Designer Workbench
Preliminary
Capabilities Overview

Document 7831 9746-000

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About This Overview

Purpose

This overview introduces the Unisys Designer Workbench product. It offers a guide to Designer Workbench capabilities and describes how Designer Workbench can enhance the value of your Unisys fourth generation language (4GL) systems.

This overview is not intended to provide the kind of "how to" information you need to start using Designer Workbench. For this information, please refer to other Designer Workbench documents described in "Related Product Information" at the end of this section.

Scope

This overview highlights major Designer Workbench features. It shows you how Designer Workbench integrates the advantages of today's graphical user interfaces with the power of Unisys 4GL (MAPPER, LINC, and ALLY) applications. It also outlines basic Designer Workbench configuration requirements.

Audience

The audience for this overview includes managers, information workers, application developers, and application users who need to acquaint themselves with Designer Workbench capabilities.

Prerequisites

Readers should have experience with Unisys MAPPER, LINC, or ALLY software in order to make the best use of this overview. Familiarity with Microsoft Windows is also assumed.

Organization

This overview contains the following sections:

Section 1. Designer Workbench introduces Designer Workbench and the Unisys 4GL products it supports. This section also includes planning information and system requirements.

Section 2. Making Designer Workbench Work for You describes the basic features of Designer Workbench and explains how you can use Designer Workbench to enhance your MAPPER, LINC, and ALLY systems.

Section 3. System Components highlights the major components of Designer Workbench and provides more detailed information on many of the features introduced in Section 2.

Related Product Information

You may need to refer to one or more of the following Designer Workbench manuals, depending on the tasks you will perform.

- For managers and all Designer Workbench users:

  Capabilities Overview — summarizes product capabilities and the benefits of using Designer Workbench with Unisys 4GL systems.

- For Designer Workbench software installers and site administrators:

  Installation and Administration Guide — describes how to install Designer Workbench software, configure communications facilities and the Repository, and administer the system (including users, forms, scripts, and other Repository objects).

- For application developers:

  Developer Training Guide — describes how to create forms with the Forms Designer, specify MAPPER application run logic for forms handling, and use the Forms Designer to customize the appearance of LINC Ispecs.

- For end users:

  Operations Guide — describes how to run host 4GL applications from Designer Workbench and perform basic system-related tasks.

Online Product Information

Each component of Designer Workbench also includes extensive online help information accessed through a Windows-style help menu.

Demonstration Disk and Video

Available by separate order are a Designer Workbench demonstration diskette and a videotape:

- **Introduction to Designer Workbench** (7831 9829-000) — a PC demonstration program that introduces Designer Workbench capabilities.

- **Designer Workbench: Bring 4GL Power to Your PC** (7831 9837-000) — a VHS video that presents Designer Workbench and highlights product benefits.

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Section 1
Designer Workbench

Designer Workbench is a PC-based product that enhances the use of your Unisys MAPPER, LINC, and ALLY systems. With Designer Workbench, you can

- Run host-resident 4GL applications from Windows — an industry-standard GUI (graphical user interface) environment

- Access any 4GL system running on any host computer in a supported configuration without loading separate terminal emulators or additional communications software

- Run existing 4GL applications in their native character mode without rewriting

- Use the Designer Workbench Forms Designer to create or customize forms (screen layouts) that make use of Windows GUI capabilities, including full mouse support and features such as list boxes, buttons, and drop-down menus

- Run your MAPPER applications using graphical forms (screen layouts) created especially for Designer Workbench using the Forms Designer or MAPPER windows run control statements

- Run your LINC system using Ispecs customized with the Designer Workbench Forms Designer

- Access Windows-style help for all Designer Workbench operations

- Administer Designer Workbench system functions, such as partition assignments and security controls, for multiple users

This section includes the following topics:

- Planning and integration strategies
- The Unisys 4GLs — MAPPER, LINC, and ALLY
- Hardware and software requirements

Planning and Integration Strategies

Designer Workbench is an integral part of the Unisys strategy for enterprise-wide computing. The Designer Workbench workstation is your avenue of access to the host computers that are the information hubs of a distributed business computing network. By combining the Windows graphical user interface with seamless communications, Designer Workbench gives the workstation user easy access to vital information and processing power no matter where in the organization they reside.

Designed around a client/server architecture and an object-oriented Repository, Designer Workbench makes efficient use of computing resources by sharing processing responsibilities between the workstation and the host. For example, copies of Designer Workbench forms (graphical screen layouts created with the Forms Designer) used when running host applications are stored locally in the Designer Workbench repository. With the forms already present in the workstation, the host does not have to download all this information during each session, and the communications system is not clogged with extra forms-related traffic — only commands and data need to be exchanged between the workstation and the host.

A single Designer Workbench workstation can do the work of the various terminals or terminal emulators needed to access different 4GL applications running on different computer systems. At the same time, Designer Workbench can co-exist with character-based terminals, allowing Designer Workbench workstations to be added gradually to the network while preserving your investment in existing hardware. Applications updated to support enhanced Designer Workbench capabilities continue to run as expected with older terminal types.

If desired, a single Designer Workbench workstation can be configured for multiple users, each with individual user name, password, and access privileges.

The Unisys 4GLs

Designer Workbench serves as a common platform for using MAPPER,
LINC, and ALLY systems from a single PC workstation. Summaries of the
Unisys 4GL products are presented in the following paragraphs. You can
find more information about the specific benefits Designer Workbench
brings to each of these products in Section 2 of this overview.

