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Trimble Pivot Platform: Infrastructure and Mobile Apps

This document contains Frequently Asked Questions about the Trimble® Pivot™ platform and the Infrastructure and mobile apps that operate within the platform.

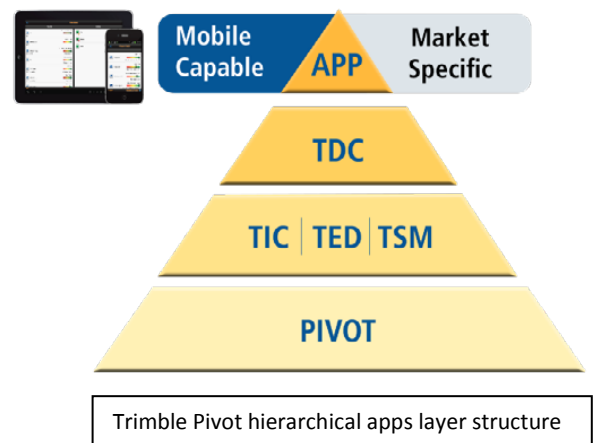## What is the Trimble Pivot platform?

The Trimble Pivot platform is the new foundation for Infrastructure apps. The Pivot platform is a solutions-oriented framework designed to deliver the performance and reliability required by a range of demanding applications while supporting configuration flexibility and ease of maintenance to future proof your investment. This building block concept was developed to address the specific needs of professionals in various market segments by providing an easy to use, yet powerful foundation for current system requirements with support for a wide range of future expansion options.

For more information, go to the Trimble Pivot page at www.trimble.com/infrastructure/pivot-platform.aspx.

Key features include:

Trimble Pivot hierarchical apps layer structure

- • Scalable and flexible software system architecture
- • Common platform for improved system performance
- • Fully integrated architecture for simplified system configuration
- • Single platform to maintain version consistency across multiple apps
- • Shared components may be updated across multiple apps
- • Minimizes the time and effort to deploy software updates
- • Trimble Pivot platform now supports mobile apps running on devices (such as tablets or smart phones) that are powered by the Google Android or Apple iOS operating systems

Trimble Infrastructure is taking users to a whole new level of unprecedented freedom by offering Pivot Mobile Apps. With the support of the Pivot platform, the latest technology in server software, Pivot mobile apps running on devices such as tablets or smart phones enable administrators and users in the field to access important status and activity information so that they can act on tasks immediately.

What is an Infrastructure app?

Infrastructure apps on the Pivot platform support a wide and growing range of capabilities and may be combined to create complete solutions to the specific requirements of individual applications. Each app provides unique modules and functionality in a range of applications such as real-time network correction services, tectonic and seismic monitoring, and ionospheric studies. The apps enable users to collect, manage, and analyze complex information faster and easier, making them more productive, efficient, and profitable.

Based on the latest server software technology, the Trimble Pivot platform provides a robust and scalable framework to deliver exceptional system performance, enable flexibility in configuration, and reduce the cost of operations.

What Infrastructure apps are currently available?

The following Infrastructure apps are supported on the Pivot platform. The first apps below are common to many configurations and provide functions shared by other higher-level applications.

