Deltek

Deltek Vantagepoint Intelligence

Installation and Configuration Guide

April 23, 2021

Contents

Overview

This guide provides instructions on how to install and configure the Analysis Cubes and Intelligence Dashboards components of the Deltek Vantagepoint Intelligence module. These instructions apply for both new Vantagepoint Intelligence installations and upgrades from earlier versions.

Vantagepoint Intelligence

Vantagepoint Intelligence is an optional module that consists of two parts:

- **Analysis Cubes**: Provides you with a Vantagepoint project data cube and a general ledger data cube from which you create custom reports with Microsoft Excel®, or with any business intelligence tool that supports SQL Server Analysis Services OLAP cubes. The Analysis Cubes also serve as the data sources for the performance dashboards that you create.

- **Intelligence Dashboards**: Use Tableau® Server and Tableau Desktop (products of Tableau Software®, Inc.), along with Analysis Cubes and Microsoft SQL Server and Microsoft SQL Server Analysis Services components, to create role-based graphical Intelligence dashboards. Executives and managers use Intelligence dashboards to view and interact with critical project and general ledger data using a variety of graphical representations of that data. The Intelligence dashboards are displayed as dashparts on the Vantagepoint Dashboard.

Adding Custom Notes to This Guide

If you would like to add custom notes to this guide that are specific to your company, Adobe® Reader® X provides this ability. If you do not already use Adobe Reader X, you can download it here free from Adobe.

To add a custom note using Adobe Reader X, complete the following steps:

1. On the Reader toolbar, click **Comment** at the far right.

2. In the **Annotations** pane that displays, click 💬 **Sticky Note**. The cursor changes to match the button.

3. Position the cursor at the location in the guide where you want the note to appear, and click. A note icon is inserted at the location and a text box pops up.

4. Enter your information in the text box.

5. Continue adding notes as needed.

6. Save the document.

> **Note:** Deltek recommends that you save the document to a slightly different filename so as to keep the original from being overwritten.

When reading the document, cursor over a note icon to see the information. Double-click a note icon to edit the information.

If You Need Assistance

If you need assistance installing, implementing, or using Vantagepoint, Deltek makes a wealth of information and expertise readily available to you.

For over 30 years, Deltek has maintained close relationships with client firms, helping with their problems, listening to their needs, and getting to know their individual business environments. A full range of customer services has grown out of this close contact, including the following:

- Extensive self-support options through the Deltek Support Center.

- Phone and email support from Customer Care analysts

- Technical services

- Consulting services

- Custom programming

- Classroom, on-site, and Web-based training

> **Attention:** Find out more about these and other services from the Deltek Support Center.

Deltek Support Center

The Deltek Support Center is a support Web portal for Deltek customers who purchase an Ongoing Support Plan (OSP).

The following are some of the many options that the Deltek Support Center provides:

- Search for product documentation, such as release notes, install guides, technical information, online help topics, and white papers

- Ask questions, exchange ideas, and share knowledge with other Deltek customers through the Deltek Support Center Community

- Access Cloud-specific documents and forums

- Download the latest versions of your Deltek products

- Search Deltek's knowledge base

- Submit a support case and check on its progress

- Transfer requested files to a Customer Care analyst

- Subscribe to Deltek communications about your products and services

- Receive alerts of new Deltek releases and hot fixes

- Initiate a Chat to submit a question to a Customer Care analyst online

> **Attention:** For more information regarding Deltek Support Center, refer to the online help available from the Web site.

Access Deltek Support Center

To access the Deltek Support Center:

1. Go to https://deltek.custhelp.com.
2. Enter your Deltek Support Center **Username** and **Password**.
3. Click **Login**.

> **Note:** If you forget your username or password, you can click the **Need Help?** button on the login screen for help.

Additional Documentation

The following table lists additional related Deltek documentation that is available for this release. These documents are available for download from the Deltek Support Center.

Document Name	Description
Deltek Vantagepoint 4.0 Release Notes	These release notes contain pre-installation information, database changes, and a summary of enhancements and software issues resolved in the Vantagepoint 4.0 release.
Deltek Vantagepoint 4.0 Installation and Maintenance Guide	This guide explains how to install Vantagepoint on your servers and other advanced configuration options that you might consider.
Deltek Vantagepoint 4.0 Custom Reports and Microsoft SQL Server Reporting Services	This guide provides instructions to create, deliver, and generate Vantagepoint custom reports with Microsoft SQL Server Reporting Services and its report writing tools.
Deltek Vantagepoint 4.0 Settings and Configuration	This guide explains the available configuration options for Vantagepoint, including settings for security, Vantagepoint Intelligence, and Analysis Cubes.

Vantagepoint Intelligence Installation and Configuration

With Vantagepoint Intelligence Server and Desktop (referred to as Tableau Server and Tableau Desktop, products of Tableau Software, Inc., in this guide), you can use your Vantagepoint database (SQL Server) and also the Vantagepoint Project and General Ledger Cubes data sets (Analysis Services) as data sources to create graphical performance dashboards.

You can publish these performance dashboards to Tableau Server via the Vantagepoint Intelligence application and view them as dashparts on the Vantagepoint dashboard. You must complete the installation and configuration steps in this chapter to use Tableau Server/Tableau Desktop with the Vantagepoint data sources.

Note on Terminology

Tableau uses the following key terms in its software and supporting documentation:

- **Workbook**: A workbook is a web page that functions as a container for displaying a set of views.

- **View**: A view is a chart or table that provides a graphical representation of the values of the critical metrics that you select for that chart or table.

As you use Tableau, you may encounter the following additional term:

- **Site**: A logical security separation of workbooks, views, and users. Sites provide a way to segregate workbooks. For example, you might want two different databases (a production database and a test database), different languages, or perhaps different organization units or business groups. For more information, see About Tableau Sites.

Before You Begin

The Tableau server and desktop software is being provided as a means for creating workbooks against your Vantagepoint data sources.

