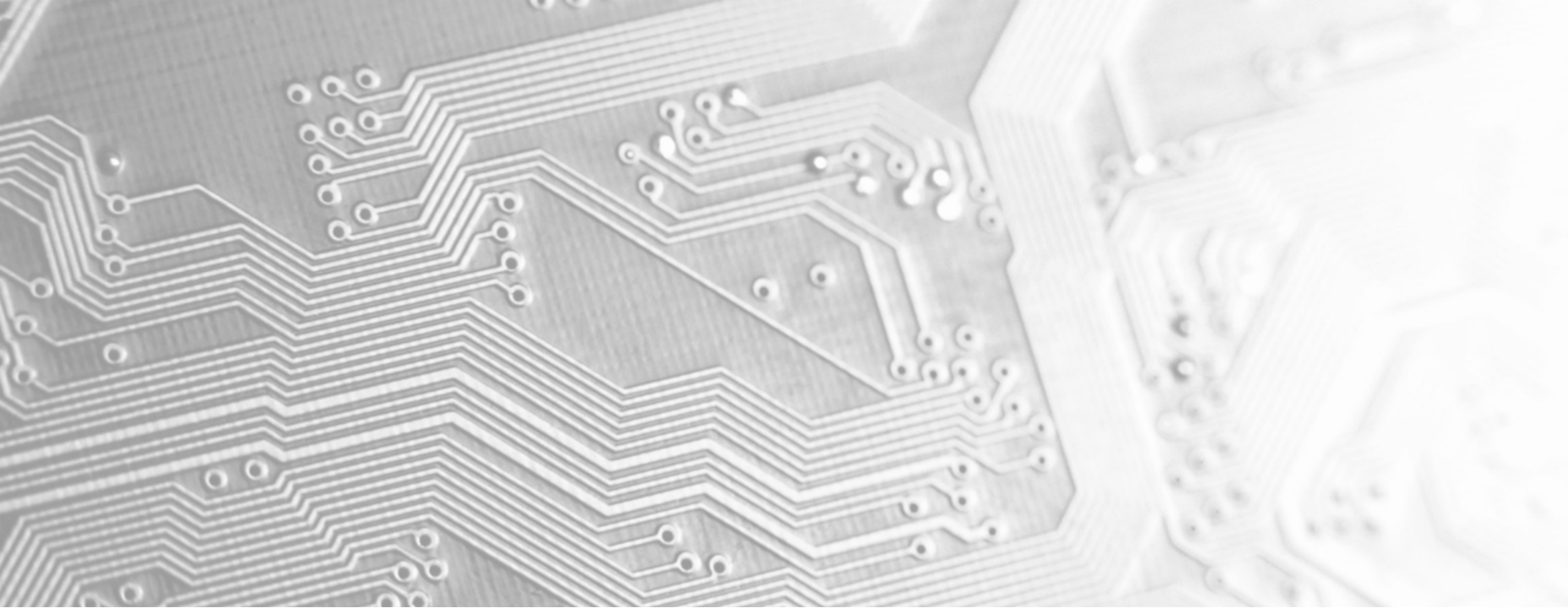
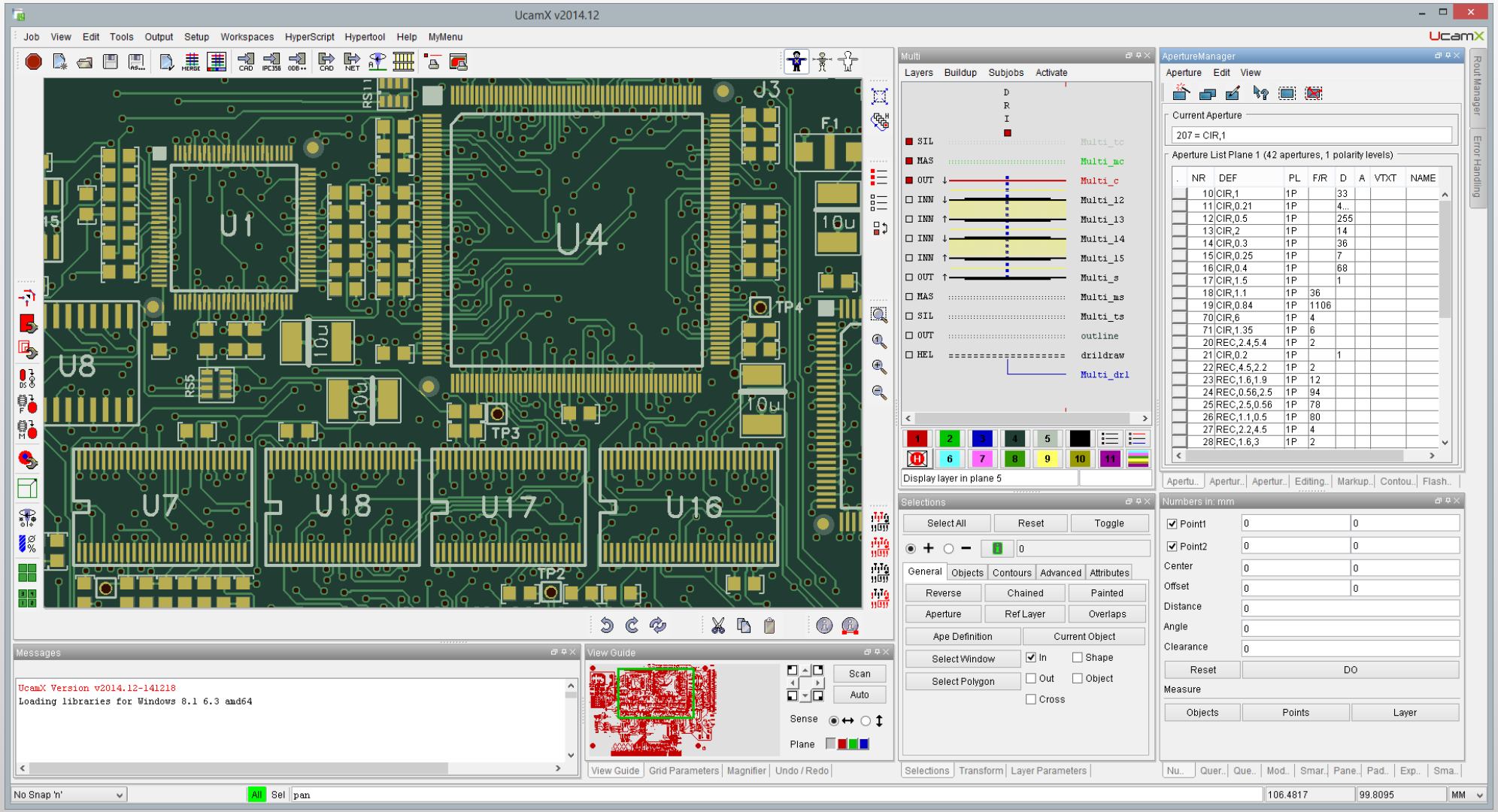


