TECHNICAL NOTES

Trimble Business Center

Confidence with every click.

Trimble Business Center Office Software
June 2026

Start in TBC, stay in TBC.

Leverage the power of raw geospatial and construction data in a single, robust software environment to confidently deliver project after project with Trimble® Business Center (TBC) office software. Engage with powerful, streamlined workflows designed for you to take data further with survey, CAD, surface, corridor, point cloud, mobile mapping, machine control and photogrammetric deliverables. Protect your professional reputation and financial well-being amidst tight deadlines using TBC's unique capabilities. Stand out from your competition and deliver superior results to your clients.

Trimble

Data Integration

In a single software package, combine raw measurements from GNSS, total stations, and levels—then, add in data from unmanned aerial vehicles (UAVs), mobile mapping systems, and terrestrial laser scanners—all of which is scaled to your survey data. No need to import and export between multiple software packages. No need for training, renewals, or support for different applications from different providers. TBC provides the capabilities you need to deliver complete survey and construction deliverables.

Confidence-inspiring Results

Work with raw sensor data, not just X,Y,Z coordinates, view and edit rod heights, prism constants, vector timestamps, and more to achieve the most accurate horizontal and vertical results. Visualize your data in context with Trimble Maps or import background maps and imagery. Eliminate fragmented datasets and disjointed workflows that cause costly mistakes and jeopardize your deliverables. Easily back up office and field data imported from Trimble and other third-party hardware, ensuring complete traceability throughout your project.

Robust Deliverables

When "good enough" is not acceptable, TBC ensures your ability to deliver the highest quality results, which can be displayed in a large variety of reports and spreadsheets, digital surface and site models, CAD plans, point clouds, aerial ortho photos, corridor and tunnel designs and as-builts, machine control models, station-based images, and much more. Easily work with other industry-leading software packages such as Autodesk®, Bentley®, and Esri with powerful import and export support for a variety of third-party file types. Store and share projects online using Trimble Connect®, Trimble Reality Capture Platform Service™, Google Earth™, and Bentley ProjectWise®.

Subscription options for every customer

- There is a TBC offering for every surveying, mining, engineering, and construction organization.
- Utilize value-adds like Trimble Connect Business and Business Premium, included in TBC's subscription offerings.

Use the cloud for real productivity

- Customize and store your settings, ribbon layouts, and templates to your Trimble Identity (TID) user profile to share across your organization or recall after version updates.
- Send project data back and forth to Trimble Access™ with Connected Workspace.
- Store your data—including large files, images, and raw data—in Trimble Connect, then download to use in your TBC projects.

Publish and view in Trimble Reality Capture Platform Service

- Visualize your rich point cloud and 3D model data on any device.
- Measure, mark-up, and annotate your models to share now or save for later.
- Securely share projects and progress updates with your team or clients without the need for third-party software.

Customize your TBC with Macros

- Use Python scripts and access TBC's native objects and calls to write your own commands.
- Encrypt and publish your own macros for sharing across your organization.
- Learn more and get help on the TBC Macros Community: https://community.trimble.com/groups/trimble-business-center-hce

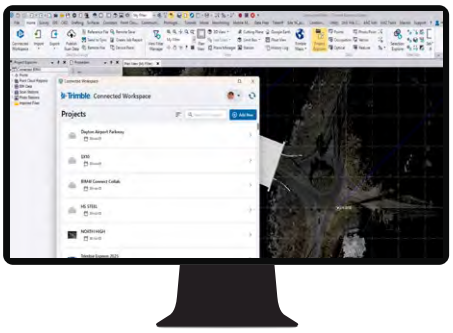
Trimble Business Center

Supported Workflows

Connected Workflows

Cutting the cord and connecting TBC with the field is now easier. Manage field data and TBC projects through the Trimble Connected environment to eliminate the USB and enable full field, project, and data backup in Trimble Connect.