You must also meet the following additional requirements:

- If you are a previous user of Vision Performance Management and have Tableau Server 9.3.5 installed and still need this installation for Vision, **do not** upgrade that installation to Tableau Server 2020.3 as this version of Tableau is not compatible with Vantagepoint. Also, do not attempt to install Tableau Server 2020.3 side by side with 9.3.5, as this is not supported.

- If you no longer need Tableau Server 9.3.5:

  - You must deactivate the license on the Tableau 9.3.5 server before uninstalling. For more information, see Deactivate Tableau License. You will use the same license key when you install and register Tableau Server 2019.

  - If you will use the same server, you must uninstall and completely remove the previous version of the Tableau Server. For more information, see Completely Remove a Previous Instance of Tableau.

  - You must also ensure that the existing server meets the hardware requirements of Tableau Server 2020.3, which are significantly higher than Tableau Server 9.3.5. See Tableau Server Technical Specifications for more information.

- You will also need to uninstall Tableau Desktop and install the newly supported version. If Tableau Desktop 9.3.5 is needed, both versions can be installed on the workstation.

> **Warning:** Make sure you have backups of your workbooks before you attempt to upgrade them to the new version.

- The Tableau server installation will provide a failure message if the system does not meet the minimum requirements, and you will not be able to proceed with the installation.

    - **Licensing**: You must have a license for the Tableau Server. The Tableau Server and Desktop license keys are provided by Deltek. If you have not received them, contact your Account Manager.

    - **Authentication**: Decide on an authentication method before proceeding. If you need to change the authentication method later, you must uninstall and reinstall Tableau Server. For more information, see Tableau Security Configuration.

    - **Support**: Use Deltek Customer Care for all product support needs. You will not be able to contact Tableau Software Support directly.

Software Requirements

Before you install Vantagepoint Intelligence, you must have the following software and configurations in place. Although every attempt is made to keep these prerequisites up to date, Deltek recommends that you verify them against the Deltek Platform Compatibility Matrix, which always has the latest compatibility information:

https://deltek.custhelp.com/ci/fattach/get/2975379/0/filename/DeltekProductSupportCompatibilityMatrix.pdf

Supported Versions and Compatible Versions

The Platform Compatibility Matrix list both supported versions and compatible versions:

- Supported versions are the most current, actively tested technologies used to deploy Vantagepoint.

- Compatible versions are recent technologies that have been tested and used for deploying Vantagepoint in the past, but are not currently being tested. Deltek believes that they are still compatible with Vantagepoint.

Component	Requirements
Operating System	- Windows Server 2019, - Windows Server 2016, or - Windows Server 2012 R2 (Windows Server 2012 is not supported.)
Secure Sockets Layer (SSL)	- A valid SSL certificate with a resolvable fully qualified domain name must be installed and configured on both the web server (IIS) and the report server for the installation to proceed. - You can use a self-signed certificate for local single server installation testing only. See Configure Secure Sockets Layer (SSL) for more information.
Transport Layer Security (TLS)	TLS 1.2 is required.

Component	Requirements
	▪ Older TLS/SSL protocols must be disabled on all Vantagepoint tiers:
	▪ TLS 1.1/1.0 must be disabled.
	▪ SSL 2.0/3.0 must be disabled.
	▪ Once these protocols are disabled, you must restart your server.
	▪ You can also use the IISCrypto tool by Nartac Software to disable these older protocols.
	For more information on why Deltek requires that you disable these protocols, see the following article:
	https://blog.pcisecuritystandards.org/are-you-ready-for-30-june-2018-sayin-goodbye-to-ssl-early-tls
	For more information on disabling protocols, see the following article:
	https://support.microsoft.com/en-us/help/187498/how-to-disable-pct-1-0-ssl-2-0-ssl-3-0-or-tls-1-0-in-internet-informat

Identify Your Deployment Strategy

Before you install the server software, consider the following questions:

▪ Where will you install the Tableau Server software?

▪ What type of security will you use?

▪ Will Tableau Server be accessed by Internet clients?

Where will you install the Tableau Server software?

Before you install the Tableau Server software on a server, review Tableau Server Technical Specifications.

Deltek does not recommend installing the Tableau Server software on any Deltek tier.

> **Warning:** Tableau Server has imposed hard limits for the system requirements. If your server does not meet system requirements, you will not be able to proceed with the installation. **These minimum requirements are significantly greater than those needed for previous Tableau Server versions.**

What type of security will you use?

Although Vantagepoint does not currently support an integration with Tableau, for ease and consistency of the future integration, Deltek suggests that you choose security for Tableau Server based on the security that you implemented (or plan to implement) for Vantagepoint.

Vantagepoint supports two methods of authentication:

▪ **Vantagepoint Security**: If you use Vantagepoint security (application-level users and passwords), Deltek suggests that you use Local authentication when you configure Tableau Server.

- **Windows Integrated Authentication**: If you use Windows Integrated security for Vantagepoint, your users authenticate to Vantagepoint using their Active Directory login. In this case, Deltek suggests that you use Active Directory authentication when you configure Tableau Server.

If you use Windows Integrated Authentication with Vantagepoint but also have Vantagepoint security users, those users will not be able to access the Tableau Server until their domain accounts are added as Tableau users. These are only suggestions, however. You can use either Tableau Server security option, regardless of your Vantagepoint security, and you do not need to change your Vantagepoint security model to implement the Tableau Server software.

> **Attention:** For details on security, see Tableau Security Configuration.

Will Tableau Server be accessed by Internet clients?

If your current deployment allows users to access Vantagepoint directly over the Internet (excluding access through a VPN), and users also need to access to the Tableau Web application over the Internet to view workbooks, do the following:

- Configure your firewall to allow the port used by the Tableau Server to be accessed. For more information, see Configure Tableau Server for SSL.
- Establish an Internet-accessible, fully qualified domain name for that purpose (for example, tableau.company.com). That domain name must be resolved both inside and outside the corporate network as the Tableau Server name will be the same for all clients.