UcamX v2015.04

Release Notes
April 2015

UcamX v2015.04 Release Notes

Introduction



UcamX v2015.04 Release Notes

Introduction

Ucamco are proud to present UcamX, thelatest generation CAM software for the Rigid, Flex and HDI PCB manufacturing

It takes advantage of modern-day multicore and 64 bit technology to set new standards in throughput

In line with our longstanding tradition of protecting our customers' investments in Ucamco products, UcamX is fully compatible with your existing setups and VHS or Java automation

UcamX v2015.04 Release Notes

Contents Overview

UcamX v2015.04 comes with the following existing new features

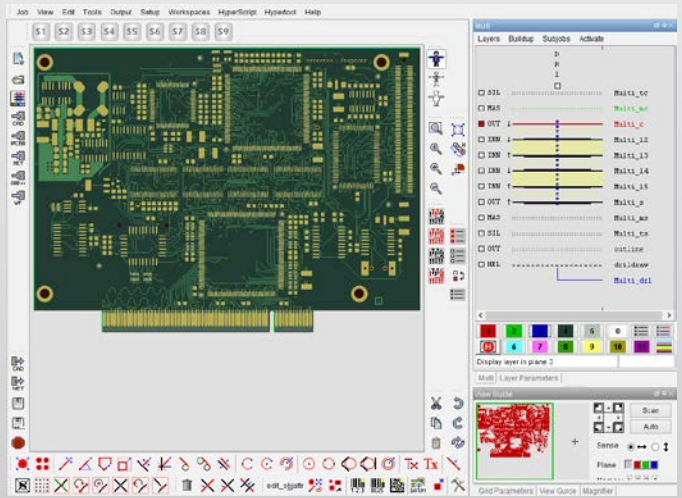
- Workspace GUI (Graphical User Interface)
- Parallel Processing
- Load Balanced Sessions
- Gerber X2 Input Support

In addition a host of corrections and enhancements to existing functionality have been included for your comfort and convenience

UcamX v2015.04 Release Notes

Workspace GUI – Functional overview

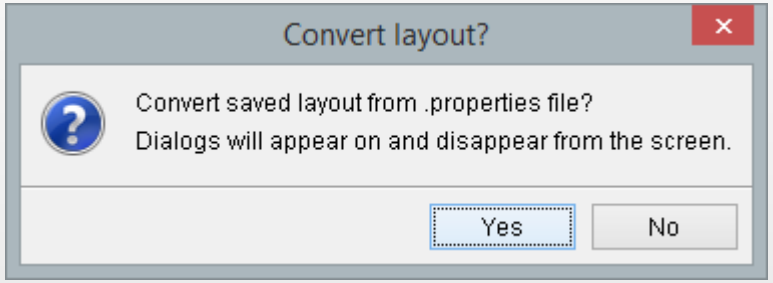
- Workspace: particular arrangement of dialogues and toolbars tailored to deal with a certain aspect of the CAM workflow (data input – data cleanup – verification…)
- Workspace GUI can store several of these workspaces under different names
- Switch between Workspaces and Workspace GUI rearranges itself for the next task at hand
- "Dockable" dialogues for a highly efficient and compact working environment
- Pin bar on the right – handy repository for larger dialogues
- Drag-and-drop functionality for placing toolbars
- Multiple toolbars side by side or above each other
- Floating toolbars
- VHS and Hypertool functionality locatable on toolbars
- Support for workstation with dual displays

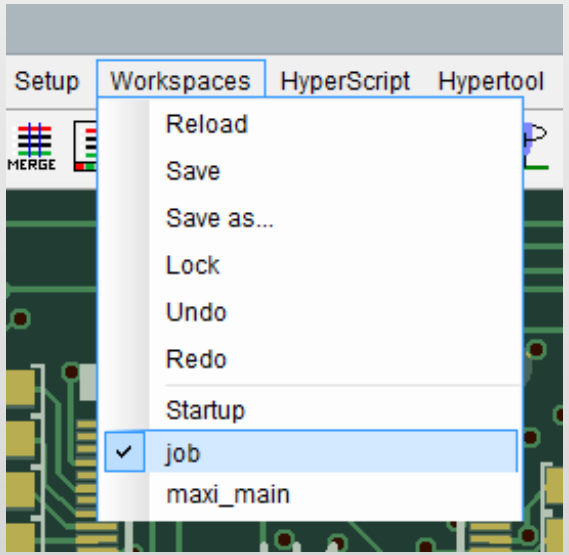


UcamX v2015.04 Release Notes

Workspace GUI – Storing and Reloading Workspaces

- Have your traditional Ucam screen layout automatically captured in a UcamX Workspace for further use in your new software environment
- Arrange dialogues and toolbars to your convenience and save/reload/rename them using of the new Workspaces menu item
- Move from one Workspace to the next by clicking on a name in the bottom part of the Workspaces menu
  - → No cluttered dialogues – Always a clean and tidy working area
  - → Reduced learning curve for novice users – only the relevant functionality for a particular task is presented on screen

