Mentor Graphics Glossary

Software Release B.1
Part No. 059337

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About This Manual

The Mentor Graphics Glossary contains an alphabetic list of terms that are related to Mentor Graphics tools. To display the first page of the Glossary entries for a particular letter, click on that letter at the top of the page. If a letter spans more than two pages, that letter contains its own mini index on the first page of the terms for that letter.

Glossary A

The following terms are described in this section:

AA
Absolute Pathname
Absolute Time
Access Control List
AccuParts Library
AccuSim II Primitive
AccuSim II Simulator
ACL
Acquiring A License
Action List
Active Area
Active Context Cell
Active Process
Active Window
Actual Flow Net
AIX
Alarm Window
AMPLE
AMPLE_PATH
Analog Modelfile
Annotation Block
Apollo Token Ring Network
Application
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Architectural Analysis
Archive
Area
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Argument
Array

Ascender
ASCII
ASCII Backannotation File
ASCII File
ASIC
Asim_model Property
Aspect
Aspect Ratio
Asynchronous
ATR
Attribute
Attribute File
Authorized Area
Auto Scale
Auto-deletion
AutoLogic
AutoLogic VHDL
Automated Layout
Automounter
Auxiliary Layer
Auxiliary Operation
Auxiliary Rules File Operation

AA
See Authorized Area.

Absolute Pathname
A pathname that originates at the root directory. An absolute pathname begins with either a slash (/) or with a dollar sign ($), and specifies the full pathname for the specified object. *See also: Hard Pathname*, Relative Pathname, and Soft Pathname.

Absolute Time
A specific point in time, such as 15:26:45 on 4/12/92. *See also: Relative Time*.

Access Control List
A list of users who have access to objects in the network, and specific rights that each user has for accessing these objects. In the Aegis environment ACLs allow for extended lists of users outside the PGO UNIX limit. ACLs are known as "permissions" in the UNIX environment.

AccuParts Library
The Mentor Graphics library of commercially-available packaged analog component models. AccuParts is a read-only database of AccuSim II simulation models.

AccuSim II Primitive
A set of model equations (generic model templates) for components such as BJTs, JFETs, diodes, magnetic cores, and MOSFETs that are built into AccuSim II. For these components, the AccuParts model consists only of a set of model parameters matching the template to a particular component's electrical characteristics.

AccuSim II Simulator
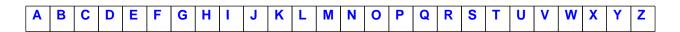The Mentor Graphics interactive analog circuit simulator that lets you verify the functionality and performance of those designs you create with Design Architect.

ACL
See Access Control List.

Acquiring A License
Acquiring a license means that you have exclusive use of that license until you release it by exiting the application or you execute the $release_license() function.

Action List

The operations performed when a transition occurs in a State Machine. Actions are statements that modify output flows. *See also:* *State*, Transition, Condition and Default Actions Block.

Active Area

The active area is the area within a session window, or the session window itself, that receives command input. On monochrome monitors, the active area is highlighted with a heavier outline around its border. On color monitors, the color of the border and title bar indicates the active area.

Active Context Cell

The active context cell is the cell that is the editing context for the active window.

Active Process

The active Process is the Process associated with the active context. Whenever the active window changes, the active Process is reset to the Process of the active context.

Active Window

The window to which all logical user actions are directed. That is equivalent to the window in which all the functions and commands through the popup command line, menus, or dialog boxes are executed. Only one window can be active at a time. The active window's frame and title, if visible, are highlighted.

Actual Flow Net

A signal flow net that is connected to a formal flow net using one or more connected formal points. *See also:* *Flow Net*.

AIX

The operating system for IBM RS6000 workstations. It is System V based.

Alarm Window

An operating system window that displays messages.

AMPLE

The Mentor Graphics programming language for customizing the user interface. AMPLE is a structured, procedural language that supports dynamic linking with C libraries and modules. AMPLE replaces the pre-V8 HI macro language.

AMPLE_PATH

Lets you define alternate locations where the system looks for userware.

Analog Modelfile

A netlistfile.

Annotation Block

A block of text containing commentary information on a Context Diagram, Data Flow Diagram or State Transition Diagram.

Apollo Token Ring Network

The proprietary token-passing ring network that serves as the standard interconnection method for HP/Apollo workstations. Also called the *Domain ring network*.

Application

A Mentor Graphics program that enables the user to produce useful work in a specific domain, such as IC design, digital simulation, or PCB layout. *See also: DSS Application*.

Application Variable

Application variables provide defaults for function arguments that you do not supply.

Application Window

A window wholly contained within the session window. You use this window for most of your communication with an application. Windows can have specific functions. For example, the transcript window records function calls. *See also: Session Window*.

Architectural Analysis

This is the process by which the structure of a design is evaluated. Principle factors that can be considered during architectural analysis are reliability, performance, maintainability, understandability, suitability to re-use and ease of implementation.

Archive

Archiving creates a sequential file that contains all the information in a complete hierarchical copy of a design. In addition, the file contains other information

concerning the design object, such as the version of the tool that created it. The sequence file can optionally include archive copies of certain tools. The target location is normally a tape.

Area

A rectangular portion of the display screen for graphics display and event handling.

Area Optimization

The process of altering the design structure to reduce the gate count while maintaining functionality.

Argument

That part of a function or command that you supply. For example, in the function, $writeln("This is an argument"), the text string encapsulated in quotation marks is an argument you supply.

Array

An array is an object that contains arrayed instances of a cell; it contains rows and columns of a cell instance.
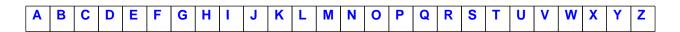
Ascender

The portion of lower case letters that extends above the main portion of the letter, such as the tops of b, d, and h.

ASCII

American Standard Code for Information Interchange, which is a seven-bit code representing alphanumeric and control characters. A standard that defines the characters associated with the lower 7-bits of a byte of information (the ASCII standard defines only the lower 128 characters of the possible 256 characters definable in a byte of information). The character set also defines the upper 128 characters that are active in a printer.

ASCII Backannotation File

The ASCII backannotation file contains individual backannotations, comments, and special instructions, called directives that the Design Viewpoint Editor can use to import the file.

ASCII File

A file composed of ASCII characters, stored in user-readable form that can be edited with a text editor.

ASIC

Application Specific Integrated Circuit.

Asim_model Property

A property conveying the model name of the component model. This model name points into the ASCII text file (modelfile) that contains analog component descriptions in AccuSim II syntax. For example, the value of the Asim_model property for a NPN BJT with the part number 2n2222 is "2n2222".

Aspect

Aspect is the abstraction of a cell that is visible in a specific context. There are two sets of data associated with a cell: internal data and external. External data objects are the interface and abstraction of the cell. Internal data objects are the implementation of a cell and are visible when the cell is peeked.

Aspect Ratio

The ratio of page width to page height.

Asynchronous

An asynchronous VHDL process is activated as soon as any of its inputs have any activity on them rather than only being activated on a clock edge. *See also: Clocking Schemes.*

ATR

See Apollo Token Ring Network.

Attribute

1. Any characteristic of an item or associated descriptor. For example, scale, priority, and orientation can all be considered attributes of one print job.

2. EDIF terminology for a set of commonly used properties.

Attribute File

An attribute file is a special file contained within a design object that is used to store all attribute information about the design object. The information includes object type, identity, user-defined properties, and design object references. An attribute file is identified by its .attr suffix. *See also: Metadata.*

Authorized Area

A source area created during the initial installation of SR10, used to provide source software for subsequent software installations on an SR10.4 network.

Auto Scale

Instructs the print server to print at true scale, that is, print the picture at actual size unless it is larger than the page, then fill one page.

Auto-deletion

Selected text is automatically deleted when new text is entered.

AutoLogic

AutoLogic is a design optimization tool that produces technology-specific netlists from generic netlists, such as those produced by AutoLogic VHDL. AutoLogic optimizes these netlists at the gate level so that they meet your requirements in terms of area and performance. AutoLogic also serves as a technology-mapping tool by giving you the ability to map a netlist from one technology to another.

AutoLogic VHDL

An option to AutoLogic and the System-1076 Compiler that accepts the IEEE 1076 standard Very High Speed Integrated Circuit Hardware Description Language (VHDL) as a primary input, and synthesizes logic designs at the register transfer level of abstraction. AutoLogic VHDL is technology-independent, which allows you to capture, simulate, and synthesize the entire design before performing any technology mapping. When your design work is complete, you can realize your logic in any combination of ASIC, PLD, and FPGA implementations by using AutoLogic for technology-dependent optimization and implementation.

Automated Layout

The process of creating an IC by placing standard cells into a layout and performing automatic routing between the blocks or cells to generate an IC layout from schematics or from netlist information.

Automounter

A daemon that automatically and transparently mounts an NFS file system as needed. The daemon monitors attempts to access directories that are associated with an automount map, along with any directories or files that reside under those directories.

Auxiliary Layer

Identifies a layer that contains the shapes that form an important part of a device instance.

Auxiliary Operation

Auxiliary operations consist of many types of layer operations. Many auxiliary operations do not use secondary keywords to modify their functionality; instead, each variation is represented by its own unique layer operation keyword.

Auxiliary Rules File Operation

Generates derived polygon layers or derived edge layers. They generate data that usually supports other operations.

Glossary B

The following terms are described in this section:

Backannotation
Backannotation Object
Back-End
Background Processing
Backup
Backup Media
Basic Container
BDF
Behavioral Language Modeling
Behavioral-level Model
Bi-directional
Bit
Bitmap
BJ-130 and BJ-130e Plotter
BJT
Blackbox
BLM
Block_dir
Blockage
Blocking Dialog Box
Body Capacitance
Bold
BOLD
BOLD Administrator
BOLD Browser
BOLD Daemon
Bold Italic
Boldface
Bookcase
Boolean Search
Boot Host

BORDER
Boundary Model
Boundary Point
Bound-in Server
Branch
Breadboarding
Bridge
Broker
Btxt
Bubble Jet Printing
Build Rules
Builtin
Bundle
Bundling
Bus
Button
Button Binding

Backannotation

Creating or editing properties associated with either instances, nets, or pins, from a downstream tool, such as a simulator. Back annotations include such things as load-dependent delay calculations, adding bypass capacitors to the design viewpoint, load-dependent delay calculations, capacitance properties to nets, and putting reference designators on schematics. Back annotations are stored in a design viewpoint, and can be moved/copied from one viewpoint to another.

In IC, ICextract Back annotation updates a logic design with extracted parameters from a corresponding layout. It back annotates net properties derived from lumped parasitic extraction and pin time delay properties derived from distributed parasitic extraction.

Backannotation Object

A database object that is a "storage container" for back-annotation data connected to a design viewpoint and is dedicated to storing only back annotation information. It contains the instances, net, or pin pathname with the associated property name and value for each property that is back-annotated by a downstream application. Back-annotation Objects are managed by the DVE.

Background Processing

In this mode, the computer does not wait for a command to terminate before it prompts you for another command. This lets you start a task and then go to another task while the system continues with the initial one. Generally, the computer completes the task without your intervention.

Backup

The saving of data from a workstation's disk to backup media.

Back-End

A simulation kernel that provides the programs needed to run simulations on a circuit design. In the case of the integrated mixed-signal simulator, the QuickSim II kernel together with the AccuSim II kernel provide the back-end for mixed-signal simulations, whereas the AccuSim II kernel alone provides the back-end for analog-only simulations. The term "back-end" presupposes there is a "front-end," which refers to the SimView user interface that provides a graphical environment in which the user controls the setup, running, and viewing of electronic design data. Together, the back-end in the form of the simulation

kernels and the front-end in the form of the graphical user interface, constitute a mixed-signal simulator.

Backup Media

Magnetic media (tape or disk) used to contain data backed up from workstations.

Basic Container

A basic container is a container design object that has only one fileset member, a directory. See also: Container, Containment Hierarchy, and Design Object.

BDF

Bitmap Distribution Format, the standard portable source format for the X Window System fonts.

Behavioral Language Modeling

Behavioral language modeling is a technique that you can use to create your own component models. Behavioral language models, or BLMs, are C programs that you write, to simulate the function of complex devices. Well-written BLMs simulate faster than other models and are very accurate.

Behavioral-level Model

A simulation model whose behavior is specified algorithmically. BLMs are behavioral-level models.

Bi-directional

A characteristic of a pin or model that allows it to pass signals in either direction.

Bit

A binary digit that has a value of 1 (high, true) or 0 (low, false) volts.

Bitmap

A two-dimensional array of memory in which each element of the array represents a pixel. A display or printer can output the contents of a bitmap. Pixels of the array that are turned on appear black on the printed page; pixels that are turned off appear white. For multi-plane bitmaps, each plane of pixels is associated with a different color.

BJ-130 and BJ-130e Plotter

See CheckPlot.

BJT

The acronym for Bipolar Junction Transistor.

Blackbox

A hierarchical control that prevents AutoLogic from optimizing or analyzing the contents of a hierarchical block. AutoLogic does not consider the timing through the hierarchical block when performing timing analysis, nor does it optimize the logic within the hierarchical block.

BLM

Behavioral Language Model; a C, C++ or Pascal program that models the behavior of a component. A BLM describes the function of a component at the algorithmic level.

Block_dir

This property controls over-the-cell routing and compaction by blocking the direction of automatic routing.

Blockage

Blockages are areas in which the router is prohibited from routing. Each routing layer has a corresponding blockage layer. Blockages prohibit routing in the horizontal and/or vertical direction and can prohibit the placement of vias in the region covered by the blockage shape. A blockage layer can be a routing layer with an external aspect when the blockage is a lower level cell in the hierarchy.

Blocking Dialog Box

A dialog box to which you must respond before you can do other work (dialog boxes do not support mid-command freedom) and that prompts you for function arguments. See also: Question Box and Message Box.

Body Capacitance

Body capacitance is proportional to the area of the path conduction geometry.

Bold

A heavier weight of characters that appear darker than standard characters.

BOLD

A tool for building, viewing, annotating, and printing online documentation. Beginning with V8.x, all Mentor Graphics product documentation is available online and accessed through the BOLD product. See also: BOLD Browser.

BOLD Administrator

The BOLD Administrator is the online information tool used to make online libraries available to BOLD Browser users.

BOLD Browser

The Mentor Graphics application that lets you view documentation online.

In terms of the BOLD Administrator, the BOLD Browser initiates a Client Process.

BOLD Daemon

A process that must be running on a workstation before a BOLD server can be started on that workstation. BOLD daemon processes run in the background.

Bold Italic

A heavier weight of characters that slant to the right.

Boldface

See Bold.

Bookcase

A named subset of documents in an online library. Typically, the documents in a bookcase are related to one another. For example, the INFORM bookcase named "BOLD Online Information" contains all of the documents that describe the BOLD tools.

Boolean Search

See Compound Search.

Boot Host

A computer system that holds the operating system files necessary to start (boot) the X terminal.

BORDER

Governs the visibility of the HP/Apollo Display Manager window border and banner.

Boundary Model

An element inserted in the simulator data structures that communicates analog-to-digital or digital-to-analog data between the QuickSim II and AccuSim II kernels.

Boundary Point

An element on a Data Flow Diagram that represents a connection to the parent Data Flow Diagram or, for a Top Level Data Flow Diagram, the Context Diagram. Flows connected to boundary points are inputs or outputs to the diagram.

Bound-in Server

An External Rendering Interface (ERI) server that is part of a specific application. This type of ERI server is transparent to the user.

Branch

A branch of a net is a section of the net that logically connects two device ports or pins.

Breadboarding

A technique used to verify a design by physically interconnecting sample components to measure the design's electrical behavior using lab instruments.

Bridge

A communications device that selectively copies packets between networks of the same type using the same protocol. A bridge matches up the physical and data link layers (ISO model layers 1 and 2) of connecting networks. See also: Router and Gateway.

Broker

A daemon that manages information about objects and interfaces to the objects. A program that wants to become an interface client can use a broker to obtain information about daemons that export the interface.

Btxt

Non-persistent text used in single-line Notepad windows.

Bubble Jet Printing

A variation of ink jet printer technology. Refer to the Bubble Jet printer user's manual for a description of bubble jet operation. See also: Ink Jet Printing.

Build Rules

The build rules tell the Design Manager which design objects to include in and which design to exclude from a configuration during a build. You can specify build rules for each primary entry in a configuration. If you do not specify the build rules, the primary entry inherits the default build rules. See also: Configuration Entry and Default Build Rules.

Builtin

A C++ programming routine called from AMPLE. See also: Function.

Bundle

An object containing nets and/or buses having different names.

Bundling

A technique used by Schematic Generator to group together nets of a common name, like [NET[X] or NET(X), or those nets defined to be part of a bundle.

Bus

A group of related signal lines combined in a schematic or in a simulator. They are combined in the Schematic Editor, or in the simulator with the Define Bus command. However, in MISL, a bus is a bi-directional pin.

Button

1. A key on a mouse graphic input device.

2. A graphic control on a window frame, in a dialog box, or other graphic tool. If you press a button when the mouse pointer is over it, it performs an action.

Button Binding

Association of a mouse button operation with a window manager or application function.

Glossary C

The following terms are described in this section:

Cache
CAD
CAE
CalComp Plotter
Callable
Cancel
Capacitance Limit
Capacitance Load
Card Catalog Entry
Carriage Control Character
Cascade Arrow
Cascading Menu
Category
CBC
CD ROM Caddy
CD ROM Drive
CD ROM
CDE
CE
Cell
Cell Library
Cell Reference
Cell Reservation
Cell View
CGM
Character
Character Set
Character String
Characters Per Inch
Characters Per Line
Check Box

Check Button
CheckPlot
CheckPlot Print Server
Checkpointing
Child
Choice Stepper
Class
Click
Client Area
Client Border
Client Process
Client/Server Mode
Clipboard
Clocking Schemes
Clone
Close
Clustering
Code Page
Collision Detect
Command
Command Argument
Command File
Command Line
Command Registration
Commercial Component Library
Common User Interface
Compaction
Compiled Rules
Complete Transition Path
Component
Component Interface

Component Interface Browser

Component Modeling

Component Node

Component Sample

Component Symbol

Composite State

Compound Search

Compound Site

Computer Graphics Metafile

Concurrent Design

Concurrent Events

Condition

Config

Configuration

Configuration Entry

Configuration Object

Configuration Window

Connectable Element

Connection Resistance

Connectivity Editing

Connectivity Related Polygon Operation

Connectivity Validation

Connector

Container

Containment Hierarchy

Contents Mode

Continuum-QuickHDL

Context Diagram

Control Architect

Control Flow

Control Key Sequence

Control Panel

Control System

Control Transform

Conversion

Converter

Copy

Correct By Construction

Correspondence

Count

Coupled Simulator

Coupling Capacitance

Courier

CPI

CPL

Cross-probing

Crossover Fringe Capacitance

Crossover Overlap Capacitance

Crossprobe Table

CUI

Current View

Cursor

Curve-fitting

Custom Clock

Cache

To place data in a quickly accessible area of memory. Also an area of memory that allows for quick access to its contents. *See also: Memory Caching and File Caching.*

CAD

Computer Aided Design. The use of computer-based applications to assist in any kind of design process including physical layout of electronic designs, and preparation of manufacturing tooling. CAD also refers to automated mechanical design.

CAE

Computer Aided Engineering. The use of computer-based applications to assist in the creation of electronic designs, from initial specification through layout, analysis, and production.

CalComp Plotter

Any number of plotting devices manufactured by CalComp Inc. CalComp supplies a broad range of plotting devices including penplotters and electrostatic plotters as well as thermal and wax transfer devices. Mentor Graphics supports a very specific subset of the CalComp product line. See the *CalComp Print Server Manual* for additional information.

Callable

An AMPLE function or builtin that can accept program control; a function you can execute.

Cancel

A label given to a push button in some dialog boxes and prompt bars that closes the object without performing the operation implied by the dialog box or prompt bar.

Capacitance Limit

The maximum capacitance that can be placed on an input or net without violating vendor-specified limits.

Capacitance Load

The amount of capacitance that exists on a net including the sum of the pin capacitance and the estimated route capacitance.

Card Catalog Entry

Information about a document within an online library. Similar to a card catalog entry in a public library, a card catalog entry for an online document provides basic information about the document, such as the title ("The BOLD Browser User's Manual"), the single-word document name ("bold_brow_user"), the abstract, the copyright notice, and the version. There is one card catalog entry for each document in an online library.

Carriage Control Character

A character or character sequence that starts a new line or a new page.

Cascade Arrow

An arrow to the right of a menu item that indicates the presence of a cascading menu.

Cascading Menu

A submenu (menu-within-a-menu) that displays when you highlight a menu item with an arrow after its name.

Category

See Library Category.

CBC

See Correct By Construction.

CD ROM Caddy

A holder for the CD ROM disk that is used to load the CD ROM disk into the CD ROM drive.

CD ROM Drive

The hardware device that provides access to information stored on a CD ROM.

CD ROM

Compact Disc Read Only Memory. An optical read-only storage medium. All Mentor Graphics product software and documentation is available on INFORM CD ROM. Reading information from CD ROM requires that you have a CD ROM drive available on your network. To load Mentor Graphics software stored on CD ROM onto your network, you use the install program. To view documentation stored on CD ROM, you use the BOLD Browser application.

CDE

Concurrent Design Environment. A set of compatible Mentor Graphics design automation software tools, with a framework of object-oriented technology. The Concurrent Design Environment provides concurrent viewpoints of a command database through multiple tools and supervisory applications to create, model, analyze, synthesize, monitor, and control electronic, mechanical, and embedded software designs and processes.

CE

See Connectivity Editing.

Cell

1. (BOLD) A cell is an independent BOLD server environment that is local to one or more workstations on the network. The network can contain multiple cells, and each workstation can access one or more cells.

2. (DSS) The area at the intersection of a column and a row. The basic storage element of DSS.

3. (ICgraph) A named object in the database hierarchy. When a cell is added to another cell, it becomes a cell instance. An instance can be placed or unplaced. Each cell has a name, but only an instance of the cell has a handle. *See Also: Component.*

Cell Library

A cell library is a design object that you create in IC Station that contains the cells in your library and that can also contain other cell libraries.

Cell Reference

A cell address within a formula, or as an argument to a function. In the formula "=A1", "A1" is a cell reference, indicating that the cell containing that formula will derive its value from cell A1.

Cell Reservation

To edit a cell, you must reserve the cell for edit, which coordinates access to cells in the database by multiple users. When you reserve a cell, others have only "read" access to it.

Cell View

A cell view is the term used to describe the set of BOLD server environments (cells) currently accessible from your workstation.

CGM

See Computer Graphics Metafile.

Character

A symbol or mark constituting one element of a font. For example, the letter A is a character.

Character Set

A collection of symbols. The symbols contained in character sets are used for various printing applications. Typically, character sets are composed of the alphabet, the numbers zero through nine, and an assortment of other symbols, such as the dollar sign and the ampersand.

Character String

A set of alphanumeric or other characters that form an object name word or group of words. String delimiters include the space character to separate commands and command arguments, the semicolon (;) to concatenate commands, and the slash (/) to break or concatenate strings of directory and file identifiers. To mark the string as a single object, you must enclose character strings with embedded string delimiters or spaces in quotes.

Characters Per Inch

See: Pitch.

Characters Per Line

This is used to specify the line width of the printer. With a default pitch of 10, an 80 cpl width corresponds to an 8 inch line.

Check Box

A group of one or more toggle buttons that can be set in any combination. Check buttons can appear in a dialog box or in an application window. The application usually displays check buttons as small square buttons. The visual cue to its selection is a highlighted button.

Check Button

A group of one or more toggle buttons that can be set in any combination. Check buttons can appear in a dialog box or in an application's window. The application usually displays check buttons as small square buttons. The visual cue to its selection is a filled in and/or pushed button.

CheckPlot

The combination of printer hardware and print server software that comprise the CheckPlot product.

CheckPlot Print Server

The software that formats, renders, and outputs text and graphic print jobs to the CheckPlot printer.

Checkpointing

The process of writing a temporary database to disk without giving up your edit reservation, and without creating a new version.

Child

A subcomponent of a Transform Component, immediately below it in the design hierarchy. A transform instance on a DFD typically has a child view, which can be a DFD, State Machine or VHDL Specification.

Choice Stepper

A list box you can scroll or step through one item at a time by clicking the up or down arrows. This is a common gadget in prompt bars.
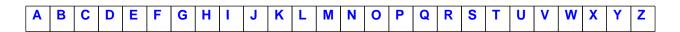
Class

Granular divisions within a component type based on different behavior or purpose. Class is analogous to a functional subset of a library category.

Click

To press and release a mouse button. The term comes from the fact that pressing and releasing the buttons of most mice makes a clicking sound.

Client Area

The interior area of a window where applications run. *See also: Client Border.*

Client Border

The border around the client area. *See also: Client Area.*

Client Process

The process that attempts to retrieve information from an online library.
Typically, the client process is initiated by someone who uses the BOLD Browser.

Client/Server Mode

Client/server mode is the mode of operation of the BOLD online information
system in which BOLD Browser applications use BOLD servers to locate and
read data from online libraries. The BOLD Browsers are clients of the BOLD
servers. In this mode, system management operations must be performed with the
BOLD Administrator application. *See also: Serverless Mode.*

Clipboard

A reserved memory area used to store text or graphics during cut-and-paste
operations.

Clocking Schemes

Two types of clocking are supported by System Architect to control the timing
aspect of the system behavior. They are: asynchronous and synchronous (using
explicit clocking).

Clone

A duplicate view of a window.

1. In System Architect, you can clone the Context Diagram, Data Flow
    Diagram, and State Transition Diagram windows. Any edits made in one
    window are also made in the clone. However, you can display different
    parts of a diagram in each clone.

2. In the BOLD Browser, a clone can be a HyperDriver Copy or a Simple
    Copy.

Close

1. A label given to a button in some dialog boxes that performs the action of closing the dialog box.

2. A selection in window menus that closes the window associated with the menu.

Clustering

A technique used by Schematic Generator to simplify placement and routing by grouping related components into closely placed clusters, which are then treated as units when the actual schematic is produced.

Code Page

A mapping of available printer characters to specific values in the printer's memory. For example, the printer code 182 could specify a Greek character in one code page, and a block graphics character in another.

