AutoCAD – pushing it to the limits

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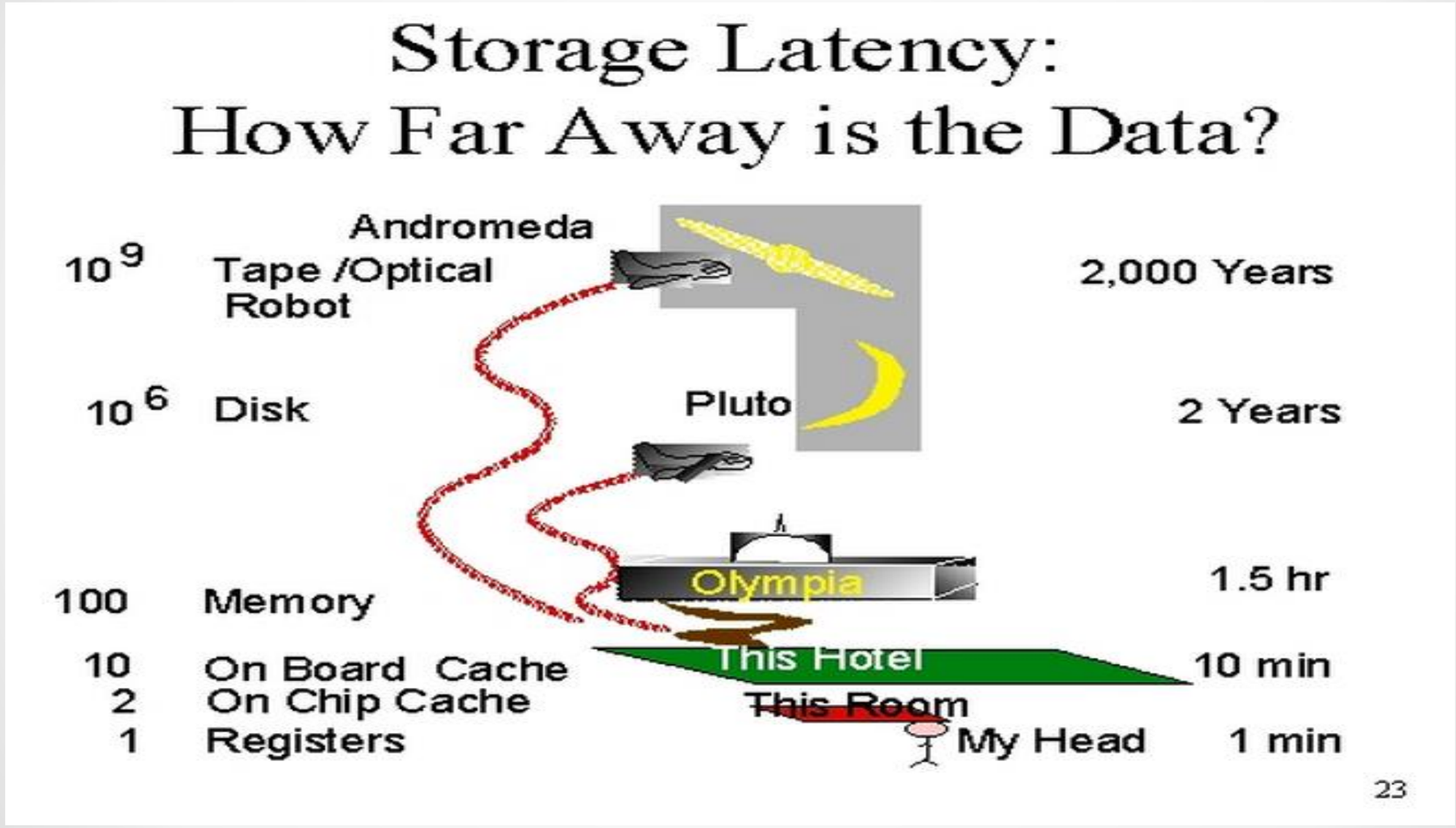
Class summary

Are you using large data sets? Are your commands taking too long to run? Are you pushing AutoCAD or your hardware to its limits? This session will give you valuable insights into the ways AutoCAD is taking advantage of the latest advances in processor technology. It will be led by members of the AutoCAD desktop team and will explore how to take advantage both of AutoCAD features as well as Xeon based workstations and servers with Iris Pro graphics.

Agenda

- Hardware dependent operations
- AutoCAD 2015 highlights
  - Point clouds
- Tuning for performance
- Multi-process architecture

Why the fuss around hardware?



