NAME

xcontrol - set and list extraction state of cells

SYNOPSIS

xcontrol [-macro | -regular | -device | -library | -remote]
                        [-strict | -free | -freemasks[:mask,..]] [-v] cell...
xcontrol -cleanup [-v] [cell...]
xcontrol -convert [-v]
xcontrol -default [-v] [cell...]
xcontrol -list   [ct] [it] [cell... | -cl | -icl]
xcontrol -liste   [ct] [it] [cell... | -cl | -icl | -obs | -new | -old]

OPTIONS

-macro	Set the extraction state to Macro.
-regular	Set the extraction state to Regular.
-device	Set the extraction state to Device.
-library	Set the extraction state to Library.
-remote	Set the extraction state of imported cells to remote state.
-strict	Set the interface type to Strict.
-free	Set the interface type to Free.
-freemasks	Set the interface type to Freemasks. When no masklist is specified, old masklist of entry is used.
-cleanup	Remove (all) obsolete cell entries from xcontrol file.
-convert	Convert format of extraction state information in the project.
-default	Set (all) cells to the default status.
-list	List the extraction state of the database cells. When option 'ct' is specified, only of that cell-type. When option 'it' is specified, only of that interfacetype.
-liste	List only the entries of cells in the xcontrol file.
-cl	List only celllist (local) cells.
-icl	List only impcelllist (imported) cells.
-obs	List only obsolete cell entries.
-new	List only newest cell entries.
-old	List only oldest cell entries.
-v	Set verbose mode.

DESCRIPTION

The *xcontrol* program sets or reads the extraction state and interface type of the cells that are local or imported from another project. See below for a description of these settings.

Note that the requested set action takes always place and touches the timestamp of the cell entry.

When the option **-list** without a cell is specified, all cells in the project and their extraction state will be shown.

When the option **-convert** is specified, the dataformat of the extraction state information of the cells that are present in the IC design database is converted.
The extraction state of all cells in the project will be read, converted in the new format provided by dmPut-CellStatus(), and the old extraction state information of each cell will be removed.

EXTRACTION STATUS and INTERFACE TYPE

A cell can have different extraction statuses, as well as different interface types. Extraction statuses and their meaning are as follows:

regular   the module is extracted hierarchically or flattened, depending on the extractor option.

macro   the module is always flattened during extraction.

library   the module is not extracted, it is included in the extracted circuit as an instance and a (previously extracted) library circuit is available for it.

device   the module is not extracted and is included in the extracted circuit as a network primitive.

Interface types and their meaning are as follows:

strict   when the module is used as an instance, it only connects to its parent module via its terminal areas.

free   when the module is used as an instance, it connects to its parent module via its terminal areas as well as via all polygons that are connected to its terminal areas.

freemasks   when the module is used as an instance, it connects to its parent module via its terminal areas as well as via all polygons of the specified mask type(s) that are connected to its terminal areas.

EXAMPLES

The first example converts the current (old) database project into the (new) xcontrol format:

% xcontrol -convert

The second example sets the celltype "macro" of two cells:

% xcontrol -macro inv oscil

The third example sets the interfacetype "freemasks" with 3 masks (the masks have to be in the project) of the cell oscil:

% xcontrol -freemasks:cpg,caa,cmf oscil

The fourth example sets the celltype "device" and the interfacetype "free" of 2 cells verbose:

```
% xcontrol -device -free -v term3 poly5
  term3  Device  Free  Jun 13 15:00:12 2000
  poly5  Device  Free  Jun 13 15:00:12 2000
```

The fifth example lists all cells in the actual project with their extraction state. The first row is the cellname, the second the celltype, the third the interfacetype and the fourth the last date of change. If the interfacetype is Freemasks, the masks of this cell are written just on the next line.

```
% xcontrol -list
local cells:
  aa    C Regular  Strict    No status found
  inv   L Macro    Strict    Jun 13 14:49:57 2000
  oscil L Macro    Freemasks Jun 13 14:51:02 2000

  Mask(s): cpg cca cmf
  poly5  LC Device  Free  Jun 13 15:00:12 2000
  term3  LC Device  Free  Jun 13 15:00:12 2000
```

imported cells:
 rc1 L   Regular Strict Jun 13 14:47:38 2000
 rc2 LC Regular Strict Jun 13 14:47:38 2000

The sixth example sets all local and imported cells to default. The local cells are set to regular, strict and the imported cells are set to the status from the imported project.

% xcontrol -default

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FILES

      `project/.dmxdata`   (in/output xcontrol file)

      `project/layout/celllist`   (input file)

      `project/layout/impcelllist`
                        (input file)

      `project/layout/`*cell*`/is_macro`
                        (old file, deleted)

      `project/circuit/celllist` (input file)

      `project/circuit/impcelllist`
                        (input file)

      `project/circuit/`*cell*`/devmod`
                        (old file, deleted if empty)