Collision Detect

If two systems on an Ethernet attempt to send data at the same time, a collision occurs. When this happens, each system detects the conflict, stops transmitting, and waits a specified amount of time before monitoring the network and attempting to rebroadcast. Both the transmitter and receiver provide collision detection circuitry to sense when more than one packet has been transmitted on the network at the same time.

Command

1. An instruction that you give a program or an application. *See also: Function.*

2. A form of AMPLE function syntactically simplified for ease of use.

Command Argument

See Argument.

Command File

An ASCII file containing Schematic Generator functions and/or commands. This file can be executed at batch mode invocation or at any time during an interactive session. The functions and/or commands in this file are executed sequentially.

Command Line

See Popup Command Line.

Command Registration

The process of assigning a command text string, and a minimum abbreviation, as a synonym for a function. A command is registered in the user interface using the AMPLE language.

Commercial Component Library

A set of graphic symbols and simulation models of parts or components that semiconductor vendors manufacture. A commercial component library also includes associated parametric data taken from manufacturing specifications. Simulation models can be grouped according to some file hierarchy according to some selection mechanism. This manual uses library and commercial component library interchangeably.

Common User Interface

The common and global set of commands, keys, menus, and windows. The rules, methods, and conventions used by all Mentor Graphics applications to communicate with the person using the application.

Compaction

Compaction is the process of minimizing the size of a completed layout.

Compiled Rules

Guide the actions of the Layout Verification system components. The Compiled Rules is the in-memory version of the Rules File that the IC Environment creates when you load a Rules File from disk into the IC Station Session.

Complete Transition Path

The sequence of one or more transitions involved in going from one state to itself, or to another state, in a State Machine. The conditions in the transition path are the collection of all the conditions on the individual transitions. The actions in the transition path are the collection of all the actions on the individual transitions plus the actions of the origin state. When tracing the transition path, links are resolved to the start state, state or transition node to which they refer.

Component

1. A container design object comprised of a schematic model, a VHDL model, and/or a symbol model, which can represent anything from a simple logical function to a full blown integrated circuit. The term *cell* is synonymous with component.

2. The graphic symbol and property information depicting a modeling block. Property information includes specific information about the modeling block, including model name and parameter values.

3. A physical, commercially-packaged semiconductor integrated circuit or discrete semiconductor that performs some electrical function and is used in a printed circuit board or equipment assembly. Components can also be called devices. An example of a component is the BJT with a part number of 2n2222a.

4. Within the context of AccuParts storage concepts, a component is a collection of similar part numbers (referencing models) grouped under a part design object.

5. Within the context of System Architect, a collection of data objects that together represent an electronic system or part of a system. System Architect supports four types of component: System Components, Transform Components, Logic Components and Type Definition Package Components.

Component Interface

A mechanism for associating model information with a component. A component interface contains the following:

- A pin list, which includes pin names and associated properties;

- A body property list, which includes a list of property names and values owned by the symbol body;

- A model table, which includes model names and associated labels, or...

- A model table that includes one entry per model, net mappings, and multiple labels per entry.

Component Interface Browser

The Mentor Graphics Component Interface Browser (CIB) is an application for viewing and editing a component interface.
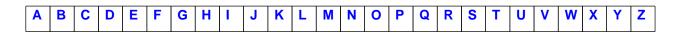
Component Modeling

The process of generating through modeling techniques simulation models of semiconductor components for board-level simulation. These modeling techniques can involve the process of extracting model parameters from semiconductor manufacturers' published datasheets or from the measured electrical characteristics of a particular component type.

Component Node

A transform instance, system instance, logic instance, or foreign instance on a Data Flow Diagram or a system symbol on a Context Diagram. A connectable element that represents a component. *See also: System Component, Transform Component, Logic Component and Node.*

Component Sample

A physical device from a specific semiconductor manufacturer. Mentor Graphics measures component samples to obtain data for the model development process.

Component Symbol

A design object that contains the graphical and electrical representation(s) of the component. A symbol consists of a graphical symbol body, symbol pins, symbol pin properties, and symbol body properties. Symbols are created by SYMED.

Composite State

A symbol on a State Transition Diagram that represents a child state machine. *See also: Simple State.*

Compound Search

An advanced full text searching operation. A compound search allows users to search either for documents that have both "String A" and "String B" in them, or for documents that have either "String A" or "String B" in them.

Compound Site

A location for a gadget in a dialog box, containing compound or primitive sites. A compound site is a mechanism for controlling the layout of primitive sites.

Computer Graphics Metafile

An industry standard file format designed for the storage and retrieval of picture information. The file format is a set of elements that describe pictures in a device independent way. The plotting of CGM files is not supported in Release 8.0, but will probably be a supported object type in future releases.

Concurrent Design

A design methodology in which multiple product parameters are taken into consideration at the same time, through the sharing of analytical information among disciplines.

Concurrent Events

Occurrence of two or more events in the same time period.

Condition

A condition in a State Machine is a boolean expression that conforms to VHDL syntax, and when it evaluates to TRUE, causes a transition to occur. The expression usually consists of a flow name, a relational operator and a flow value. *See also: Transition.*

Config

A Domain/OS program that interactively uses the release indexes for products in an authorized area to create a file that controls the software configuration when that software is installed with the Domain/OS **install**++ tool.

Configuration

A configuration is a collection of design objects. *See also: Design Data Configuration Management.*

Configuration Entry

A configuration entry is a pointer to a single version of a design object; the design object is part of a configuration. *See also: Primary Entry, Secondary Entry, and Reference State.*

Configuration Object

A configuration object is a special type of design object that specifies how a configuration is built. A configuration object is versioned, it references primary and secondary design objects, and it records build rules for each primary design object. *See also: Configuration and Design Data Configuration Management.*

Configuration Window

A configuration window is a bounded area bordered by a rectangular box within which complex groupings of related design objects are collected and operated on as a single unit. *See also: Configuration, Configuration Entry, and Design Data Configuration Management.*

Connectable Element

An element in a Context Diagram, Data Flow Diagram or State Transition Diagram that can be the origin or destination of a connector. In a Context Diagram only the system symbol, externals and junctions are connectable. In a Data Flow Diagram transform instances, boundary points, formal points splices or junctions are connectable. In a State Transition Diagram, states, links and transition nodes are connectable (although a link can only be a destination).

Connection Resistance

Connection resistance is the resistance of contacts and vias, which connect different conduction layers.

Connectivity Editing

The Connectivity Editing (CE) mode maintains connectivity data as edits occur, but doesn't prevent any errors in connectivity or physical design rules. You get a warning when connectivity is being changed by an edit, but the edit does occur. The CE mode is typically used in situations where you want to keep track of connectivity, but need the freedom to modify it. *See also: Geometry Editing and Correct By Construction.*

Connectivity Related Polygon Operation

Connectivity related polygon operations either select polygons based on both connectivity information and polygon dimensional attributes or they associate connectivity information with polygons.

Connectivity Validation

The cell's Connectivity Database must be present and current before the IC Environment can promote the cell to the CE mode. You must first execute Connectivity Extraction in the GE mode before promoting the cell if you have made an edit to the design after you have extracted connectivity.

Connector

An element in a Context Diagram, Data Flow Diagram or State Transition Diagram that connects one connectable element to another. *See also: Control Flow, Data Flow and Transition.*

Container

A special type of design object that can contain other design objects. Containers are the Design Manager equivalent of file system directories. A container is a design object whose fileset includes one or more directories. Containers can contain other design objects, and, unlike a directory, they have a special, unique icon that indicates their type. *See also: Containment Hierarchy.*

Containment Hierarchy

The containment hierarchy is the organization of design objects held in containers throughout the file system. In the context of hierarchy, you can think of a container as simply a directory. *See also: Container.*

Contents Mode

When the contents of a directory are displayed in a navigator window, the navigator window is in contents mode. The navigator window is always in contents mode, unless you have just explored the references of a design object. In contents mode, the navigator title bar displays the absolute pathname of the directory whose contents are displayed in the navigator window. *See also: Reference Mode.*

Context Diagram

The Context Diagram is a type of system environment diagram. It is a graphic view of a system that describes the relationship between the system being modeled and the system's surrounding environment. The Context Diagram contains a single system symbol that represents the whole system. This is connected to externals by input and output flows. The Context Diagram can also contain junctions and annotation blocks.
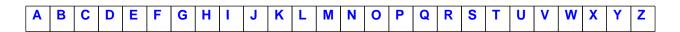
Continuum-QuickHDL

A coupled-kernel simulator that includes a VHDL compiler and separate graphical user interface from standard Continuum. SimView provides the graphical interface for schematic design and for AccuSim II-related data. The AccuSim II kernel operates on the analog partition and the QuickSim II kernel operates on the digital partition of the design; FlexSim synchronizes the calculations between the kernels.

Control Architect

The System Architect session window that supports the animatable State Transition Matrix and Control Panel editors. *See also: System Architect.*

Control Flow

A flow that transfers control information on a Context Diagram or Data Flow Diagram. There is no semantic difference between a control flow and a data flow. A control flow typically represents a signal that controls the behavior of its destination transform. *See also: Connector.*

Control Key Sequence

A keystroke combination (Ctrl in combination with another key) used as a shorthand way to specify commands. To enter a control key sequence, hold Ctrl down while pressing another key.

Control Panel

1. A part of a window that holds push buttons and other gadgets.

2. A DSS sheet that contains action buttons designed to control other sheets.

3. Within the context of System Architect, a graphical interface containing action buttons and gadgets that is used by the prototyping tool to exercise a State Machine or a VHDL Model of a system or transform.

Control System

A self-contained system, with defined inputs and outputs, that describes control behavior. Typically used for sequential logic. *See also: System Instance and System Symbol.*

Control Transform

A subsystem that represents a control block in a Data Flow Diagram. There is no semantic difference between a control and data transform, but a control transform is typically used to describe control behavior and is typically defined by a child State Machine view. *See also: Transform Instance and Transform Component.*

Conversion

The action of taking old data, designs, or userware and creating equivalent new data in a new format.

Converter

Any tool used to convert data from an old format into a new format.

Copy

1. To store Notepad text from the text window in a clipboard, leaving the original text intact.

2. To duplicate selected text in another area of the Notepad text.
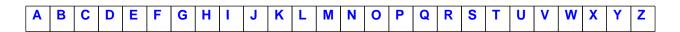
Correct By Construction

The Correct By Construction (CBC) mode restricts editing to prevent changes to connectivity or violations of physical design rules. Connectivity and physical design rules are checked with each edit and any edits that would cause a violation are not accepted (unless you specify the inst_unchecked option on certain functions). In the CBC mode, a rulecheck group named continuous_drc is automatically evaluated each time that you modify the layout. You must have the continuous_drc group in your Rules File. The CBC mode is typically used for compaction and cleanup after you do automated layout. *See also: Geometry Editing and Connectivity Editing.*

Correspondence

Correspondence is a term that describes the information contained in a crossprobe table. This information describes the relationship between an instance in a logic source (schematic) and the corresponding layout object. Correspondence is established by:

1. Running LVS.

2. Running SDL.

3. Using the function called $set_logical_correspondence().

See also: Crossprobe Table.

Count

The value of a digital word. For example, the digital output word "1 0 1 1" has a count of 11 because 1011_2 is 11_{10}.

Coupled Simulator

A mixed-signal simulator consisting of separate analog and digital simulator kernels, in which the interface between the analog and digital simulation algorithms is internal to one of the simulators.

Coupling Capacitance

Coupling capacitance is the capacitance between two different paths on the conduction layers. Coupling capacitance is comprised of crossover overlap, crossover fringe, and near-body capacitances.

Courier

A monospaced font family that can be printed on a laser or CheckPlot printer.

CPI

See Characters Per Inch.

CPL

See Characters Per Line.

Cross-probing

Cross-probing is a method of automatically highlighting a portion of either a cell layout or schematic that corresponds to a selected portion of either a schematic or cell layout, respectively. *See also: Correspondence, Crossprobe Table, and ECO.*

Crossover Fringe Capacitance

Crossover fringe capacitance is proportional to the perimeter of the of the path segments that overlap.

Crossover Overlap Capacitance

Crossover overlap capacitance is proportional to the area of overlap between paths.

Crossprobe Table

A crossprobe table is a persistent record associated with a design viewpoint that contains correspondence information. The Common User Interface uses correspondence information for highlighting and ICgraph's ECO functionality uses it to determine when changes have been made to a logic source that have not been applied to a layout. *See also: Correspondence.*

CUI

See Common User Interface.

Current View

The model of a SDS component that is used in hierarchical operations and, by default, in open commands and VHDL generation.

Cursor

See Mouse Pointer and Insertion Cursor.

Curve-fitting

The process of matching the curves from a simulated model to measured data points. Mentor Graphics uses optimization techniques to extract the model parameters that produce the best fit of curves to measured data.

Custom Clock

A user-defined set of clocks.

Glossary D

The following terms are described in this section:

Daemon
Data
Data Flow
Data Flow Diagram
Data Model
Data Point
Data Set
Datasheet
Datasheet Value
Data System
Data Transform
Data Type
DCOP
DDMS
DDP
Decomposition
Default
Default Actions Block
Default Build Rules
Default_printer_name
Delete
Demand Loading
Demoting Cells
Derived Edge Layer
Derived Error Layer
Derived Polygon Layer
Descender
Design
Design Architect
Design Configuration Rules
Design Cycle

Design Data Configuration
Management
Design Database
Design Dataport
Design Decomposition
Design Entity
Design Evaluation
Design Flattening
Design Hierarchy
Design Instance
Design Latching
Design Manager
Design Object
Design Root
Design Traverser
Design Unit
Design Viewpoint
Design Rule Checking
Design Viewpoint Editor
Destination
Destination Technology
Device
Device Driver
Device Generator
Device Recognition
Device Recognition Template
DFA
DFI
Dialog Box
Dialog Box Control
Dialog Box Indicator

Dialog Navigator

Digital Modelfile

Digital Word

Dimensional Check Operation

Dimensional Check Rules File Operation

Dimmed Menu Item

Dimmed Selection

DIP

Direct Connectivity Extraction

Direct ICextract Parasitic Extraction

Direct ICextract PEX

Direct ICtrace Layout Versus Schematic

Direct ICtrace LVS

Direct PEX

Direct Verification

Directive

Directory

Discrepancy

Discrete Component

Discrete Device

Discrete Model Parameter

Display

Display Manager

Display Manager Window

Dissolve

Distributed Parasitic Extraction

DM

DO File

Document Area

Document Window

Domain

Domain/OS

Dont_touch

Dots Per Inch

Double-clicking

Downloading

DPI

Draft Mode

Drag

DRC

Drive

DSC

DSS Application

DTR

Dual Inline Package

DVAS

DVE

Dynamic Rectangle

Daemon

A continually running process that handles a specific function or system-wide functions. An example is the TCP/IP protocol server process, tcpd, which initializes several internal tables that are required for operation of the TCP/IP protocols and enables a system's socket-call interface. Daemon is also another name for server. See also: BOLD Daemon.

Data

Objects, directories or files, created by Mentor Graphics applications.

Data Flow

A flow that transfers data on a Context Diagram or Data Flow Diagram. There is no semantic difference between a data flow and a control flow. A data flow typically represents a signal that transfers data between component nodes. See Connector.

Data Flow Diagram

A type of block diagram. It is a graphic view of a system or transform that defines the behavior of this system or transform in terms of lower level transforms. A Data Flow Diagram (DFD) consists of a number of connectable elements connected by flows. The diagram can also contain annotation blocks. The Data Flow Diagram at the top of the hierarchy in the System Component is known as the Top Level Data Flow Diagram.

Data Model

An internal representation of a collection of data, used and maintained by an application.

Data Point

An individual measurement that comprises a data set; measured data.

Data Set

A collection of similar data points that correspond to the same measurement condition or setup; measured data.

Datasheet

A *datasheet* contains information describing the characteristics of analog components or component models. There are two types of datasheets:

- *Model datasheets* detail the simulation performance characteristics in AccuSim II of the models of components that Mentor Graphics develops.

- *Manufacturers' datasheets* detail the electrical characteristics of a physical device, that is, a component.

Mentor Graphics uses specifications from manufacturers' datasheets during model development to compare Mentor Graphics simulation model performance characteristics against manufacturer's component specifications.

Datasheet Value

Numerical values for a component's electrical characteristics. Sources for datasheet values are tabular or graphic curve data values from datasheets. Alternatively, you can manually measure a limited amount of data.

Data System

A self-contained system, with defined inputs and outputs, that describes data transformation. Typically used for combinational logic. See System Instance, System Symbol and System Component.

Data Transform

A subsystem that represents a data block. There is no semantic difference between a data and control transform, but a data transform is typically used to describe data transformation and is typically defined by a child Data Flow Diagram or VHDL Specification view. See Transform Instance and Transform Component.
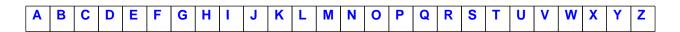
Data Type

A classification of data recognized by an application. Examples of data types are string, boolean, and vector.

DCOP

The acronym for DC Operating Point.

DDMS

The Design Data Management System is the entity responsible for managing the lookup and acquisition of persistent data objects requested by applications. The DDMS interacts with the data models and low-level IO facilities to accomplish the reading and writing of application data from and to various persistent media.

The DDMS is a set of classes and their member functions supporting tool and data encapsulation, data model definition and storage, and design data management. The fundamental concepts supported by these functions include persistence, typed objects, object identification, versioning, configurations, transparent referencing of persistent objects, and concurrency control.

DDP

See Design Dataport.

Decomposition

The process of substituting generic netlists for each technology-specific primitive.

Default

A value assigned to the function argument by an application when the user does not supply a specific choice.

Default Actions Block

The default actions performed by a synchronous State Machine when there is a transition from one state to another.

Default Build Rules

The default build rules are the rules used to build a configuration if you do not specify build rules for a primary entry. The default build rules include all design objects in both the containment hierarchy and reference network. See also: Build Rules.

Default_printer_name

An environment variable that is the printer name.

Delete

To remove Notepad text from the text window and discard it. Deleted text can be recovered with **Undo**.

Demand Loading

The process of postponing creation of a user interface object, such as a menu or dialog box, until needed. The object is created the first time you invoke it.

Demoting Cells

Changing from an editing mode of tighter constraints to an editing mode of fewer constraints is called demoting a cell.

Derived Edge Layer

Derived edge layers are comprised of edges or edge segments.

Derived Error Layer

Derived error layers contain edge clusters resulting from error-directed operations.

Derived Polygon Layer

Derived polygon layers are comprised of polygon information, and derived edge layers are comprised of edges or edge segments.

Descender

The portion of lower-case letters (g, j, p, q, and y) that extends below the baseline of other characters.
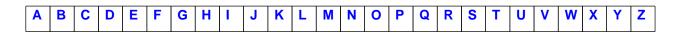
Design

1. A component and a design viewpoint, which together describe the electrical, graphical, and configuration aspects of a design.

2. The contents of a directory initially created by Design Architect. The design contains all the data necessary for processing simulation and layout applications. *See also: Design Object.*

Design Architect

The Mentor Graphics schematic capture application that includes a Schematic Editor, a Symbol Editor, and a VHDL Editor. You can use it to create and edit logical designs that are used by downstream processes such as IC and PCB layout and analog and digital simulation.

Design Configuration Rules

A set of rules located in the design viewpoint used to evaluate source objects. These rules define parameters, primitiveness, substitutes, visible properties, and inserts.

Design Cycle

The sequence of phases through which a design evolves. For example, the typical electronic design cycle consists of concept, design, simulation, layout and test.

Design Data Configuration Management

Configuration management is the process of managing configurations. Configuration management includes copying and releasing designs. See also: Configuration and Configuration Object.

Design Database

A set of objects that describe a design. See also: Design.

Design Dataport

A programmatic interface that gives a C programmer direct access (read and edit) to component data in the database.

Design Decomposition

The process of defining the architecture, components, interfaces and other characteristics of a system or component. Also, the result of this process.

Design Entity

A design entity is the primary abstraction level of a VHDL hardware model. The design entity represents a cell, chip, board or subsystem. A VHDL design entity is composed of two main parts, a VHDL entity declaration and a VHDL architecture body.

Design Evaluation

The process of evaluating expressions, parameters, and frames to establish electrical connectivity across the design. The mechanism that allows design evaluation is the design viewpoint. Design evaluation occurs as needed by downstream applications.

Design Flattening

The process of looking down through hierarchical components to the bottom (primitive) level of the design and removing all hierarchical information. Some downstream tools require this "flattened" view of the design.

Design Hierarchy

A means of representing increasing levels of detail in a design. For example, the top level of a design hierarchy could be a block diagram, the next level could be the logic gates that implement the block diagram, and the bottom level could be the transistors that implement the logic gates.

Design Instance

A design instance is created when a design is evaluated. The pre-V8 .erel files created with EXPAND contain design instances.

Design Latching

A means of "freezing" the design in its current state so that the design can be released for simulation or layout. It lets work continue on the design without affecting the simulation or layout. Latching a design locks the current version of objects referenced by the design viewpoint and prevents them from being edited or deleted.

Design Manager

A graphical interface to, and management facilities for, design data such as schematic, PC board, and IC layout designs, and for managing applications. The Design Manager supports three primary tasks: file system navigation, tool invocation, and design data configuration management. For example, the Design Manager permits you to copy or move designs, keeping references intact. You can also specify version levels, freeze versions, create design configurations, release, or archive designs, among other Design Manager functionality. See also: Registrar and Design Object.

Design Object

1. An object-oriented database object consisting of data and methods to operate on that data. Design objects also contain the information that applications need to understand that data. This allows applications to be invoked on a design object.

2. In a design, it is an instance, net, or pin.

3. A set of files and directories that represents one aspect of a design. In the Design Manager, these files and directories appear as a single object with a

unique icon to represent the object's type. When you perform operations on a design object, you need not remember which files and directories compose the object. The Design Manager treats them as a single object.

4. An encapsulation of the various aspects of a design. For example, a Design Architect design object can consist of schematics, sheets, and parts. Using the Design Manager, a design object provides a single, consistent entity that you can copy, move, and release. *See also: Fileset*, Type, Version, Graphics Object and Encapsulation.

Design Root

In the Mentor Graphics environment, the top level of a design hierarchy. Generally, but not always, applications are invoked upon the design root.

Design Traverser

A Mentor Graphics pre-V8 application used to examine and modify the design database.

Design Unit

[VHDL] A design unit is a portion of the hardware description (model) that can be contained and compiled in a separate design file. The following are design units: entity declarations, architecture bodies, package declarations, and package bodies. The ability to store design units in separate files allows you to modularize a design description by compiling each entity or package declaration separate from the corresponding body. This ability is also useful so packages can be shared by multiple entities.

Design Viewpoint

A design viewpoint is a special design object that contains design configuration rules for evaluating the source object along with references to back annotation objects. It is not a copy of the component; it is a set of rules used by downstream applications to evaluate the component, and a container in which related design information is stored.

Similar to the pre-V8 .erel file created by EXPAND. The design viewpoint is a design object, implemented as a directory, that specifies how a design is to be composed. The design viewpoint specifies the versions to use for the various parts of the design, and values of design parameters, and builds the rules that

describe primitive instances. A design object can have multiple design viewpoints.

You use the Design Viewpoint Editor (DVE) to create a design viewpoint, which is a special data object used for design configuration. The design viewpoint contains a subset of the schematic's information that is used by a specific tool, such as ICgraph. A design viewpoint is a special design object that contains both design configuration rules for evaluating the components created by Design Architect and references to related back-annotation objects. A design viewpoint is required before the design can be used with other downstream EDA tools, such as ICblocks.

Design Rule Checking

(ICrules DRC) checks design rules such as width and spacing of your layout. You specify rules in the Rules File that describe the relationship of shapes to one another.

Design Viewpoint Editor

An interactive design configuration editor that you can use to set and change the rules that configure your design, check the Design Viewpoint to create, edit and view models, and to browse the design. In addition you can use it to create, connect, disconnect, and prioritize back-annotation objects.

Destination

The connectable element at the end of a connector.

Destination Technology

The technology used to implement the design after optimization.

Device

A hardware component that acts as a unit to perform a specific function. Example of devices are printers, hard disk drives, cartridge tape drives, and CD ROM drives.

Device Driver

A program that controls the flow of information to and from a hardware device.

Device Generator

Device Generators are AMPLE userware programs, written by the customer that allow the user to create and place layout devices, such as transistors, resistors, capacitors, paths, gates, and more complex cells. Device Generators allow you to build "nearly-alike" repeated devices, where each placement can have unique parameters. For example, you can have a generic transistor Device Generator, but place each occurrence with unique width and length values.

Generated Devices are similar to traditional cells in most ways; however, traditional cells maintain a graphical template that's used to produce each instance of the cell. All instances of a cell are identical to each other, and edits to the cell template are automatically reflected in all instances of the cell. Devices do not maintain a graphical template.

Device Recognition

Device Recognition analyzes your design's layout geometries to recognize and classify device instances. It compares the layout geometries to device templates that are stored in the Rules File. When it finds a group of polygons that matches a device template, it notes the type, location, connectivity, and properties of the device instance.

Device Recognition Template

A device recognition template is a set of device definitions in a DEVICE statement, that describes how a collection of polygons can be recognized as an instance of that device.

DFA

Design File Analyzer. A set of pre-V8 commands available in EXPAND and all Mentor Graphics simulators. DFA commands were used to examine a design file. DFA has been replaced by Design Viewing and Analysis Support.

DFI

Design File Interface. A read/back-annotation write procedural interface to the Mentor Graphics design, through a design viewpoint.

Dialog Box

A box that appears after you invoke a command or function for which you must provide additional information required by the application. See also: Options Dialog Box and Prompt Bar.

Dialog Box Control

A graphic control that elicits simulation of an action, such as pushing a button or moving a slider. This small, interactive area displays a value or solicits input from the user. See also: Slider.

Dialog Box Indicator

An ellipsis (...) that follows a menu item. Indicates that executing the menu item displays a dialog box.

Dialog Navigator

The dialog navigator is a dialog box control that allows navigation to and selection of design objects. The application that displays the dialog navigator can filter the navigator's display to show only design objects of particular types.

Digital Modelfile

Contains QuickSim II initialization information for RAMs and ROMs.

Digital Word

A set of bits collectively defining some higher level quantity. In this manual, this term applies only to Analog-to-Digital and Digital-to-Analog Converters.
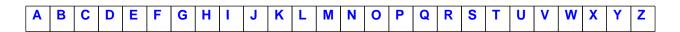
Dimensional Check Operation

Dimensional check operations measure the separation of edges on one or two input layers. You can modify dimensional check operations by using a wide variety of secondary keywords.