Storage: Alternate Futures, Jim Gray
http://loci.cs.utk.edu/dsi/netstore99/docs/presentations/keynote/index.htm

Hardware dependent operations in AutoCAD

- Graphics
  - Visual effects
  - Non-wireframe visual styles
  - Lighting and textured materials
- Large drawings
  - 700k+ objects
  - Solids
- Heavy objects
  - File attachments
  - Point clouds
  - Geo location

AutoCAD 2015

AutoCAD 2015

- Enable customers to bring in real world data
- Improve efficiency while working with large data sets

AutoCAD 2015

- 2D
  - Selection highlight
  - Rollover
  - Line tessellation
  - Density fading
  - Better previews
- 3D
  - 3DORBIT improvements
  - Point clouds
  - Geo location

Point clouds

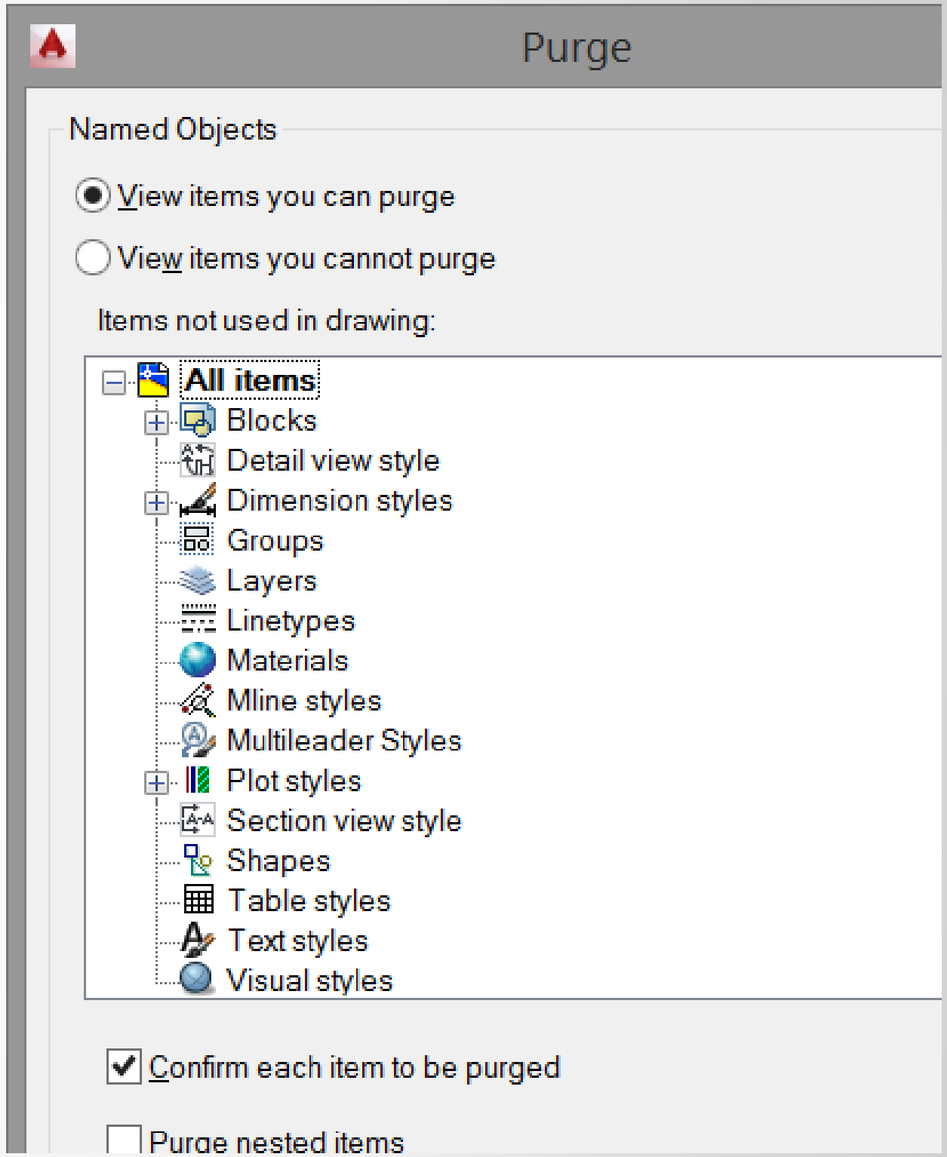
- Improved visualization and performance
- Increased maximum points per cloud

