Empyrean
华大九天

PyAether试用区
工具使用手册

北京华大九天科技股份有限公司

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总览

- 本试用区主要提供了三个PyAether使用实例：
  - 创建inverter
  - 创建菜单(menu)
  - 试用AetherWings功能---Bus Router &Res Display
- 为了更进一步便捷地指导用户操作，已将全部所需命令整理至以下指定路径：
  - 用户既可参照后续PPT中的步骤手动输入对应命令
  - 也可直接从“run_command_all”区域中复制并粘贴相关命令

```
[pyaether_player19@PyAether demo]$ cd /home/PyAether_Packages/demo
[pyaether_player19@PyAether demo]$ ls
aether.ini  display.drf  lib.defs  run_command_all  tools.bash
[pyaether_player19@PyAether demo]$
```

目录

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01

复制配置文件

复制配置文件

- 在自己home路径下，复制/home/PyAether_Packages下的demo文件

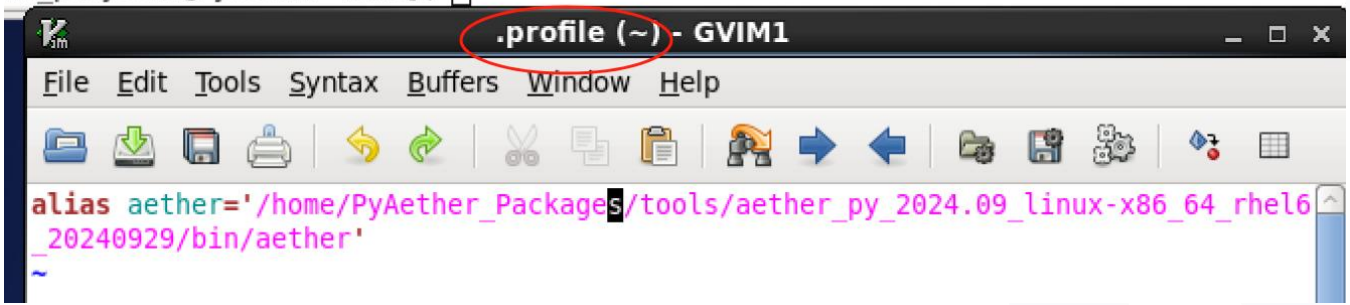
```
[pyaether_player09@PyAether ~]$ cp -r /home/PyAether_Packages/demo/ .
```

- demo文件的内容如下：

```
[pyaether_player19@PyAether ~]$ cd demo/
[pyaether_player19@PyAether demo]$ ls
aether.ini  display.drf  lib.defs  run_command_all  tools.bash
```

- 在home路径，创建.profile 文件，为aether命令设置快捷方式

```
er_player19@PyAether demo]$ touch  ~/.profile
er_player19@PyAether demo]$ gvim ~/.profile
er_player19@PyAether demo]$
```



复制配置文件

- Source 此快捷键（aether）：

```
[pyaether player09@PyAether demo]$ source ~/.profile
```

- 在demo文件夹下，Source整体环境：

```
[pyaether player09@PyAether demo]$ source tools.bash
```

02

创建 inverter layout

创建inverter layout

- 重新回到demo文件夹下，拷贝Packages folder下的一个inv的例子

```
[pyaether_player09@PyAether demo]$ cp -r /home/PyAether_Packages/tools/aether_py_2024.09_linux
-x86_64_rhel6_20240929/tools/pyaether/labs/db/layout/inverter_le_02/ .
[pyaether_player09@PyAether demo]$ ls
aether.ini  display.drf  inverter_le_02  lib.defs  tools.bash
```

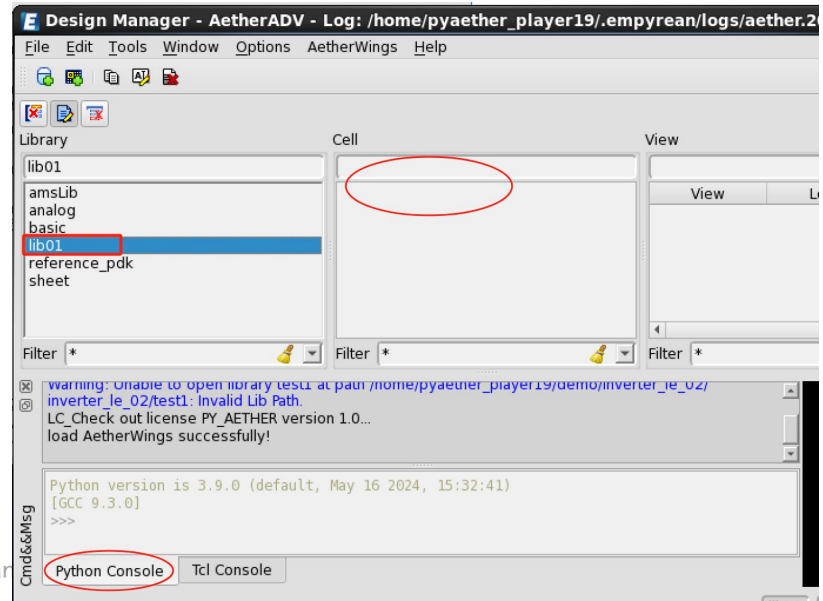
- 到inverter_le_02文件夹下，查看拷贝内容：
  - 具有lib01 folder，目前暂无layout等内容

```
[pyaether_player19@PyAether inverter_le_02]$ ls
aether.ini  dbTest.py  display.drf  inverter_le_02  inverter_le_02.py  lib.defs
[pyaether_player19@PyAether inverter_le_02]$ cd inverter_le_02
[pyaether_player19@PyAether inverter_le_02]$ ls
aether.ini  dbTest.py  display.drf  inverter_le_02.py  lib01  lib.defs
[pyaether_player19@PyAether inverter_le_02]$ cd lib01/
[pyaether_player19@PyAether lib01]$ ls
data.dm
[pyaether_player19@PyAether lib01]$
```

