

CADDS[®] 5/ Revision 10.0 Tips and Considerations

CADDS 5/ Revision 10.0

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Preface

CADDSS[®] 5i Revision 10.0 Tips and Considerations provides licensing and installation information, tips to help you run CADDSS more efficiently, and considerations and known issues currently in CADDSS Revision 10.0.

Related Documents

The following documents may be helpful as you use this document:

- *CADDSS 5i Revision 10.0 Read This First*
- *Installing CADDSS 5i*
- *CV-DORS User Guide*
- *What's New in CADDSS 5i Revision 10.0*
- *Using the License Manager*

Book Conventions

The following table illustrates and explains conventions used in writing about CADD5 applications.

Use of the Convention	Example	Explanation
Menu selections and options	List Section option, Specify Layer field, File menu	Indicates a selection you must make from a menu or property sheet or a text field that you must fill in.
User-selected graphic location	X, d ₁ or P1	Marks a location or entity selection in graphic examples.
User input in CADD5 text fields and on any command line	<code>cvaec.hd.data.param</code> <code>tar -xvf /dev/rst0</code>	Enter the text in a CADD5 text field or on any command line.
System output	Binary transfer complete.	Indicates system responses in the CADD5 text window or on any command line.
Variable in user input	<code>tar -cvf /dev/rst0 filename</code>	Replace the variable with an appropriate substitute; for example, replace filename with an actual file name.
Variable in text	tagname	Indicates a variable that requires an appropriate substitute when used in a real operation; for example, replace tagname with an actual tag name.
CADD5 commands and modifiers	INSERT LINE TANTO	Shows CADD5 commands and modifiers as they appear in the command line interface.
Text string	"SRFGROUPA" or 'SRFGROUPA'	Shows text strings. You must enclose text string with single or double quotation marks.
Integer	<i>n</i>	Supply an integer for the <i>n</i> .
Real number	<i>x</i>	Supply a real number for the <i>x</i> .
#	# mkdir /cdrom	Indicates the root (superuser) prompt on command lines.
%	% rlogin remote_system_name -l root	Indicates the C shell prompt on command lines.
\$	\$ rlogin remote_system_name -l root	Indicates the Bourne shell prompt on command lines.

Window Managers and the User Interface

According to the window manager that you use, the look and feel of the user interface in CADD5 can change. Refer to the following table:

User Interface Element	Common Desktop Environment (CDE) on Solaris, HP, DEC, and IBM	Window Manager Other Than CDE on Solaris, HP, DEC, IBM, SGI, and Windows NT
Option button	ON — Round, filled in the center OFF — Round, empty	ON — Diamond, filled OFF — Diamond, empty
Toggle key	ON — Square with a check mark OFF — Square, empty	ON — Square, filled OFF — Square, empty

Online User Documentation

Online documentation for each book is provided in HTML if the documentation CD-ROM is installed. You can access the online collection in the following ways:

- From an HTML browser
- From the Information Access button on the CADD5 desktop or the LDM (Local Data Manager)

You can also access the online documentation directly from the CD-ROM without installing it.

From an HTML Browser:

1. Navigate to the directory where the documents are installed. For example:

```
/usr/apl/cadd5/data/html/htmldoc/ (UNIX)
```

```
Drive:\usr\apl\cadd5\data\html\htmldoc\ (Windows NT®)
```

2. Click the `mainmenu.html` file. A list of available CADD5 documentation appears.
3. Click the book title you want to view.

From the Information Access Button on the CADD5 Desktop or the LDM:

1. Start CADD5.
2. Choose Information Access, the `i` button, in the top-left corner of the CADD5 desktop or the LDM.
3. Choose DOCUMENTATION. A list of available CADD5 documentation appears.
4. Click the book title you want to view.

From the Documentation CD-ROM:

1. Mount the documentation CD-ROM.
2. Point your browser to:
CDROM_mount_point/html/doc/mainmenu.html (UNIX)
CDROM_Drive:\html\doc\mainmenu.html (Windows NT)

Online Command Help

You can access the online command help directly from the CADDSS desktop in the following ways:

- From the Information Access button on the CADDSS desktop or the LDM
- From the command line

From the Information Access Button on the CADDSS Desktop or the LDM:

1. Start CADDSS.
2. Choose Information Access, the *i* button, in the top-left corner of the CADDSS desktop or the LDM.
3. Choose COMMAND HELP. The Command Help property sheet opens displaying a list of verb/noun combinations of commands.

From the Command Line:

Type the exclamation mark (!) to display online documentation before typing the verb/noun combination as follows:

```
#01#!INSERT LINE
```

Printing Documentation

The CADDSS CD-ROM contains a PostScript file for each document in the online book collection. See the first page of each online book for the document number referenced in the PostScript file name. The default documentation directories are:

```
/usr/apl/cadds/data/html/htmlps/doc_number.ps (UNIX)  
CDROM_Drive:\usr\apl\cadds\data\html\htmlps\doc_number.ps  
(Windows NT)
```

Printing from a UNIX System: Enter the following command at the system prompt:

```
lp -d printername filepath
```

Printing from Windows NT: To print from Windows NT to a network printer, at the MS-DOS prompt, use the `copy` command. The variable `filename` represents the file path and `systemname` represents the printer connection to the network.

```
> copy filename \\systemname\printername
```

Check with your system administrator if you need more information.

