

*Voom Mower™*

# Milkyway and OpenAccess User Update

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# The Application: Mower™

- Links Milkyway C-API and OpenAccess
- Eliminates LEF, DEF, Verilog and GDSII to make OA tools a drop-in solution for Milkyway flows
- Three components:
  - Astro tech file reader for OA with full 90nm rules
  - Milkyway→OpenAccess design data translator
  - OpenAccess→Milkyway design data translator



# OpenAccess Update

- OA 2.2 is the current version
  - 2.2.3 released to OA Coalition members
  - 2.2.0 released to the public in July 2005
- OA 2.0 and 2.2 are almost entirely incompatible
  - Mower required a complete rewrite
  - But 2.2 is superior
    - Rationalized
    - Smaller application code
    - Performance much better
- Avoid OA 2.0 and 2.1



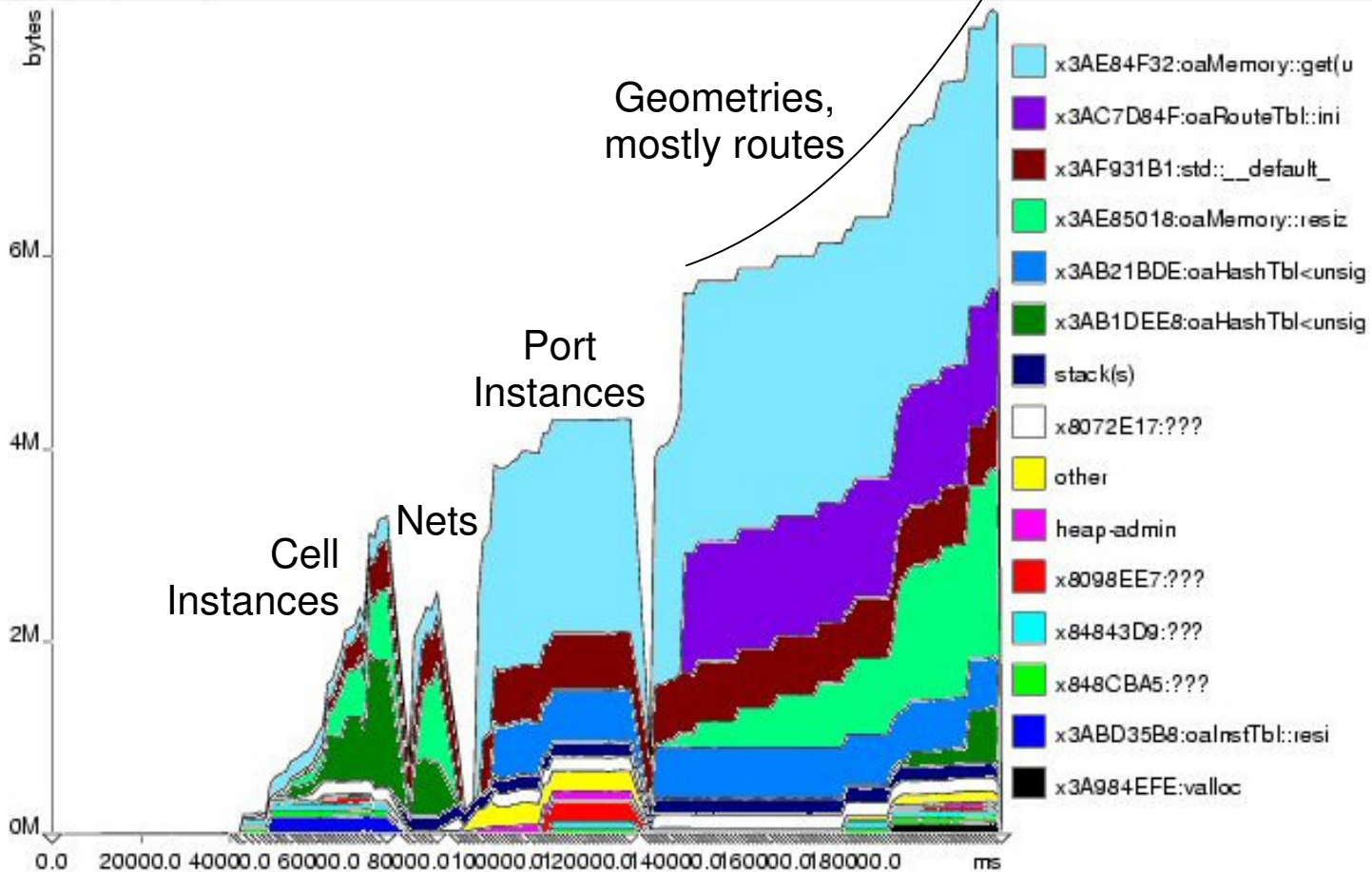
# What's Different in OA 2.2

- Library management
  - See *oaLibDefList* usage in the *HelloWorld* example
  - Open and close libraries using the *LibMgr* class
- Design rules, route constraint groups
- EMH, the Embedded Module Hierarchy
- Nice wrapper scripts adaptable to your executable
- Memory efficiency

