



Intel® Battery Life Analyzer

Release Notes

April 2013

Revision 2.5.1.1148



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Revision History

Package Definition	Intel® Battery Life Analyzer Revision	Release Date
2.5 PC	2.5.1.1148	April 22, 2013
2.5 PC	2.5.0.1136	March 25, 2013
2.4	2.4.0.1147	November 19, 2012
2.4 Pre-Alpha	2.4.0.1040	August 31, 2012
2.3 PC	2.3.0.1041	July 6, 2012
2.2 PC	2.2.0.1089	April 27, 2012
2.1PC	2.1.0.1022	January 10, 2012
2.0 PV	2.0.0.1034	October 10, 2011
2.0 PV	2.0.0.1031	June 1, 2011
2.0 PV	2.0.0.1022	February 22, 2011
1.1 PV	1.1.0.1009	October 8, 2010
1.0 PV	1.0.0.1011	August 6, 2010
1.0 PC	1.0.0.1007	July 16, 2010
0.8 Beta	0.8.0.1024	May 27, 2010



1 Introduction

1.1 Supported Operating Systems

- Microsoft Windows 7* x32 Edition (RTM)
- Microsoft Windows 7* x64 Edition (RTM)
- Microsoft Windows 8* x32 Edition (Build 9200 last tested version)
- Microsoft Windows 8* x64 Edition (Build 9200 last tested version)

1.2 Supported Platforms

- Shark Bay-based configurations
 - 4th Generation Intel® Core™ i7/i5/i3 Mobile Processors (2-chip & ULT)
 - Intel® 8 Series Mobile Chipset
- Chief River-based configurations
 - 3rd Generation Intel® Core™ i7/i5/i3 Mobile Processors
 - Intel® 7 Series Mobile Chipset
- Huron River-based configurations
 - 2nd Generation Intel® Core™ i7/i5/i3 Mobile Processors
 - Intel® 6 Series Mobile Chipset
- Calpella-based configurations
 - Intel® Core™ i7/i5/i3 Mobile Processors
 - Intel® 5 Series Mobile Chipset



2 Included Features

Table 1. Feature Set

Feature	Notes
Battery Usage	Measures battery usage and can be executed concurrently with other modules that support concurrent capture. Analysis continues across Connected Standby and Sx States.
Connected Standby	Deep analysis into connected standby window, including connected standby entry exit timing analysis and deep C-State events along with CPU & platform metrics.
CPU C-State	Support on all platforms and OS configurations Supports concurrent capture.
Disk Activity	Support on all platforms and OS configurations.
Graphics Activity	Support on all platforms and OS configurations. Requires DirectX drivers to accurately collect data.
HDD Spin-Down	Support on all platforms. Limited to OS configurations using Microsoft Windows Vista* SP1 and later.
Long-duration Software Activity	Support on all platforms and OS configurations.
Memory Activity	Support starting with SharkBay platform and later on all OS configurations.
PCI-E LPM	Support on all platforms and OS configurations.
PCI-E LTR	Support on Intel® 6 Series Mobile Chipset based platforms only and all OS configurations.
Platform LTR	Support starting with SharkBay platform and later on all OS configurations.
LPSS LTR module	LTR analysis for controllers within the LPSS subsystem.
Power Feature Quick Check	Support on all platforms and OS configurations.
Device Power Analysis	Device power management Analysis. Support on all platforms with Win8. Supports concurrent capture. Panel Self Refresh Analysis. D3Cold Analysis is BIOS dependent.
SATA LPM	Support on all platforms and OS configurations.
SATA Latency	Support on all platforms and OS configurations. Capability to collect and analyze in-command and post-command LPM transition added.

Included Features



Feature	Notes
Software Activity Analysis	Support on all platforms and OS configurations. Capability to collect and analyze P-state and timer tick request information added. Capability to collect and analyze idle periods. Supports concurrent capture.
EHCI Analysis	Support on all platforms. Data capture limited to Microsoft Windows® 7 and Windows® 8 only. Measurement is stopped upon Sx state entry, user is given option to save data upon Sx state exit.
XHCI LPM	Support on all platforms and OS configurations. Measurement is stopped upon Sx state entry, user is given option to save data upon Sx state exit.
XHCI LTM	No OS support , platform testing feature only. Measurement is stopped upon Sx state entry, user is given option to save data upon Sx state exit.
On-Line Help	On-Line help support is incorporated through menu items and the F1 key.
Command Line Support	Ability to run BLA from the command line through a console interface.