创建inverter layout

- 重新回到，inverter_le_02下，启动Aether

```
[pyaether_player11@PyAether lib01]$ cd ..
[pyaether_player11@PyAether inverter_le_02]$ ls
aether.ini  dbTest.py  display.drf  inverter_le_02.py  lib01  lib.defs
[pyaether_player11@PyAether inverter_le_02]$ aether -adv &
[2] 21074
[pyaether_player11@PyAether inverter_le_02]$ LC_Check out license DM version 1.0...
[2024-11-12 14:20:58.752528] [0x00007f0ef797a440] [info]    checkOut success: DM 1.0
```

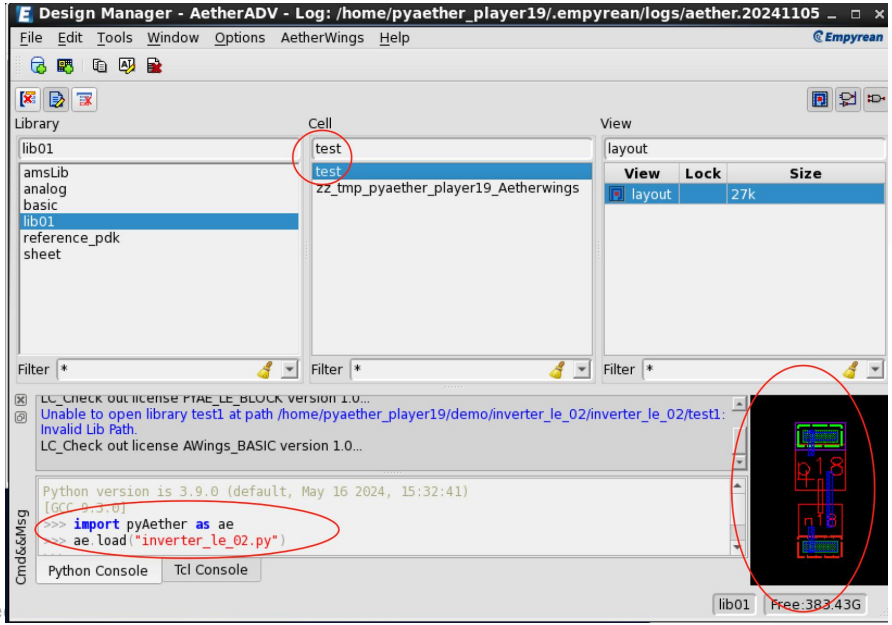


创建inverter layout

- 在”python Console“中，输入以下命令(注意不要有空格，因为Python是对空格敏感的）；即可创建一个inverter的“test”cell，layout view

  >>> import pyAether as ae

  >>> ae.load(“inverter_le_02.py”)



03

创建 Menu

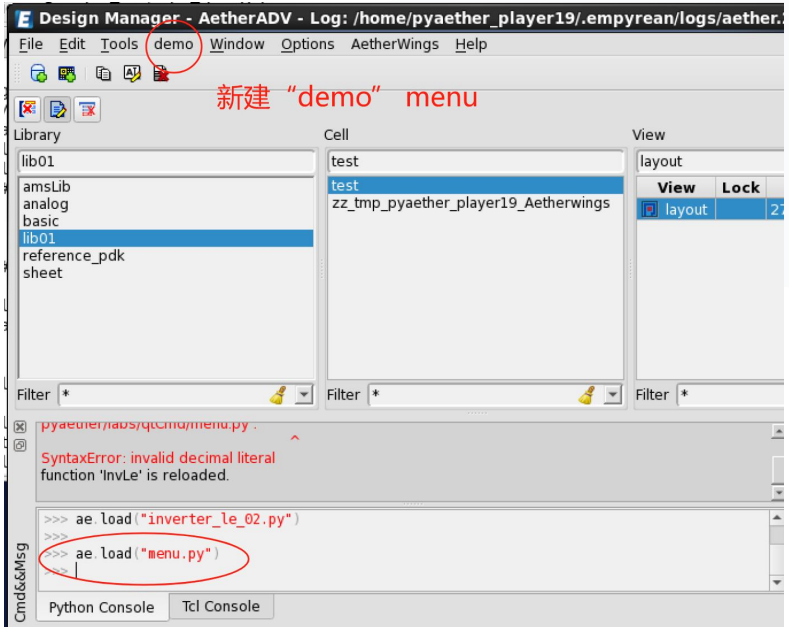
Demo-创建一个菜单

- 依然在这个inverter_le_02文件夹下，复制 menu.py到这个case下

```
[pyaether_player09@PyAether inverter_le_02]$ cp /home/PyAether_Packages/tools/ae
ther_py_2024.09_linux-x86_64_rhel6_20240929/tools/pyaether/labs/qtCmd/menu.py .
[pyaether_player09@PyAether inverter_le_02]$ ls
aether.ini  dbTest.py  display.drf  inverter_le_02.py  lib01  lib.defs  menu.py
```

- 在”Python Console“中，输入以下命令，可以在DM创建“demo”菜单

```
>>> import pyAether as ae
>>> ae.load(“menu.py”)
```



