BAPCo® SYSmark® 30 User Guide

Revision: 1.1

Revision History:

1.0 Initial version of SYSmark 30 User Guide.
1.1 Updated minimum requirements.
1.2 Updated Disclosure Report.

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Introduction

SYSmark 30 is an application based, system performance benchmark designed to assist users in making PC purchasing decisions.

This document is intended as a user manual to assist with the installation, configuration, and execution of SYSmark 30. For a technical overview of SYSmark 30, please download the SYSmark 30 Whitepaper published on the BAPCo website: www.bapco.com

Setup

Before attempting to install or run SYSmark 30, verify that the test system meets the recommended minimum system configuration for running the benchmark. Visit the BAPCo Benchmarks YouTube channel for video tutorials to assist with installing and running SYSmark 30.

- **CPU**: 2015 or newer x86 processor (Intel 6th Generation Core or newer, AMD A6/A8/A107000 series APU or newer or newer), 2GHz or higher, dual core or higher
- **RAM:** 16 GB
- **HDD/SSD:** 30GB of free space on the primary drive
- **Operating System:** Microsoft® Windows® 11 64bit 21H2 (10.0.22000.282) or newer Microsoft® Windows® 10 64-bit version 19043 (22H1 or higher)
- **Resolution:** 1280x800 or 1366x768
- **Graphics:** DirectX 10 compatible, 2GB VRAM free when using integrated graphics
- **Supported Languages on Windows 10/11:** English (US) ○ **Additional languages to be added in future update:** Brazilian Portuguese, Simplified Chinese, French, German, Italian, Japanese, Polish, Spanish (SP)

Image configuration

For best results, SYSmark 30 should be installed to a clean instance of a supported operating system, with updated hardware drivers. See the APPLICATIONS section for a list of application software installed by the benchmark. SYSmark 30 includes an integrated configuration tool that will automate making changes to the system in preparation for running the benchmark. See the SYSTEM CONFIGURATION TOOL section for more information on image configuration. A list of supported meters for use with the energy consumption test is in the ENERGY TEST section.

- Administrative rights: An account with administrative privileges is required. The same account must be used to install and run SYSmark 30.

Virtualization Based Security

Default enablement

Starting with Windows 11, new installations on compatible systems have memory integrity turned on by default. This is changing the default state of the feature in Windows, though device manufacturers and end users have the ultimate control of whether the feature is enabled.

Hardware features for automatic enablement

Memory integrity is turned on by default when a PC includes the following minimum hardware features:

HARDWARE FEATURES FOR AUTOMATIC ENABLEMENT	
Component	**Detail**
Processor	• Intel 11th generation Core processors and newer • AMD Zen 2 architecture and newer • Qualcomm Snapdragon 8180 and newer
RAM	Minimum 8GB
Storage	SSD with a minimum size of 64GB
Drivers	HVCI-compatible drivers must be installed. See Hypervisor-Protected Code Integrity (HVCI) for more information about drivers.
BIOS	Virtualization must be enabled

SYSmark 30 installation

Please use disk image software to make a backup of the disk prior to installation of SYSmark 30. SYSmark 30 does not support uninstallation, therefore, BAPCo recommends making a backup of your image before installing SYSmark 30.

Please be sure the test image is free of any known conflicting software before attempting installation. This list includes but is notlimited to any of the applications that will be installed by the benchmark. See the APPLICATIONS section for the list of applications that SYSmark 30 installs and/or uses.

Be sure that the system clock date and time are set correctly before proceeding with installation. Installation on systems with incorrect date and time settings or modifying the time and/or date after installation may results in run time failures.

Follow these steps to install SYSmark 30:

1) Download SYSmark 30 from the BAPCo store
    a. Make a backup copy of the download zip to a USB key or other external drive for safe keeping.

b. Update the SUT to the correct date and time

c. Disconnect the SUT from the internet during installation, as this may cause issues with some of the applications installed by the benchmark.

2) Unpack the benchmark files

   a. Create a folder called SYSmark30 and unpack the contents of store download.

3) Using Windows Explorer, navigate back to the Disc1 folder created in Step 2.

4) Double click on the file named SYSmark30_setup.exe and follow the prompts to complete installation

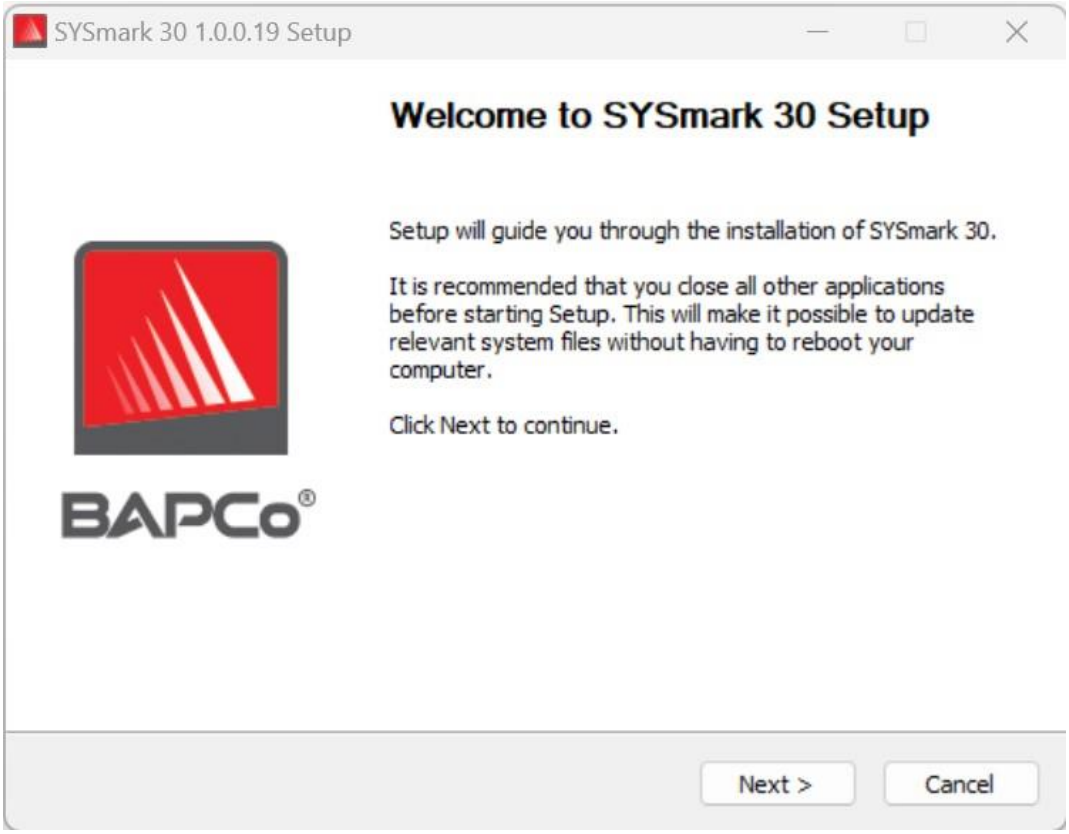

Figure 1: SYSmark 30 installer window

Read and accept BAPCo software EULA by clicking the option 'I accept the terms of the License Agreement'. Then click 'Next'

