TRIMBLE BUSINESS CENTER

Release Notes

Version 3.70

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Welcome to Trimble Business Center

Trimble® Business Center office software is ideal for working with all types of geospatial data. The software provides numerous innovative and powerful features, and it is easy to learn and use.

Installing or updating

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

Notes:
- 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. It does not allow you to use any licensed features. To view your license after installation is complete, select View License Manager on the Start Page. For a description of the features available in each licensed configuration, see "Licensed Features" in the online Help.
- After installation, be sure to select Check for Updates on the Start Page to ensure you have the latest updates for Trimble Business Center.

- **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 2016 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:**

  a. Ensure the following:

     - Your computer can connect to the network server where the Sentinel HASP multi-user network license is installed.
     - There are no Sentinel HASP hardware keys connected to your computer.

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

  c. Run TBC.

The software automatically searches the network for a Sentinel HASP network key. If a Sentinel HASP network key is found and the multi-user license limit has not been exceeded, the license is available for use and all licensed features in TBC are available. If a Sentinel HASP network key is not found or the multi-user license limit has been exceeded, licensed features are not available and an appropriate message is displayed when you attempt to use them.

Optionally, you can verify whether or not you have access to the multi-user license by selecting View License Manager on the Start Page. For more information on using the License Manager dialog, press F1 with the dialog open.

Note that each time you run TBC, the software will need to automatically access the multi-user license installed on the network.

Note to Administrators: For instructions on installing a Sentinel HASP network key (multi-user license) and viewing and managing license information, select Network Licensing Read Me on the Tools menu on the TBC Installation DVD.

New features

Following are the new features included in the various licensing options for this version of Trimble Business Center. See "Licensed Features" in the online Help to help determine which of these new features are available with your license.

Data review and editing

- **Merge survey projects** - Merge (import) the following types of data from one or more VCE (.vce) projects into a single (master) VCE project:
  - GNSS data:
    - Antenna information (base and rover)
    - Base and rover height
    - Status
    - Feature codes and attributes
    - Vector statistics
  - Total station data (imported and keyed-in):
    - Target information
    - Station information (height and method)
    - Point IDs
    - Feature codes and attributes
  - Leveling data (imported and keyed-in)
  - Imported coordinates
  - Keyed-in points and coordinates
  - Processed and unprocessed baselines, and Baseline Processing report
  - Georeferenced images
  - Layers

- Data sheet files (coordinates)
- Traverse coordinates (adjusted) and Traverse Adjustment report
- As-staked points
- Media files
- Terrestrial photogrammetry

Notes:
- This feature does not merge processed features, feature definition libraries, CAD objects, network adjustments, surfaces, alignments, corridors, point clouds, and project settings.
- Although this feature has been verified with numerous types of data and project settings in a multitude of different scenarios, it is possible that your merge could produce unexpected results. It is highly recommended that you test this feature using your workflow and project types prior to using it for production.

- **Rename duplicate points on import using multiple options** - Select to rename duplicate points on import using a variety of options: rename duplicate points individually, add a specific prefix or suffix to multiple duplicate points, or add a constant value to multiple duplicate points that are numeric. The duplicate point is imported into the project with its new name. This saves significant time when trying to identify duplicate point names later and changing them by using the Rename Points command.
- **Convert local to global and global to local** - If you are importing NGS Data Sheets or OPUS solutions to use in a site calibration, you can now easily convert the GNSS local coordinates used in those solutions to global coordinates, which are required when performing the site calibration.
- **Support for as-staked vertical offset data from Trimble Access** - Import and review properties of as-staked points using the new vertical offset routines in Trimble Access.

Feature coding and attribution

- **Include in surface** - When creating a point, line, or polygon feature definition in the Feature Definition Manager, you can now specify whether a point to which the feature is assigned can or cannot be included in a surface. This allows you to exclude, for example, fence posts or street sign from the creation of the surface. As this is a new property for point features in TBC, you have the ability to change this property as needed.
- **Auto-complete feature codes** - As you are typing a feature code in the TBC point property grid, you can see all the codes that start with the letter specified (similar to Trimble Access).
- **Show/hide feature attribute names in point labels** - You can now select to show or hide feature attribute names when showing attribute values in a point label.
- **Display-only attributes in Trimble Access** - If attributes are labeled in Feature Definition Manager as “Office Use Only,” you can now view the attributes in Trimble Access. The attributes will be visible in the field but editable only in the office.