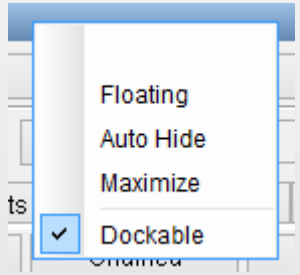




UcamX v2015.04 Release Notes

Workspace GUI – Dockable Dialogues

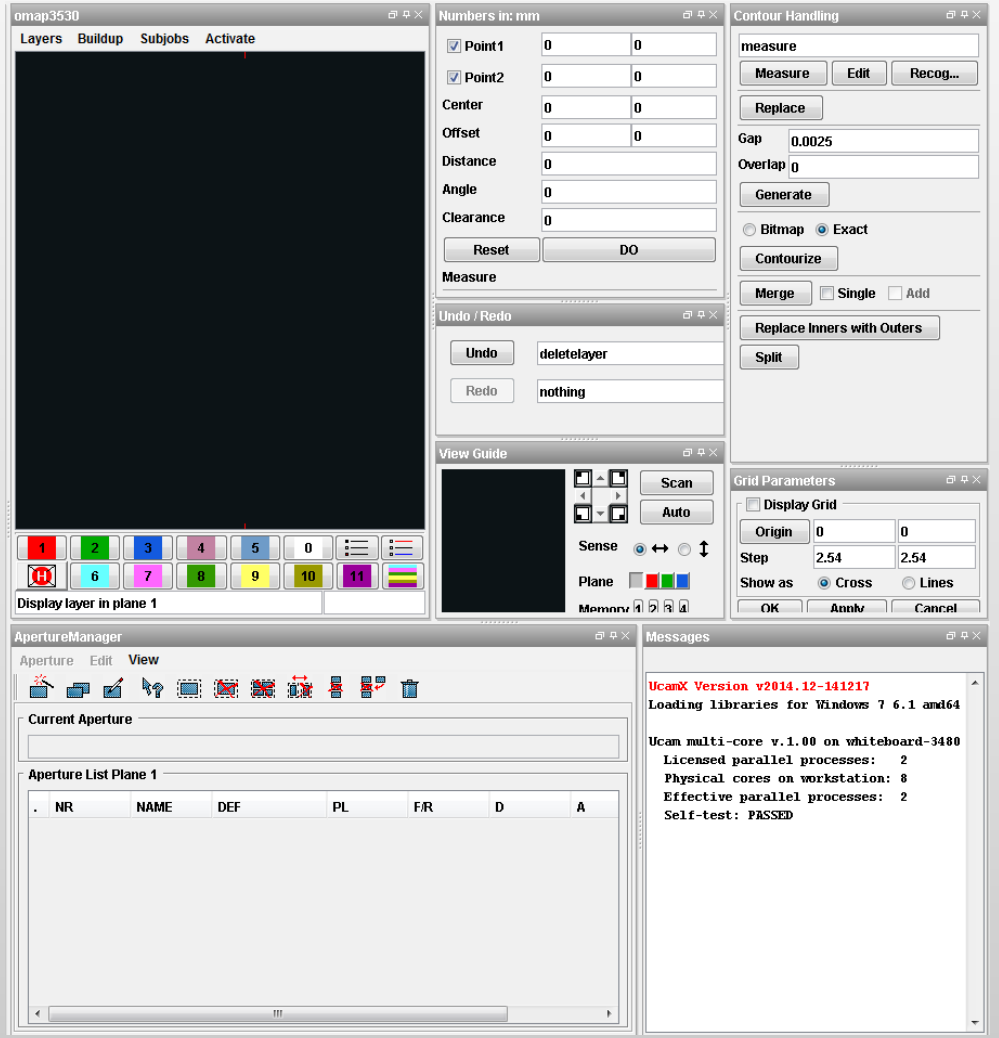
- UcamX Workspace GUI dialogues can be made dockable
- Right-click in the dialogue's upper part to access its Workspace GUI options and switch on the dockable feature
- Hold down the <CTRL> key and start moving the dockable dialogue around towards the edges of the drawing area to build your Workspace
- Drop the dialogue once its outline has snapped to the desired position
- Use the dialogue's grabber bars to fit it to its optimal size