Resources and Services

For resources and services to help you with Parametric Technology Corporation (PTC) software products, see the *PTC Customer Service Guide*. It includes instructions for using the World Wide Web or fax transmissions for customer support.

Documentation Comments

Parametric Technology Corporation welcomes your suggestions and comments. You can send feedback in the following ways:

- Send comments electronically to `doc_webhelp@ptc.com`.
- Complete and mail the Parametric Technology Corporation Documentation Survey located in the *PTC Customer Service Guide*.

This chapter contains information on the following topics:

- Licensing
- Supported Compilers
- Supported Operating System Versions — UNIX
- Supported Patches
- JRE Installation
- Using ISD in PEX or X11 Mode (HP Only)
- Web Sites
- Programming Interfaces Support for Sun Solaris
- CVact on Solaris 2.6 and 2.7
- Supported Oracle® Versions — UNIX
- IGES and STEP on IBM AIX 4.3.2
- `caddsrc-local` Settings — Windows NT
- System Requirements — Windows NT

Licensing

This CADD5 revision requires a new license file. See the *PTC Customer Service Guide* for more information.

Use the following information along with licensing information in these books:

- *Using the License Manager*
- *PTC Customer Service Guide*

Licensing for Windows NT

Run the `lmgrdinstall` command to install the license file only if the machine is to be used as a license server. If this machine uses a demo license or if the license is being served from a different machine, it is not necessary to run the `lmgrdinstall` procedure.

Supported Compilers

Compilers for this CADD5 revision are listed in the following table:

Table 1-1 Supported Compilers

Platform	C	C++	FORTRAN
Solaris 2.5.1	Sparc Compiler C 4.2	Sparc Compiler C++ 4.2	Sparc Compiler F77 4.2
SGI 6.2	7.2.1	7.2.1	7.1
Digital 4.0D	V5.6-071	V6.0-21	V5.0-138
HP 10.20	G.10.32.05	A.01.15(acc)	B.10.20.09
IBM 4.2.1	3.6.4.2	3.6.4.2	4.1.0.0
Intel NT 4.0	n/a	n/a	n/a

Please note: On the Solaris platform, programming products are supported only on Solaris 2.5.1 (they are not supported on Solaris 2.6 and 2.7). Programming products are not currently available for Windows NT.

Supported Operating System Versions — UNIX

CADD5 supports the following operating systems and window managers:

Table 1-2 Supported UNIX Operating Systems and Window Managers

Platform	OS Version and Window Manager
Sun	Solaris 2.5.1 hardware 11/97 (CDE and Open Windows) Solaris 2.6, Solaris 2.7
HP	HP-UX 10.20 (HP-VUE and CDE)
Digital	Digital UNIX v4.0D
SGI	IRIX 6.2, 6.3 (Indigo Magic), 6.4, and 6.5
IBM	AIX 4.2.1 (CDE) and 4.3.2

The command `uname -a` reports the system's OS version.

Supported Patches

This CADD5 revision was subjected to final qualification using system patches that are published and available on vendor-specific Web sites. Contact the vendor of your individual system for the latest patch set that you may require.

Please note: PTC no longer maintains *soundgarden.cv.com* as a central FTP server for patches. Contact your local PTC customer service representative for product assistance.

JRE Installation

The Java Splash Screen and *What's New in CADD5 5i Revision 10.0* requires that the Java Runtime Environment (JRE) 1.1.6 or later be installed on your system. CADD5 installs a copy of the JRE in the `/usr/apl/cadd5/jre` area. This package is the same as that available at the vendor Web site for download and installation. Consult the `README` file in `/usr/apl/cadd5/jre` to learn more about JRE.

IBM does not have the JRE available as a separate package. You must download and install the standard JDK from the vendor Web site. After installing JRE on IBM, you must then append `JRE_HOME/bin` to the `PATH` environment setting, where `JRE_HOME` is the installation directory of JRE. If you do not do this, you will not be able to see the Splash Screen and *What's New in CADD5 5i Revision 10.0* on IBM.

Using ISD in PEX or X11 Mode (HP Only)

If you plan to use ISD on HP in PEX or X11 mode with the HP-UX 10.20 ACE3 patch bundle installed, you must replace the `PHSS_13900` patch with the earlier version, `PHSS_11399`.

Web Sites

Parametric Technology Corporation Web Site

The location for the Parametric Technology Corporation Web site is:

`www.ptc.com`

Vendor Web Sites

Vendor Web sites are listed below. Patches are available from several locations.

Table 1-3 Vendor Web sites

Vendors	Web sites
Silicon Graphics	<code>www.sgi.com</code>
Sun Microsystems	<code>www.sun.com</code>
Sun patches	<code>www.sunsolve.sun.com</code>
CVSI site for Sun patches	<code>softserv.cvsi.com</code>
Digital Equipment	<code>www.digital.com</code>
Digital Equipment patches	<code>www.service.digital.com</code>
Hewlett-Packard	<code>www.hp.com</code>
IBM	<code>www.ibm.com</code>
ITI	<code>www.iti-oh.com</code>

Programming Interfaces Support for Sun Solaris

All CADDs programming interfaces, including the CVact™ interface, are supported for Sun Solaris 2.5.1. They are not supported on Solaris 2.6 and 2.7.