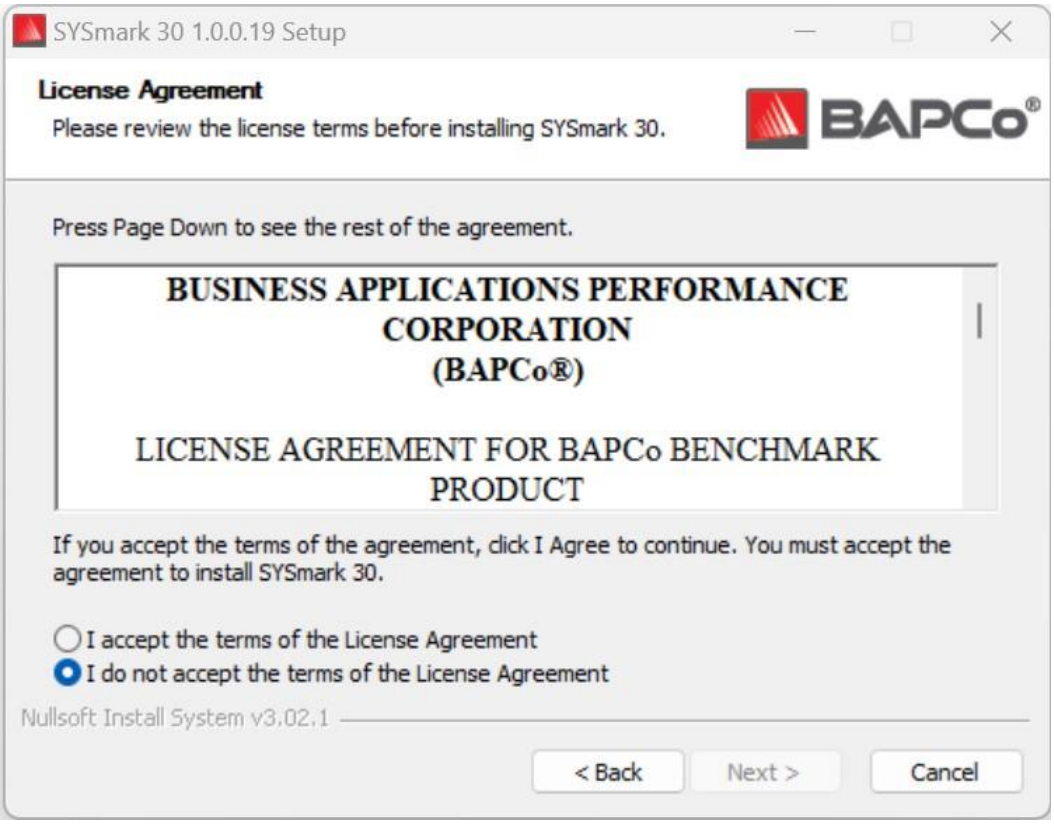

Figure 2: SYSmark 30 EULA

Enter serial number the serial number provided with benchmark package and click next to continue.

Figure 3 Enter a valid SYSmark 30 serial number to proceed with installation.

Figure 4 shows the default full installation of the benchmark. All core components, all scenarios and the results browser will be installed when the user clicks 'Next'

