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Group

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From the Chair

Marla Kozak, *President*

It's 2006 and CCRUG has turned twenty! Way, way, way back, in 1986, the first meeting of Unigraphics users in Canada was attended by 15 CAD pioneers at the McDonnell Douglas Canada plant in Toronto. One of the facilitators of this gathering was Bob Chessell. Since those heady days of big hair and disco, CAD has evolved and styles have changed but Bob has remained a vital member of CCRUG. I would like to extend our thanks and congratulations to him on this significant anniversary.

And now, moving from history to current events...

Our Teamcenter Focus meeting, held on February 1st at HP Canada in Mississauga, was a great success. There are tentative plans for another Focus Meeting in the fall. If you have any topics you would like us to focus on please contact me. (mkozak@husky.ca)

Conference Announcement!!!

The Toronto Aerospace Museum was such a hit with conference-goers last year that we decided to buzz the tower again.

I am very pleased to announce that the 2006 Annual CCRUG Conference has been scheduled for Wednesday, June 14th in Hamilton at the Canadian Warplane Heritage Museum (CWHM) www.warplane.com.



The museum's extensive collection includes one of only two operational Lancaster bombers left in the world; the other one is in Britain. At the museum, one could climb into the cockpit of a real WWII trainer or a real jet fighter - the Avro CF-100. One of our attendees could possibly end the day with a flight in one of the museum's aircraft in the air over the great metropolis of Hamilton.

The CWHM is a non-profit organization whose mandate is to acquire, document, preserve and maintain a complete collection of aircraft that were flown by Canadians and the Canadian military services from the beginning of World War II to the present. We are pleased and honoured to be able to use this facility for our 2006 conference.

Want to register for this year's exciting conference?

Along with this newsletter, you should also be receiving a separate sheet containing details about registering for this conference. As in the past, we will also have up-to-date information and online registration on our website at www.ccrug.com. **Hope to see you there!**

NX Training: By The Byte Or By The Book?

Jonathan Jug, *Siemens VDO*

Do you remember the days when we argued over whether to use an H3 or H4 pencil to create construction lines?

Design technology has certainly progressed at a rapid rate. But keeping up with the frequent changes and improvements in design software can be a chore. Picking things up on your own with no instruction and direction can be daunting. So what can we do for training? There are two forms of training that we can look at: self-directed training and classroom training.

Self-directed training is one option, available through either CADPO's "I.get.it" <http://www.cadpo.com/home.asp> or UGS' "Learning Advantage" training <http://training.ugs.com/self-paced/memberships.shtml>.

Both have received very positive reviews. The ability to repeat a session is just one of the draws of this type of training. Textbooks can also be used although difficult if one is not very motivated and lacks the self-discipline necessary to follow the course through to completion.

NX Membership Fee	
\$408	first year
\$204	yearly renewal
<small>listed fees are per user volume discounts available</small>	

In the traditional training option one thinks of a classroom. Commercially available courses in NX are offered through UGS. <http://training.ugs.com/index.shtml> and Cimatrix Solutions, Inc <http://www.cimatrixsolutions.com>. However, NX is also taught as part of full time programs in mechanical design at community colleges like Durham, Georgian, and St Clair and at universities like Windsor, Waterloo, Queens, UBC, Dalhousie and Toronto.

One of the toughest tasks may be getting your CAD manager to agree to the time away from work for training. Many design departments these days are strapped for cash as well as labour. But if you argue that learning one new method at a training course may save you significant production time later on, then a case will probably be made. You will probably need to do the math to back this up, but it will be well worth it. It can be argued that the money can be recouped through better models and methods of doing things.

So let's look into training eh!

Here are some training related Web links for you to investigate:

Techno-Sexy Training (Self-Paced, Online)

UGS: <http://training.ugs.com/self-paced/memberships.shtml>
 CADPO <http://www.cadpo.com>

Traditional (Classroom)

UGS: <http://training.ugs.com>
 Cimatrix: <http://www.cimatrixsolutions.com>

Colleges

Durham: <http://www.durhamcollege.ca/>
 Georgian: <http://www.georgianc.on.ca/>
 St Clair: <http://www.stclairc.on.ca/>

Universities

Windsor: <http://www.uwindsor.ca>
 Waterloo: <http://www.uwaterloo.ca/>
 Queens: <http://www.queensu.ca/>
 UBC: <http://www.ubc.ca/>
 Dalhousie: <http://www.dal.ca/>
 Toronto: <http://www.utoronto.ca>

CAM: Keeping It Simple

George R. Bennett, CAM SIG Chair

There are many reasons to use NX CAM. One is the fact that if you're using NX for modelling and drafting, it only makes sense to maintain the continuity through manufacturing. Another is the fact that there are so many machining parameters available to the user. Whether a component's geometry is complex or simple, NX provides the user with hundreds of parameters which permit tool paths to be fine tuned for lean and efficient machining, smoothed out for high speed machining (HSM), etc. While all these parameters are a good thing, they aren't necessarily required in

every operation and they sometimes create the illusion that NX CAM is complex and difficult to learn.