- A fluid connected workspace: The core of the office-to-field-to-office connection in Connected Workspace is a user-friendly interface that simplifies how you access, share, and collaborate on project data with TBC and Trimble Access through Trimble Connect.
- Exchangeable TBC project sharing: As a seamless extension of the Connected Workspace, utilize Trimble Connect to securely share your ongoing TBC project files directly with stakeholders. This eliminates localized file transfers and ensures that distributed teams are always reviewing or collaborating on the latest single source of truth.
- Web-based reality capture streaming: Publish massive point clouds directly to the Trimble Connect 3D viewer using the Trimble Reality Capture Platform Service (TRCPS). Now supporting both terrestrial and mobile mapping datasets, stakeholders can effortlessly visualize and collaborate on heavy reality capture data in a web browser without the need for time-consuming downloads.
- Seamless GIS integration: TBC integrates field asset and pavement inspection results directly with Esri's GIS system. This crucial link allows for efficient data sharing between teams, ensuring that asset management data is always current.
- Streamlined land survey campaigns: Model-based feature collection simplifies large-scale land surveys. Define your data model in TBC, export it to Trimble Access for efficient field collection, and seamlessly import the updated data back into your project—creating a true office-to-field-to-office loop.
- Simplified construction data transfer: For construction projects, the Enhanced VCL Exporter simplifies the office-to-field process for Trimble Siteworks and Trimble Earthworks. It uses the existing Project Link exporter and integrates directly with WorksManager, making data handoffs quicker and more reliable.



Enable full field, project, and data backup in Trimble Connect

Aerial Photogrammetry

Adjust, measure, and model from any drone, such as leading UAV providers DJI®, Wingtra, Skydio®, FreeFly® and more. Oblique imagery processing and deliverables also now supported.

- Leverage streamlined aerial workflows by utilizing trajectory post-processing from a large variety of drones and easily drag and drop your data into TBC.
- Extract points and geometry from station imagery, ortho images, and point cloud data using a variety of matching techniques.
- Generate photo tie-points automatically and match ground control points (GCPs).
- Create high-resolution point clouds, meshing, orthomosaics, and elevation raster digital surface models (DSMs) from Trimble or third-party UAVs.
- Use Trimble Inpho® UASMaster software for additional processing, deliverables creation, and QA/QC options.

To learn more, see the TBC for AP and lidar Technical Notes.

Adjust UAV data and create deliverables

Field Data QA/QC

Import and interact with Trimble and third-party raw data.

- Visualize, interact, and measure your data across multiple views and reports.
- Check and edit raw data with spreadsheets, selection filters, and interactive property menus.
- Sync data with Trimble Access, Siteworks and machine control systems.
- Process feature codes from the field or keyed into TBC.
- Provide context with background maps, georeferenced images, and overlays in Trimble Maps.

Use multiple views to review and edit raw data

Adjustment and COGO

Efficiently reduce observations and perform cadastral survey workflows.

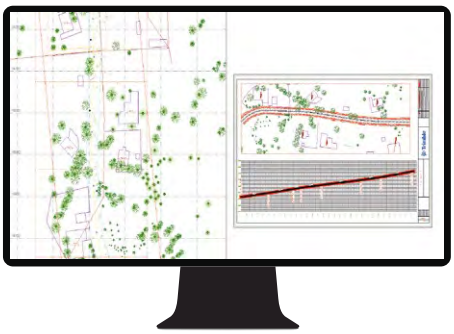
- Finish CAD deliverables with options like COGO collections from existing linework, support for nested parcels, and ease of use enhancements.
- Process static and kinematic GNSS observations and export GNSS vectors in National Geodetic Survey (NGS) *.gvx files consistent with varying third-party manufacturer hardware.
- Re-engineered Kinematic GNSS processor provides substantially more precise and accurate results.
- Compute and adjust traverse and level runs.
- Translate field book data and notes into the Level Editor and Total Station Editor.
- Complete least square corrections with mixed observations using Variance Groups and survey constraints in the Network Adjustment.
- Input survey plans, compose legal descriptions, and compute parcel misclosures intuitively with the Create COGO routine.

Apply a least-squares adjustment in a network adjustment

CAD and Drafting

Produce your final survey linework, construction models, and roadway design plots with ease.

- Quickly draft and edit points, 2D or 3D linework, and CAD geometry with the keystroke-based CAD Command Lines.
- Use Dynaviews to place your model space data into sheet plots.
- Add dynamic labels, line and curve tables, scale bars, and other map elements.
- Automatically plot profiles and cross-sections for alignment-based surfaces or corridors.
- Create digital deliverables such as *.dwg CAD files or print deliverables like plan sets or 3D PDFs for client collaboration.

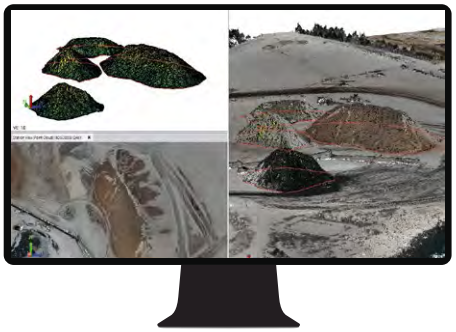


Draft plan and profile sheets with dynaviews

Surfaces and Volumes

Create, process, and deliver complex surface models for field devices, machine control systems, and third-party export.