Summary of Vantagepoint Intelligence Configuration Steps

The primary steps required to configure Tableau Server are listed in the following table. If you are upgrading from Vision Performance Management, skip ahead to Upgrading Tableau Software.

Step	Where to Perform	Description
1	Server hosting Tableau Server	Uninstall any previous version of Tableau Server. For more information, see Deactivate Tableau License and Completely Remove a Previous Instance of Tableau.
2	Server hosting Tableau Server	Identify the Tableau security configuration that you will use.
3	Server hosting Tableau Server	Install Tableau Server.
4	Server hosting Tableau Server	Configure Tableau Server for SSL (required).
5	Server hosting Tableau Server	Complete the post installation configuration steps.
6	Tableau Server	Configure the Tableau Server maintenance process.

Step	Where to Perform	Description
7	Add user accounts to Tableau Server	
7a	SQL Server Management Studio on the Vantagepoint database server	Export Vantagepoint users to a comma-separated values (.CSV) file.
7b	Tableau Server TSM	Import Vantagepoint users into Tableau Server.
8	User Desktops	Install Tableau Desktop and the necessary drivers.
9	Vantagepoint Application	Configure Vantagepoint Intelligence application to connect to the Tableau server
9	Vantagepoint Application	Test the Tableau workbooks by uploading them via the Vantagepoint Intelligence application and then viewing them on the Vantagepoint dashboard.

Tableau Security Configuration

During the installation and configuration of Tableau Server, you must specify the type of authentication that you will use. Deltek suggests, but does not require, that this authentication match the authentication that you are using (or plan to use) for your Vantagepoint implementation.

- If you are using Windows Integrated Authentication with Vantagepoint, configure Tableau Server for Active Directory security.

- If you are using Vantagepoint security, select Local (Tableau) authentication. This is configured via the User Authentication section of the Tableau Server Configuration dialog during the initial configuration of Tableau server and cannot be changed except to uninstall and re-install the Tableau Server software.

Active Directory

After you add Active Directory users to Tableau Server, your users can view performance dashboards in Vantagepoint and directly in Tableau Server. For more information, see Add Domain Users and Groups.

If you have users in domains outside of the domain in which the Tableau Server is a member, and if those users require access to Tableau Server, a Domain Trust relationship must exist between the domains such that the server domain trusts the user domain. To enable your users to be automatically logged in to the Tableau Server using their domain credentials, you need to configure the Tableau Server setting **Enable automatic sign-in using Microsoft SSPI (Security Support Provider Interface)** using the Tableau Services Manager. See Post Installation Configuration for the steps that you complete to configure this setting.

Local Authentication

If you use Local (Tableau) authentication, and your users need direct access to Tableau Server (outside of Vantagepoint dashboards), you will need to create a username and password for each user that will need access to Tableau. To streamline this process, you can export your Vantagepoint usernames and import them into Tableau Server. For more information, see Add Local (Tableau) Users.

Changing Tableau Security Configuration

> **Warning:** If you install Tableau Server and then need to change the security configuration, it is not possible to save any Tableau configuration settings or data. You must fully reconfigure the environment.

If you install Tableau Server and later need to change the security configuration (from Active Directory to Local Authentication or the reverse), you must uninstall the Tableau Server software and also remove the following Tableau Server installation folders:

- **C:\Program Files\Tableau** (Substitute the appropriate installation drive letter and path, as appropriate.)

- **C:\ProgramData\Tableau** (The ProgramData folder is a hidden Windows folder, so you will need to change your folder and view settings to display it.)

Completely Remove a Previous Instance of Tableau

You must first deactivate your existing Tableau Server 9.3.5 license so that it can be used with the new version. Then you can follow the steps outlined in the Tableau knowledgebase article cited below.

Deactivate Tableau License

To deactivate the license on the Tableau server:

1. Open the Manage Product Keys application from the Deltek Vision Performance Management program group.

2. Select your existing license(s) and click **Deactivate**.

1. After all licenses are deactivated, you can proceed to uninstall.

Uninstall Tableau Server

Follow the instructions for **Option 1 – For Tableau Server 2018.1 and earlier versions on Windows**, in the following Tableau knowledgebase article:

https://kb.tableau.com/articles/howto/uninstal-tableau-server

Download Tableau Software

Use the DownloadVantagepointIntelligence switch to download the Vantagepoint Intelligence (Tableau) server and desktop installation files. The DownloadVantagepointIntelligence switch is part of the Deltek Vantagepoint installation process. For more information on installation options and how to use the PowerShell installation, see the *Deltek Vantagepoint Installation and Configuration Guide.*

To run the script with the DownloadVantagepointIntelligence switch:

1. On the operating system Start menu, locate the Windows PowerShell Console.

2. Run the console using the **Run as Administrator** option on the right-click context menu.

3. From the installation directory Scripts folder on your Vantagepoint web/application server (for example, <drive>:\Program Files\Deltek\Vantagepoint\Scripts), enter **.\DeltekVantagepoint.ps1 - DownloadVantagepointIntelligence**.

4. Enter your Deltek Support username and password.

5. The script checks prerequisites and verifies your access to Deltek Vantagepoint Intelligence. If you do not have a valid module code for Vantagepoint Intelligence, you will not be able to download the software.

6. The download of DeltekVantagepointIntelligence_<build>.zip starts. The download location of the zip file is <drive>:\Program Files\Deltek\Vantagepoint\Support\Intelligence.

7. Once this file download is complete, the files are extracted to the same directory.

Setup Steps Performed by the Script

After you enter the information needed to run DeltekVantagepoint.ps1 using the DownloadVantagepointIntelligence switch, the script downloads the files to the \Support\Intelligence directory and extracts the files.

Install and Configure Tableau Server

Before you begin the installation process, read the "Tableau Server on Windows" section of the Tableau Server Online Help. Make sure to select the correct version of Tableau from the **Version** drop-down list. Focus on the "Getting Started with Tableau Server" and "Install and Configure" sections so that you have a thorough understanding of the installation and configuration process.

To install and configure the Tableau Server software, follow the instructions in the "Install and Configure" section of "Tableau Server on Windows" in the Tableau Online Help.

