1) Save your existing database using the Save Database Utility.

\* For help on the Save Database utility click on the help menu for the save\_database utility

2) Convert to NEXUSLX V3.2.25 first

Or load NEXUS2000 database into one of the NEXUS LX V3.2.25 PC, then run NEXUS LX V3 once. This will convert NEXUS2000 Foxpro database to NEXUS LX V3 format.

3) Install new NEXUSLX V4 onto this PC. Refer to "NEW INSTALL" section above for the installation procedure.

4) Convert to NEXUSLX V4 following the procedure of "UPGRADING From NEXUSLX V3.2.n (e.g. V3.2.25)".

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## **UPGRADING From NEXUS 3.7**

1) Save your existing database using the NEXUS3.7 save database utility.

2) Run C:\NEXUS\WLM2CSV.EXE to generate NX37.csv file.

a) Double click on C:\NEXUS\WLM2CSV.EXE

b) Click on OK to get rid of the splash screen

c) For the database browse to C:\NEXUS\STANLON\LONDB.DBF

d) For SNVT file browse to C:\LONWORKS\TYPES\SNVT.TYP

e) Set the output file to C:\NEXUS\NX37.CSV

f) Leave all other settings as the default

g) Click on Export to export the LON Database to NX37.CSV file

NOTE: There some .DLL files are required to run WLM2CSV.EXE:

C4dll.DLL, Vista.DLL, Wldb.DLL, Wldv.DLL, Wlon.DLL, Wlxt.DLL

If you copy and run WLM2CSV.EXE in a different folder rather than the NEXUS3.7 installation folder C:\NEXUS\ then these DLL files needs to be copied in as well.

3) Install new NEXUSLX V4 onto this PC. Refer to "NEW INSTALL" section above for the installation procedure.

NOTE: After the installation, Lonworks Interface needs to be set from NSIPCLTA to PCL10VNI. You need to set to PCL10VNI to make LNS group binding working properly.

a) Open Control Panel, then double click Lonworks Plug n Play icon

b) Under "NI Application", change to PCL10VNI

c) Click Apply then OK to close the form

d) Close Control Panel

4) Run C:\NEXUSLX V4\RecoveryLX.exe to convert NEXUS3.7 Codebase database to V4 Foxpro database

- a) Click button "Convert NEXUS3.7 to V4" to open the conversion form.
- b) In "STEP 1", browse to folder contains NEXUS3.7 database and NX37.CSV file.
- c) In "STEP 2", click button "Convert Database" to convert NEXUS3.7 database files to V4 format.
- d) After finish, close RecoveryLX.exe

5) Run NEXUSLX V4 (C:\NEXUSLX V4\NEXUSLX.exe) in offline mode to visually check if any routers, repeaters, channels or groups are missing. You may need to fix the database before any network conversion is done. Contact technical support to modify the just converted V4 database. When you finish, close NEXUSLX.exe.

6) Run RecoveryLX again

- a) Click button "Operate on Selected Nodes" to open Routers/Repeaters & Channels Nodes list form.
- b) Highlight the fittings to recover trunk first then channel by channel. Normally the recovery sequence is as following:  
1. Trunk Repeaters 2. Trunk Routers 3. Channel Repeaters 3 Channel Nodes  
When recovery operation finishes, close RecoveryLX.exe

7) Start NEXUSLX V4 again, check the display of all channels and groups and the status of all channel nodes.

NOTE: After the conversion, maintenance group will be cleared out. All channel nodes' Type IDs are converted to V4 values if Nexus3.7 values are present and valid. Otherwise all Type IDs are cleared to 0.

The above recovery process for the conversion will consume LNS credits. Contact NEXUS LX technical support for any help.

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### **NEXUS LX V4.1.21 Advantages over NEXUS LX V3.2.25 or Other Earlier Versions**

1. LNS runs much more reliable and faster  
All previous versions run LNS in 2 instances simultaneously. This is because Event\_processor.exe starts and run the first LNS instance and then it starts NEXUSLX.exe which starts and run the second LNS instance. At runtime, these 2 instances creates unnecessary synchronization overhead which slows LNS down and frequently cause LNS lock up or cause other LNS database corruption problems. This is one of the biggest problems for NEXUSLX V3 versions.  
NEXUSLX V4 only runs LNS in one instance. Thus it reduces the LNS start up time, increase the runtime speed and reliability because no more synchronization is needed.