- Create traditional, projected/vertical, and radial surfaces that dynamically update when surface members are modified.
- Generate quick and accurate volume reports from surface comparisons, stockpile/depression, and corridor surfaces.
- Compute gridded Cut/Fill surfaces and reports with customizable color mapping.
- Specify contour lines and labels that update as a reference surface changes.
- Drape objects onto surface, run point-to-surface comparisons, and view site balance factors in volume grid properties for a surface.
- Create composite surfaces that reflect changes to their contributing surfaces as they are made.

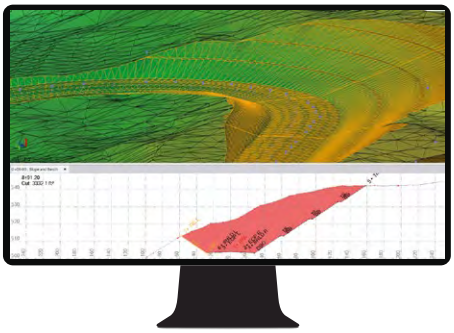


Compute precise surfaces and volume stockpile quantities

Alignments and Corridors

Model and manipulate alignments and parametrically-designed corridors.

- Define horizontal and vertical alignments from scratch or existing CAD linework with support for station equations and superelevations.
- Enter corridor template instructions with interactive, graphical feedback and automatically generate breaklines based on nodes defined in corridor template instructions.
- Handle complex roadway designs with conditional instructions and slope and node tables.
- Design corridor features such as interchanges, ramps, and intersections with parameter prompts.
- Generate corridor earthwork reports, apply material properties, and create subgrade surfaces.

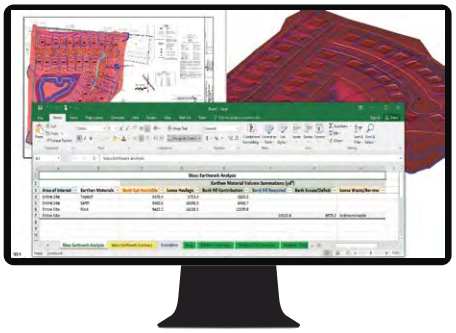


Model and visualize simple or complex alignments and corridors

Takeoff and Mass Haul

Calculate earthwork and material quantities of a construction project.

- Define site improvements in the Material and Site Improvement Manager for computations and reports.
- Generate takeoff reports for earthwork, materials and costs.
- Optimize earthwork volumes to reduce borrow and waste.
- Create mass haul diagrams and reports to plan and monitor progress for sites and corridors.
- New Over-Excavation Template Editor to simplify managing multiple Over-Excavation profiles in the Over-Excavation surface.

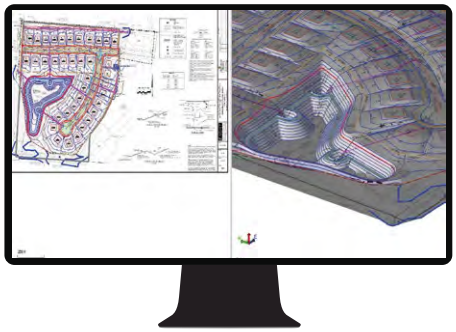


Calculate earthwork, material, and cost data

Data Prep

Make sure your data is clean, up-to-date, and delivered in the right format to get the job done.

- Import, clean up, and organize CAD and PDF data with Project Cleanup and import field data from WorksManager.
- Extract and digitize data from vector PDFs.
- Elevate 2D contours, points, lines, and polygons into 3D models with parametric side slope and vertical design tools.
- Interact with site and corridor designs from third-party packages with support for a variety of CAD and BIM formats.
- Create linework, surfaces, global vertical designs and avoidance zones for machine control systems.



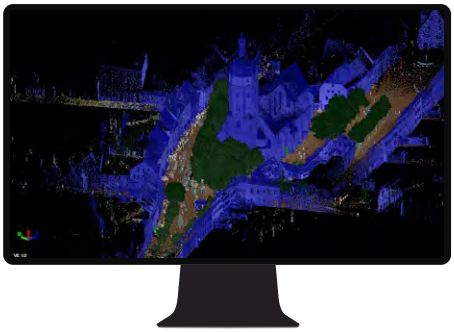
Digitalize plan sets from *.pdf into 3D linework & models

Scanning and Point Clouds

View, manipulate, and extract information from terrestrial, mobile, and aerial point cloud data.