CVact on Solaris 2.6 and 2.7

On Solaris 2.6 and 2.7, set `LD_LIBRARY_PATH` to have `/usr/apl/cadds/slib/sol26` ahead of all paths and then start the CVact tool. This fixes the CVact crash on Solaris 2.6 and 2.7 upon creation of a Paragraph field when the CDE Motif library is used.

Supported Oracle Versions — UNIX

For this CADDs revision, Oracle version 8.0.4.0.0 is supported for all platforms, with the following exceptions:

- For IBM — 8.0.4.1.0
- For SGI — 8.0.5.0.0

IGES and STEP on IBM AIX 4.3.2

If you are running IGES or STEP on the AIX 4.3.2 platform, you must define the library path before issuing the IGES/STEP command as follows:

```
setenv LIBPATH /usr/apl/cvuts/slib
```

caddsrc-local Settings — Windows NT

Enter the `caddsrc-local` settings for an environment variable all in one line. The `$<variable>` is not expanded as it is in UNIX.

For example, on UNIX:

```
setenv CADDSDRAWATTR "Display=`hostname`, State=normal, Retained=yes"  
setenv CADDSDRAWATTR "$CADDSDRAWATTR, DwinRatio=6"  
setenv CADDSDRAWATTR "$CADDSDRAWATTR, CursorType=Bitmap, CursorColor=white"  
setenv CADDSDRAWATTR "$CADDSDRAWATTR, CursorNumber=34"
```

should be set as the following on Windows NT:

```
setenv CADDSDRAWATTR "Display=`hostname`, State=normal, Retained=yes,  
DwinRatio=6, CursorType=Bitmap, CursorColor=white, CursorNumber=34"
```

Note the following:

- Do not use a period (.) when naming the `caddsrc` and `caddsrc-local` files.
- If you use quotation marks for settings, use double (") quotation marks.
- Settings in the `cvpath` variable must be delimited with a semicolon (;), not a colon (:).
- The default path for the `create` directory is `\parts`, not `$home\parts`.
- Do not copy the default `caddsrc` file in `usr\apl\cadd\scripts\templates` or use it directly as a

`caddsrc-local` file. The `caddsrc` file contains entries for both UNIX and Windows NT. If you do, CADDs closes prematurely during startup.

System Requirements — Windows NT

To run CADDs on Windows NT, your system must meet the following minimum requirements:

Table 1-4 Windows NT System Requirements

Component	Minimum Requirement
CPU	133 MHz or better, Pentium
RAM	64 MB
Hard disk	350 MB available for software
Virtual Memory/Swap	Minimum of 250 MB
Monitor	17" SVGA or better and a 2-D graphics card with at least 2 MB memory. If you are running CADDs on Windows NT on an X server, set your monitor resolution to a minimum of 1024 by 768.
CD-ROM drive	Required hardware
Operating system	Windows NT 4.0, Service Pack 3, Service Pack 4
Network protocol software	Windows NT TCP/IP
X Server	Hummingbird's Exceed X Server 6.1 plus Exceed 3D version 6.1. (This is included on your CADDs CD-ROM.)

This chapter provides information that helps you run CADD5 more efficiently. It contains the following topics:

- HLR/Sectioning
- Sketcher
- CADD5 ISSM
- LDM Part and Assembly Listing
- Dialog Box Configurations on IBM, Sun, DEC, SGI, and HP Platforms
- AEC Applications on Windows NT
- Explicit Plotting
- Modeling
- CVNC
- CVact™
- Viewing an Entity When Switching Between Environments
- INSERT DIMENSION Command
- Associating a Variable Name with a Parameter
- Disabling the CAMU Status Window
- Edit Text OS (NT)
- Displaying Surfaces Using Show Polygon
- Product Licensing for International Technegroup, Inc. (ITI)

HLR/Sectioning

When you open in Revision 10.0 a part created on revisions earlier than Revision 8.0, clean up all the HLR/section views in the old drawings using the `UNHIDE OBJECT/UNDEFINE SECTION` commands. Do not use `DELETE VIEW` to clean the old HLR/section views. Not cleaning the old HLR/section views may cause database problems. Once cleaned, you can reissue `HIDE OBJECT/DEFINE SECTION` on the view.

Starting with Revision 10.0, the system displays an update message whenever the HLR/section view is not synchronized with the model. When a part created on a revision earlier than Revision 10.0 is opened in Revision 10.0, the system does not display an update message, even if the HLR/section view is not synchronized with the model. Once the HLR/section view is updated, the correct update is generated whenever the view is due for an update.

Sketcher

The layer bar pick is not active in Sketcher. To access the layer bar in Sketcher, activate it before you enter Sketcher.

CADDS ISSM

`t_nspline::t_nspline`

```
t_nspline::t_nspline(t_object_list& crv_list, int&
continuity_level, int& param_flag, & tol, double& ang_tol, t_err&
err)
```

This constructor allows you to build an `Nspline` by joining several curves at a specified continuity level and tolerance. You can specify the type of parameterization scheme for joining the curves.

`t_nspline::approximate`

```
t_nspline* approximate( t_nspline& ref_crv, int&
approx_knot_option, double& approx_tol, int& degree, double&
max_dev, double& avg_dev, t_err& err ); associated with the
current class.
```

This method allows you to approximate a base `Nspline` object using the knot vector and parameterization of a reference `Nspline` object.