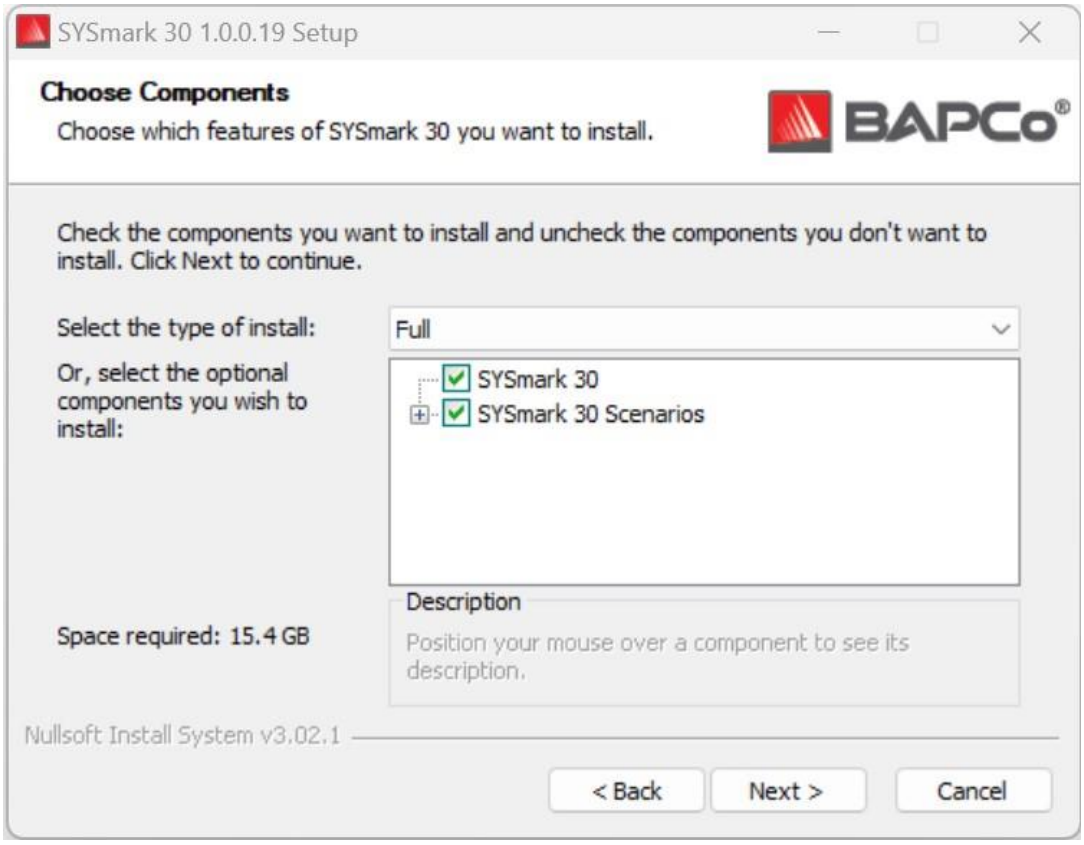

Figure 4: Default full install of SYSmark 30

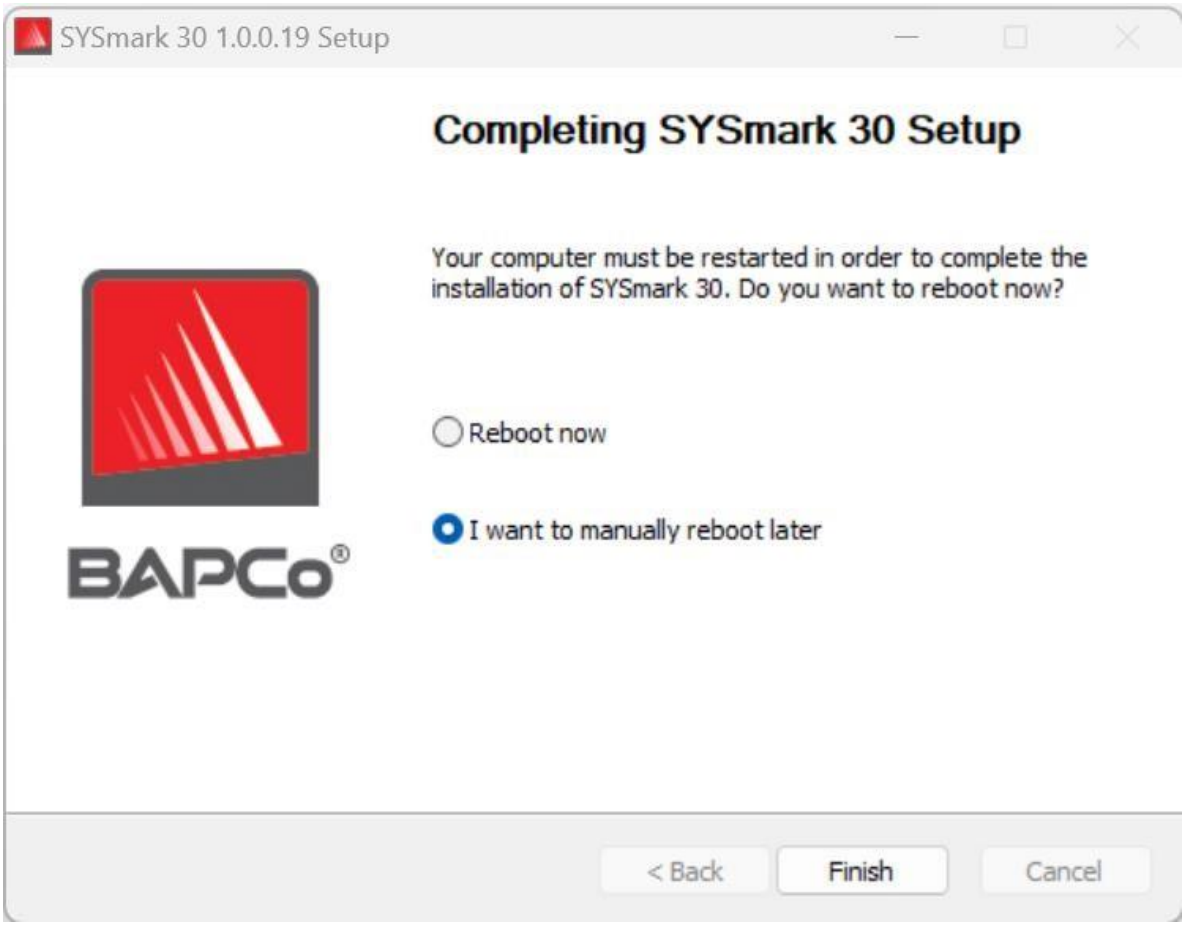

Figure 5: Installation of SYSmark 30 has completed successfully

Once installation has completed, please reboot the system before attempting to run SYSmark 30.

Uninstallation

SYSmark 30 workload manager can be uninstalled through the Windows Add/Remove programs control panel. However, due to the DRM present in some of the applications distributed with the benchmark, the system image will not fully return to its pre-installation state. For this reason, uninstallation is not supported. BAPCo recommends customers make a backup of the system image prior to installing SYSmark 30, and restore that backup after testing has been completed.

Running SYSmark 30

Start SYSmark 30 by double clicking the desktop short cut to launch the main interface as illustrated in Figure 6 below.

Important: If User Account Control has not been previously disabled, right-click the icon and choose 'Run as administrator'. UAC can then be disabled using the integrated configuration tool. More information on the integrated configuration tool is available in the SYSTEM CONFIGURATION TOOL section. SYSmark 30 must be run under the same user account that was used to install it.

Note: SYSmark 30 may also be launched via command line. See the AUTOMATED EXECUTION section for more details

SYSmark 30 interface

SYSmark 30 includes an updated user interface, which allows running individual scenarios.

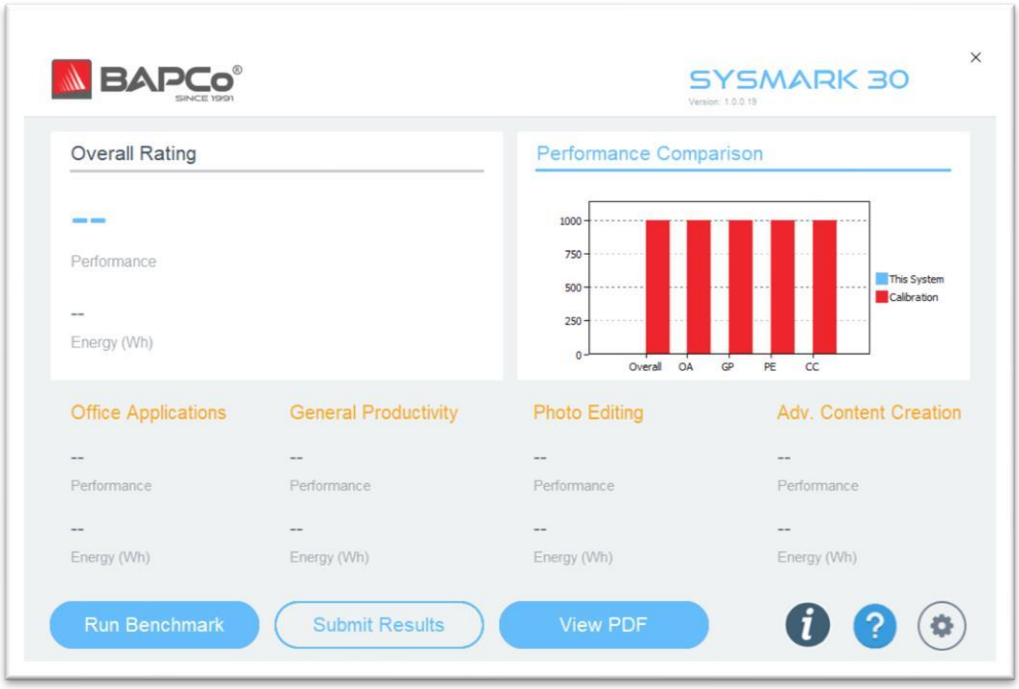

Figure 6: SYSmark 30 interface.

