

PyCell Studio, Version 4.4.5, Release Notes

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Introduction

Welcome to PyCell Studio, Version 4.4.5, released 2010-12-01. This is a feature release, based on OpenAccess 22.04.054.

Highlights of Version 4.4.5 include:

- New methods for PhysicalComponent, Rect, PathSegRef, and Box.
- Enhancements for PyCells using OpenAccess tech.db only mode.
- cngenlib –bundle adds encrypted_source option, to enable compatibility between Python versions.
- Pyros:
 - New layer density visualization.
 - New hierarchical net highlighting.
 - New user-defined grid lines display.
 - Stability improvements in graphics rendering.

Highlights of Version 4.4.5 premium features include:

- New DRC operators

See Change Requests for specific differences from Version 4.4.2.

These release notes summarize the important enhancements, bug fixes, and other changes which have been made since Version 4.4.2. For complete technical details, please see the related documentation.

New Features and Enhancements

1. New PhysicalComponent method.
`alignEdgeToCoord(self, Direction dir, Coord coord, ShapeFilter filter=ShapeFilter())`
2. New Rect methods.
`expand(self, Coord coord)`
`expandDir(self, Direction dir, Coord coord)`
`expandForMinArea(self, Direction dir, AreaType minArea, Grid grid=None)`
`expandForMinWidth(self, Direction dir, Coord minWidth, Grid grid=None)`
`expandToGrid(self, Grid grid, Direction dir=None)`
3. New Box methods.
`abut(self, Direction dir, Box refBox, bool align=True)`
`alignEdgeToPoint(self, Direction dir, Point point)`
`expandDir(self, Direction dir, Coord coord)`
`expandToGrid(self, Grid grid, Direction dir=None)`
`mirrorX(self, Coord yCoord=0)`
`mirrorY(self, Coord xCoord=0)`
`moveTo(self, Point destination, Location loc=Location.CENTER_CENTER)`
`moveTowards(self, Direction dir, Coord d)`
`rotate180(self, Point origin=None)`
`rotate270(self, Point origin=None)`
`rotate90(self, Point origin=None)`
4. Enhancements to Box methods.
`alignEdge()` adds offset option.
`alignLocation()` adds offset option.
5. New PathSegRef methods.
`getBoundary(PointList points=None)`
`getPoints(self)`
`getWidth(self)`
`isOrthogonal(self)`
6. PyCells using OpenAccess tech.db only mode.
In this mode, hierarchical OpenAccess constraint groups are now accessible as hierarchical rulesets.
7. `cngenlib --bundle=encrypted_source`.
When bundling PyCell code in OpenAccess libraries, previous `--bundle` options, bytecode and encrypted, were sensitive to Python versions. New `--bundle=encrypted_source` is introduced to avoid format incompatibilities between Python versions.
8. New Pyros features.
 1. Layer density calculation and visualization added to Tools menu.
 2. Net highlighting of geometries enhanced to support hierarchical designs.
 3. New user-defined grid lines aids layout review in designs featuring global gridded placement requirements.

Change Requests

Like many companies, Ciranova uses Bugzilla (www.bugzilla.org) to track change requests. As yet, Ciranova does not have a publicly accessible request tracking system. If your request was assigned a Bugzilla number, you should have been notified by Ciranova technical support when it was closed. Otherwise, you can check the following listing of Bugzilla requests which were closed for this release.

