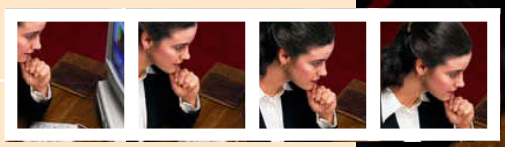
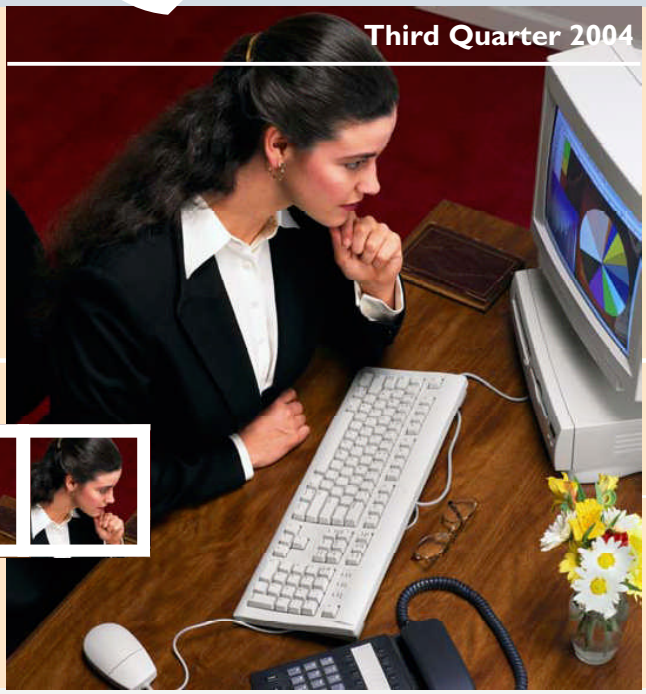
GTAC Quarterly

Third Quarter 2004





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Message From Editor

The GTAC Quarterly newsletter is a collection of technical articles written by your Support team at the Global Technical Access Center (GTAC). Articles span our product line and are grouped into product areas for your convenience.

This issue includes valuable information on the new plotting package included with the NX 3 release. We recommend all who are installing and running NX 3 to read these articles carefully. They are intended to help you prepare for the changes to plotting setup and operation and ease the transition to this improved feature.

Please direct any comments on the newsletter to **gtac_quarterly@ugs.com.** We are always interested in hearing your comments and suggestions. Also remember, you must subscribe to the ***Newsletter Electronic Mailing List*** to receive a notification of when the newsletter is available.

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Enjoy the issue!

Blended Training Solutions — One Size Does Not Fit All

UGS Education Services continues to offer many training choices:

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- Finding the Unigraphics NX 2, I-deas, Imageware, Teamcenter and E-factory training solutions you need is as simple as following these steps:

1. Visit **http://training.ugs.com**
2. Choose class finder
3. Choose the options that match your training requirements and select GO
4. Review the classes categorized by delivery format
5. Select Register to sign up for a course

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>> NX

New Printing and Plotting in NX 3

NX 3 will provide users with a state-of-the-art printing and plotting system as part of the Gateway module. This is another step in our ongoing initiative to bring stronger production functionality to NX users. This new plotting system will provide users with flexibility and control through a comprehensive user interface, and provide many new capabilities. Nearly 300 Enhancement Requests (ER) have been resolved and fulfilled as a result. These include numerous requests for color and width controls, and more flexibility for the end user.

A new NX plotting system was needed because the legacy plotting functionality was outdated and inadequate. The legacy system was designed more than a decade ago, and it had not been updated to support newer printers or contemporary printing concepts. It also lacked an easy-to-use graphical user interface. NX users had requested many enhancements that could not be effectively implemented in the context of the legacy plotting system. It was essential to replace the legacy system with a new plotting system that provides modern printing features commonly available with other applications. The powerful features of the new system can significantly enhance the effectiveness and productivity of NX users.

The new plotting system replaces the legacy plotting system. Legacy NX plotting functionality is not supported by NX 3 or later NX releases. You cannot use legacy plot queues with these releases. If you run NX 2 or an earlier NX release concurrently with NX 3 or a later NX release, then two different plotting systems are in use. The earlier release uses the legacy plotting system, and the later release uses the new plotting system. The two plotting systems are independent and do not interact or interfere with one another.

The new plotting system is based on powerful commercial printing software developed by SDI (www.sdicgm.com), a UGS strategic partner. Basing the new system on commercial printing software provides NX users with capable, flexible, and up-to-date printing functionality. SDI is in the business of plotting, and also has extensive expertise in CGM (Computer Graphics Metafile), a graphics file format that NX produces for the new plotting system. Major NX customers already use SDI products, and SDI provides the printing/plotting capability in I-deas. The UGS partnership with SDI means that NX customers can install other useful SDI products to obtain optional enhancements to printing and CGM functionality.