The following options are available:

- The approximated Nspline has the same knot vector as that of the reference Nspline.
- The approximated Nspline has the arc length parameterization of the base Nspline.

t_surface::offset

```
t_surface* t_surface::offset(t_err &error, double dist = 1.0,
double tol = 0.01, int opt_flag = 0 )
```

This method removes the upper limit of 3000 polygon points on surfaces to be offset and returns the pointer to the new offset surface.

LDM Part and Assembly Listing

You can restrict the number of parts or assemblies displayed in the LDM by setting the following environment variables in your `.caddsrc_local`:

```
setenv CV_DB_PARTLISTLIMIT n
setenv CADDSASSEMBLYLISTLIMIT n
```

where `n` is an integer value such as:

```
setenv CV_DB_PARTLISTLIMIT 6
setenv CADDSASSEMBLYLISTLIMIT 6
```

The first `<n>` parts or assemblies from `create_dir` or `CVPATH` are displayed by the LDM in alphabetical order.

For example,

1. Set the following environment variables in your `.caddsrc-local`:

```
set env CV_DB_PARTLISTLIMIT 5
set env CADDSASSEMBLYLISTLIMIT 5
```

2. Start CADDS
3. Create Explicit parts in the following order:

```
b, c, d, e, f, a
```

The LDM lists parts as follows:

```
a, b, c, d, e
```

4. Create Explicit assemblies in the following order:

```
bb, cc, dd, ee, ff, aa
```

The LDM lists assemblies as follows:

```
aa, bb, cc, dd, ee
```

Dialog Box Configurations on IBM, Sun, DEC, SGI, and HP Platforms

The knobs of the dialog box have been configured to provide the dynamic manipulations on various platforms, as described in the following tables.

Table 2-1 Dial Configurations for the Dialog Box on IBM

Dial 4	Translate along X	Dial 5	Rotate about X
Dial 3	Translate along Y	Dial 6	Rotate about Y
Dial 2	Translate along Z	Dial 7	Rotate about Z
Dial 1	Noop. Not used	Dial 8	Zoom In/Out

Table 2-2 Dial Configurations for the Dialog Box on Sun

Dial 1	Translate along X	Dial 5	Rotate about X
Dial 2	Translate along Y	Dial 6	Rotate about Y
Dial 3	Translate along Z	Dial 7	Rotate about Z
Dial 4	Noop. Not used	Dial 8	Zoom In/Out

Table 2-3 Dial Configurations for the Dialog Box on DEC and SGI

Dial 7	Translate along X	Dial 8	Rotate about X
Dial 5	Translate along Y	Dial 6	Rotate about Y
Dial 3	Translate along Z	Dial 4	Rotate about Z
Dial 1	Noop. Not used	Dial 2	Zoom In/Out

Table 2-4 Dial Configurations for the Dialog Box on HP

Dial 1	Translate along X	Dial 5	Rotate about X
Dial 2	Translate along Y	Dial 6	Rotate about Y
Dial 3	Translate along Z	Dial 7	Rotate about Z
Dial 4	Noop. Not used	Dial 8	Zoom In/Out

AEC Applications on Windows NT

Piping, Piping Isometrics, and ASM applications are available on the Windows NT.

Explicit Plotting

Two environment variables, `Plot Quality` and `Plot Scaleto`, have been added to the `.caddsrc` template file for setting the vector. These variables are used with the `PUT CGM` and `PLOT DRAW` Explicit commands. You can set these variables in your `.caddsrc-local` file, depending on the quality that you require.

Setting the Plot Quality Variable

The `CV_PLOT_QUALITY` variable specifies the relative resolution for stroking curves, arcs, and circles. Acceptable integer values range from 8 through 24 and -24 through -8. The values 8 and -8 represent the coarsest resolution and 24 and -24 represent the finest resolution. Positive values produce 16-bit CGM files. Negative values produce 32-bit CGM files. The default value of `<n>` is 12. You can set `CV_PLOT_QUALITY` as follows:

```
setenv CV_PLOT_QUALITY <number>
```

For example,

```
setenv CV_PLOT_QUALITY 10
```

Setting the Plot Scaleto Variable

You can set `CV_PLOT_SCALETO` to scale the drawing size to the standard English or metric drawing size, as specified by the following example:

```
setenv CV_PLOT_SCALETO <char>
```

For example,

```
setenv CV_PLOT_SCALETO A0
```

The default value of `<char>` is A.

The range of values that you can specify for `CV_PLOT_SCALETO` is as follows:

A	8.5 X 11	IN
B	11 X 17	IN
C	17 X 22	IN (English default)
D	22 X 34	IN
E	34 X 44	IN
A0	841 X 1189	MM
A1	594 X 841	MM
A2	420 X 594	MM (metric default)
A3	297 X 420	MM
A4	210 X 297	MM

Modeling

LOFT NSURFACE Command

When you have guide and spine curves that are multisegmented and closed, the point of digitization on the first segment determines the start point of the joined guide and spine curves.

CVNC

ZPROF3 Command

You can specify a threshold surface angle for ZPROF3. ZPROF3 machines all areas of part surfaces where the surface angle is greater than the specified threshold value.

A modifier, SURFANG, has been added to the ZPROF3 and DEFZPRO3 commands.