Tuning for performance

Tuning for performance

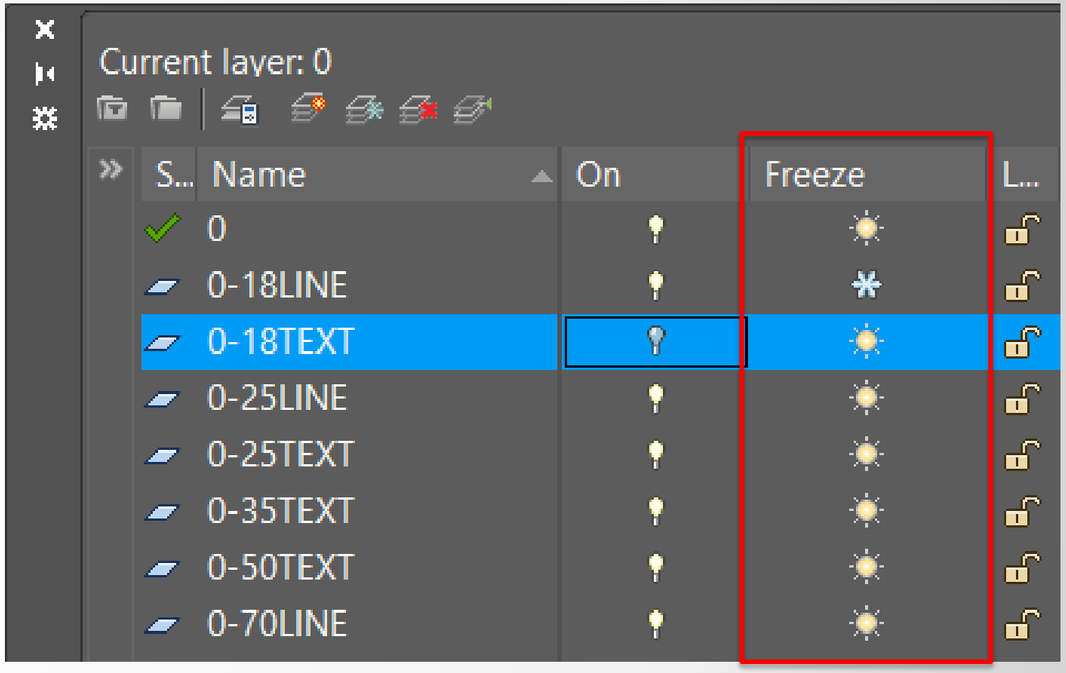
Remove unnecessary data

- OVERKILL
- PURGE
- PURGE external application data



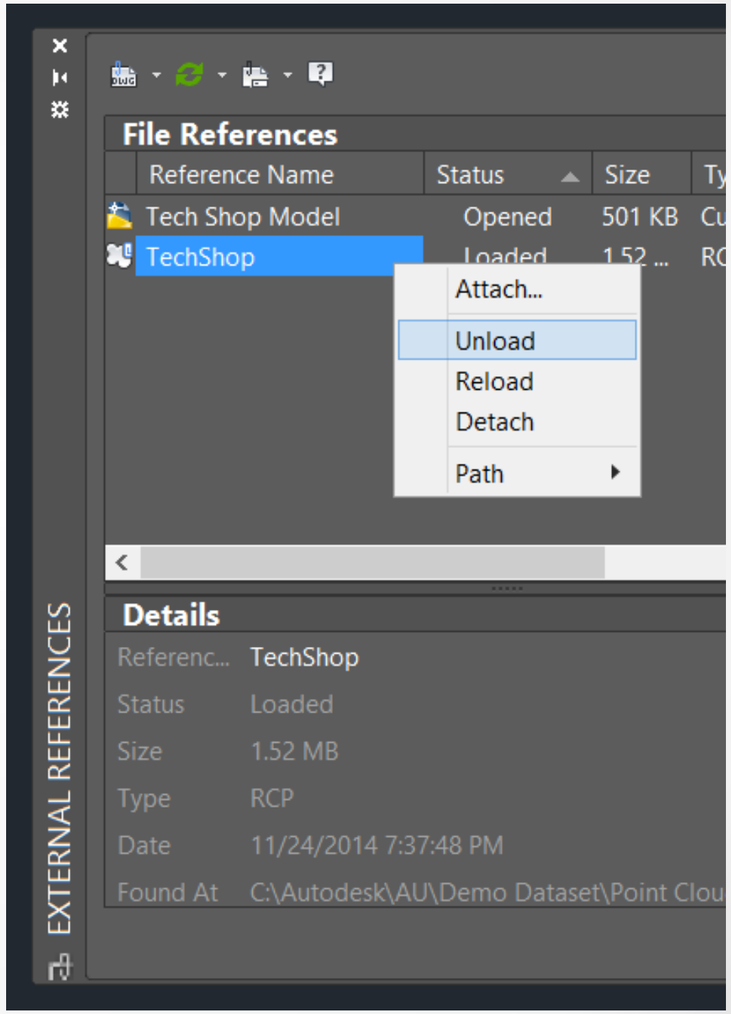
Tuning for performance

Freeze/Thaw layers vs On/Off