Just click 'Run Benchmark' to launch a benchmark run with default configuration which will do the following:

- Run one iteration of all four scenarios.
  - The project name will be 'project001' for the first project. Subsequent projects will be named 'project002', 'project003', and so on.
- Conditioning run is set to OFF
- Process idle tasks is set to OFF

- The system configuration tool will execute with the following options (see the **SYSTEM CONFIGURATION TOOL** section for additional information on these options)
    - Required items – set to ON
    - Recommended items – set to ON
    - Optional items – set to OFF
- Energy Test will execute if a supported meter is installed and detected to the system under test.

Advanced settings can be viewed and modified by clicking the gear icon in the bottom right corner of the main user interface. See the **BENCHMARK SETTINGS** section for more information.

Benchmark settings

Users can access additional benchmark settings by clicking the settings button as indicated by the red arrow in Figure 7.

Figure 7: SYSmark 30 settings button

Clicking 'Settings' button as indicated by the red arrow in Figure 7 above, will bring up the detailed settings window as shown in Figure 8 below. From this window, users may change the default number of iterations, specify a project name, enable the conditioning run, disable the energy test, select individual scenarios to run, and make changes to the configuration tool options. The GUI remembers the state of any setting that has been changed and carries forward to subsequent runs. For example, if the condition run is turned ON, all subsequent runs will include the conditioning run. See the next section, **SYSTEM CONFIGURATION TOOL**, for more information.

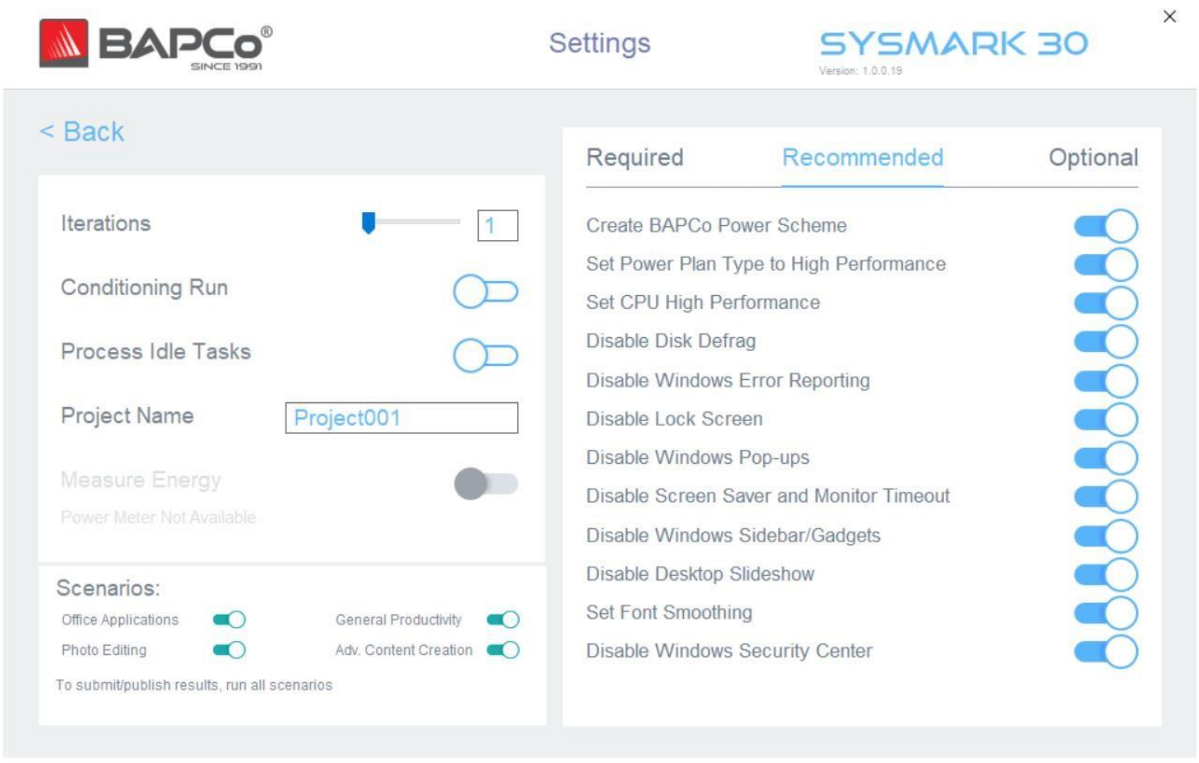

Figure 8: SYSmark 30 configuration options on Windows 10

System Configuration Tool

The configuration tool runs automatically at the start of each test and records the state each item on the system under test prior to modifying it for benchmark execution.

By default, the configuration tool sets the Required and Recommended items as described below. Optional items are not set by default.

Users may modify the default items by clicking on the settings icon and navigating the Recommended or Optional configuration tabs. Note that Required settings cannot be disabled via the GUI.

If additional control of the system configuration items is required, please refer to the section: **SYSTEM CONFIGURATION FROM COMMAND LINE**.

The following is a list of configuration options with their priorities that can be applied using the System Configuration tool. Some items may apply only to certain supported operating systems, as noted in the item's description. An example command line string for each configuration item is also included in the description.

Required

Make configuration changes required for the benchmark to run. These items are enabled by default and cannot be disabled.

Disable User Account Control (UAC)

Disables User Account Control to prevent Administrator elevation prompts from appearing during benchmark runs. The system must be rebooted to apply this change.

Set DPI scaling to 100%

Sets the desktop scaling to 100%. Prevents failures on higher resolution displays

Disable Low Battery Actions

Prevents the system from shutting down or from posting a warning when the battery reaches the low level.

Disable Network Proxies

Disables proxy server configuration for Internet connection settings.

Disable System Sleep and Hibernate

Prevents the system from going to sleep or hibernating and disables the "Require password on wake" setting.

Disable Windows Update

Disables the windows update service.

Disable WinSAT service

Disables the WinSAT service

Recommended

Make configuration changes recommended in order to obtain repeatable scores and minimize the occurrence of errors. Recommended items are enabled by default. Recommended items may be disabled by clicking the slider next to the configuration item or using the command line option.

