swviz: Software Visualizer
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https://github.com/hdwiv/swviz

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What is swviz?
Generate and query full program call graph

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Purpose of swviz?

• Triaging bugs
  – Figure out quickly all the locations a function is getting called from
  – Get list of all possible paths between two functions
  – Anything more that can be gleaned by querying the callgraph

• Helps to quickly understand the overall structure of any code

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How does it really work?

• Use clang callgraph generation option to generate call graph of each individual translation unit

• Construct a full program call graph by modifying the linker to generate combined call graph.

• Since the linker combines the object files anyway, it is ideal to invoke our graph stitching from the linker

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How does it really work?

– Eg: `clang file1.c file2.c -o prog`
How does it really work?

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How does it really work?

- Use Python Networkx library to load and analyze full program call graph
- Use a web front-end to query the program call graph

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Questions?

• Let the tools do the “grep”ing and let the devs do the analysis
• Piggyback on the linker since it already combines disparate units to produce your program, no need to reinvent major logic to stitch individual graphs
• Follow swviz at: https://github.com/hdwiv/swviz
• Send any questions:
• hdwivedi@codeaurora.org
• Profit!!