The Unisys 4GLs — MAPPER, LINC, and ALLY — are software products
that help you produce powerful and timely solutions to business computing
needs without relying on traditional application coding practices. The 4GLs
dramatically reduce the time and cost needed to develop and maintain
useful business information systems. They streamline the work of
professional programming staff while extending more of the power and
creative control over information systems to end users — the people who
best understand their own needs. With the Unisys 4GLs, your information
systems can keep pace with your rapidly changing business demands.

MAPPER Systems

With its intuitive structure and English-like commands, MAPPER software
puts extensive processing and reporting capabilities in the hands of ordinary
users. End users can organize and create their own database, manipulate
and analyze data, and produce reports without relying on programming
specialists. MAPPER software also provides the tools that allow
professional programmers to create complex and powerful applications with
a minimum of time and effort.

Integrated MAPPER software features supply the foundation for a total
business environment:

- Word processing
- Networking
- Electronic mail
- Color business graphics
- Access to other industry standard databases

- Automated application development tools

LINC Systems

LINC software is a total system environment for developing and operating information systems that model actual business activities. With LINC software, end users work together with computer professionals to specify their unique system requirements. This specification process combines the separate steps of planning, analysis, design, coding, and prototyping required by most other software development tools.

Using the results of the specification process, LINC software automatically generates the working system, including

- Application logic
- Database management
- Network management
- Message control system
- Communications to other types of systems

ALLY Systems

ALLY is a software environment that allows users to build and run full-scale, portable, applications using virtually no programming. An ALLY dialog guides users through the application definition process with easy-to-use menus, fill-in-the-blank forms, and online help messages.

The ALLY application execution system works in conjunction with the host computer's own operating system and database rather than building its own file management system. As a result, applications and their data can be moved easily to different computers, different operating systems, or different database and file management systems. A single ALLY application can even use data that is stored in different systems.

Workstation Requirements

Designer Workbench requires an 80286/80386/80486 PC workstation properly configured for Microsoft Windows. The minimum workstation requirements are

- MS-DOS 3.3 or higher

- MS-Windows 3.0

- 2 MB RAM (4 MB recommended)

- Hard disk with at least 10 MB free space

- 1.2 MB 5.25 inch or 1.4 MB 3.5 inch diskette drive

- EGA or VGA color monitor

- Mouse

- Optional communications board for host connections (see the following table for configuration dependencies)

Type of Connection	Additional Hardware Required
TTY	None*
Poll/Select (MT)	None*
UNISCOPE (UTS)	STEP board
TCP/IP	Ethernet board

*Uses existing COM1 or COM2 port.

Section 2
Making Designer Workbench Work for You

Section 2 describes how Designer Workbench works with Unisys 4GL systems to make applications easier to develop and use.

This section includes the following topics:

- Simplified access to applications
- Improved usability
- Help
- Designer Workbench and MAPPER systems
- Designer Workbench and LINC systems
- Designer Workbench and ALLY systems

Simplified Access

Whether you have a single 4GL on one host computer or multiple 4GL systems on multiple host computers, Designer Workbench can be configured to provide transparent access to the applications you need to run. All necessary communications software is built in.

The figure below shows some of the possible connections between different computer sites and Designer Workbench.
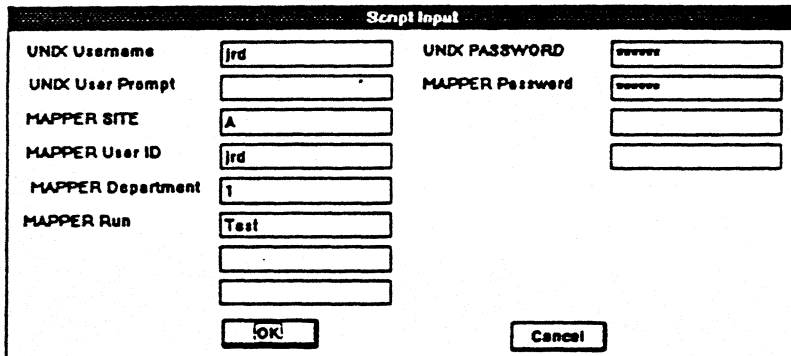
[Need good network diagram here.]

All connections between Designer Workbench and the different host computers you may use are defined with scripts. When you want to start up a session with a given host, you need only select the appropriate script.

You can also customize your scripts with personal information, such as the user name and password you use to sign on to the host. When you use scripts customized in this way, you can switch applications and hosts as often as you like without stopping to sign on to each system individually — or trying to remember different passwords on different systems. Host security is not compromised because you must sign on to Designer

Workbench initially before beginning your 4GL host sessions. If more than one person will be using the same Designer Workbench station, script access can be controlled to prevent someone else from using your scripts.

The following figure shows the dialog box used to complete a script for a U Series MAPPER host. If you enter the user and password information in the script, you need not enter it again manually when you start up your MAPPER session. If you also enter a MAPPER run name in the script, MAPPER software will execute that run as soon as Designer Workbench establishes the connection.

Scripts for other 4GL systems are slightly different from the one pictured here. In particular, LINC and ALLY scripts do not include a specific run (application) field.

Once your scripts are set up the way you want them, you can use the
Windows Program Manager to create an individual program item icon for
each of your most frequently used sites or applications. As shown in the
following figure, creating icons for scripts lets you start those sessions
directly from the Designer Workbench group window.

[Show picture of a customized Designer Workbench group window with
icons for a selected group of applications. Maybe use pointers to a network
diagram showing the different sites where those applications reside.]

Improved Usability

Designer Workbench offers advantages for both end users and developers of Unisys 4GL applications:

- Designer Workbench follows Common User Access (CUA) guidelines, which govern the familiar "look and feel" of Windows applications. Users and developers will find that skills learned in other Windows applications can be transferred easily to Designer Workbench.