3 Fixed Issues

Table 2. All Issues fixed in the 2.5.1.1148 Release

Reference No:	Description
5041003	BLA 2.5 support for latest Windows OS.

Table 3. All Issues fixed in the 2.5.0.1136 Release

Reference No:	Description
4993389	PSR History file not saved with other history files.
4993378	Average Data shown in PSR history data instead of data over a single sample period.
4992814	C10 Residency Affected (Eliminated) by Running BLA from Command Line in Non-CS Systems: When collecting data BLA inactivates the command window to minimize impact to C states due to blinking cursor activity.
4992493	XHCI Modules not loading in Sharkbay 2 Chip platform
4935764	Power impact formula is incorrect in SW Analysis module
4859557	USB 3.0 SuperSpeed Capability not Detected in XHCI LPM/LTM Modules: detection is only available for Windows 8 not for Windows 7.
4859351	SDIO devices are not listed in BLA Device Power Analysis Module even though detected by the ULT system
4859027	BLA Device Power Analysis module Device Power Information invalid after capture if ETL logging enabled.
4859000	ACPI Power Resources not detected for port when USB Storage Device Attached
4858761	Device Power Analysis Module responds incorrectly to CS PnP Events that do not Affect the Module
4858707	Device Power Analysis Module does not save correct data after capture if PnP event occurs
4858705	Device Power Analysis Module only Saves Kernel Power Data to ETL File
4858703	Some Devices Show as Unknown Device in Device Power Analysis Module
4858702	Application Crash after Running Device Power Module if user Saves Data after PnP

Fixed Issues



	Event during Capture.
4858500	After data capture "Save All" function creates files but no data saved in the files.
4858568	BLA does not capture D3.C for USB devices
4857828	Error message from XHCI modules : "Failed to start data collection. Could not read XHCI register at offset 0x000004ff for bus0 Device20 Function0. The parameter is incorrect" Reason BLA cannot access MMIO space when controller is in D3.
4834499	XHCI LPM module: Data does not add to 100% (all 0's) for composite device. Starting with version 2.5, XHCI LPM module will list all possible states for XHCI devices.



Table 4. All Issues fixed in the 2.4.0.1147 Beta Release

Reference No:	Description
4771869	Windows 8: Optical drive data may be inaccurate. NOTE: Issue appears to be resolved in the 9200 build of Windows 8
4771997	Windows 8: Stack trace information missing for spin-ups. NOTE: Issue appears to be resolved in the 9200 build of Windows 8
4788410	For USB device power states, values are reported for "D2%" even though "D2 enable" is reported as "N"
4830518	BLA stops working on reloading modules after resuming from System suspend state (S3)
4831249	BLA stops working while using the "Save All" option in the File menu.
4831251	Tool stops working while saving data of modules which are not loaded.
4831896	Some modules will not load every other restart of BLA when no PCIe ports are enabled
4832244	C-State Power Data Reported as ½ Actual Values
4832997	Command line does not accept more than two modules if the capture time is specified as a parameter for any module other than the first or last
4833389	No data shown in OBFF Module if only 1 port is enabled
4833526	Intermittent crashes when closing BLA after running Device Power Module
4833278	Device Sleep Present (DSP) is not reported as per BIOS settings (only first port was reported).

Table 5. All Issues fixed in the 2.3.0.1041 Production Version Release

Reference No:	Description
4772168	Software Analysis data capture occasionally shows error on data capture.
4772447	Memory module data capture fails on Montevina Platform
4772465	GUI issue in Device Power Analysis module

Table 6. All Issues fixed in the 2.2.0.1089 Production Version Release

Reference No:	Description
4771313	HDD Spin-down module does not report any data for Microsoft® Windows Vista RTM



4771426	When the user-defined maximum log file size has been reached, data collection does not automatically stop.
4771525	Graphics Activity module only captures DWM activity possibly resulting in incorrect frame rate data for Media Players and Teleconferencing applications.
4772116	Windows 8: BLA hangs while selecting USB Analysis. Fixed in current build of Windows 8
4772459	USB LPM module command line does not take duration argument

Table 7. All Issues fixed in the 2.1.0.1022 Production Candidate Release

Reference No:	Description
4772162	BLA does not show SATA controller in SATA LPM module
4772273	BLA HTML output on non-Latin characters fails

Table 8. All Issues fixed in the 2.0.0.1034 Production Version Release

Reference No:	Description
4771977	Incorrect endpoint OBFF capability/enabling status

Table 9. All Issues fixed in the 2.0.0.1031 Production Version Release

Reference No:	Description
4771785	OBFF data for PCH root ports displayed as PEG port data

Table 10. All Issues fixed in the 2.0.0.1022 Production Version Release

Reference No:	Description
4771340	SATA LPM module doesn't report a warning for 100% active drives
4771421	On systems with no PCIe devices present, data capture may show "N/A" for some captures and "0" for others.