The new plotting system has a large number of enhancements and benefits for users. Among the key features are:

- The new system uses standard plot file formats (CGM and TIFF) that are supported by a wide variety of commercial applications, so the new plotting system can be readily extended and integrated with other customer processes.
- All aspects of the new plotting system are controlled by intuitive, easy to use graphical user interfaces.
- It is much easier to control printer settings than in the legacy system. Many settings can be easily set by an NX user in the NX Print dialog instead of by a system administrator in a plot queue definition.
- Many more printers are now supported, including devices that do not support PostScript or HP-GL/2. Defining a queue for a printer device is easier than in the legacy system. It can be as simple as entering a name for the queue, and then choosing the operating system print queue and the printer model. Easy printer definition means greater productivity for both end users and system administrators.
- The new system permits system administrators and ordinary users to define "profiles" to encapsulate commonly used printer option settings (scale, portrait/landscape, color/monochrome) for fast and easy preparation of plot jobs.
- CGM files produced for plotting support a generous variety of color and width settings. It is much easier to set color and width attributes than in the legacy system. It is now possible to plot by both color and width.
- The NX Print dialog displays a preview of the plot layout on paper, and also provides a CGM Viewer function that displays the contents of the CGM file to be printed.
- The new system permits the user to save print-ready CGM files on disk that can be directed to any plotter at a later time without starting NX or loading a part.
- The new system permits the user to convert wireframe CGM output to raster images (e.g. JPEG) of arbitrary resolution.
- The new system provides an easy-to-use visual interface for arranging plots on a layout.

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- The new system provides effective user interfaces for operating on multiple drawing sheets at once, both for plotting and CGM export.
- The new system provides powerful NX Open API access, and also includes updated GRIP commands. The ***nxplot*** command-line program provides some programming options even to customers without GRIP and NX Open API licenses.
- The new plotting system supports plotting of raster image annotations on drawing sheets.

The new NX 3 plotting system makes it easy for a large number of users to share the same printer definitions. Printer definitions are stored in a directory called a printer group directory, and any NX user who can access the directory (i.e., who has "read permissions" for the directory) can use the printers in the printer group. These printer group directories contain file specifications, so if you have both UNIX and Windows workstations, you will need one printer group directory for your UNIX systems, and a separate printer group directory for your Windows systems.

If a single printer group directory is all that is needed, then it can be easily specified by an environment variable, **UGII_SDI_SERVER_CFG_DIR**. If multiple printer groups are desired, they can be used by pointing a customer default to the location of a text file that describes the supported plotter groups. The printer groups will then display in the plotting user interface as a drop down menu of choices for the user. Multiple printer groups are useful when you have a large variety of printers configured, and you want to place them into logical groups to make it easier for users to find them.

The new plotting system has a completely new NX Open API interface defined in **uf_plot.h**. The interface is extensive, and includes access to all aspects of the new plotting system. GRIP has also been updated, and the GRIP plotting commands have been redesigned to allow GRIP programs to interface with the new plotting system. This does mean that customized programs that have been written to automate plotting will need to be re-written. Although older GRIP plotting programs will run, you will need to define a text file that maps from older queue names to the newer printer group structure. These older GRIP programs will not have access to much of the new printer functionality. Once you recompile a GRIP plotting program, you will need to update to the NX 3 GRIP command syntax for the plotting commands. Older NX Open API plotting programs will not run at all. These plotting API programs will have to be rewritten with the new interface. There are additional NX Open API functions for generating CGM files. These new routines are defined in **uf_cgm.h** and are in addition to the older CGM functions that will continue to work in the new system.

The new plotting system is a powerful tool for producing hard copy output, but it will require some planning to integrate it into a production system. The system manager will have to understand the new plotting system, and how printer queues are defined. You will want to consider which printer queues will need to be set up for users, and whether these will be set up in one printer group (which requires configuring an environment variable), or multiple printer groups (which requires setting a customer default, and creating a printer group definition file). How users will share these printer groups needs to be considered, typically printer groups will be on a shared file server that all users have access to. If you have to support both Windows and UNIX users, you will need to define the printer groups twice, once for each platform. In addition any automated programs that deal with plotting will need to be rewritten before you can deploy NX 3. NX Open API programs that automate plotting will definitely need to be rewritten, and GRIP programs should be rewritten to gain access to the new plotting features. Finally you will want the users to try the new plotting functionality, so that they can see how it will meet their needs, and to become familiar with all the new functionality.

This new printing and plotting system will provide NX users with new functionality and greater flexibility through a modern user interface. As stated previously, this new capability is part of our ongoing initiative to bring stronger production functionality to NX users. The new printing/plotting system User Interface (UI) is rich with options and visual feedback.