2. Lookup table system is much simpler to update and maintain and more reliable  
V3's lookup table system contains more than 30 tables. Each type of device requires 2 lookup tables: one for runtime operation and one for test results. Many tables contain duplicated records and unused records. Each table contains many records and all tables are manually done. So the V3 lookup table system is very hard to maintain and update, no version information, prone to bugs and inaccurate.  
V4's lookup table system just has 3 tables: tbltype, tbllogic and pid. There are 2 more tables are for nexus3.7 to V4 and V3 to V4 conversion. Particularly tbllogic table containing only 32 records is equivalent to V3's 30 or so tables. V4 tables system is easy to maintain and update with version information built in, flexible and extendable for future new type of devices and no duplication.
3. Type IDs are systematically redesigned and is stored in the commissioned SPU node  
V3's type ID system has a big problem: many non-default type IDs (unit descriptions) are not stored in commissioned nodes. They are only stored in Foxpro DB table spulns. If a non-default type ID is assigned to a commissioned node and node is decommissioned later, then the assigned type ID information is lost. This is because only default type ID value is stored in node rather than the type ID user assigned. The reason of creating this virtual type ID system is to preserve node's network variable NV\_unit\_type's old Nexus3.7 structure. Other problem of V3 type IDs is that the number values are not organized into a certain range for certain type of device style. It is messy to maintain and very hard to add new ones.  
V4's type ID system solved all the above problems. New system is simpler, easy to maintain and update, defined range for defined device type and futuristic compatible and expandable.
4. No more DECOM trouble.  
V3 runs 2 executables: Event\_processor.exe and NEXUSLX.exe simultaneously. These 2 programs must be paired by the same source code compilation. When one program is replaced the other must also be replaced otherwise will cause runtime error. This is due to their internal DECOM relationship. DECOM is a Microsoft way to make 2 or more programs intercommunicatable. This make updating program hard because you always need to know if these 2 executables are in pair.  
V4 runs single executable NEXUSLX.exe. No more DECOM. Any executables in V4 directory can be replaced by simple copy and paste. No more pairing trouble.

5. Foxpro DB tables are redesigned and simplified for more reliability and speed  
Because V3 runs Event\_processor.exe and NEXUSLX.exe simultaneously, Foxpro DB tables become common resources shared by both of the applications. This is an inefficient setup. The database synchronization overhead and communication between the 2 programs not only slow down the program and screen display but also prone to lockup in the similar fashion LNS suffers.  
V4 only runs single executable: NEXUSLX.exe, no more synchronization and inter communication overhead anymore. The result is V4 program and screen display is more responsive and Foxpro DB tables are more reliable.
6. Background integrity monitor is redesigned for more reliable, faster and easy to use  
V3's integrity monitor is run by Event\_processor and NEXUSLX displays its result. This causes some unnecessary intercommunication overhead and coding complicity.  
V4's integrity monitor is more efficient due to deletion of DECOM and improved database accessibility. The result is more reliable and quicker to run and simple to control by user.
7. Graphical user interface forms are redesigned and simplified for more reliability and less confusion  
V4's graphical user interface are greatly simplified compare to V3. Now only useful information is displayed. All new features as well as existing functions are regrouped on the form. Menu items are also reduced and simplified. The result is an easy to use, faster for updating and less confusion user interface.
8. A range of new products are included  
The following new products are new and only included in V4
  - a) LED exit
  - b) Night Vision Goggle GPN Controller
  - c) Nexus Relay Alarm Module V1.0.0
9. New report system is simple and more  
V4's new report system is totally different from V3. It provides more practical reports with only practical and important information shown in the report. Each report has the new report format makes more SPU nodes reported on each page for saving paper when the report is printed. Also it provides a user friendly, easy and clear way to select and generate the report.
10. Better RecoveryLX with more features  
V4's RecoveryLX has fixed all known bugs and added more features. It provides easy conversion from Nexus3.7 to V4 or V3 to V4.
11. New version DbLab with Foxpro table packing feature  
V4's installation CD also includes a new version of DbLab which provides a Foxpro table packing function. This function can be used to pack the tables like maint.dbf, tstreslms.dbf and spulms.dbf.