Tuning for performance

Unload external references

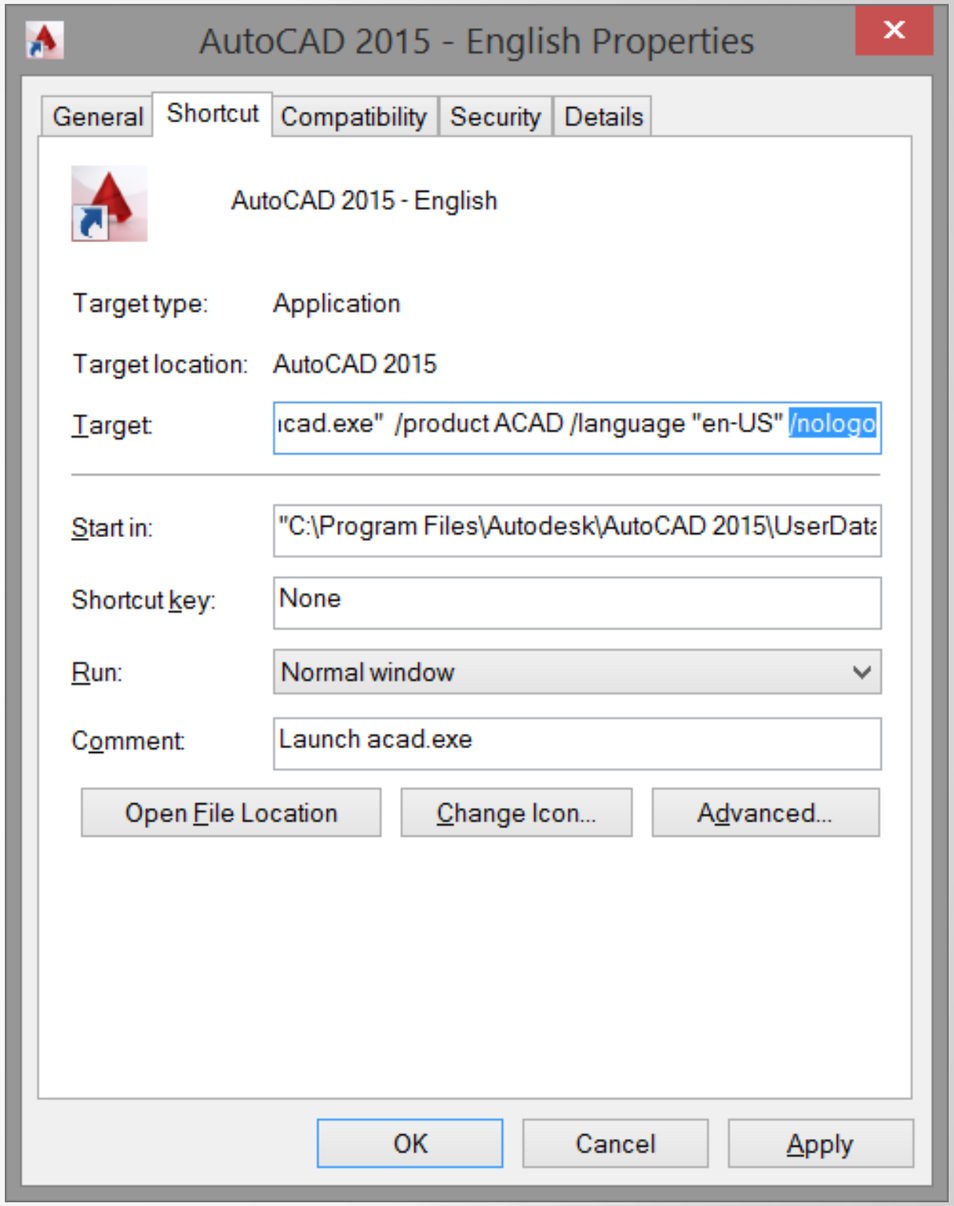


Tuning for performance

- Turn off fancy effects
  - Rollover highlight
  - Selection
- Disable features
  - Rollover tips
  - Ribbon
  - ViewCube
  - Command line AutoComplete
  - Object Snaps