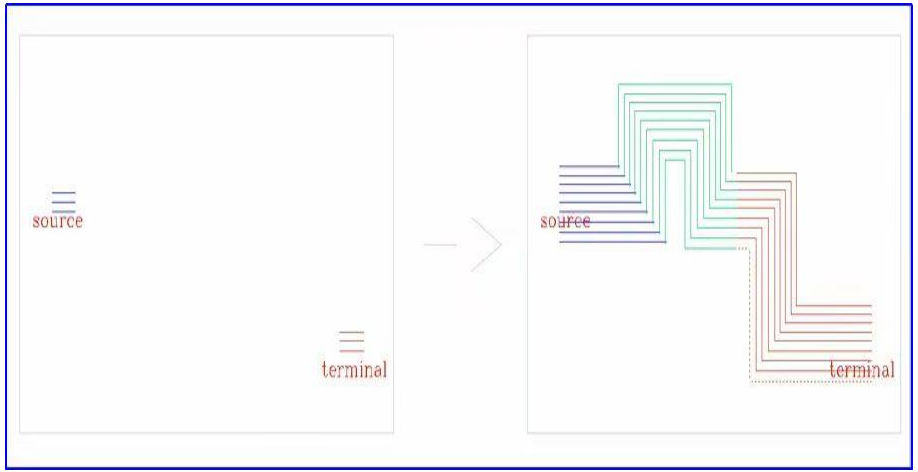
说明：在“DM”，“SE”，”LE”等界面下，均可按照此方式进行菜单创建

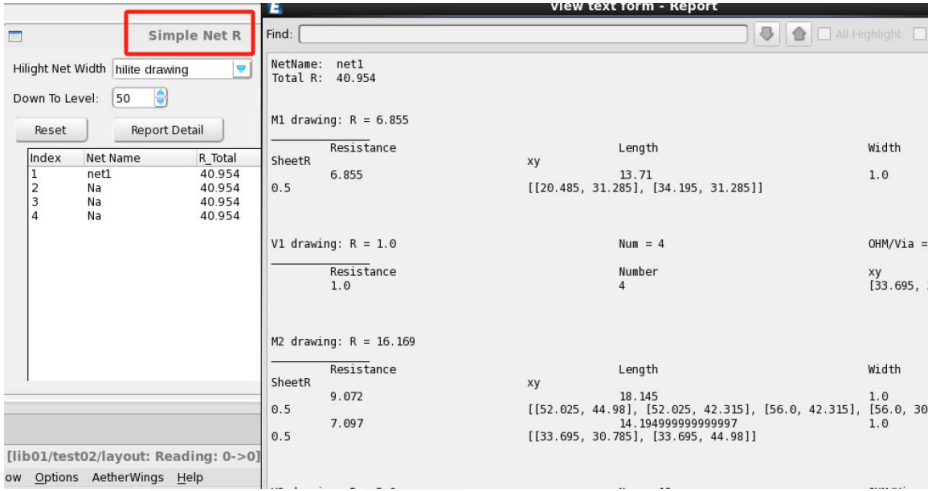
04

LE、SE下的AetherWings

AetherWings的应用例子 整体效果

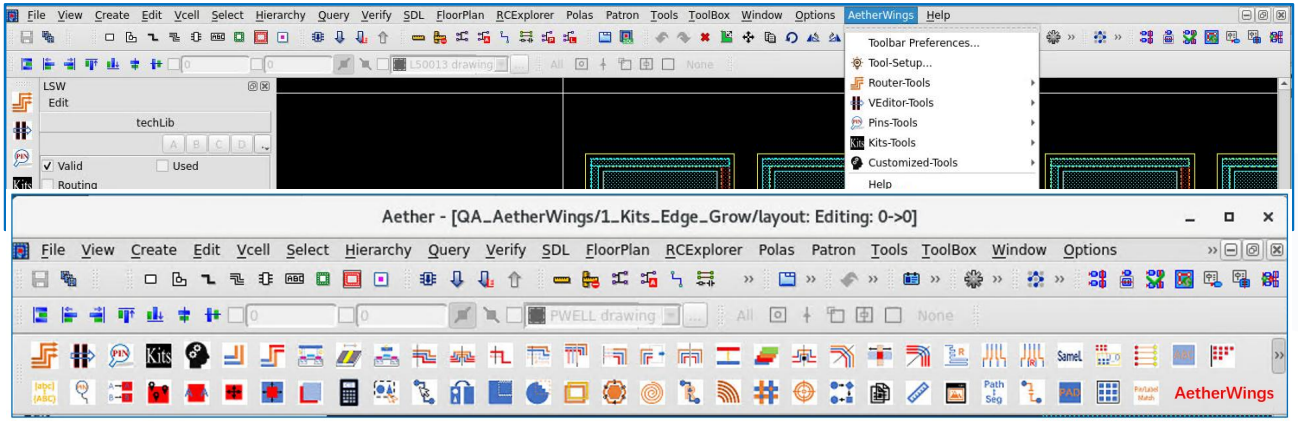
- BUS版图绘制 （包括 BUS扩展）； 显示电阻值



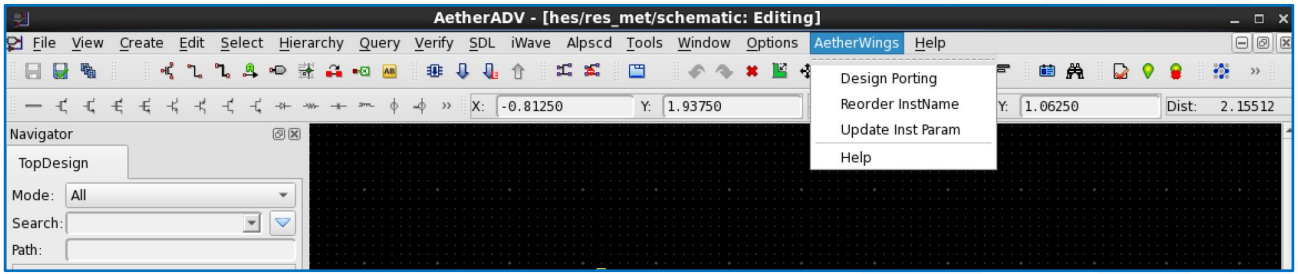


LE、SE下的AetherWings

- LE下的AetherWings

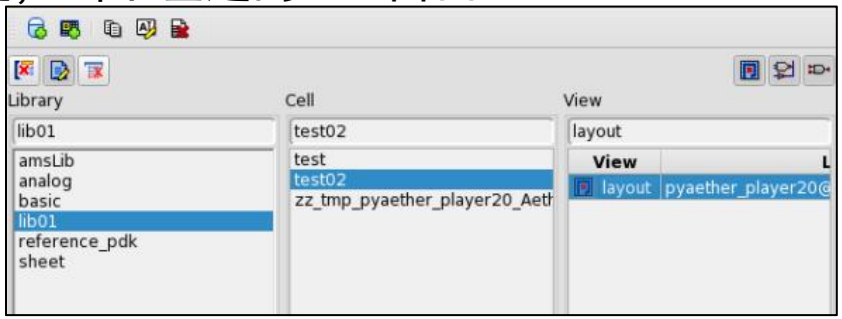


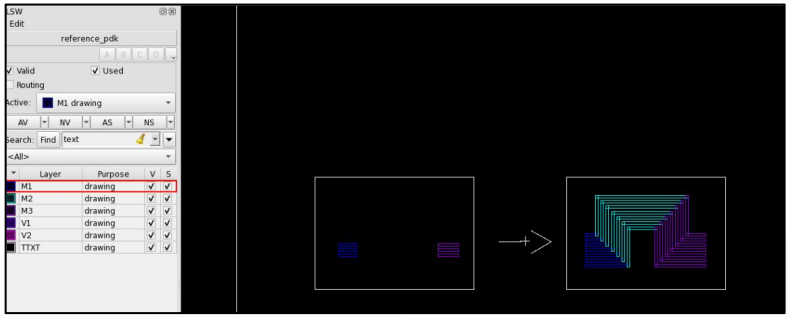
- SE下的AetherWings



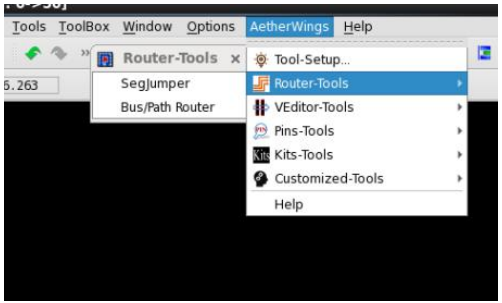
SegJumper功能 Demo演示

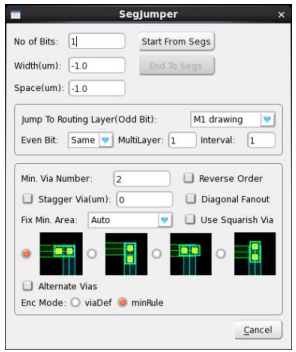
