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# *Database Design with VisualDCT*

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## What is VDCT?

- VDCT is Visual Database Configuration Tool
- Beta version released summer of 2002, funded by SLS
- Developed by *Cosylab Ltd.*
- Replacement for text editor, DCT, JDCT, GDCT or Capfast
- VDCT developed to provide missing features in Capfast(?) and GDCT.
- Supports hierarchical design
- Written in Java
  - Therefore supported in various systems
  - Java Runtime Environment 2
- Importing existing DB and DBD files

# What is VDCT?

- VDCT features
  - GUI features
    - *Clipboard, undo, redo, object inspector, visual linking*
    - *Data flow arrows, not process flow*
  - Supports hierarchal design
    - *Based on the pvname separator*
    - *Grouping “grp1:grp2:test1AO”*
    - *VDCT templates can be used.*
      - Separate VDB file as a template with ports and macros defined.

# What is VDCT?

- VDCT features
  - Powerful DB parser
    - *Supports existing DB's*
    - *Preserves DB comments, record/field order*
      - # normal comments
      - #! VDCT layout comments
    - *DB's can be edited manually*
  - Single file which contains both DB and display data
    - *GDCT created two separate files*

# What is VDCT?

- VDCT features
  - Rapid database development
  - Simple mouse-clicks
  - Visualization of record instances
    - *Easier to understand*
      - Yet no field description as with DCT, JDCT & GDCT
    - *Detect errors faster*
      - e.g. broken links shown with a cross
  - Database can be split into logical blocks (grouping)
    - *e.g. hierarchical design*
  - Printing ?