Keith Hafen and Doug Korneffel

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>> NX

NX 3 Plottting - Frequently Asked Questions

General

How can I get the latest information on the NX plotting system?

The latest information on the NX plotting system is available at the UGS GTAC Support page (http://support.ugs.com). Search the UGSolutions Database for the exact phrase "*NX Plotting System Information*."

Why does NX 3 provide a new plotting system?

A new NX plotting system was needed because legacy plotting functionality was outdated and inadequate. The legacy system was designed more than a decade ago, and it had not been updated to support newer printers or contemporary printing concepts or an easy-to-use graphical user interface. NX users had requested many enhancements that could not be effectively implemented in the context of the legacy plotting system.

It was essential to replace the legacy system with a new plotting system that provides modern printing features commonly available with other applications. The powerful features of the new system can significantly enhance the effectiveness and productivity of NX users.

Why does the new plotting system use commercial printing software provided by SDI?

The new plotting system is based on powerful commercial printing software developed by SDI (www.sdicgm.com), a UGS strategic partner. Basing the new system on commercial printing software provides NX users with capable, flexible, and up-to-date printing functionality.

SDI is in the business of and plotting, and also has extensive expertise in CGM (Computer Graphics Metafile), a graphics file format that NX produces for the new plotting system. Major NX customers already use SDI products, and SDI provides the printing/plotting capability in I-DEAS.

The UGS partnership with SDI means that NX customers can install other useful SDI products to obtain optional enhancements to printing and CGM functionality.

Can I still use the legacy plotting system?

No. The new plotting system replaces the legacy plotting system. Legacy NX plotting functionality is not supported by NX 3 or later NX releases. You cannot use legacy plot queues with these releases.

If you run NX 2 or an earlier NX release concurrently with NX 3 or a later NX release, then two different plotting systems are in use. The earlier release uses the legacy plotting system, and the later release uses the new plotting system. The two plotting systems are independent and do not interact with one another.

Banner

How has banner functionality changed in the new plotting system?

In the new plotting system, plot banner functionality (appends an informative text block to plots) is enhanced to support additional content elements, including elements to display the full path of the part, the Teamcenter revision of the part, whether the drawing sheet is out of date, etc.

Plot banner functionality is also enhanced to permit the location of the banner text block to be defined relative to the bounds of the plot, so it is no longer necessary to specify the location in absolute plot coordinates. For example, the banner location might be specified relative to the lower-right corner of the plot.

In addition, for printers that use RTL printer models, you can set header and trailer options to display an alternate form of banner. If enabled, the header is printed on the leading edge of the output, and the trailer is printed on the trailing edge of the output. The content of the header and trailer are the same: date and time, user account name, CGM file name, SDI job number (a number referenced on the Queue page of the NX Print dialog), and an optional text message that you are prompted to enter when you click Print.

- You can enable headers or trailers for individual plot jobs on an RTL printer. Click ***Advanced Settings*** on the ***Print Setup tab*** of the ***NX Print dialog***. When the Advanced Settings dialog is displayed turn on Headers or Trailers as desired.
- You can enable headers or trailers by default for all plot jobs printed on an RTL printer. Select the printer on the ***Printers tab*** of the ***Printer Administrator dialog***, and click ***System Profile***. When the System Profile dialog is displayed, click ***Advanced Settings*** on the ***Printer Setup tab***. When the Advanced Settings dialog is displayed turn on Headers or Trailers as desired.

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Colors and Widths

How are colors and widths used in the new plotting system?

The new plotting system supports easy specification of colors for plotting, including use of as-displayed (WYSIWYG) colors, part colors, custom color palettes, and black-on-white. All 216 object colors can be used. Custom color palettes are easy to create and edit, and can be readily stored and shared via ***color definition files (CDFs).***

The new plotting system also supports easy specification of widths for plotting, including use of standard widths, an arbitrary single width, custom widths assigned according to object width index, and custom widths assigned according to object color index. Custom widths are easy to create and edit, and can be readily stored and shared via ***width definition files (WDFs).***

Color customizations are independent of width customizations, and can be used in mix and match fashion. You can save custom color and width settings with an individual drawing sheet, so the same colors and widths can be used each time you plot the sheet.

Features of the NX Plotting System

What are key enhancements in the new plotting system introduced in NX 3?