Dimensional Check Rules File Operation

Generates derived error layers, derived edge layers, or derived polygon layers by measuring the separation of edges on one or two input layers.

Dimmed Menu Item

A menu item that is not available because of the current menu state. Typically, the unavailable menu item displays in a gray color that appears dimmer than other available selections.

Dimmed Selection

A selection that is not available because of the current operation. Typically, the unavailable item displays in a gray color that appears dimmer than other available selections.

DIP

See Dual Inline Package.

Direct Connectivity Extraction

Extracts connectivity from the layout geometries to recognize electrically connected nets. Direct Connectivity Extraction is the IC Station connectivity backbone that lets you change the editing mode of the cell and maintain the cell's connectivity.

Direct ICextract Parasitic Extraction

Direct ICextract Parasitic Extraction (Direct PEX) calculates capacitance and resistance values for nets that correspond to paths in an active context cell.

Direct ICextract PEX

Calculates parasitic capacitance and resistance for nets, estimates time delays, and gives you the ability to back-annotate the results to a schematic.

Direct ICtrace Layout Versus Schematic

Direct ICtrace Layout Versus Schematic (Direct LVS) compares the active context cell's connectivity to the source circuit's connectivity. Direct LVS operates on cell instances, nets, ports, and instance pins in the active context cell. It creates correlation data by finding matches between the cell instances, nets, ports, and instance pins of the layout circuit to corresponding elements of the source circuit.

Direct ICtrace LVS

Compares electrical connectivity of a cell layout with a source circuit, and gives you the capability to perform cross-probing between the layout and source.

Direct PEX

Direct PEX reads net information from the cell's Connectivity Database and stores the extracted net parameters as properties of the corresponding net objects back into the Connectivity Database.

Direct Verification

Direct verification takes advantage of the connectivity already present in the layout cell you are currently editing and compares the connectivity of the layout and the source.

Directive

A valid entry in a server or job configuration file. Directives usually consist of a keyword and value pair. For example:

```
page_width    8.5 in
```

Directory

An object in the file system that contains files and other directories.

Discrepancy

A discrepancy is any difference between the connectivity of the layout and the source.

Discrete Component

A single-packaged semiconductor device (component). Mentor Graphics implements AccuParts models for discrete components, with the exception of some models like power FETs, temperature- compensated Zener diodes, and transient suppressors, using built-in AccuSim II primitives. Discrete components include the following:

- Bipolar junction transistors (BJTs)

- Diodes

- Junction field-effect transistors (JFETs)

- Metal-oxide semiconductor field-effect transistors (MOSFETs)

- Zener diodes

Power FETs are also discrete, but Mentor Graphics implements power FET models as macromodels.

Discrete Device
See Discrete Component.

Discrete Model Parameter
The mathematical variables whose values, when properly selected, match the model template's characteristics to those of the physical component and its specifications. Discrete model parameters appear in the .MODEL statement for an AccuSim II primitive.

Display

1. A physical device, such as a CRT (cathode ray tube) that graphically displays information from the computer , that shows images.

2. The physical representation of data, as on a screen.

3. The process of creating a visual representation of graphic data on an output device.

4. A UNIX environment variable that specifies the name of the workstation where display events are received.

   For example: setenv DISPLAY nodename:0.0

Display Manager
The workstation program that executes commands that start and stop display processes, as well as commands that open, close, move, or modify windows and pads. OpenWindows and HP VUE are examples of display managers.

Display Manager Window
A window created by the workstation window system. HP, Sun, Mentor Graphics, and other applications run in a display manager window.

Dissolve
A hierarchical control in the optimization process that tells AutoLogic to dissolve the boundaries of a hierarchical block That block (and each block beneath it) loses its identity as a block and becomes a part of the hierarchical block immediately above it.

Distributed Parasitic Extraction

Distributed parasitic extraction calculates distributed resistance and capacitance (RC) trees, which are comprised of both parasitic resistance and capacitance effects. Each section of a net is assigned a pair of resistance and capacitance values that represents all parasitic resistance and capacitance values for that section.

DM

See Display Manager.

DO File

A pre-V8 text file containing a sequence of commands (a macro) that can be executed using the DO command within an application.

Document Area

The area within the document window that displays the pages of an online document. The document area is beneath the document window title bar.

Document Window

A window in which an individual online document can be viewed and manipulated. A document window is contained within a BOLD Browser session area window. A document window contains the document area, and also consists of the window title bar (which contains the window menu button, window control buttons, document title, and any BOLD Browser icons) and the scroll bar areas (hidden by default).

Domain

A collection of systems administered as a logical group. In NIS, a domain is a group of systems that access the same set of NIS maps. Domains are given names and can be nested within one another. For example, your host, along with other hosts can be part of a domain named sys_mgt. In turn, domain sys_mgt, along with domains engr, mktg, and desg can be part of a larger domain named wiblets.

Domain/OS

The HP/Apollo operating system, which consists of the Aegis, BSD 4.3, and Sys V.3 operating environments and other support software.

Dont_touch

A control placed on a hierarchical block that tells AutoLogic to calculate the timing through the block, but not to optimize it.

Dots Per Inch

The resolution of any pixel-oriented device. Dots per inch often expresses the resolution of both the display device and the printer. Displays are typically 75 to 100 dpi, while printers are typically 180 to 400 dpi.

Double-clicking

Clicking a mouse button twice in rapid succession without moving the pointer.

Downloading

The process of filling the printer character generator RAM with a user-supplied font. The printer then uses the supplied font in place of the built-in font.

DPI

See Dots Per Inch.

Draft Mode

A quality of print on the page that is not suitable for presentation. Usually, this mode is faster than letter quality.

Drag

To press and hold down a mouse button or keyboard key while you move the mouse (and the pointer on the display). Typically, you drag the mouse pointer when selecting items or when moving or resizing a window.

DRC

See Design Rule Checking.

Drive

The relationship between output delay and capacitance load.

DSC

Design Syntax Checker checks a schematic design with respect to the configuration rules of a design viewpoint. DSC is a subset of the Design Viewing and Analysis Support (DVAS) functionality.

DSS Application

An application built using DSS. This includes small prototypes or large, fully-functional applications. The icon strip includes some examples of DSS applications.

DTR

See Design Traverser.

Dual Inline Package

A package of electrical connections enclosed in plastic or other material, whose external connecting pins are set in two parallel rows. DIPs are intended to be plugged into a circuit board.

DVAS

Design Viewing and Analysis Support. Consists of selecting, viewing, highlighting, analyzing, reporting, grouping and naming functionality used by multiple applications.

DVE

Design Viewpoint Editor. An interactive application used to create and edit design viewpoints. It enables you to set and change the rules that configure a design, including the creation and management of back annotation data.

Dynamic Rectangle

A rectangle representing the outer boundaries of an object. When you move an object, a window for example, a rectangle moves with the mouse pointer while the object remains stationary. When you release the mouse button, the object moves to the location where you placed the dynamic rectangle.

Glossary E

The following terms are described in this section:

ECO
EDDM
EDDM Netlist
Edge
Edge Expansion Operation
Edge Measurement Operation
Edge Topological Operation
Edge-based Polygon Selection
Operation
EDIF
Edit Cursor
Edit Mode
Electronic Design Data Model
Electronic Design Data Model Design
Viewpoint
Element
Element Name
Element Property
Encapsulation
Engineering Change Order
Entry Box
Entry Node
Environment Variable
EOC
ERI
ERI Server
Error Manager
Error-directed Operation
Estimation
Ethernet
Evaluation

Event
Exit Link
EXPAND
Explicit Clock
Expression
Extent Box
Extent Generation Operation
External
External Aspect
Extraction

ECO

1. The acronym for the ICgraph functionality that you use to report changes made to a logic source and implement corrections to the layout.

2. An acronym for Engineering Change Order.

See also: Crossprobe Table.

EDDM
See Electronic Design Data Model.

EDDM Netlist
See Simple Connectivity Model.

Edge
A transition from zero to one volts or one to zero volts. A rising edge occurs during the zero to one transition; a falling edge occurs during the one to zero transition.

Edge Expansion Operation
Edge expansion operations generate rectangles on a derived polygon layer from edges on either an original polygon, a derived polygon, or a derived edge layer.
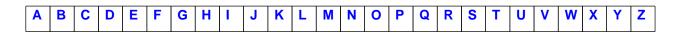
Edge Measurement Operation
Edge measurement operations select edges from the input layer that meet certain length or angle requirements in order to generate a derived edge layer.

Edge Topological Operation
Edge topological operations generate derived edge layers by selecting edges from the first input layer that satisfy certain topological relationships with either polygons or edges from the second input layer.

Edge-based Polygon Selection Operation
Edge-based polygon selection operations select polygons that either share or do not share edges of a derived edge layer.

EDIF

Electronic Design Interchange Format. A common format of transferring data between various EDA systems.

Edit Cursor

The point of insertion, marked by a vertical bar.

Edit Mode

ICgraph has three editing modes, or levels of rules checking that you can assign to each cell when you create it. The editing modes are Geometry Editing (GE), Connectivity Editing (CE), and Correct By Construction (CBC).

Electronic Design Data Model

A generic data model used for exchanging information and persistent storage of connectivity.

Electronic Design Data Model Design Viewpoint

A special design object that contains design configuration rules for evaluating the source object, related design information, and references to back-annotation objects.

Element

A graphic item on a diagram that can be added, moved or deleted. Element types include any connectable element, connector, title and annotation block. *See also: Requirement View Element*.

Element Name

Identifies the type of recognition logic that Device Recognition uses to find groups of polygons that are a particular type of device.

Element Property

A property telling AccuSim II what kind of analog component an instance represents; that is, whether the component is a resistor, a capacitor, a transistor, and so forth. For example, the value of the Element property for the BJT 2n2222, which uses the component $MGC_APLIB/npn, is "Q"; Q represents transistor.

Because every System Modeling Block is a subcircuit, the Element property on every modeling block symbol is "X", which is the property value for a subcircuit-defined element.

Encapsulation

The process of integrating design tools or design data into the Design Manager. Encapsulation controls how applications and data are used within the Design Manager, without affecting the application or data. This is also referred to as tool registration. *See also: Design Manager* and Design Object.

Engineering Change Order

An engineering change order is a process that describes a change or changes made within a large system, such as the logic that drives an IC layout.

See also: ECO.

Entry Box

An area in which you enter text, numbers, DSS or AMPLE expressions. Typically, an entry box is part of a dialog box or prompt bar.

Entry Node

A symbol on a child State Transition Diagram that connects to the parent composite state in the parent STD. *See also: Transition Node.*

Environment Variable

Usually associated with your login id or an application. The operating system shell maintains these character strings of the form *name=value* where *name* can be any character string that does not include the dollar sign ($) and does not have embedded white space, and *value* can be any character string including spaces. The shell remembers the name and value. Notice that the convention is to name environment variables in uppercase characters, but this is not required.

EOC

The acronym for End Of Conversion. It is an output voltage signaling the completion of an analog-to-digital conversion. When EOC equals one volt, conversion is complete; when EOC equals zero volts, conversion is in progress. In this manual, this term applies only to Analog-to-Digital Converters.

ERI

External Rendering Interface. Software for the generation of renderings of data objects by reference. ERI allows applications to obtain graphical views of designs from Mentor Graphics EDA tools and other third party data formats for inclusion in documents, viewing, printing, and plotting in the V8.0 environment.

The ic_eri shell command is used to create a non-graphical interface between IC Station graphics and other applications, such as print servers and the design manager.

ERI Server

A server that renders data into an acceptable form for displaying, printing or plotting. An ERI server can be part of an application (and therefore user-transparent), or it can be an application by itself.

Error Manager

Manages the display and transcription of all user interface errors, warnings, notes, and failures.

Error-directed Operation

Error-directed operations analyze the polygons on all of the original layers to find edges of polygons that are at acute angles to each other, edges that are skew, and edges that are not on grid.

Estimation

See Parameter Estimation.

Ethernet

A mid-range type of local area network (LAN). Originally Ethernet was jointly developed by Xerox, Intel, and DEC. The IEEE adopted the specifications of Ethernet as the IEEE 802 specification. In an Ethernet, a network device such as a workstation can broadcast and receive signals to and from other devices along or across terminated cable segments.

Evaluation

The act of a simulator determining the output of an instance based on the instance's input values. *See also: Design Evaluation.*

Event

1. An occurrence of a rising or falling edge or a voltage crossing a threshold. An event causes a modeling block to perform some action. The term event is used mainly with the digital modeling blocks.

2. A signal from the hardware input devices that generates a Common User Interface software action.

Exit Link

A symbol on a child State Transition Diagram that connects to the parent composite state in the parent STD. *See also: Transition Node.*

EXPAND

A Mentor Graphics pre-V8 application that processes hierarchical information from the design database and creates a design file (with a *.erel* extension). The design file is a binary netlist that describes component interconnections of a circuit, and also contains other information required by the application for which the netlist is created.

Explicit Clock

A flow on a Data Flow Diagram that is used as a clock signal by a VHDL process. *See also: Clocking Schemes.*

Expression

A mathematical or Boolean statement that must be evaluated before its value is known. The use of expressions allows parameters to be changed easily.

Extent Box

An extent box is a transparent graphical image that the mouse draws. The extent box is displayed as a dynamic rectangle that represents the outer boundaries of an object. When you move an object, a window for example, a rectangle moves with the mouse pointer while the object remains stationary. When you release the mouse button, the object moves to the location where you placed the dynamic rectangle.

Extent Generation Operation

Extent generation operations create a derived polygon layer consisting of rectangles that represent bounding boxes from either an original polygon, a derived polygon, or derived edge layer.

External

1. EDIF terminology for a library that already exists at the destination system; that is, the library is already located on the system where the netlist or design will be created.

2. In System Architect, a connectable element in a Context Diagram that is a source or destination for data that is outside the boundaries of the system being modeled. Sometimes also called terminators.

External Aspect

In ICgraph, there are two sets of data associated with a cell: internal aspect and external aspect. External aspect objects are the interface and abstraction of the cell. *See also: Aspect and Internal Aspect.*

Extraction

See Parameter Extraction.

Glossary F

The following terms are described in this section:

Face
Falcon Font Path
Falcon Framework
FastScan
Fault Analysis
Feature
Field Separator
File
File Caching
File System
File System Object
File Transfer Protocol
Fileset
Fill Page
Filter
First Cut Panel
Flat Checking Mode
Flat Design
Flat Layout
Flatten
FlexTest
Floating License
Floorplan
Floorplanning
Floorplan Shape
Flow
Flow Net
Font
Font Family
Font Library
Font Path

Font Size
Footer
Foreign Instance
Form
Formal Flow
Formal Point
Format
FORTRAN
Frame
Framework
Freeze
Freeze Design
Freeze File
Fringe Capacitance
Front-End
Front-End Design
Frozen Reference
Frozen Version
Fsck
FTP
Ftxt
Full Custom Layout
Full Text Search Index
Function
Functional Decomposition
Functional Model
Functional Primitive
Functional Test
Function Header
Function Key

Face

A specific weight or slant of a font family, which shares the basic style of that family, and includes a variety of sizes. See also: Bold, Italic, and Standard.

Falcon Font Path

A path whose leading elements locate a directory and whose leaf gives the file prefix for a Falcon font. When you add a file suffix such as .bdf or .snf to the prefix, you get the name of a font file.

Falcon Framework

Mentor Graphics framework of an object-oriented core technology, linking together in dynamic relationships a Motif-compliant Common User Interface , a design database management system, a design management environment, a decision support system, online documentation, and an advanced multi-purpose programming language. This framework is the foundation for bringing design application tools together into an advanced architecture with the powers of concurrent, multiple viewpoints acting on a common database, plus powerful programming capabilities for organizing and controlling design processes and project management, and customizing the user interface.

FastScan

FastScan creates a set of test patterns that achieve a high, accurately measured test coverage for scan based designs. FastScan performs a static learning analysis of the circuit to determine indirect relationships of gate assignments.

Fault Analysis

Fault analysis is the process that the simulator uses to determine the fault detection coverage of your designs.

Feature

A portion of the license data file that contains the Mentor Graphics software license. Features are either composites, such as ASIC Tools; stations, such as Idea station; or options, such as QuickSim.

Field Separator

A line or rectangle drawn or etched around a set of controls to show that the controls contained within the box are logically related.

File

A type of storage object that contains information in ASCII, binary, data, or relational format. See also: Directory.

File Caching

To store data that has been accessed from an online library in a file on the hard disk on which the resource server is running. File caching speeds up repeat access to library data; however, it is done at the expense of disk space.

File System

A hierarchical arrangement of directories and files.

File System Object

File system objects are the files and directories of which a design object is comprised. See also: Fileset and Design Object.

File Transfer Protocol

A protocol for copying files between hosts. FTP uses TCP/IP as underlying protocols.

Fileset

A fileset is the combination of files and directories that compose that object. The files hold either design data or metadata, which is data that describes the design object. The directory can contain other files or design objects. The Design Manager treats the entire fileset as a single object. When you use the Design Manager to move, copy, or delete a design object, that object's entire fileset is moved, copied, or deleted. See also: Design Object.

Fill Page

The graphics object scales or magnifies to fill, at most, one page width.

Filter

Removes edge pairs based on orientation, projection, connectivity, polygon membership, and non-intersection criteria from the edges that are analyzed

First Cut Panel

A Control Panel, which has been created from a State Machine description, which has been not been modified or changed in any way. Also referred to as "initial" panel.

Flat Checking Mode

In the FLAT checking mode, ICrules DRC analyzes your entire design, from the top-level cell to the bottom of the cell hierarchy.

Flat Design

A design evaluated down to its primitive level with all intermediate hierarchy removed.

Flat Layout

Flat layout contains only mask layout data. You generally use flat layout for smaller chip designs, defining functional blocks, and creating library cells for automated layout.

Flatten

1. A hierarchical control that tells AutoLogic to flatten all levels of hierarchy beneath a particular hierarchical block. Instances marked with a flatten hierarchy control have all hierarchical boundaries removed within that block and the block contents incorporated into the parent block.

2. An algorithm that attempts to express a design in two-level form.

FlexTest

FlexTest is a high performance sequential Automatic Test Pattern Generation (ATPG) system that allows you to create a set of test patterns that achieves a high, accurately measured test coverage for your cycle-based circuits.
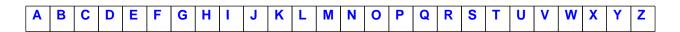
Floating License

Floating licenses are available through a network license broker and can authorize a particular workstation to run the application or specific functionality within the application.

Floorplan

A floorplan is a topological structure comprised of rows and shapes used as guides for placing cells in a design.

Floorplanning

Floorplanning is the process of estimating the chip area that will be used for each standard cell or block in the design.

Floorplan Shape

Floorplan shapes are closed polygons that exist on a single layer. They are used in top-down hierarchical design to plan the shape and size of a cell that has not yet been placed, routed and compacted.

Flow

A signal represented as a connector on a Context Diagram or Data Flow Diagram. A flow represents a transfer of data or control signals between, mostly, transform instances. Strictly speaking, a flow is a single connector and a network of connected flows with the same name is called a flow net.

Flow Net

A set of flows or signals that have the same name and are on the same diagram and any connected flows on a parent or child diagram. A flow net can be either a signal flow net (that contains only signal flows) or a formal flow net (that contains only formal flows). A flow net has an associated type name. This is the name of a type definition, which should be defined in one of the Type Definition Packages in the type definition package list of the diagram containing the flow net. The flows in a flow net cannot be a mixture of formal and signal flows. They must also be either all control flows or all data flows.

Font

The display representation of a complete set of alphanumeric characters in a single point size and face. Times Roman is the font used for most newspaper text; Helvetica is the font used for newspaper headlines. Fonts are usually stored as bitmaps but can also be represented as stroke tables.

Font Family

A set of fonts that contains different sizes and faces but whose members are all of the same visual character style. Times and Helvetica are examples of font families.

Font Library

See Font Family.

Font Path

See Falcon Font Path and X Windows Font Path.

Font Size

See Point Size.

Footer

Text that repeats at the bottom of each page of a multi-page document.

Foreign Instance

A component node on a Data Flow Diagram that instantiates a model that was not created by System Architect and is therefore not within an SDS component (for example, user written VHDL or Verilog models, gate level VHDL models created by synthesis or DSP Station generated VHDL). A port interface entity must exist for the referenced model as a VHDL entity or Verilog Module. See also: Transform Instance, System Instance, and Logic Instance.

Form

See Dialog Box.

Formal Flow

A control or data flow associated with a System Instance, Logic Instance, or Foreign Instance. A formal flow connects a system or logic instance to a formal flow, which can be connected to other control or data flows on a Data Flow Diagram.
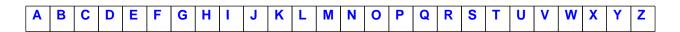
Formal Point

An element on a Data Flow Diagram that represents a connection to the formal flows associated with a Logic Instance, System Instance, or Foreign Instance.

Format

A code that goes into a cell affecting how the cell is displayed. Formats can include cell contents justification, currency formats, date and time formats, and so on.

FORTRAN

A high-level programming language developed during the 1960s and used primarily for scientific and engineering applications.

Frame

1. An object that contains names of variables or functions and their values in a specific scope. Multiple frames can be linked together to form a frame chain. This capability allows the overloading of the same function or variable name in different scopes. It also allows some functions to be restricted to certain frames.

2. The interior portion of the resize border.

Framework

A collection of software facilities, or a set of extensible services, that are the foundation for an integrated electronic design automation system. The key facilities provided by a framework include common design data management, product data management, process management, and a common user interface.

Freeze

This action copies an object's current sequence version. The frozen copy is placed in the same directory and has the same ID as the original, but has a new name. No new sequence versions can be created for the frozen copy. A frozen object is a read-only copy that can only be accessed through a frozen reference.

Freeze Design

See Design Latching.

Freeze File

A freeze file is a frozen version file that is temporarily added to a design object's fileset when you freeze a version. The file is removed when the version is unfrozen. See also: Frozen Version.

Fringe Capacitance

Fringe capacitance is proportional to the perimeter of the path conduction geometry.

Front-End

A user interface that provides a graphical environment in which the user controls the setup, running, and viewing of electronic design data. In the case of the Continuum simulator, SimView provides the front-end for a simulation. The term "front-end" presupposes there is a "back-end" which refers to a simulation kernel.

Together the front-end, in the form of the graphical user interface, and the back-end, in the form of a simulation kernel, constitute a mixed-signal simulator.

Front-End Design

Front-end design is the process of creating the logic source for your design. The logic source can be as simple as a paper copy of the design, or it can originate from many different electronic sources.

Frozen Reference

A read-only reference that refers to a frozen copy of the referenced object.

Frozen Version

A frozen version is a version of a design object that cannot be deleted by the version depth mechanism. You use frozen versions to save a particular version. See also: Version and Version Depth Mechanism.

Fsck

A UNIX utility that verifies and fixes problems found on a file system. Only the system manager should run **fsck** as "root."

FTP

See File Transfer Protocol.

Ftxt

Text in an enhanced Notepad window.
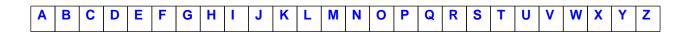
Full Custom Layout

Full custom, or handcrafted IC design is the process of creating an IC by creating and editing each polygon manually.

Full Text Search Index

An index containing a list of the words and their locations in a document. When a BOLD Browser user initiates a search for a word or word phrase, the BOLD Browser searches this index, rather than scanning through the text of all the documents.

Function

A set of instructions implemented in AMPLE and designed to run in an application. These instructions can be other functions, commands, or

programming constructs recognized by a Mentor Graphics application. See also: Builtin.

Functional Decomposition

A method of designing a system by breaking the system down into components corresponding directly to system functions and sub-functions. Also known as Hierarchical Decomposition.

Functional Model

A model that defines design connectivity and logic function, but not timing.

Functional Primitive

A component that is not further decomposed but fully defined by its own view. However, a component can have both a Data Flow Diagram view, which describes its behavior in terms of lower level components and, say, a VHDL Specification view, which fully defines its behavior. Therefore, the current view setting determines whether a component such as this is a functional primitive.

Functional Test

Sequences of input stimuli applied to the evolving design, to verify that the design functions according to specification.

Function Header

The first line or lines in a function definition. It declares the function name, function arguments, and data types, and consists of six components: the function type, the function name, the function's arguments, function argument default values, an optional transcript modifier, an optional quick help specification, and an optional reference help specification. It also checks function arguments and ensures that the value declared fails within a specified range.

Function Key

Keys that can be defined by the user or an application. See also: Key Identifier.

Glossary G

The following terms are described in this section:

Gadget
Gate-level Model
Gateway
GE
Generated Devices
GENIE
Geometry Editing
GFL
Ghost Image
GLBD
Global
Global Location Broker Daemon
Global Net
GMF
GN
Gothic Font
GPR
Graphic Input Device
Graphic-mode Printing
Graphical Interface
Graphical User Interface
Graphics Cursor
Graphics Insertion Cursor
Graphics MetaFile
Graphics Object
Graphics PRimitive
Grayed Selection
Group
Group_abut
Group_place
Group_prio

Group_seed
Grouped Box
Grow
Guaranteed Specifications

Gadget

A graphic control that elicits simulation of an action, such as pushing a button or moving a slider. This small, interactive area displays a value or solicits input from the user. See also: Dialog Box Control and Slider.

Gate-level Model

A simulation model that is either a primitive logic gate or composed of primitive logic gates.

Gateway

A device that provides protocol translation in order to let two networks that use different protocols communicate with each another. A gateway can provide translation and checking through all seven layers of the ISO model to establish reliable communication among the networks. In the Mentor Graphics environment, you can configure an HP/Apollo workstation as a gateway to allow communication between the systems on a Domain ring network and the systems on an Ethernet. See also: Bridge and Router.
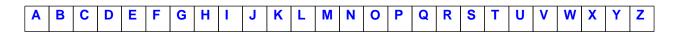
GE

See Geometry Editing.

Generated Devices

See Device Generator.

GENIE

A Mentor Graphics language used to customize AutoLogic and other tools and allow direct interaction with the synthesis engine.