All the switches and parameters don't have to be in front of the user all the time though. The developers put all the important parameters in the as-shipped operation templates so the users will see that they are there. If a parameter isn't used very often, maybe it should be put out of sight to simplify the appearance of the dialogs. This is not just a cosmetic issue. If there are too many parameters in a template, there is a danger of overlooking an important one because you can't see the forest for the trees. All we really need to see are the items that we will most likely modify with each operation such as Engage/Retract, Feeds, marker UDE's, display options and so on.

A couple of new dialog customization options introduced with NX3 might help to make dialogs a little more to the point. One is "More/Less" and the other is "All Other Parameters". With these new features, the user can hide many parameters but still have ready access to them when the need arises.

Figure 1 shows a customized dialog for a FACE_MILLING_AREA operation template.

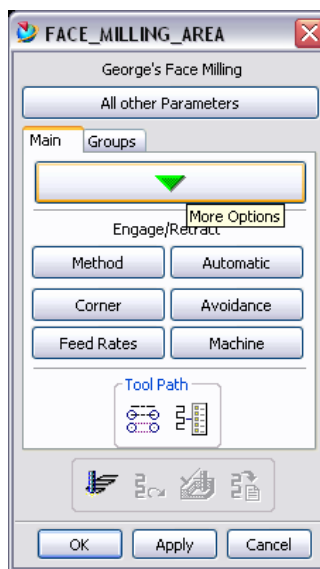


Figure 1

Figure 2 shows an "as-shipped" dialog for the same template. Note the green arrow in the Figure 1 dialog. It's called "More Options" in the pop up. If the "More Options" button is pressed, all the second most commonly used parameters pop up.

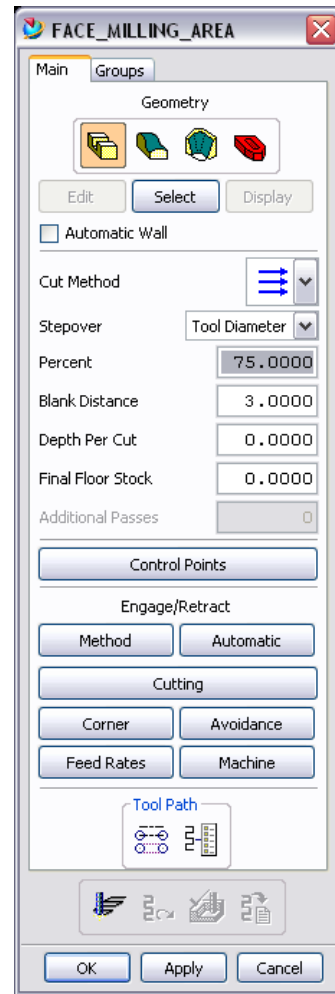


Figure 2

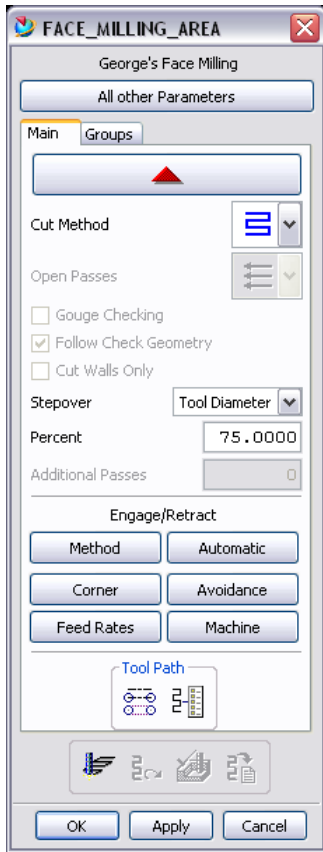


Figure 3

So NX CAM dialogs can now be simplified down to their bare bones minimum without losing ready access to the rest of the parameters. That's another reason to build more operation templates and to spend a little extra time fine-tuning them.

Customizing the NX CAM environment can be vital to maintaining efficiency and customizing dialogs is just one of the many methods available to us.

NX4 Running on 64-bit Platforms

Vladimir Winkler, UGS Canada

The long awaited 64-bit platform for NX is finally available for both the Windows XP 64-Bit environment and Linux!