2010-12-01

- 454 Default buffer for Message window pane should be warning
- 821 Display file parser should check for type 2 layers and purposes
- 1019 need full support of unlimited shape in select, boolean etc operations
- 1396 Request Box.expandToGrid()
- 1397 Request Rect.expandToGrid()
- 1609 pyros canvas not being updated on Windows when hardware acceleration is on
- 1667 Pyros needs to display connectivity information
- 1719 Instance in Pyros main viewing window gets de-selected when parameters updated
- 1740 Request Rect.expand(), same as Box.expand()
- 2229 Pyros "next canvas" (F8) feature mixes viewing order
- 2322 DRC pane lists errors in alphabetic order, instead of numerical order
- 2480 Box & Rect should have same align, move, abut, expand methods
- 2487 mouse wheel stops working after changing a parameter for a supermaster
- 2845 Box.expandForMinWidth() & Box.expandForMinArea() to support more directions
- 3094 remove references to \$CNI_ROOT
- 3161 Enhance code bundling to be robust against bytecode format changes
- 3239 closing a window and undo will crash
- 3248 Close all design generates exception
- 3273 Instance layer should be off by default
- 3334 Request for font size control in new Pyros
- 3386 New Pyros needs to work with Wing IDE and Eclipse
- 3441 Pyros should display PRBoundary objects
- 3484 DRC Error description is truncated
- 3497 Pyros Highlight Net highlighting wrong shapes
- 3504 Enhance installer to set directory and file permissions
- 3549 seg fault with old OpenGL library loading designs
- 3553 Add libltdl.so to PyCell Studio & Helix packages
- 3571 Displaying another design when new value to parameter is applied
- 3574 Option OFFSET is added to operation OFFGRID
- 3576 New operation WITH_TEXT is introduced
- 3580 Enhance code bundling to support encrypted_source
- 3587 cni.gui.mainWindow() missing from pyros2
- 3601 Unexpected/undocumented behavior setting Rect bbox
- 3603 Pyros crashes entire Citrix session
- 3614 Pyros sometimes doesn't open canvas created from Python shell
- 3624 Pyros crashes VNC session
- 3629 Need a Python method to create a text cellView
- 3655 Backport --bundle=encrypted_source into Santana 4.4.2
- 3678 Slow ruler performance while zoomed in
- 3695 Pyros aborts with Segmentation Fault when .cnitools is not writable
- 3696 Pyros crashes VNC when dynamic highlighting
- 3698 2000 selected limit issue directory

3715 Slow Pyros performance on tiger (conf rm demo computer)
3722 cnexp segfaults after creating transistor instance
3724 Second display of designs only opens one design
3729 cnsendcmd help message improvement
3731 Gravity is broken
3754 Incompatibility in tech.db created by cngenlib
3755 Stretch handle example has too many parentheses
3761 Stretch Handles not working with small float values
3762 Pyros ruler should display text for small measurements
3763 python build cannot work without setting PYTHONHOME
3781 improper rule query conflic resolution for replacement rules in derived ruleset
3783 Pyros does not display an empty layout correctly
3785 Dlo() does not create a top block
3788 cannot run cntechconv shell script on solaris
3801 MultiPath documentation error
3812 cngenlib --encrypted_source error
3813 Add Grid(s) Display
3814 Pyros should understand reserved Virtuoso Layers and Purposes
3815 x-axis and y-axis disappear when zoomed out
3822 Add Interface to Density Analyzer
3829 Grids file is saved with two dots in the name
3830 Grids keyboard entry for pitch and offset is inconsistent
3831 User grids on/off setting does not affect grid display
3832 User grids transparency controls are linked for different grids
3833 User grids should check for name uniqueness
3834 pyros2 submaster parameter display problem with cnTechVersion
3835 Catch exceptions thrown when opening the design hierarchy
3836 Change OA_PLUGIN_PATH to \$CNI_ROOT/quickstart
3851 Enhance cni130 to support deep nwell for product demonstrations
3854 Pin.addInstPin() should also copy promote Path, Polygon, and PathSeg
3859 Add ability to run cnoaExtract from Pyros
3902 Support for Cadence system layers, purposes, and lpp display packet assignment
3919 santana/partners/{snps,spst}/cniUtils.tcl for packaging
3926 New library for Pyros and cnhxgui
3929 PyCell Studio documentation tracking for 4.4.5+
3949 Tools > Density suggested change in menus
3959 Changes needed for Density Analysis
3960 Pyros does not correctly determine display packets for incremental tech.db
3968 Pyros doesn't display Line objects
3975 Pyros documentation should list other supported command line options
3976 pyros should support --help to list supported options
3977 Pyros enhancement for option to disable graph view in library browser
3983 Remove all Qt3 dependencies
3984 Premium features documentation does not explain count-qualifier
3990 Premium documentation: SIZE does not show how to use second layer
GROW_EDGE EXTENT_GROWTH & EXTENT_GROWTH_BY_FACTOR
3993 does not produce any results
4000 Add example of upper & lower bound qualifier
4005 WITH_EDGE description is misleading
4006 TOUCH and INTERACT operators do not consider touching at corner/corner