Create BAPCo Power Scheme

Creates a new power scheme named "BAPCo SYSmark 30" based on the system's currently active power scheme. If applied, all subsequent power profile configuration changes will be applied to

the newly created power scheme. If this option is not enabled, all power profile configuration changes will be applied to the currently active power scheme.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= PowerScheme= on|off

Set Power Plan Type to "High Performance"

Sets the "Power Plan Type" option (sometimes referred to as "Power Plan Personality") of the active power scheme to "High Performance". This setting tags the active power plan with an overall personality that favors performance over energy savings. Drivers and applications may query this setting to determine their respective performance vs energy savings behavior. This option may be used whether or not the "Create BAPCo Power Scheme" option is checked. If "Create BAPCo Power Scheme" is not enabled, "Set Power Plan Type" will be applied to the currently active power scheme.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= PowerPlan= on|off

Set CPU High Performance

Sets the minimum and maximum value for CPU performance state to 100% to prevent CPU throttling on both AC and DC power.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= HighPerformance= on|off

Disable Disk Defrag

Disables the Defrag scheduled task.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= DiskDefrag= on|off

Disable Windows Error reporting

Prevents Windows Error reporting tool from presenting error reporting windows.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= ErrorReporting= on|off

Disable Windows Lock screen

Disables the lock screen to prevent it from blocking application input

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= DisableLockScreen= on|off

Disable Windows Pop-ups

Disables all pop up notifications (Balloon tips) in the systray.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= DisablePopUps= on|off

Disable Screen Saver and Monitor Timeout

Turns off the screen saver. Disables display timeout in the power profile for both AC and DC options

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= SystemSleep= on|off

Disable Windows Sidebar/Gadgets Turns off Gadgets.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= WindowsSideBar= on|off

Disable Desktop Slide Show

Prevents the desktop background from changing.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= DesktopSlideShow= on|off

Disable Windows Security Center

Disables Windows Defender Antivirus and Windows Security Center services. This option does not apply to Windows 11.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= WindowsSecurityCenter= on|off

Disable Windows Firewall

Configures the Windows firewall to allow all inbound/outbound traffic on Windows 10.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= DisableWindowsFirewall= on|off

Set Font Smoothing

Turns on Windows font smoothing

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= SetFontSmoothing= on|off

Optional

Make configuration changes that are typically not needed to obtain repeatable scores, but which may be needed in some rare cases. Optional items are not enabled by default.

Disable Hard Disk Timeout

Prevents the hard disk from going to sleep

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= HardDiskTimeout= on|off

Disable System Restore

Disables Windows system restore

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= SystemRestore= on|off

Ignore Laptop Lid Close

Prevents the system from going to sleep if the lid is closed during a benchmark run

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= LaptopLidClose= on|off

Enable Dark Mode

Enables Dark Mode on systems which support it. This setting will be reported in the results as 'On', if all dark mode settings are enabled, 'Off' if all dark mode settings are disabled, or 'Custom' if the system has been configured with a combination of dark mode settings.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -sc= EnableDarkMode= on|off

System configuration from command line

When running SYSmark 30 from the command line, the system configuration items will be set according to their defaults unless the user specifies options on the command line. Example parameters for individual settings are provided in the description for each item in the previous section.

Example:

"C:\Program Files (x86)\BAPCo\Sysmark30\bin\SYSmark 30.exe" -p=test_project -sc= WindowsSecurityCenter= Off

The above command will execute the benchmark in a project called 'test_project', run the defaults of one iteration plus the conditioning run. The WindowsSecurityCenter option in the configuration tool will be set to 'Off' meaning the Windows Security Center service will not be disabled during the test.

For cases where users do not want to set any system configuration items, all of the system configuration items must be specified as set to 'Off' on the command line. Configuration items listed as Required cannot be disabled, and therefore do not have a corresponding command line parameter.

Results generation and display

The SYSmark 30 user interface will display the results of the most recently run project in the main benchmark windows. If SYSmark 30 has been launched after a new installation, no results will appear until a run has been successful completed.

Viewing additional results

SYSmark 30 results are saved as a PDF document in the Results folder located on the desktop of the system under test. Use Microsoft Edge browser in order to view the contents of the PDF on the system under test. Each PDF file also includes an embedded .XML attachment which contains additional details about the system under test. A standalone PDF reader such as Adobe Acrobat or Foxit PDF must be used to view the XML, as PDF attachments are not currently supported by browser based PDF viewers.

Results submission

Users may submit results in the following ways:

Submit from SYSmark 30

- Click the 'Submit Results' button on the SYSmark 30 main window to submit the most recent FDR.
- Fill in the submission form dialog and click submit.
- Note: If no results are displayed in the main window, no information will be sent to BAPCo.

Submit results by web browser

PDF results files may also be submitted through the web browser via drag and drop at results.bapco.com/upload. To upload results by drag and drop do the following steps:

- Locate the PDF files to be submitted
- Navigate to results.bapco.com and click the 'Submit results' option in the menu on the left of the web page
- Complete the information (Name, company, email address, and configuration notes, if desired).
- Drag and drop the files on to the page, or click 'Add files' and browse to the folder containing the PDFs for upload. Click 'Start upload'.
- An email will be sent to the provided email address with a link to view the status of the submission. Results will take up to 10 days to be publicly viewable.

Automated installation

SYSmark 30 may be installed through the command line. The following command line switches are available:

- /S - silent install, no GUI
- /SN <serialnumber>, pass serial number to the installer

To install SYSmark 30 from the command line, open a command prompt, change to the directory where the SYSmark30_Setup.exe file is located and issue the following command, replacing <1234-5678-91234567-8912-34567> with the 25 digit serial number provided at time of purchase.

Example command for unattended installation

C:\>start /wait SYSmark30_Setup.exe /S /SN= <1234-5678-9123-4567-8912-34567>

Installer exit codes

When complete, the installer will return an exit code (stored in %ERRORLEVEL%). See below for the exit codes and their meanings:

- 0 - Success
- 3010 - Success, reboot required
- 1 - Installation abort by user
- 2 - General installation problem
- 3 - Missing or invalid serial number
- 4 - The following applications must be uninstalled before installing SYSmark 30
- 5 - SYSmark 30 (64-bit) can only be installed on 64-bit machines
- 6 - SYSmark 30 installer is already running
- 7 - Installer must be run from the top level installer: SYSmark30_Setup.exe
- 8 - Disc 2 version does not match the version in Disc 1
- 9 - Application installation missing. Invalid installation. Please uninstall and reinstall SYSmark 30
- 10 - Installation directory must be less than 145 characters.
- 11 - Installer cannot find Disc2 media (or folder)

Automated execution

SYSmark 30 also supports execution from the command line. Supported command line parameters are provided in the list below. The SYSmark 30 GUI will launch if there are syntax errors in the command line text.

-p= or --project	Specifies the name of the project. This option determines if the GUI is presented to the user, or if the benchmark runs silently. If this option is supplied, it is assumed that the GUI should not appear.
-i or --iterations	Specifies the number of iterations to run. This must be greater than 0. The default is 1.
-r or --retries	Specifies the number of retries when a script error occurs. The default is 5.
-w or --retrywait	Specifies the amount of time in seconds to wait before a retry. The default is 120 seconds.