Geometry Editing

The Geometry Editing (GE) mode lets you do unrestricted polygon editing, doesn't use or maintain the connectivity information, and doesn't prevent connectivity or physical design rule errors. If you demote a cell to the GE mode from the CE or CBC modes, connectivity and correspondence data will be present after demotion to the GE mode, but it might be invalidated by editing operations. You can also extract connectivity data from the design, and you can create correspondence data with ICtrace. The GE mode is typically used for handcrafting polygon-level layout. See also: Connectivity Editing and Correct By Construction.

GFL

A Mentor Graphics netlist format used by AutoLogic and other tools.

Ghost Image

A rectangle representing the outer boundaries of an object. When you move an object, a window for example, a rectangle moves with the mouse pointer while the object remains stationary. When you release the mouse button, the object moves to the location where you placed the ghost image. See also: Dynamic Rectangle.

GLBD

See Global Location Broker Daemon.

Global

Userware common to all applications. Also, a variable or command available to all programs or parts of a program. See also: Local.

Global Location Broker Daemon

A data replication manager-based daemon that maintains global information about objects on a network or internet. The glbd is part of NCS.

Global Net

1. Nets that span multiple schematic sheets.

2. Nets connected to special instances (such as VCC and GROUND) that contain the Class property with a value of G. Global nets contain the Global property, and those that have the same Global property value are assumed to be connected.

3. A Mentor Graphics netlist format used by AutoLogic and other tools.

GMF

See Graphics MetaFile.

GN

See Global Net.

Gothic Font

A monospaced, sans serif font family that can be printed on a CheckPlot plotter.

GPR

See Graphics PRimitive.

Graphic Input Device

The hardware you use to quickly position the mouse pointer or insertion cursor on the display. Graphics input devices include the mouse, puck, and touchpad. See also: Hitachi and Summagraphics.

Graphic-mode Printing

In this print mode, each bit of print information is simply converted into the presence or absence of a dot of ink. There are no higher level interpretations made of the print information. Because there is no conversion or interpretation performed on the print information in this print mode, the print speed is directly related to the amount of information processed.

Graphical Interface

See Common User Interface.

Graphical User Interface

A form of communication between users and computers that uses graphics-oriented software, such as windows, menus, and icons, to make the user's interaction with the computer more intuitive.

Graphics Cursor

The blinking pointer on your screen that you can move with a graphics input device (such as a mouse) or with the scroll keys.

Graphics Insertion Cursor

See Insertion Cursor.

Graphics MetaFile

The standard bitmap file format output by HP/Apollo monochrome nodes to support screen images.

Graphics Object

A term for a group of data. A single graphics object can be a single file, such as a text file, or it can be many files that reside in a single directory, such as a design that includes schematic sheets, symbols, attribute files, version history, design

viewpoints, and other design objects. In the printing environment a graphics object is any file or group of files that make up a single printable entity.

Graphics PRimitive

The standard bitmap file format that is output by HP/Apollo color displays to support screen images.

Grayed Selection

See Dimmed Selection.

Group

1. A control that tells AutoLogic to create a parent hierarchical block and include objects with that group name in it.

2. A collection of objects. Making and operating on groups can speed tasks that process a large number of similar objects.

Group_abut

This property prohibits the Placer from leaving gaps between adjacent cells for routing feedthrus; it also prohibits the $autoplace_standard_cells() function from changing the placement of abutting cells.

Group_place

This property specifies a relative position within a cell where you can preplace an instance group.

Group_prio

This property specifies the routing priority given to the nets attached to the instances in an instance group.

Group_seed

This property specifies a relative position within a cell where you can preplace an instance group.

Grouped Box

See Field Separator.

Grow

An operation where the size or shape of an object is changed. See also: Resize.

Guaranteed Specifications

Specifications that AccuParts models meet within a range of 90 to 98 percent.

Glossary H

The following terms are described in this section:

Handle
Handshake
Hard Link
Hard Pathname
Hardcopy
HDL
HDL Architect
HDL Specification
Header
Help Key
Help Mode
Helvetica Font
Heterogeneous Network
HI
Hierarchical Block
Hierarchical Decomposition
Hierarchical Design
Hierarchical Layout
Hierarchical Repartitioning
Highlight
Hit
Hitachi
Hitachi_5
HML
HOME
Home Directory
Homogeneous Network
Hop
Host
Hot Key
Hotspot

Hourglass
HP Penplotter
HP-UX
Human Interface
Hyperbutton
Hyperdestination
HyperDriver Copy
Hypersource
Hypertext
Hypertext Link
Hysteresis

Handle

A handle is a unique integer that identifies a specific object in your design. Every object that you create or place in your design has a handle. *See also: SLD Names*.

Handshake

A protocol or process by which devices synchronously communicate to each other.

Hard Link

A hard link is a link that points directly to an object. Hard links cannot span file systems and cannot refer to directories. *See also: Hard Pathname*, Soft Pathname, and Symbolic Link.

Hard Pathname

A hard pathname is a pathname that beings with the slash (/) character. A hard pathname might or might not be interoperable. The network and file system environment within which the hard pathname exists, determines whether it is interoperable. *See also: Soft Pathname*.

Hardcopy

Screen image files or printer output produced from the HP/Apollo shell, using the Mentor Graphics **hardcopy** command.

HDL

HDL stands for Hardware Description Language. It is used in this manual as a generic term for the VHDL or Verilog languages.

HDL Architect

A workstation with the Mentor Graphics System Architect application plus QuickHDL compilation and simulator applications, which is used for top-down electronic system design using VHDL or Verilog. See also: System Architect.

HDL Specification

A view of a system or transform which defines the behavior of this system or transform using behavioral VHDL or Verilog source. See also: Verilog Specification and VHDL Specification.

Header

Text that repeats at the top of each page of a multi-page document.

Help Key

A special-purpose key (on some keyboards) used to display context-sensitive help.

Help Mode

A term used to describe a BOLD Browser that has been started with the -as_help switch. A BOLD Browser running in help mode services a user's requests for reference help.

Helvetica Font

A proportionally-spaced, sans serif font family that can be printed on a laser printer.

Heterogeneous Network

A network comprised of more than one type of system (workstation), with each system manufactured by a different company, using a different type of processor and/or operating system. For example, a network that contains HP/Apollo, Sun SPARC, and HP Series 700 and 800 systems is a heterogeneous network.

HI

HI was the V7.x human interface language. *See Human Interface*.

Hierarchical Block

A component or section of the design that can include instances of primitives or other hierarchical blocks.

Hierarchical Decomposition

A method of designing a system by breaking it down into its components through a series of top-down refinements. Also known as Functional Decomposition.

Hierarchical Design

A design that contains different levels of abstraction; that is, a design that contains components that in turn contain other components.

Hierarchical Layout

Hierarchical layout contains symbolic representations of mask data for a particular set of functionality. These symbolic representations are called instances. This concept is similar to using symbols on a schematic. Your design is separated into functional blocks that can range from a gate to an entire CPU subsystem. Symbols are created for each block, such as an inverter, or register. The symbols contain connection points called pins, that you connect together with nets.

Hierarchical Repartitioning

ICplan supports hierarchical repartitioning, which lets you interactively rearrange your design's hierarchy so that it is more suitable for the layout without having to modify your source schematic.

Highlight

A graphic technique used to show the current selection or the current location of the input focus by making the item stand out on the screen. Highlighting is frequently done by reversing the video of the selection or by drawing a red highlight box around the gadget.

Hit

An occurrence of a search request in an online document.

Hitachi

A four-key graphic input device that can be moved on its own tablet.

Hitachi_5

A five-key graphic input device that can be moved on its own tablet.

HML

The Hardware Modeling Library (HML) was a special-purpose network server hardware and software system that provided designers with a quick and reliable method of including actual LSI and VLSI components in logic and fault simulation programs of larger circuit designs. By using real IC devices as simulation primitives, you could avoid the need to write a software description of a complex device, such as a microprocessor. This equipment is obsolete.

HOME

Your home directory, which is used by your user level startup file.

Home Directory

The directory in which you are placed after you log in; your initial working directory. Your home directory is specified in the account database. Typically, your home directory name is the same as your user account name.

Homogeneous Network

A network composed strictly of systems (workstations) from a single vendor that use the same type of processor and operating system, such as HP/Apollo workstations. For example, a network that contains an HP/Apollo DN4500, DN5500, and Model 425t is a homogenous network.

Hop

The passage of a packet through a router or gateway. The number of hops between the origin and destination indicates how many routers or gateways a packet must pass through.

Host

A computer attached to a network.

Hot Key

A hotkey is an alphanumeric keyboard key that has an IC Station command attached to it. You execute the command by pressing the keyboard key. IC Station commands can be attached to any of the 62 alphanumeric keys.

Hotspot

1. The region in a menu item in which a specific action causes an associated cascading menu to pop up.

2. The point on the visible mouse cursor that is the action point.

Hourglass

A mouse pointer shape that symbolizes the passage of time and indicates that the application is busy performing an operation. You cannot interact with an application while the mouse pointer remains in the shape of an hourglass.

HP Penplotter

A penplotter manufactured by Hewlett-Packard Inc. HP penplotters range in size from desktop A/B size models to standup models that accept E size paper and plot

with up to 8 different colored pens. Mentor Graphics supports a very specific subset of HP penplotters.

HP-UX

The Hewlett-Packard UNIX-based operating system that runs on the HP Series 700 and 800 workstations. It is System V based.

Human Interface

A common screen layout and menu structure used in all pre-V8 Mentor Graphics applications that makes them easy to learn and remember. HI also included a set of commands common to all Pre-V8 Mentor Graphics applications.

Hyperbutton

A defined area in an online document that performs an action when activated by a BOLD Browser user.

Hyperdestination

The destination of a *hypertext link*. A hyperdestination is a defined location in an online document. If BOLD Browser users activate a *hypersource*, they are taken to its associated hyperdestination.

HyperDriver Copy

A *clone* (copy) of a document window that can serve as a navigational control window. Users can click on a hypertext link in the HyperDriver window and view the destination of the link in the original window.
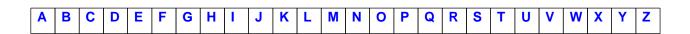
Hypersource

The source of a *hypertext lin*k. A hypersource is a defined location of an online document. If BOLD Browser users activate a hypersource, they are taken to its associated *hyperdestination*.

Hypertext

A method of linking related textual information that is non-linear.   This allows viewing the information in a cognitive rather than a printed sequence.

Hypertext Link

A method of linking related textual information in online documents. Hypertext links are used to travel to another location in the same document or in another document. Hypertext links are shown as hyperbuttons (colored or boxed text) in

the BOLD Browser. Clicking the left mouse button on a hypertext link displays related information on a topic.

Hysteresis

An electrical concept for analog "memory". Hysteresis is characterized by changes in the output occurring at two different boundary points for the input, depending on whether the input is increasing or decreasing. Modeling blocks using hysteresis equate the high input boundary with threshold value added to the hysteresis value divided by two. The low input boundary is the threshold value minus the hysteresis value divided by two.

Glossary I

The following terms are described in this section:

I/O
IC
ICblocks
IC Centric
IC Environment
ICextract
ICgraph
ICcompact
Icon
Iconify
ICplan
ICrules
ICrules Continuous DRC
ICrules Design Rule Checker
IC Session
ICtrace
ICverify
ID
ID Netlist
IDEA
Idea Station
Implementation Model
ImPRESS
In_place
Inactive Window
Include Statement
Incremental Change
Inetd
INFORM
Initialize
Ink Jet Printing

Input Arrival
Input Arrival Time
Input/Output
Insertion Cursor
Insertion Point
Inst Property
Install++
Instance
Instance-by-reference
Instance-in-place
Instantiate
Instpar Property
Integrated Simulator
Integrated Design Management
Interactive
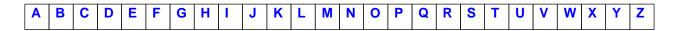Interface
Internal Aspect
Internal State Function
Internet
Internet Protocol
Internetwork
Interoperable Pathname
Intrinsic Capacitance
Invol
IP
IP address
Italic
IXO

I/O

See Input/Output.

IC

The acronym for Integrated Circuit.

ICblocks

The standard cell/blocks IC layout editor environment, part of IC Station.

IC Centric

IC Centric refers to the L Converter user with IC Station as the primary development environment.

IC Environment

The IC Environment is a single IC development environment that you can invoke from the Design Manager or a shell. The Design Manager is a concurrent design environment that is comprised of both a graphical interface and a set of management facilities that help you to create and manage your schematic, PC board, and IC layout designs. IC Station tools use the Falcon Framework, which provides the Common User Interface (CUI) for all Mentor Graphics tools, supports, multiple editing windows, and manages your layout's database.

ICextract

The parasitic extraction tool, part of IC Station and ICverify.

ICgraph

The IC layout editor environment, part of IC Station.

ICcompact

ICcompact is the IC Station automated layout tool that lets you to perform both automatic and interactive minimization of the area of your completed layout.

Icon

A small, graphic representation of an object. For example, you can minimize a window to clear a cluttered workspace and you can restore a window (return it to its original appearance) as needed.

Iconify

See Minimize.

ICplan

ICplan is the IC Station tool that lets you generate and edit hierarchical floorplans.

ICrules

The Design Rule Checker, part of IC Station and ICverify.

ICrules Continuous DRC

ICrules Continuous DRC automatically checks your layout against all of the RuleCheck statements that are referred to in the continuous_drc RuleCheck group. *See also: Design Rule Checking.*

ICrules Design Rule Checker

ICrules Design Rule Checker (ICrules DRC) is an electrical and design rule verifier that analyzes your layout in order to locate layout design rule violations. ICrules DRC can utilize both the layout data and connectivity data of your design to verify that the layout conforms to the design rules.

IC Session

An active IC Environment is called an IC Session.

ICtrace

The Layout Versus Schematic checker, part of IC Station and ICverify.

ICverify

The desktop layout verification toolset (ICextract, ICrules, and ICtrace) that are part of IC Station.

ID

A unique identifier. A design object is assigned an ID when its attribute file is created, or when the object is first referenced.

ID Netlist

Contains unique device identification numbers and device node connection information. The connection information takes the form of nets, which logically represent the physical path connections in your layout. Each net is uniquely identified by an identification number.

IDEA

Specifies the location of the Idea Tree.

Idea Station

A workstation with Mentor Graphics Falcon Framework, Design Architect, Design Dataport, Design Viewpoint Editor, and QuickSim II applications and some procedural interfaces installed, enabling an engineer to perform schematic capture, simulation, and design file management.

Implementation Model

The implementation model of a system is derived from the System Model. It creates a cost effective solution to the system functional requirements using the available technology. *See also: System Model*.

ImPRESS

A language that communicates with certain Imagen printers. The laser print server outputs data in either PostScript or imPRESS language.

In_place

A hierarchical control that tells AutoLogic to optimize the block while maintaining its hierarchical boundaries within the design.

Inactive Window

A window that does not have the input focus.

Include Statement

Statements that include other Rules Files within a Rules File.

Incremental Change

The ability to update a change to a portion of the design in simulation or DVE memory without having to re-load the entire design.

Inetd

The daemon that manages TCP/IP services.

INFORM

The Mentor Graphics online documentation and help library, which can be viewed using the BOLD Browser. INFORM is a collection of information on CD ROM that provides to the network a complete set of Mentor Graphics documentation and online help. A tool for viewing, administering, and printing Mentor Graphics online documentation.

Initialize

1. To establish an initial condition or starting point.

2. To set counters, switches, and addresses to zero or other starting values at the beginning of, or at prescribed points in, a computer routine.

Ink Jet Printing

A process in which ink jet printers apply discrete *jets* of ink directly onto the paper or other media that they are printing. During graphic-mode printing, a jet of ink corresponds to a single bit of print information. Ink jet printers, like dot matrix and laser printers, are raster-scan devices that print one or more lines at a time.

Input Arrival

The input arrival constraint defines the time at which the signal at a particular input becomes stable with the circuit clock. The input arrival time depends on the delay outside the circuit. This time might be due to external devices or some asynchronous timing requirement.

Input Arrival Time

The time at which the signal at a particular input becomes valid. The input arrival time depends on the delay outside the circuit. This time might be due to external devices or some asynchronous timing requirement. The input arrival time can be expressed with respect to a clock edge, in the case of sequential circuits, or relative to other input arrival times, for combinational circuits.

Input/Output

The techniques, media, and devices to achieve communication.

Insertion Cursor

The graphic symbol that provides the visual cue to the location of the insertion point.

Insertion Point

The point in an entry area, shown by the presence of the insertion cursor, where text or graphics appears when you press keys on the keyboard or insert objects through menus or commands.

Inst Property

A property that lets you assign a unique name to a particular instance of a component model.

Install++

An Domain/OS program used to install software from an authorized area onto other workstations in the network.

Instance

A copy of a symbol on a schematic sheet. An instance is an active reflection of a unique version of a symbol model in the design database. A schematic might have several instances of a particular model (for example, eight 1K resistors), or one instance each of many different models.

An instance references the symbol model of a component for its graphical representation and a functional model of the component for its implementation. A schematic might have several instances of a particular component.

A cell is a named object in the database hierarchy. When a cell is added to another cell, it becomes a cell instance. An instance can be placed or unplaced. Each cell has a name, but only an instance of the cell has a handle.

Instance-by-reference

An instance of a previously defined model. Multiple EDDMs can be required to fully model the next level of hierarchy, if the model is a set of schematic sheets.
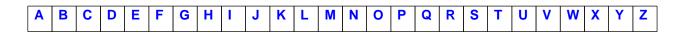
Instance-in-place

An instance whose next level of hierarchy is contained within the instance. Instance-in-place can be used only where there is no model selection and no re-use of the component.

Instantiate

The act of placing a component (instance) on a schematic sheet.

Instpar Property

A property specifying instance-specific information on analog device attributes, such as resistor value or device size (length and width) of a MOSFET.

Integrated Design Management

The Integrated Design Management (iDM) toolkit provides a limited set of simple easy-to-use design management commands from within EDA applications. These commands provide the ability to copy, move, delete, and change the references of your design objects, as well as to view the design hierarchy of your data.

Integrated Simulator

A simulator that integrates or couples two simulation kernels, such as QuickSim II and AccuSim II, and includes a graphical user interface environment, such as SimView. The kernels act as a combined back-end of the simulator, while SimView acts as the front-end of the simulator.

Interactive

Denotes two-way communication between a computer system and its operator.

Interface

An interface is a set of pins representing a component. *See also: Component Interface* and NCS Interface.

Internal Aspect

In Icgraph, there are two sets of data associated with a cell: internal aspect and external aspect. Internal aspect objects are the implementation of a cell and are visible when the cell is peeked.

Internal State Function

A system-defined and maintained function that lets you change the value of an internal variable by passing one or more arguments for the new value. The internal variable cannot be manipulated by the AMPLE assignment operator.

Internet

A worldwide area network that uses the TCP/IP protocol. The Internet was originally sponsored by the Defense Advanced Research Project Agency (DARPA). Currently, the Network Information Center (NIC) at the Stanford Research Center distributes and tracks unique IP addresses for Internet sites.

Internet Protocol

A protocol that allows host-to-host datagram delivery.

Internetwork

Two or more connected networks that might or might not use the same communication protocol. For example, an HP/Apollo ring network and a Sun network connected together with a network gateway form an internetwork. Internetwork is also often abbreviated as *internet.*

Interoperable Pathname

An interoperable pathname is a pathname that leads you to the same or equivalent object, within a given context, regardless of the workstation you start from on your network. Additionally, if the pathname leads you to a given object at a given time, it will lead you to the same object again at any later time.   *See also: Absolute Pathname*, Hard Pathname, Relative Pathname, Soft Pathname, Soft Prefix, and Symbolic Link.

Intrinsic Capacitance

Intrinsic capacitance is the capacitance between a conduction layer and the base layer. Intrinsic capacitance is comprised of both body and fringe capacitance.

Invol

An Domain/OS program that initializes a disk or storage module. The *invol* program resides in each of the */sau* directories and also in the */com* directory.

IP

See Internet Protocol.

IP address

A unique string of four numbers, separated by periods, that identifies each host in a network. IP addresses provide the information necessary to locate the correct network and host for a given transmission. IP addresses are also called *internet addresses.*

Italic

A face that slants to the right. The letterforms can also be redrawn to resemble script.

IXO

See Input/Output.

Glossary J

JAF

Job Attribute File. A file containing information about a specific Mentor Graphics print job, including all the printing options set in the setup printer dialog box, an options box, or a call to an internal state function ($set). When you call a print function, the print daemon creates a JAF for that print job.

JCF

See Job Configuration File.

JFET

The acronym for Junction Field Effect Transistor.

Job Configuration File

A file that overrides configuration directives in the Mentor Graphics startup configuration file (SCF), on a job-by-job basis. The JCF is written into the JAF at spool time.

Junction

A connectable element in a Data Flow Diagram or Context Diagram that allows flows that share the same origin or destination to share their route up to a certain location. See also: Splice.

Glossary K

Keep

An abstract entity that can be established to monitor and preserve the states, strengths, and values of nets and pins.

Key Identifier

The name of an AMPLE function bound to a key or keys on the keyboard. Examples are $key_cut() and $key_control_s().

Keycard

A card provided by Mentor Graphics that identifies the purpose of each function key on the keyboard in their normal, shifted, and control modes.

Glossary L

The following terms are described in this section:

L_KEY_WORDS
Label
LAN
LANG
Latched Design
Layer Definition
Layer Operation
Layer Set
Layout Netlist
Layout Verification
Leaf Name
LED
Letter Quality
Letterform
Library
Library Category
Library Creation
Library Server
License Daemon
License Data File
License Server
Link
List Box
LLBD
LM_LICENSE_FILE
Load
Local
Local Area Network
Local Layer Definition
Local Location Broker Daemon
Local Network

Location Broker
Location Broker Client Agent
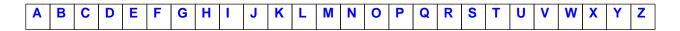Location Cursor
Location Map
Lock
Logical Event
Logical Information
Logical Key Name
Logical Page Number
Logical Transcript
Logic Component
Logic Instance
LSB
LSI+
Lumped Parasitic Extraction
LVS

L_KEY_WORDS

Provides a method of specifying GDT keywords that might not be included in the current version of lconvt.

Label

The text part of an icon or graphic control.

LAN

See Local Area Network.

LANG

Provides applications with information on the language and the set of characters that are required by the user.

Latched Design

A design that is "frozen" in its current state so that the it can be released for simulation or layout. See also Design Latching.

Layer Definition

Statements that assign a name to a derived polygon layer or a derived edge layer.

Layer Operation

Produce derived layers by performing geometric and topological operations on polygons and edges of a cell and cell hierarchy layout.
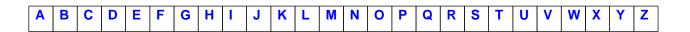
Layer Set

A layer set is a logical grouping of layers that typically belong to the same mask level, for example, metallization or polysilicon. The layer set acts as if it were a simple original layer with all of the geometries on the constituent layers overlapped on a single layer. ICrules recognizes both original layers and layer sets by their name, number or alias.

Layout Netlist

Contains device identification names and node names that correspond to the layout's component names and to node connection information.

Layout Verification

Layout verification is the process of interpreting the physical layout data to determine whether it conforms to the physical design rules, electrical design rules,

and to the source schematic, as well as extracting parasitic information that you can use with simulators to determine if the design will perform according to specifications.

Leaf Name

A leaf name is the portion of a pathname after the last "/". For example, the leaf of pathname /usr/tmp/ginko/doc_mgc is doc_mgc.

LED

The acronym for light emitting diode.

Letter Quality

Presentation quality of print on a page. Usually, this mode of printing is slower than draft mode.

Letterform

The shape of a character.

Library

1. A collection of related components; for example, ls_lib, which contains the 74 series, low-power, Schottky component models and is provided by Mentor Graphics. *See also: Online Library.*

2. A container for System Components in System Architect. Any directory containing System Components is considered to be a library by System Architect and must have an entry in the location map.

Library Category

A group of elements in the AccuParts library with similar functionality. Library categories are directories containing simulation models of similar component types. Some library categories include current regulator, diode, comparator, n-channel JFET, PNP BJT, operational amplifier, and magnetic core material.

Library Creation

Library creation is the process of creating a library of standard cells that you will use in your design.

Library Server

A library server is a BOLD server that controls access to all documents in a particular library.

License Daemon

A program that administers Mentor Graphics licenses. MGLS includes two daemons, lmgrd and mgcld.

License Data File

An ASCII file that contains the customer site identification, license server and daemon information, and feature lines, which are the actual licenses.

License Server

A program that administers a database of floating licenses. The license server administers floating licenses by accepting requests from applications and then granting available licenses to those applications that qualify.

Link

1. A type of file that acts as a pointer to another file location.

2. A symbol on a State Transition Diagram. Links are a form of on-page connector used to avoid long transition arcs and do not carry any semantic information. See also Exit Link.

List Box

A dialog box gadget that provides a scrollable list of options from which to choose.
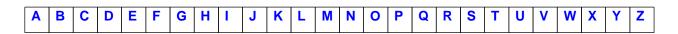
LLBD

See Local Location Broker Daemon.

LM_LICENSE_FILE

Contains the port number(s) on the license server(s), the name(s) of the server(s) holding the license data file, and the pathname to the license data file.

Load

See Capacitance Load.

Local
A variable or command available only to the part of a program that defines it.

Local Area Network
A network that connects systems together by a continuous medium such as a twisted pair, coaxial, or fiber optic cable. A LAN typically covers a small geographic area, usually less than a few thousand feet. An Ethernet is an example of a LAN.

Local Layer Definition
Layers operations that define layers within a RuleCheck statement are called local layer definitions.

Local Location Broker Daemon
A server that maintains information about objects and interfaces on the local host. The local location broker also forwards requests to the appropriate server on the local host. Some Mentor Graphics applications require that an llbd run on the local workstation.

Local Network
The network that is directly connected to your host. See also: Hop and Remote Network.

Location Broker
A set of software including the local location broker, the global location broker, and the location broker client agent. The location broker maintains information about the location of objects and interfaces.

Location Broker Client Agent
Part of the location broker. Programs communicate with location brokers via the location broker client agent.

Location Cursor
A rectangular symbol that marks the location of the keyboard input focus. Typically, this symbol is a rectangle that surrounds the current object. For a prompt bar dynamic, the cursor is a crosshair location.

Location Map

An ASCII file that maps platform-independent soft prefixes to hard pathnames. Soft prefixes can then be used in Mentor Graphics designs in place of the hard pathnames.