- **GIS module:**
  - **Upload (write) observation metadata to GIS** - When you upload (write) processed features to a GIS data source, you can now select to upload the corresponding GNSS and total station observation metadata at the same time. The metadata includes statistics such as DOP values, RMS, and instrument raw readings.
  - **Read and import features from GIS** - In addition to the ability to read and extract schema from the GIS data source, you can now read data and import features. You can then edit and modify the feature attributes and write data back to the GIS data source.
  - **Track written features** - When you upload (write) a feature to a GIS data source, you can see whether the same feature has already been uploaded to the data source and decide whether to write all of the features again or write only the features with changed properties.

Survey computations and COGO

- **Update projection origin during site calibration** - When performing a site calibration, you can now update the false northing and easting coordinates that were specified in the Project Definition dialog when you imported the GNSS data (for example, you entered coordinates that do not appropriately center the projection to where the grid coordinates are located, resulting in poor projection scale factors). You can set the projection origin based on the first point pair or the mean of point pairs.
- **Coordinate System Manager:**
  - **Japan GEOID 2011** - Select Geoid 2011 in Japan, which was recently published by NGS, to use in your TBC project.
  - **Wisconsin Coordinate Reference System (WISCRS)** - The coordinate system database now includes the new Wisconsin Coordinate Reference System (WISCRS), which replaces the older Wisconsin County Coordinate System (WCCS).
- **RGP CORS network support** - Download reference data from an RGP network so that you can process baselines for rover raw data.
- **Inverse Results Report enhancement** - The Inverse Results Report now includes total distance and area measurements.

CAD and drafting

- **Labeling enhancements:**
  - **Create leader lines** - Move a label and simultaneously create a leader line to "connect" it to its associated object.
  - **Specify default rotation** - Specify default rotation values for predefined point label styles in the Label Style Manager. Also, specify to align a line point label with its associated (next) line segment.
  - **Get point label rotations from associated line segments** – By selecting the option “Align labels to associated line segment,” labels for points that are part of line segments will be rotated and aligned with the next line segment.
  - **Swap label sides** – Quickly (with a right click on the label) change the side of the label with respect to the label object (point or line).

  - **Flip an azimuth bearing label** – Quickly (with a right click on the label) change the direction of the azimuth/bearing depending on the direction you prefer. When you label lines by clicking on the side of the line segment (selecting at one end or the other), you choose the direction for label value.
  - **Display attributes in individual table columns** - When creating label tables, specify whether to group attributes in a single column or separate them into individual columns.
- **Show/hide feature attribute names in point labels** - You can now select to show or hide feature attribute names when showing attribute values in a point label.
- **Fillet/Chamfer** - Create a fillet between two line segments by specifying the radius. Create a chamfer between two line segments by selecting one or two distances, or a distance and an angle.
- **Create scale bars** - Create scale line, alternating, or double-alternating scale bar types that are displayed in a Dynaview or in the Plan View.
- **Improved point handling in .dwg/.dxf exports** - Exporting to .dwg/.dxf now exports point nodes instead of an “X” if the option to export points as blocks is selected. This allows you to snap to a point node more accurately rather than snapping to the end of a line.
- **Flatten data on export to DWG/DXF** - You now have the option to flatten your 3D data to 2D data when exporting to CAD using DWG (.dwg) orDXF (.dxf) formats. This flattens all of your data and allows you to work efficiently with 2D information.
- **Create a linestring that has varying offsets from an existing line** - Use the Variable Offset command to create a linestring that has varying offsets from an existing line. The offsets from the reference line can be 2D or 3D and based on either fixed elevations or slopes. You can also choose to smooth the transitions between segments.
- **Elevation control supports slopes** - Specify an elevation using a vertical angle (slope, grade) from a previous node/vertex just by typing, for example, “2%” or “4:1” into the elevation command.
- **Create VPIs by offset slope from a reference line** - In the Edit Linestring command, you can specify the location of any VPI by selecting a 3D reference line and specifying a cross-slope projected from the reference line and a distance along the reference line from which to derive/project the elevation. The new VPI is added to the linestring, sloping perpendicular from the distance along the reference line to the linestring.
- **From Plane snap** - Calculate an elevation from a location on a plane based on three points picked to specify the plane and a fourth point from which to derive the elevation. The plane that is defined extends infinitely into 3D space, so the point you select for the elevation can be picked anywhere.
- **Specify backsight angle for new linestring segment** – When creating a new horizontal linestring segment based on a specified angle, you can now specify that the angle be measured while backsighting the start point for the previous segment.
- **Quickly move unneeded lines to a hidden layer** - Use the Relayer Objects command to quickly move unneeded lines to a hidden layer as you clean up and work with imported CAD lines.
- **Quickly name or rename objects** - Use the Name Objects command to quickly name or rename objects that have missing or wrong names by picking named objects or CAD text, typing a name, or editing an existing name.