UcamX v2015.04 Release Notes

Workspace GUI – Dockable Dialogues

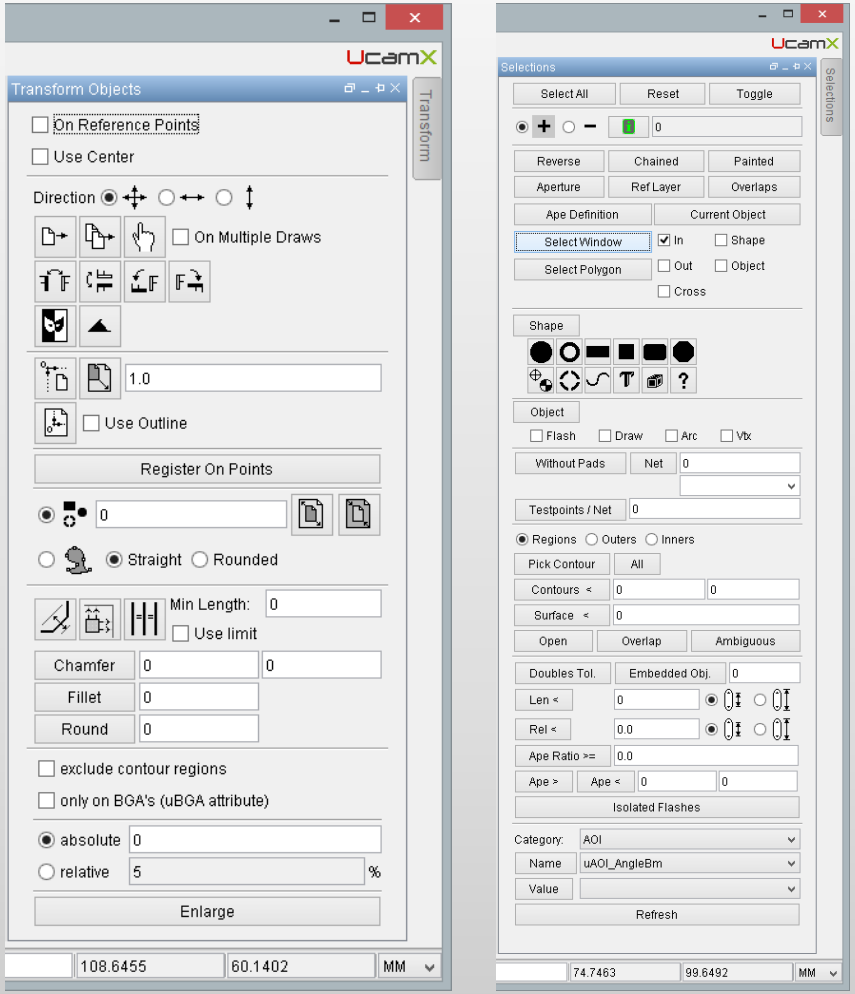
- Dockable dialogues can be melted together with the drawing area for a tight and slick appearance
- Dockable dialogues may also be forged together in a separate frame and moved independently from the drawing area to be accommodated on a second monitor
  - → Extremely comfortable and ergonomic interaction with the software
  - → Maximum utilization of a single monitor's screen size



UcamX v2015.04 Release Notes

Workspace GUI – Pin Bar

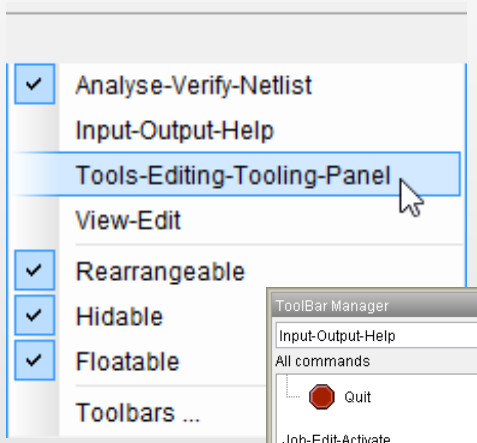
- Pin a docked dialogue onto the pin bar on the right-hand side of the working area by clicking its auto-hide toggle
- Pinned dialogues slide open to the left when clicked and automatically close upon leaving
- Dialogues that contain tab pages unfold themselves with all tabs expanded
  - → Handy repository for larger dialogues
  - → Direct access to the dialogues full functionality
  - → Auto-close feature ensures desktop's cleanliness

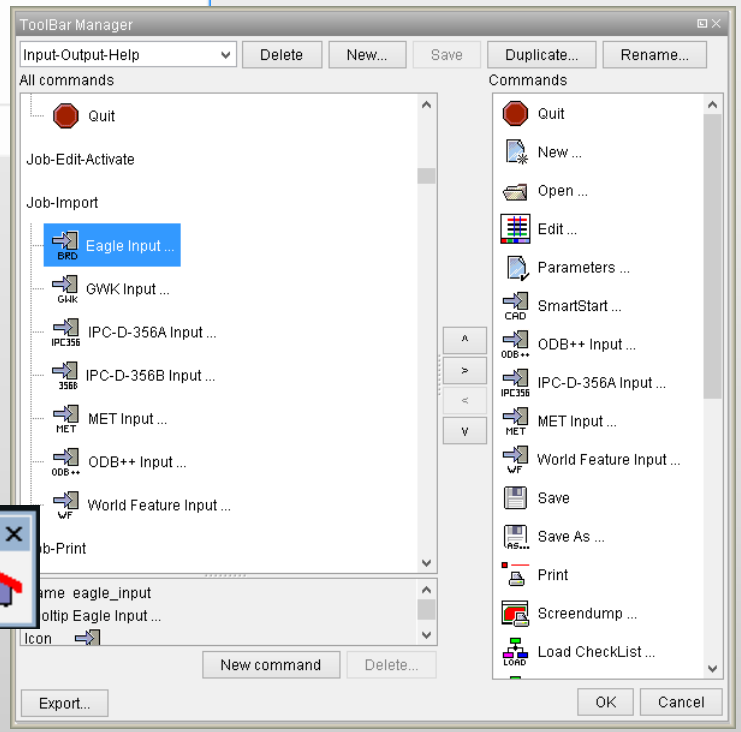


UcamX v2015.04 Release Notes

Workspace GUI – Toolbars

- Open the list of available toolbars by right-clicking in one of the four toolbar areas around the drawing area
- Show or hide a toolbar by clicking its name
- Enter the toolbar editor to create new toolbars that fit your workflow
- Pick up the toolbar by its grabber and drag-and-drop it into its desired location, anywhere in the 4 toolbar areas
- Simply drop it outside one of the toolbar areas to have a floating toolbar