App Icon	Trimble Pivot App	Description	Part Number
	Trimble Ephemeris Download	Manages the polling of all relevant orbit information data and makes it available to all other applications running on the Pivot platform.	96801-10
	Trimble Streaming Manager	Controls and manages incoming and outgoing data streams.	96801-20
	Trimble Instrument Configurator	Controls high precision instruments, such as GNSS receivers. It also performs firmware updates.	96801-30
	Trimble Dynamic Control	Monitors and controls all receiver connections through multiple device managers. It also streams single station corrections to the end customer.	96801-40
	Trimble Mobile Communication	Builds the foundation for the communication with Pivot Mobile Apps and allows the configuration of information to be shown on supported mobile devices.	96801-70
	Trimble Transformation Generator	Enables users to add transformation parameters and grid files to correction data stream based on the RTCM standard.	96802-00
	Trimble VRS³Net™	Generates correction data for centimeter accurate positioning solutions in a dense network. Overview status information of all network processors is also available.	96802-10
	Trimble SparseVRS	Generates correction data for sub-decimeter-level (4 inch) accurate positioning solutions in a sparse network.	96802-30
	Trimble NTRIP Caster	Manages the administration of multiple NTRIP casters. An overview of status information of users "connected" to the Pivot platform is also available.	96803-00
	Trimble Accounting	Provides relevant account information such as the number of registered users, contracts and subscriptions.	96803-10
	Trimble Data Shop	Includes the Reference Data Shop module that allows users to generate and download correction data for either a CORS or a VRS™ network for a given period.	96803-20
	Trimble iScope	Provides an overview of iScope rovers presented on the iScope Map to allow users to manage the connected rovers. Users can also review survey sessions.	96803-40
	Trimble Rover Integrity	Analyzes the performance of permanent rovers in a network based on incoming NMEA strings.	96803-50

App Icon	Trimble Pivot App	Description	Part Number
	Trimble Atmosphere	Calculates IPWV and TEC values computed based on incoming GNSS data streams and meteorological information from various data sources.	96805-00
	Trimble Ionosphere	Provides ionosphere activity and scintillation information for single CORS stations or GNSS networks.	96805-10
	Trimble Integrity Manager	Provides real- time and postprocessing engines to monitor GNSS reference stations.	96806-00
	Trimble Pivot RTX	Performs absolute position estimation and coordinate integrity monitoring in real-time mode using the RTX technology.	96807-00
	Trimble Pivot RTX-PP	Performs absolute position estimation and coordinate integrity monitoring in postprocessing mode using the RTX technology.	96807-10

What are the Pivot Mobile Apps?

Pivot Mobile Apps running on Andoid or Apple iOS devices can now interact with a Pivot system installation to provide users with health status information, network availability, and ionosphere conditions from anywhere and at any time. In addition, administrators can use the mobile apps to administrate and control the system installation without the need to remotely log into the server running the Pivot installation. Different levels of access grant different rights and information within the mobile apps.

What Pivot Mobile Apps are currently available?

The following mobile apps are currently supported to communicate with a Pivot system installation.

App Icon	Mobile App	Description
	Pivot Admin	Provides the administrator easy access to the server system, including a full overview on all servers and Trimble Pivot platform installations.
	Pivot Field	Provides the field user with information on atmospheric conditions, satellite availability, or subscription and session station.

What is the Apps View?

The Trimble Pivot user interface offers a new Apps View that provides an overview of all Apps and their health status. A direct link is provided to each App Status View making it easy for the user to obtain more detailed information about individual Apps. When a condition is detected that may need user attention, the Apps View provides a clear indication for the app that an warning or error condition exists, and a single click allows the user to review the details. This allows a software administrator to see the status of their system at a glance and quickly evaluate the performance of individual apps or resolve issues that may arise.

What is the App Status View?

Each app has its own App Status View. This is a detailed view that offers more information about the current health status of the App and views detailed performance parameters. Each app has its own set of individual health and performance status conditions. The App Status View links directly to the next level of detail and enables the operator to look further into the exact module or functionality where an error may occur, in order to analyze the overall health.

Why should I consider purchasing the Trimble Pivot platform?

The Trimble Pivot platform is a state-of-the-art software architecture supporting a wide range of apps that may be customized to meet your current needs and allow future expansion as your needs grow. It was designed to provide performance and scalability for applications ranging from a single CORS station to an earth science network spanning a continent. The new system operator interface makes it easier to maintain complex systems and quickly resolve issues that may arise. Trimble is committed to ensuring that your purchase is future proof by investing in continued enhancement of existing apps and creation of new apps for an expanding range of functionality.

Does the Trimble Pivot platform provide a web interface?