  [This statement will have to be amended if known inconsistencies are not corrected.]

- Designer Workbench extends this visually consistent, predictable user interface to different host computer environments. Application users do not have to learn about different terminal emulators or host operating systems in order to run their 4GL applications.

- Designer Workbench can access all existing 4GL applications. New applications or existing applications can be enhanced to take advantage of unique Designer Workbench capabilities while still being used as before by regular terminals.

- Designer Workbench offers developers a powerful graphical tool for constructing Windows-style forms (screens layouts) for Unisys 4GL applications.
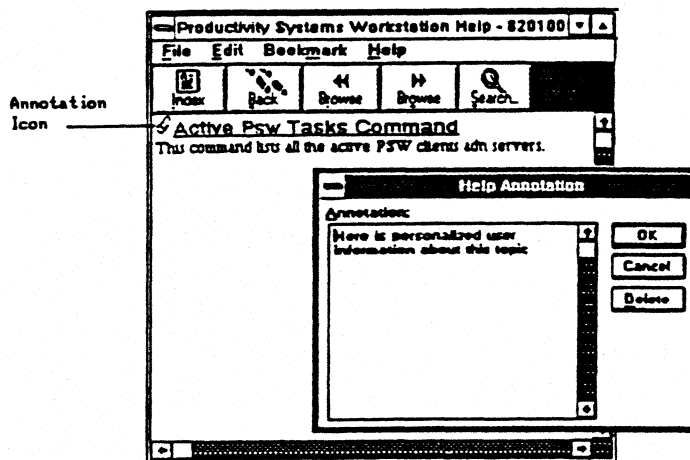
[Anything else that should go here?]

Help

Designer Workbench provides online Windows-style help for all facilities. You can open the Help window at any time by selecting a category from the Help menu or by clicking on the Help button displayed in many dialog boxes. You can also position and size the Help window so you can keep it displayed on your screen while you work. The Help window's command buttons let you move easily from topic to topic and retrace your steps if needed.

Bookmark and Annotate are two features of this kind of help system that you can use to customize Designer Workbench help information:

- With Bookmark you can create a personalized list of Help topics, each identified by a unique topic label you assign. You can move instantly from any Help topic to one of your selected topics simply by selecting Bookmark on the menu bar and clicking on the topic you want.

- The Annotate command (on the Help window Edit menu) allows you to add your own text to a Help topic. The next time the topic is displayed, a small paper clip icon beside the topic title indicates that an annotation has been added. You can view the annotation by clicking on the paper clip icon (see the following figure). This is a handy way to record tips or comments for yourself or other users.

Annotation
Icon ——

Productivity Systems Workstation Help - 820100

File   Edit   Bookmark   Help

| Index | Back | Browse | Browse | Search |

Active Psw Tasks Command

This command lists all the active PSW clients adn servers.

Help Annotation

Annotation:

Here is personalized user
information about this topic

OK

Cancel

Delete

Designer Workbench and MAPPER Systems

Of particular interest to MAPPER system users are Designer Workbench features that enhance the development and use of MAPPER applications:

- Forms Designer for creating graphical screen layouts
- Repository for managing system objects

[Do we want to include MAPGraph here? We may want to expand this discussion when we get a better idea of how MAPPER is handling the Windows interface.]

MAPPER Systems and the Forms Designer

As shown in the following figure, the Designer Workbench Forms Designer helps you create attractive and functional forms (screen layouts) for your MAPPER applications. Using Forms Designer tools, you can quickly add text, graphics, list boxes, menu bars, and command buttons to your forms without tedious hand coding. As well as improving the appearance of your forms, these features help make applications easier to use. They can reduce user errors by supplying relevant choices and eliminating the need for users to remember or look up command formats.

[Need picture of Forms Designer and form.]

Note: *The Designer Workbench Forms Designer cannot be used to modify*
screens coded manually using MAPPER windows run statements.

Form design must be closely coordinated with MAPPER run design. While
defining the objects on a form, you specify the MAPPER reports or fields
displayed by the list boxes, the MAPPER reports updated by user entry
fields, the actions produced by clicking on the various command buttons,
and so on. By including the required run statements, you can build in
Designer Workbench capability when creating new MAPPER applications or
you can add Designer Workbench capability to your existing applications
without affecting existing non-Designer Workbench terminals.

Section 3 of this overview contains more information about Forms Designer
features. Detailed instructions for using the Forms Designer and the
related MAPPER run statements are presented in the *Designer Workbench
Developer Training Guide.*

MAPPER Systems and the Repository

Forms created with the Forms Designer must be uploaded to the MAPPER
host in order to make them available to the other Designer Workbench
workstations that will use them in a production environment. The
MAPPER host works together with the Designer Workbench Repository to
ensure that the proper forms are always present when you run an
application.

When you first start up an application, MAPPER software checks the
Repository for the forms the application needs. If necessary, the MAPPER
host automatically downloads copies of the forms to your Designer
Workbench workstation. Normally, the forms only need to be downloaded
the first time the workstation is used to run a particular application. From
then on, the forms remain in the local Designer Workbench Repository
where they are used automatically for all future sessions.

A process called version control allows the MAPPER host to verify whether
the forms in the Repository are current. You can instruct the MAPPER
application to compare the Repository forms' timestamp or revision
information to that of the forms stored on the host. If the forms are current,
the session continues and no forms are downloaded. If, on the other hand, a
form has been updated since the last session with the Designer Workbench

workstation, the form in the Repository will be out of date and MAPPER software will download the new form automatically.