- Colorize, register, georeference, and adjust Trimble SX-series, Trimble X-series and third-party scan data.
- Scale scan and point cloud data to survey data in an integrated project environment.
- Compare as-built reference point cloud regions to BIM objects, tunnel design meshes, surfaces, or other point cloud regions to create heat maps.
- Extract point, line, cross-section and curb and gutter features using user-defined planes with automatic and semi-automatic feature extraction tools.
- Filter point cloud data and prepare ground regions for surface modeling with Advanced Filtering and the Dynamic cell size option, which adapts sampling cell size to changes in terrain.
- Integrated 3D Deep Learning technology improves results of point cloud classification regions and feature extraction options for terrestrial and aerial data.
- Customize point cloud classification and train AI models.
- Automate the stockpile extraction and volume computation process from point clouds with just a few clicks.

To learn more, see the TBC for Feature Extraction Technical Notes.



Apply a least-squares adjustment in a network adjustment

GIS

Integrate GIS within survey data and provide deliverables to an Esri-based environment.

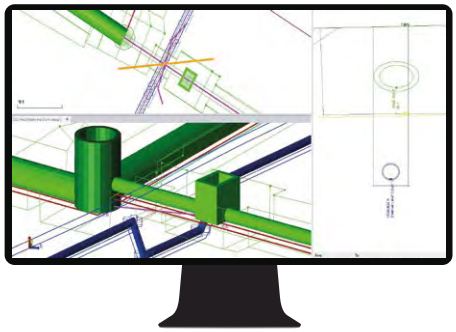
- Extract schemas and convert from GIS sources with the same symbology to feature definition code libraries (*.fxl).
- Connect to different GIS data sources, including File Geodatabase™, Shapefile®, Enterprise Geodatabase, Postgres database, and SQL Server. (Support for ArcGIS® Pro is now included!).
- Map metadata from data source connections.
- Easily adjust your pulled data to your needs using selection filters. (Polygon, Window selection and attribute query).
- Use the preview to check the incoming data ahead.
- Autofield sync: Define attributes in your feature library to be automatically populated with GNSS measurement values (e.g., PDOP, RMS), project metadata, and calculated geometry via the EntryMethod workflow, ensuring high-fidelity accuracy data is preserved from the field to your GIS.

Export feature and attribute data to ArcGIS Pro

Utility Modeling

Create gravity, pressure, and cable utility networks with circular pipes, rectangular pipes, fittings, headwalls, junction boxes, and manholes.

- Create pipe and utility networks.
- Create custom utility lines for non-circular, non-rectangular shapes.
- Design parametric trench templates and surfaces.
- Add utility models to existing sitework, CAD geometry, and surface context.
- Generate customized utility takeoff reports.

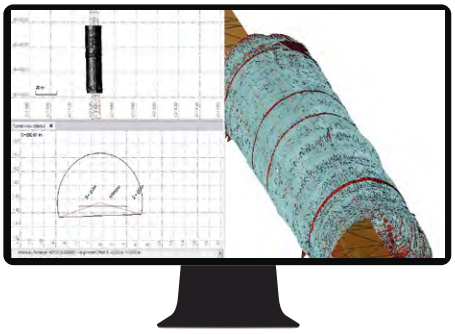


Model pipe networks, structures, and trenches in 3D

Tunneling

Work with Trimble Access Tunnels and leverage TBC's point cloud and reporting tools for tunnel survey workflows and deliverables.

- Create CAD cross-section diagrams.
- Parametrically design tunnel shape templates with dynamic cross-section interface.
- Intuitively design set-out positions like blast holes, rock bolts, canopy tubes, and more for in-field stake out and as-built via Trimble Access Tunnels field software.
- Analyze designed or as-built tunnel meshes to produce customized heat map comparisons and assign as-built points from point cloud data to create 3D as-built inspections.
- Generate comprehensive as-built reports to convey excavation overbreak/underbreak estimates, TBM ovalisation and wriggle checks, and more.
- Perform as-built to design and as-built to as-built inspection using total station or point cloud data to verify shotcrete thickness, excavation shape, and final lining position.

