



Trimble Business Center

Release Notes

Version 5.31

www.trimble.com

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Welcome to Trimble Business Center 5.31

Trimble Business Center (TBC) provides a complete office software solution for survey and construction professionals. Having the ability to work in a single software environment streamlines operational efficiency while minimizing the costs of data management, software maintenance, and training.

This version of TBC includes numerous enhancements. See "New features" for more information.

Installing or updating

For installation or update instructions, see the appropriate bullet below.

Note:

Trimble Business Center (TBC) licensing information is contained in a Sentinel HASP hardware or software key connected to or installed on your computer. If no key has been connected or installed, TBC allows you to import and view data only (excluding data collected with Trimble-branded Mobile Mapping hardware, which requires an appropriate license). It does not allow you to use any licensed features. To view your license after installation is complete, select Support > License > License Manager. For a description of the features available in each licensed configuration, see "Licensed Features" in the online Help.

Warning!

When installing Trimble Business Center and various support applications (for example, Microsoft DirectX and Windows Mobile Device Center), you may be prompted to reboot your system multiple times to ensure the proper installation of these applications. To prevent the possibility of lost or corrupted data, it is highly recommended that you save all files and close all other applications prior to performing this installation.

- **New users installing TBC to use with a single-user license:**
 - a. Before you insert the new Sentinel HASP hardware key you received in your installation package, install TBC from the TBC installation package downloaded from the Trimble website.
 - b. Before running TBC for the first time, insert the new Sentinel HASP hardware key into an available USB port on your computer.

All licensed features will be available when you run TBC. Your 1-year warranty begins the first time you open the software.
- **Existing users installing this version of TBC:**

Install TBC from the installation package downloaded from the Trimble website.

Important Note! This version is available to users whose current warranty expiration date is **1 April 2020 or later**. If your warranty expires prior to this date and you proceed with the installation, licensed features will not be available. Contact your distributor to purchase a warranty extension. In the TBC ribbon, select Support > License Manager to verify your warranty expiration date.

New users installing TBC to use with a multi-user license installed on a network:

- Ensure your computer can connect to the network server where the HASP multi-user network license is installed. When you run the software after installation is complete, it will automatically search the network to locate the license.
- Ensure no HASP hardware key is connected to your computer during installation.
- See your administrator for more information.

Note to Administrators: For instructions on installing a HASP network key (multi-user license) and viewing and managing license information, in the TBC ribbon, select Support > License > License Manager. Then, in the License Manager dialog, select the Network Licensing Read Me link.

New features

Following are the new features included in this version of Trimble Business Center. The features are organized by their related ribbon tabs. To view context-sensitive help at any time while using TBC, press F1.

Survey

- **Baseline processing mode included in report** - The mode automatically selected by TBC to process baselines for static GNSS data is now displayed in the Baseline Processing Report. TBC dynamically selects the best mode to use based on baseline length, occupation time, available signals, and other criteria. Displayed modes include:
 - **Uncombined Mode** - This processing mode, generally used for short baselines, uses uncombined multi-frequency processing either with or without ionospheric modeling.
 - **Wide Lane Mode** - This processing mode, generally used for long baselines, uses a combination of ionosphere-free processing and wide lane (IF/WL) processing, or a mix of IF/WL processing and Melbourne-Wubbena processing.
 - **Melbourne-Wubbena Mode** - This processing mode, generally used for very long baselines, uses Melbourne-Wubbena processing exclusively. (Due to code biases, this mode is used only for baselines between devices from the same manufacturer.)

This should provide you a better understanding of how baseline processing was performed on your static GNSS data when you are viewing the resulting baseline and the Baseline Processing Report. For more information on the various baseline processing modes used in TBC, visit the *Trimble Business Center: Bulletins and Updates* page at <https://geospatial.trimble.com/trimble-business-center-bulletins-and-updates> and select to view *Modernized Approaches for GNSS Baseline Processing White Paper*.

CAD

- **CAD Command Line hotkey update** - The shortcut to open the CAD Command Line has been changed to **F3**. The hotkey to enter the edit mode for spreadsheet/grid views remains **F2**.