It has been a long and winding road. With good intentions, UGS first announced its planned availability of NX on the 64-bit platform back in 2001. As it turned out, we (UGS) were ready for the brave new world, but the 64-bit environment was not ready for UGS: Windows XP-64bit Edition was delayed, the plans for the Intel Itanium processor were altered and Linux became the fastest growing 64-bit UNIX platform.

Now fast-forward to 2005. UGS Press Announcements hit the airwaves

Figure 3 shows these parameters after the "More Options" button is pushed. Press the button again to reduce the dialog back to **Figure 1**.

At the top of **Figure 1** a button called "All Other Parameters" can be seen. When it's pushed, every single parameter that pertains to **FACE_MILLING_AREA** operations can be accessed.

Figure 4 shows the result of pressing this button. You can see by the small scroll bar in the new dialog that there is a long list of parameters available to inspect and/or modify.

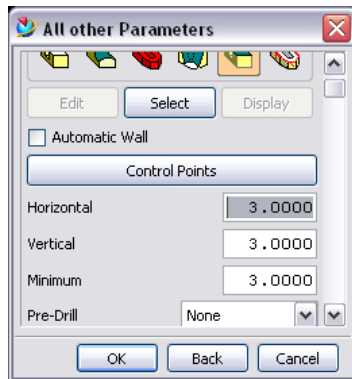


Figure 4

"UGS...announced its flagship digital product development software, NX™, will natively support Microsoft® Windows® XP Professional x64 Edition on HP Personal Workstations enabled with Intel® EM64T or AMD64 processors."

(See details at http://www.ugs.com/about_us/press/press.shtml?id=4084)

Then just recently in 2006 –

"UGS ...announced the shipment of its NX™ 4 digital product development software on the popular Linux open source operating system."

(See details at http://www.ugs.com/about_us/press/press.shtml?id=4624)

With the Windows XP x64 Edition finally released by Microsoft in late summer 2005, UGS decided to make a stable version of NX4 64-bit available in February 2006, instead of sticking to the plans and releasing an unstable product in late 2005. The Linux 64-bit version was actually available even earlier.*¹

Over the last few years Linux has matured to become a very stable, robust, flexible, and truly open Enterprise-Class Operating environment that supports both clients and servers applications. Although Windows is still the dominant force in enterprise computing, Linux has become a strong alternative platform. UGS has always promoted the concept of "platform of choice" and providing the hardware platforms needed by our customers. This is why we have now begun to openly embrace Linux.*²

UGS has a suite of applications that are designed and marketed to work together thus providing the total PLM solution required by our customers. Therefore, any UGS Linux strategy needs to include all our products and not just a few products. Because these products have a diverse set of technical requirements (server, desktop, 2D graphics, 3D graphics, SMP, 32-bit, 64-bit, etc.) it was necessary for Linux to mature before UGS could embrace this new technology. UGS believes that Linux is finally at the stage that it now can provide all the necessary requirements.

We (UGS) decided to port NX only to 64-bit Linux. The reason for this is probably obvious: why port to a platform (32-bit Linux) that will soon be obsolete. So, please don't expect to take your 32-bit PC, load Linux on it and run NX. In addition, UGS decided to port to the Novell Linux (64-bit) i.e SuSE Linux Desktop and Enterprise.

1. What decides the computer and the application performance?

Let's first dispel some misconceptions.

First, in the world of bits and bytes, 64 is not the same as 32 times two. Just because a computer chip is advertised as 64-bit doesn't necessarily mean it will run better and faster. What it does mean is that the computer bus has a larger 64-bit word to

process, the clock speed is usually slower than most 32-bit CPUs these days and memory addressing grows exponentially. You should not equate moving from 32-bits to 64-bits with expecting better performance. The migration from a 32-bit to 64-bit environment is mostly done to enable larger memory addressing. Many businesses have a 3-year equipment refresh cycle and are now looking for new gear. It's OK to buy 64-bit machines in anticipation of the future, but please know and understand what you're actually getting for your money. Secondly, the performance that really matters to most users is

“... in the world of bits and bytes, 64 is not the same as 32 times two.”

how fast their particular application software responds. A 32-bit application running on a native 64-bit computer will inevitably run in an “emulation” mode, so you will not necessarily see any performance improvement. However running a 32-bit version of NX using Windows XP x64 will enable you to work with larger models since the amount of addressable memory increases from 2 (or 3) GB to 4GB of address space. This additional 1GB is a significant increase and can benefit many customers.

The following table is a reference tool to show general memory and CPU limits supported by Windows (32-bit versus 64-bit).