By storing forms locally in the Repository, Designer Workbench eliminates the need for large amounts of graphical screen formatting data to be transmitted repeatedly to the workstation during host sessions. In turn, streamlined communications means better response times.

In addition to storing forms, the Repository provides facilities for system configuration, security, and other Designer Workbench functions. See Section 3 for more information on Repository features.

Designer Workbench and LINC Systems

Designer Workbench brings a new measure of power and convenience to
LINC system users:

- The LINC Workbench, which includes the following features

  - List boxes for selecting Ispecs, Reports, and LINC System
    commands

  - Multiple Ispec windows

  - Simple access to LINC Workbench help and LINC host Teach
    screens.

  - Local storage of Ispec forms (screen layouts)

- Customized Ispec forms

The LINC Workbench

The LINC Workbench window (see the following figure) includes many
features designed to enhance LINC host sessions. For example, you can use
the LINC menu to display and select from lists of available Ispecs, Reports,
and LINC System commands. To make it easy to switch from one Ispec to
another, you can have many different Ispecs open at the same time, each in
a separate window. You can also keep the View Messages/Errors window
open to receive and respond to messages from LINC Reports.

[Show screen with several open Ispec windows and perhaps a couple of icons
at the bottom.]

The Help system provides context-sensitive information about all LINC Workbench activities. You can also use the View Teach Screen command to display information about specific Ispecs from the LINC host. If multiple languages have been generated for your LINC system, you can use the Select Language command to alter the language in which LINC messages and user prompts are displayed.

For Administrators, the LINC Workbench provides a variety of maintenance functions, including the ability to

- Download and upload Ispec forms between the Repository and the LINC host

- Select which Ispecs, Reports, and colon commands appear in list boxes

- Load and unload (back up) Ispec forms between the Repository and regular DOS files

- Delete all files associated with a system

LINC Systems and the Repository

Normally, the LINC host downloads copies of Ispec forms (screen layouts) to the Designer Workbench Repository during its first session with your Designer Workbench workstation. From then on whenever you run an Ispec, Designer Workbench uses the Repository copy to produce the screen image you see.

If the LINC host system changes and the local copies of Ispecs are no longer valid, the Designer Workbench Administrator can have the new Ispec forms downloaded to the workstation so the correct forms will be there for the next session.

Using Ispec forms stored in the workstation can improve system performance by reducing the amount of data transmitted back and forth between the workstation and the LINC host.

In addition to storing forms, the Repository provides facilities for system configuration, security, and other Designer Workbench functions. See

Section 3 for more information on Repository features.

LINC Systems and the Forms Designer

Another benefit of having the forms stored in the workstation is that LINC developers can use the Forms Designer to customize the appearance of Ispecs. The Forms Designer can alter the size, color, and style of text; move fields; and add graphics images to Ispec forms. Since the Forms Designer operates only on the forms in the Designer Workbench Repository, you do not have to worry about changes you make affecting other Designer Workbench workstations unless you chose to make them available to other users by uploading them to the LINC host or by distributing copies on disk.

The following figures show an Ispec as it appears on an ordinary LINC terminal and the same Ispec on Designer Workbench after it has been customized with the Forms Designer.

[Need two views of an Ispec: stock Ispec followed by customized Ispec.]

The changes you make to your Ispec forms will remain in effect until you change the forms again or until new Ispecs are downloaded from the host to accommodate changes made in the LINC system. See the *Designer Workbench Developer Training Guide* for detailed information about using the Forms Designer with LINC Ispec forms.

Designer Workbench and ALLY Systems

To be completed.

Section 3
System Components

This section describes the major components of Designer Workbench and provides more detailed information on how you can use some of the features introduced in Section 2.

Section 3 includes the following topics:

- Component overview
- Repository
- Forms Designer
- INFOConnect

    [The name of this subsection will be whatever collective name is chosen for Designer Workbench communications facilities. Right now INFOConnect is only one part of those facilities, but I don't want to burden the reader with this distinction.]

- The MAPPER, LINC, and ALLY application program interfaces (APIs)
- MAPGRAPH
- Pictures

Component Overview

The following figure shows the major Designer Workbench components. Some of these, such as the Forms Designer, are facilities you can run directly by double-clicking on the appropriate icon. Others, such as the Repository, are functional components that provide essential services to other Designer Workbench components as well as directly to the Designer Workbench user. Some, such as MAPGRAPH, are both.

[The subsection headings will depend on the final version of the Designer Workbench user interface. This section describes the components that are functionally visible to (or inferable by) the user; consequently, it will not necessarily reflect the internal structure of the product.]

[Conceptual diagram of Designer Workbench.]

Repository

At the heart of Designer Workbench is the Repository, an object-oriented data management facility. The Repository is both the place where Designer Workbench objects — such as forms, user scripts, and images — are stored as well as the collection of processes by which those objects are managed and made available to Designer Workbench users.

The Repository performs a wide range of administrative functions associated with the configuration and operation of Designer Workbench. Built on a client/server model, the Repository interacts with Designer Workbench users and with other system components to control system access, maintain session-related information, and preserve the integrity of the database.

User Administration and Security

The Repository maintains security and controls access to the system by requiring all users to sign on to Designer Workbench before they can run any of its facilities. Designer Workbench users can have four possible privilege levels:

- Administrator
- Developer
- User
- Visitor

You can have different privileges in different Repository partitions.

Administrator Privileges

Administrators have access to all Designer Workbench facilities. They can

- Assign names, passwords, and access privileges for all Workbench users
- Set up Repository partitions
- Specify the operating characteristics of the system

Other administrative activities include reading and writing objects such as bitmaps and forms into and out of the Repository, performing backups, and enabling and disabling the audit trail.