Lock

A lock is a state that the Falcon Framework provides to avoid concurrency conflict among several users trying to access a single design object. The Falcon Framework provides two kinds of locks: read locks and write locks.

When your application read-locks a design object, every user can read, but not edit, that design object. This lock is also known as a shared lock because several applications can read-lock a design object simultaneously. The object remains read-locked until all of the applications release their locks.

When your application write-locks a design object, you can edit that design object. In addition, others can read it, but no others can edit it or lock it. To edit a design object, the application must first write-lock it. This lock is also known as an exclusive lock because only one application can write-lock a design object, and when a design object is write-locked, no other application can lock it.

Logical Event

Artificial events generated by the Common User Interface. These are typically AMPLE functions or builtins.
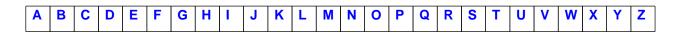
Logical Information

The logical information consists of connectivity data and device or cell placement information.

Logical Key Name

A key name that maps to actual key names on different workstations. For example, MenuBar maps to F0 on HP/Apollo workstations and F10 on Sun workstations.

Logical Page Number

The number that appears on the page. In INFORM documents, examples of logical page numbers include iii, 3-8, and Index-2.

Logical Transcript

A transcript of logical events, such as AMPLE function calls. See also: Physical Transcript.

Logic Component

The Logic Component contains generated VHDL that defines an instantiated logic function. It can also optionally contain an optimized EDDM netlist and a Design Architect schematic symbol. See Logic Instance.

Logic Instance

A component node on a Data Flow Diagram that instantiates an AutoLogic LogicLib function. See Transform Instance, System Instance, and Logic Component.

LSB

The acronym for least significant bit. When using this term with Analog-to-Digital and Digital-to-Analog Converters, one LSB is equal to VREF divided by 2^N, where VREF is the reference voltage; N is the number of bits in the digital word.

LSI+

Large Scale Integration.

Lumped Parasitic Extraction

Lumped parasitic extraction calculates only parasitic lumped capacitance and lumped resistance values; each entire net is assigned both a single capacitance and resistance value that is the sum of the various types of parasitic capacitance and resistance, respectively.

LVS

Layout Versus Schematic (ICtrace LVS) compares the connectivity of a cell or cell hierarchy with a source circuit or schematic.

Glossary M

The following terms are described in this section:

Macro
Macromodel
Macromodel Model Parameter
Macromodel Template
Magnification Factor
Manual Connectivity Extraction
Mapping
Margin
Mask Connectivity Extraction
Mask ICtrace Layout Versus
Schematic Comparison
Mask Verification
Master Tree
Maximize
Maximize Button
Mealy State Machine
Memory Caching
Mentor Graphics Tree
Menu
Menu Accelerator Key
Menu Bar
Menu Item
Menu Mouse Button
Menu Path
Menu-driven Application
Message Area
Message Box
Metadata
Methodological Operation
Metric
MGC Working Directory

MGC_COMPONENT_STATUS
MGC_DISABLE_BACKING_STORE
MGC_ERI_HOSTS
MGC_HOME
MGC_IC_QUERY_ON_MERGE
MGC_KBD
MGC_LOCATION_MAP
MGC_NO_DASHED_WIDE_LINES
MGC_PLOT_DEFAULT_PRINTER
MGC_USER
MGC_WD
MGLS
MGLS_LICENSE_FILE
Minimize
Minimize Button
Minst
Mixed Net
Mixed-Signal Simulation
Mnemonic Character
Mode
Model
Model Configuration
Model Datasheet
Model Evaluation
Model Labels
Model Name
Model Parameter
Model Property
Model Registration
Model Template

Modelfile

Modeling

Modeling Block

Model View

Monospace Font

Moore State Machine

MOSFET

Motif

Motif Window Manager

Mount

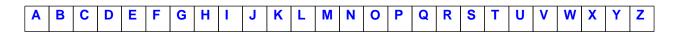Mountd

Mouse

Mouse Pointer

Move

Moving Pointer

MSB

MSR Print Server

Must_connect

MWM

My_net

Macro

A sequence of commands executed in order, usually invoked by entering a single command or keystroke. See also: Function.

Macromodel

A set of circuit elements (AccuSim II primitives) that are interconnected to form a model of a discrete semiconductor or a semiconductor integrated circuit for which there is no AccuSim II primitive. A macromodel takes the form of an AccuSim II subcircuit and is equivalent to a SPICE .SUBCKT. Mentor Graphics uses macromodels to develop some AccuParts models. Some examples of macromodeling include the following component types:

- Analog switches

- Comparators

- Operational amplifiers

- Power FETs

- PWMs

- Temperature-compensated Zeners

- Transient suppressors

- Voltage references

- Voltage regulators

Macromodel Model Parameter

The mathematical variables whose values, when properly selected, match the model's characteristics to those of the physical component and its specifications. Macromodel model parameters include numerical values and the model parameter values for the AccuSim II primitives and appear in the .SUBCKT netlist for a macromodel.

Macromodel Template

A generic subcircuit that Mentor Graphics uses to create specific models for a class of analog integrated circuits, such as operational amplifiers, comparators, or voltage references. A macromodel template includes the equations and/or optimization techniques used to calculate the values of the subcircuit model parameters for a specific commercial component. See also: Model Template.

Magnification Factor

An integer from -1 to 16, inclusive. With these factors you can magnify a bitmaps to fill at most one page width, print at true scale (at most one page), print at actual size, or print at the magnification specified by the value, for example 2 is 2x.

Manual Connectivity Extraction

Connectivity information is not actively maintained in the GE mode. You can execute Connectivity Extraction when you want to update the connectivity of the cell; however, the extracted connectivity is only valid until you make a change to the cell.

Mapping

The process of converting a generic netlist to a technology-specific netlist.
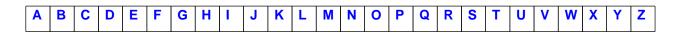
Margin

The space surrounding a picture or text.

Mask Connectivity Extraction

Mask Connectivity Extraction is a function that analyzes layout geometries to recognize electrically connected nets. Mask Connectivity Extraction extracts the layout's connectivity by using the connectivity operations in the Rules File. Recognizes electrically connected net objects of a layout. It is only invoked as a subsystem by Mask ICtrace LVS, Mask ICextract PEX, and ICrulesDRC.

Mask ICtrace Layout Versus Schematic Comparison

Mask ICtrace Layout Versus Schematic Comparison (Mask LVS) finds the relation between the complete layout hierarchy's connectivity and the source circuit's connectivity. It operates on the cell hierarchy, which starts with the top-level cell that is associated with the currently active IC Environment window.

Mask Verification

Mask verification develops its own connectivity from the entire design, beginning with the top-level cell and compares the connectivity of the layout and the source.

Master Tree

A Master tree is the first Mentor Graphics tree you install on a workstation or file server and usually serves other client workstations. A links within a Master tree typically resolve to software physically located within that tree.

Maximize

To enlarge a window to its maximum size, which is the size of its parent window or the size of the display.

Maximize Button

A window control button on the upper-right corner of the window used to enlarge a window to its maximum size or to restore a maximized window to its previous size. See also: Window Control Button.

Mealy State Machine

A State Machine that is defined as a sequential network whose output is a function of both the present state and the input (/condition) to the network. The state graph for a Mealy State Machine has the output (/actions) associated with the transition between states.

Memory Caching

To store data that has been accessed from an online library in memory on the workstation on which the resource server is running. Memory caching speeds up repeat access to library data; however, it is done at the expense of memory space.

Mentor Graphics Tree

The software tree that contains Mentor Graphics software.

Menu

A list of options that allows you to select the course of action you want to take, such as print a report or bring up an application.

Menu Accelerator Key

In the popup and pulldown menus, some characters are underlined. The underlined character identifies a menu accelerator key. Menu accelerator keys

allow you to quickly enter a short series of characters to access most menu functions.

Menu Bar

A rectangular area at the top of the session window that contains the pulldown menu names for the application. The menu bar might change when a new window or application becomes active.

Menu Item

One selection on a menu. Each menu item can call a function, invoke a cascading menu, or display a dialog box or prompt bar.

Menu Mouse Button

The mouse button used for menu operations. By default, the menu mouse button is the right button on a three- or two-button mouse.

Menu Path

The sequence of menu items to follow to cause a specific function or command to execute. For example, to open a a transcript window, choose the **MGC > Transcript > Show Transcript** menu path to display the logical transcript window.

Menu-driven Application

Application commands that can be given through menu selections. Notepad is a menu-driven editor.

Message Area

An area along the bottom of a session window that displays notes, warnings, or errors. You can display or hide the message area, as well as determine the area's height.

Message Box

A window that provides information, displays the current state of work in progress, asks a question, issues a warning, or draws attention to an error.

Metadata

Metadata is information about a design object, which is contained in the design object's attribute file. Some of the information found in the attribute file consists

of references, properties, and versions. If the design object is locked or frozen, this information is also present. See also: Attribute File.

Methodological Operation

Methodological operations select polygons that have a specified aspect.

Metric

Determines the measurement algorithm that is used

MGC Working Directory

The MGC working directory is the pathname of the internal working directory that is appended to the beginning of relative names during pathname resolution. See also: Absolute Pathname, Hard Pathname, Relative Pathname, Soft Pathname, Soft Prefix, Symbolic Link.

MGC_COMPONENT_STATUS

Enables design status to be saved.

MGC_DISABLE_BACKING_STORE

Controls whether a graphic window image is saved when covered by another window or iconified.

MGC_ERI_HOSTS

Lets an ERI client workstation search a specified list of remote hosts for the required ERI separate process server.

MGC_HOME

Sets the location of the MGC tools directory.

MGC_IC_QUERY_ON_MERGE

Controls whether nets are merged without querying the user in CE mode.

MGC_KBD

Specifies the type of keyboard attached to your workstation.

MGC_LOCATION_MAP

Defines the pathname of your location map.

MGC_NO_DASHED_WIDE_LINES

Controls whether dashed wide lines are displayed on Sun workstations.

MGC_PLOT_DEFAULT_PRINTER

Default printer name used by Mentor Graphics applications and the spooling command.

MGC_USER

Sets the name of the current logged in user.

MGC_WD

Sets the project working directory for DDMS.

MGLS

The Mentor Graphics Licensing System, which is based on FLEXlm with Mentor Graphics extensions.

MGLS_LICENSE_FILE

MGLS_LICENSE file works like LM_LICENSE_FILE but also tells MGLS to ignore the setting of LM_LICENSE_FILE and to get the license file or server from the value of MGLS_LICENSE_FILE.

Minimize

To turn a window into a window icon. The term iconify is sometimes used instead of minimize.

Minimize Button

A window control button on the window frame used to turn a window into a window icon. See also: Window Control Button.
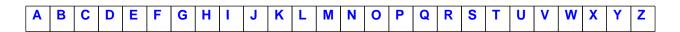
Minst

The Domain/OS Media Install program. The **minst** program creates and loads an authorized area from media.

Mixed Net

A net that is connected to elements owned by more than one kernel, or solver.

Mixed-Signal Simulation

Simulation that uses both analog and digital simulation algorithms.

Mnemonic Character

A single, underlined character of a menu item that allows you to select the item by pressing the corresponding key on the keyboard.

Mode

See State or Setting.

Model

A representation of an aspect of a component. Two types of models exist: functional models and non-functional models. Functional models, which describe the implementation of a component, include builtin models, schematic models, QuickParts, QuickPart Table models, schematic models, BLMs, VHDL models, and HML models. Non-functional models, which describe other aspects of a component such as graphical or timing data, include the symbol model, technology file, and library data technology files. See also: Simulation Model.

Model Configuration

Any of several topology variants for a given template. Mentor Graphics uses these variants either to model different subtypes within a given component classification or to provide multiple levels of accuracy for one component class or subclass.

Model Datasheet

See Datasheet.

Model Evaluation

This process builds the final net connectivity across the model. This process includes evaluating conditional and repetitive logic frames, expressions, and property values, and expanding wide nets and wide pins, and connecting them as needed. See also: Design Evaluation.

Model Labels

A model label is a user-defined text string associated with a model. A model can have multiple labels, and labels need not be unique. These labels are used in combinations to fully define the implementation of a component in a variety of ways.

Model Name

The unique name of a modeling block that identifies the subtype of the schematic component and defines a set of data (either .SUBCKT or .MODEL). You can refer to this data by making the SPICE element point to it via the Model property. This data can be in a file by itself or in a file containing other similar data.

Model Parameter

Numerical values you supply to AccuSim II through the values for parameter-specific properties on a System Modeling Block. Model parameters define the numerical behavior of a modeling block within the boundary of that block's functionality. See also: Discrete Model Parameter and Macromodel Model Parameter.

Model Property

A property conveying the model name of the modeling block. This model name points to a corresponding.SUBCKT or .MODEL name in the netlist. A modelfile (ASCII text) contains the contents of the subcircuit or model. Modelfiles can be either user-defined or precharacterized, as in the case of AccuParts and System Modeling Blocks, and stored in a database. An example of the value of the Model property on a four-input Digital-to-Analog Converter is "DTOA4".

Model Registration

A method of associating functional and non-functional models with a component.

Model Template

A generic model and the method or heuristics to generate from datasheet or measurement information the model parameter values for a specific commercial component. There are two types of model templates: AccuSim II primitive templates and macromodel templates.

Modelfile

1. A text file containing statements required by the AccuSim II server in AccuSim II. The modelfile contains parameters or subcircuits needed to define component simulation models and active components and can also contain various control statements. This file is searched for .MODEL and .SUBCKT definitions only.

2. The Modelfile property specifies one or more pathnames to text files containing PLD (programmable logic device*)*, memory, or analog device information. More specifically:

- State of a memory device. Format of the state descriptions varies with the vendor of the software model.

- Fuse map of a PLD, JEDEC file format

- "Data Initialization File" of a Memory Table Model. The "Data Initialization File" is an ASCII file that defines the contents of the memory array associated with a Memory Table model.

Modeling

The process of describing the behavior of a component, generally accomplished by combining primitives (as with a sheet-based component) or by using a behavioral modeling language (as with BLMs).

Modeling Block

A high-level abstraction of a system function ranging from basic arithmetic, frequency domain, time domain, and logic functions. Modeling blocks comprise the System Modeling Blocks library.

Model View

A user editable or source view of a System Architect component that specifies a simulatable model of that component. The three types of model view are the Data Flow Diagram, the State Machine, and the VHDL Specification.

Monospace Font

A font family whose characters all have uniform and equal spacing. Each monospace character, whether it is narrow, such as an i, or wide, such as an m, occupies the same space width. The characters on a typewriter are a familiar example of a monospace font.

Moore State Machine

A State Machine that is defined as a sequential network whose output (/actions) is a function of the present state only. The state graph for a Moore State Machine has the output associated with the state.

MOSFET

The acronym for metal-oxide semiconductor field-effect transistor.

Motif

The name of the guidelines defined by the Open Software Foundation (OSF) for user interfaces of software applications. All applications have a Common User Interface developed from these guidelines.

Motif Window Manager

A window manager based on OSF/Motif.

Mount

1. The process of accessing a directory from a disk attached to the machine making the mount request or remote disk on a network.

2. The command used to mount a filesystem.

Mountd

The mount daemon.

Mouse

A device for moving the insertion cursor or mouse pointer on the display. A typical mouse has two or three buttons on top of a small box that can be moved around on a flat surface.

Mouse Pointer

A visual display pointer that tracks mouse movement. The mouse pointer's shape depends on its location. In the session window, the mouse pointer is an arrow.

Move

To delete selected text from one area while inserting it in another.

Moving Pointer

A mouse pointer whose shape indicates that you must move the mouse to complete the operation.

MSB

The acronym for most significant bit. One MSB is equal to VREF divided by 2, where VREF is the reference voltage. This term applies only to Analog-to-Digital and Digital-to-Analog Converters.

MSR Print Server

Mentor (Graphics) Software Rasterizer. A plotting software package that uses high performance, integer-based algorithms to render graphical data that can be output to other Mentor Graphic print servers for plotting.

Must_connect

This property is attached to a pin/port and can have either a positive or negative value.
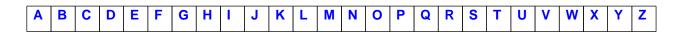
MWM

See Motif Window Manager.

My_net

This property specifies the net to which you plan to connect the power port.

Glossary N

The following terms are described in this section:

Name Server

Named

NC

NCS

NCS Interface

Nearbody Capacitance

Net

Net Parameter

Net Segment

Net_comp

Net_comp_count

Net_comp_place

Netlist

Netlister

Netlistfile

Network

Network Computing System

Network File System

Network Information System

Network Server

NFS

NIS

NIS Map

Node

Nodelocked License

Nominal Delay

Non-functional Model

Non-proportional Font

Not-dot

Notepad

Notepad Document

Notepad Text

Notepad Window

Name Server

A host that runs named.

Named

The UNIX daemon that responds to and resolves name queries.

NC

No-connect pin. Pins shown on a physical symbol that are not connected to power or ground and are not used as part of the functional component are no-connect pins. No-connect pins usually do not appear on the logical symbol.

NCS

See Network Computing System.

NCS Interface

The link between a client and a server process. The BOLD Administrator manages two type of NCS interfaces: DDS and IP interfaces. The type of interface a client process uses depends on the availability of interfaces and whether the client has a preference for a certain type.

Nearbody Capacitance

Near-body capacitance is the capacitance between two parallel paths on the same original layer.
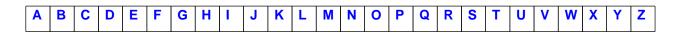
Net

This property specifies the connectivity of signal nets by assigning unique names to paths, pins, ports, busses, overflows, and cells of type via. A signal path, node, or wire that connects two or more pins. (Also known as a signal network or signal net). Analogous to a wire or trace in a physical circuit. At a higher level, a net is a logical representation of a set of device ports and pins that are all physically connected in the layout by paths.

Net Parameter

The extracted mask mode parasitic values are called net parameters, which are stored by Mask PEX in the Mask Results Database.

Net Segment

A straight uninterrupted portion of a net with a vertex at each end.

Net_comp

This property specifies the name of a port style when placing ports attached to a particular net.

Net_comp_count

This property specifies the number of discrete port locations for a net in a cell.

Net_comp_place

This property specifies one or more relative locations for preplacement of ports on a given net.

Netlist

An ASCII representation of a circuit that lists of all the parts in a design and shows how they are interconnected. Generally used as input to simulators or wire router programs.

Netlister

A program that produces a file (netlist) that describes a design.

In IC the Netlister is a set of functionality that can create either an LSIM or an HSPICE netlist from within either Direct or Mask PEX.

Netlistfile

Same as modelfile, except that it is appended verbatim to the netlist sent to the simulation kernel. Also, it can contain control statements.

This file, contained within Design Manager also lets you specify where the analog simulator can find the corresponding .MODEL and .SUBCKT statements that define the semiconductor models and subcircuits. These netlist files conform exactly to SPICE syntax, except that they can contain parameterized expressions for any of the values. Netlistfiles are converted to uppercase and transmitted verbatim to the AccuSim II kernel.

Network

Two or more workstations that share information over a physical interface. There are many types of networks.

Network Computing System

The Apollo Network Computing System. NCS provides a standard language and set of utilities that allow processes to communicate with each other across a network. For detailed information about NCS refer to Managing the NCS Location Broker and Network Computing System (NCS) Reference.

Network File System

A collection of programs that allows users on different systems to share files over the network. NFS is both a communications protocol and a collection of software using that protocol. NFS lets you treat files on other systems as though they were on your own local disk.

Network Information System

Network Information System. A distributed name service that maintains certain files with information about the systems on the network and their users, and provides the ability to look up that information.

Network Server

A network server is a BOLD server that maintains a central database of the contents of each library that has been registered with it. When a client process submits a request to the network server to access a particular document, the network server then locates an available copy of that document and establishes the connection between the client process and the library server. It also keeps track of all activity between client processes and documents.

NFS

See Network File System.

NIS

See Network Information System.

NIS Map

An NIS file that holds information of a particular type. For example, a map file can hold the host names of all systems on a network. A map file can also list file systems for mounting.

Node

1. A line connecting the pins of two or more components, or elements. Corresponds to a "net vertex" in the Schematic Editor. *See also: Workstation*.

2. A connectable item on a Context Diagram, Data Flow Diagram or State Transition Diagram. Can be an external, junction or the system symbol on a Context Diagram or a component node, junction, boundary point or formal point on a Data Flow Diagram. In a State Machine it can be a state or transition node.

Nodelocked License

Nodelocked licenses authorize a specific workstation to run an application.

Nominal Delay

The average time a signal takes to propagate through an instance or net. The effect of an input change does not occur on the output until after the duration of nominal delay.

Non-functional Model

A model that does not provide logic function information, but can provide timing, layout, graphical, or other information.

Non-proportional Font

See Monospace Font.

Not-dot

An object on a vertex that indicates that not all the segments passing through that vertex are connected. It is not an electrical object on a schematic sheet.

Notepad

The Mentor Graphics window-oriented editor. A full-featured text editor that you can invoke through the user interface or through AMPLE functions. Available features include font selection, search and replace, auto-wrap, and file manipulation. You can select text for deleting, copying, clipboard storage, and cut and paste operations.

Notepad Document

Text within a Notepad window. Notepad documents become files only when written to the file system.

Notepad Text

Text within a Notepad window. Notepad text becomes a file only when written to the file system.

Notepad Window

The area within the screen that contains the text window. Notepad windows can be small enough to contain a single line of text or large enough to fill an application session.

Glossary O

The following terms are described in this section:

Object
Object Property
Oblique
Offpage Connector
Offset
One-layer Boolean
Online Library
Online Retrieval
Opamp
Open
Open Software Foundation
OpenDoor Program
Operating System
Optimization
Options Box
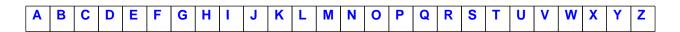Options Dialog Box
Orientation
Origin
Original Layer
OS
OSF
Output Capacitance
Output Setup
Overflow

Object

ICgraph objects are either physical or logical. A physical object is a set of geometric layout shapes. A logical object consists of a group of descriptive information that is not directly represented in the physical layout. You can create or change logical objects by importing either schematic or netlist data into your IC Station design. See also: Graphics Object.

Object Property

An object property is a name and value pair that stores user or tool defined information about the design object. Object properties are versioned to reflect differences as the design object evolves, but they propagate forward from the current version to later versions, until they are explicitly changed or deleted in the current version. See also: Property, Reference Property, and Version Property.

Oblique

See Italic.

Offpage Connector

A component placed on the end of a net that connects to a net on another sheet.

Offset

The amount the print server moves printable area from its default printable area on the page.

One-layer Boolean

One-layer Boolean operations perform simple Boolean logic operations on an original layer in order to generate a derived polygon layer.

Online Library

A library of information that is stored on electronic media and can be retrieved and displayed on computer monitors. The BOLD Administrator is used to make online libraries available to a network, and the BOLD Browser is used to retrieve information from the online libraries.

Online Retrieval

The act of using the BOLD Browser to locate information in an online library and display that information on a computer monitor.

Opamp

The abbreviation for operational amplifier.

Open

To start an action or begin working with a text, data, or graphics file.

Open Software Foundation

A consortium of computer hardware and software manufacturers formed to develop industry standards for software production.

OpenDoor Program

A program that allows encapsulation and inclusion of foreign data and applications into Mentor Graphics Falcon Framework. Through the Design Manager, it also provides a common look and feel between foreign application sessions and sessions running Mentor Graphics applications.

Operating System

Software that controls the execution of computer programs and that can provide scheduling, debugging, input/output control, accounting, compilation, storage assignment, data management, and related services.

Optimization

The process of implementing a design in a target technology so that it meets specific requirements for gate-count and performance. More specifically, the automatic determination, through a series of analyses with varying model parameter values, of the minimized error between model behavior and measured and/or manufacturers' datasheet information for a user-designated circuit response. Optimization involves the use of linear or non-linear constrained mathematical search algorithms and techniques.

Options Box

See Options Dialog Box.

Options Dialog Box

A dialog box that appears after clicking on the **Options...** button on a prompt bar. Generally, you do not need to supply values for its gadgets because they are optional.

Orientation

The direction of print on the page. Portrait orientation reads from left to right, across the narrow dimension of the page. This manual is in portrait orientation. Landscape orientation also reads from left to right but places the image across the wider dimension of the page. This type of printing is commonly used for graphics, designs, spreadsheets, and tables. Both terms originated in painting; a portrait is usually a vertical view, while a landscape is usually a horizontal view.

Origin

1. The connectable element at the start of a connector.

2. In ICgraph, location 0,0 in a cell, which is used as a reference point when instantiating one cell into another.

Original Layer

An original layer, stored in the Cell Layout Database, contains original polygon data you can individually display and edit. The original layer is the ultimate data source for all ICrules operations.

OS

See Operating System.

OSF

See Open Software Foundation.

Output Capacitance

The expected load at an output port due to devices outside the bounds of the circuit.

Output Setup

The output setup constraint defines the time before the next active edge of the circuit clock at which the output signal must be stable. The time at which a signal at the circuit output must be valid. This time can be expressed relative to a circuit clock, for sequential circuits, or as an absolute value, for combinational circuits. This time is generally due to some external device outside the circuit that requires its data to be stable a certain amount of time before it is clocked in.

Overflow

In automated layout, an overflow is an unrouted connection between parts of a net that aren't physically connected in the layout.

Glossary P

The following terms are described in this section:

Packet
Pad
Page Description Language
Palette
Panel
Parameter
Parameter Estimation
Parameter Extraction
Parameterized Device
Parasitic Resistance
Parent
Part
Partial Condition
Partial Transition
Part Library
Part Model
Part Number
Partition
Partitioning
Paste
Pathname
Path
PCF
PDL
Peek
Peeked Checking Mode
Performance Characteristics
Performance Optimization
Permissions
Persistence
Personal Thesaurus

PEX
Pgtext
Phy_pin
Physical Event
Physical Page Number
Physical Symbol
Physical Transcript
PIC
PICture file
Pin
Pin Layer
Pin Name
Pitch
Pixel
Place
Placement
Plain Text
Plotter
Point
Point Size
Point-to-Point Routing
Pointer
Pointing Device
Polygon Containment
Polygon Measurement Operation
Polygon Topological Operation
Pop
Popup Command Line
Popup Menu
Port
Port Member

Port Number

PostScript

PostScript Device

PostScript Interpreter

Power Path

PowerFET

Press

Primary Entry

Primitive

Primitive Property

Primitive Site

Print Job

Print Queue

Print Server

Print Weight

Printable Area

Printer

Printing Option

Prio

Process

Process Data

Process Variable

Product Development Process

Product Life Cycle

Program

Progressive Disclosure

Promoting Cells

Prompt

Prompt Bar

Property

Property Name

Property Owner

Property Specification

Property Text

Property Value

Proportional Characters
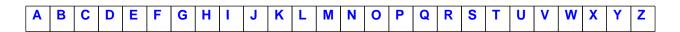
Protection

Protocol

Prototype Panel

Proximity Search

Pruned

Ptxt

Pulldown Menu

Packet

A collection of information in a fixed format transmitted as a unit over a communication medium. Network data is transmitted in packets.