- The new system uses standard plot file formats (CGM and TIFF) that are supported by a wide variety of commercial applications, so the new plotting system can be readily extended and integrated with other customer processes.
- All aspects of the new plotting system are controlled by intuitive, easy to use graphical user interfaces.
- It is much easier to control printer settings than in the legacy system. Many settings can be easily set by an NX user in the NX Print dialog instead of by a system administrator in a plot queue definition.
- It is much easier to define printer queues. An ordinary user can readily define printers and profiles for the plotter devices and plotting tasks that are most important to him. Easy printer definition means greater productivity for both end users and system administrators.
- The new system permits system administrators and ordinary users to define "*profiles*" to encapsulate commonly used printer option settings (scale, portrait/landscape, color/monochrome) for fast and easy preparation of plot jobs.
- CGM files produced for plotting support a generous variety of color and width settings. It is much easier to set color and width attributes than in the legacy system.
- The NX Print dialog displays a preview of the plot layout on paper, and also provides a CGM Viewer function that displays the contents of the CGM file to be printed. The CGM Viewer function can also be used to select a rectangular subregion of the plot for printing.
- The new system permits the user to save print-ready CGM files on disk that can be directed to any plotter at a later time without starting NX or loading a part.
- The new system permits the user to convert wireframe CGM output to raster images (e.g., JPEG) of arbitrary resolution.
- The new system provides an easy-to-use visual interface for arranging plots on a layout.
- The new system provides effective user interfaces for operating on multiple drawing sheets at once, both for plotting and CGM export.
- The new system provides powerful programmability, and the ***nxplot command-line program*** provides some programming options even to customers without GRIP and UFUNC licenses.
- The new plotting system supports plotting of raster image annotations on drawing sheets.

How can I combine multiple plots in one plot file?

The new plotting system provides ***Plot Layout functionality*** for arranging multiple plots in one plot file for printing or for saving to disk in CGM format. This functionality permits you to layout multiple plots for efficient printing on roll-feed paper, or to overlay plot jobs so they are printed on top of one another, or to collect plots in a single file for publishing.

Plot Layout functionality includes an intuitive, easy to use, graphical user interface that permits you to see the current arrangement of plots and to manipulate each new plot as it is added to the layout. Optionally, the functionality can compute a default, initial location for each new plot in a manner designed to conserve roll-feed media.

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You can add any number of plots to the plot layout over the course of the session, but you can still plot individual jobs at any time without disturbing the contents of the layout.

To add a plot to the plot layout, click ***Add to Plot Layout*** in the ***File-=> Plot dialog***.

NX Open

How can I convert legacy NX Open API programs for the new plotting system?

An extensive collection of NX Open API functions provides comprehensive access to NX plotting functionality introduced in NX 3.

For an example of how to plot all drawing sheets in the current part, refer to sample program **ufd_plot_drawings.c** in the **NX Open kit**.

For an example of how to create HP-GL/2 output files for all drawing sheets in the current part, perhaps for purposes of comparing plots in HP-GL/2 format, refer to sample program **ufd_plot_drawings_hpgl.c** and script **move_hpgl.pl** in the **NX Open kit**.

- Command-line program ***nxplot*** provides programmatic access to some plotting functionality without using an NX Open license. You can automate common plotting tasks by implementing scripts or programs that invoke ***nxplot.***

How can I convert legacy NX Open GRIP programs for the new plotting system?

Beginning with NX 3, GRIP plotting statements are redefined to utilize the many features of the new plotting system. Plotting statements **PLOT, PLTSAV, PLTSUB, and PLTDEL** have new parameters and new behaviors. Also, statement **PLTUPD** and plotting-related parameters of statement **DRAWV** are now obsolete and have no effect.

If you have legacy GRIP plotting programs written for releases before NX 3, you can modify them to use the redefined statements with their new parameters. If you do not modify or recompile your legacy GRIP plotting programs, you can continue to use them with the new plotting system, provided you create a mapping file that maps legacy statement parameters to values that are meaningful in the new system.

- Only limited features of the new plotting system are available with this mapping technique. **To fully exploit the capabilities of the new system, you must modify GRIP plotting programs to use the updated statement parameters**.

You can find instructions for using the mapping technique in a sample mapping file provided with NX. The sample file is **${UGII_BASE_DIR}/nxplot/sample_plotter_mapping.txt**.

Plot Layout

How can I save plot output to disk in the new system?

The NX plotting system supports various strategies for saving plot files on disk. Choosing an approach depends on how you intend to use the files.

- You can save plot files on disk in printer-independent CGM format by selecting ***Save CGM File*** in the ***File-=> Plot*** dialog. You can later use the ***NX Print dialog*** to print the saved CGM files on any printer, or you can use various applications to import or otherwise process the files. For example, Microsoft Office applications support importing of CGM files. Note that you can view any CGM file with the CGM Viewer function of the NX Print dialog, but you can also install a CGM viewer application or browser plug-in so that you can easily view the CGM files you save on disk.
- You also can save plot files on disk in the printer output format (e.g. RTL, PostScript, HP-GL/2).

If you save a plot output file on disk only occasionally, then use the ***Output Options setting*** in the ***NX Print dialog***.

1. In the ***File => Plot*** dialog, click ***Plot*** to display the ***NX Print dialog***.
2. Choose a printer and then set ***Output Options*** to ***Print to File*** or ***Print to File and Printer***.
3. When you click ***Print***, the system prompts you to specify a path for the plot output file.