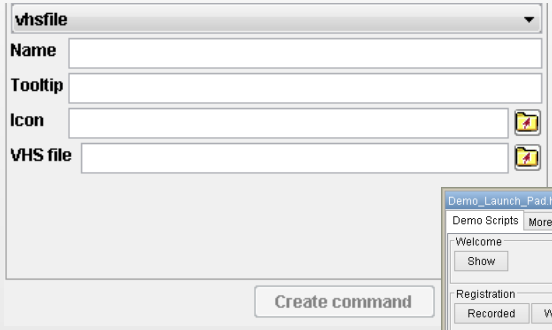


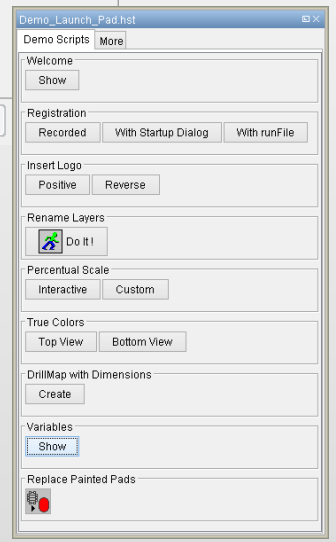


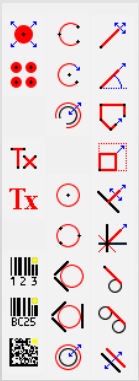
UcamX v2015.04 Release Notes

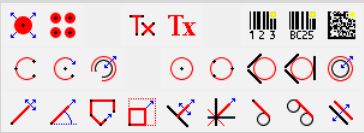
Workspace GUI – Toolbars

- Bring custom scripts and automation on launch pads alongside standard UcamX icons
- Multiple toolbars side by side or above each other allowed
- Save your Workspace and the toolbar setup currently in use is stored along with it
- Full UcamX User Interface Guide available on FTP and WWW
  - → Massive functionality harnessed onto minimal surface
  - → Custom automation as easily accessible as standard UcamX functionality





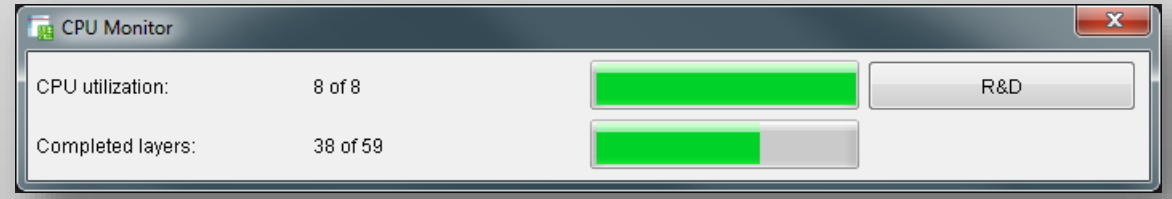


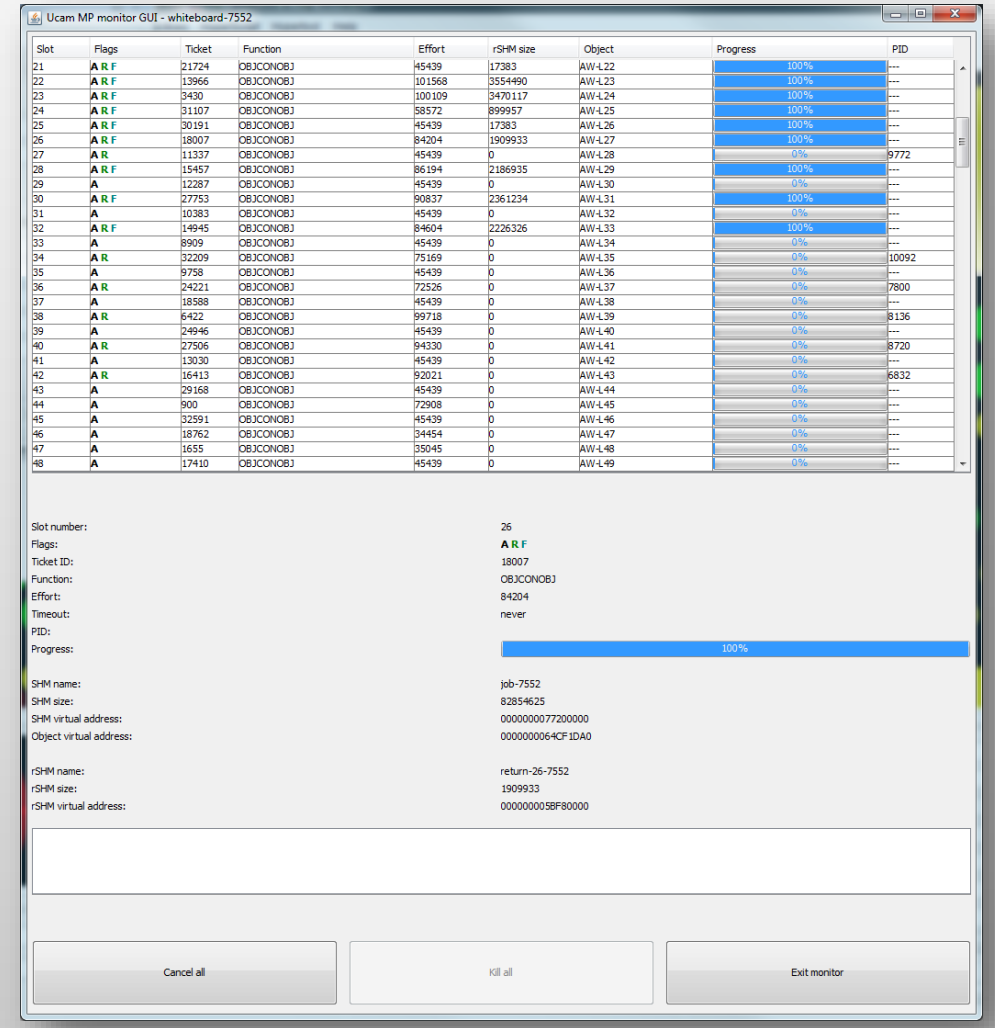


UcamX v2015.04 Release Notes

Parallel Processing(PP) – Functional overview

- Parallel Processing (PP): UcamX' ability to divide a single software task between several CPUs of a workstation
- Multiple Ucam software engines running in parallel on different CPUs in background. Note that the number of parallel processes is a licensed option.
- Available in a variety of Parallel Processing modes
- Dedicated Parallel Processing installer section
- Scalable to match current and future hardware configurations and performance level required