The following steps summarize the process:

1. If you are installing on a server that hosts a previous version of Tableau Server, see Completely Remove a Previous Instance of Tableau for more information.

2. Download <setup> using the Deltek Vantagepoint PowerShell installation <name of switch>.

3. **Running Setup**: This section describes how to install the Tableau Server software using the server setup and TSM web interface. This is located under **Contents » Deploy » Install and Configure Tableau Server » Install TSM** in the Tableau Server Online Help. A summary of the installation steps follows:

    a. Run the <name of installer> installation package.

        The setup process will complete a system verification process to ensure that the server meets the minimum hardware requirements. (For more information, see Tableau Server Technical Specifications.)

    b. Click **Next**.

        > **Note:** Minimum hardware requirements that are allowed are considered a "Proof of Concept," not a "Production" installation.

    c. Select the **Create a new Deltek Vantagepoint Intelligence installation** option, click **Next**, and then click **Install**.

    d. On the Start Tableau Services Manager (TSM) screen, click **Next**,

    e. On the TSM web interface, enter your domain credentials (you must be a member of the local administrators group), and click **Sign In**.

4. **Activate Tableau Server:** Activate Tableau Server with the license key that Deltek provides.

5. **Configure Initial Node Settings**: Use the TSM web interface to configure Tableau Server for your environment. The following notes provide additional guidance for making key entries:

    ▪ **Identity Store**: Select **Local** (Tableau authentication).or **Active Directory** (recommended). If you are using Active Directory, you enter the Fully Qualified Domain and the NetBIOS nickname of the domain. For more information, see Tableau Security Configuration.

    > **Attention:** When you complete the Tableau Server installation and are ready to Configure Vantagepoint Intelligence, if you chose "Local Authentication" as the Identity Store in Tableau setup you will select the **Local (Tableau)** radio button as the Authentication Type when configuring Vantagepoint Intelligence. If you chose "Active Directory" as the Identity Store, you will select the **Active Directory** radio button.

    > **Warning:** If you install Tableau Server and later need to change the security configuration (from Active Directory to Local Authentication or the reverse), you must uninstall the Tableau Server software and also remove the Tableau Server installation folders. None of your configuration will be preserved. You must then reinstall and reconfigure Tableau Server.

    ▪ **Run As Service Account**: This entry must be a domain account that has rights to the Vantagepoint database which will be used as the Data Source for your published workbooks. Whether you are using Active Directory or Local authentication, this account must be a domain account with rights to the Vantagepoint database.

    ▪ **Gateway Port**: Choose the port that Tableau Server monitors for requests. The default is 80 if IIS is not installed on the Tableau server, and 8000 if it is installed. Note that an SSL certificate is required to be installed and configured after the installation is completed so this port will change to the SSL port.

    ▪ **Include Samples**: If you select this setting, Tableau sample workbooks are installed. Later, you will need to delete them manually from Tableau Server. It is recommended that you do not select this check box when you configure your production instance of Tableau Server.

6. **Initialize Tableau Server**: After you enter the above information, click the **Initialize** button. The initialization process can take some time to finish. After the process is completed, you are prompted to create a Tableau Server Administrator account. Click **Continue**.

Configure Tableau Server for SSL

Since your Vantagepoint server is configured for SSL (https), it is required that you also configure the server hosting Tableau Server with an SSL certificate.

To configure the Tableau server for SSL:

Refer to the SSL section in the Tableau Server Online Help for steps on configuring SSL.

When you configure the server hosting Tableau Server for SSL, it only accepts requests on the default SSL (https) port of 443.

Tableau does not support the configuration of a non-standard SSL port.

Apply Required TLS 1.2 Changes to the Tableau Server

If you have not already done so, ensure the required TLS configurations changes are made to your Tableau server as described in the Software Requirements. Failure to do so will cause workbooks

uploads and views to fail, due to mismatched TLS configurations between the Vantagepoint Web Server and the Tableau Server.

Post Installation Configuration

Refer to the Post Installation Tasks in the Tableau Server Online Help for additional configuration tasks.

1. You must ensure the SQL Server and Analysis Services drivers are installed on the Tableau Server and client workstations that will be connecting to the Vantagepoint data sources.

   You can download the latest drivers from the following links:

   ▪ **SQL Server**:

      https://downloads.tableau.com/drivers/microsoft/odbc/x64/msodbcsql.msi

   ▪ **Analysis Services**:

      https://downloads.tableau.com/drivers/microsoft/2014/x64/SQL_AS_OLEDB.msi

   > **Attention:** Tableau drivers are significantly out of date but they do not support the latest drivers provided by Microsoft. If you have connection issues from either Tableau Server or Desktop, check to ensure you are using the drivers above.

2. Ensure that the Tableau server '**Run as'** account has the necessary rights to the data sources for which workbooks will be published (for example, read rights to the Vantagepoint database) and added to the Service Accounts role for the Vantagepoint Analysis Services database (this role is automatically created when the Analysis Cubes are deployed). These rights can be granted using SQL Server Management Studio.

   By default, published workbooks accessed from Tableau Server will be accessed by the account running the Tableau Server.

3. Configure the Tableau Server data cache settings to always use the latest data

   a. Open a command prompt on the Tableau Server using 'Run as Administrator'.

   b. Enter the following commands:

      1. tsm data-access caching set –r 0

         > **Note:** If not logged on as the Tableau Server run as account you may need to enter the *–username <Run As Account> and –password <password>* parameters to the command.

      2. *tsm pending-changes apply* to restart the Tableau Server services.

      3. After the services are restarted run the following to confirm the setting:

         tsm data-access caching list (the value should be 0)

4. If you are using Active Directory, optionally configure "Enable automatic sign-in using Microsoft SSPI" to allow automatic sign-in for your users:

   a. On the Tableau Server, log in to the Tableau Services Manager (TSM) (https://<server>:8850).