-j or --energytest	Enables energy testing
-nc or --noconditioning	Turns off system conditioning run.
-ep or --processIdleTask	Turns on process idle tasks.
-h or --help	Displays the help screen.
-drsc or --disablerestoresc	Disables restore of system configuration values at the end of the benchmark run.
-s or --shutdown	Shutdown the system at the end of benchmark run.
-sc or --system config = <str>	Enables or disables system config tool options on the command line (see section SYSTEM CONFIGURATION FROM COMMAND LINE for more information)

The example command below will launch SYSmark 30 with the default system configuration items, create a project called 'test_project' and run the benchmark four times.

"C:\Program Files (x86)\BAPCo\SYSmark30\bin\SYSmark 30.exe" -p=test_project -i 4"

Automated data collection

SYSmark 30's workload manager allows the user to execute scripts to aid in the processing of results at the conclusion of a run. Placeholder scripts are included with each installation in the C:\Program Files (x86)\BAPCo\SYSmark30\Automation\ directory.

ProcessResults.bat is executed at the conclusion of a successful run of SYSmark 30. Users can add commands to this script to copy results to a new location, or call additional commands specific to their environment.

ProcessError.bat is executed if SYSmark 30 exits with an error condition. Insert commands to this script to do things such as copying error logs to a new location, or call other commands for post processing errors.

Energy Test

Yokogawa WT310E Meter configuration

1. Obtain WT310E series power meter
2. Make all power connections
3. Power up the system under test and install YKMUSB drivers https://tmi.yokogawa.com/us/library/documents-downloads/software/usb-driver/
4. Connect USB cable from WT310E to system under test
5. SYSmark 30 can now be executed with the 'Energy Test' option enabled.

Watts up? Meter configuration

1. Obtain a compatible Watts up? power meter
    - Contact support@bapco.com for available meter options • Compatible meters include the PRO, PRO ES, and .NET models
    - The basic "Watts up?" model is not compatible.
    - Compatible Watts up? models support 120V, 60 Hz power and are unfortunately not suitable for Europe (230 VAC 50 Hz)
2. Make all power connections
    - Plug the Watts up? meter into a power outlet
    - Plug the system under test into the power outlet on the Watts up? meter
3. Power up the system under test and install Watts up? data logger found here:
    - Download the data logger package: https://bapco.com/wpcontent/uploads/ftp_uploads/WuUSBSetup9.zip
    - Unzip the package, double click WuUSBSetup.exe, and step through the installation wizard
    - If the following warning appears during installation of the Data logger, click 'Ok' to dismiss

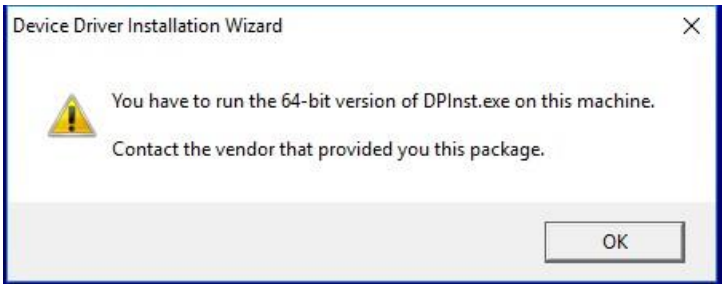

Figure 9: Watts Up Pro warning

- Uncheck the option to ‘Run Watts Up USB now and click ‘Finish’ to complete installation of the data logger

4. Install the USB controller driver
    - Be sure the Watts Up Pro meter is connected to the test system

- Download the USB controller driver: https://bapco.com/wpcontent/uploads/ftp_uploads/CDM2.04.06WHQL_Certified.zip
- Extract the contents of the zip file to a folder.
- Open Device Manager and under ‘Other devices’ locate the USB UART entry as shown

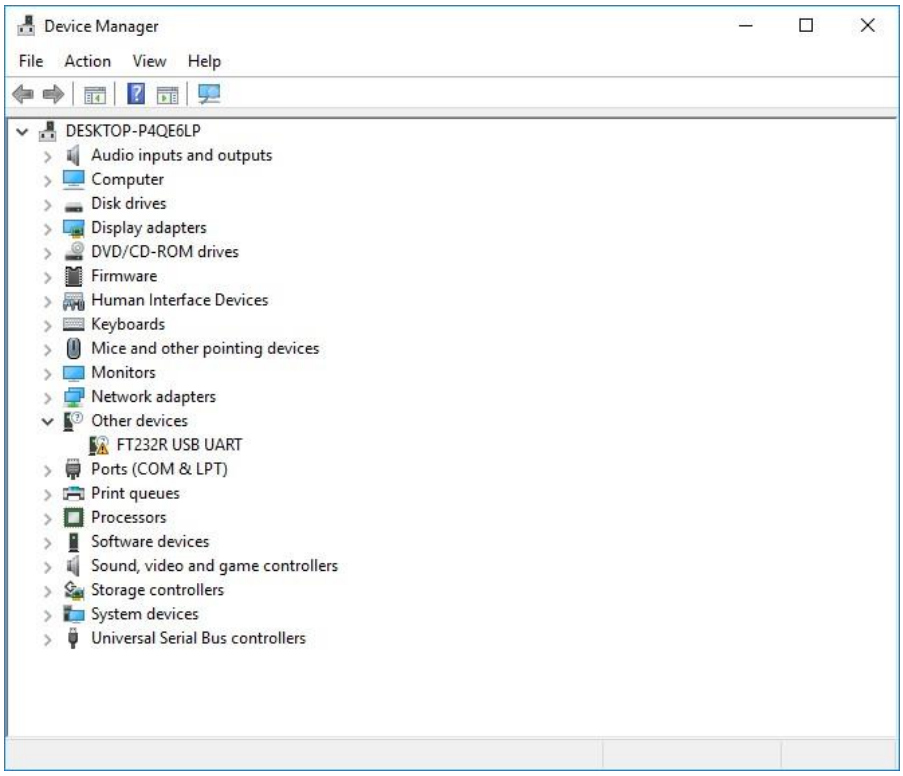

Figure 10: Device manager driver not found

- Right click the and choose ‘Update driver software’
- Choose ‘Browse my computer for driver software’
- Check the box for ‘include subfolders’, then use ‘Browse’ to navigate to the location where the driver package was extracted. Click ‘Next’ and Windows will scan the folder and install drivers
- After ‘USB serial controller’ is installed, return to device manager and repeat the steps for the ‘USB serial port’ item
- Device manager should now be clear of any driver not found warnings • SYSmark 30 can now be executed with the ‘Energy Test’ option enabled.

Tips For Usage

This subsection describes the behavior of SYSmark 30 during the execution of a benchmark run.

Best Practices

In order to obtain reliable, reproducible results, BAPCo recommends using the default settings in the SYSmark 30 interface. To run with the default settings, just launch SYSmark 30 and click 'Run Benchmark'. The default settings are listed below.