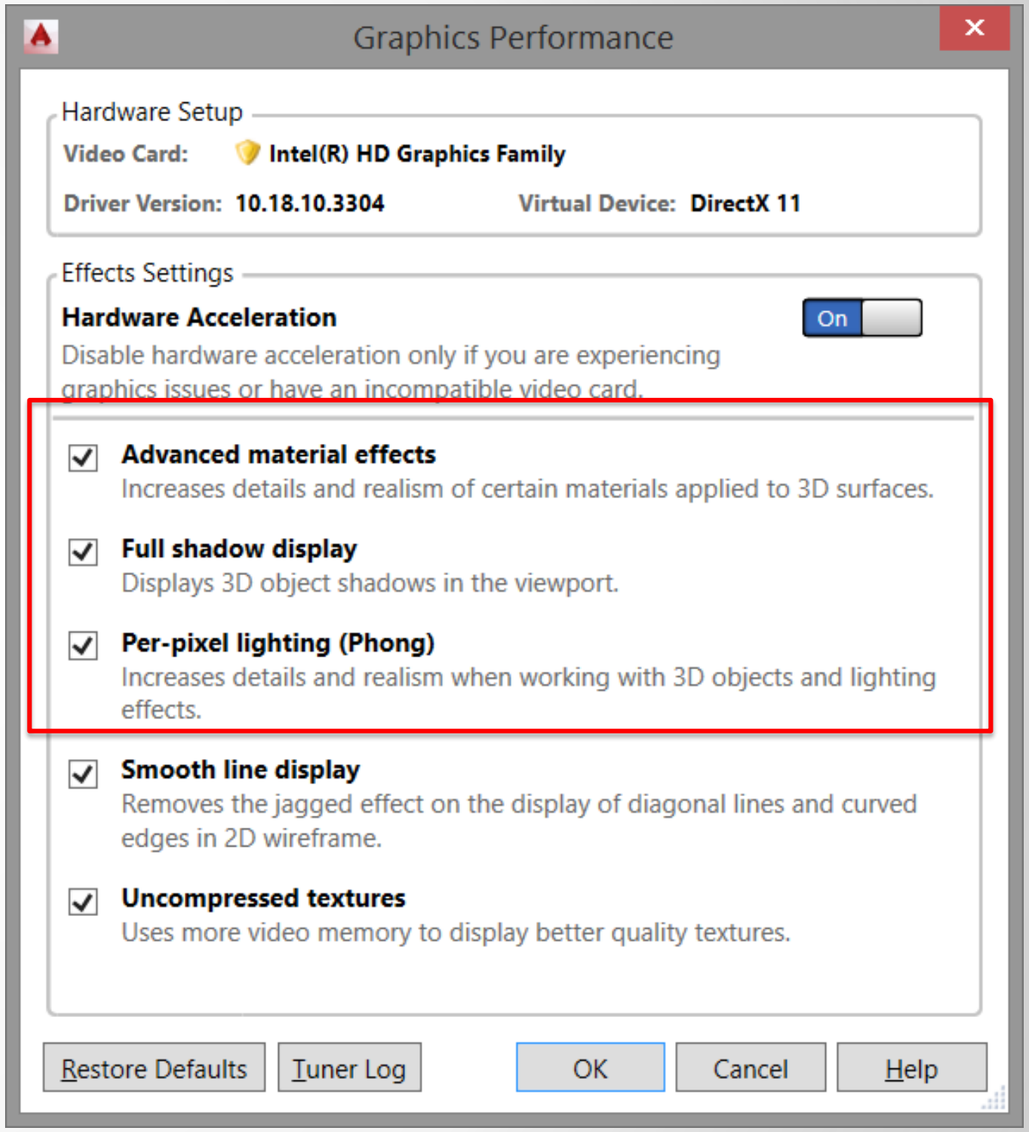
Tuning for performance

Start AutoCAD with /nologo switch



Tuning for performance

- Visual Style
  - Use 2D or 3D wireframe
- Use Graphics Performance dialog



Multi-process architecture