The procedures for configuring and administering Designer Workbench are detailed in the *Designer Workbench Planning and Installation Guide*.

Developer Privileges

Developers can run MAPPER and LINC systems and can use the Designer Workbench Forms Designer. They also have access to a limited set of administrative functions, which allows them to

- Display information about the partitions and user scripts available to them

- Import and export certain classes of Repository objects

- Select a default partition

- Change their password

Developers can use the Session Notes facility to enter information about what they did during a session.

User Privileges

Users can do everything developers can do except use the Forms Designer.

Visitor Privileges

Visitors can display session, partition, and script information. They cannot alter any information and cannot use the Forms Designer, Session Notes, or 4GL applications.

Object Management

Items stored in the Repository are called objects. All objects in an object-oriented system belong to classes which govern their relationships to other classes and the actions that can be performed on them. Some of the classes of objects in the Designer Workbench Repository include partitions, forms, bitmaps, users, and scripts.

An example of a relationship between classes is the connection between partitions and forms. The figure below shows how forms and some other classes of Repository objects are associated with partitions in a similar way as files are said to be in directories. The association between an object and a particular partition is not so much a matter of where the object is physically stored as it is a logical relationship maintained by the Repository.

[Need figure here.]

The Repository export facility is a practical application of the concept of relationship. When you export a partition, for example, the Repository selects all the forms, bitmaps, and other objects related to that partition and copies them into an export file. This capability makes it easy to move all the different kinds of objects associated with a partition to another partition or to another Designer Workbench workstation.

Workbench users are also related to partitions, although in a slightly more complicated way. Not only can a single user be associated with more than one partition, but that association is further governed by the attribute called privilege (one of the four privilege levels described earlier in this section).

In the example shown in the following figure, the administrator has assigned workbench user Jane different privilege levels for partitions A and B. Partition A might be a development partition used to work on new forms. Partition B represents the production partition for a particular MAPPER host site.

[Show figure.]

When Jane signs on to the system, she selects the partition she wants to work with during the session. If Jane selects partition A, she is free to use the Forms Designer to make changes to form 1 or form 2. She cannot alter form 3 because form 3 is associated with partition B. If Jane selects partition B at sign-on time, she can run the MAPPER applications that use the forms in partition B, but she cannot use the Forms Designer at all during that session.

In this way, the administrator can use the Repository to manage access to different parts and different functions of the system.

Here are some additional features of the Designer Workbench Repository:

- **Partition and Script Information.** No matter what your privilege level, you can display the names of the partitions you have been given access to, your privilege level in those partitions, and the scripts you can use. All Workbench users except visitors can also change their

passwords and select a default partition. By selecting a default partition, you can avoid being prompted to select a partition at sign-on time.

- **Partitions and 4GL Applications.** The Repository ensures that each MAPPER or LINC system you can run from Designer Workbench uses only the objects in the partition reserved for its host site. This restriction prevents applications from attempting to access the wrong forms or other objects that may have the same name as objects in other partitions.

  The Designer Workbench administrator can exploit this Repository feature by setting up separate partitions for development work. Copies of production forms can be exported to this partition where they can be modified as desired using the Forms Designer without disturbing the versions used by the application. When the modified forms are finished, they can be uploaded to the host to replace the previous versions.

- **Version Control.** Timestamp and other session-related information is attached to the objects in the Repository. Host 4GLs can use this information to ensure that an application run from Designer Workbench uses the proper version of a form.

- **Export and Import.** A previous example described how the objects related to a partition can be exported and imported using Repository commands. You can also use export and import to move other objects, such as users and user scripts, to another Repository. This capability can help you set up several Designer Workbench workstations to be shared among a group of users.

- **Backup and Recovery Control.** Designer Workbench administrators can use Repository facilities to save a complete backup of all objects in the Repository. An optional audit feature automatically keeps records that allow the state of the Repository to be reconstructed from the time of the last backup.

- **Script Administration.** The Designer Workbench administrator can create, modify, and assign user scripts which control access to specific hosts or applications. See the "INFOConnect" heading later in this section for more information on user scripts.

- **Session Information.** With the Display Sessions command, you can display information about previous Designer Workbench sessions: user name, date, start time, end time, and any session notes recorded during the session.

Designer Workbench Administration

Designer Workbench Administration is a specialized Repository facility that performs file and display operations on particular classes of objects. Using Designer Workbench Administration commands, administrators can

- Read bitmaps, TIFF images, and other objects from DOS files into the Repository where they can be used by Designer Workbench

- Write Repository objects back out to DOS files

- Import/export objects such as forms and bitmaps between partitions or Repositories (similar to the Import and Export commands on the Repository Database menu)

Administrators can also display detailed Repository information about individual objects in selected classes (see the following figure). Among other things, this information includes when specific objects were created and who created them.
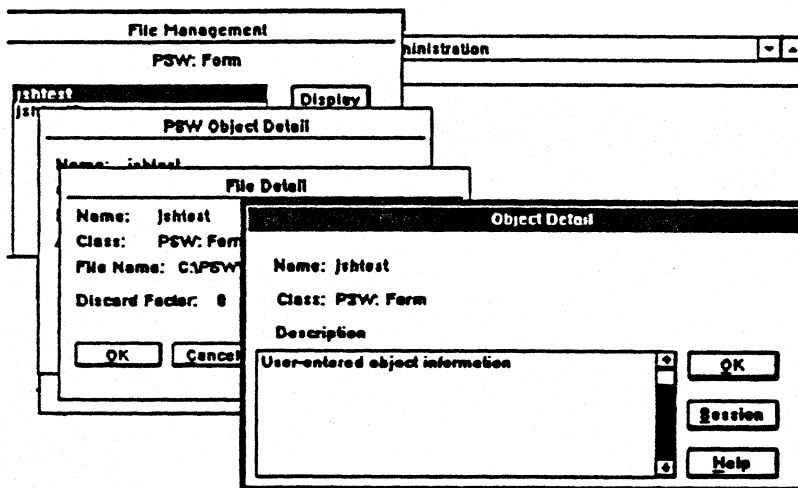
Session Notes