General Windows Memory and CPU Limits		
General Memory Limits	32-bit	64-bit
Total Virtual Address Space	4 GB	16 TB
Virtual Address Space per 32-bit process	2GB (3 GB if system is booted with /3gb switch)	4GB if compiled with /LARGEADDRESSAWARE; 2GB otherwise
Virtual Address Space per 64-bit process	N/A	8 TB
Paged Pool	470 MB	128 GB
Non-Paged Pool	256 MB	128 GB
System Cache	1 GB	1 TB
Physical Memory and CPU Limits	32-bit	64-bit
Windows XP Professional	4 GB /1-2 CPUs	128 GB /1-2 CPUs

Running a 64-bit application on a native 64-bit computer will provide better performance than the example above. However, the pure speed (of a typical CAD application) will still not be as fast as a current 32-bit application running on a 32-bit computer. The good thing is that the memory addressability problems should be virtually eliminated. One needs to look at this holistically. There may be other (non-CAD) applications on the same computer that do not yet support the 64-bit platform. In most current environments the user will end up with a mixture of both 32-bit and 64-bit applications on their computer. They should all run fine (about 99.9% fine), but they will be running in a mixed mode: Windows XP x64 automatically detects the application type and uses the appropriate system calls to execute.

2. UGS Linux FAQ's

Q1: Which distribution (version) of Linux will UGS support?



A1: All products will support Novell SuSE Enterprise Server version 9 and the corresponding SuSE Desktop release but certain products will support other distributions based on their market requirements. For example, NX Nastran supports both Novell SuSE and Red Hat.

Q2: Will UGS Linux products ever support Red Hat?

A2: The current plan does call for support for both Novell SuSE and Red Hat, but due to resource limitations we choose Novell SuSE first. But as mentioned before, some UGS products already support Red Hat.

Q3: Why choose Novell SuSE first?

A3: Since UGS was looking for a distribution that provided various technical requirements for a number of different products, only Novell SuSE satisfied all these. Novell SuSE seems to be a bit quicker in supporting new innovations, such as 64-bit computing. In addition, several major customers with an interest in Linux expressed SuSE as their preferred Linux OS.

Q4: Will the same software run on either the Intel or AMD x64 hardware or do I need two versions of NX?

A4: One version of NX will run on either AMD or Intel based hardware. Customers can purchase either x64 technologies and get the same functionality for all UGS supported products.

Q5: Which architecture is better, AMD-64 or Intel EM64T?

A5: Although there are differences these architectures are so similar that UGS expects both to be excellent processing

platforms. Customers need to decide based on their own internal needs.

3. NX 4 Operating System Versions

The following table lists the minimum recommended operating system levels by platform for NX 4. Newer versions of specific operating systems are supported as they are released via certification. These newer certified versions are shown in brackets to the right of the minimum versions.

Minimum Recommended Operating System Levels	
O.S.	Version
HP-UX (64-bit)	11.11
Sun Solaris (64-bit)	Solaris 9 (Solaris 10)
IBM-AIX (64-bit) ⁽²⁾	5.2 (5.3)
Microsoft Windows (32-bit)	Microsoft Windows XP (SP2) ⁽¹⁾
New for NX 4	
Novell Linux (64-bit) ⁽²⁾	SuSE Linux Enterprise Server 9 SP 2 and SuSE Linux Desktop 9 SP 2
Microsoft Windows (64-bit) ⁽²⁾	Microsoft Windows XP Professional x64

¹ Windows XP is the supported NX 4 32-bit Windows operating system. Microsoft has discontinued general support for Windows 2000 as of July 2005. Although customers may choose to continue to use Windows 2000, it is no longer tested and it is not supported by UGS. Problems reported on Windows 2000 will be addressed only if they can be duplicated on Windows XP.

² The error message "fail to load library in xxx function" means the library is not yet available in Windows 64, Linux 64 or AIX 64. On ports to new platforms, third party products sometimes are not available at first customer ship and will ship at a future maintenance release.

NX Tips

Feature: Radial menus

Hold down mouse button 3 (MB3) with cursor in graphics area.

Function: When you open a pop-up menu with MB3, you have access to radial pop-up menus as well. When you press MB3, depending on your selection, a radial pop-up displays up to eight icons that surround the cursor location. These icons are available for frequently used functions and options, and you can choose them just as you would from a menu.

- 1.The radial pop-up operates in the context of pre-selected or highlighted objects
- 2.No need to wait for the radial images to appear

Benefit: Increase productivity by reducing mouse travel and clicks. Accelerates learning process for new users.



Contact Us

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We look forward to hearing from you!

Your CCRUG executive ♦