Pad

A temporary, unnamed file that holds the information displayed in a window.

Page Description Language

A method of describing text and graphics on a printed or displayed page. For example, a page description language usually has commands for describing lines, arcs, and text strings, as well as for positioning and scaling objects. PostScript and imPRESS are two popular page description languages.

Palette

A static or resident menu made of an array of items that occupy a given area of the screen. You cannot move or resize a window over a palette.

Panel

A user-defined rectangular region in a graphics window, such as the trace or view window, which is usually smaller than the full size of the page. Once you specify a panel, you can plot the contents of only the panel, if desired. Panels exist in some V8.x applications, but not in others.

Parameter

Variables that are resolved outside of the component, either through the design viewpoint or a timing file. Parameters can be properties attached to an instance in the Schematic Editor, or specified in a modelfile. Parameters are values that must be supplied to variables before the expression(s) containing those variables can be evaluated. See also: Discrete Model Parameter, Macromodel Model Parameter, and Model Parameter.

Parameter Estimation

The process of initially approximating model parameter values for discrete components and analog integrated circuits using calculations from datasheet values or from measured data. Parameter estimation employs direct computational techniques.

Parameter Extraction

The process of deriving model parameter values using calculations from equations or from optimization. When Mentor Graphics derives model parameter values from optimization, it begins with an estimate of these values.

Parameterized Device

See Device Generator.

Parasitic Resistance

Parasitic resistance is comprised of both sheet resistance and connection resistance.

Parent

The super-component of a Transform Component, immediately above it in the design hierarchy. A child component appears as a transform instance on its parent Data Flow Diagram.

Part

A collection of data that can be either a design building block (a primitive) or the electronic representation of a component (a design). Parts include a part name, a part type, a netlist, a graphic symbol, spec values, and datasheet values.

Partial Condition

Any condition arriving at or leaving a transition node on a State Machine.

Partial Transition

Any transition arriving at or leaving a transition node on a State Machine.

Part Library

A library of Mentor Graphics supplied parts, such as gen_lib. Such components are usually customized at your site. See also: Commercial Component Library.

Part Model

See Simulation Model.

Part Number

The alphanumeric identifier that semiconductor manufacturers assign to the components they create and sell. The part number identifying a physical component also identifies the simulation model for that component. Part numbers

for models typically use only lowercase letters. For example, Mentor Graphics labels the AccuParts model for component 2n2222a as "2n2222a".

When necessary to avoid confusion, this manual uses *model part number* when referring to an AccuParts model to differentiate between the manufacturer's part number and the simulation model's part number.

Partition

In the UNIX environment, a discrete portion of the hard disk. You can partition a hard disk during operating system installation or at other times.

In the Continuum environment, a representation of design connectivity for a specific kernel. For Continuum, two partitions exist: one for the QuickSim II kernel and one for the AccuSim II kernel.

Partitioning

The process by which Schematic Generator divides a large schematic into a number of smaller portions of functionality (sheets).]

In the Continuum environment, the process the simulator goes through to assign components to the analog and digital partitions.

Paste

To insert data into an area. Pasting is commonly used in reference to text or graphic files where a block of text or a graphic object is cut from one area and pasted into another area.

Pathname

A series of names separated by slashes that constitute the fully qualified name of the path from one point in the file system hierarchy to a particular file. Pathnames begin with the starting point's name, and include every directory name between the starting point and the destination object. A pathname ends with the destination object's name. See also: Absolute Pathname and Relative Pathname.

Path

A path has a centerline (sometimes called a model line), a width, and an endtype. Most edit functions operate on the centerline of a path.

PCF

Portable Compiled Font (new in X11R5), an the X Window System font that is in a format that any X11R5 X server can interpret directly for display purposes.

PDL

See Page Description Language.

Peek

Peeking lets you temporarily replace the symbolic (external) view of a cell with the mask layout (internal) view for a cell.

Peeked Checking Mode

In the PEEKED checking mode, ICrules DRC analyzes the top-level cell and all of the subcells that are currently peeked, including the ports and pins that are in the subcells.

Performance Characteristics

The simulated behavior of an AccuParts model in the AccuSim II analog simulator. Performance characteristics can also refer to the behavior of a physical component sample as measured, or as the manufacturer's datasheet specifies.

Performance Optimization

See Timing Optimization.

Permissions

1. A list of users who have access to an object and the specific rights that each user has for accessing that object.

2. The access rights to a directory or file for a given user.

Persistence

The ability of an object's representation to survive from one invocation of a process or session to the next. The data is saved on disk.

Personal Thesaurus

An external user-defined rules file that contains one or more aliases for a search string.

PEX

Parasitic Extraction (ICextract PEX) calculates resistance and capacitance effects that result from routing path placement in the layout.

Pgtext

A Device Generator that you can use to place Pattern Generatable (PG) text into your design. See also: Device Generator.

Phy_pin

This property specifies a name for a logical pin on both an ICgraph cell and its corresponding schematic symbol.

Physical Event

Events generated by the graphic input devices.

Physical Page Number

The number that represents the location of the page within the document. Physical page numbers are consecutive numbers, beginning with 0. For example, the first page of a document has a physical page number of 0, the second page is 1, and the tenth page is 9.

Physical Symbol

The physical appearance, or footprint, of a component. The view is looking down at the top of the component, showing only pin numbers, not pin functions.

Physical Transcript

A transcript of physical events, such as key strokes and mouse movements. You use physical transcripts to recreate a given session state. See also: Logical Transcript.

PIC

See PICture file.

PICture file

Generally refers to .pic files, a Mentor Graphics picture file format that represents graphical data. In Release 7.0, Mentor Graphics used this format to send design data or graphics to a printer. In Release 8.0, .pic files are just one of many formats recognized by the print servers.

Pin

1. An electrical connection between an instance and a net. A pin is part of the symbol body.

2. A symbol's connection point between an external net and the internal circuitry of the component represented by the symbol (input and output).

3. In IC, a property that specifies a name for a logical pin on both an ICgraph cell and its corresponding schematic symbol. A pin, which can have a name, is a logical object that belongs to an instance. Objects that make up the pin are defined by the port members in the underlying cell. You use pins to make connections to an instance at the same level of the hierarchy. When a cell is placed as an instance in another cell, all shapes and paths that are part of a port become a single pin in the parent cell. A pin is viewed at the symbolic level; a port is viewed at the mask level.

Pin Layer

Identifies all of the layers that pins will be located on and the number of pins that Device Recognition will attempt to find for each device instance.

Pin Name

Specifies the name of pins that Device Recognition assigns to recognized device instances.

Pitch

The number of characters per inch (cpi). Ten-pitch Courier prints ten characters per inch. Hence, ten-pitch is wider than twelve-pitch type because only ten characters fill a horizontal inch, rather than twelve.

Pixel

1. The smallest element of a display surface that can be independently addressed. A pixel is the phosphor dot on the screen of a display. Screen size is often given as the number of pixels, for example a 1024 x 1024 screen.

2. A 400 dpi plotting device has 400 pixels (dots) in a one inch width.

Place

This property specifies a relative position within a cell where you can preplace an instance.

Placement

Placement is the process of placing standard cells or blocks onto the floorplan.

Plain Text

Text that does not include page formatting or font information.

Plotter

Device used for outputting graphical or textual data onto paper, vellum, or film. A plotter is usually connected to a computer through a serial or parallel interface cable and requires that the input data be translated into a language and format that it can understand. (Thus, a plotter needs print servers.) Plotters are often referred to as printers. See also: Printer.

Point

1. To position the pointer or location cursor.

2. A unit of measure in typography that is approximately 1/72nd of an inch. Font sizes are typically measured in points. 72-point type, therefore, measures approximately an inch from the bottom of the descender to the top of the ascender.

Point Size

The size of a font, measured in points.

Point-to-Point Routing

The point-to-point router enables you to route between two specified points and optionally start and end the route on specified layers instead of the current layer.

Pointer

See Mouse Pointer.

Pointing Device

A device such as a mouse, trackball, or graphics tablet that allows you to move a mouse pointer on the workspace and to point to graphic objects.

Polygon Containment

Determines whether dimensional check operations will either use polygon containment criteria or modify the criteria to include coincident edges in the dimensional measurements

Polygon Measurement Operation

Polygon measurement operations select polygons that meet specified measurement requirements.

Polygon Topological Operation

Polygon Topological operations analyze the input polygons of two different layers to locate portions of polygons that have specific relations to each other.

Pop

The act of shuffling the order of overlapping windows. For example, a hidden or partially-hidden window can be popped to the top of the stack of windows for viewing.

Popup Command Line

A one line area that appears when you press the CMD key or start typing text in an area not designed for text entry. A popup command line indicates that the application is ready to accept your function call or command.

Popup Menu

A menu that provides no visual cue to its presence, but pops up when you press the Menu mouse button. Popup menus are associated with a particular area of the workspace, such as an application window.

Port

A connection point to a pin and a symbol. The port serves as a place-holder to inter-hierarchy connection. Used to mark a net as making a connection external to the schematic, and corresponds to the pins on the symbol. The portins and portouts on a schematic are special instances that connect to nets whose names must match the symbol pins.

In IC, a port is a logical object that includes one or more shapes or paths called port members.   Ports define where connections can be made to a cell at the next hierarchical level.

Port Member

A port, which is a logical object, includes one or more shapes or paths called port members.

Port Number

Numbers used by TCP/IP to identify end points of communication.

PostScript

1. A page description language (PDL) specifically designed to communicate a description of a printable document or graphic from a computer-based composition system to a raster-output printing system.

2. Format generated by the Context TIF ERI server for laser print servers that drive PostScript printers.

PostScript Device

A printer or plotter served by a PostScript print server. It executes commands from the PostScript page description language.

PostScript Interpreter

Generally runs in an independent device, such as a laser printer. The interpreter translates PostScript operations and data into device-specific codes and controls the output device in order to generate the graphics being described on the page.

Power Path

Power paths carry current to cells to power the cells' operations.

PowerFET

The acronym for power field effect transistor.

Press

To push or hold down a mouse button or a key. Note that to hold down a mouse button while moving the mouse is dragging. Clicking consists of pressing and releasing a mouse button, without moving the mouse pointer. See also: Drag and Release.

Primary Entry

A primary entry is a configuration entry that you add to a configuration, as opposed to secondary entries, which the Design Manager adds during a build operation. The entry is only a pointer to the design object version. See also: Build Rules, Configuration Entry, Secondary Entry, and Reference State.

Primitive

An instance that does not contain other hierarchically lower instances. Primitive instances are the lowest level in the design hierarchy. Examples of primitives include BLMs, HML models, QuickPart models, and builtin models. Sheet-based models are not primitives.

Primitive Property

A primitive property, which you can add to an schematic by using the Idea Station Design Viewpoint Editor, prevents Direct LVS from looking at lower hierarchical levels when it flattens the source circuit.

Primitive Site

The simplest place holder in a dialog box. It can contain either a control or a simple value. See also: Compound Site.
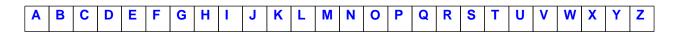
Print Job

A print request spooled to a print server. The print job generally consists of a job attribute file (JAF) and a data file containing the graphical or textual data to print.

Print Queue

1. The list of print jobs ready to be printed.

2. A directory where files to be printed reside.

Print Server

Software that executes on the host computer and translates graphical and/or textual data into a format that the printer can understand. The print server processes print jobs in the order and priority in which they were spooled. The translated output from a print server can be sent directly to the printer or written to a file, which can be sent to a printer at another time or place. See also: Spool.

Print Weight

See Weight.

Printable Area

A rectangular area that defines the limits into which print data can be drawn. This area can be the physical limits of the device or can be redefined logically.

Printer

The hardware associated with a print server. This hardware includes the print head, the paper handler hardware, and the interface hardware. Although the terms printer and plotter are used interchangeably, a printer is generally associated with textual data while a plotter is associated with graphical data. See also: Plotter.

Printing Option

A system-defined and maintained internal variable whose value you can change by passing a new value to a function.

Prio

This property specifies the priority of a net for routing.

Process

1. In IC, you must describe the physical characteristics of the technology or manufacturing process that you will use to implement your IC design. The description of your technology is referred to as the Process. You can use the IC Station default Process, or you can define your own.

2. A uniquely identified CPU task that can run concurrently with other processes on the node. Each process runs tasks independently of other shell processes, while sharing the same Central Processor Unit (CPU).

Process Data

Process data describes the technology, design rules, and other information about your design. Information shared among different cells in one design (for example, the routing level definitions) is also contained in the Process.

Process Variable

Process variables are reserved AMPLE variables that specify a predefined Process parameter.

Product Development Process

The set of activities, tools, methods and procedures by which customer expectations are translated into a product. This process involves translating customer expectations into system requirements, transforming those requirements into a design, implementing and testing the design, and then transferring the design data to production.

Product Life Cycle

The entire process of product development from product definition through development, production, enhancement and, finally, disposal.

Program

1. A set of instructions describing actions for a computer to perform some task, conforming to the rules and conventions of a particular programming language.

2. A file containing coded instructions to the computer. A *compiled program* is a file that is first created in source code and then transformed by a compiler into object code. A *shell program* or *shell script* is a text file that does not need to be compiled because it is interpreted by a shell.

Progressive Disclosure

The ability of a dialog box to reformat itself in response to user input, either to make more gadgets visible or to hide existing ones.

Promoting Cells

Changing from an editing mode of fewer constraints to an editing mode of tighter constraints is called promoting a cell.

Prompt

1. A symbol displayed by the system to let you know that it is ready for input. For example, the default System V Bourne shell prompt is the dollar sign ($) character.

2. Text displayed in a dialog box or prompt bar to guide your actions.

Prompt Bar

A special dialog box displayed to collect input when you invoke an AMPLE function without supplying all its required values. A prompt bar is a one-line dialog box that consists of the function name, gadgets with labels, and **Options...**, **OK**, and **Cancel** buttons. (Not all prompt bars have an **Options...** box.)

Property

In the Mentor Graphics environment, a means of placing information about an instance, net, or pin into the design database using the Symbol Editor or the Schematic Editor. A property is an attribute attached to an object in the form of a name/value pair. Simulators and layout applications refer to the properties for information about the design.

Properties define the physical attributes of an electronic component and are also used to configure or identify information associated with a design object. References have properties. These properties can be back-annotated by DVE, DFI, SimUI, and others.

A property attached to a graphical symbol conveys information about that symbol. Each property has a name and a value. For example, the Inst property is attached to the body of a symbol. Inst is the name; a possible value can be "X1" or "" (null string).

In IC a property, which is a logical object, is a mechanism that you use to convey nongraphical information to ICgraph and other tools. Properties are associated with another specific physical or logical object in the cell. Properties are persistent at the cell level. Each property consists of a name, value, and owner. *See also: Object Property, Reference Property, and Version Property.*

Property Name

The property name is either a reserved word or an arbitrary, but unique name that you pick.

Property Owner

The property owner is another object in the design, such as a shape, pin or port.

Property Specification

Describes what electrical and physical properties Device Recognition calculates and how it calculates them for the instance of this device.

Property Text

Property text is a graphical representation of a property that you add to a specific layer of your design. The property value is displayed as an object that you can select in the layout. It has characteristics such as height, justification, and orientation. You can select, highlight, move, delete, group, rotate, and flip property text independent of the owning object.

Property Value

The property value is an arbitrary non-empty string that contains the information that you want conveyed to ICgraph and other tools.

Proportional Characters

A typeface that varies the horizontal print space of each character, based on the character's width. For example, the letter i is thinner than the letter m and takes up less horizontal print space. This manual uses proportionally-spaced characters.

Protection

A design object's protection refers to the granting of access permissions to other users.

Protocol

A network communication language that establishes a set of rules for a particular communication task. Three examples of network protocols are: transmission control protocol (TCP), a stream-based protocol; user datagram protocol (UDP), a message-based protocol; and internet protocol (IP), a routing protocol.

Prototype Panel

See Control Panel.

Proximity Search

An advanced full text searching operation. A proximity search allows users to search for "String A" within a specified number of characters of "String B".

Pruned

Pruning is the automatic deletion of design object versions that exist beyond the current version depth. See also: Version, Version Depth, and Version Depth Mechanism.

Ptxt

Text in a standard Notepad window.

Pulldown Menu

A menu not normally visible until you access it by pointing to an item on the menu bar and pulling down the menu with the Select mouse button. Pulldown menus are associated with menu bars, or in some cases, certain buttons. See also: Popup Menu and Palette.

Glossary Q

The following terms are described in this section:

Qualification Script
Quality
Question Box
Queue
Queue Site
Quick Help
QuickFault
QuickGrade
QuickPart Schematic
QuickPart Table
QuickParts
QuickPath
QuickSim
QuickSim II

Qualification Script

A qualification script is a required AMPLE script that runs when you invoke a tool within the Design Manager, before the tool's actual executable code runs. The qualification script gathers and evaluates tool arguments, validates tool invocation, and enforces workflow policies or procedures (if desired).   See also: Termination Script and Tool Viewpoint.

Quality

The degree to which a system, component or process meets specified requirements or meets customer expectations.

Question Box

A blocking dialog box that you must respond to by pressing a button before you can continue your work.

Queue

See Print Queue.

Queue Site

A workstation, associated with the printer or plotter, containing the /sys/print directory that data is sent to. It contains the directory where files to be printed reside.

Quick Help

Provides a brief description about an object such as a menu, window, or function, or describes a particular feature of the application. Quick help can appear first when you ask for help from within an application. Most quick help message windows have a button that, when activated, will bring up reference help.
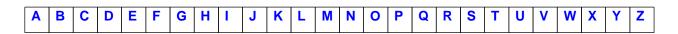
QuickFault

The Mentor Graphics fault simulator.

QuickGrade

The Mentor Graphics fault grader.

QuickPart Schematic

A sheet-based model that provides the functionality to the QuickPart compiler. Once the QuickPart is compiled, the sheet-based model in no longer required.

QuickPart Table

A list of timing constraints that apply to the sheet-based model. This list provides timing delays, setup and hold times and pulse widths for the QuickPart model.

QuickParts

A Mentor Graphics modeling technique that transforms a sheet-based component into a component with similar functionality but with pin-to-pin timing provided by a timing file.

QuickPath

A Mentor Graphics critical path analysis application.

QuickSim

The Mentor Graphics family of simulators, which includes the QuickSim II logic simulator, the QuickGrade fault grader, the QuickFault fault simulator, and the SimUI remote simulator interface.

QuickSim II

The Mentor Graphics digital logic simulator that can simulate and test a design that is referenced by a Design Viewpoint. QuickSim II can use the active back-annotation object to accurately simulate the layout.

Glossary R

The following terms are described in this section:

Radio Button
Range
Raster Device
Red, Green, Blue
Reference
Reference Handle
Reference Help
Reference Mode
Reference Network
Reference Property
Reference State
Reference Voltage
Reference Window
Referenced Cell
Register A Library
Registrar
Registration
Regular Expression
Relative Pathname
Relative Time
Release
Relevel Merge
Relevel Replace
Remote Host
Remote Network
Remote Procedure Call Daemon
Repeating Entry Box
Requirement List
Requirement Traceability
Requirement View
Requirement View Element

Resident Menu
Resize
Resize Border
Resizing Pointer
Resolution
Resource Server
Restore
Restructuring Nets
Retargetable Entry
Revert
Rexd
RGB
Rise/Fall delay
Rlogind
Root
Route_set
Routed
Route Point
Router
Routing
Row
RPCD
Rubberband Box
RuleCheck Comment
RuleCheck Group
RuleCheck Statement
Rule File
Rule File Comment
Rule File Operation
Rule File Statement

Radio Button

A graphic control that simulates a button on a car radio. Each button represents a mutually exclusive selection. Radio buttons are typically used for setting a state and appear in a dialog box. The application usually displays check buttons as small diamond shaped buttons.

Range

A cell address encompassing more than one cell. A cell range can be all in one row (A1:D1), all in one column (A1:A4), or two-dimensional (A1:C3).

Raster Device

A device that represents graphical data as a set of dots on a grid. A line is represented by turning on several dots in a single path. The closeness (spacing) of the dots determines the resolution of a raster device. A typical output device can have 300 dots side-by-side in a one inch width; this is a 300 dpi device. Note that the height also has 300 dpi, so a one inch square contains 90,000 dots that can be turned on or off.

Red, Green, Blue

Red, green, blue. The three colors used in color displays.

Reference

A reference is a pointer from one design object to another. Design tools use references to associate design objects. References contain the object ID, name, type, and sequence version of the referenced object.

Both applications and users create references from within the Design Manager. You can define a reference to an explicit version of a design object or to the current version. Properties can be added to references to store information about the reference.

For example, in IC, when you place an instance of a cell in your design, ICgraph maintains a pointer to where the instance came from on disk called a reference. See also: Reference Handle, Reference Network, and Reference Property.

Reference Handle

A reference handle is an integer that uniquely identifies the reference. See also: Reference, Reference Network, and Reference Property.

Reference Help

A form of detailed online help that users can request from within a Mentor Graphics application. Reference help is available for menu items and dialog boxes. When users request reference help, the BOLD Browser accesses the appropriate information from an online library. This help is a follow-up to quick help and provides more information.

Reference Mode

When the references of a design object are displayed in a navigator window, the navigator window is in reference mode. You are only in reference mode after you have explored the references of a design object by using the Explore References command. When you are in reference mode, the navigator title bar displays the absolute pathname of the design object whose references are displayed in the navigator window, followed by a "@" indicating reference navigation. See also: Contents Mode.

Reference Network

A reference network is the set of design objects that are related through references. The reference network of a design object includes the design object itself and all other design objects that can be reached by traversing references. A reference network is analogous to the design object's containment hierarchy. Using the Design Manager navigator, you can traverse the reference network, one path at a time. When building configurations, the Design Manager can traverse the entire reference network of a design object in one operation. See also: Reference, Reference Handle, and Reference Property.

Reference Property

A reference property is a name/value pair that contains information about the reference. The "creating_tool" property identifies the tool that "owns" the reference. Reference properties propagate with the reference from the current version to later versions, until they are explicitly changed or deleted in the current version. See also: Object Property, Property, Reference, and Version Property.

Reference State

A state is a condition that applies to references and configuration entries. There are three possible states that a reference or configuration entry can possess:

- Current

  Current references and configuration entries always point to the current version of the design object that they reference. As the design object evolves, the reference or configuration entry remains set to that current version.

- Fixed

  Fixed references and configuration entries always point to the version of the design object to which they were originally set. As the design object evolves, the reference or configuration entry remains set to the same version.

- Read-only (applies to references only)

  A read-only reference points to the current version of the target design object, but the object cannot be edited when accessed through this reference, regardless of the access permissions of the referenced object.

See also: Configuration Entry and Reference.

Reference Voltage

A measure defining the full-scale analog input or output voltage. Reference voltage defines the range zero volts to VREF volts, over which the Analog-to-Digital and Digital-to-Analog Converters perform conversions.

Reference Window

The reference window is a bounded area bordered by a rectangular box within which a selected design object's references are displayed and modified. The reference window displays exactly the same items as the navigator does when a design object is selected and its references are explored. See also: Reference, Reference Handle, Reference Network, and Reference Property.

Referenced Cell

When you place an instance of a cell in your design, ICgraph maintains a pointer to where the instance came from on disk called a reference. Thus, cells that you place in your design as an instance are called referenced cells.

Register A Library

To add a library to the network server database, thereby making the contents of the library available to users.

Registrar

The Registrar™ is an application used to register (declare) tool and data types, so that the Design Manager can recognize them. The Registrar is a graphical, easy-to-use application that does not require knowledge of C++ to perform the registration process. For more information about the Registrar, refer to the Registrar User's and Reference Manual. See also: Design Manager, Registration, and Type Registry.

Registration

Registration is the process of defining data and tool types. Registration is done using the Registrar. See also: Registrar, Type Registry, Model Registration, Command Registration, and Tool Registration.

reg_model

A Mentor Graphics tool that configures component models for simulation.

Regular Expression

Symbolic notation that describes patterns in text.

Relative Pathname

A relative pathname is a pathname that is relative to the MGC working directory. The MGC working directory is the value returned by the Design Manager toolkit function $$get_working_directory(). See also: Hard Pathname and Soft Pathname.

Relative Time

A time interval, such as five minutes, 23 seconds. See also: Absolute Time.

Release

1. This action makes a complete hierarchical copy of all components and references of the latest sequence version of the design object being released. The copy includes copies of included design objects, the fileset contained in the object, and all objects referenced in its attribute file. The released copy is placed in a target directory, and has the same ID as the

original, but has a new name. You cannot create new sequence versions for the released copy, although you can copy it. If you want to open and to evolve these design objects, you must copy the released configuration to another directory. *See also: Configuration* and Configuration Object

2. To let up on a mouse button you have pressed. Sometimes it is the press that initiates an action; at other times, it is the release (upstroke) that initiates the action. *See also: Drag* and Press.

Relevel Merge

An operation available in the DFD editor that merges a set of instances into a new Data Flow Diagram view in a new Transform Component. A relevel merge adds a level in the component hierarchy.

Relevel Replace

An operation available in the DFD editor that replaces a transform instance with the contents of its Data Flow Diagram view. A relevel replace deletes a level in the component hierarchy.

Remote Host

A host other than the one you are currently working on, which is on the same local or wide area network.

Remote Network

A network that is not directly connected to your host. A remote network is separated from your local network by one or more hops.

Remote Procedure Call Daemon

A server that maintains information about objects and interfaces on the local host. The rpcd also forwards requests to the appropriate server on the local host. An rpcd must be running on every HP/Apollo workstation that contains V8 software. On non-HP/Apollo workstations, the local location broker daemon (llbd) serves the same function as the rpcd.