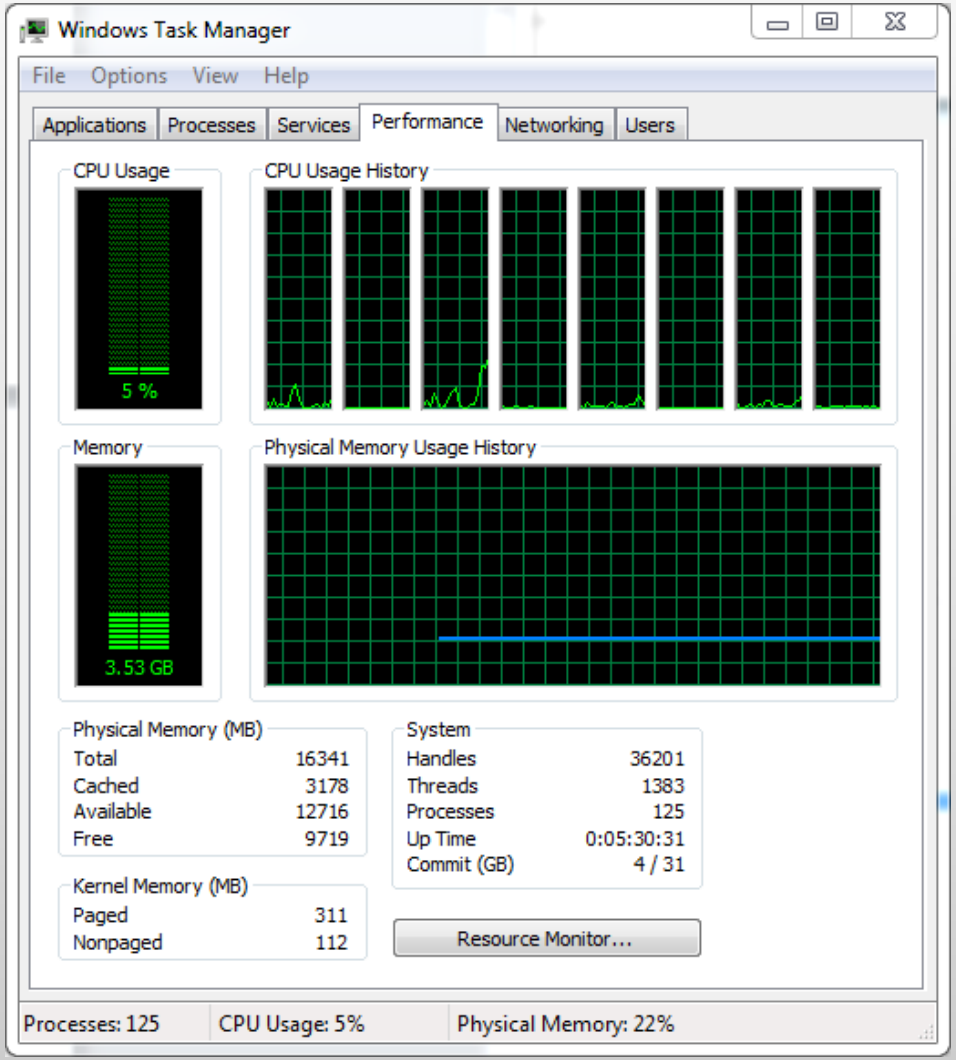




UcamX v2015.04 Release Notes

Parallel Processing(PP) – Splitting tasks

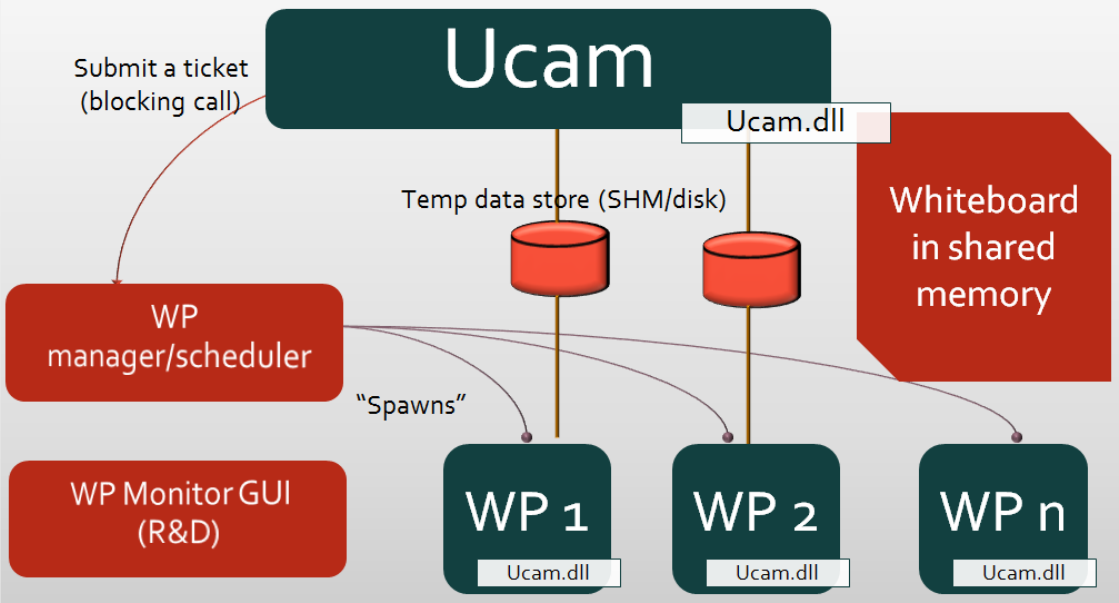
- Current-day processor technology is towards multiple CPUs working in parallel on a workstation rather than increasing processor speed
- UcamX core software engine rewritten to take advantage of this hardware trend
- Processor-intensive algorithms completely redesigned to be able to address multiple CPUs
  - → Intensive number-crunching CAM tasks finish more quickly
  - → Operator waiting time for functions to complete significantly reduced
  - → Overall throughput is increased