Drafting

- **Show volumes on cross-section sheets** - When you use the Sheet Set Editor to create/edit cross-section sheets in a sheet set, you can now opt to label the volumes of any materials shown on the sheets. You can also choose the material to report volumes for; the reported/displayed volumes are not adjusted for material densities (shrink/swell/bulkage) or alignment curvature.
- **CAD block feature enhancements** - You use the CAD block feature in TBC to import or create CAD block definitions from lines, text, and other objects (for example, a north arrow). You can then insert instances of the resulting blocks into your model. The CAD block feature has been enhanced as follows:
 - When viewing the Properties pane for an instance of a block, you have the option to replace the block with a different block definition stored in your project using the Block name drop-down list.
 - You can select any instance of a block, right-click, and select New Block Edit View to view the associated block definition in a separate Block Edit View graphics tab on which you can make modifications as necessary (for example, modify linework, remove objects, or edit text).

Corridors

- **Comment instruction for corridor templates** - The Edit Corridor Template command includes a new *Comment* instruction type that inserts a comment you compose into the Instructions list to label one or more groupings of related instructions. When viewing the Instructions list, you have the option to collapse/expand (hide/show) all of the instructions following the Comment instruction, either to the end of the list or to the next Comment instruction. Comment instructions do not modify the template in any way. Instead, they enable you to easily break a long list of instructions into one or more labeled groups and then select to show or hide those groups in the Instructions list, making the list easier to scan and understand.

Point clouds

- **Faster imports of TDX files** - The TDX importer has been enhanced to apply parallel processing to the import of TBC / RealWorks Scan Data Exchange files, making the import process much faster.
- **Faster point feature extraction** - The Extract Point Feature command has been enhanced to more quickly extract point features for trees, poles, and signs. This can be very helpful when extracting large numbers of point features using the Automatic option.

Construction Data

- **Support for Siteworks Android data structure** - When you connect an Android data collector used for Siteworks to TBC, the device is recognized as a controller and does not require connectivity with TBC to work with the files after initial synchronization. This is the same way TBC handles Windows devices.
- **Reduce the density of VisionLink data for machine data surfaces** - In the Create Machine Data Surface command, you can now reduce the density (e.g., to a 10m grid rather than the default 0.3m grid) of the data from VisionLink to make surfaces smaller for better performance.

Mobile Mapping

- **Enhanced target picking for Mobile Mapping scan registration** - Mobile Mapping target picking has been enhanced as follows:
 - The Mobile Mapping Register a Run command now includes an indicator of which control point targets have been picked for registration, making it easy to keep track of your registration workflow progress when it includes numerous control points.
 - The Mobile Mapping Register a Run command now includes an "Activate limit box" option that allows you to specify that a customizable limit box be placed around a selected control point, limiting the amount of the point cloud displayed in the 3D View. This allows you to more easily focus on the target and its immediate surroundings.
 - The "Intersected plane" point cloud picking option now provides both a top-down view and a relief view in the Validate Picking window, enabling you to more precisely make your point selection both horizontally and vertically. It also enables you to select a diamond or checkerboard target type, specify the target's dimensions, select two opposite corners of the target, and allow TBC to automatically interpolate the center point of the target, eliminating guess work on your part and making the selection process as fast and easy as possible.

- **Register Run to Run command enhancements** - The Register Run to Run command has been enhanced to allow the processing of multiple pairs of runs using the new batch mode. Runs from a pair must be from the same mission and have enough overlapping scan data along the trajectory. Once processed, each pair can be inspected as residual RMS or visually using the Cutting Plane and has updated scan data.
- **Faster generation of Mobile Mapping scans in case of zero velocity** - Mobile mapping is the process of collecting data from a mobile vehicle. When the vehicle does not move (for example, stopped at a red light), data is still collected. The time required to process data when there is no velocity is faster in TBC 5.31.
- **RiMTA dll Upgrade** - RiMTA dll has been upgraded to version 6.0, which reduces missing data acquired in tunnels.

Support

- **License Manager enhancements** - The License Manager now displays the version of TBC currently installed. In addition, when you change license types or configure your active license, you do not have to restart TBC for the changes to take effect. Your changes take place as soon as you click Apply or OK in the License Manager.