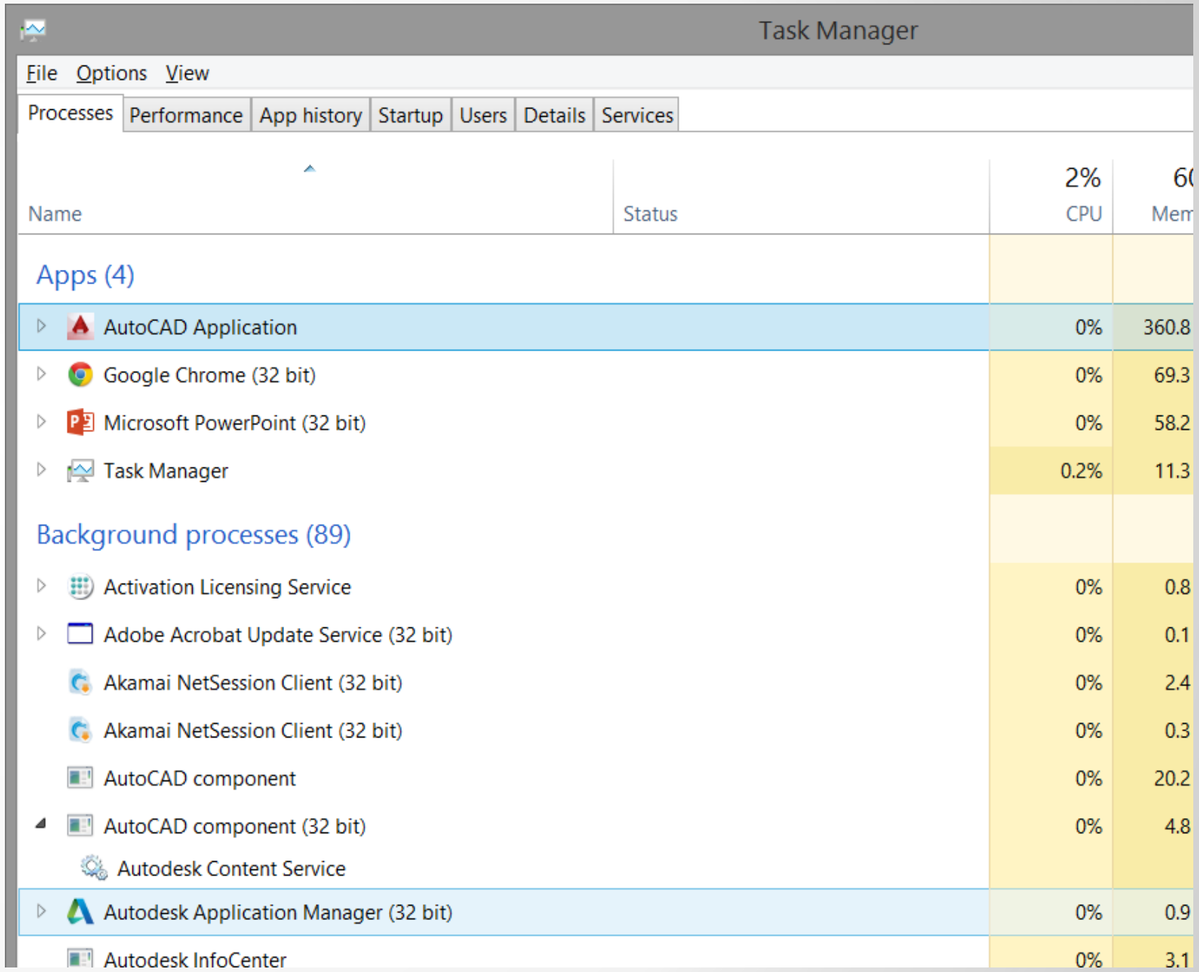
Multi-process architecture

Split out work into separate processes to enable

- Responsive UI in primary application
- Isolate crashes or errors
- Leverage technology from other products