Yes, the Trimble Pivot platform has a Web Application that supports the following configuration functions for network operators:

- Basic user management
- Language management
- Services management
- Redundancy management

Based on the licensed apps running on the Trimble Pivot interface, additional web pages are available within the Trimble Pivot Web Application, including Sensor Map, Network Processor information, and Atmosphere conditions. The *Trimble Pivot Software Release Notes* provide a full overview of the web page(s) that come with individual apps. To download the *Trimble Pivot Software Release Notes,* go to the Trimble Pivot page at www.trimble.com/infrastructure/pivot-platform.aspx.

What map sources does the Pivot web interface support?

The Trimble Pivot Web Application uses an Open Layers interface that supports a selection of multiple map providers to be used within map implementations on the Trimble Pivot Web Application. The map management web page in the Web Application has the following options:

- Google Maps
- Microsoft® Bing® Maps
- Open Street Map
- Web Map Services (WMS)
- Static Images

What satellite systems are supported?

The Pivot software provides complete support for the GPS, GLONASS, and QZSS satellite systems. This means that the data is tracked, stored, and processed and may also be included in correction data streams. In addition, the software also supports the tracking, visualization, and storage of the Galileo and Compass satellite systems.

What are the new Pivot RTX and Pivot RTX-PP Apps?

The Trimble Pivot RTX™ App enables you to perform absolute positioning of reference stations in real-time using RTX technology. Absolute precise positioning using RTX technology delivers centimeter-level positions worldwide without requiring local reference stations. This is important where there is no local geodetic control such as in scientific applications measuring regional deformation, plate tectonics, or as a check on coordinates developed using relative positioning. Determining accurate and reliable coordinates for a Continuously Operating Reference Station (CORS) is critical in the following situations:

- When establishing a new reference station
- After movement of a CORS, for example, due to an earthquake
- While monitoring existing network receivers

The Trimble Pivot RTX-PP App completes the Trimble Infrastructure Apps portfolio of absolute positioning techniques by providing a highly accurate postprocessed solution. This enables you to precisely determine initial coordinates for CORS, for measuring displacements after a station movement, or for measuring motion during seismic events using kinematic processing.

What is the difference between the VRS³Net and the Sparse VRS App?

The Trimble VRS³Net™ App is a unique application designed to optimize the performance and reliability of real-time networks delivering corrections for applications requiring centimeter level accuracy. The VRS³Net system enables real-time network operators to build stable GNSS networks that can provide continuous Real Time Kinematic (RTK) corrections and postprocessed data to an unlimited number of users in a coverage area. This app implements the exclusive Trimble virtual reference station technology.

The Trimble SparseVRS App is designed to offer a virtual reference station solution for networks with extended inter-station distance and applications with a requirement of 10 cm or better horizontal accuracy.

The main differences between these two Apps are as follows:

	VRS³Net App	Sparse VRS App
Inter-station distance (recommended)	50 km	<120 km
Field application accuracy	Centimeter level (RTK)	Better than 10 cm (4")

Detailed requirements and specifications can be found on the Infrastructure Software page at http://www.trimble.com/infrastructure/software.aspx. Alternatively, send an email to Infrastructure_Sales@Trimble.com.

The following image shows the scalable Trimble Infrastructure solutions:

Single BASE/CORS	BASE/CORS Array	SparseVRS Network	VRS Network
Trimble NetR9™	Trimble Dynamic Control App	Trimble SparseVRS	Trimble VRS³Net™App
GNSS reference receiver			
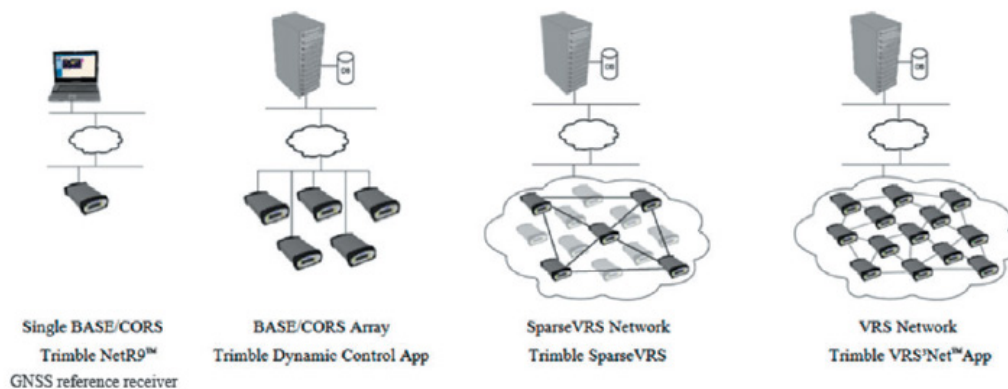
Can the Pivot platform retrieve information about atmospheric conditions?