> **Note:** The TSM application is configured with a self-signed SSL certificate registered to the machine where it is installed. You will receive an SSL error if you attempt to access TSM remotely.

  b. Click the Configuration menu.

  c. On the navigation menu, select **User Identity & Access**.

  d. Click the Authentication Method tab.

  e. Select the **Enable automatic sign-in using Microsoft SSPI (Security Support Provider Interface)** check box.

  f. To restart the Tableau Server, click the **Pending Changes** button, select **Apply Changes and Restart**, and then click **Confirm**.

   The restart will take several minutes to complete.

5. If using Local (Tableau) authentication, you need to configure Tableau to create Trusted Tickets for each Vantagepoint web/application server that will access the Tableau Server:

  a. On the Tableau Server, log in to the Tableau Services Manager (TSM) (https://<server>:8850).

  b. Click the Configuration menu.

  c. On the navigation menu, select **User Identity & Access**.

  d. Click the Trusted Authentication tab.

  e. Enter the IP address of each trusted host (Vantagepoint web/application server) to the Trusted Hosts list.

  f. To restart the Tableau Server, click the **Pending Changes** button, select **Apply Changes and Restart**, and then click **Confirm**.

   The restart will take several minutes to complete.

6. Import (or add) your Vantagepoint users to Tableau Server.

  See Add User Accounts to Tableau Server in this guide.

7. Set up anti-virus exclusions.

  To increase performance and minimize issues during Tableau Server installations and upgrades, complete the steps in the following article, to set exclusions on the Tableau Server directories:

  http://kb.tableausoftware.com/articles/howto/improving-performance-by-using-antivirus-exclusions

8. Set up the Tableau Server Maintenance Process to ensure the following:

  ▪ The application is always fresh (restarted periodically).

  ▪ You have a current backup of the Tableau Server repository (database).

  ▪ Logs are cleaned up and archived.

9. Install Tableau Desktop on users' workstations.

10. Configure access to the Tableau Server in Vantagepoint Intelligence (**Settings » General » Intelligence**) using these settings:

Setting	Enter this information or complete this action
Port	443 (required)
Server Name	Fully qualified server name matching the SSL certificate installed on the Tableau Server.
Authentication Type	Local (Tableau) or Active Directory
User Name / Password	An administrative account created in Tableau server with the rights to Publish workbooks.
Image Path	The path where images for workbooks are stored.
Test Configuration	Click this button to ensure that Vantagepoint can successfully connect to the Tableau Server.
View Error Log	Link to the error log for troubleshooting connection or workbook uploading issues.

11. Click the **Upload Workbook** button in the Vantagepoint Intelligence application to upload workbooks to Tableau Server.

12. View workbooks as dashboards using the Vantagepoint Dashboards module.

Upgrading Tableau Software

As mentioned earlier, **DO NOT** upgrade from Tableau Server 9.3.5 to 2020.3. Upgrades from Tableau Server 9.3.5 or prior are not supported. You must completely uninstall and remove Tableau Server 9.3.5 before attempting to install 2020.3 for use with Deltek Vantagepoint.

> **Attention:** For more information, see Completely Remove a Previous Instance of Tableau.

If you are upgrading from Tableau Server to a newly supported release of Tableau, follow the steps outlined in Upgrade Tableau Server.

When upgrading to a newer supported version of Tableau, you must update the following Tableau components:

- Tableau Server software
- Tableau Desktop software

The Tableau Server and Desktop software must be the same version.

To upgrade Tableau Server, you install the new version while your existing version is running. Then, run an upgrade script to switch over to the new version. This reduces the amount of downtime for users because the server continues to run while you install the new version. You only stop the server to run the upgrade script.

The Tableau software for Vantagepoint Intelligence is specifically branded for Deltek, and Deltek must be your source for that software. **Do not** attempt to upgrade Tableau with software from a source other than Deltek, such as from Tableau directly.

Configure Vantagepoint Intelligence

After you complete the installation and configuration of Tableau server, you must configure Vantagepoint Intelligence to connect to Tableau. In Vantagepoint, navigate to **Settings » General » Intelligence** and enter the Tableau server connection information in the **Configuration** section. The field definitions are as follows:

- **Port:** SSL is required and Tableau only supports SSL port 443. The port value in pre-filled.

- **Server Name:** Enter the FQDN for the Tableau server that matches the SSL certificate configured.

- **Authentication Type:** This setting **MUST MATCH** the Tableau server security chosen during the installation. If you configured Tableau server to use Local Authentication, select the **Local** radio button. If you configured Tableau server to use Active Directory authentication, select the **Active Directory** radio button. Refer to Install and Configure Tableau Server, step 5 for more information or log in to the Tableau Server TSM web application in this menu path: **Configuration » User Identity and Access » Identity Store**.

> **Attention:** When Tableau Server is configured for Active Directory authentication, you will still see "Local Authentication" being used on the Authentication Method tab in **TSM » Configuration » User Identity and Access**. "Local Authentication" does not mean that Tableau server is configured for Local Authentication; it means that Tableau server will locally authenticate your Active Directory users (which you have to import into Tableau server – refer to "Add User Accounts to Tableau Server) rather than using one of the External Authentication methods, which are available via the drop-down list. Deltek does not support external authentication methods with Tableau.

- **User Name:** Enter a valid Tableau user account that is a member of the Server Administrator role. If Tableau Server is configured for Local authentication this will be a local user account created in Tableau Server. If Tableau Server is configured for Active Directory authentication this will be a domain account.

- **Password:** Enter the password associated with the user name.

- **Image Path:** Enter the network path where images associated with Tableau workbooks will be stored.

After you enter all of the configuration information, click **Test Configuration** to ensure that Vantagepoint Intelligence can correctly authenticate with Tableau Server. If you receive an error message, click **View Error Log** and then contact Deltek Support for assistance. You should also ensure that you can successfully log in to the Tableau server web application using the username/password entered.

Create and Publish Workbooks to Tableau Server

Your users will use Tableau Desktop to create workbooks, which they can then upload to Tableau Server using the Vantagepoint Intelligence application (**Settings » General » Intelligence**).