Multi-process architecture

Many services are already running separately

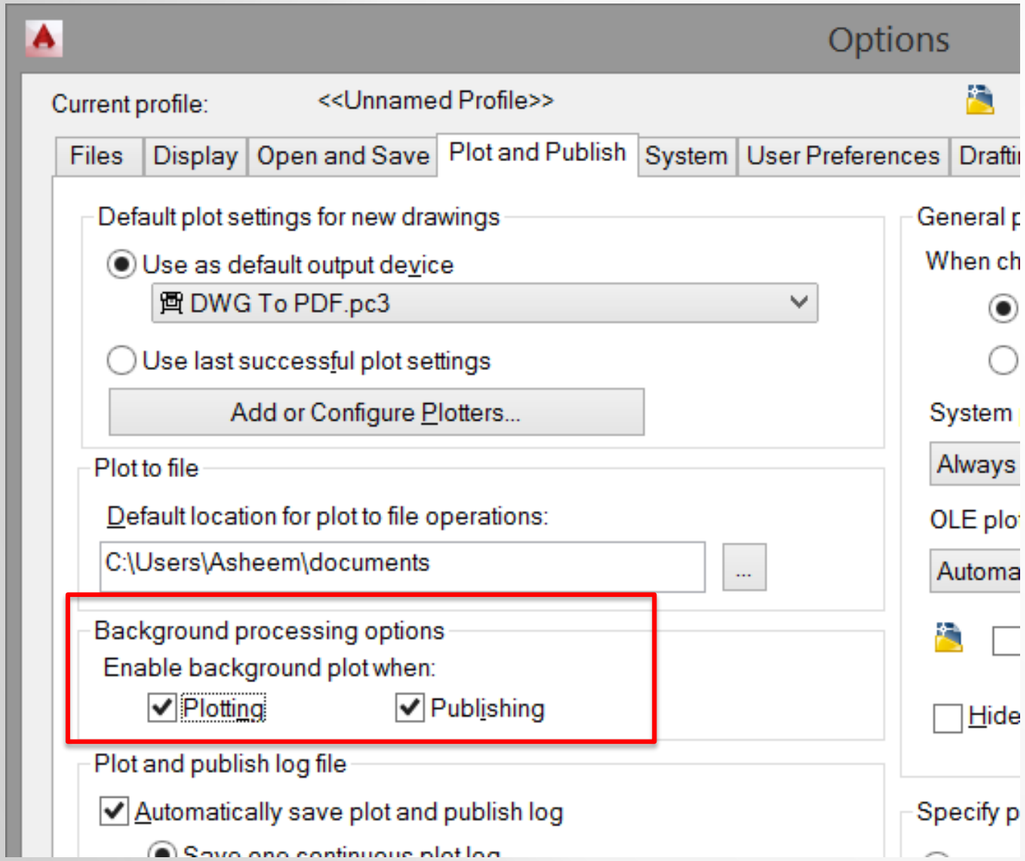


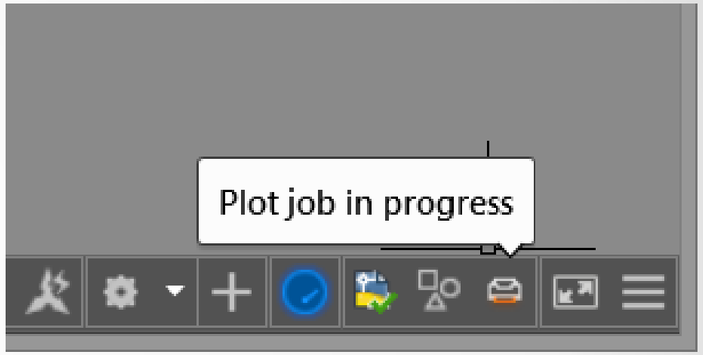
Multi-process architecture

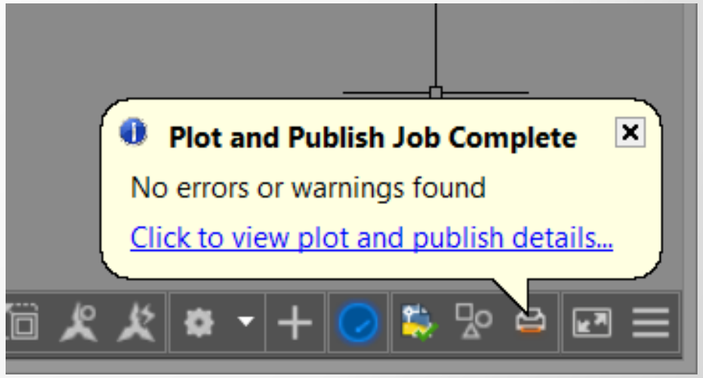
- Operations
  - Plot
  - Publish
- Model Documentation
  - Uses Inventor server in the background
- Fusion 360 Drawings
  - Documentation provided by AutoCAD in the background

Multi-process architecture

Plot and Publish



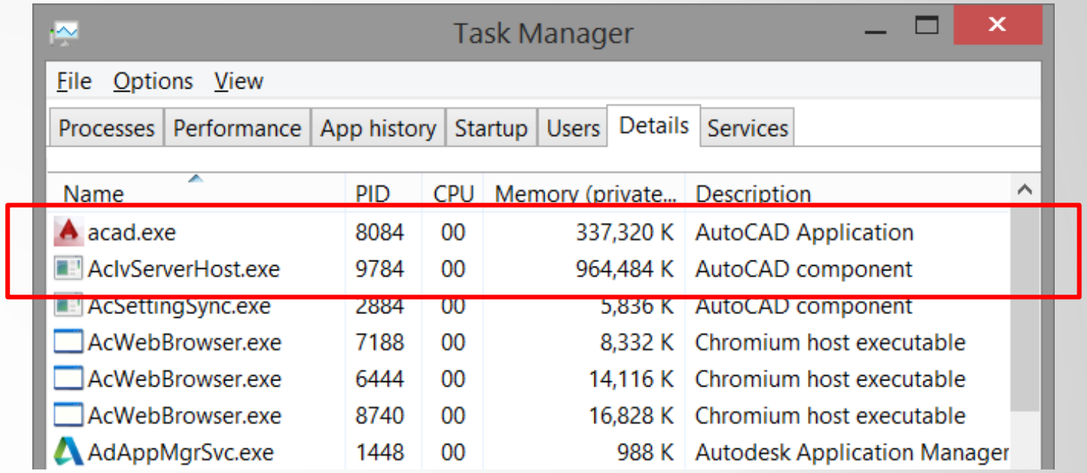




Multi-process architecture

Model Documentation

- Allows loading large Inventor models
- AutoCAD only loads the 2D representation
- Provides stability through process isolation