- If you routinely save plot output files as part of some defined process, then you might prefer to invoke the process automatically whenever a plot output file is produced. To accomplish this, you can use the ***Printer Administrator dialog*** to set the ***Render File*** then ***Execute Program option*** for your printer.

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1. Select ***File => Utilities-=> Printer Administration***
2. Specify the printer group for the printer of interest.
3. When you click **OK**, the Printer Administrator dialog displays. In the Printer Administrator dialog, ***select your printer***
4. Click ***Setup.***
5. Turn on the ***Render File*** then ***Execute Program option***.
6. Enter the full path of a command (including switches) to invoke your process. After SDI software generates each plot output file, it automatically invokes your command, specifying the plot file name as the last parameter. In a simple case, your command might simply copy the plot output file to a particular directory.

   - You can generally retain plot output files so you can later access them on disk. In the ***Printer Administrator dialog***, click the ***BPS Settings tab***, and turn on the ***Save Input/ Output Files option***. The setting affects all plot jobs printed on all printers in the printer group.

You can find retained files under the **"*jobs*" directory**. (Search for **UGII_SDI_BPS_JOBS_DIR** in the **ugii_env file**.) By default, the jobs directory is **${UGII_TMP_DIR}/bps**, and you can find all files for a particular plot job in one of the subdirectories of **${UGII_TMP_DIR}/bps/*<user_name>*/*<node_name>***, where ***<user_name>*** represents the **user account name**, and ***<node_name>*** represents the **system node name**.

Retained input/output files can consume large amounts of disk space, so delete the files promptly when they are no longer needed.

Plot Queues

Can all users at my site share the same printer definitions?

Yes. Printer definitions are stored in a directory called a printer group directory, and any NX user who can access the directory (i.e., who has "read permissions" for the directory) can use the printers in the printer group.

- Printer definitions are platform-specific, so if both Windows and UNIX workstations are used at the site, you must create a printer group with printer definitions for Windows and a printer group with printer definitions for UNIX.

Also, any printer devices or files specified by printer definitions must be visible to the operating system of each user workstation. When defining a printer for Windows, for example, the printer must have been added on each user workstation (via Add Printer), or you can use the LPR/Queue option to identify the printer in ***Uniform Naming Convention (UNC) format***: ***\\server_name\share_name*** to permit access by all user nodes. On the ***Printers tab*** of the ***Printer Administration dialog***, ***select the printer of interest, and click Setup***. When the Printer Setup dialog is displayed, ***set the Printer option to LPR/Queue and enter the UNC name of the printer.***

If all users at the site share only a single printer group per UNIX or Windows platform, then the system administrator sets environment variable **UGII_SDI_SERVER_CFG_DIR** in the **ugii_env file** to identify the printer group directory.

Users also can share multiple printer groups per platform. In this case, the system administrator enumerates the printer groups in a printer group list file, and he sets a customer default to identify this file.

Printer Queues and Printer Groups

Is there a way to automatically convert legacy plot queues for use with the new plotting system?

No. You must manually define new printers for the new plotting system, but defining a printer in the new system is generally easier than defining a queue in the legacy system. The process of defining a printer is similar to using the Add Printer function on Windows systems. It can be as simple as entering a name for the printer, and then using the mouse to choose the operating system print queue from one list and the printer model from another list.

You might define fewer printers for the new plotting system because the new system permits you to directly control more options than did the legacy system. For example, some options controlled by plot queue switches in the legacy system (switches /AS (auto-scale), /D (DPI), /SP (set palette), etc.) can be conveniently controlled by you in the new system. Therefore, you might prefer not to define extra printers to handle the various option choices.

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- Printer definitions are platform-specific, so if you use both Windows and UNIX workstations, you will create a printer group with printer definitions for Windows and a printer group with printer definitions for UNIX.

Use ***File => Utilities-=> Printer Administration*** to define printers.

In the new plotting system, how can I obtain the behaviors produced by legacy plot queue switches?

In the legacy plotting system, you set plotting options by specifying switches (codes) in plot queue definitions. The new plotting system supports comparable features, but you enable the features in other ways. For some common legacy plot queue switches, the following table indicates how to produce comparable results in the new plotting system.