1. 打开lib01/test02/layout cellView, 可以看到如右图的Demo case画面。点击“F4”快捷键，出来左边的LSW窗口。





2. 点击菜单栏上的AetherWings菜单，在下拉菜单中选择Router-Tools，选择SegJumper并左键单击一次，出现SegJumper界面。

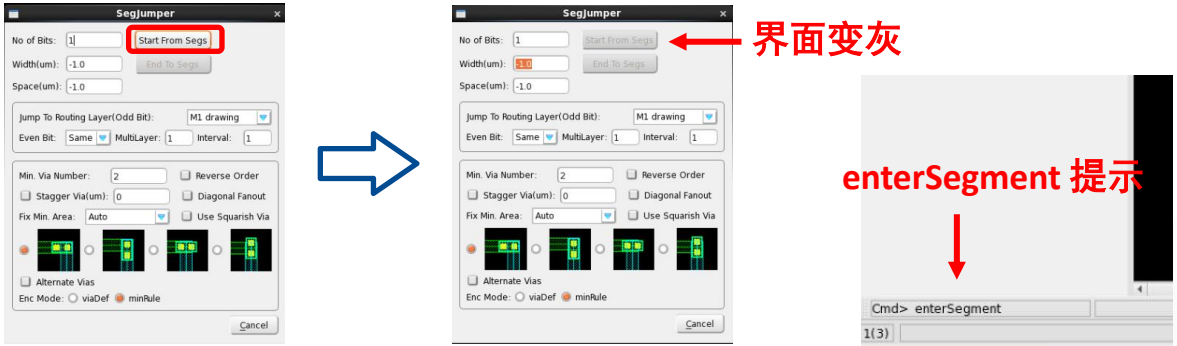




SegJumper 界面

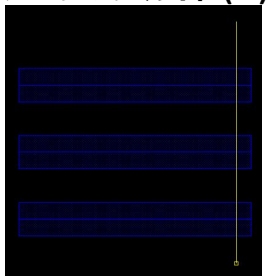
SegJumper功能 Demo演示

3. 将光标放在SegJumper界面，单击’Start From Segs’ 按钮。单击完毕后，该按钮会变成灰色，且layout界面左下角出现 enterSegment 提示。

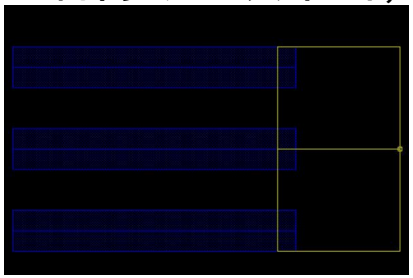


4. 将光标移动到layout中，在左侧Demo例子的M1 bus上方单击一次，然后向下拉，做划线动作(a)，贯穿Bus之后再做一次单击，此时会出现画Path的方框提示(b)。