UcamX v2015.04 Release Notes

Parallel Processing(PP) – Multiple engines running in parallel in background

- At UcamX startup one single engine is started
- When in need for extra calculating power, main engine can start up auxiliary engines and delegates the work to be done (WP1, WP2, … WPn)
- When finished, auxiliary engine returns its result to main engine
- When all auxiliary engines finish, main engine makes the final results available in UcamX
  - → Completely transparent in use
  - → User continues to operate his software the way he has always done
  - → No need for extra operator training



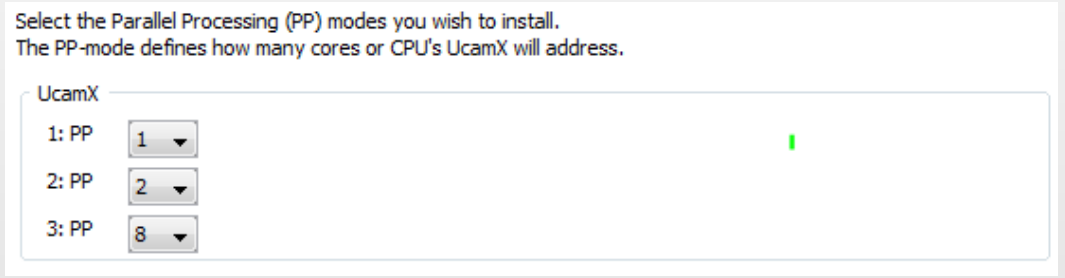
UcamX v2015.04 Release Notes

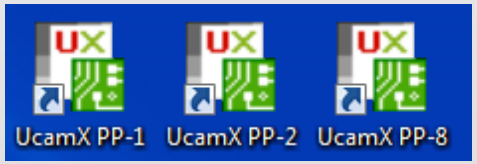
Parallel Processing(PP) – Modes and UcamX Installer

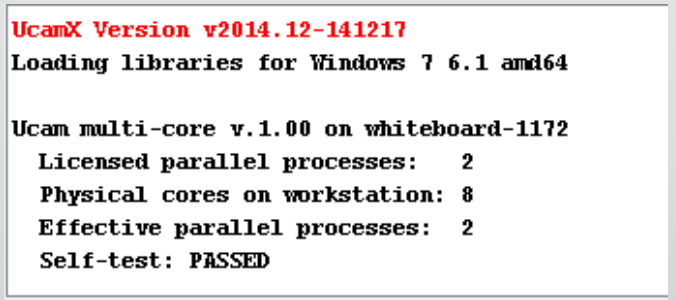
- To match UcamX to its hardware, different Parallel Processing modes are available:
  - PP1 for legacy 32 bit systems – no parallel processsing functionality
  - PP2, PP3, PP4,… licensed add-on high-performance parallel processing modes for 64 bit systems with multiple cores
- UcamX installer allows to install up to 3 different Parallel Processing modes, resulting in multiple UcamX startup icons after installation
- UcamX startup window and title bar reports the PP+ mode is being used

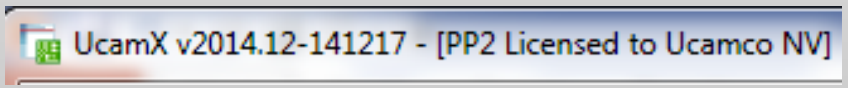
  → Legacy 32 bit hardware usable with UcamX