SURFINT3 AUTO Command

You can control the connecting moves for multiple cuts generated around a corner cut.

Specify the connecting moves in one of the following ways:

- Use the ONESIDE modifier to specify that the cuts start at one side and move to the other.
- Use the CUTIN modifier to specify that the cuts start on the outside and converge at the corner cut.

When machining along intersections that are almost vertical, lace connections can cause large loads on the cutters. You can use the DOWNHILL and UPHILL modifiers to control the machining along such intersections. The cutting motion is unidirectional; downward for DOWNHILL and upward for UPHILL. UPHILL and DOWNHILL are mutually exclusive.

You can define a threshold angle as a deciding factor for UPHILL and DOWNHILL machining, using the ANGLE modifier. If a portion of the cut crosses this angle, the entire cut is machined using your choice of UPHILL or DOWNHILL machining. The angle is measured relative to the xy-plane of the active construction space.

CVNC Fastening

You can perform off-line programming of fastening machines in an assembly-centric environment like CAMU.

You can use 3D solid or surface representations of a subassembly and its supporting jig for riveting or bolting operations.

You can also use features like points, lines, arcs, or circles to represent fasteners containing parametric properties.

Multi-Select and Edit

You can select a point from the CADDs database and generate a Run Time List (RTL) of all exception processes attached to it. The exception processes interface allows you to select multiple points in the current feature to which a single manufacturing exception process can be attached. In addition, you can also perform mass editing of token attributes.

Machine Setup

You can select the optional PQR vectors. This is in addition to features like linked upper and lower anvils and additional gauge lengths for Head/0, Head/1, and Head/2. You can also specify the Anvil, INTOL, OUTOL, and GAPOL definitions in the setup itself.

You can generate output from a local CPL. Pass-through statements to the output file are generated to indicate a change in output coordinates.

Graphics

Tool path graphics include the path of the upper anvil, as well as the path of the lower anvil. You can also display the direction of tool paths generated by the current JCF.

CVact

CVact/UIHLI Core Support for Multiple Instances of a CVact Menu

The CI function `ClRegisterDialogMaxInstances` allows the creation of multiple instances of a CVact menu. Specify the dialog box or property sheet by name.

ClGetDialogMaxInstances

Gets the maximum instances of a specific dialog box or property sheet. A maximum of up to 65,535 instances of the property sheet or dialog box can exist.

ClGetDialogNumCurlInstances

Gets the current number of instances of the property sheet or dialog box.

ClGetDialogLastInstanceId

Creates the last instance ID for the specified dialog box or property sheet.

The maximum number of instances allowed for a property sheet or dialog box is in the range 1 to 65,535. The instance ID is also in the range 1 to 65,535.

The CI Library automatically sets the appropriate instance ID on each of the multiple instances of the dialog box or property sheet that are launched from the CADDs algorithms using `cl_launch_dialog` or `ClLaunchDialog`.

ClGetDialogInstances

Creates all instances for the specified dialog box or property sheet.

Toolpath and Geometry

You can perform circular ordering of features. The approach and retract features support rotation of the lower anvil during approach and retract motions. Additional features include anvil control, improved fastening clearance, and handling of design gaps. To detect collision, use surfaces, faces, or solids. To avoid collision, use the defined machine tool envelopes.

UiSetInstanceId

Sets the instance ID of a specified UI object that represents the instance of a specified dialog box or property sheet. `UiSetInstanceId` sets the instance ID for each of the multiple instances of a CVact menu.

The Cl Library automatically sets the appropriate instance ID on each instance of the dialog box or property sheet that is launched from the CADDs algorithms using `cl_launch_dialog` or `ClLaunchDialog`. In a single session, the instance ID and the assigned instance ID remain the same and do not change.

Do not use `UiSetInstanceId` to assign an ID to an instance of a property sheet or dialog box if you have used `cl_launch_dialog` or `ClLaunchDialog` to launch the dialog box or property sheet already registered with `ClRegisterDialog`.

UiGetObjectByName

This is enhanced to allow the handling of multiple instances of a dialog box or property sheet. For dialog boxes with multiple instances, `UiGetObjectByName` works only on top level dialog boxes. It uses the Cl function `ClGetDialogInstances` to return all instances of the dialog box or property sheet specified by name.

Complete the following steps to get all instances of a specified dialog box or property sheet with multiple instances:

1. Call the Cl function `ClGetDialogNumCurInstances` to get the current number of instances of the property sheet or dialog box.
2. Allocate a `UIObject` array of size ((number of current instances) * size of (`UIObject`)).
3. Invoke `UiGetObjectByName` to locate all instances of the property sheet or dialog box.
4. Pass the `UIObject` array pointer as the object parameter to the `UiGetObjectByName` call.

`UiGetObjectByName` treats the object parameter as an array of UI objects for dialog boxes or property sheets with multiple instances. An array of all instances of the specified dialog box or property sheet is returned using the object parameter.

To pick an object inside a particular instance of a property sheet or dialog box, locate the appropriate top level instance using `UiGetObjectByName` and search for the object you want to pick in that specific instance.

