

Changes and Improvements in V1.42

Version 1.42 adds support for Excel 2002 (a component of Office XP, internally known as Excel 10.0). This support takes the form of changes and improvements to the Neuralyst.XLM macro sheet. In nearly every respect, V1.42 is functionally identical to V1.4 and V1.41.

A minor bug related to the calculated output values after training has been fixed.

A minor bug related to the genetic training supervisor when applied to certain enhanced parameters has been fixed.

The TML is now loaded reliably from the Neuralyst installation directory in all versions of Excel.

The latest printing of the Neuralyst User's Guide is available in Adobe Acrobat (PDF) format as part of the version 1.42 distribution. Acrobat Reader version 4 or later is required to view this file, but is not provided with the Neuralyst distribution. Acrobat Reader can be downloaded free of charge from <http://www.Adobe.com/>.

The file README.TXT contains revised installation instructions for use with Windows 95, 98, Me, 2000, and XP.

Changes and Improvements in V1.41

Version 1.41 adds support for Excel 95 (aka Excel 7). This support takes the form of a new 32-bit neural network engine. In nearly every other respect V1.41 is functionally identical to V1.4. Neuralyst V1.41 will automatically detect the Windows and Excel versions that are active and correctly operate in 16-bit or 32-bit mode as needed.

The installation procedure for V1.41 is identical to that of prior versions. Both the 16-bit and 32-bit neural network engines will be copied to your system, ready for use.

Excel 95 imposes a limit of 5450 rows in an Input or Output column. This is lower than the limit of 6550 rows imposed by Excel 4 & 5.

Excel 95 imposes a limit of 310 as the maximum population size during genetic training. This is lower than the 390 limit imposed by Excel 4 & 5.

Sample Performance

Measured Neuralyst performance, in Connections per Second:

	v1.41 Pentium 60 MHz -----	v1.42 Pentium 2 MMX 450 MHz -----
Fixed Training	410,000	1,830,000
Fixed Testing	1,230,000	13,700,000
Float Training	420,000	1,440,000
Float Testing	1,260,000	10,800,000

Notice that since the weights and data are far larger than the cache, the measured performance does not increase as much as indicated by the CPU clock speed alone.

The fixed-point rates are comparable to the rates obtained by the 16-bit version of the Neuralyst engine (see Appendix D of the User's Guide).

The floating-point rates have nearly tripled versus the 16-bit engine, but this result may be peculiar to the Pentium processor. This is because the Pentium can accelerate (dual-issue) floating-point instructions only when it is operating in 32-bit mode.

Also of note is that the 32-bit implementation eliminates the slight performance penalty imposed on huge neural networks by the 16-bit engine.