(a)



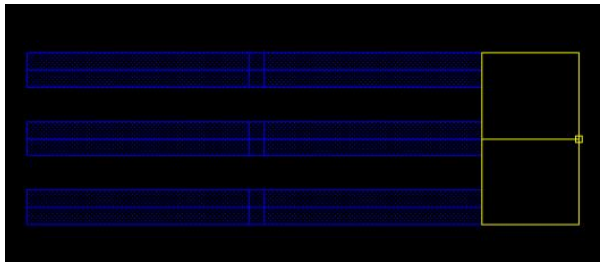
(b)



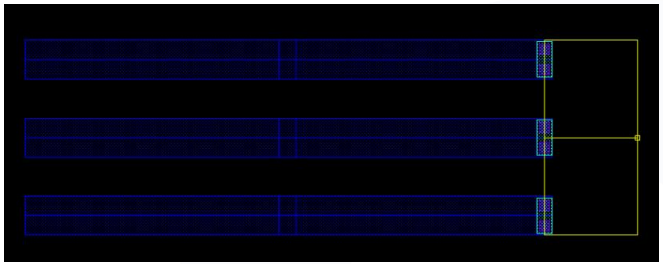
SegJumper功能 Demo演示

5. 向右拉动Bus方框，并在右方选择一个点左键点击，此时Bus被延伸出一段距离(c)；
继续向右延长一小段距离后，按下键盘的数字键 “2”，此时会生成 V1的通孔(d)；
将光标划线方向向上，并在上方一段位置处鼠标点击一次，出现M2的Bus连线(e)；
继续向右画线(f)(g)。

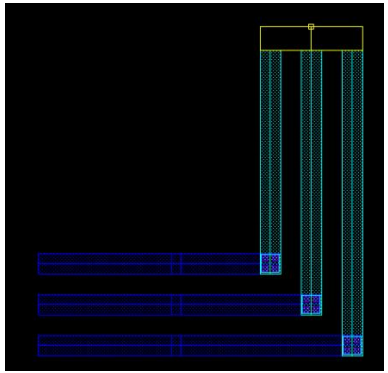
(c)



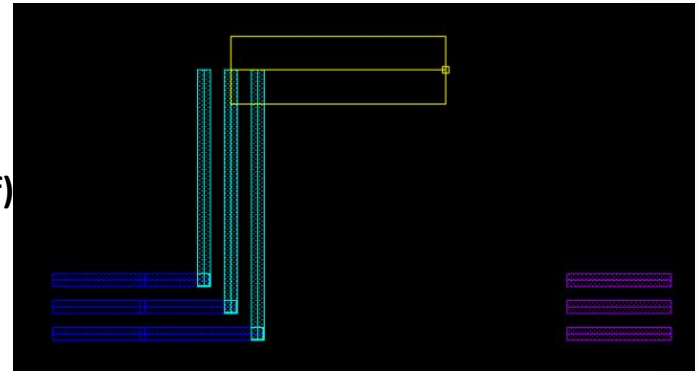
d)



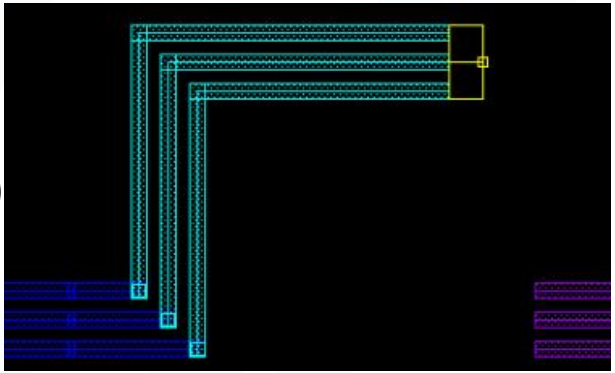
(e)



(f)



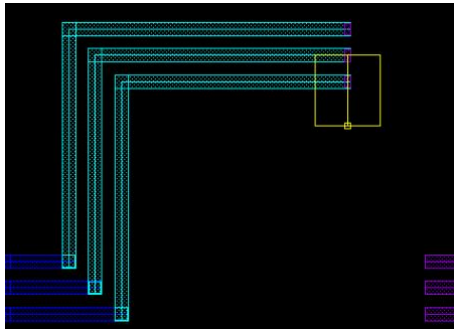
(g)



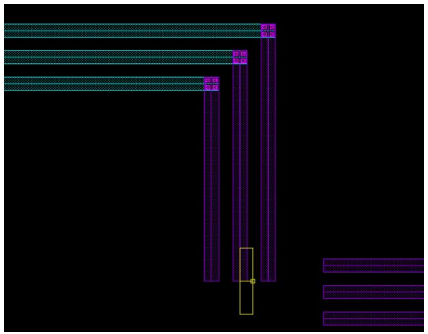
SegJumper功能 Demo演示

6. 按下键盘上数字键”3”，此时出现V2通孔(h)，然后将光标向下移动，在下方合适位置处左键单击一次，此时M3 Bus会向下延长(i)；此时，将光标在放到SegJumper界面空白处单击一次，将焦点聚焦到SegJumper里面，点击End To Segs 按钮(k)，此时Bus提示框消失，layout界面左下角出现enterSegment提示(l)。