The Trimble Atmosphere App and Trimble Ionosphere App provide condition information about the ionosphere and troposphere. The following results are available for the troposphere conditions derived from GNSS measurements in combination with meteorological measurements:

- Integrated Precipitable Water Vapor (IPWV)
- Slant Delay

Ionosphere conditions are described with:

- Total Electron Content (TEC)
- Scintillation Index
- Ionosphere Index

What operating system and SQL servers are supported by the Pivot platform?

- Windows® 7 Professional x64, latest service pack
- Windows Server 2008 x64, Service Pack 1 or later
- Windows Server 2008 R2 x64

The installation DVD includes SQL Server® Express 2012. However, Trimble recommends the SQL Server Standard Edition or Enterprise Edition. For more details, please refer to the *Trimble Pivot Software Release Notes.* Alternatively, go to the Trimble Pivot page at www.trimble.com/infrastructure/pivot-platform.aspx.

Can the Pivot platform be installed in a Cloud?

The Trimble Pivot platform can be installed in the Windows Azure™ Cloud. Two possible installation types are supported here:

- Using the SQL Azure™ database instead of the local SQL Server database
- Installing the Pivot platform in the cloud.

I currently own a Trimble Infrastructure Software solution and am interested in Trimble Pivot platform. What must I do?

Contact your local authorized Trimble distributor or regional Trimble sales representative to discuss your options. You can also email Infrastructure_Sales@Trimble.com.

How do I upgrade from previous Infrastructure software to this new version?

If you are under an existing annual maintenance contract (level 1 or level 2) for the VRS³Net, Trimble Integrity Manager, or Trimble Dynamic Control products, you will automatically receive the new installation DVD. A new license will also be made available at this time. For more information, email Trimble Support at Infrastructure_Support@Trimble.com.

What type of warranty will I receive with this software?

The Trimble Pivot platform comes with a standard one-year, limited level 1, software warranty. Additional support and maintenance options are available.

Who can help me if I have technical questions about Trimble Pivot platform and Infrastructure apps?

Email the Trimble Global Support team at Infrastructure_Support@Trimble.com.

Who can I contact for more information about this exciting new platform?

Email Infrastructure_Sales@Trimble.com.

Alternatively, contact your local authorized Trimble Distributor or regional Trimble sales representative.

Why do the Trimble Pivot platform and its Apps require a new license?

The Trimble Pivot platform implements a new application architecture that requires a new license schema with a revised grouping of existing and new functionality based on the new Apps.

How does the online license activation of a Trimble Pivot license work?

To expand the system with additional functionality, you must update the license. With the Trimble Pivot platform you can download the license directly from a license server as soon as the license is available. The individual login credentials for the connection to the Trimble Infrastructure License Server, with information on the availability of the new license, is distributed through auto-generated emails.

Where can I find additional information regarding the Trimble Pivot platform and the new Infrastructure apps?

Go to the Trimble Infrastructure and Mobile website at www.trimble.com/Infrastructure/software.aspx. From here you can download the latest Release Notes, Technical Notes, and additional brochures.

Alternatively, contact your local authorized Trimble Distributor or regional Trimble sales representative.

You can download the Pivot Admin and Pivot Field Apps from the Apple App store and from the Google Play store.