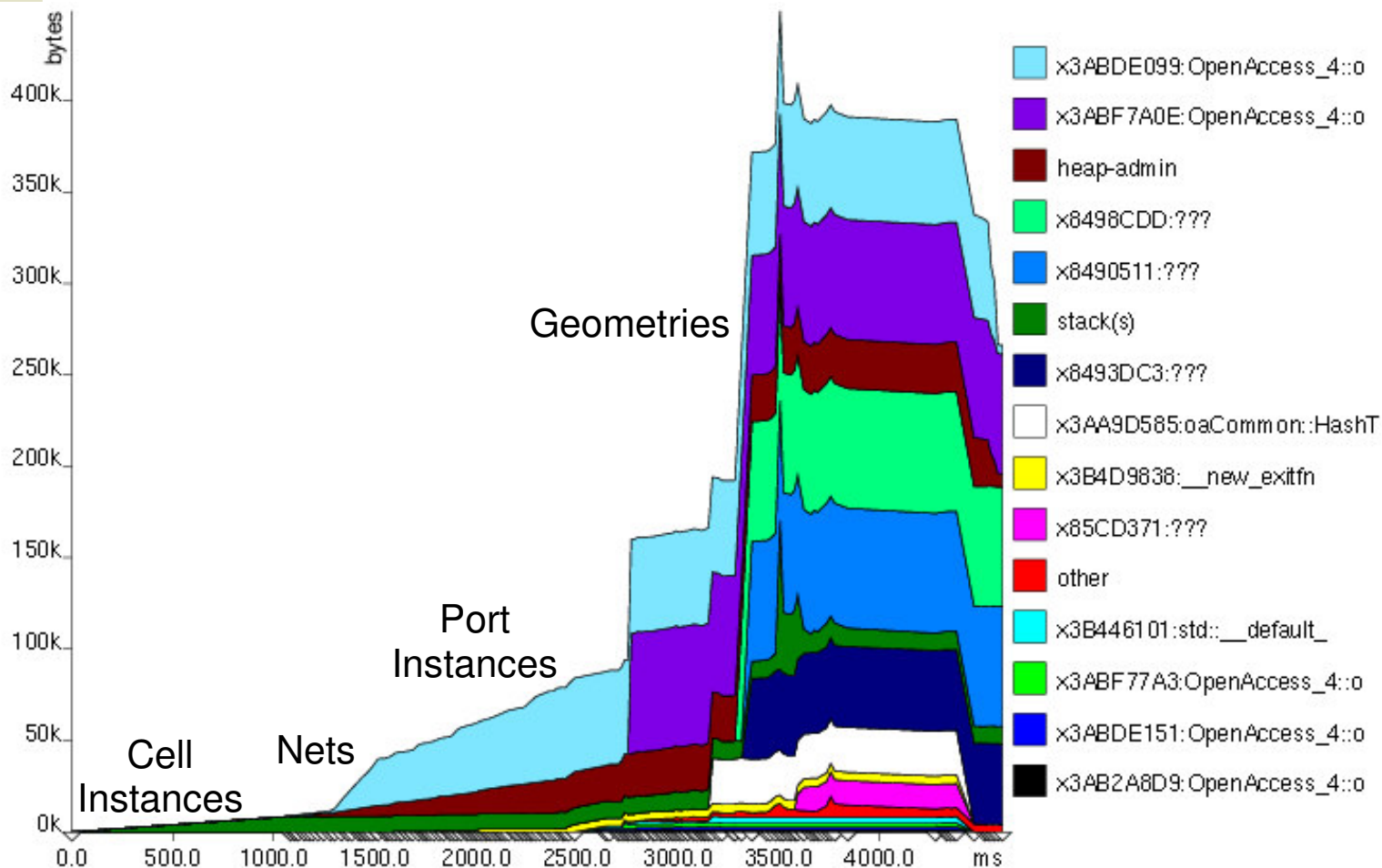


# OA 2.0 Used Heaps of Memory

726,875,742,572 bytes x ms



# 1/20<sup>th</sup> the Memory, 1/60<sup>th</sup> the Run Time with OA 2.2



# Milkyway C-API Update

- MDA\_2004.06-e1 is the best current release
- MDA\_2005.09 is scheduled for release soon
  - See Laurence Brevard's presentation for details
- C-API works well, and is very stable, so new versions link with no surprises



# Milkyway TCL Update

- Works fine
- I mainly used SDC functions
- Presently most AEs and users still use Scheme



# Map-In Members Need

- *So we can create power/ground/clock routing in the C-API,*
  - `MWXDb_Create_Horizontal_Wire_WithRouteType()`
  - `MWXDb_Create_Vertical_Wire_WithRouteType()`
  - `MWXDb_Set_Contact_routeType()`
  - `MWXDb_Set_ContactArray_routeType()`
  - `MWXDb_Set_HorizontalWire_routeType()`
  - `MWXDb_Set_VerticalWire_routeType()`
- *So we can read and write variable route rules,*
  - `dbDefineVarRouteRule`
  - `dbDeleteAllVarRouteRules`
  - `dbDumpAllVarRouteRules`
  - *and the corresponding C-API functions*



# Map-In Members Need

(continued)

- So we can create floorplans and base arrays,
  - *Floorplan Dump*, *Route Dump* commands and the Scheme functions they output
  - Corresponding C-API functions
- Solution comparable to OA Embedded Module Hierarchy
  - The 2005.09 *MWXDb\_Get\_Hier\** functions may help
  - Astro CG also contains some of the functionality



# Revitalize the Milkyway Forum

- The last two posts were June 10 and August 25
- The forum needs,
  - Editing and restructuring
  - A way to enter bugs and enhancement requests
  - Posts that appear immediately
  - YOUR participation

<http://synopsys.infopop.net>



# Library and File Skew

- One of the chief interoperability difficulties
- Difficult to know when you have a problem

Endeavour to keep technology, library and design data in a single unified database.



# File Skew Example

- Compared LEF and Astro tech files in several design kits using Mower
- Found major differences in all of them:
  - Missing rules
  - Different rule values
  - Missing layer



# Get Voom

- Mower™ Milkyway-OA translator software
- Milkyway and OpenAccess jump start
- Custom application development
- Physical design consulting

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