4771430	Application occasionally crashes when processing large software activity ETL files
4771432	Changed "automatic" mode to always apply to all modules
4771443	Scroll position is not maintained in output pane when data is refreshed
4771447	USB Module fails to load if root hub is disabled.
4771487	Added the ability to save data in CSV format from all modules in the menu
4771514	Double-clicking on power impact cells can cause an application crash
4771531	Long Duration Software items data not updated when scrolling through with the keyboard
4771543	Removed the default context menus displayed when right clicking the analysis area
4771569	Fixed an invalid value being displayed in the warning summary during Graphics Analysis
4771573	Descendants of USB devices without name displayed as "Unknown"
4771707	Multiple tooltips seen when hovering over the summary pane

Table 11. All Issues fixed in the 1.1.0.1009 PV Release

Reference No:	Description
4771422	Long text in message pane not fully displayed
4771440	Unexpected device change notifications displayed
4771482	Enabling status of EHCI AASB on Calpella platforms incorrect
4771484	Highlighted item not maintained when clicking in different panes or windows
4771515	No warning displayed if USB host controller is running without a device attached
4771521	Contact e-mail added to "About" dialog
4771532	Window loses focus when clicking on HTML output pane
4771536	Automatic mode capture button remained pressed after module reload
4771538	Potential application crash when a USB 3.0 controller is installed

Table 12. All Issues fixed in the 1.0.0.1011 PV Release

Reference No:	Description
4771310	When running the Software Analysis module for extended periods of time, occasionally crashes can be seen.
4771315	Some menu items not disabled when data capture running
4771316	Disk Activity items not sorted by time with multiple disks
4771321	Sorted results aren't sorted if updated
4771333	On Emerald Lake CRB, SATA drive on Port2 not recognized

Fixed Issues



Reference No:	Description
4771362	Application crashes upon load if C-States are disabled
4771428	Setting the log file size limit may cause data collection to fail in Software Analysis module
4771442	USB shows incorrect statistics data

Table 13. All Issues fixed in the 0.8.0.1024 Beta Release

Reference No:	Description
N/A	Initial release, no issues resolved for this release.

*** Other names and brands may be claimed as the property of others.**

- Note: Issue IDs have changes due to Issue Tracking System changes.



4 Known Issues

Table 14. All Issues Currently Listed As Open

Reference No:	Description
5041203	Device Power Analysis module may show negative values for D0 residency when device entered D3 cold (issue was observed for SATA device).
5041204	SATA LPM module may show low DEVSLP residency due to sampling method used by BLA to detect the LPM state.
4858207	SATA Related Modules may show "No Disk Attached" with some versions of iRST Driver (12.5.0.1019). Issue resolved in iRST Driver version 12.5.0.1033.
4997298	Resume from Hibernation (S4) causes BLA to hang intermittently. <u>Measurement across Hibernation is only supported for CPU C state module.</u> For any other module if hibernation occurs during measurement BLA may not be able to reload.
4996861	<p>BLA Memory Activity Module reports:</p> <p>"Capture has been stopped due to a known issue that may occur on resume from suspend. The current data may be invalid. Please restart capture."</p> <p>"Error reading memory bandwidth, try rebooting your system".</p> <p>As indicated in the above BLA dialogs, please reboot the machine and start memory activity analysis without entering any suspend state /connected standby state. Reboot may correct some of the measurement error conditions. Note that, issue may still persist after reboot.</p>
4771322	<p>Software Activity Analysis results can be skewed when mouse cursor is kept over the active tool window.</p> <p>Resolution: Moving the cursor outside of window resolves the issue</p>
4771425	Some file paths in the stack trace for data collected in the Disk Activity module may not show drive letters and obtaining file properties will fail.
4771429	In the Long Duration Software Activity module, values in the Total Logical CPU % column may be observed with values in the Average CPU % column.
4771437	Graphics Activity module may show all zeros for data when run without a graphics driver that supports DirectX is installed.
4771438	Enabling Symbol name translation in software modules may cause a noticeable delay in the data update to the screen.
4771455	Root Matching Hub may report incorrect Selective Suspend data (Issue in data received. Restart platform to correct.)
4771565	USB filter driver fails to load if there are open handles to USB devices during host controller restart (Resolution: Close any applications which may be holding handles to USB devices and restart BLA.)
4771653	System responsiveness slow during USB LPM capture with some devices