/2 (HP-GL/2 switch)	When using the Printer Administrator dialog to create the printer, choose an HP-GL/2 printer model. (See also "How can I produce plot output in HP-GL/2 format?")
/AR (Auto-run switch)	You need not perform any steps to obtain this behavior. The new plotting system automatically processes all ready plot jobs.
/AS (Auto-scaling switch)	In the new plotting system, you can obtain auto-scaling behavior by enabling the ***Best Fit to Page option*** as follows: • You can enable Best Fit to Page for an individual plot job, or you can save the setting in a user profile. Set the Scaling option to Best Fit to Page on the Print Layout tab of the NX Print dialog. Click Save Profile As in the NX Print dialog to save the setting in a user profile. • You can enable Best Fit to Page as the default scaling setting for a printer. Select the printer on the Printers tab of the Printer Administrator dialog, and click System Profile. When the System Profile dialog is displayed, click the Print Layout tab, and turn on Best Fit to Page.
/DJ (DesignJet switch) **/LJ (LaserJet switch)**	When using the Printer Administrator dialog to create the printer, choose the appropriate DesignJet or LaserJet model from the list of printer models.
/D (DPI or dots-per-inch)	In the new plotting system, you can set the DPI or resolution as follows: • You can choose the **resolution for an individual plot job**, or you can save the resolution in a user profile. Set the Resolution option to the desired value on the Print Setup tab of the NX Print dialog. Click Save Profile As in the NX Print dialog to save the setting in a user profile. • You can **set the default resolution for a printer**. Select the printer on the Printers tab of the Printer Administrator dialog, and click System Profile. When the System Profile dialog is displayed, choose the default resolution on the Print Setup tab. • You can set the **resolutions supported by a custom printer model**. Select a custom printer model on the Models tab of the Printer Administrator dialog, and click Properties. When the Properties - Printer Model dialog is displayed, use the Resolutions option to customize resolutions supported by the printer model. Note that you cannot modify the properties of a predefined printer model. First use Save As to save a custom copy of a predefined printer model, and then modify the properties of the custom copy.

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/MO (Monochrome switch)	In the new plotting system, you can enable monochrome output in the following ways: • You can **enable monochrome output for individual plot jobs**. In the ***File-=> Plot*** dialog, set the Colors option to Black on White, or instead, set the Colors option to Monochrome on the Print Setup tab of the NX Print dialog. Click Save Profile As in the NX Print dialog to save the NX Print Monochrome setting in a user profile. • You can **choose monochrome as the default color setting for a printer.** Select the printer on the Printers tab of the Printer Administrator dialog, and click System Profile. When the System Profile dialog is displayed, set the Colors option to Monochrome on the Print Setup tab. • You can **specify whether a printer model supports color or monochrome output**. Select a custom printer model on the Models tab of the Printer Administrator dialog, and click Properties. When the Properties - Printer Model dialog is displayed, set the Colors option to Color, Monochrome, or Both. Note that you cannot modify the properties of a predefined printer model. First use Save As to save a custom copy of a predefined printer model, and then modify the properties of the custom copy.
/SP (Set palette switch)	In the new plotting system, you can set the **Colors and Widths options** in the ***File => Plot*** dialog to reproduce the behavior of any of the many possible settings of the legacy **/SP** switch. You can set the Colors option to any of the following values: • As Displayed: The colors used to display the geometry on screen are also used in printing. • Part Color: The colors of the part color table are used in printing. • Custom Palette: An alternate set of 216 colors is used for printed output. • Legacy Colors: Geometry is printed using 15 fixed colors supported by NX releases before NX 3, and each of the 216 colors in the part color table is mapped to the most similar of the 15 fixed colors. • Black on White: Geometry is printed in black. You can set the Widths option to any of the following values. • Standard Widths: Three fixed line widths are used in printed output. • Single Width: A single line width is used. You can choose one of the standard widths, one of the custom 3 widths, or a user-defined width. • Custom 3 Widths: You specify three custom lines widths that are used in printed output. • Custom Palette: You specify custom line widths per color (for 216 colors). • /11 /14 /17 /A3 /A4 (Tray selection switches)

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In the new plotting system, you can select a paper tray by using an initialization file containing tray selection commands that are inserted at the beginning of each output file dispatched to the printer.

When you define a printer, you can specify an initialization file to be used for all jobs printed on this printer.

1. On the Printers tab of the Printer Administration dialog, select the printer of interest.
2. Click Setup.
3. When the Printer Setup dialog displays, enter the path of an initialization file in the Initialization File entry field or click the Browse button to search for the file.

When you define a paper size for a custom printer model, you can specify an initialization file to be used for all jobs printed on paper of this size by all printers that share the custom printer model. Use this second approach if you wish to define a printer that supports printing to multiple paper trays.

1. On the Models tab of the Printer Administration dialog, select the custom model of interest.
2. Click Properties.
3. When the Properties - Printer Model Dialog displays, select the paper size of interest.
4. Click Edit Paper Size.
5. When the Paper Size Properties dialog displays, enter the path of an initialization file in the Initialization File entry field, or click the Browse button to search for the file.

What are some reasons for using multiple printer groups?