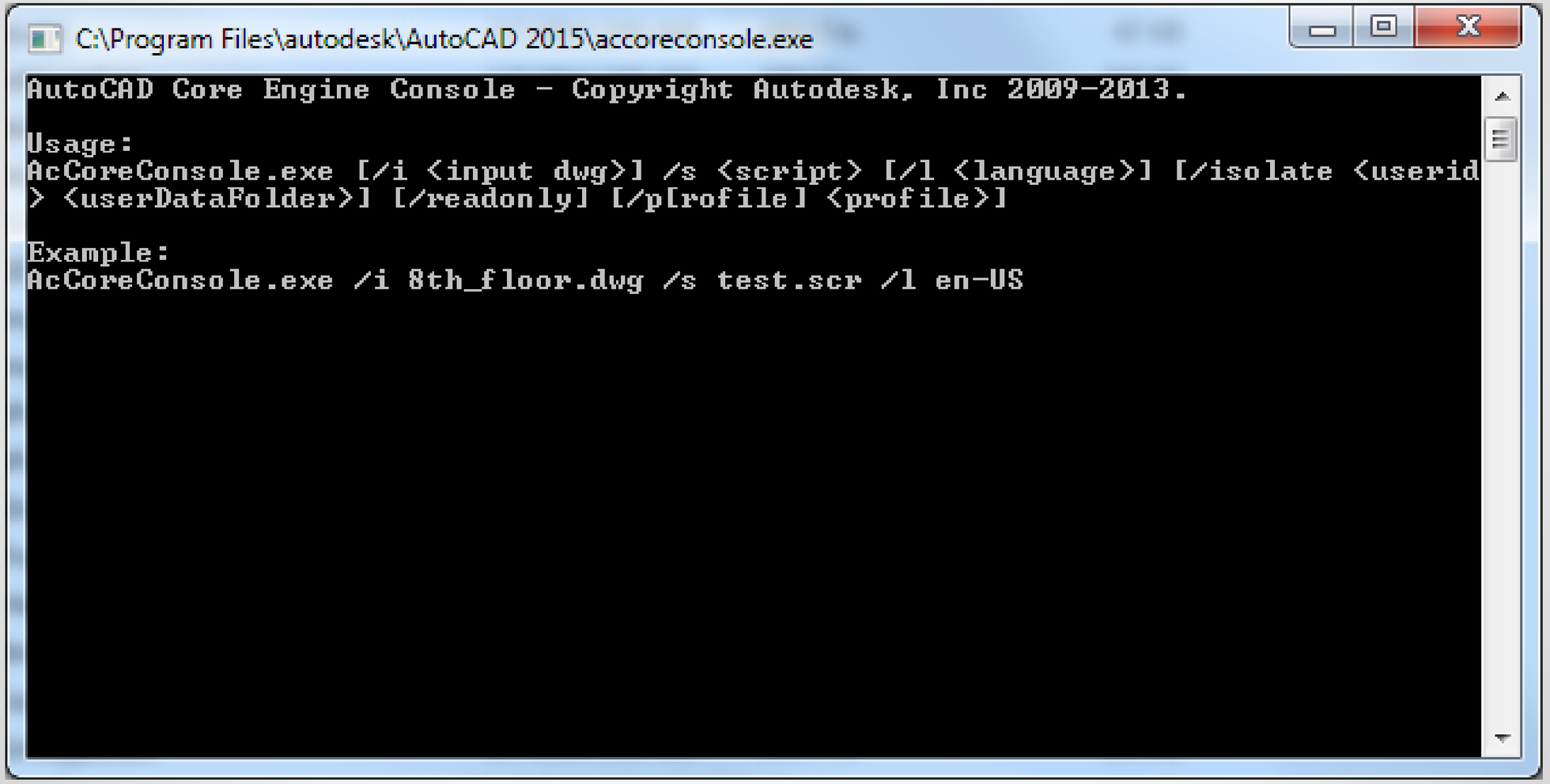


Multi-process architecture

Fusion 360 Drawings

- Reuse AutoCAD core technology
  - Including the Model Documentation functionality
- Each Drawing tab is a separate core process

AcCoreConsole



AcCoreConsole

- Part of AutoCAD install
- Runs a subset of commands
- Faster than AutoCAD!
- Great for running scripts

AcCoreConsole

- Command line arguments for input DWG and input Script
- Supports SCR and LISP
  - Use AutoCAD session to create your own script file
- Use ScriptPro 2.0 to operate on multiple DWGs

Conclusion

- AutoCAD takes advantage of latest in hardware for new effects and features
- AutoCAD can be used with real world data, such as point clouds
- Multi-process architecture is paving the way for new and interesting uses


Q & A

Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2014 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time