Resolved issues

The following issues **have been fixed** in this version of TBC:

- When importing a Trimble Earthworks .DSZ file containing a .TSD surface file instead of a .SVD surface file, an import error occurred.
- A sideslope was applied to the entire length of a reference line, whether you wanted it to or not. To resolve, an optional end station was added to the properties of the SideSlope object.
- A problem occurred when displaying VCL files in the Work Order Viewer.
- TBC incorrectly reported no project in Works Manager when the project was archived.
- Needed to add "Rebuild" command to context menu for contours/alignment labels.
- Layer Manager would sometimes not display when running TBC using two monitors at different resolutions. (See additional instructions in "TBC floating tool panes disappear" bullet in "Miscellaneous notes" section below.)
- Creating a Machine Data Overlay was failing with an error.
- Vector text needed to support line weights just like lines.

Known issues

See "Known Issues" in the TBC Help for a complete list of known issues associated with the software and related utilities, along with possible workarounds.

Miscellaneous notes

- **TBC floating tool panes "disappear"** - If you are running TBC using two monitors at different resolutions and you move a TBC floating tool pane (for example, Layer Manager) from one monitor to another, it is possible for the pane to "disappear" (that is, it no longer displays on either monitor even if you close all other open windows). When this occurs, you can re-display the pane by holding the Shift key and clicking the associated command icon in the TBC ribbon.
- **Windows 7 no longer supported** - On January 14, 2020, Microsoft officially ended its support for the Windows 7 desktop operating system, which could leave computers vulnerable to cyber attacks or dangerous software bugs. In accordance, TBC v5.21 and later is not supported on computers running the Windows 7 operating system.
- **Ignore unknown satellites in baseline processing** - If an "unknown" satellite (that is, a satellite that is not listed in Project Settings > Baseline Processing > Satellites) is imported into a project from raw data files, TBC automatically sets the satellite's baseline processing status to "ignore" so it is not included in the processing (just as if you had unchecked it in Project Settings had it appeared there).
- **New prism height measurement method for Trimble SX10** - Prior to TBC v5.20, typical measurement methods for Trimble prisms designed for traversing with S-series total stations included "True vertical", "Bottom notch", "Bottom of V10", "Lever of V10 extension", etc. For TBC v5.20, the prism measurement method "Bottom notch" has been renamed "S notch" (same as the prior "Bottom notch"), and a new "SX notch" measurement method has been added that provides the same horizontal and vertical offsets as the bottom notch on the SX10. Other prism measurement methods have not been changed.
- **Mobile Mapping Windows display** - When processing Mobile Mapping data, it is recommended that your Window's display scale and layout not exceed 100%.
- **Disabling a laptop integrated graphics card** - If you are using a laptop computer with both an integrated (on-board) graphics card (for example, Intel®) and a discrete graphics card (for example, NVIDIA®) enabled, TBC may freeze when you are working with point clouds. To avoid this problem, you must select to disable the integrated graphics card and use only the discrete graphics card when working with scan registration. Follow these steps:
 - a. Open your Windows Control Panel, select BitLocker Drive Encryption, and select to suspend protection - if it is turned on. This is required to make the BIOS change required to disable the integrated graphics card.

- b. Restart your laptop computer and select to enter the BIOS setup utility as soon as the first image displays (prior to Windows launching) by pressing the appropriate shortcut key (for example, F1, F2, F10, ESC, or DEL). The BIOS shortcut is typically displayed briefly on the screen during startup.
- c. Once in the BIOS setup utility, navigate to the location of the graphics card control and use the appropriate method to disable the integrated graphics card. The method for doing this will vary depending on the BIOS setup utility. You can search the Internet for specific instructions.

For example, for a Dell® laptop implementing NVidia Optimus™ technology, you would select Settings > Video > Switchable Graphics in the BIOS setup utility, and then uncheck the Enable Switchable Graphics check box.
- d. Save changes and exit the BIOS setup utility to continue computer startup.
- e. If BitLocker Drive Encryption was suspended, turn it back on.