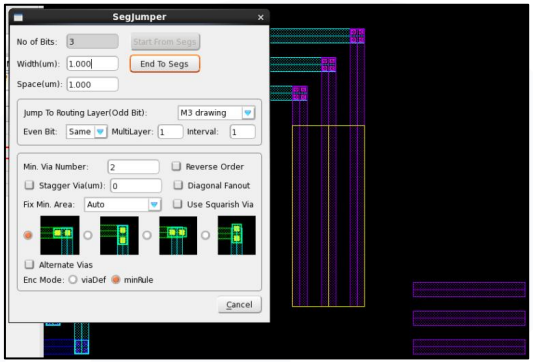
(h)



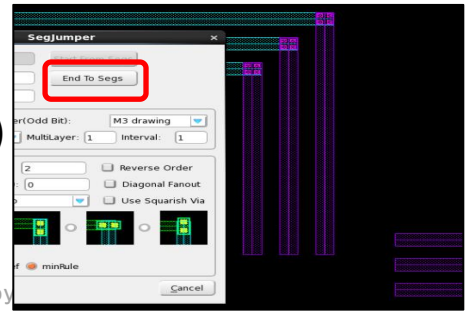
(i)



(j)



(k)

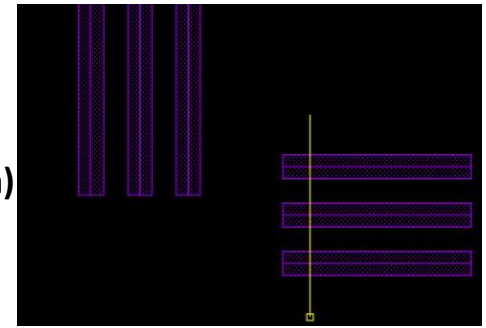


(l)

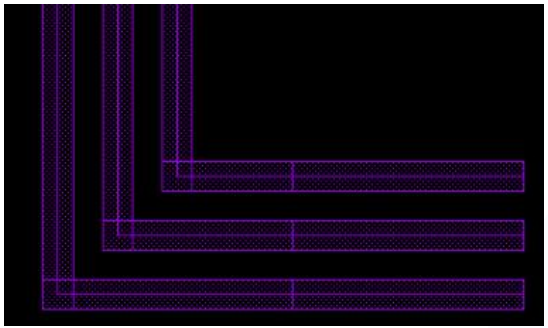
SegJumper功能 Demo演示

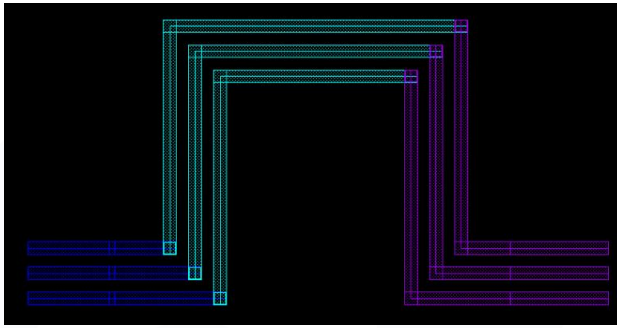
7. 将光标移动到layout界面，在M3上方处左键单击一次，确定第一个点，然后向下画线贯穿整个Bus，然后再作一次单击(m)；此时两端的Bus线会自动连接在一起(n)。按下键盘上的ESC按钮，退出SegJumper功能。

(m)



(n)



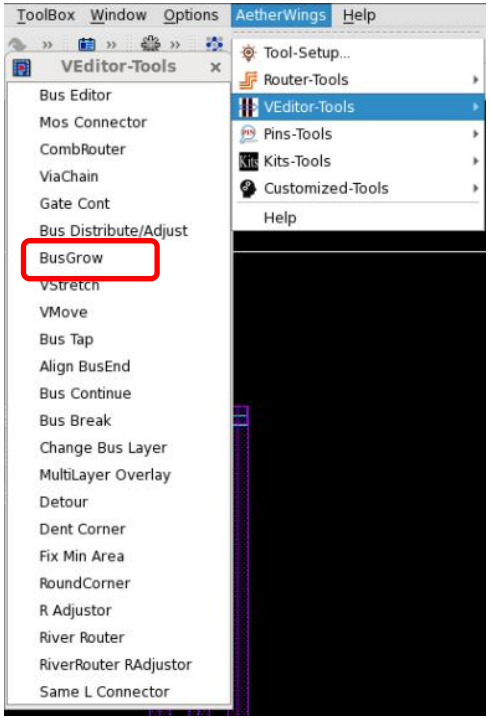


SegJumper演示最终结果

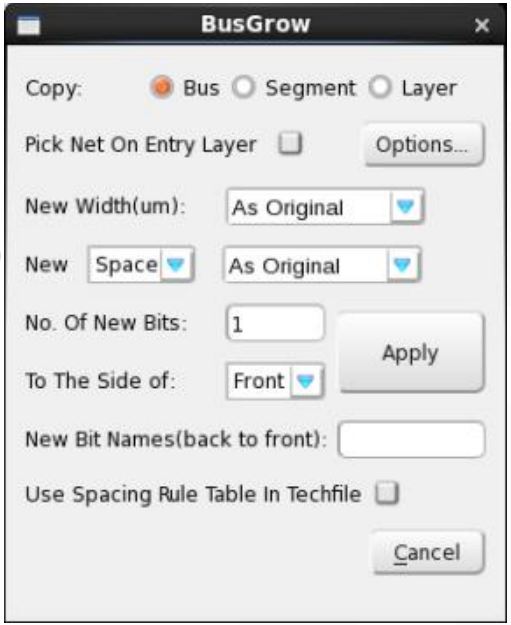
BusGrow功能 Demo演示

1. 点击layout 菜单栏上的AetherWings菜单，选择VEditor-Tools，在弹出的子菜单中选择BusGrow(a)，左键单击，弹出BusGrow窗口(b)。