- Iterations (one iteration)
- Conditioning run enabled
- Process idle tasks disabled
- Enable Energy test (applies only if a supported meter is installed and connected to the system under test).
- When using BAPCo benchmarks to evaluate performance or battery life, one should install the latest production drivers from the hardware manufacturer. Drivers included with the operating system may not be device specific or newer drivers may be available from the device manufacturer. Using incorrect drivers could result in significantly reduced performance

Heads Up Display (HUD)

The Heads Up Display appears in the upper right corner of the desktop and provides information about the currently running project

Figure 11: SYSmark 30 HUD.

Process idle tasks

Prior to executing benchmark workloads, the SYSmark 30 workload manager will pause for 120 seconds to allow the system to stabilize. When the 120 seconds have elapsed, the workload manager will issue the process idle tasks command, if this option was selected. When the idle tasks queue is cleared, the benchmark workload will begin. Note: Process idle tasks completion time can vary from system to system.

Keyboard/mouse input blocking

Once workload execution begins, the workload manager will lock the system to prevent accidental input from the mouse or keyboard from disrupting the workload automation. The workload manager will continue to execute the selected scenarios for the current project, and will display the results at the successful conclusion of the run. Refer to the STOPPING A RUN IN PROGRESS section below for additional information on keyboard and mouse input blocking.

Error handling

By default, when SYSmark 30 encounters an error during the execution of a project, the workload manager will log the error and then present the user with the retry dialog, as pictured below.

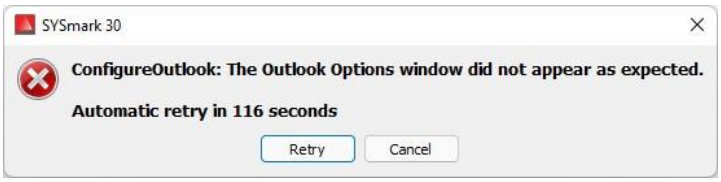

Figure 12: SYSmark 30 retry dialog

Unless otherwise configured on the command line with *-r or --retries*, SYSmark 30 will attempt to retry a scenario up to five times. The default timeout between an error and scenario retry is 120 seconds. This value can be changed on the command line using *-r or --retrywait*. If the scenario cannot be successfully completed before the retry threshold is reached, the workload manager will halt execution and display the error message in the results browser.

SYSmark 30 allows further control of error handling timeouts through the BENCHMARK_TIMEOUT_MULT environment variable. This variable can be configured to increase the amount of time a benchmark script waits before throwing an error and either attempting a retry or halting the run. The default value for BENCHMARK_TIMEOUT_MULT is 1.0. Increasing the value to 2.0 doubles the error handling timeout, 3.0 triples the timeout, and so on.

Stopping a run in progress

If it becomes necessary to stop a benchmark run in progress, follow these steps:

- Press the CTRL-ALT-DEL keys at the same time, to bring up the Windows change password screen
- Click 'Cancel' to return to the desktop
- Keyboard and mouse input should now be enabled
- Navigate to the systray in the lower right corner of the screen and find the BAPCo icon, as shown below
- Right click the icon and choose 'Stop'

Figure 13: BAPCo systray icon. The green triangle indicates SYSmark 30 is running

Reference system

SYSmark 30 performance scores are normalized using a reference system. The reference system scores '1000' on each of the three scenarios, and on the overall SYSmark 30 performance rating. The reference system configuration is listed below.

Lenovo® ThinkCentre™ M720q

- CPU: 11th Gen Intel Core i5 11400T
- Graphics: Intel UHD 730
- Resolution: 1920x1080
- OS: Win 11 21H2 build 10.0.22000.318 (64-bit)
- RAM: 2x8GB, 16GB dual channel
- Storage: 512GB PCIE OPAL2

Applications

The following applications (grouped by scenario) are installed and/or used by SYSmark 30. Some applications appear in multiple scenarios, but only one instance of the application is installed.

Office Applications

- Microsoft® Excel® 2021 Professional Plus VL
- Microsoft® Outlook® 2021 Professional Plus VL
- Microsoft® PowerPoint® 2021 Professional Plus VL
- Microsoft® Word® 2021 Professional Plus VL

General Productivity

- Adobe® Acrobat® Pro DC
- Audacity (v 2.3.2) (for app install)
- Corel WinZip 26.0
- Google Chrome (v 106.0.5249.103)

Photo Editing

- Adobe® Lightroom® Classic (version 11)
- Adobe® Photoshop® CC (version 23)

Advanced Content Creation

- Adobe® Photoshop® CC (version 23)
- Adobe® Premiere® CC (version 22)

Please note some of these applications have licensing restrictions which cause them to expire after 30 days requiring restoring device under test from backup and then installing new instance of SYSmark30.

Scenarios

SYSmark 30 scenarios and workload descriptions are provided below.

Office Applications

The Office Applications scenario models office environment like usage including word processing (mail merge, document comparison, and PDF conversion), spreadsheet data manipulation (data modeling, financial forecasting), presentation editing.

General Productivity

The General Productivity scenario models OCR of documents, web browsing, application installation, and archiving and unpacking a mixed file data set.

Photo Editing

The Photo Editing scenario models editing digital photos (applying filters and creating HDR photos), cataloging digital photos (organizing catalog, use of facial detection to group people).

Advanced Content Creation

The Advanced Content Creation scenario encodes video with a CPU render and GPU accelerated workload for SUTs configured with a supported accelerated GPU. A multitasking workload switches between photo editing and video editing workloads.

Support

Technical support for SYSmark 30 is provided on the web at https://bapco.com/support and via email at support@bapco.com. Before contacting support, please be sure all updates for SYSmark 30 have been installed. BAPCo does not provide support for down-level versions. When contacting support please include the following information.

- SYSmark 30 version, e.g., 1.0.0.123
- System under test configuration information
- Step by step instructions for reproducing the problem
- Rate of error, e.g., 100%, 50%
- Archive of the benchmark error logs from the failing run
- Locate the installation folder, for example: C:\Program Files (x86)\BAPCo\SYSmark30\Config ○ Copy the SYSmark30.db file
- If reporting a problem with installation, locate the benchmark installation logs:
  - %TEMP%\SYSmark30_Disc1.log
- Locate the Results folder on the desktop and include the .pdf report from the failed run
- Archive the database file and the logs listed above using WinZip, WinRAR, etc.
- Attach the archive file to the support request email sent to BAPCo support, or please upload the archive file through the form at https://bapco.com/support
- When reporting multiple errors, please include the logs and a description for each problem being reported

SYSmark® 30 Benchmarking Rules v1.0

This document describes the rules governing publication of results derived from running the BAPCo SYSmark 30 benchmark. Any licensee who wishes to publish such results is obliged to adhere to all rules and regulations described in this document or other documents provided by BAPCo related to execution and reporting of SYSmark 30 benchmark results. BAPCo reserves the right to change the rules outlined in this document at any time. Licensees are encouraged to consult BAPCo website at www.bapco.com for the latest information regarding execution and publication rules. For more information please consult the Software License Agreement.