- **Name control supports picking object** - Pick an object to use its name or associated CAD text.
- **Create a boundary from an existing closed line** - In the Create Boundary command, you can pick an existing closed line in the Plan View from which to create the boundary.
- **Filter line marking** - To conserve graphics memory, you can use the Filter Line Marking command to select just the lines you need to see line marking on. Line marking includes markers and labels for horizontal and vertical values along linestrings in 2D views to make viewing, understanding, and editing them easier. Markers are symbols that distinguish between horizontal segment end points, arc mid points, vertical control points, and the overall line's start and end points.
- **Display Create Points COGO routines** - When expanding options while using the Create Points command, you can now see labels with different snap/COGO routines available, providing an overview of all available options at a glance. (Previously you would have to hover above a graphic to see the Tool Tip with the routine name.)

Corridor design

- **Generate construction accounting reports and export files in various REB formats** - Use the REB Tools command to generate construction accounting reports and export files in various REB (Regeln zur Elektronischen Bauabrechnung) formats (primarily used in Germany). These REB road data files can include corridor material volumes, corridor surface areas, corridor cross-sections, and horizontal alignment geometry. Although REB data can be separated into file formats with different numeric extensions, this exporter creates files with a single, common .reb file extension.
- **REB import enhancement** - You can now create a separate surface from each layer in a cross-section contained in an REB roading file.
- **Alignment enhancements:**
  - **Support for railroad spirals** - Use chord-based spirals (common in railway track alignments) for degree of curve and stationing calculations.
  - **Support for chord-based stationing** - Specify the default chord length to use for chord-defined arcs and spirals, such as those used when creating alignments for railroads.

Point clouds

- **Export point cloud data in PTX format** - Export point cloud data to a PTX format file so that the data can be opened in other software for unification.
- **Quick access to 3D View Settings** - Separate commands have been added to the toolbar to change the 3D Preset View and toggle between, for example, front, back, top, bottom, and so on. You can also quickly switch between the orthographic and perspective projection. (To change these settings previously, you had to enter the 3D View Settings command.)
- **Improved navigation and visualization** - Rendering and navigating through points clouds has been significantly improved, making working with point clouds more efficient.

Terrestrial photogrammetry

- **Station view image contro**l - TBC has been enhanced to make viewing station-captured images easier, quicker, and more intuitive, especially when working with a large quantity of overlapping images. TBC automatically prioritizes the display of overlapping images based on size: smaller images in front of larger images. This typically provides an optimal view of your panoramas.

Aerial photogrammetry

- **Automatic ground extraction** - Create a new point cloud in your project that includes only scan points located at ground level. You can use the ground-level point cloud to create a new surface.
- **Sample point cloud regions** - Perform either random or spatial sampling on a point cloud region in your project to create a new sampled region for creating surfaces, exporting data, and so on.

General software enhancements

- **Save and reuse option settings** - The Options dialog now includes import and export controls that allow you to save your option settings in a file that you can share with other users or use to maintain specific settings (for example, default project folder locations, cursor and display settings, and so on) when you upload to a newer version of TBC. It also allows you to restore defaults if necessary.
- **Support for nautical miles** - TBC now supports the keying in and conversion of nautical miles.
- **Toggle visibility of background images, surfaces, and point clouds** - As a quick alternative to using the View Filter Manager to show and hide such objects as background images, surfaces, and point clouds, you can right-click the object and select the Toggle Visibility command, which does not require the View Filter Manager to be open.
- **Display view filter names on tab labels** - The name of the view filter being applied to a graphic view tab is now conveniently displayed in the tab's label. (You can use the View Filter Manager to predefine view filters and apply them to graphic views as necessary.)
- **Tutorial download page** - A new *Trimble Business Center Tutorials* web page displays when you click the tutorial link in TBC and allows you to view a brief description of any tutorial before downloading it.

Resolved issues

Following are issues that have been fixed in this version of TBC:

- **Baseline Processor** - The following issues have been resolved:
  - **Galileo satellites post-processing** - When processing baselines from static data that contains Galileo observations, you had to have a minimum of four SVs for the data from Galileo to be included in the processing. This limitation is now removed.