Repeating Entry Box

An entry box that reveals a copy of the entry box when a value is supplied.

Requirement List

A list of hard requirements. Normally generated from the Requirement View.

Requirement Traceability

The process of tracking an original specification or requirement through each phase of the product life cycle.

Requirement View

A structured document produced by the System Architect Requirement View editor. The document that defines in some fashion the customer requirements. Each system can have one Requirement View. See also: Requirement List.

Requirement View Element

The elements used to identify requirements in the Requirement View.

Resident Menu

A static menu that remains visible for the life of the window, unless you choose to hide it. Menu bars and palettes are resident menus.

Resize

To change the height or width of a window or graphic object. See also: Grow.

Resize Border

The portion of the frame that surrounds an application window and is used to change the height or width of the window.

Resizing Pointer

A mouse pointer shape indicating the direction in which the window is changing size.

Resolution

For a given raster device, the number of dots or pixels in a specified width. A typical monochrome screen display has 100 pixels per inch, so its resolution is 100 dpi. A typical laser printer has 300 pixels per inch, so it has a resolution of 300 dpi. In this example, because the laser printer has more pixels in the same area, it has a higher resolution. See also: Pixel.

Resource Server

A resource server is a BOLD server that manages traffic to and from the physical device on which the online libraries reside. If your libraries are on CD ROM discs, the resource server manages the CD ROM disk drive. If your libraries

reside on a hard disk, the resource server manages the individual file that contains the library.

Restore

1. To return an icon or minimized window to its original state.

2. The action of taking data off backup media and placing it on a workstation's hard drive.

Restructuring Nets

Restructuring nets is the process of attempting to connect together all objects associated with a net either through other objects or through overflows.

Retargetable Entry

A retargetable entry is a configuration entry that can be released or copied to a separate location, other than the location specified for the release or copy operation. An entry is retargetable if its parent container is not part of the configuration. See also: Configuration Entry.

Revert

Reverting is the process of making the previous version of a design object current, by deleting the current version. See also: Version, Versioned Design Object, and Version Depth Mechanism.

Rexd

The remote execution daemon that controls remote processes.

RGB

See Red, Green, Blue.

Rise/Fall delay

A property of a simulation model that determines the delay between an input change, and the corresponding output transition. The rise (low to high voltage transition) or fall (high to low voltage transition) time can be specified independently. This method more closely approximates the actual timing parameters of a device, as compared to nominal delay models that assume equal rise and fall times.

Rlogind

The daemon that allows you to log into a remote workstation.

Root

See Superuser.

Route_set

This property specifies the shapes that comprise a port, which can be treated as equivalent for routing purposes.

Routed

The daemon that maintains the routing table on a TCP/IP gateway. The routing table provides the communication path between the originating host of the packet and the destination host when the packet must make one or more hops.

Route Point

One location along the path of a flow or connector. Route points can be specified so that a path curves.

Router

A device that lets two networks that use the same protocol communicate with one another. A router usually only translates information through the fourth layer of the ISO model to establish reliable communication among the networks. See also: Bridge and Gateway.

Routing

Routing is the process of placing and connecting signal and power paths between the standard cells and blocks.

Row

A row, which is logical object, is a floorplanning aid that helps you place standard cells. Rows are on a special layer called row.

RPCD

See Remote Procedure Call Daemon.

Rubberband Box

An outline in a rectangular shape that dynamically tracks mouse pointer movement. Typically, when you grow a window or graphic object, a rectangle,

representing the outline of the object, tracks with the mouse pointer to indicate the new size or shape. See also: Dynamic Rectangle.

RuleCheck Comment

A RuleCheck comment is text that follows an "at" sign in a Rules File. You can write RuleCheck comments only within a RuleCheck statement's brackets.

RuleCheck Group

A RuleCheck group is a set of RuleCheck statements and other RuleCheck groups that are referred to by a single name. When you evaluate a RuleCheck group, you are actually evaluating its constituent RuleCheck statements and RuleCheck groups.

RuleCheck Statement

A RuleCheck statement is a named collection of layer definitions, layer operations, universal comments, and RuleCheck comments that is located in a Rules File.

Rule File

An ASCII text file that contains source information that is used by ICrules, ICtrace, and ICextract, for a particular Process, to perform design rule checking, connectivity extraction, device recognition, layout versus schematic comparison, and parasitic extraction. The Rule File governs the following activities: derived layer generation, design rule checks, connectivity extraction, device recognition, and parasitic extraction. It consists of a set of statements and layer operations. Each operation is composed of keywords, layer names, and other parameters. IC Station compiles the rules when you load a Rule File into an IC Station Session.

Rule File Comment

A comment is a line of text that can be used to document either the Rule File or the Layout Verification Results. Rule File comments are composed of text that the Layout Verification tools use to document your Rule File and the results in the DRC Results Database. Text that follows either a double slash (//) or an at sign (@) on a single line is interpreted as a comment by IC Station.
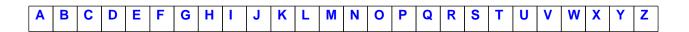
Rule File Operation

An operation is the basic directive unit within a Rule File. It directs the activities of design rule checking, connectivity extraction, device recognition, layout versus schematic comparison, and parasitic extraction.

Rule File Statement

Defines derived layers, variables, and design rule checks and can include other Rule Files. Rule File statements either describe actions that are to be performed by IC Station or define Layout Verification variables.

Glossary S

The following terms are described in this section:

Sans-serif
Save
Scale Factor
Scan Chains
Scan Insertion
SCF
Schematic Model
Schematic Netlist
Schematic Sheet
Scope
SCR
Screen
Screen Copy
Scroll Bar
Secondary Entry
Secondary Parameter
Seed
Seed Layer
Select Filter
Select Mouse Button
Selected Text
Selection
Selection Cursor
SEPARATE
Separate Process Server
Sequence Version
Serif
Server
Server Configuration File
Server Icon
Server Process Manager

Serverless Mode
Session Area
Session Clipboard
Session Process
Session Window
Setting
Shape
Shared Blocks
Sheet
Sheet Resistance
Sheet-based Model
Sheet-based Part
Shell
Shell Script
Signal
Signal Path
Signature Synthesis
Simple Clock
Simple Connectivity Model
Simple Copy
Simple State
Simulation Model
Simulator
SimView
Site
Sizing
Sizing Operation
Skew Edge
SLD Names
Slider
SNF

Soft Pathname

Soft Prefix

Softkey

Solaris

Solver

Source Document

Source Object

Source Technology

Spacing

Spec Entry

Specification Document

Specification Statement

Splice

SPM

Spool

Spooled Data

Spooler Node

Standard

Start A Server

Start State

Startup File

State

State Diagram

State Machine

State Matrix

State Transition Diagram

State Transition Matrix

Static Timing Analysis

Status Code

Status Code Stack

Status Message

STC

Stop A Server

String

Stroke

Stroke Weight

Sub-cell

Sub-cell Database

Subcircuit

Submenu

Subnetting

Subsystem

Subtree

Summagraphics

SunOS

Superuser

Swap Code

Swap_set

Switch

Symbol

Symbol Model

Symbolic Link

Synchronize Two Network Servers

Synonym

Syntax

Synthesis

System

System-1076

System Architect

System Clipboard

System Component

System Design

SDS

System Design Series

System Design Station

Systems Engineering

System Instance

System Manager

System Model

System Requirements
System Symbol

Sans-serif

A font name that means literally "without points." Sans-serif characters have smoothly terminated extremities. The following is sans-serif: sans-serif

Save

To write changes made to a data file to a storage device for safekeeping.

Scale Factor

A numeric value applied to graphical data to increase or decrease its size for plotting. For example, a scale factor of two results in a plotted picture twice the size of the original.

Scan Chains

Circuitry that forms a shift register of sequential devices in a design that allow verification of data at each register in the chain every clock cycle.

Scan Insertion

The process of including scan circuitry in a design.

SCF

See Server Configuration File.

Schematic Model

A schematic diagram created with the Schematic Editor, Design Dataport, or synthesis applications. Many schematic sheets can make up a schematic model. By default, each schematic model has one sheet. A schematic model is comprised of electrical objects, including instances, pins, nets, and frames, which are connected to describe the behavior of a circuit.

Schematic Netlist

Contains device identification names and node names that correspond to the component names and net names in the schematic, respectively.

Schematic Sheet

A page of a schematic. It contain the entire schematic, or it can be one of several sheets that represent the schematic model. A schematic diagram created with the Schematic Editor, Design Dataport, or synthesis tools. Many schematic sheets can make up a schematic (or schematic drawing).

Scope

An object that points to the domain of AMPLE functions and external variables. In the common user interface, a scope is typically associated with objects such as areas, toolkits, and applications. See also: Frame.

SCR

The acronym for Silicon Controlled Rectifier.

Screen

See Display.

Screen Copy

A picture of the screen. It can be sent to a printer or saved in a file. See also: Bitmap and Hardcopy.

Scroll Bar

A graphic gadget used to change the viewing area within a window. A scroll bar consists of a slider, scroll region, and stepper arrows. The size of the slider represents the relative portion of the data that is currently visible. You can change the view by dragging the slider in the scroll region, by clicking the Select mouse button on one of the stepper arrows, or by clicking in the scroll region. If you use the vertical scroll bar, the view scrolls up or down in the window adjacent to the scroll bar. If you use the horizontal scroll bar, the view scrolls to the left or right.

Secondary Entry

A secondary entry is an entry that the Design Manager adds to a configuration during a build. Secondary entries are added based on the build rules of the primary entries. You can set the build rules of primary entries to either include or exclude secondary entries from a configuration. See also: Build Rules, Configuration Entry, Primary Entry, and Reference State.

Secondary Parameter

Secondary parameters modify or extend the default behavior of the dimensional check operations. To modify the behavior of dimensional check operations, you include secondary parameters in the operation descriptions.

Seed

This property specifies a relative position within a cell where you can preplace an instance.

Seed Layer

Identifies the seed or device layer that Device Recognition uses to begin its search for instances of the device. Device Recognition first searches for a particular shape on the seed layer, called a seed shape. If the shape is found, Device Recognition compares the polygons that are either nearby or overlapping the seed shape on other layers in order to find a complete match to the device template.

Select Filter

The select filter in ICgraph establishes the criteria for object selection.

Select Mouse Button

The mouse button used to make a selection. By default, the select button is the left mouse button on a three- or two-button mouse.

Selected Text

Highlighted text that can be manipulated as a unit.

Selection

Identification of certain elements or design objects for subsequent operations.

Selection Cursor

See Location Cursor.

SEPARATE

Specifies whether a new shell is created when you invoke an application.
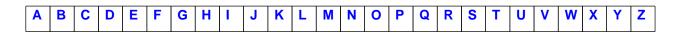
Separate Process Server

An External Rendering Interface server that is not directly bound to a specific application, but can be accessed from across the network by applications that use this server type.

Sequence Version

A non-decreasing integer associated with a design object. Sequence versions are used to detect when design objects have changed.

Serif

A font name that means literally "points." A decorative line or "tail" is on the ends of the lines forming a letter. Usually on the lower half of a letter, serifs (small projections at their extremities) have been called "feet" or "curlicues."

Server

1. A background process that services client processes. The BOLD online information system uses three types of servers: Library Server, *Resource Server*, and Network Server. Using the BOLD Administrator, you can start, stop, and show the status of BOLD servers.

2. A hardware device that is optimized for a specific task, such as a file server. See also: Print Server and Daemon.

Server Configuration File
A file containing directives that control the operation of the print server. To set the default behavior of the print server, the print server reads the SCF once at startup. The SCF settings can be overridden on a job-by-job basis with a job configuration file (JCF).

Server Icon
A server icon is a BOLD Administrator icon that represents a BOLD server. Each server icon is labeled to show what type of BOLD server the icon represents (Library Server, Resource Server, or Network Server) and where the server is running.

Server Process Manager
A server that allows you to create a process on a workstation from another, remote workstation.

Serverless Mode
Serverless mode is the mode of operation of the BOLD online information system in which BOLD Browser applications locate and read data from online libraries directly, without the use of the BOLD servers. Consequently, system management operations performed with the BOLD Administrator application have no affect on BOLD Browsers running in serverless mode. See also: Client/Server Mode.

Session Area
A portion of the BOLD Browser session window that exists beneath the pulldown menu bar and above the message line. The session area contains document windows.

Session Clipboard

A temporary storage area accessible only to applications running under a particular session.

Session Process

The session Process is the Process of the top-level cell in the active window.

Session Window

A specialized area that exists immediately within the operating system window, containing the session area, the window title bar, pulldown menu bar, and message area. It appears when you first start an application because it is the backdrop of your Mentor Graphics environment. Although you can hide the session window under operating system windows or other operating system objects, all application windows and graphic objects are stacked on the session window.

Setting

A parameter that does not cause an operation, but rather influences the outcome of related operations. Once set, it influences subsequent operations. See also: Printing Option.
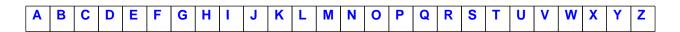
Shape

A shape is a closed polygon that exists on a single layer.

Shared Blocks

The number of blocks that contain links to the $MGC_HOME/shared portion of the master Mentor Graphics tree. Each shared block is equal to 1 kbyte.

Sheet

1. A page of a schematic. Can contain the entire schematic, or can be one of several sheets that represent the schematic model hierarchy. *See also: Schematic Sheet*.

2. A window DSS displays when asked to open a file. Usually synonymous with view, but refers to the entire file, not just the visible part..

Sheet Resistance

Sheet resistance is the resistance of a conduction layer from one boundary to another, typically specified as ohms per square.

Sheet-based Model

A simulation model whose behavior is defined by an underlying schematic sheet.

Sheet-based Part

A simulation model whose behavior is defined by an underlying schematic sheet.

Shell

A command-line interpreter program used to invoke utility programs. Shells interface with the operating system. The Bourne shell is the default shell for Mentor Graphics applications. The common UNIX shells are the Bourne shell, C-shell, and Korn shell.

Shell Script

A program written in syntax recognized and executed by the specified shell.

Signal

1) A signal path or net. 2) The activity occurring on a net.

Signal Path

Signal paths are used to transmit electrical signals between signal pins. The centerline of a signal path should be on the user-grid.

Signature Synthesis

The process of making cost-based substitutions of technology-specific primitives to improve the performance or reduce the size of the circuit.

Simple Clock

A single one-phased clock.

Simple Connectivity Model

A model, which is similar to a netlist (but not in ASCII-readable form) containing only connectivity--not graphical--data. You can simulate or optimize a simple connectivity model. This object is sometimes called an EDDM netlist.

Simple Copy

A clone (copy) of a document window. Unlike a HyperDriver clone, there is no relationship between the original document and a simple copy of it.

Simple State

A symbol on a State Transition Diagram that represents a state that has no child state machine. See also: Composite State.

Simulation Model

A set of model parameters, or an equivalent circuit, that, when simulated, describes the performance characteristics for a physical component. Mentor Graphics implements analog simulation models as AccuSim II .MODEL primitive statements or .SUBCKT statements in ASCII format. The term simulation model generically refers to both primitives and macromodels.

AccuSim II extracts ASCII analog simulation models from the AccuParts library database when you initiate a simulation run or when you select the **Design Architect > Libraries > MGC Analog Libraries > Utilities > VIew/Edit Model** or **AccuSim > File > AccuParts > View/Edit Model** menu items.

Simulator

A simulation kernel, such as QuickSim II or AccuSim II, combined with a graphical user interface environment, such as SimView. The kernel(s) act as the back-end of the simulator, while SimView acts as the front-end of the simulator.

SimView

A user interface technology designed to provide consistent graphical access to Mentor Graphics simulation products.

Site

The location of a gadget or group of gadgets within the dialog box. A site can contain other sites or gadgets.

Sizing

Changing the size of window or a graphic object in the workspace. See also: Resize and Grow.

Sizing Operation

Sizing operations either oversize or undersize the polygons that are on either an original or a derived polygon layer in order to generate a derived polygon layer.

Skew Edge

Skew edges are edges that have an orientation that is neither orthogonal nor at a slope of +1 or -1.

SLD Names

"Structured Logic Design" (SLD) names, which are unique identifiers for each instance, pin, and net in a design. By default, the Symbol Editor and the Schematic Editor assign SLD names as you build a design; however, you can specify your own names with the INST, PIN, and NET properties. Examples of default SLD names include I$4 and N$23, which are sometimes called "handles."

Slider

1. One of the graphic components of a scroll bar. The slider is the object you drag along the scroll area to change the area displayed in the window.

2. A dialog box gadget that uses a slider to traverse a scale of numbers.

SNF

Server Normal Format, one of several non-portable binary formats commonly used for the X Window System fonts by X11R4 X servers. While this format is logically consistent in design across various systems, its binary implementation can differ. This format is supported in X11R5.

Soft Pathname

A soft pathname is a pathname that begins with a soft prefix. Because a soft pathname must begin with a soft prefix, it follows that the initial characters of a soft pathname must be a dollar sign ($). A soft pathname is not in and of itself interoperable. See also: Absolute Pathname, Hard Pathname, Soft Pathname, and Soft Prefix.

Soft Prefix

A soft prefix is a string that begins with a dollar sign ($), contains one or more capital letters, digits, or underscore characters. A soft prefix precedes all other characters in a pathname, and is followed by a slash. A soft prefix has an

associated value which can be substituted in its place to produce a hard pathname. See also: Absolute Pathname, Hard Pathname, and Soft Pathname.

Softkey

A softkey is the textual description of a function key on your keyboard.

Solaris

The newest UNIX-based operating system for Sun workstations. It is a SysV-based operating system.

Solver

A time-domain-based simulation program.

Source Document

A source document is the file containing the compiled or edited source data of a connectivity model. You use this form to view a design. The source document can include a schematic sheet, or System-1076 ASCII source text.

Source Object

A design object used by Design Architect to organize and store design data. It contains unevaluated and unlinked data.
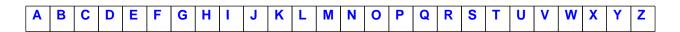
Source Technology

The technology in which a design is expressed before optimization.

Spacing

The control of white space on a page. In the vertical direction, spacing is called leading, or line spacing, and controls the amount of white space between the baseline of one line of text, and the tops of the ascenders of the line of text below. In the horizontal direction, spacing can refer to the width of each character or the amount of white space between the individual characters in a word (inter-character spacing).

Spec Entry

The process Mentor Graphics performs during modeling that involves entering datasheet specification values into a dialog box. Sources for datasheet values can be manufacturers' datasheets or measured data.

Specification Document

See Requirement View.

Specification Statement

Statements that describe the overall environment for the application using the Rules File.

Splice

A connectable element in a Data Flow Diagram that allows flows that share the same origin or destination to share their route up to a certain location. Unlike a junction it allows flows with composite types to be composed or decomposed and allows the connection of flows with different type definitions. A splice typically contains simple assignment statements that do not justify the use of a VHDL Specification contained in a transform instance.

SPM

See Server Process Manager.

Spool

To use a queued buffer for an operation, such as printing, where files are sent to wait for the operation. Most spoolers use the first in/first out (FIFO) method to process files.

Spooled Data

A file containing the actual graphical or textual data to be translated by the print server. Because this data file is created when the print function is called, at spool time, it is referred to as the spooled data file. A job attribute file (JAF), which contains printing options for the print job, is also created at this time.

Spooler Node

See Queue Site.

Standard

The basal face of a given font family. The standard face embodies the basic shape and style of the letterforms of the font family, before they are slanted (italics) or thickened (bold). See also: Bold, Face, Font Family, and Italic.

Start A Server

To create a new library server, resource server, or network server process.

Start State

The initial state of a State Machine that represents the state of the State Machine before any transitions occur.

Startup File

A user-created file of commands or functions. If it is placed in the proper directory, each application executes it automatically when you invoke the application, or the session. Startup files allow you to modify your Mentor Graphics application environment.

State

A resting mode of a system. See also: Composite State, Simple State, Start State, State Machine, Transition, and Condition.

State Diagram

See State Transition Diagram.

State Machine

A view of a system or transform that defines the behavior of this system or transform in terms of a finite State Machine. This is a mathematical model of a system. The system is represented by a finite number of states with a finite number of associated transitions between pairs of states. The State Machine is represented by a State Transition Diagram in the STD editor and by a State Transition Matrix in the STM edit/animate window of Control Architect. A State Machine can also be exercised by a Control Panel. See also: Mealy State Machine and Moore State Machine.

State Matrix

See State Transition Matrix.

State Transition Diagram

A graphical representation of a State Machine. A State Transition Diagram (STD) consists of a number of states, transition nodes and links connected by transitions. The diagram can also contain annotation blocks and a default actions block. Also known as a State Diagram.

State Transition Matrix

A tabular representation of a State Machine. A State Transition Matrix (STM) contains a row for each state and a column for each condition. If the STM contains Moore states, state actions are displayed in a State/Actions column.

Static Timing Analysis

An analysis of circuit timing without test vectors.

Status Code

A status code is an integer that corresponds to an error message. The status code is returned to the status code stack after a function executes. The status code typically refers to the number at the top of the status code stack. A status code of 0 means no error occurred. See also: Status Code Stack and Status Message.

Status Code Stack

A status code stack is a list of status codes. See also: Status Code and Status Message.

Status Message

A status message is a vector of strings that correspond to the status codes on the status code stack. See also: Status Code and Status Code Stack.

STC

The acronym for Start Conversion. It is an input voltage signaling the beginning of an analog-to-digital conversion. When an event occurs on the STC pin, the A-to-D Converter begins a conversion. An event in this context is a rising or falling edge. In this manual, this term applies only to Analog-to-Digital Converters.

STD

The acronym for State Transition Diagram.

Stop A Server

To terminate a library server, resource server, or network server process in an orderly fashion. This involves shutting down all active NCS interfaces and informing associated servers of that server's termination.

Note that stopping a server is different than *deleting* a server. Deleting a server is necessary only after a system error has occurred that has terminated the server without telling associated servers that it is no longer functioning.

String

A sequence of characters including spaces, tabs, numbers and punctuation characters in addition to alphabetic characters.

Stroke

A predefined mouse pointer movement that is translated into commands or functions. The display is divided into nine partitions and a number assigned to each area. The sequence of partitions the mouse pointer passes through define a stroke. The Stroke/Drag (middle) mouse button executes strokes.

Stroke Weight

See Weight.

Sub-cell

Subcells are cells that are instantiated in either the top-level cell or in other subcells.

Sub-cell Database

Contains the cell layout, connectivity, and the LVS results database. It might possibly contain a DRC Results Database if ICrules DRC was executed when the subcell was loaded as a top-level cell. You can edit the cell database only when the cell is in the active editing context in the IC Session. Since a cell can be composed of a hierarchy of more primitive cells, the IC Environment uses a template attribute file to maintain references to other cells. The IC Environment stores the Layout Versus Schematic (LVS) results that you generate for any cell in the hierarchy in the active context cell database. The cell's template attribute file references all cells that are included in the hierarchy of the subcells.

Subcircuit

1. The interconnection of AccuSim II primitives to define a circuit that can be referenced repeatedly in an AccuSim II netlist or Design Architect sheet.

2. A non-primitive component (in SPICE terminology).

Submenu

See Cascading Menu.

Subnetting

A way of dividing a single logical network into smaller physical networks to simplify routing and troubleshooting.

Subsystem

A system that is part of a larger system. A subsystem is no different to a system except in the context to which it is referred. The designer who creates a system might see it as a complete system, but a designer who then uses it in a larger system sees it as a subsystem.

Subtree

All components directly or indirectly below a given component in the design hierarchy.

Summagraphics

The Summagraphics puck, a four-key graphic input device that can be moved on its own tablet.

SunOS

The Sun operating system. A BSD UNIX-based operating system with Sys V UNIX extensions.

Superuser

A user account for with almost all permissions in the operating system. Normally the account is named "root."

Swap Code

Some ports are electrically the same; for these ports you can specify that they are the same by assigning them a swap set code. You specify swap sets by adding the name of the logical swap_set property and the rules to the port. Swappable ports share the same swap (swap code >0).

Swap_set

This property identifies a pin as belonging to a set of swappable pins.

Switch

An optional command argument that is preceded by a dash (-) and is separated from the command and other command arguments by a space character.

Symbol

A non-functional design object that contains a graphical representation of a component. A symbol consists of a graphical symbol body, symbol pins, symbol pin properties, and symbol body properties. Symbols are created in the Symbol Editor in Design Architect. A design object can represent anything from a simple logical function to a full blown integrated circuit.

Symbol Model

A symbol model graphically represents the component.

Symbolic Link

A symbolic link is a special type of object that points from one place in the naming tree to another and contains the name of the file to which it is linked. When a link name is used as a pathname or as part of a pathname, the link text is traversed in place of the link name; the link resolves to the destination specified by the link text. Symbolic links can span file systems and cannot refer to directories. See also: Hard Link, Hard Pathname, and Soft Pathname.

Synchronize Two Network Servers

To force a network server database to be identical with another network server database.

Synonym

Names or actions that are equivalent to each other. For example, an instance with the pathname I$2#1/I#2/MP might also be recognized by the synonym "Q1". Also, a stroke (a particular motion on a touchpad, mouse, or graphic tablet that can be defined to represent a command) can be given several synonyms (slight variations on the basic stroke) so that the command works for different users.

Syntax

The rules governing the structure of a language and its expressions. Syntax is the way in which you must type the function or command on the popup command line in order for it to correctly call the underlying function. This structure allows

verification of the relationships between symbols, identifiers, and references within statements.

Synthesis

The automatic generation of ASIC, FPGA or PLD designs (circuits) from VHDL descriptions (text).

System

Something that performs a specific function or set of functions with defined inputs and outputs. Typically, for System Architect, a self-contained electronic subsystem. See Control System and Data System.

System-1076

The Mentor Graphics design and simulation application for IEEE Standard 1076 VHDL models.

System Architect

The Mentor Graphics design capture application for Top-down Design. It includes graphical data flow and state machine editors, HDL generation, animation, prototyping and process management tools. It is closely integrated with HDL compilation and simulation tools and linked directly to downstream processes such as synthesis. See also: Control Architect and HDL Architect.

System Clipboard

A temporary storage area accessible to all applications running under a user's login.