(a)



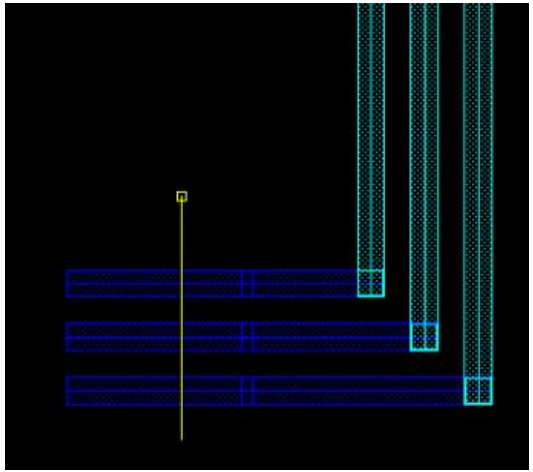
(b)



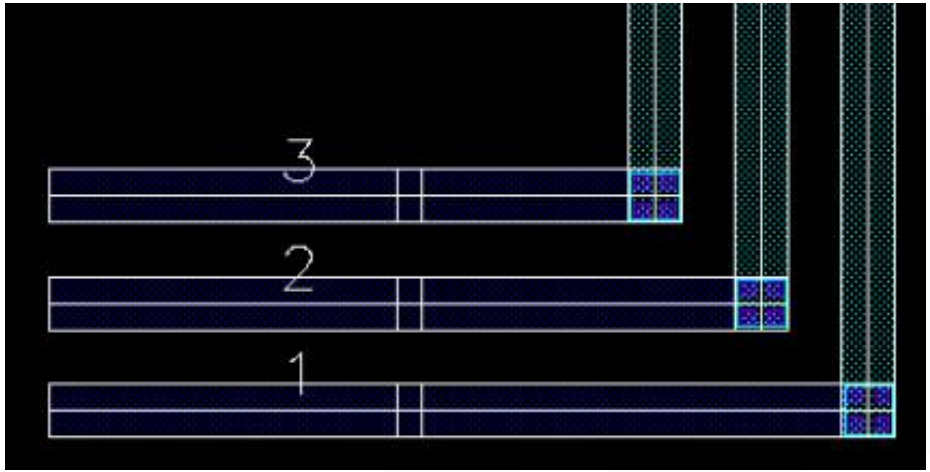
BusGrow功能 Demo演示

2. 将鼠标光标移动到layout中，在Bus底部开始划线，并且贯穿三条Bus(c)，此时被选中的Bus会出现数字标志(d)，且Bus处于被选中状态。

(c)



(d)

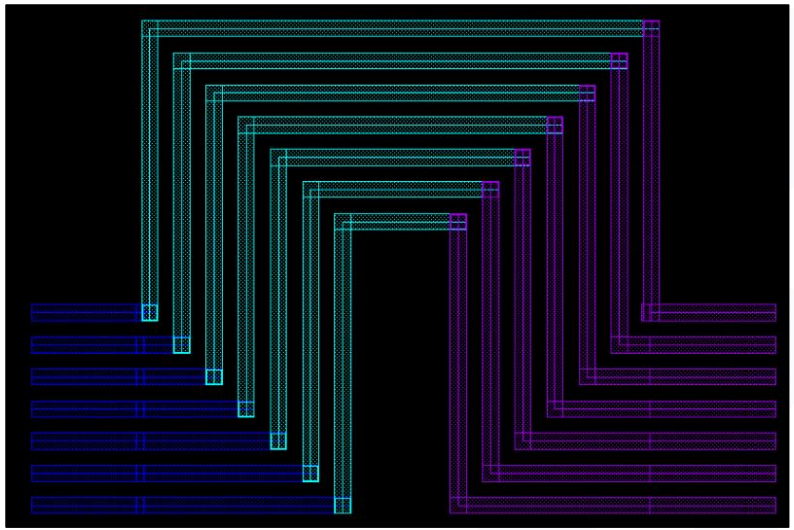


BusGrow功能 Demo演示

3. 将光标移动到BusGrow界面，并且在界面中的”No. Of New Bits: “输入框中输入 2, “To The Side of:” 下列框中选择 “Both”，点击Apply 按钮(e)；此时Bus从3根变成7根(f)，点击Cancel 退出BusGrow界面。

(e)

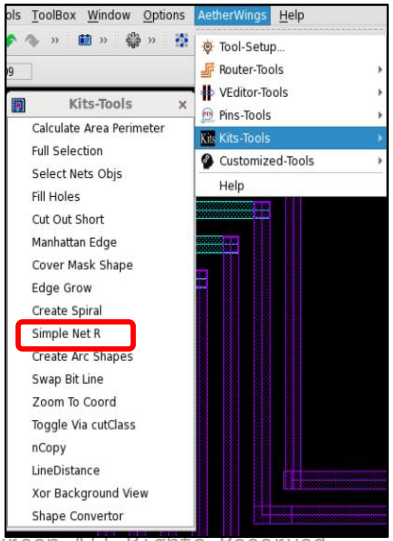
(f)