Viewing an Entity When Switching Between Environments

Use the Repaint option from the top bar of the CADDs desktop to view existing entities when you switch environments if you have:

- Set the `CV_PLATFORM` environment variable to X11 on a Solaris 24-bit plane machine with a Creator 3D card.
- Activated a new or an existing assembly in the Assembly Explicit or Assembly Parametric environment, from the LDM menu.
- Issued the following at the command prompt:

```
exit assembly fileflag 0
exit assembly fileflag 1
```

Please note: The desktop remains in Assembly mode.

- Issued the `enter explicit` command at the command prompt.
- Activated a new part or an existing part.
- Activated a drawing.
- Switched to the Parametric environment, then returned to the Explicit environment.

Please note: The entities that were visible in the Explicit environment are no longer visible.

caddsrc-local on Windows NT

Do not use a single quote (') to set the environment variable in `caddsrc-local` on Windows NT. Use either double quotes (" ") or no quotes, as in the following example:.

- `setenv CV_UI_DEFAULT_ENV "explicit"`
- `setenv CV_UI_DEFAULT_ENV explicit`

When you set `CV_UI_DEFAULT_ENV` in `caddsrc-local` on Windows NT using either of these methods, CADDs on Windows NT bypasses the LDM and goes directly to the Explicit environment (as on UNIX).

INSERT DIMENSION Command

The INSERT DIMENSION online help file has been modified. The INSERT DIMENSION command can now also be used in Concurrent Assembly Mock-up Environment (CAMU) and Multipart Access Environment (MPE).

Reference

Design and Drafting User Guide and Menu Reference

Description

INSERT DIMENSION activates the CSD (Context Sensitive Dimensioning) environment in Insert mode. The CSD environment can now be used to insert dimensions as well as modify existing ones.

You can insert linear, radial, diametrical, and angular dimensions and also modify and reposition dimension elements. In the CSD Insert Dimension mode, you can also use the dynamic dragging functionality.

You can insert dimensions directly in the CSD environment by clicking on the entities. The relevant dimensions are created automatically, depending on the entities selected. You can switch between the various options by pressing Tab.

For example, if you are creating linear dimensions, you can toggle between horizontal, vertical, and point-to-point dimensions by pressing Tab. You can also modify the individual components of a dimension in the CSD Insert Dimension mode.

Dynamic Dragging

Dynamic dragging in CSD enables you to visualize the exact placement of dimensions, texts, and annotations.

You select a dimension for dynamic dragging by clicking it with the left mouse button. This automatically attaches the left mouse button to the dimension. Dragging the mouse updates the dimension. Releasing the left mouse button repositions the dimension at the current cursor location.

You can zoom, scroll, and repaint using INSERT DIMENSION.

To exit the CSD environment, press RETURN.

Please note: INSERT DIMENSION can also be used in CAMU and the MPE.

Valid Modes

Model Mode or Draw Mode.

Syntax

INSERT DIMENSION: Select an object to insert a new dimension or modify an existing dimension.

Modifiers

None.

Limitations

This command does not support the insertion of text and FCS (Feature Control Symbols).

Associating a Variable Name with a Parameter

You can now use the UVAR modifier to assign a variable name to a parameter while creating or modifying geometry from the command line. You can use this option only at the command line.

For example, in the following command, the modifier UVAR automatically associates the constraint variable `len` with the `xlength` value and `wid` with the `ylength` value of the box.

```
Insert Box Solid Xlength 3 uvar [len] Ylength 5 uvar [wid] Zlength 3
```

Disabling the CAMU Status Window

You can disable the CAMU status window using the `USE_CAMU_STATUS_WINDOW` environment variable by setting it to No.

Please note: The default setting for this `caddsrc` environment variable is Yes. When you set it to No, the degree of performance is increased during locking and unlocking of components. However, the extra `CALLBACK_SERVER` and `CALLBACK_AD` processes are not spawned.

Edit Text OS (NT)

EDIT TEXT OS is now available on Windows NT. It supports the following editors:

- Notepad
- Emacs
- vi

Please note: It does not support the WordPad editor.

To set a default editor, do the following:

1. In the root directory of the drive where you are using CADDSS, create the `caddsrc-local` file.
2. For example, if you are using drive C, in `c:\caddsrc-local`, `setenv EDITOR editorname`.

The editor name can be any of the three editors that are supported.

Displaying Surfaces Using Show Polygon

When building a network of curves using Net Nsurface, use the Show Polygon option to display a surface temporarily. You can see how the surface looks before the resulting Nsurface is saved by choosing the Net option from the Net task set.

Net Nsurface Options Menu



Windows NT Display Settings

Reduce the screen resolution on certain accelerated graphics cards (boards), if there are system crashes or OpenGL does not work. Confirm the maximum resolution to support 3D rendering in true color with the vendor and use this resolution.

Product Licensing for International Technegroup, Inc. (ITI)

This licensing information applies to the following MCAE lab products:

- StressLab™
- ThermaLab™
- PlasticsLab™

Models:

- 3310
- 3320
- 3330
- 1318
- 1328

These products are now licensed through a separate license manager from CADDs. This license manager must be installed in the following directory during installation of CADDs:

```
/usr/apl/cadd/mcae/bin
```

Requesting a License Key

Decide whether you want nodelocked keys or floating keys. A floating key can be used by the system for which it is licensed or any other system on the network that has a copy of its license file, and it can serve more than one license. A nodelocked key is a single license that can only be used by the system for which it is issued.