## **NEXUS LX V4.1.23 Installation CD**

NEXUSLX V4.1.23

RecoveryLX V4.0.34

Table System V1.4.18

Relay\_Alarm V1.0.2

nefw003b\_e2 V2.4 – firmware for SPU nodes (replacement of nefw003a\_e2)

nefw010a\_e2 V2.0 – firmware for UPS SPU, e.g. SF-UPS-NM

lgfw004a\_e2 V1.3 – firmware for GPN-NVG

### New in NEXUSLX V4.1.23

1. Installed date is added in WI report
2. Warning message is added for SPU Replace function
3. ParseNumber() function is added in mduReport for parsing the combined group number+name string such as “13 6 avenue Bld 8”
4. Modified Start\_LNS\_Server so that offline mode can be opened when RecoveryLX is already running.
5. Changed NEXUSLX log file system from WriteDataToFile to LxFileLog
6. Created TblGetSpulcon1 and deleted IconIdxLookup for reducing the access to spulns table when calculating icon string.
7. Created NvEventQue & NvEventProcess() to eliminate database racing condition between OnNvMonitorpointUpdateEvent and main timer loop.
8. Modified Install\_Node() to avoid removal of the node when using NID commission so that the process will speed up.
9. Added PackTables to pack foxpro tables before the starting of NEXUS.

### New in RecoveryLX V4.0.34

1. Display TEST\_ON bit (0x04) on the Display status form.
2. Added Relay Alarm Module relay control on frmRecovNviConf
3. Added GPN-UPS1, SF-UPS-NM status byte display in frmRecovStatus
4. Modified GPN-NVG status byte b0 for red LED state, b1 for green LED state
5. Set to be recovered nodes offline before the recovery process.

### New in Table System V1.4.18

1. Modified TblLogic MQF-M, LL-M lamp error formula (no testing case)
2. Modified TblLogic PP-SA-M, PP-SA-S lamp error formula (no testing case)
3. LDR is valid only when SWACT on, LDR is don't-care state when SWACT off.
4. nxv3v4 added 7050,7051(V3) to 7050,7051(V4) conversion
5. Added nefw010a (SF-UPS-NM) and GPN-UPS1 to the table system.
6. Added PP-M-58/65W-2H-8C, TypeID=1556 in the table system.

7. Added the following items into TblType table

Type ID	Symix ID
1780	PBATNXS158M
1781	PBATNXS158N
1782	PBATNXS258M
1783	PBATNXS258S
16700	LSF-NM
16721	SFNXS1LED
16722	SFBNXS2LED
16723	SBNXS1LED
16724	SFBWPNXS2LED
16725	SFBWPNXS1LED

**NEXUS LX V4.1.24 Installation CD**

NEXUSLX V4.1.24  
RecoveryLX V4.0.34  
Table System V1.4.18  
Relay\_Alarm V1.0.2

Save\_Database.exe V4.1.0  
Added zip save feature.

Load\_Database.exe V4.1.0  
Added unzip load feature.

NUN Utility2.exe V3.6.14  
Updated to recognize the device type information for all fittings and routers including all new products.

**NEXUS LX V4.1.27 Installation CD - 19/03/2012**

NEXUSLX V4.1.27  
RecoveryLX V4.0.35  
Table System V1.4.24  
Relay\_Alarm V1.0.2

Save\_Database.exe V4.1.0  
Added zip save feature.

Load\_Database.exe V4.1.0  
Added unzip load feature.

NUN Utility2.exe V3.6.14  
Updated to recognize the device type information for all fittings and routers including all new products.

New in NEXUSLX V4.1.27

1. Added LDR Enable/Disable checkbox on NodeBox form for service login. Only emergency light fittings with Maintained or Sustained type has this checkbox shown.
2. Added LDR Enable/Disable checkbox and its Apply button on Group form for service login.
3. LDR Enable/Disable or N/A status is displayed on the SPU Details report.
4. For EFN, if LDR is disabled then LDR calibration button is also disabled.
5. Display a warning message before opening NodeBox form if the node's Type ID is unknown(icon is ?).