Benchmark Execution

Workload Manager: All benchmarks must be run using the SYSmark 30 Workload Manager. This utility is an executable program that runs the SYSmark 30 benchmark. It also includes a module that generates the final benchmark results for the system under test. All published results must be derived only from a complete and correct run of the benchmark. All tests must be performed without modification to any part of the SYSmark 30 software.

The collective set of hardware and software used in generation of an official SYSmark 30 result must be available to the public as defined by BAPCo's availability criteria. The following specific rules apply:

Operating System: The operating system used to generate and publish results must be a publicly available release from the original software vendor. Consult the product manual at www.bapco.com for the current list of supported operating systems. Upgrade of specific drivers that are released and maintained by vendors other than the operating system vendor (e.g. graphics drivers, disk drivers, motherboard setting files, multimedia drivers) is allowed provided these drivers are publicly available, release-quality drivers from original vendors of such drivers. Licensees may also use operating system service packs, API updates (e.g. Direct X) and other such updates provided they are publicly available, release-quality software from the original vendor, and that they meet the benchmark's Operating System requirements. Licensees should also consult license agreements from individual software vendors to ensure compliance with vendor benchmark restrictions.

Performance Enhancing Utilities: Use of performance enhancing utilities or techniques is allowed provided that the utility or technique is publicly available, release-quality software from the original vendor. The utility needs to be documented and such techniques should not compromise the integrity of the system under test or the benchmark. BAPCo shall reserve the right to review the usage of such tools or techniques and invalidate published results if need be.

Hardware: The system hardware used to generate official SYSmark 30 results must be publicly available at the time of publication or within 60 days thereafter. The system must be purchasable as a complete platform from an Original Equipment Manufacturer within 60 days of publication. Alternatively, licensees

may report results for systems which may not be available from an OEM but whose individual components are publicly available and purchasable from various vendors at the time of publication or within 60 days thereafter. Note that the 60-day grace period does not apply to system software. All software used must be publicly available and be of release-quality available from the original software vendor.

Full Disclosure Report

A complete Full Disclosure Report (FDR), must be generated by the Workload Manager for all published results. ***This FDR may include the rating of any of the four scenarios (Ex. Office Productivity, General Productivity, Photo Editing, Advanced Content Creation) to be valid for publication or submission. SYSmark 30 Overall rating will only be generated when all 4 scenarios are performed.*** *Pertinent information regarding the state of the system under test must also be included. The format and the information included in this report is determined by BAPCo. BAPCo forbids modification of the generated FDR. Any modifications violate the BAPCo software license agreement and invalidate the FDR for publication or submission).*

Publication

BAPCo requires all licensees to submit FDRs to the BAPCo website (https://results.bapco.com) for all publicly available published results. Submit results by any of the following methods:

1) Clicking the 'submit results' button from the benchmark GUI after a successfully completed run 2) Uploading results via the online submission form at https://results.bapco.com

Or, if the above options are unavailable

3) Submit results by email to report@bapco.com

Licensees are responsible for retaining FDR records for all published results. Results submitted by email will be published at results.bapco.com.

All FDRs submitted by licensees to BAPCo are subject to a 10 day review period. During this review period any BAPCo member can challenge the submitted FDR or submit a counter FDR. When a challenge occurs or a counter FDR is submitted, BAPCo will decide which, if any, of the FDRs will be accepted for inclusion in the FDR database.

Any publication of results must be accompanied by at least the system model number plus any discrepancies between the shipping configuration of that system model and the configuration of the system model actually tested.

Results collected on systems that do not meet the minimum system requirements for running SYSmark 30 may be published if submitted to BAPCo for inclusion in the FDR database. However, BAPCo will only offer technical support for system configurations that meet or exceed the minimum system requirements for SYSmark 30.

Any publication of SYSmark 30 results must include the SYSmark 30 overall rating from the same run of the benchmark.

Any publication of SYSmark 30 results must include a link to the corresponding result at results.bapco.com.

Relative Performance

Licensees have the option of publishing the relative performance of two or more systems (for example, "System X is 15% faster than System Y using SYSmark 30") as long as the licensee adheres to the Benchmark Execution and Publication rules above for all systems.

If a licensee publishes the relative performance of two or more systems and one or more of those systems does not adhere to the Benchmark Execution and Publication rules above, the licensee must state that the performance results are "estimated" or "projected" when making the claim (for example, "We estimate that System X is 15% faster than System Y using SYSmark 30"). Publishing absolute scores of estimated or projected results is not permitted.

Availability

When publishing SYSmark 30 results, the tested system must be available for purchase by the public either at the time of publication or within 60 days after publication. Note that the 60-day grace period does not apply to system software. All software used must be release-quality and made publicly available from the original software vendor.

FDR Processing

The submitted FDRs are processed by BAPCo and classified as:

Released for publication - The results are released for publication as filed.

Rejected - The results are rejected for publication as filed.

The Released for publication classification is in no way a validation or an endorsement of the results by BAPCo. Licensees are free to publish results as long as a complete and valid FDR has been generated and submitted to results.bapco.com. BAPCo will perform frequent audits of the submitted FDRs and reserves the right to revoke the license granted to licensees who have not adhered to the regulations described in this or other SYSmark 30 documentation. In the case where an FDR is returned to the licensee with rejected classification, the licensee must immediately stop publication of the rejected results until the matter is clarified by BAPCo. Any publication of results must be accompanied by at least the system model number plus any discrepancies between the configuration of the stated model number and the configuration of the system tested. The publication can use the single overall SYSmark 30 rating or the combination of the overall rating and a scenario rating. Licensees may not publish scenario ratings unless the overall SYSmark 30 rating is also included. (E.g. the Productivity scenario rating cannot be published without disclosing the SYSmark 30 overall rating) The term SYSmark is a registered trademark of the Business Applications Performance Corporation and may only be used in conjunction with performance metrics generated by the SYSmark 30 Workload Manager. Any other performance characterizations may be made but must be derived from the performance metrics generated by the Workload Manager. The terms SYSmark and SYSmark 30 may not be used as the performance metric describing such characterizations.

Publication of Results on Non-OEM Platforms

BAPCo allows the publication of performance indices using SYSmark 30 for making "Non-OEM" platform comparisons. This includes performance comparisons on systems that are not shipped from an OEM as a complete platform. An example of such comparisons is when a graphics card manufacturer wishes to compare the performance of its graphics card to that of another manufacturer in an identical platform by swapping the cards and measuring the performance. Results published on Non-OEM platforms must be marked as Modified on the accompanying FDR and whenever appearing in publications of any kind.