Add User Accounts to Tableau Server

You can add users to Tableau Server using an export-import process, or you can set up users (or groups, if you are using Active Directory) manually, one at a time, in Tableau Server. You must be either a System Admin or Site Admin to add users to Tableau Server.

Add Domain Users and Groups

If you use Active Directory security, you must add your domain users to Tableau Server so those users can access the Tableau Server web application and publish workbooks. After you add your Domain users (or groups) to Tableau server, they can access the Tableau web application or (if granted permissions) publish workbooks to the server.

You can also import Active Directory Groups to Tableau Server for easier management.

> **Attention:** For more information, see Create Groups via Active Directory.

Add Local (Tableau) Users

If you configured Tableau Server to use Local Authentication, you must create Local (Tableau) security accounts for your users. To simplify this process, you can export your Vantagepoint security usernames using the process below and then import the usernames to Tableau Server.

Export Vantagepoint Users

In SQL Server Management Studio (SSMS), execute the following SQL queries against your Vantagepoint database to create a .csv export file that contains all of your users. If appropriate, you can modify these queries to filter users further by role or by other criteria.

The users that you export are filtered as follows:

- **If you use Local (Tableau) authentication**: This query only includes "non-disabled" Vantagepoint Security (non-Active Directory) logins.

- **If you use Active Directory authentication**: This query only includes "non-disabled" Active Directory logins for which the domain has been specified in Vantagepoint security settings.

All users who meet this criteria are exported.

After you execute the query in SSMS, you can right-click in the results pane, select **Save results as**, and then choose a .csv file.

Local Authentication Query

```sql
SELECT  s.username as Username,
'password' as Password,
e.firstname + ' ' + e.lastname as Fullname,
'Explorer' as LicenseLevel,
'None' as Administrator,
'No' as Publisher,
e.email as Email
FROM EM e
INNER JOIN Seuser s
 ON e.Employee = s.employee
WHERE s.DisableLogin <> 'Y' and s.Password <> 'integrated'
```

> **Note:** When using Local (Tableau) authentication, a password is required. The password column in the export file will default to "password" for all users. After users log in to Tableau Server, they must change their Tableau Server password under **User Preferences**. Alternatively you can modify the export file and set a password for your users.

Active Directory Query

```
SELECT  s.Domain + '\' + S.username as Username,
' ' as Password,
e.firstname + ' ' + e.lastname as Fullname,
'Interactor' as LicenseLevel,
'None' as Administrator,
'No' as Publisher,
e.email as Email
FROM EM e
INNER JOIN Seuser s
 ON e.Employee = s.employee
WHERE s.DisableLogin <> 'Y' and s.Password = 'integrated'
```

CSV File Format

The format of the .csv file is as follows.

```
Username,Password,Full Name,License Level,Administrator,Publisher,Email
```

(For more information, see https://onlinehelp.tableau.com/current/online/en-us/csvguidelines.htm.)

Example Active Directory export file:

```
INETTEST2K8N\VPMUser1,,"VPM User 1",Interactor,None,No,VPMUser1@Inettest2k8n.com
```

Example Local (Tableau) export file:

```
ADMIN,password,"William Apple",Explorer,None,No,admin@domain.com
JAMESB,password,"James Bartlett",Explorer,None,No,JamesB@domain.com
```

The following table describes the data in the export file in more detail.

Data Item	Description
Username	This field contains the user's login name. If you use Active Directory, the format is <Domain>\<Username>. If you use Local (Tableau) authentication, the format is <username>.
Password	This field contains the user's login password, if applicable. ▪ If you use Active Directory, this field is blank. ▪ If you use Local (Tableau) authentication, this field contains **password**, the default password.

Data Item	Description
	Users can change their passwords on the User Preferences page after they successfully log in to Tableau Server.
Full Name	This field contains the full name of the user, for display purposes.
License Level	This field contains the user's Tableau license level, which controls the user's level of access to the workbooks: **Creator**, **Explorer**, **Viewer**, or **Unlicensed**. The default value is **Explorer**.
Administrator	This field contains the user's Tableau Server administrative level: **System**, **Site**, or **None**. The default value is **None**.
Publisher	This field indicates if the user has the access necessary to publish workbooks: **Yes** or **No**. The default value is **No**.
Email	The user's email address.

> **Note:** You can modify the values in the **License Level**, **Administrator**, and **Publisher** fields before performing the import if you have specific users who require additional rights. You can also modify rights in Tableau after the import.
>
> For more information, see the Tableau Online help: http://onlinehelp.tableau.com/

Import Users into Tableau Server

The Default site is created by the Tableau Server configuration. You can create additional sites to suit your specific requirements (for example, departments, offices, business units, and so on).

You can perform the import at the Default site level and then modify the site membership for a single user or groups of users after the import using Site Membership, or you can import at the site level directly. If the account performing the import is a site administrator in Tableau, you can only import users to that site.

To perform the import:

1. Open a browser and enter the URL for Tableau Server.

2. Log in to Tableau Server using an account that is either a Site or Server Administrator and click **Sign In**.

3. If prompted and, if applicable, select a site.

   You have the ability to import users to a specific site or to the default site and assign site membership later on.

   - If you use Active Directory authentication and have allowed "Enable automatic sign-in using Microsoft SSPI," you are immediately prompted to choose the Tableau site to log in to.

   - If you use Local (Tableau) authentication, a login prompt displays initially.

4. On the navigation menu, click the **Users** menu.

5. Click the **+ Add Users** button.

6. Click the **Import from File** option.

7. Click **Browse** and select the.csv file.

8. Click **Import Users**.

9. When a dialog box displays, indicating the success or failure of the operation, click **Exit**.

After the Import

As indicated previously, you may have several Tableau sites. If you import all users at the Default site of Tableau Server, follow the steps below to modify the site membership for your users.

To modify the site membership, site role (license level), or administrator rights for one or more users, select the users and then select the Actions menu to set the various options.