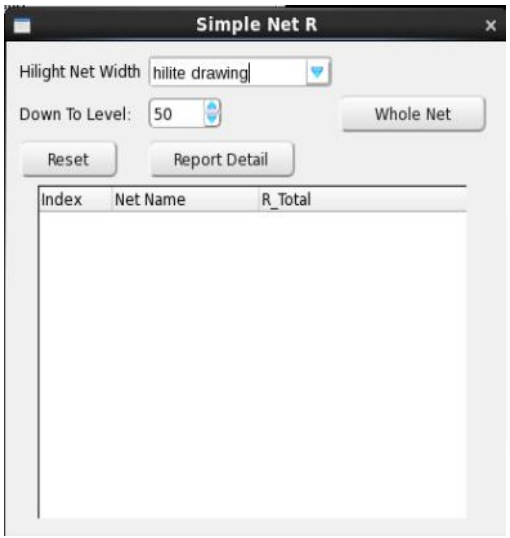
Simple Net R功能 Demo演示

1. 在layout界面菜单栏上单击AetherWings菜单，选择Kits-Tools，然后选择Simple Net R并单击(a)；此时会弹出Simple Net R的界面(b)，单击Simple Net R界面的Whole Net按钮，然后点击layout界面中的Bus，此时被点击的Bus会高亮，并且Simple Net R界面的表单中会显示对应的net和R信息(c)；点击界面中的Report Detail可以查看详细信息。如果想查看另外的Bus的信息，需要重新单击Whole Net，然后点击对应的Net即可；

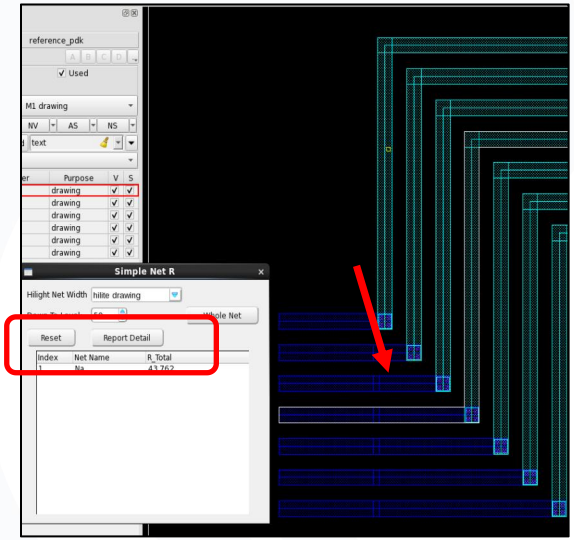
(a)



(b)



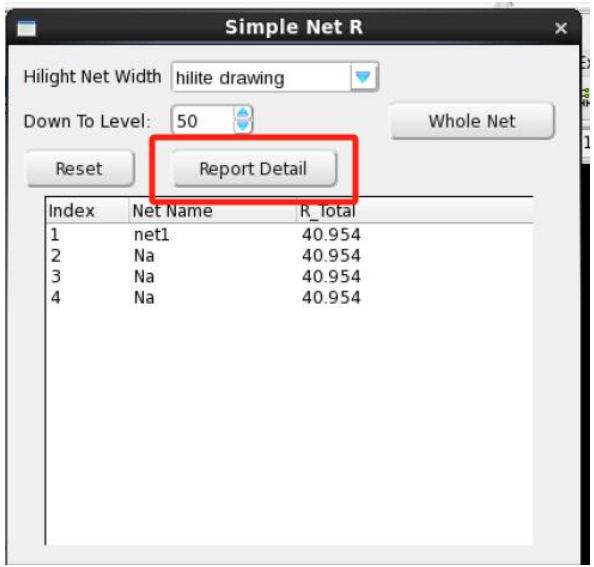
(c)



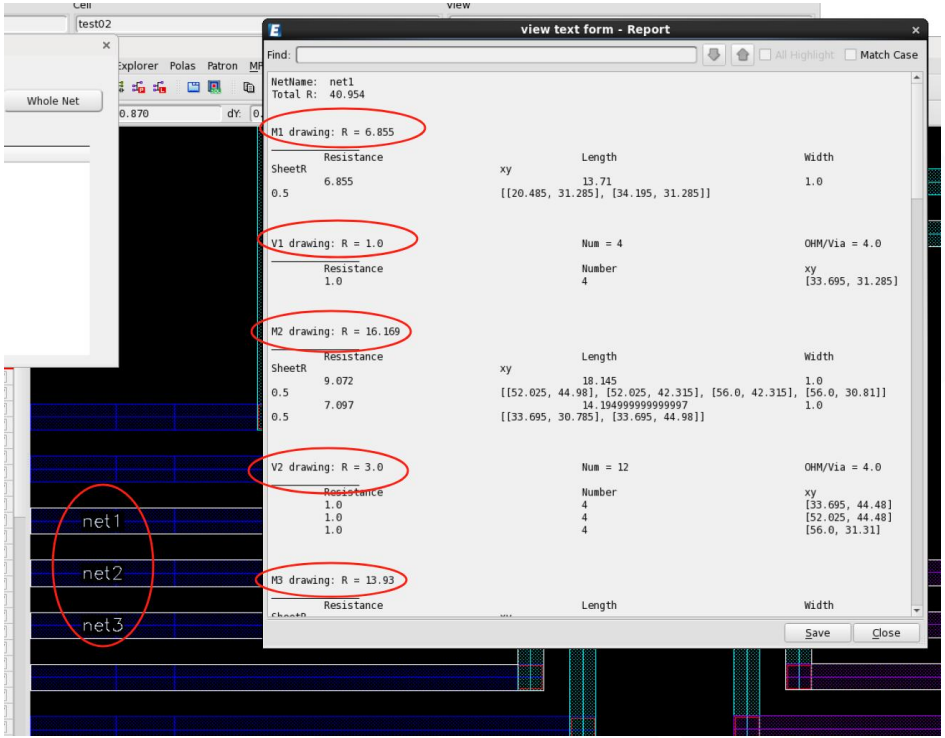
Simple Net R功能 Demo演示

2. 可以通过“Report Detail” 来展示电阻值

(a)



(b)



Empyrean
华大九天

Thank You

致力于成为全流程、全领域、全球领先的EDA提供商