Known Issues



Reference No:	Description
4771682	USB 3.0 LPM may not show correct data with some 3 rd party drivers.
4771735	Opening a trace file from one OS in a different OS may not show correct timer tick information
4771753	BLA 2.0 will not open the timer tick ETL files from previous versions
4771769	USB LPM Module may require platform restart between uses on Microsoft® Windows Vista
4771867	All fields in Graphics Activity module shown as 0 after capture in Windows 8
4771875	Windows 8: Disk spin-down events not working with In-box driver. NOTE Issue may be resolved with future builds of Windows 8
4772213	SATA-related data incorrect when using RST 11.5.0.1022 (Alpha) and earlier
4772219	Cause of spin-up events may not be detected when using Microsoft storage drivers
4772551	Under Win8, PCIe OBFF module fails to load after exchanging or swapping multiple NIC
4831680	HDD Spin-Down :: " state" field reports " unknown" for Windows 8
4857828	Errors Reading XHCI MMIO for XHCI Modules in Some Configurations (Primarily with no USB devices attached.)

- Note: Issue IDs have changes due to Issue Tracking System changes.



5 Known Limitations

Table 35. All Known Limitations

Reference No.	Description
	Users should not plug/unplug devices while BLA modules are being loaded: BLA will ignore PnP events when the BLA modules are being loaded, therefore a device plugged or unplugged during this time may not be present in BLA analysis. If a PnP event happened during this time, user should exit out of BLA and restart it.
	In order to perform PSR Residency analysis users must follow the Manual Steps in BLA user guide PSR Analysis module in section 4.5.13.1.
4997441	If the time spent in C States (C10 Time, C9 Time etc. columns) are all measured 0, please follow the additional debugging steps described in BLA user guide section 4.5.2.1.
4995421	BSOD might occur on client systems with TPM (Trusted Platform Module) device is installed. Resolution: User must disable TPM device in device manager before starting BLA analysis.
	In order to collect correct data across Connected Standby and Sx states (such as, hibernation) and users must enable history logging and high rate polling in CPU-C State module. In order to learn how to enable these features in BLA GUI or in command line please refer to C-State Residency Analysis section of the BLA Users Guide document that is distributed with BLA.exe.
4991734	Invalid Data Displayed in Modules that do not Support S-States when Sx Entered on Connected Standby Systems : Most BLA HW analysis modules do not support collecting data across Sx. Only BLA C state module is tested for this use case and as mentioned above, users must enable history limit and polling in order to obtain correct data.
	In XHCI LPM module USB 3.0 SuperSpeed capability detection is only available in Windows 8 (not available in Windows 7).
4993312	NFC device is not detected by BLA: BLA only lists LPSS controllers in LPSS LTR module, not the downstream devices.
	The application requires being run with Administrator privileges for data capture. Without Administrator privileges set, the user will be limited to reviewing previous captures.
	The BLA tool cannot capture data across S-States however capture can function through connected standby.
	The CPU C-State module determines the deepest enabled C-State based on hardware register settings. If the ACPI BIOS chooses not to expose all hardware enabled C-States, the CPU C-State module may generate a warning message about the low residency in the non-exposed C-State.
	The CPUD C-State module will show incorrect data if run in manual mode with screen refreshes disabled for more than an hour.

Known Limitations



Reference No.	Description
2891427/4771437	Graphics Activity module may show all zeros for data when run without a graphics driver that supports DirectX is installed.
	PCIe LPM Module does not properly calculate the power impact of 2 nd Generation Intel® Core™ Processors
4787953	BLA memory module usage may result in high active C State residencies – as measured by another Cstate monitoring tool. (BLA does not support concurrent analysis with the CState and Memory modules)
	PCIe OBFF analysis is available only for the first 2 ports.
	Device power resource mapping information in Device Power Analysis Module is bios dependent and not available when BIOS is not configured appropriately.
	DRAM power in CPU-C State Analysis module is bios dependent and not available when BIOS is not configured appropriately.

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