To get information about the system that will either use the nodelocked key or host the floating key, run the command:

```
/usr/apl/cadd/mcae/bin/xhostid>
```

The output from this command is one of the following:

- SYSINFO_ID = 55974051 (Solaris)
- Hostid = 5540b38e (Solaris)
- SYSID = 690aa318 (SGI)
- NETID = c61e6079 (DEC)
- UNAME_ID = 77d0f607 (HP)

Contact ITI at `labinfo@iti-oh.com`, telephone 1-800-783-9199 x3990 (USA) or telephone 1-513-576-3990.

Supply the output from `xhostid`, along with your name, company name, the LAB product name, and specify whether you need a nodelocked or floating key. If you choose a floating key, specify how many licenses (seats) you have bought need to be used at the same time by the floating key.

You will receive a key of the form:

```
itimcae 1 systemname license_dir encrypted_key
```

Example

```
itimcae 1  
tomcat/usr/tmp0x43ca-d8ba-48a4-87c6-c428-9165-0d19-20ca
```

For floating keys, account information about the licenses is kept in the directory

```
system name:license_dir/itimcae
```

(For example, `tomcat:/usr/tmp/itimcae`).

The `license_dir` is unimportant for nodelocked keys.

Licensing Keys through an Environment Variable

Nodelocked keys can be licensed through an environment variable, rather than entering it in a file. In your `.caddsrc` (or `.caddsrc-local`), insert the line:

```
setenv MCAE_LICENSE_KEY encrypted_key
```

Example

```
setenv MCAE_LICENSE_KEY  
"0x43ca-d8ba-48a4-87c6-c428-9165-0d19-20ca"
```

No license daemons or license files are needed. Only nodelocked keys work this way; floating keys still require that a license file and license daemon be used.

Licensing Keys Using a License File

Enter the key you receive in a file. The default file name used is

```
/usr/tmp/mcae_lic.dat
```

If you want to use a different file name, specify it in your `.caddsrc` (or `.caddsrc-local`) through the environment variable:

```
setenv MCAE_LICENSE_FILE license_filename
```

Example

```
setenv MCAE_LICENSE_FILE/home/senglema/stresslab.key
```

Otherwise, the key should be located in

```
/usr/tmp/mcae_lic.dat
```

For floating keys, a copy of the license file must be installed on the system serving the licenses, as well as any system that uses those licenses. The files can reside in different locations on different systems; the only requirement is that the `MCAE_LICENSE_FILE` needs to specify the location of your particular system when you attempt to run the MCAE LAB product (if the location is other than `/usr/tmp/mcae_lic.dat`).

Starting the License Daemon

In your `.caddsrc` (or `.caddsrc-local`), insert the line:

```
setenv MCAE_DAEMON_DIR /usr/apl/cadd/mcae/bin
```

An attempt to run any of the MCAE LAB products automatically starts a license daemon, `locald6`. If for some reason the daemon does not run automatically, the user can start it manually from

```
/usr/apl/cadd/mcae/bin.
```

No arguments are necessary.

For floating keys, the system serving the licenses also needs to have a license daemon `issd6` running. Once running, the daemon will not need to be restarted unless the system is rebooted. To force the `issd6` daemon to start automatically on system reboot (preferred), the script `install_issd6` should be run as root from the directory `/usr/apl/cadd/mcae/bin`.

This script modifies the appropriate `/etc/rc` files to start the daemon every time the system is rebooted, eliminating the need to ever manually start the `issd6` floating license daemon.

If the `issd6` daemon does not reside on the machine serving the floating licenses, you can manually execute safely from

```
/usr/apl/cadds/mcae/bin
```

No arguments are necessary.

Troubleshooting

To troubleshoot any problems, or for more detailed information on installation, accounting, and querying license functions, contact ITI directly, either by e-mail or telephone at:

E-mail: labinfo@iti-oh.com

Telephone (toll free): 1-800-783-9199 x3990 (USA)

Telephone: 1-513-576-3990.

This chapter notes considerations for CADD5 Revision 10.0 for Windows NT and UNIX operating systems.

PLOT DOT (NT)

The first time you use PLOT DOT, the Windows[®] printer driver appears behind the CADD5 desktop and CADD5 appears to hang. To continue, bring the printer driver forward by selecting that task from the toolbar.

CVMAC (NT)

If you are running CVMAC on Windows NT, use the perl scripts in the `/usr/apl/cadds/scripts` directory. To execute, change the directory to the drive where CADD5 is installed and use one of the following commands:

```
\perl5\bin\ perl\usr\apl\cadds\scripts\cvmlink.pl filename  
\perl5\bin\ perl\usr\apl\cadds\scripts\cvmcomp.pl filename  
\perl5\bin\ perl\usr\apl\cadds\scripts\runcvm.pl filename
```

Customizer (NT)

The Customizer is not currently supported.

Removing CADD5 (NT)

Removing CADD5 does not remove the NutCRACKER Kernel Service from the Control Panel.

Resizing the CADD5 Desktop (NT)

Resizing the CADD5 Desktop (by modifying `CV_UI_MENU_HEIGHT` and `CV_UI_MENU_WIDTH` through the Windows Control Panel) results in header titles on menus overwriting existing text and truncation of text in pull-down menus.

DELETE PART (NT)

DELETE PART in the LDM does not delete the complete directory structure on Windows NT.