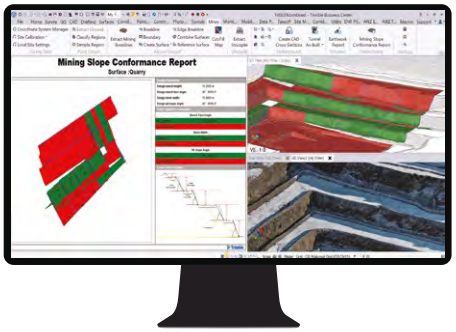


Use point cloud or total station data for tunnel survey deliverables

Mining

Work with mining geospatial data and leverage TBC's point cloud and reporting tools for mining survey workflows and deliverables.

- Process, clean, and compare design against data extracted from various data sources. Provide reporting on shovel final conformance, areas of overdig and underdig, and in-pit volumetrics.
- Automatically extract breaklines from open-pit slopes and create Slope Conformance reports for mine stakeholders and auditing.
- Automatically create volume reports for stockpile management.
- Create a Mine Design Conformance Report to visualize in cross-sections and surface view, areas of over-dig and under-dig volumetrics between as-built and design surfaces.
- Enable surveyors to accurately set positions for vertical shaft construction and measure progress, reducing the risk of costly deviations or structural failures by producing inspection reports.
- Underground heading and decline inspection tools and reporting enable accurate data analysis and verification of conformance/non-conformance with the design.
- Creating watertight meshes from point clouds enables underground mining surveyors to perform precise volume calculations, conduct safety assessments, and generate production reports. These high-fidelity models streamline development and map updates.
- Automate the extraction of CAD information from underground point clouds to reduce manual digitization. The tool identifies and generates 3D linestrings for several tunnel components:
  - Centerlines: Floor, middle, and back centerlines.
  - Contours: Floor, rib, and back contours.



Create mining-specific deliverables for a wide range of mining professionals

Monitoring

Utilize survey data collected using Trimble Access Monitoring or third-party field software to generate periodic or campaign-based monitoring deliverables.

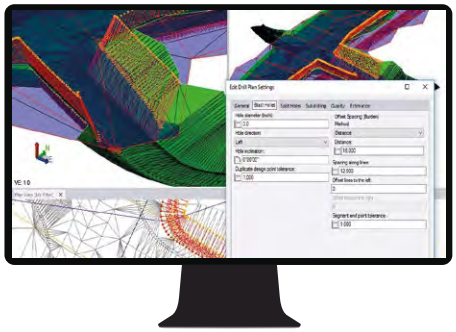
- Manage monitoring data utilizing tools for editing, deleting, and adding epochs from all survey data — total station, GNSS or level.
- Automatically process and report on multiple epochs using data contained in *.json files imported from the Trimble Access Monitoring application.
- Define warning and alarm thresholds to flag points with significant movement.
- Visualize movement patterns and magnitude using 3D displacement vectors and interactive charts showing movement level thresholds.
- Customize and create comprehensive monitoring reports showing displacements in various formats for client requirements.

Create monitoring deliverables from any survey data

Drilling, Piling & Dynamic Compaction

Prepare field data for DPS900 and Groundworks systems and produce quality report deliverables from the machine guidance data collected during execution.

- Create boring and drilling plans and work reports.
- Create foundation and infrastructure piling plans and work reports.
- Create dynamic compaction plans and work reports.
- Customize pile types, drill quality reports and final lining positions.



Set and edit drill, piling, and dynamic compaction plans

Mobile Mapping

Import and process data from Trimble's mobile mapping hardware platforms like the MX60 and MX90.

- Manage point cloud processing, classification, registration and deliverables of one or multiple projects with MM Batch Processing tools.
- Post-process raw trajectory data with local base stations, CORS networks or PP-RTX.
- Adjust, colorize, and register scan data with single run or multirun options and precise target-picking tools.
- Take advantage of the powerful registration tool to align scans from one or from multiple missions.
- Navigate your reality capture data in the multiple views for image and for 3D scan data. Overlay your reality capture data to display scans and images in a combined view.
- Perform road pavement inspection workflows with the PCI and the IRI tool.
- Export data to third-party software such as Trimble MX, Mapillary®, TopoDOT®, Solv3D®, and Horus®.
- Share mobile mapping data in Trimble Connect multi-pane viewer enabling collaboration among project stakeholders. Take advantage of the multi pane views to navigate and inspect your reality capture data.

To learn more, see the TBC for Mobile Mapping Technical Notes.