Additional notes:

- Your laptop computer consumes more power when using the discrete graphics card exclusively. If it is running in battery mode, you should re-enable the integrated graphic card when you are done working with scan registration.
- Do not use Device Manager to disable the integrated graphics card. Device Manager disables the card just for Windows, not for the entire motherboard, causing the integrated graphics card to still load first.
- Some laptops do not allow you to disable the integrated graphics card.
- **ArcGIS versions and Windows operating systems** - When using TBC to connect or write data to an ArcGIS Enterprise Geodatabase provider, see your ArcGIS user documentation to determine which versions of the ArcGIS products are supported on the various versions of the Windows operating system.
- **OpenCL Runtime driver** - OpenCL Runtime is a graphics accelerator driver required when TBC is performing automatic tie point matching or dense point cloud creation. If the driver is not installed, an error message is displayed indicating OpenCL Runtime cannot be found. In this case, you must download OpenCL Runtime from <https://software.intel.com/en-us/articles/opencl-drivers#phiwin> and install it on your computer using the instructions provided.
- **VCE compatibility** - As a general rule, you cannot open a VCE project file created in a newer version of TBC in an older version of TBC.
- **Windows 8 users** – Some components in TBC require Microsoft .NET Framework 3.5 to operate. If the .NET Framework 3.5 is not installed, you are prompted to install it when you install TBC. If your computer is connected to a domain that does not allow you to directly connect to Windows Updates on the Internet to enable and install .NET 3.5, you may need to change your group policy settings. See your system administrator for assistance.

For more information, see <http://technet.microsoft.com/en-us/library/dn482065.aspx>

- **TabletSync transfers** - If you use TabletSync to transfer large files (for example, panoramas) into TBC, it can take a long time for the upload to complete. As an alternative, you can shorten the transfer time by copying the files from the tablet onto a USB memory stick and copying the files from the stick into TBC.
- **Proxy server settings** - If you receive an error when trying to access an external server to process data, you may need to specify a proxy server for your LAN using Internet Properties > Connections > LAN settings > Proxy Server.

System requirements

Operating system:	Microsoft Windows® 10 (64-bit version) Microsoft Windows 8 (64-bit version) Note: Starting with TBC v5.21, Microsoft Windows 7 is no longer supported.
Processor:	Dual-core 1.80 GHz or better recommended Quad-core 2.80 GHz or better (additional cores with hyper-threading support highly recommended for Aerial Photogrammetry, Mobile Mapping, and Scanning modules) Important! Because components of TBC make use of Intel-only multi-thread processing, AMD Ryzen processors are not supported.
Random access memory (RAM):	4 GB or more recommended 32 GB or more recommended for Aerial Photogrammetry, Mobile Mapping, and Scanning modules
Hard disk space available:	10 GB or more recommended 100 GB or more on solid-state drive required for Aerial Photogrammetry, Mobile Mapping, and Scanning modules The recommended SSD overall hard drive capacity is 500GB or more for Aerial Photogrammetry, Mobile Mapping, and Scanning modules
Monitor:	1280 x 1024 or higher resolution with 256 or more colors (at 96 DPI)

I/O Ports: USB 2.0 port required if HASP hardware key is used

Graphics: DirectX 11 compatible graphics card with 512 MB memory or more
OpenGL version 3.2 or later required when working with point cloud data (latest version recommended)
8 GB graphics card or higher (for example, NVIDIA Quadro P4000) required when working with Aerial Photogrammetry, Mobile Mapping, and Scanning modules

Note: If you are using a laptop computer with both an integrated (on-board) graphics card and a discrete NVIDIA graphics card enabled via Optimus technology, your computer must allow you to select to disable the integrated graphics card and use only the discrete graphics card when working with point cloud data. See "Disabling a laptop integrated graphics card" in the "Miscellaneous notes" section earlier in this document.

Important!

It is critical that you keep your graphics driver(s) updated if you are working with point cloud data.

Whether your computer has one or multiple graphics cards installed, you must ensure each has been updated with the latest driver provided by the card's manufacturer. The best way to determine if your driver needs to be updated and, if so, perform the update is to visit the card manufacturer's website. For more information, see "Update and Configure Your Graphics/Video Driver" in the online Help.

(If, instead, you decide to update your driver using the Windows Device Manager and the "Search automatically" option, the program may suggest using a Microsoft-approved WHQL version of the driver. However, to ensure you have the latest bug fixes and new features for your graphics card, it is recommended that you use the latest manufacturer version instead.)