You can create multiple printer groups as a strategy for organizing printers, so that an individual printer group might represent just the printers at a particular location or just the printers belonging to a particular department or work group. This provides the following benefits:

1. When you invoke the ***File-=> Plot*** dialog to prepare a plot job, it is easy to choose the appropriate printer group by its descriptive name, and the NX Print dialog lists only the printers in this printer group. This approach can make it easier for you to select the printers you use most often, because printer lists are uncluttered by printers you rarely use.
2. Use of multiple printer groups means that printer definition can be a distributed responsibility. The system administrator might create a printer group to represent printers that are shared by all users at the site. Others might create printer groups for printers used only by users in a particular workgroup at a particular location. An individual NX user might create a printer group to manage printers and printing options that he uses most often.
3. Because it is easy to define printers in the NX plotting system, each individual NX user can readily define printers for his particular printing needs in his own printer group. (Defining a printer is similar to using Add Printer on Windows.)

To use multiple printer groups:

1. List the printer groups of interest in a printergroup list file.
2. Set a customer default to identify the file. NX reads the printer group list file to display an option menu of printer groups in the ***File-=> Plot*** dialog and other plotting dialogs.
3. Specify a special entry in a printer group list file to automatically include the contents of some other printer group list file, so an individual user can create a file that includes the contents of the printer group list file defined by a system administrator for the site or workgroup.

A template version of the printer group list file is provided with NX. The template file contains instructions and samples to explain file syntax. When creating a printer group list file, you can copy this template file and add your printer group information to the copied file. The template file is **${UGII_BASE_DIR}/nxplot/printer_group_list_file.txt**.

How can I produce plot output in HP-GL/2 format?

To produce plot output in HP-GL/2 format, plot the job on a printer defined to use an HP-GL/2 printer model.

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1. First you must define a printer that uses an HP-GL/2 printer model. By default, the SDI plotting software integrated with NX uses RTL (HP Raster Transfer Language, a subset of HP PCL) for many printer models. To produce HP-GL/2 output, you can choose an existing printer model that uses HP-GL/2, or you can create a new printer model that uses HP-GL/2.

   In either case, ***use the Printer Administrator dialog*** to define printers and printer models. Select ***File-=> Utilities-=> Printer Administration***, and specify the printer group for which you wish to define printers and models. When you click OK, the Printer Administrator dialog is displayed.

   To use an existing printer model, add a new printer and choose printer model ***GEN:Generic HPGL/2***.

   If you have an actual printer device in mind (e.g., HP DesignJet), then you can create a HP-GL/2 model for this printer by copying an existing model. In the Printer Administrator dialog, click the ***Models tab*** and select the model of interest. Click ***Save As***, and specify a unique name for your new model, possibly including some reference to HP-GL/2. Then click ***Properties***, **set the Class to *HPGL/2***, and click **OK**. Then return to the ***Printers tab*** and **add a new printer using your new model**.
2. After you add the new printer on the Printers tab, click ***System Profile*** and **specify default options for the new printer**.
3. Click ***Cancel or Close*** to dismiss the Printer Administrator program. You will be able use your new printer the next time you invoke ***File-=> Plot***.

If you wish to save HP-GL/2 plot output files on disk, see question "How can I save plot files on disk?"

Maggie Bourguet and Keith Hafen

Enabling FLEXlm with Windows XP Service Pack 2

Windows XP Service Pack 2, by default, adds a firewall. If you have this firewall enabled, you will need to configure your server to allow incoming requests to communicate with FLEXlm.
To enable communication with FLEXlm perform the following steps:

- ***Start => All Programs => Accessories => Security Center.*** This will open the ***Windows Security Center*** window.
- Select ***Windows Firewall***.
- In the ***Windows Firewall*** window, select the ***Exceptions*** button.
- Select the ***Add Program*** button.
- Select ***Browse…*** from the ***Add Program*** window.
- Locate the ***lmgrd.exe*** file which should be in your ***UGNXFLEXlm*** **directory**.
- Select ***Open*** to add it to your list of exceptions.

Repeat this process to add the ***uglmd.exe*** file.

Jamie Goggin

Export a Specific, User-defined View to IGES

Suppose you have a user-defined view that depicts the model in its position where it fits on a vehicle. How do you export the 3D model only in that specific view?

From the IGES Export inside a Unigraphics' sessions (GUI), go to ***Modify Settings => Choose Views***, turn **off** the ***All User Defined switch*** and choose the view to export.

Using the external translator interface (**xlatorui**) perform the normal file selection steps. ***Go to Edit => Settings.*** On the ***General*** page, find ***Views to Export***, turn **off *Standard Views*** and in the ***User Views - all or Just Names Entered,*** type the name of the desired view. (Avoid misspellings that will cause no data to export.)