Session Notes is an extension of Repository facilities available to all user privilege levels except visitors. Double-clicking on the Session Notes icon displays a text entry window where you can record information about the current session (see the figure below). This information, which you or other Workbench users can view using the Display Sessions command, can help keep track of actions performed during different sessions.
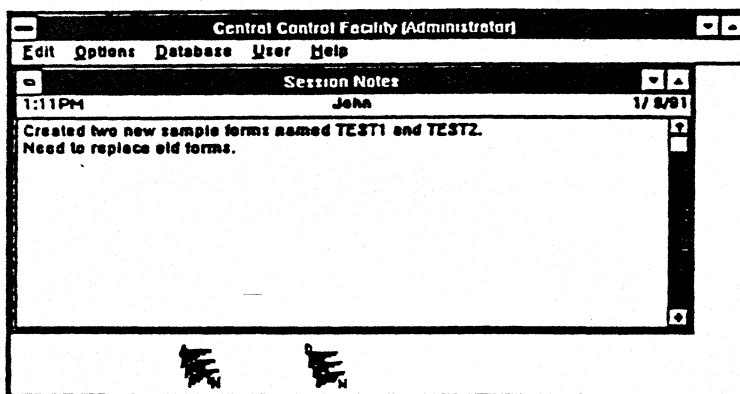
Forms Designer

The Designer Workbench Forms Designer is a graphical form drawing accessory that can be used to create or customize forms (screen layouts) for Unisys 4GL applications. These forms work in combination with 4GL applications to display output, accept user input, and perform specific operations within the application. The figure below shows the Forms Designer window and a sample of a form that can be created with a few simple steps.
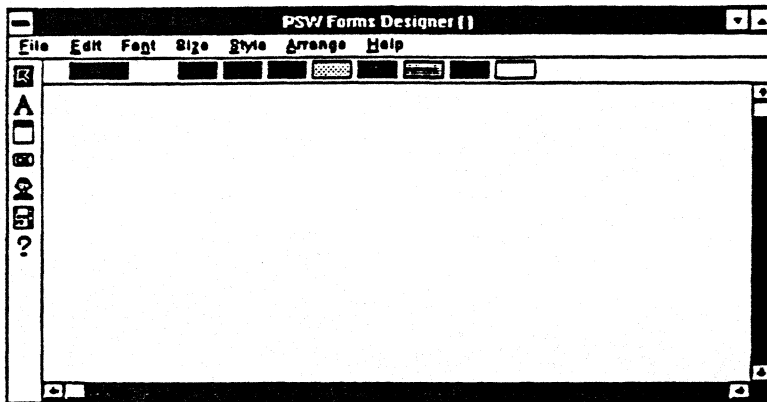
The Forms Designer tools help you construct MAPPER forms using virtually any combination of list boxes, graphics boxes, option buttons, command buttons, and other Windows objects. The Designer draws the objects, and you use the mouse and keyboard to move, size, and label them as desired. No special knowledge of screen control languages or formatting is required.

If you are working with a LINC system, you can customize the appearance of your Ispecs by altering the color, size, and font style of text; repositioning fields; and adding graphics.

Detailed instructions for designing and customizing forms for MAPPER and LINC systems are contained in the *Designer Workbench Developer Training Guide*.

Forms Designer Tools

The Forms Designer tools are represented by the icons along the left margin of the screen (see the following figure). Selecting an icon with the mouse activates the tool associated with a particular form object or function:

- Pointer tool - used to select commands, other tools, and objects. The pointer tool is also used to move and resize objects and to move the T-squares.

- Text tool - used to position and edit text objects. The text tool is also used to mark text for cutting and copying.

- Field tool - used to position and size field box objects.

- Button tool - used to position and size command button, option button, and check box objects.

- Image tool - used to position and size image box objects (graphics).

- List tool - used to position and size list box objects.