Ongoing User Maintenance

There is no automatic synchronization functionality between users in Vantagepoint and Tableau Server. As new users are added to, removed from, or disabled in Vantagepoint, you must add, remove, or disable them manually in Tableau Server.

Maintain the Tableau Server

Complete the steps below to set up the nightly Tableau Maintenance PowerShell script that backs up the Tableau repository, archives current logs, and performs cleanup operations such as removing old files.

To maintain the Tableau Server:

1. Copy the PowerShell script below into Windows PowerShell ISE.

2. Modify the highlighted parameters as appropriate:

   - **$global:LogFilePath**: Specify the location where maintenance script logs are maintained.

   - **$CopyFilesToRemote**: Set to **true** to copy the backup to a remote file share. The default value is **false**, meaning that backups will be maintained on the Tableau server.

   - **$RemoteBackupsLocation**: If CopyFilesToRemote is **true**, this is the share path for the remote network location to store backups.

   - **$DaysToKeep**: By default, the script deletes backup and log files older than 30 days.

   - **$PurgeOldFiles**: If **true**, files older than the specified value are deleted.

3. Save the file as TableauMaintenance.ps1 (or similar) in a location on the server that will be accessible to the account running the script via Task Scheduler. The account running the script must also be a local administrator on the server in order to bypass TSM prompting for credentials.

4. Use Windows Task Scheduler to schedule the script to run at an appropriate time for your organization.

   > **Tip:** If you are unfamiliar with Task Scheduler, see the following Microsoft Technet article: (http://technet.microsoft.com/en-us/library/cc721871.aspx).

Tableau Server Maintenance Script

Use the **Task** and **Maintenance** PowerShell scripts below to create the nightly maintenance task. Copy the Maintenance Script to Windows PowerShell ISE, update the highlighted sections as appropriate, and save locally on the Tableau Server as TableauCleanup.ps1 (or similar name). After you save the Maintenance Script, copy the Task Script to Windows PowerShell ISE, update the highlighted sections as appropriate, and execute the script to create the scheduled task.

Task Script

```
# PowerShell Sript to create schedule task for Tableau Maintenance

# Modify highlighted as appropriate for your installation


# Specify what program to run and with its parameters

$Action= New-ScheduledTaskAction -Execute "PowerShell.exe" -Argument "<Path to Script>\TableauCleanup.ps1"

# Specify the trigger settings

$Trigger= New-ScheduledTaskTrigger -At 12:00am -Daily

# Specify the user account to run the task

$Principal = New-ScheduledTaskPrincipal -LogonType S4U -UserId "<Tableau RunAs Account>"

# Create the scheduled task

Register-ScheduledTask -TaskName "Tableau Nightly Maintenance" -Trigger $Trigger -Principal $Principal -Action $Action -Force
```