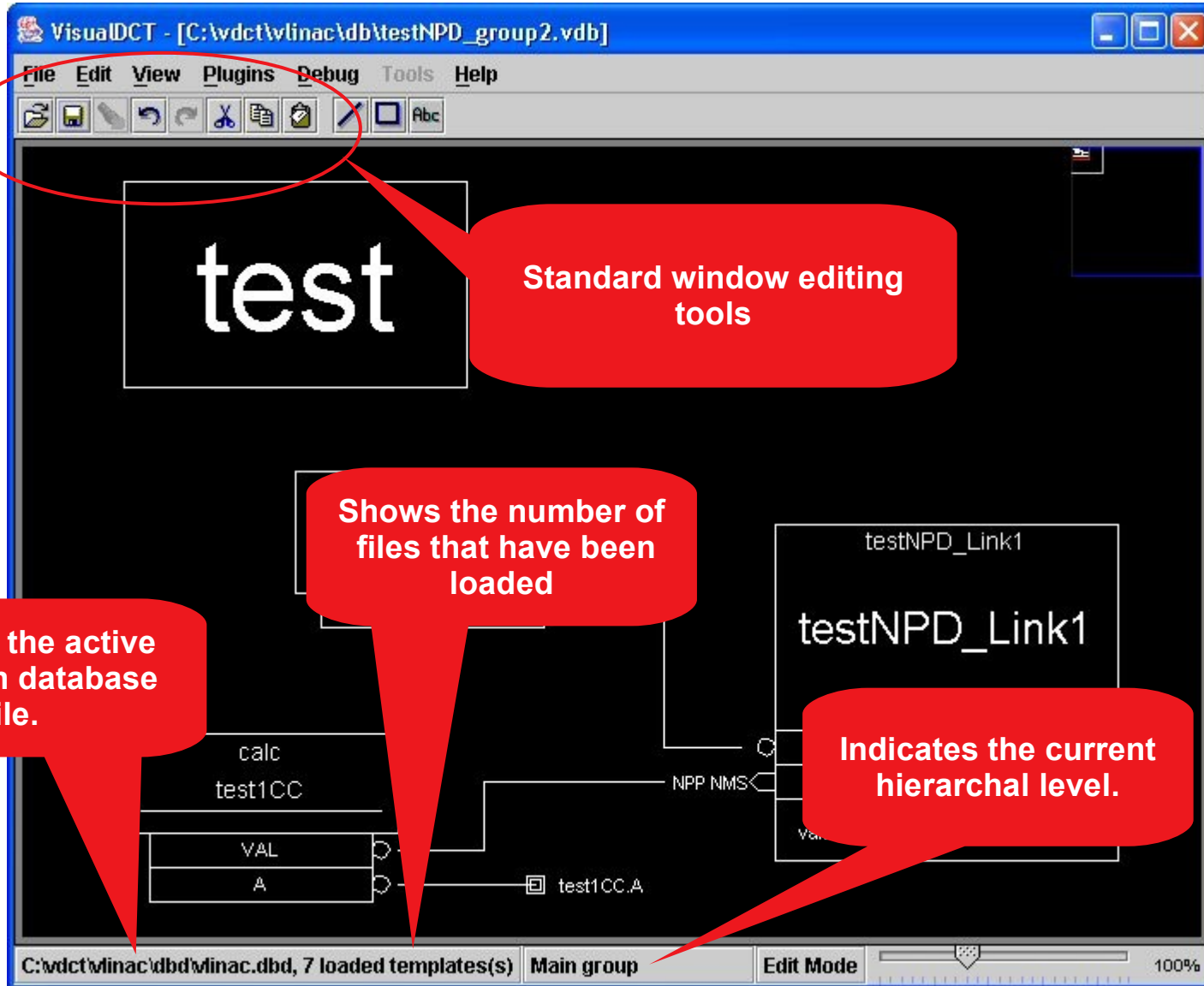
## Using VisualDCT

- Launch VisualDCT by executing jar file
- On most machines just type vdct
  - This script defines the Class Path and then runs the latest version.
- To start VisualDCT in Windows
  - Execute (double click) “VisualDCT2.4.1253.jar”
  - Or, use command line options
    - *VisualDCT2.4.1253.jar [<DBDs>] [<DB>]*

## Using VisualDCT

- Load DBD file(s)
  - Recommend selecting save option in “DBD Manager”
- Load DB or VDB file.
- Save work with a VDB extension. (recommended)
- Once a VDB file is created and saved, no need to specify DBD files, DBD files will be included at the beginning of a VDB file.
  - `#! DBDSTART`
  - `#! DBD("../dbd/vlinac.dbd")`
  - .....
  - `#! DBD("other DBD file")`
  - `#! DBDEND`

# Using VisualDCT





# Using VisualDCT

The screenshot shows the VisualDCT application window with the following components and callouts:

- Navigator:** A small panel in the top right corner, highlighted by a red callout: "Navigator, simplifies moving through the workspace".
- Workspace:** The main central area containing a diagram with nodes like "test", "test1BI", "testNPD\_Link1", "testN", "test1CC", and "test1CC.A". A red callout points to this area: "Workspace".
- Debugger Status:** A red callout with a question mark points to a small icon in the diagram: "Indicates if the Debugger is running.".
- Sliding zoom scale:** A red callout points to a slider at the bottom right of the workspace: "Sliding zoom scale.".
- Bottom Bar:** Shows the file path "C:\vdct\minac\dbd\minac.dbd, 7 loaded templates(s)", "Main group", "Edit Mode", and a zoom level of "100%".

# Using VisualDCT

- Inspector
  - Records
    - Fields
      - Visible
- Links
  - Data flow

The screenshot shows the VisualDCT interface. The main window displays a data flow diagram with several components: 'calc testCC', 'VAL', 'ao testAO', 'DOL', 'OUT', 'calc test1CC', and 'A'. A red circle highlights the 'ao testAO' component, which contains the following text: 'DESC=AO record', 'DTYP=Soft Channel', 'OUT=test1CC.A', and 'DOL=testCC'. A red arrow points from the 'Visible' field in the list to this component. To the right, the 'Inspector testAO' window is open, showing a table of fields and their values. A red circle highlights the 'testAO (ao)' dropdown menu. Another red circle highlights the 'GUI\_OUTPUT' section of the table, which includes the following rows:

Value	Name
GUI_COMMON	GUI_COMMON
DESC	AO record
ASG	
UDF	1
GUI_LINKS	
DTYP	Soft Channel
FLNK	
GUI_INPUTS	
SIOL	
SIML	
SIMS	<none>
GUI_OUTPUT	
OUT	test1CC.A
DOL	testCC
VAL	
OROC	
OMSL	<none>
OIF	<none>

# Using VisualDCT

VisualDCT - [C:\vdct\vlina\ldb\testNPD.vdb]

Plugins Debug Tools Help

calc  
testCC  
VAL

ao  
testAO  
DESC=AO record  
DTYP=Soft Channel

NPP NMS Σ DOL  
NPP NMS ◁ OUT

calc  
test1CC  
A

Group	Alpha	DBD Order
GUI_COMMON	GUI_COMMON	GUI_COMMON
DESC		AO record
ASG		
UD		1
GUI_LINKS	GUI_LINKS	GUI_LINKS
DTYP		Soft Channel
FLNK		
GUI_INPUTS	GUI_INPUTS	GUI_INPUTS
SIOL		
SIML		
SIMS		<none>
GUI_OUTPUT	GUI_OUTPUT	GUI_OUTPUT
OUT		test1CC.A
DOL		testCC
VAL		
OMC		
OMS		<none>
OIF		<none>

Comment

Default is determined by Settings dialog box

Single click to make Visible

Double click to make Invisible

## Field Visibility Values

### -0: NON\_DEFAULT\_VISIBLE

-Blank for build 1249

### -0: VISIBILITY\_SELECT

-Blank for build 1250

### -1: ALWAYS\_VISIBLE

-Eye

### -2: NEVER\_VISIBLE

-Eye w/Red X

## Using VisualDCT

Visibility text in vdb file

```
#! Visibility("testAO.DTYP",1)
```

```
#! Visibility("testAO.OUT",2)
```

```
#! Visibility("testAO.DOL",2)
```