System Component

The definition of a system. It is contained within a library and normally contains a number of Transform Components, Logic Components and Type Definition Package Components. The System Component contains a Context Diagram and can contain a number of Data Flow Diagram, State Machine and VHDL Specification views that represent its behavior. See System Instance, Control System, and Data System.

System Design

The act of designing a complex system that entails many components and technologies.

SDS
See System Design Series.

System Design Series
A series of products including System Architect, System Design Station and VHDL Architecture Station that support top down electronic system design. See also: Top-down Design.

System Design Station
A workstation with the Mentor Graphics System Architect, System-1076, Design Architect, and QuickSim II applications which is used for top-down electronic system design. See also System Architect and HDL Architect.

Systems Engineering
A process that consists of describing behavior, selecting a component model of the architecture, and verifying that the required behavior is traceable from requirements and feasible within the constraints upon time, cost and component capabilities.

System Instance
A component node on a Data Flow Diagram that instantiates a system. It can represent a control or data system. A system can be instantiated on more than one Data Flow Diagram in the same or different design hierarchies. See System Component, Control System, and Data System.

System Manager
The person(s) responsible for system maintenance and administration at your site. Typical duties of the system manager include installing and configuring the operating system, installing and configuring Mentor Graphics software, creating and deleting user accounts and maintaining user account databases, adding or removing network systems and peripherals, configuring and managing network mail, managing network files systems and disk space, maintaining network security, and setting up and maintaining the printers and the print environment.

System Model
A System Model defines the required behavior of a system. See also: Implementation Model.

System Requirements

The required performance, features and characteristics of a complex system or product. These requirements are documented in the Requirement View.

System Symbol

A component node on a Context Diagram that represents a control or data system. See Control System and Data System.

Glossary T

The following terms are described in this section:

Tab Window Manager
Target Path
Target Technology
TCP/IP
TCP/IP Administrative Files
Technology Environment
Telnet
Termination Script
Test
Test Vector Generation
Text Entry Box
Text Insertion Cursor
Text Support Subsystem
Text Window
Text-mode Printing
TFNF
Threshold
TimeBase
Times
Timing Constraints
Timing Model
Timing Optimization
Title
Title Area
Title Bar
Toggle
Toggle Button
Tool
Tool Invocation
Tool Registration
Tool Viewpoint

Toolbox
Toolbox Search Path
Toolkit
Tools Window
Top Checking Mode
Top-down Design
Top-level Cell Database
Topology
Torque
Torsion
Touchpad
Transcript
Transcript Pad
Transcript Window
Transduction
Transfer Function
Transform
Transform Component
Transform Instance
Transition
Transition Node
Translation
Transparent File
Trash Window
Travel Log
True Scale
TSS
TWM
Two-layer Boolean
Two-phase Clock
Type

Type Definition
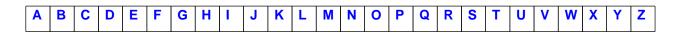
Type Definition Package

Type Definition Package Component

Type Definition Package List

Type Definition Package Source View

Type Registry

Typeface

Tab Window Manager

A window manager for the X window system.

Target Path

The target path is the location that a retargetable configuration entry is released or copied to during a copy or release operation. See also: Retargetable Entry.

Target Technology

See Destination Technology.

TCP/IP

Transmission Control Protocol/Internet Protocol. An acronym used to refer to the TCP and IP protocols and related internet protocols, such as FTP and Telnet, as defined by DARPA. It is a stream-based protocol for sending information over a network.

TCP/IP Administrative Files

A collection of files that contain the data necessary for TCP/IP to route packets between hosts. TCP/IP administrative files include /etc/hosts, /etc/networks, /etc/gateways, /etc/hosts.equiv, and /etc/resolv.conf. While some files are found on every network, the presence of others depend on the network layout.

Technology Environment

Vendor-supplied parameters defining the performance of the technology under varying conditions.

Telnet

A remote terminal emulation protocol. Telnet uses TCP and IP as underlying protocols.

Termination Script

A termination script is an optional AMPLE script that runs in the Design Manager session after the design tool has terminated. This script performs cleanup functions required by the design tool. See also: Qualification Script and Tool Viewpoint.

Test

When you "test" you obtain some type of output (that is, test results) from the object under test.

When you "verify" you compare these results with a known good set of data. This comparison can be manual or automated. The known good data can be in the form of a data book, a set of golden results, and so forth.

Example 1, testing a simulation model:

A component can be tested on a schematic by running a simulation program such as QuickSim with a stimulus file. Simulation results might be generated. The verification can consist of running a script that compares the simulation results with a set of golden test results.

Example 2, testing hardware:

An IC can be tested by running a set of stimulus files against the hardware on Automated Test Equipment (ATE) or simulator equipment. The ATE can have a set of golden results. The verification might consist of looking at the results to see if output of the simulator matches the device.

Additional notes:

1. The distinction between "test" and "verify" is not related to methodology (where it occurs in the development process). This distinction is also not related who performs the action (whether performed by a part developer or QA).

2. Sometimes test and verification are combined in one step.

3. "Test" and "check" have similar meanings but test is preferred to distinguish it from other uses of "check", as in DA.

4. To the engineers: Ken would like "test" rather than "check" used in our UI (such as menu selections) as well as documentation.

Test Vector Generation

Test vector generation is the process of creating test vectors, which are the electronic signals that you use to verify the operation of a design after it has been manufactured.

Text Entry Box
See Entry Box.

Text Insertion Cursor
See Insertion Cursor.

Text Support Subsystem
A file format output by Mentor Graphics workstations in support of the Write Document or Print commands in DOC, scanned images produced by ScanED, or PicED files containing bitmap text.

Text Window
The area of the screen within which Notepad can manipulate text. You can recognize when you are within a Notepad window by the shape of the graphic pointer.

Text-mode Printing
In this print mode, the information is sent to the printer as a string of bytes. Each byte of information is interpreted as one of 256 extended ASCII characters and printed as that character. Each text-mode character can be equivalent to as many as 216 bytes of graphic-mode print information, which means that text-mode printing is potentially more than 200 times faster than graphic-mode printing.

TFNF
A netlist format containing component, net, and property definitions.

Threshold
A boundary defining the point at which some change in the output occurs when the input crosses this boundary. The output behaves differently, depending on which side of the boundary the input falls.

TimeBase
The Mentor Graphics timing-equation calculator.

Times
A proportionally-spaced, serif typeface that can be printed on a laser printer.

Timing Constraints
A set of constraints that govern how AutoLogic optimizes the circuit for timing.

Timing Model

Vendor-supplied information that describes the timing and functionality of the technology primitives.

Timing Optimization

The process of altering a design's structure to improve performance in order to meet specific timing requirements.

Title

An element within a diagram that displays the name of the ???? in which this diagram view is contained.

Title Area

The bar across the top of a window that displays the window's title.

Title Bar

The bar across the top of a window that displays the window's title.

Toggle

To switch back and forth between two states.

Toggle Button

See Check Button.

Tool

A tool is software created for a specific task. An example of a Mentor Graphics tool is Design Architect. The Design Manager represents tools using icons. See also: Toolbox and Tool Viewpoint.

Tool Invocation

Tool invocation is the process of opening a tool. In the Design Manager, you can invoke tools in the navigator, by selecting and opening a design object using the navigator popup menu item **Open >**, and in the tools window by double-clicking a tool icon. See also: Tool and Tool Viewpoint.

Tool Registration

Encapsulation is performed by the optional Registrar tool. See also: Encapsulation.

Tool Viewpoint

A tool viewpoint is a special design object that provides the Design Manager interface to a design tool. A tool viewpoint defines the manner in which a design tool invokes and terminates from the Design Manager. You can create multiple tool viewpoints to represent the same tool in the Design Manager, with each invoking the tool in a different way. See also: Tool.

Toolbox

A toolbox is a directory that contains tool viewpoints. See also: Tool Viewpoint.

Toolbox Search Path

The toolbox search path is a group of pathnames that specify the order in which the Design Manager searches toolboxes when populating the tools window. Given two tool viewpoints with the same name but in different toolboxes, the first tool viewpoint found is the one displayed. See also: Toolbox and Tool Viewpoint.

Toolkit

A logical collection of functionality, including data and actions, that is common across applications. For example, the functions and builtins that comprise the printing routines are in a printing toolkit.

Tools Window

The tools window is a bounded area bordered by a rectangular box within which are displayed, as icons, all the tools that can be invoked from the Design Manager session. See also: Toolbox, Tool Invocation, and Tool Viewpoint.

Top Checking Mode

In the TOP checking mode, ICrules DRC analyzes all objects that have an internal aspect in the top-level cell and all objects that have an external aspect from cells that are instantiated in the top-level cell.

Top-down Design

The process of designing a system by identifying its major components, decomposing them into lower level components and repeating the process until the desired level of detail is achieved, typically using a hardware description language such as VHDL. In Mentor Graphics this definition is specifically applied to the top-down design of ASIC, FPGA and CPLD circuits.

Top-level Cell Database

Contains the cell layout, connectivity, LVS results, and DRC results. The IC Environment stores the Design Rule Checking (DRC) results that you generate for any cell in the hierarchy of the top-level cell only in the top-level cell database. You can only edit the cell database when the cell is in the active editing context in the IC Session. The IC Environment stores all cell databases as a set of similarly named files on disk. The top-level cell's template attribute file references all cells that are included in the hierarchy of the top-level cell. The top-level cell can reference any number of subcells.

Topology

1. The physical interconnection of AccuSim II primitives to form a macromodel.

2. The layout of systems that are connected to networks and of networks that are connected to each other. Network topology can be represented through both physical and logical diagrams.

Torque

A vector quantity defined for rotational systems. Torque is a measure of force applied at a distance from a reference point. In the rotational electromechanical analogy for behavioral System Modeling Blocks, current represents torque. The units are such that one ampere represents one Newton-meter (N-m).

Torsion

A measure of the pliability of a rotational element. Torsion refers to the amount of twisting or stiffness a rotational body experiences when a torque is applied.

Touchpad

1. An input device that converts graphics and pictorial data into numbers. It generates graphic data when touched by a finger or stylus.

2. A touch-sensitive surface built into the right side of the HP/Apollo type 1 keyboards.
See also: Graphic Input Device.

Transcript

A record of commands and comments that appear in the transcript window of a Mentor Graphics application. You can save transcripts for later reference, print-out, or replay. To replay a transcript, you copy the transcript into a file and use $dofile().

Transcript Pad

An HP/Apollo workstation operating system pad containing an application's command history.

Transcript Window

A window that records your interaction with the application.

Transduction

The process of eliminating redundant logic, and of sharing equivalent logic within the circuit.

Transfer Function

The relationship between the output and input quantities. It is a ratio of Laplace transforms in the frequency domain, or it is equations mathematically relating the output to the input in the time domain.

Transform

A part of a system that performs a specific function or set of functions. A transform has a set of input and output flows. Transform is a general term, for more specific uses see Control Transform and Data Transform.

Transform Component

The definition of a control or data transform. It is contained within a System Component and can contain a number of views that represent its behavior. These views can be Data Flow Diagrams, State Machines and VHDL Specifications. See Transform Instance.

Transform Instance

A component node on a Data Flow Diagram that represents an instantiated control or data transform. The decomposition of a system into a hierarchy of transforms is defined by the instantiation of transforms within Data Flow Diagram views of a system. Each transform can only be instantiated on a single Data Flow Diagram

in a design hierarchy and its interface is defined by the input and output flows on the parent diagram. See Control Transform and Data Transform.

Transition

A change of state within a State Machine. The transition takes place when its associated condition is satisfied. A Mealy transition has an associated action list, which is executed when the transition takes place. A transition is represented by a connector with associated condition and action text in a State Transition Diagram or by a cell in a State Transition Matrix. See State, Mealy State Machine, and Moore State Machine.

Transition Node

A symbol on a State Transition Diagram that enables a set of transitions between states to be replaced by a simpler set of partial transitions between the same states. A transition node with no name is treated as a global interrupt from each state in the state machine. See also: Entry Node.

Translation

The process of using non-Mentor Graphics application output as input for Mentor Graphics applications or the reverse.

Transparent File

Files translated into the appropriate page description language (PDL) or plotter machine language by a print server. This object type does not need further processing in order to print it.

Trash Window

The tools window is a bounded area bordered by a rectangular box within which are displayed design objects that have been dragged to the trash can. When the trash is emptied, this window becomes empty, indicating that the objects have been permanently deleted.

Travel Log

A list of previously viewed pages. BOLD Browser users can use the travel log to return to previously viewed pages. A travel log is kept for each document window open in the BOLD Browser.

True Scale

The actual size of the illustration or graphic. A graphic plotted at true scale is plotted at 1x.

TSS

See Text Support Subsystem.

TWM

See Tab Window Manager.

Two-layer Boolean

Two layer Boolean operations perform simple Boolean logic operations on both original and derived layers in order to generate a derived polygon layer.

Two-phase Clock

A single set of two related clocks of the same frequency.

Type

A description of the attributes of a design object or tool viewpoint, as the attributes exist in the Design Manager. Type information includes the filename extensions for the design object's fileset and the icon that the Design Manager uses to display the object. See also: Design Object.

Type Definition

A VHDL type definition. This defines the structure and possible values of a type with a specified name. Type definitions are contained within a type definition package source view.

Type Definition Package

A set of type definitions. Type definition package (TDP) is a general term for both the Type Definition Package Component and the type definition package source view.

Type Definition Package Component

A component directory that contains a type definition package source view and can also contain a compiled VHDL package header created by compiling this source view. Package Components can be contained within either library directories or System Components.

Type Definition Package List

The list of Type Definition Packages that are available for use by a Context Diagram or Data Flow Diagram.

Type Definition Package Source View

A VHDL source file used to define types for use in System Architect. The file should only contain a package header containing TYPE and SUBTYPE declarations (type definitions).

Type Registry

A type registry is a file that contains type definitions for design objects and tool viewpoints used in the Design Manager. See also: Type, Registrar, and Registration.

Typeface

See Face.

Glossary U

The following terms are described in this section:

UIMS
Universe
Universal Comment
Unregister A Library Server
User Account
User Information Management
System
User Interface
User Time Unit
User Tree
User Unit
Userware
Utility
UUCP
UUID File

UIMS
See User Information Management System.

Universe
The total area available for a diagram. This can also be referred to as "graphic universe".

Universal Comment
A universal comment is comprised of text that follows a double slash in a Rules File. You can write universal comments anywhere in a Rules File.

Unregister A Library Server
To remove information about a particular online library from the network server database. Library servers are the only servers that are registered or unregistered.

User Account
A personal account defined by the system administrator. One user account usually exists for each person or persona authorized to use the system.

User Information Management System
The common and global set of commands, keys, menus, and windows. Also, the environment that allows seamless modification to the user interface.
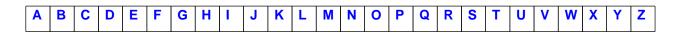
User Interface
See Common User Interface.

User Time Unit
Units of measure chosen by the user of an analysis tool. A user-defined period of time on which all time-related digital simulator commands are based (except where noted otherwise). The default user time unit is 1 nanosecond. The Set User Scale Time command sets the value of a user time unit.

User Tree
A User tree is a Mentor Graphics tree that resides a user's local system. To conserve disk space, the user tree normally contains copies of frequently used packages and accesses other less frequently used packages via symbolic links to a Master tree. In a User tree, the *shared* directory is a link to Master tree's *shared* directory. User trees are optional.

User Unit

See User Time Unit.

Userware

1. The windows, key definitions, and menus that provide the user interface or communication link between the user and the application.

2. The software you use to implement or modify the user interface and other programs. The userware code is written in AMPLE. For example, userware can create customized functions, display colors, window layout, pop-up menus, and scroll bars.

Utility

Programs provided with the operating system to perform frequently required tasks, such as printing a file or displaying the contents of a directory.

UUCP

UNIX to UNIX Communication Program. A central program in a group of programs that together permit communication between local and remote UNIX hosts by using either dial-up or hard wired connections.

UUID File

An ASCII file created by the UNIX command */etc/ncs/uuid_gen* that contains a universal unique identifier (UUID). The BOLD online information system uses UUIDs when you create a BOLD Cell. For more information about uuid_gen, issue the following command at the UNIX shell command line:

```
$ man uuid_gen.
```

Glossary V

The following terms are described in this section:

VDD Metafile
Vector Device
Vector Element
Velocity
Verification
Verify Two Servers
Versatec Plotter
Version
Version Branch
Version Depth
Version Depth Mechanism
Version Property
Version Pruning
Versioned Design Object
Vertex
Verilog
Verilog Module
Verilog Specification
VHDL
VHDL Architecture Body
VHDL Architecture Station
VHDL Entity Declaration
VHDL Model
VHDL Specification
VHSIC
Via Instance
Via Object
View
Viewpoint
VLSI

VREF
Vtype

VDD Metafile

A type of spooled data file. The format of this file is based on the VDD rendering model provided in the Falcon Framework. See also: Spooled Data.

Vector Device

A device that represents graphical data as a set of connected points. A line is represented by a series of commands that control pen motion. For example, the following set of commands draws a line from 100, 50 to 0, 50: pen_up; move_to 100, 50; pen_down; move_to 0, 50.   Vector devices, such as penplotters, generally have visible pens that move.

Vector Element

One member of a vector. Each vector element can be referred to by a numerical subscript.

Velocity

A vector quantity defined for rotational systems. Velocity is the measure of the speed of rotation of a rotating body. In the rotational electromechanical analogy for behavioral System Modeling Blocks, voltage represents velocity. The units are such that one volt represents one radian per second (rad/s).

Verification

The procedure of checking an AccuParts model in AccuSim II to compare the simulated model with databook specifications or measured data. The result of verification is a component datasheet.

Verify Two Servers

To examine the contents of two network servers and report whether they are identical.

Verilog

An alternative hardware description language (compliant with the proposed IEEE standard 1364-1995) that can be used for the design, modeling and simulation of electronic circuits. Verilog is a registered trademark of Cadence Design Systems Inc. See also HDL and VHDL.

Verilog Module

Describes the boundaries and content of a Verilog logic block in structural, dataflow and behavioral constructs.

Verilog Specification

A view of a system or transform which defines the behavior of this system or transform using behavioral Verilog source.

Versatec Plotter

Any number of plotting devices manufactured by Versatec Inc. Versatec supplies a broad range of plotting devices including electrostatic plotters. Mentor Graphics supports a very specific subset of the Versatec product line.

Version

A single saved state of a design object. When you change a design object's data and save it to disk, you create a new version of the design object. See also: Version Depth, Versioned Design Object, Version Depth Mechanism, and Version Property.

Version Branch

Version branching refers to the version model, which allows multiple versions to be derived from a single version. In version models that do not allow version branching, every version, except for the initial version, derives from exactly one version. See also: Version Depth, Versioned Design Object, Version Depth Mechanism, and Version Property.

Version Depth

The number of versions that a design object keeps of itself. You can the set version depth from one to infinity. See also: Version, Versioned Design Object, and Version Depth Mechanism.

Version Depth Mechanism

The version depth mechanism deletes versions that are beyond the default version depth for a design object. For example, if the default version depth for a design object is 2, the version depth mechanism allows for only two versions to be kept. As the design object evolves, versions beyond 2 are deleted, except for those that are frozen. See also: Version, Version Depth, and Versioned Design Object.

Version Property

A version property is a name and value pair that stores information about the design object version. Version properties do not propagate from the current

version forward. See also: Object Property, Property, Reference Property, and Version.

Version Pruning

Version pruning is the deletion of a design object's previous versions based on the specified version depth. Version pruning occurs when a new version is created and old versions exist that exceed the version depth. See also: Version, Version Depth, and Version Property.

Versioned Design Object

A versioned design object is a design object that can have multiple versions. See also: Version, Version Depth, and Version Property.

Vertex

A beginning point, ending point, turn, or junction in a net segment.

VHDL

VHDL stands for VHSIC (Very High Speed Integrated Circuit) Hardware Description Language. VHDL is a design and modeling language (compliant with the IEEE standards 1076-1987 and 1076-1993, which was specifically created to describe (in machine and human-readable form) the organization and function of digital hardware systems, circuit boards and components. See also: HDL and Verilog.

VHDL Architecture Body

Declares the items available inside a design entity and specifies the relationships between inputs and outputs. An architecture body describes the organization and operations performed inside the design entity. Within System Architect architecture body files are stored separately from VHDL entity declarations.

VHDL Architecture Station

A workstation with the Mentor Graphics System Architect, System-1076, and QuickVHDL applications, which is used for top-down electronic system design. See also: System Design Station.

VHDL Entity Declaration

Defines the interface between a design entity and its external environment. An entity declaration contains definitions of inputs to and outputs from the design

entity. Within System Architect an entity declaration is stored separately from its associated VHDL architecture body.

VHDL Model

A VHDL model describes the structural and behavioral characteristics of a circuit.

VHDL Specification

A view of a system or transform that defines the behavior of this system or transform using behavioral VHDL source.

VHSIC

Very High-Speed Integrated Circuit, a department of Defense program that was intended to speed up the insertion of new IC technology into government weapons programs.

Via Instance

A via created as a cell is referred to as a via instance. Vias by definition, connect two layers with a shape on each layer. You can implement vias in IC Station as via objects or via instances. You use $create_cell() to create via instances, and you can use $add_via() to create via objects and via instances.

Via Object

Vias, by definition, connect two layers with a shape on each layer. You can implement vias in IC Station as via objects or via instances. Via objects are simpler, but have more restrictions than via instances. Via objects are not cell instances. A via created as a cell is referred to as a via instance. You use $create_cell() to create via instances, and you use $add_via() to create via objects and via instances.

View

1. Within application graphics, a view is a panel that also contains information affecting the way the data within the panel is displayed (3D orientation, layers displayed, and so on). Functions that accept panels should also accept views, while ignoring their attributes. Functions that accept views should also accept panels as views without attributes.

2. EDIF terminology for an object that is similar in concept to a model. A view contains two parts: an interface, which is similar to a symbol

description, and the contents, which contains the actual implementation of the component.

3. Within DSS, view refers to the window displaying a sheet. This term is most frequently used to refer to a second sheet window. Every displayed sheet is also a view, but a sheet can have several views. The title bar will show the view number if there is more than one view of a sheet open.

4. In the active window, the area excluding the window decoration.

5. Within the contexts of System Architect, a description of a component from a particular viewpoint. Examples are a Context Diagram in a System Component, a State Machine in a Transform Component or a type definition package source view in a Type Definition Package Component.

Viewpoint

A design object that contains rules for looking at particular aspects of a design. See also: Design Viewpoint.

VLSI

Very Large Scale Integration.

VREF

See Reference Voltage.

Vtype

This property specifies the value of the via type defined in the $signal_via_cell Process variable.

Glossary W

The following terms are described in this section:

WAN
Waveform Database
Weight
Wide Area Network
Wide Pin
Window
Window Border
Window Control Button
Window Decoration
Window Frame
Window Menu
Window Menu Button
Window-based Application
Word
Working Directory
Workstation
Wtype

WAN

See Wide Area Network.

Waveform Database

A design object that records simulation data in a compact form for later replay, or to be used as stimulus in future analysis. Each waveform in a database represents a stream, or series, of simulation events and calculations.

WDB

See Waveform Database.

Weight

The degree of print density or darkness of the printing. These weights are frequently classified as bold, medium, and light.

Wide Area Network

A network that consists of two or more local area networks connected together over an unlimited distance through a medium such as telephone lines or a satellite link. Because of the geographic distance and the medium used, communication between remote systems is much slower than if the systems are part of the same local area network.

Wide Pin

A connection point on a symbol to which a bus can be connected.

Window

1. A rectangular area of the screen that provides two-way communication between you and the application.

2. A window wholly contained within the session window. You use this window for most of your interaction with an application. Windows can have specific functions. For example, the transcript window records function calls. *See also: Session Window.*

3. A defined area of the screen that contains a specific class of information. For example, the Menu window contains command menus, the Chart window contains graphs or charts of selected waveforms.

4. For output devices, the physical or logical drawing extents.

Window Border

1. The resize border around a window (including a session window).

2. The border around the client area or interior of a window (excluding a session window).

Window Control Button

Push buttons in the upper-right corner of a window. These buttons provide a short-cut way for minimizing and maximizing the window.

Window Decoration

The window control buttons and frame that surrounds a window.

Window Frame

The area surrounding a window. A window frame can consist of a resize border, window menu button, a title area, and window control buttons.

Window Menu

A pulldown menu that displays when you press the window menu button on a window frame. This menu enables you to control the size, shape, and location of the window, to close the window, and to hide or show the window's scroll bars.

Window Menu Button

The push button on the upper-left corner of a window that contains a pulldown window menu that manipulates the window.
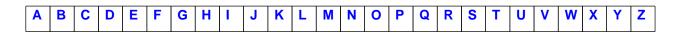
Window-based Application

An application that uses a window environment to allow user interaction.

Word

See Digital Word.

Working Directory

The default directory in which a process creates or searches for objects.

Workstation

A network computer. Each workstation can use the data, programs, and devices of other network workstations. Each workstation contains main memory, and either has its own disk or shares one with another workstation. In the UNIX computing environment, a standalone computer, probably on an Ethernet network. Each workstation a networked environment can use the data, programs, and devices of other network workstations.

Wtype

This property specifies the value of the wire type defined in the $wiring_type Process variable.

Glossary X

X Client

Any program (usually considered an application) that requests display services from the X server.

X Display

A system that runs the X server program and displays the graphics for an X client. In the context of this manual, you are seated in front of an X display to interact with a Mentor Graphics application.

X Host

A computer system that runs the X client program, which in this manual is a Mentor Graphics application.

X Server

The the X Window System program that governs the display of graphics. An application makes requests of the X server to display information, and the X server interacts with the hardware display device to grant the request. The X server also receives and sends information through the computer network. By merging these two capabilities, the X Window System enables the application to run on one machine and display its user interface on another machine, effectively separating these functions and delegating them to different computers on the same network.

X Terminal

A specialized system whose hardware was designed specifically to run the X server fast. It is roughly like a diskless workstation, except that it usually has less RAM and lacks I/O expansion options. It depends upon another computer on the network, its boot host, for access to software and the file system.In looser usage, this term sometimes refers to any hardware device that runs the X server in order to act as a display for some application that executes on another computer. This manual avoids this loose usage of the term.

X Windows Font Path

An ordered list of directories maintained by the X server, which it uses to search for fonts to display text.

Glossary Y

No entries.

Glossary Z

Zoom

The act of reducing or magnifying an image in a window.