Work with trajectory, registered point cloud, and imagery

System Requirements

Operating system

- Microsoft® Windows® 11 (64-bit version)
- Microsoft Windows 10 (64-bit version)
- Windows Server 2016, 2019, and 2022 Standard and Datacenter
- Starting with TBC v5.21, Microsoft Windows 7 is no longer supported

Processor

- Dual-core Intel 1.80 GHz or better recommended
- Quad-core Intel 2.80 GHz or better recommended (additional cores with hyper-threading support highly recommended for Aerial Photogrammetry, Mobile Mapping, and Scanning workflows)
- 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 workflows

Hard Drive

- 30 GB free or more recommended
- 100 GB free or more on solid-state drive (SSD) required with overall capacity of 500 GB or more recommended for Aerial Photogrammetry, Mobile Mapping, and Scanning workflows

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

Supported Languages

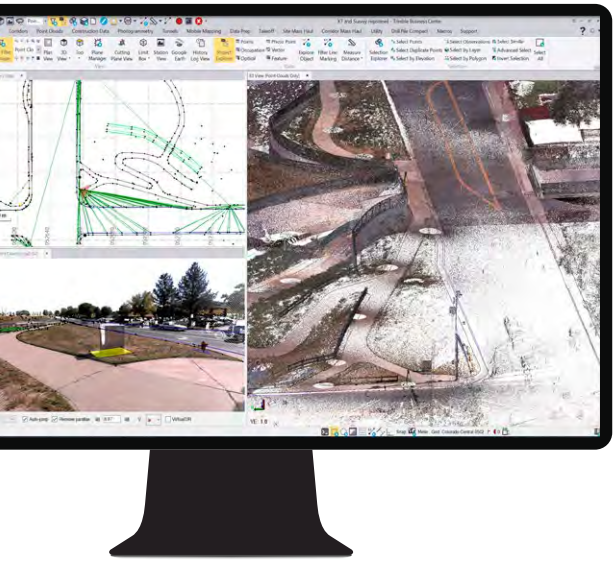
- Chinese (Simplified)
- Czech
- Danish
- Dutch
- English US
- English UK
- Finnish
- French
- German
- Italian
- Japanese
- Korean
- Norwegian
- Polish
- Portuguese
- Russian
- Spanish
- Swedish

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 (NVIDIA® Quadro® P4000 or similar) required for Aerial Photogrammetry, Mobile Mapping, and Scanning workflows.
- **Note:** 6 GB or higher NVIDIA graphics card with CUDA® compute capability (5.0 or higher) required when working with point cloud classification.
- **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 “Important Notes” topic in the TBC Help.
- **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.)

Learning Resources

Explore TBC and enhance your productivity with a range of resources, tailored for both newcomers and experienced users.



TBC Help:

Press F1 at any time when using TBC to view step-by-step instructions, workflow strategies, and detailed descriptions related to the task you are performing.

Trimble Field Systems Help Portal:

Brings together technical information including release notes, installation guides and more, in a searchable web-based format.
help.fieldsystems.trimble.com/tbc/home.htm

Webpages:

Your home for everything TBC — downloads, support information and bulletins, as well as customer testimonials and videos:
Survey & Mapping: www.trimble.com/tbc
Civil Construction:
civilconstruction.trimble.com/products/software/trimble-business-center

Learn platform:

Complete free self-paced workflow-based courses with hands-on guided software experiences**:**
learn.trimble.com/pages/422/trimble-business-center-tbc

Trimble Community Page:

Join your fellow TBC users and ask questions, showcase a project, and learn from peers in this open online forum:
community.trimble.com/groups/tbc-group

Power hours:

A live monthly session where a Trimble or industry expert showcases a workflow in TBC. All sessions available afterwards and on-demand, for free:
https://www.youtube.com/@TrimbleBusinessCenter/playlists

Tutorials:

Using sample data and PDF instructions we explain and illustrate specific workflows in TBC: help.fieldsystems.trimble.com/tbc/learn-tutorials.htm

YouTube Channel:

Watch and learn as our team explains how a specific function works or what's new in our latest release: youtube.com/@TrimbleBusinessCenter

For more information

Survey and Mapping: Contact your local Trimble Dealer https://geospatial.trimble.com/en/where-to-buy and visit the webpage: https://geospatial.trimble.com/en/products/software/trimble-business-center

Civil Construction: Contact your local Trimble Dealer https://civilconstruction.trimble.com/en/how-to-buy/dealer-locator and visit the webpage: https://civilconstruction.trimble.com/en/products/software/trimble-business-center

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