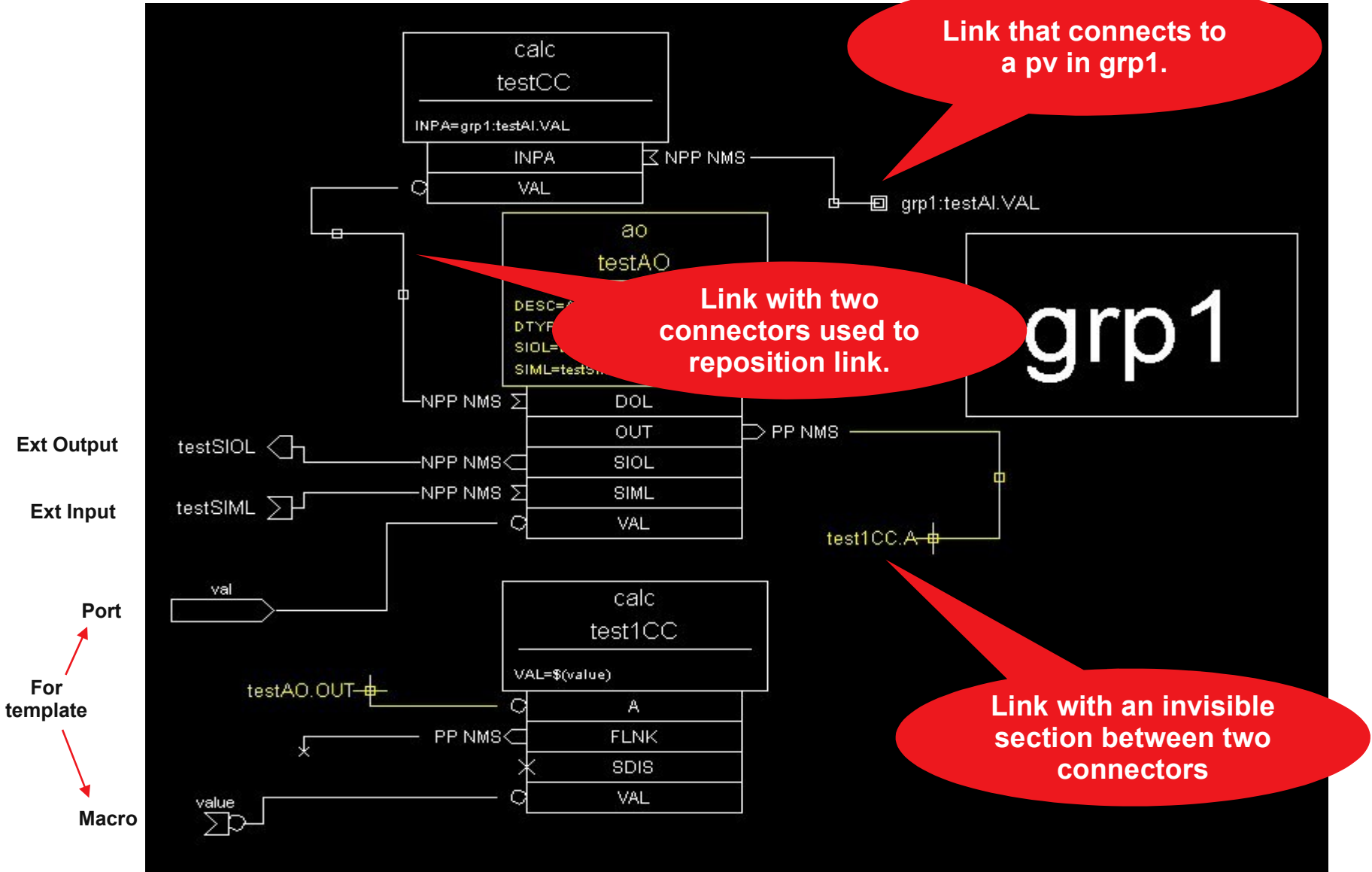
**Visibility Defined:**

```
#! Visibility("fieldname", visibility)
```

**Where visibility:**

- **0 – NON\_DEFAULT\_VISIBLE**
  - Build 1249 and earlier.
- **0 – VISIBILITY\_SELECT**
  - Build 1250 and later.
- **1 – ALWAYS\_VISIBLE**
- **2 – NEVER\_VISIBLE**

# Using VisualDCT (links)



## Using VisualDCT (links)

Link/Connector text in vdb file

```
#! Field("testAO.OUT",255,1,"testAO.OUT")
```

```
#! Link("testAO.OUT","testAO/OUT2")
```

```
#! Connector("testAO/OUT2","testAO/OUT1",660,340,255,"",0)
```

```
#! Connector("testAO/OUT1","testAO/OUT",620,380,255,"",1)
```

```
#! Connector("testAO/OUT","test1CC.A",220,480,255,"",0)
```