Activate New Part and Drawing Menu (NT)

Resetting the Activate New Part and Drawing menu in the LDM crashes CADD5.

EDIT LOCATION (NT)

After quitting and exiting edits, parameters are blanked and the location symbol disappears.

CV_UI_TEXT_BASED and CADD5ENABC5 Variables (NT)

The `CV_UI_TEXT_BASED` and `CADD5ENABC5` variables do not bypass the LDM and activate a part named `untitled`. You must manually activate a new part using the defaults. However, the part name no longer displays in the LDM as if it were successfully deleted.

TEACH FEATURE (NT)

EXIT FEATURE crashes CADD5 when you use OGL graphics. The command functions correctly when you use x11 graphics.

TRIM NSURFACE (NT)

TRIM NSURFACE occasionally causes the program to abort when you type OK.

SWEEP SURFACE (NT)

SWEEP SURFACE may fail during sweep analysis.

FILLET NSURFACE (NT)

FILLET NSURFACE may fail.

INSERT POINT INTOF (NT)

Inserting a point at the intersection of a line and a spline crashes CADD5.

CAM JCF (NT)

Using the IN command with `cam jcf` causes a system failure.

Updated License File (UNIX)

CADD5 5i Revision 10.0 requires an updated license file. See *Using the License Manager* for more information.

The features section in the license file appears similar to this:

```
FEATURE xxxx epd 9.000 ....
```

Installation Directory for STEP and IGES Translators

If you are installing IGES, STEP, or VDAFS, the default installation directory is `/usr/apl/cvuts`.

CV Translator Requirements

The path and file name limitations of CADD5, IGES, VDA, and STEP files for CV Translators include:

- CADD5

The path and file name of a CADD5 part may be no longer than 60 characters. Directory names may be 20 characters or less. A CADD5 part name must be shorter than 20 characters.

- IGES and VDA

The path and file name of the IGES/VDA file may not exceed 60 characters. The directory name may be up to 19 characters or less. IGES and VDA file names may not exceed 20 characters.

Please note: You can specify any length for STEP path or file names.

Translator CAMU IGES

You can schedule translations to run at a specified date and time using the Cron menu. This menu is available by selecting the Add option on the CAMU PUTIGES user interface. For more details regarding the cron tool, refer to the help available through the Help option on the CAMU PUTIGES user interface.

Browser Settings for Java

Before using the HTML online help, make sure that JavaScript is enabled in your browser preferences. Enabling JavaScript allows you to use the following buttons in the navigator panel of the HTML online help.

- Main Menu
- Contents
- Index
- Search
- Reset

To enable Java scripts and the Java option in Netscape 4.04:

1. Choose Edit > Preferences.
2. In the Category field, click Advanced.
3. Check Enable Java and Enable JavaScript.
4. Click OK.

MEASURE LENGTH SHORTEST

The MEASURE LENGTH SHORTEST modifier, COMPLEXITY, can be used to enhance the reliability of this command in complicated cases. This modifier can be entered from the command line:

```
measure length shortest complexity <int> <ent> <ent>
```

The default value of COMPLEXITY is 1. Increasing this value improves the reliability of the measurement. However, values higher than 4 are unlikely to yield better results and may slow the command's performance.

SET VIEW

While performing a context switch from the Parametric to Explicit environment, the associated fold views (if there are any) are not updated. To update the associated fold views, issue one of the following:

- `SET VIEW all`
- `SEt VIEW : view name`

IBM Spaceball

In CADD5, the `-nocache` option has been included in the CADD5 startup script. However, the documentation for the IBM Spaceball model 6094 031 now has a section for CADD5 settings.

If you have this model IBM Spaceball, you must change the daemon startup line in the following file:

```
/usr/apl/cadds/scripts/cadds5
```

to the following:

```
/usr/apl/cadds/bin/sballd_XGM -GL -nocache >&!  
/dev/null &
```

Corrupted Root Node

There is a problem with the auto-locked root node when a reference assembly is activated.

Workaround:

Activate the reference assembly independently (as a main assembly) and file it. This deletes the corrupt root nodes if any are present. The assembly that you created can be used as a reference assembly.

Class_Name

There is a 20-character restriction for `class_name`.

Exiting the FIGBUSTER Mode

In the Explicit or Assembly Explicit environment, the command window enters the FIGBUSTER mode if you type any of the following commands and press Return.

- ALL
- ANGLESTEP
- AXISSTEP
- CURVESTEP
- FIND
- MENU
- NOWIN
- REDISPLAY
- SUBASSEMBLYNAME
- TOL

In the Figbuster mode, the Explicit or Assembly Explicit commands are disabled.

If you enter the Figbuster mode inadvertently, use one of the following to exit Figbuster mode:

- Click the Abort option from the Utilities menu. This menu appears when you click the third mouse button in the CADD5 graphics window.
- Type `Control-E` in the CADD5 command window.

Using Networked Drives on Windows NT

When using Windows NT, note the following:

- Domain users cannot use networked drives because CADD5 on Windows NT does not update previously saved drawing files.
- VIEW PART does not work for Domain users.

Availability of Localized Versions (UNIX)

French and German localized files shipped with CADD5 Revision 9.1 are provided with the UNIX software. These files include English versions of the enhancements made for Revision 10.0 which have not yet been localized.