- Help tool - used to request context-sensitive help about other tools or commands in the Forms Designer layout area.
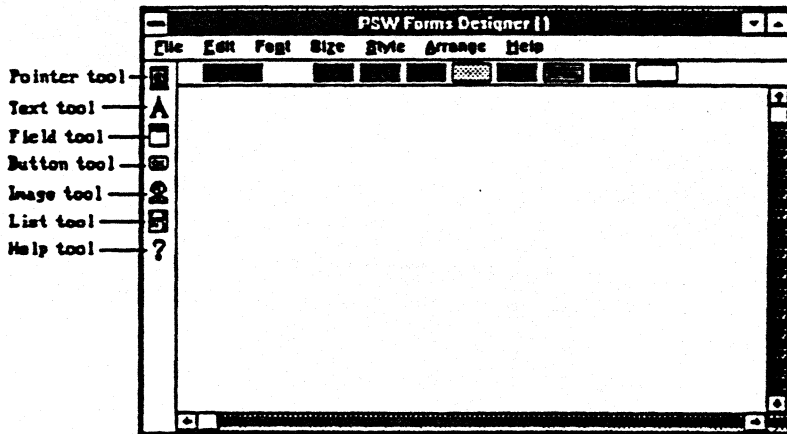
The following figure shows examples of objects created with the Forms Designer tools.
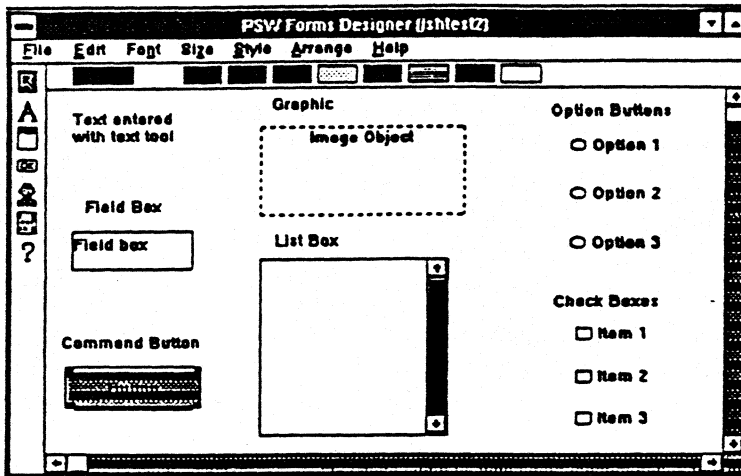
When you create an object such as a list box or a button for a MAPPER form, double-clicking on it produces a dialog box in which you specify information related to the MAPPER run and the reports it works with. The figure below shows the button dialog box where you enter the label text, label position, and action associated with the button or buttons you are defining.

Forms Designer Commands

You can control Forms Designer operations either with keyboard commands or from the drop-down menus:

- File menu - includes standard file management commands, such as Open, Save, and Print.

- Edit menu - includes standard Windows Cut, Copy, and Paste commands as well as commands that affect global form attributes. The Edit menu also includes the Menu Bar Characteristics command used to define the appearance and operation of optional menu bars displayed on MAPPER forms at run-time.

- Font menu - contains a list of the fonts that may be applied to text objects or to the text in field box objects and list box objects.

- Size menu - specifies point sizes for text fonts.

- Style menu - specifies attributes that may be applied to text, such as bold, underline, center, left justify, and others.

- **Arrange menu** - contains options to assist in forms design. The T-Squares command displays one horizontal and one vertical guide line that can be moved with the mouse and used for aligning objects on the screen. The Grid command overlays the entire work area with a user-definable grid of horizontal and vertical lines that can also be used for aligning objects. The Color command is used to change the color of text in text objects, field box objects, or list box objects.

- **Help menu** - contains a variety of options for obtaining help information on selected objects, tools, commands, and procedures.

INFOConnect

[See writer's note on p. 3-1.]

Designer Workbench communications facilities manage the connections between the workstation and the host computers running Unisys 4GL applications. Once Designer Workbench has been configured, all the mechanics of communication, such as specifying the path to the host or choosing a terminal emulator, are transparent to the user. Hosts and connections supported by Designer Workbench are shown in the following table.

Table 2-1. Designer Workbench Communications

Unisys Host	4GLs Supported	Connections
U Series	MAPPER ALLY	TCP/IP (Ethernet) TTY (COM port)
1100/2200	MAPPER LINC	TCP/IP (Ethernet) UTS (STEP) TTY (COM port)
A Series	MAPPER LINC	TCP/IP (Ethernet) Poll/Select (COM port) TTY (COM port)

INFOConnect includes a set of connection script templates that you can customize to include information specific to your MAPPER or LINC systems. The resulting user scripts, which contain the information necessary to establish host sessions, are stored in the Repository where they are available for future use. When a workstation is configured for multiple users, the Designer Workbench administrator specifies the scripts that are available to each user.

The MAPPER, LINC, and ALLY APIs

Designer Workbench contains application program interfaces (APIs) for communicating with MAPPER, LINC, and ALLY systems. In general terms, the APIs transfer data and translate commands between Designer Workbench and the 4GL host applications.

Most of this work is done behind the scenes where Designer Workbench users do not have to worry about it. If you are familiar with Windows, however, it is helpful to know that the APIs contain the executable code (the .exe files) associated with the 4GL icons that are created during Designer Workbench installation.

You can use Windows procedures for creating icons that run specific scripts. In this way, you can customize your Designer Workbench workspace by creating individual icons for frequently run applications (see the following figure).

[Does ALLY support this scripting capability?]

The LINC icon also provides access to a window called the LINC Workbench, which includes a set of LINC-specific administration and end user menus (see Section 2).
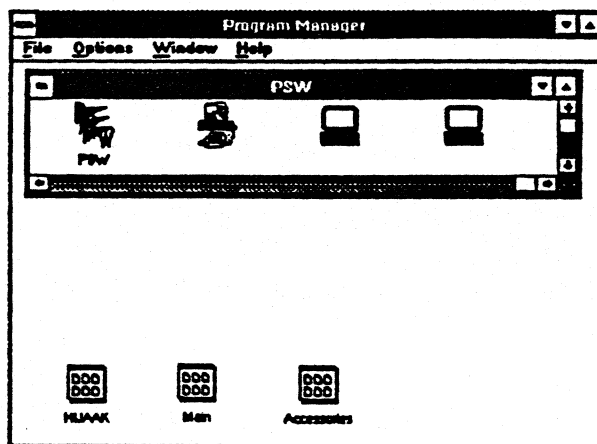
MAPGRAPH

MAPGRAPH is a Designer Workbench facility that displays the results of
MAPPER graphics runs.