  → No hardware investment required







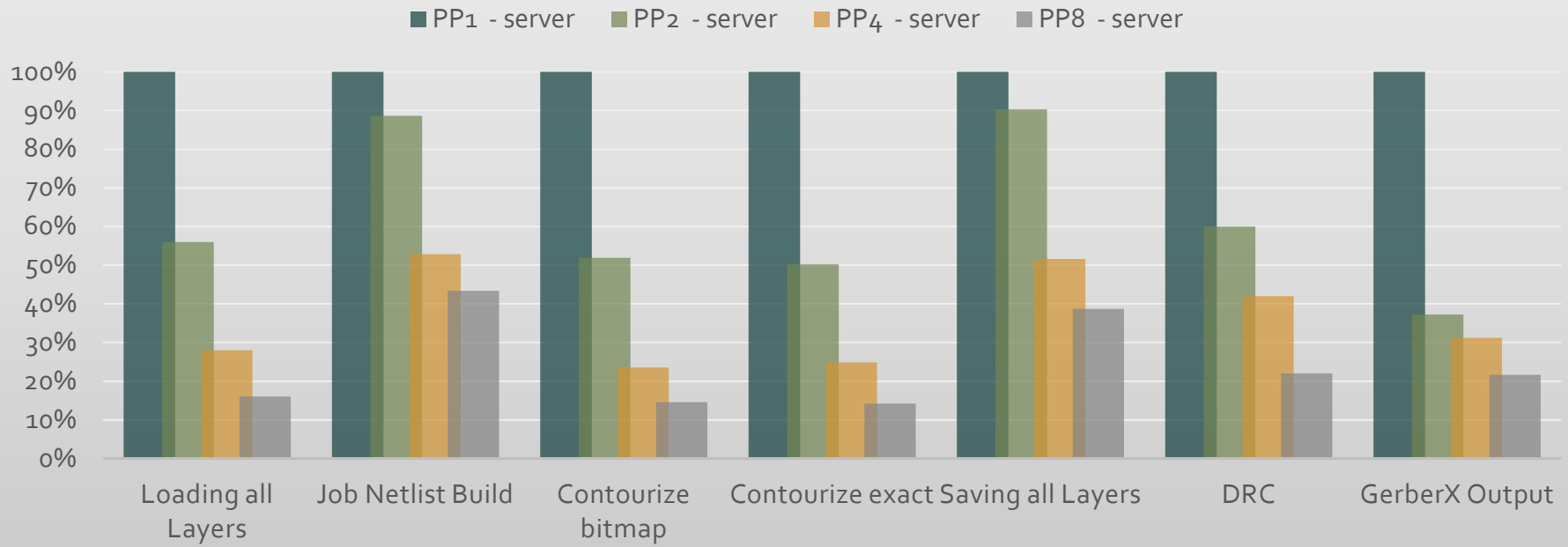


UcamX v2015.04 Release Notes

Parallel Processing(PP) – Scalability and Performance

- Higher PP modes yield higher performance. Benchmark test results included
- No software-imposed limit on the maximum number of Parallel Processes
- Currently practical ceiling set to PP32

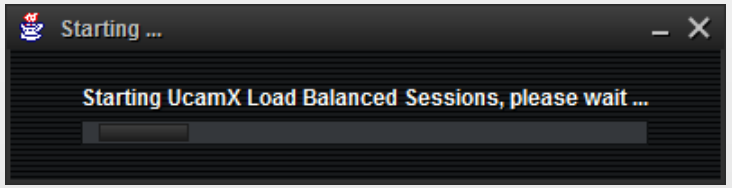
  → Ready to grow with changing needs and hardware developments



UcamX v2015.04 Release Notes

Load Balanced Session (LBS) – Functionality overview

- Load Balanced Session: UcamX' ability to open multiple jobs simultaneously AND have access to all UcamX functionality
- Parallel Processing capabilities available in all LBS member sessions
- Crunching power from the PP+ license transparently floats between LBS member sessions dynamically
- High visibility: LBS member sessions are started from dedicated desktop icon and marked differently than regular UcamX session
- High availability: every new UcamX seat comes with LBS license
- High accessibility: LBS is a true floating license taken when the need arises and made available for other operators again when it finishes.

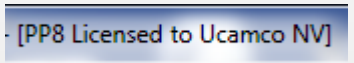


UcamX v2015.04 Release Notes

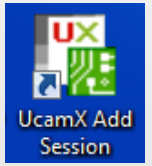
Load Balanced Session (LBS) – Usage and visibility

- Start regular UcamX session from UcamX PP+ icon on the desktop

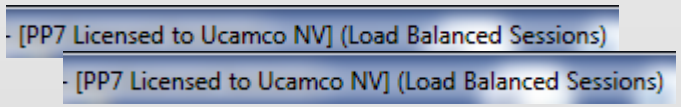
- UcamX displays its PP information in the title bar



- Return to desktop to add Load Balanced Session using dedicated UcamX Add Session icon



- An LBS session is created with 2 members
- Both members display their modified PP mode and LBS membership in title bars

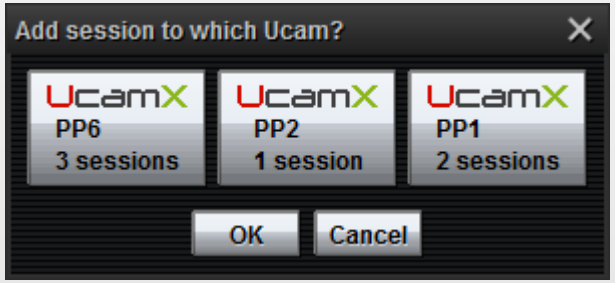


- Both members are equal in functionality and PP capabilities. If Parallel Processing is required, either session can take it. UcamX will use a maximum of 7 CPUs
- Closing either session restores the original PP mode in the remaining one

UcamX v2015.04 Release Notes

Load Balanced Session (LBS) – Usage and visibility

- Multiple Sessions may be added to the group, decrementing the group's PP mode by 1 with each additional session
- When PP1 is reached new sessions may still be added to the group, but none of its members has Parallel Processing capabilities
- Multiple groups can co-exist



  → Easy to use: Load Balanced Session is a floating license like all other UcamX options

  → Fully flexible: All session members have equal possibilities – Multiple sessions possible

  → High performance: All UcamX functionality from any session whether simple edit or intensive netlist calculation

UcamX v2015.04 Release Notes

Gerber X2 Input Support - Overview

- Gerber version 2, or "X2". A new version of the standard CAD-to-CAM data transfer format.
  The file format specification can be downloaded using this link.
- Adds a wealth of attributes to speed up the CAM work.
- Compatible. No change in the image representation with Gerber version 1.
- The new X2 features are supported in this UcamX release: capturing stackup information. Upon input into UcamX of a Gerber X2 data set, the job buildup is created automatically. Ask your customers for X2.
- Supported already by various software manufacturers including KiCad, DipTrace, Altium, Pulsonix, Graphicode, LPKF, Macaos

  → Automates the laborious task of finding out the layers' functions and positions from an external document and building the stack by hand

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