  - **Galileo processing reporting** – If you selected to use Galileo satellites for baseline processing and less than four Galileo satellites were available, TBC would not report on this usage in the Baseline Processing report. Now, TBC reports on the use of Galileo satellites in all cases when you choose to use the Galileo constellation.
  - **RINEX 3.02 Galileo ephemeris** - You could not open a file containing a RINEX 3.02 Galileo ephemeris. This issue has been resolved.
  - **Import of mixed ephemeris in RINEX 3.02** – TBC was not able to import mixed ephemeris files in RINEX 3.02. This limitation has been removed.
  - **Processing BeiDou and QZSS using Quark files** – If you used raw data from Spectra Precision receivers for post-processing, BeiDou and QZSS constellation data was not being processed. That limitation has been removed and these constellations are now being used in processing.
- **Coordinate System Manager** - The following issues have been resolved:
  - Parameters for the Barbados Challenger Astro datum were incorrect. They have been corrected.
  - Irish coordinate systems required renaming to avoid user confusion.
    Old names:
    ITM75 / Irish Map Grid 1975
    ITM75 / Irish Map Grid 1975 (ETRS89)
    IRENET95 / ITM (Northern Ireland)
    IRENET95 / ITM (Republic of Ireland)
    New names:
    TM75 / Irish Grid (7 Param.)
    TM75 / Irish Grid (Datum Grid)
    IRENET95 / Irish Transverse Mercator (NI)
    IRENET95 / Irish Transverse Mercator (ROI)
- **Display attributes vertically** – When you processed features codes with points containing a label style where the selection was made to “Display attributes vertically,” the point label for attributes would show the attributes in a single line. They are now shown correctly.
- **Preserve linework when using selection sets to display different field files** - If you processed feature codes and used the View Filter Manager and Selection Set to display only a certain file, the linework that was a product of feature coding went away. Now the linework is preserved.
- **Empty space in front of point description in .dwg/.dxf export** - When exporting to .dwg/.dxf, you would see an empty space inserted in front of the block description in Autodesk products. This space has been removed.
- **Feature Definition Manager crashes** - Feature Definition Manager would crash when you viewed features or tried to save the project with certain anti-virus software installed. The application has been updated from 32-bit to 64-bit, resolving the problem.
- **Output from Print Plan Set command incorrect** - When using the Print Plan Set command to print one or more sheets from a plan set to a printer or PDF file, the output is incorrect (the image is extremely small on the page). The image now displays correctly on the page.

- **Quotation mark causes custom .csv export failure** - A quotation mark (“) included in the description of a point selected for export in a custom .csv file caused the export to stop where the quotation mark was encountered, resulting in the remaining points in the file not being exported. A quotation mark included in the point description no longer causes this problem.
- **Leica level data not scaling benchmark data accurately** - The default custom importers for Leica level data have been updated to scale benchmark data more accur*ately.*
  Note: If you work with Leica data, especially data generated from a DNA03, it is recommended that you not copy the custom importers from a previous version of TBC. If the Leica data was copied from a previous version of TBC, you can click the “Restore Defaults” button in the Custom Import Editor to restore the default custom importers. This will remove any edits that have been made to those default importers, but it will not remove any new importers you may have created.

Known issues

Following are known issues in this version of TBC:

- **Microsoft Edge web browser** - When TBC reports are displayed in a Microsoft Edge web browser, the links to objects within the application no longer work. It is recommended that you use a different browser to view TBC reports.
- **KMZ panoramas** - KMZ (.kmz) panorama files created in TBC do not display in Google Earth version 7.0 and later. For them to display correctly, it is recommended that you use an earlier version of Google Earth. Or, use the option to generate Google Earth KML Powered by InSphere.
- **HASP license key and Intel C602 chipset** - The HASP license key required to run TBC is not compatible with the Intel C602 chipset used in some server/workstation environments. The use of the HASP license key in combination with the C602 chipset will cause the application to crash.
- **SitePulse** - SitePulse has not been updated to support the newer VCL format created in this version of TBC. If you are using SitePulse, do not upgrade until you have installed an updated version of SitePulse.

Miscellaneous notes

- **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 10 users** - When you create an HTML-based report, the links in the report to objects in TBC do not work.
- **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
- **Windows XP users** – Some components in TBC require Microsoft .NET Framework 4.5, which is not supported by the Windows XP operating system. To run this version of TBC, you must install a different operating system. See "System requirements" for complete operating system requirements.
- **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.
- **TSPX file format -** TBC no longer supports the creation of TSPX (.tspx) files used to open TBC project data in Trimble RealWorks. As a workaround, you can export whole point clouds (not scans) to an .e57 or .las file format, which can be imported into RealWorks. You can export other types of data to an appropriate format (for example, points to .jxl, linework to .dxf, and images to.jpg) that also can be imported into RealWorks.
- **Proxy server settings** - If you receive an error when trying to access an external server to process data (for example, export KML graphic files to Trimble InSphere for use in panoramas displayed in Google Earth), 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) Microsoft Windows 7 (64-bit version with Service Pack 1)
Processor:	Dual-core 1.80 GHz or better recommended
Random access memory (RAM):	2 GB or more recommended
Hard disk space available:	5 GB or more recommended

Graphics:	DirectX 9 (or higher) compatible graphics card with 512 MB memory or more *Note:* To display point cloud data (if applicable), your graphics card must support OpenGL version 3.2 or newer.
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.)