# Using VisualDCT

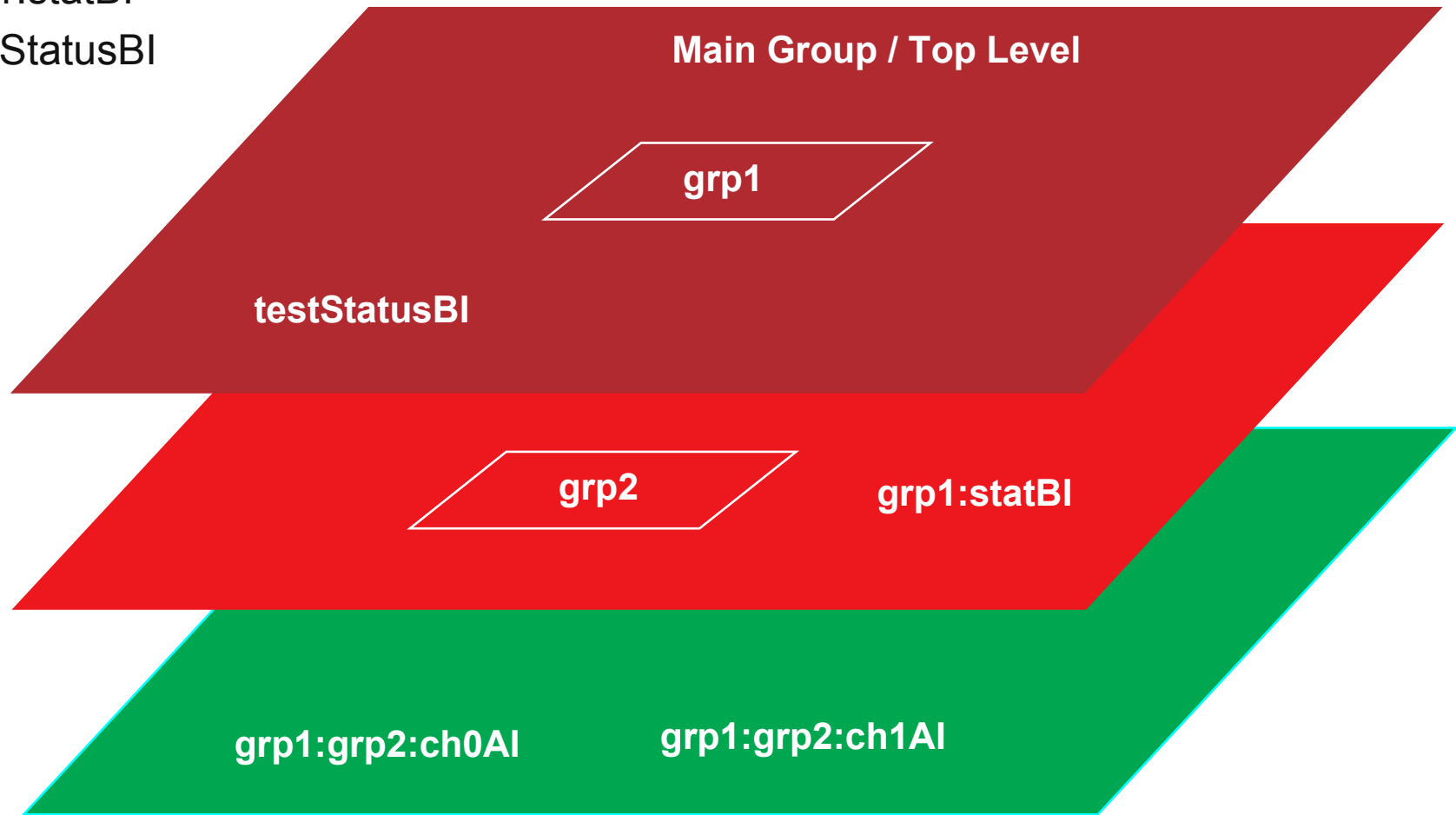
## Hierarchy Support

- Based on the pvname separator
- Grouping “grp1:grp2:test1AO”
  - This will create three levels
- Grouping must be enabled before loading DB
  - Separator must also be defined
- Support templates
  - Use **Generate...** command to flatten vdb with templates
  - *Macros* pass information into a template
  - *Ports* pass information upwards out of a template
  - Use import command to add template

# Using VisualDCT

## Hierarchy

- grp1:grp2:ch0AI, grp1:grp2:ch1AI
- grp1:statBI
- testStatusBI





## Converting files

- Converting a DB text file to VisualDCT
  - In VisualDCT select View menu, then Settings
    - *Then select Visual Tab*
      - Uncheck “Show value of fields when it is not default”
  - Load DB file
  - Rearrange display for clarity
  - Save with a .vdb extension (recommended)
    - *The Generate command will only create a .db file*