Keith Powell

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Allow User Input in Post Processing Using a TK

The following describes the process to create a TK window for user input. The variable created in the user input can then be used by the post processor. Begin by copying the following into a text file named ***your_tk_dialog.tcl***:

```
set frm [frame .f -relief flat]
pack $frm -side top -fill x -padx 3 -pady 3
label  $frm.lbl -text "Parameter" -justify left
entry  $frm.ent -width 25 -relief sunken -textvar ent_var
       $frm.ent delete 0 end
grid   $frm.lbl $frm.ent - - - -sticky ew -padx 3 -pady 3
set butt [frame .b -relief sunken -bd 1]
pack $butt -side bottom -fill x
button $butt.ok -text "OK"     -width 10 -command "OkButtonCallBack $frm"
button $butt.ca -text "Cancel" -width 10 -command "destroy ."
grid $butt.ok $butt.ca -sticky ew -padx 3 -pady 3
proc OkButtonCallBack { frm args } {
  puts [$frm.ent get]
  destroy .
}
```


Next, in the Post Builder post processor, add the following to the ***Program Start*** in a custom command. This custom command will reference the text file created in the preceding step. Then copy ***ugwish.exe*** from the ***\mach\auxiliary*** directory to the directory where the file ***your_tk_dialog.tcl*** is located.

```
set var [exec c:\\yourdir\\ugwish.exec c:\\yourdir\\your_tk_dialog.tcl]
MOM_output_literal $var
```

When the user post processes this program a dialog will appear for the input. The value of ***$var*** will be output to the post processed data.

Gale Palmer

How to Place a Parts List at an Exact Location

Suppose you want to position the lower left corner of a parts list to the upper right corner of a Title block.

1. Place the parts list on drawing sheet.
2. Place mouse cursor on upper left corner of the parts list and left click to select it.
3. With out moving the mouse, click ***MB3*** (mouse button 3) and select ***Style*** from the list.
4. From the ***Annotation Style*** dialog select the ***Sections*** tab.
5. Set ***Alignment Position*** to Lower Left and choose OK.
6. On the Selection toolbar check ***General Objects*** and set the selection filter to ***Any***.
7. Place mouse cursor on upper left corner of the parts list and left click to select it.
8. With out moving the mouse, click ***MB3*** and select ***Origin*** from list.
9. From the Origin tool select the ***Point Constructor*** icon (top row far right).
10. Click on the upper left corner of Title block.
11. OK.

Ron Zinn

Export Sketch Curves to IGES

You may have a need to export sketch geometry for use in another application. If you attempt to export these curves to IGES from your Displayed Part you will encounter an ***Object Dependency error.*** This occurs because the IGES specification does not support the sketch concept.

As a workaround, create model curves from the sketch curves for export to IGES. One method is to use ***Insert => Curve Operation*** and offset the sketch curves as either associative or non-associative geometry at a distance of zero.

Keith Powell

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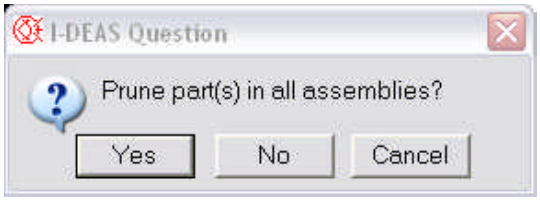
Entity Pruning From the Hierarchy Form

Entity pruning is defined as the ability to prune a part from a model file so that it is no longer in that model file. ***Instance pruning*** is defined as pruning an instance from an assembly only in the context of that assembly. The part has never been removed from the model file. Before I-deas 11 NX Series, entity pruning could not be accomplished from the Hierarchy form. Only instance pruning was available on the Hierarchy form. Beginning with I-deas 11 NX Series, an instance can be selected on the Hierarchy form in order to perform entity pruning on that part so that it is truly removed from the model file.

Prior to I-deas 11 NX Series, there were two ways to accomplish entity pruning once a part was in a model file. The first way involved bringing every assembly to the workbench, selecting every instance of the part to prune at every level of that assembly, and selecting ***Prune***. This was a very tedious, error-prone process. A second way was to select the part on the ***Manage Bins form*** and select ***Delete***. If the part was used in the definition of an assembly in that model file, the part could not really be deleted from the assembly, however, it could be pruned from the model file. I-deas would prompt the user for what was desired.

If an instance is selected on the Hierarchy form to be pruned, I-deas will now ask if it is OK to prune this part in all assemblies in the model file.



If ***Yes*** is selected, the part will be ***entity pruned*** and will be removed from the model file. If ***No*** is selected, just the selected instance will be ***pruned-local*** (instance pruning) and the part will remain in the model file. ***Pruned****-local* means that Master Assembly is going to behave like the item is pruned only in the context of the assembly on the workbench.

Note: The software will always prune the following instances locally:

- a subassembly.
- a part that was checked out of the library and has been modified.

Also note that **there is no *Unprune All***. In order to unprune all the ***entity pruned*** instances, they will each have to be selected and unpruned in each assembly in which they appear. For further information regarding pruning, see the UGSolutions article entitled *"Pruned," "Pruned-Local", and "New Pruned" defined.*

Doug Penick

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