Maintenance Script

<-- Maintenance Script start -->

```
# Portions of script credit: https://github.com/glenrobinson72/Tableau-Powershell-Scripts/tree/master/Tableau-Server-Backup

# This variable will set the location of the log file generated by the maintenance script each time it is run.

# Edit the path to be a valid folder location on the Tableau server.

$global:LogFilePath = "c:\tableaubackup\TableauMaint_" + (Get-Date -Format "yyyyMMdd_HHmm") + ".txt"


# This function is responsible for generating the log file

function global:Deltek-Common-Writelog {

    param (

        #[Parameter(Mandatory)]

        [Parameter()]

        [string]$Message,


        [Parameter()]

        [ValidateSet('1','2','3','4','5')]

        [int]$Severity = 5, ##      Default to a informational severity, Override otherwise


        [Parameter()]

        [boolean]$WriteToHost = $true,     #Default is Write Message to Host, Override otherwise
```

```powershell
        [Parameter()]
        [boolean]$MessageIsError = $false,  #If Error, Foreground will be Red


        [Parameter()]
        [boolean]$MessageIsWarning = $false  #If Error, Foreground will be Yellow
    )


    #Remove Password from logged message
    $Message = $Message -replace "(?<=-Password\s)[^\s]+"


    [string]$strLine = (Get-Date -Format "M/dd/yyyy HH:mm:ss") + " [" +
$Severity.ToString() + "] " + $Message


    if ($WriteToHost)
    {
        if ($MessageIsError -or $Severity -eq 1)
        {
            Write-Host $Message -ForegroundColor Red
        }
        elseif ($MessageIsWarning -or $Severity -eq 2)
        {
            Write-host $Message -ForegroundColor Yellow
        }
        elseif ($Severity -eq 3)
        {
            Write-host $Message -ForegroundColor Cyan
        }
        elseif ($Severity -eq 4)
        {
            Write-host $Message -ForegroundColor Green
        }
        elseif ($Severity -eq 5)
        {
            Write-host $Message -ForegroundColor White
        }
        else
        {
            Write-host $Message
```

```
        }

    }


    ## Ensure that $LogFilePath is set to a global variable at the top of script

    if ($global:LogFilePath -ne $null) {

        $strLine | Out-File -FilePath $global:LogFilePath -Append

    }

}


# This function will perform the nightly maintenance. Edit the specified variables as
appropriate.
function tableau_nightly_maintenance {


    $server = $env:COMPUTERNAME


    # Edit the following 4 variables as appropriate.
    $CopyFilesToRemote = $False
    $PurgeOldFiles = $True
    $RemoteBackupLocation = ""
    $DaysToKeep = 30


    $date = Get-Date -Format "yyyyMMdd_HHmmss"
    $TSM_server        = "https://"+$server+":8850"
    $zipfile           = "logs_"+ $date +".zip"
    $backups_file      = "tabsvc_"+ $date
    $settings_file     = "ServerSettings.json"


    global:Deltek-Common-Writelog "Running Tableau_Nightly_Maintenance on $server..."
-WriteToHost $false
    global:Deltek-Common-Writelog "" -WriteToHost $false
    global:Deltek-Common-Writelog "TSM Server: $TSM_server" -WriteToHost $false
    global:Deltek-Common-Writelog "Copy files to remote: $CopyFilesToRemote" -
WriteToHost $false
    global:Deltek-Common-Writelog "Remote backup folder: $remote_Backups_Folder" -
WriteToHost $false
    global:Deltek-Common-Writelog "Purge old files: $PurgeOldFiles" -WriteToHost
$false
    global:Deltek-Common-Writelog "Days to keep: $DaysToKeep" -WriteToHost $false


    # Get Folder Locations
    $backups_folder = &tsm configuration get -k basefilepath.backuprestore
```

```
    global:Deltek-Common-Writelog "Backup/Restore path: $Backups_Folder" -WriteToHost
$false

    $logs_folder    = &tsm configuration get -k basefilepath.log_archive

    global:Deltek-Common-Writelog "Logfile path: $logs_folder" -WriteToHost $false

    global:Deltek-Common-Writelog "" -WriteToHost $false


    # Export Settings File
    global:Deltek-Common-Writelog "Exporting server settings..." -WriteToHost $false

    $retval = &tsm settings export -f $backups_folder'\'$settings_file

    global:Deltek-Common-Writelog "Settings exported to:
$backups_folder/$settings_file" -WriteToHost $false

    global:Deltek-Common-Writelog "" -WriteToHost $false


    #Run Zip Logs
    global:Deltek-Common-Writelog "Running Tableau ziplogs..." -WriteToHost $false

    $retval = &tsm maintenance ziplogs -a -f $zipfile

    global:Deltek-Common-Writelog "Zipped logs located at: $logs_folder/$zipfile" -
WriteToHost $false

    global:Deltek-Common-Writelog "" -WriteToHost $false


    # Run Clean Up
    global:Deltek-Common-Writelog "Running Tableau cleanup..." -WriteToHost $false

    $retval = &tsm maintenance cleanup -l -t -q

    global:Deltek-Common-Writelog "Tableau cleanup completed." -WriteToHost $false

    global:Deltek-Common-Writelog "" -WriteToHost $false


    # Run backups
    global:Deltek-Common-Writelog "Backing up Tableau repository..." -WriteToHost
$false

    $retval = &tsm maintenance backup -f $Backups_file

    global:Deltek-Common-Writelog "Tableau backup located at:
$backups_folder/$backups_file" -WriteToHost $false

    global:Deltek-Common-Writelog "" -WriteToHost $false


    If ($CopyFilesToRemote -eq $True)
     {
       global:Deltek-Common-Writelog "Copying files to: $RemoteBackupLocation" -
WriteToHost $false

       copy-Item -path $logs_folder"\"$zipfile -destination
$RemoteBackupLocation$zipfile -Force

       copy-Item -path $backups_folder"\"$settings_file -destination
$RemoteBackupLocation$settings_file -Force
```

```
        copy-Item -path $backups_folder"\"$backups_file".tsbak" -Destination
$RemoteBackupLocation$backups_file".tsbak" -Force
    }


    # Delete old backup and zip log Files
    If ($PurgeOldFiles -eq $True)
     {
      # Delete local copies of backups and zip logs
      $oldfiles = Get-ChildItem $backups_folder -file | Where-object {$_.LastWriteTime
-lt $date.AddDays(-$DaysToKeep)}
      if($oldfiles.count -gt 0)
       {
        global:Deltek-Common-Writelog "Purging backups older than $DaysToKeep..." -
WriteToHost $false
        $oldfiles.Delete()
       }
      # Delete local copies of zip logs
      $oldfiles = Get-ChildItem $logs_folder -file | Where-object {$_.LastWriteTime -
lt $date.AddDays(-$DaysToKeep)}
      if($oldfiles.count -gt 0)
       {
        global:Deltek-Common-Writelog "Purging logs older than $DaysToKeep..." -
WriteToHost $false
        $oldfiles.Delete()
       }


      # Delete Remote copies of Old files
      if ($CopyFilesToRemote -eq $True)
       {
        $oldfiles = Get-ChildItem $RemoteBackupLocation -file | Where-object
{$_.LastWriteTime -lt $date.AddDays(-$DaysToKeep)}
        if($oldfiles.count -gt 0)
         {
          global:Deltek-Common-Writelog "Purging remote backups older than
$DaysToKeep..." -WriteToHost $false
          $oldfiles.Delete()
         }
       }
     }
}
```

```
# Call function
tableau_nightly_maintenance
```

<-- Maintenance Script end -->

Install Tableau Desktop on User Workstations

For users who will be creating workbooks using the Tableau Desktop tool, you must install the Tableau Desktop software, as well as the necessary SQL Server drivers. The Tableau Desktop software installation files were downloaded when you downloaded the server installation software.

> **Attention:** See Download Tableau Software and Post Installation Configuration for the appropriate SQL Server drivers to install.

Troubleshoot Tableau Server

Errors received when publishing the workbooks to Tableau Server may not provide sufficient information to identify the problem. For those issues, you need to obtain the Tableau Server logs. See the following Tableau knowledgebase article for the instructions:

https://onlinehelp.tableau.com/current/server/en-us/logs_archive.htm

The solutions to known problems follow.

Problem	Solution
When attempting to publish workbooks, you may receive an error indicating the following: *** This data connection is not licensed for use with Deltek Vantagepoint Intelligence. During the workbook publishing process, a SQL Query is executed to ensure that you are attempting to use Tableau Server against a valid Deltek data source and that query is failing. You receive this error because your Tableau Server is only licensed to connect to your Deltek Vantagepoint database.	Ensure that the Tableau Server Run As account has rights to the Vantagepoint data sources and that the necessary SQL Server and Analysis Services drivers are installed on the Tableau Server or Desktop exhibiting the problem. If the error persists, restart Tableau server.
When attempting publish workbooks, you may see the following error in the Vantagepoint Intelligence Error Log: Error publishing workbook <workbook name>: Publish: <workbook name> failed to establish a connection to your datasource.	This problem is most likely a result of an invalid TLS configuration on the Tableau server which must match the TLS configuration of the Vantagepoint servers. Refer to Software Requrements in this guide for the required TLS configuration.

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