When you create a chart or graph during a MAPPER host session, it is
automatically displayed in the MAPGRAPH window. As shown in the
following figure, you can use the regular MAPPER window to view graphics
run code while simultaneously viewing the results in the MAPGRAPH
window.
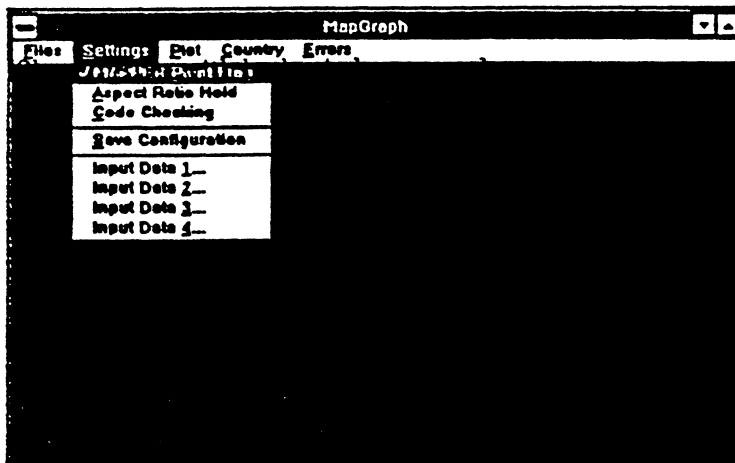
If you have a printer attached to your PC, you can print MAPPER graphics
directly from MAPGRAPH. You can also save the code for any displayed
graphic to a local file for viewing or printing at some other time. You can
open local MAPGRAPH files even when not in session with a MAPPER host.

For more information about using MAPPER graphics runs and
MAPGRAPH, see the *MAPPER System Color Graphics Operations Guide*.

Pictures

Pictures is a Designer Workbench facility called by the MAPPER and LINC APIs to display graphics used by MAPPER runs or LINC Ispecs. This process is internal, and Designer Workbench automatically opens and closes the Pictures window as needed.

You can also open Pictures manually in order to display graphics files stored in several different formats (see the following figure):

- BMP
- DIB
- PCC
- PCX
- RLE

[Show screen.]

You can use this capability to preview graphics before using them in the Forms Designer.

Glossary

A

active
> (U) A window or icon that is selected; the window or icon to which the next keystroke or command will apply.

administrator
> (1) A person responsible for configuring and maintaining system software and hardware. (2) One of the four privilege levels assigned to Designer Workbench users. *See also* visitor, user, developer.

ALLY
> (P) A Unisys fourth generation language (4GL).

API (application programming interface)
> [Need definition.]

application
> In this manual, application refers to any implementation of a Unisys 4GL system used to perform particular tasks for users.

B

bitmap
> (1) (M) An image stored as an array of bits. (2) A bitmapped image in a particular format (.BMP).

C

class
> (P) A repository term for a collection of objects with common attribute types.

colon command
> A command used to communicate directly with the controlling LINC System software at run time. Also called a LINC System command.

context-sensitive help
> (P) Help relevant to a particular area on the screen or user action in
> progress when help was invoked.

D

developer
> (1) A person who creates an application. (2) One of the four privilege levels
> assigned to Designer Workbench users (associated with Forms Designer
> privileges). *See also* visitor, user, administrator.

F

form
> A graphical screen layout used to run a 4GL application within the Windows
> environment.

Forms Designer
> Designer Workbench component that functions as an interactive forms-
> design tool.

fourth generation language (4GL)
> Any of the high level computer languages, frequently offering ready-made
> tools, predefined data structures, and a simplified command syntax, created
> to reduce the time and effort required to design, develop, and maintain
> applications.

G

GUI (graphical user interface)
> General term for software environments that include a graphically oriented
> shell through which users interact with applications. Windows is one such
> system.

H

host

(P) For Designer Workbench, an 1100, A Series, or U Series computer executing MAPPER, LINC, or ALLY software.

I

INFOConnect
(P) The software that handles PC-to-host communications for Designer Workbench.

information hub
(P) In a network architecture, a processing strategy that includes a central source of processing power (such as a mainframe), multiple spokes (such as workstations) that interact with the host, and the communication hardware and software necessary to link them.

Ispec
(1) A collective term for components and events in a LINC System. (2) A contraction of the term interface specification.

L

LINC
A Unisys fourth generation language (4GL).

M

MAPPER
A Unisys fourth generation language (4GL).

MT (Modular Terminal)
(P) An intelligent terminal series produced by Unisys that operates with the poll/select data communications protocol.

O

object
(P) A Repository term for an instance of a class with a unique identity in the system.

P

Poll Select
A Unisys communication protocol.

profile
[Does this term appear anywhere now that it's being removed from the User menu?]
(P) The combination of a user's password, privileges, script access, and other attributes.

R

Repository
Designer Workbench component that stores and manages system objects.

run
A series of instructions that a MAPPER system interprets to produce a report or perform other tasks such as updating reports.

S

script
A Repository object that contains information used by the system when establishing a connection between Designer Workbench and a host.

T

teach screen
A user-written screen display of information about an Ispec being used within a LINC Information System.

U

user
(1) Anyone who uses Designer Workbench. (2) One of the four privilege levels assigned to Designer Workbench users. *See also* visitor, developer, administrator.

UTS

A Unisys terminal emulation supported by Designer Workbench.

V

visitor
One of the four privilege levels assigned to Designer Workbench users. *See also* programmer, developer, administrator.

W

workstation
For Designer Workbench, a properly configured 80286 or higher personal computer.