

RESOLVER

PERSPECTIVE UPDATE INSTRUCTIONS

Version 5.2

February 2017

Perspective Update Instructions by Resolver Inc.™

Version 5.2

Distributed February 2017

Copyright © 2017 Resolver Inc. and its licensors. All rights reserved.

Resolver, the Resolver logo, Perspective by Resolver, Dispatch by Resolver, the Perspective by Resolver logo, Perspective Focal Point, and the Incident management from every angle logo are trademarks or registered trademarks of Resolver Inc.

Information in this document is subject to change without notice.

Companies, names, and data used in the examples herein are fictitious unless otherwise noted.

Although every precaution has been taken in preparation of this document, Resolver Inc. assumes no responsibility for errors or omissions.

Neither is any liability assumed for damages resulting from the use of the information contained herein.

Permission to modify and distribute this document strictly for the purpose of internal user training is hereby granted, provided that it is made evident the document has been modified, and that all copies contain all proprietary notices set forth in or on the original version.

Resolver Inc. assumes no responsibility for errors or omissions resulting from the modification of this document. Resolver Inc. expressly waives all liability assumed for damages resulting from the modification of the information contained herein. Notwithstanding the permission granted herein, no part of this document may otherwise be reproduced, transmitted, disseminated or distributed, in any form or by any means, electronic or mechanical, for any other purpose, without the express written permission of Resolver Inc.

Microsoft, Windows, Windows Vista, Windows Server, SQL Server, Access, Internet Explorer, Excel, PowerPoint, Outlook, Active Directory, Visual Studio, Visual Basic, the Office logo, .NET logo, and Microsoft Gold Independent Software Vendor (ISV) Partner logo are trademarks or registered trademarks of Microsoft Corporation in the U.S. and other countries.

Wi-Fi is a registered trademark of the Wi-Fi Alliance.

All other products, brands, names, or trademarks mentioned in this document may be trademarks or registered trademarks of their respective owners

Table of Contents

SYSTEM REQUIREMENTS	1
Update Instructions	2
Important Notes About SQL Server.....	2
Database Upgrade.....	2
Set Up Secure Sockets Layer (SSL) on Internet Information Services (IIS).....	4
Database Restore (Dispatch Scheduling Services and Service Clustering)	4
Scheduling Services.....	8
Updating SQL Reports	9
SAML Authentication for SSO	10
Identity Provider Configuration.....	11
Manual Settings.....	13
Export Metadata.....	15
Perspective Configurations	15
Integration Services.....	16
Perspective Services Update.....	16
Windows Authentication	19
Testing Perspective Implementation	20
Contact Information	22
Technical Support.....	22
Resolver Inc.	22

SYSTEM REQUIREMENTS Version 5.2

The following requirements are for Perspective operating in a traditional LAN/WAN environment with the Web server component running on a separate Microsoft® IIS box. These specs are for planning purposes only and apply to Perspective™ V.5.2, Dispatch, and Focal Point™ V.1.2. Please contact your Resolver representative for a specific assessment of your needs.

*NOTE: Meeting the **Minimum** system requirements means you can run the application successfully, but it may not provide the best performance. Meeting the **Recommended** requirements will offer a significantly better experience.*

	MINIMUM	RECOMMENDED
CLIENT MACHINE		
Processor Speed	2 GHz dual-core	2.5 GHz dual-core
Memory	2 GB	4 GB
Operating System	Windows® Vista SP 3, Windows® 7 SP 1, Windows® 8.1, Windows® 10	
.NET Framework	Version 4.5.2	
Web Browser – Launch Perspective	Internet Explorer® 11, Edge	
Web Browser – Web Portal	Internet Explorer® 11, Edge, Chrome®, Safari® iOS 7, Android® Browser 4.2+	
Third Party Application	Adobe Reader® 9.4.0+ Sun Java® Runtime Environment 7 U71, 8 U25 ¹ , QlikView® Analyzer Plug-in for IE ²	
Mobile iOS App	iOS 8, iOS 9	
Officer Mobile	iOS 9, iOS 10, Android 4.4, Android 5.1, Android 6.0	
WEB SERVER MACHINE³ (ON PREMISE ONLY)		
Available Disk Space⁴	1 GB	1 GB
Processor Speed	2 GHz dual-core	2.5 GHz dual-core
Memory	4 GB	4 GB
Operating System	Windows Server® 2012, Windows Server® 2012 R2 IIS with WebSockets enabled ⁵ and Secure-Channel configured (HTTPS/SSL)	
.NET Framework	Version 4.5 with HTTP and non-HTTP activation	
C++ Runtime Libraries	C++ 2010 SP1 Runtime Libraries (x64) 10.40219	
QlikView™ Server²	64-bit Version 11.20 SR1	
DATABASE SERVER MACHINE³ (ON PREMISE ONLY)		
Available Disk Space	2 GB	20+ GB
Processor Speed	2 GHz dual-core	64-bit server dual-core or multi-processors
Memory	2 GB	4+ GB
Database Server⁶	SQL Server® 2012 SP3, SQL Server® 2014 SP1	
Reporting Services	SQL Server® 2012 Reporting Services, SQL Server® 2014 Reporting Services	

1. This requirement only applies if using Visual Analysis.
2. This requirement only applies to Perspective Focal Point. A limited QlikView™ Server license is included with Focal Point.
3. These requirements apply to systems with up to 25 users. For systems with 25+ users, contact your Resolver account manager for more information.
4. Depending on the size of the Perspective database, more disk space may be needed for Focal Point and Workflow.
5. This requirement only applies if using Dispatch.
6. Only SQL Server Enterprise Edition is supported for indexing on audit tables.

Notes:

Net.TCP binding on port 808 is required only if using DispatchLog.

For the best Dispatch experience, it's recommended that dispatchers run the application on two monitors with the same resolution.

For the best performance, do not run the Indexer on the same server where the database is hosted.

Deployment Note: The Perspective client is deployed as a ClickOnce application, launched from IE. It has a zero client footprint and doesn't require administrative rights to launch.

Network Note: If single sign-on authentication or add from Active Directory is used, Active Directory Services must be enabled on the Perspective Web Server.

Internet Note: Internet connectivity on the Client Machine is required for full functionality.



Update Instructions

Important Notes About SQL Server

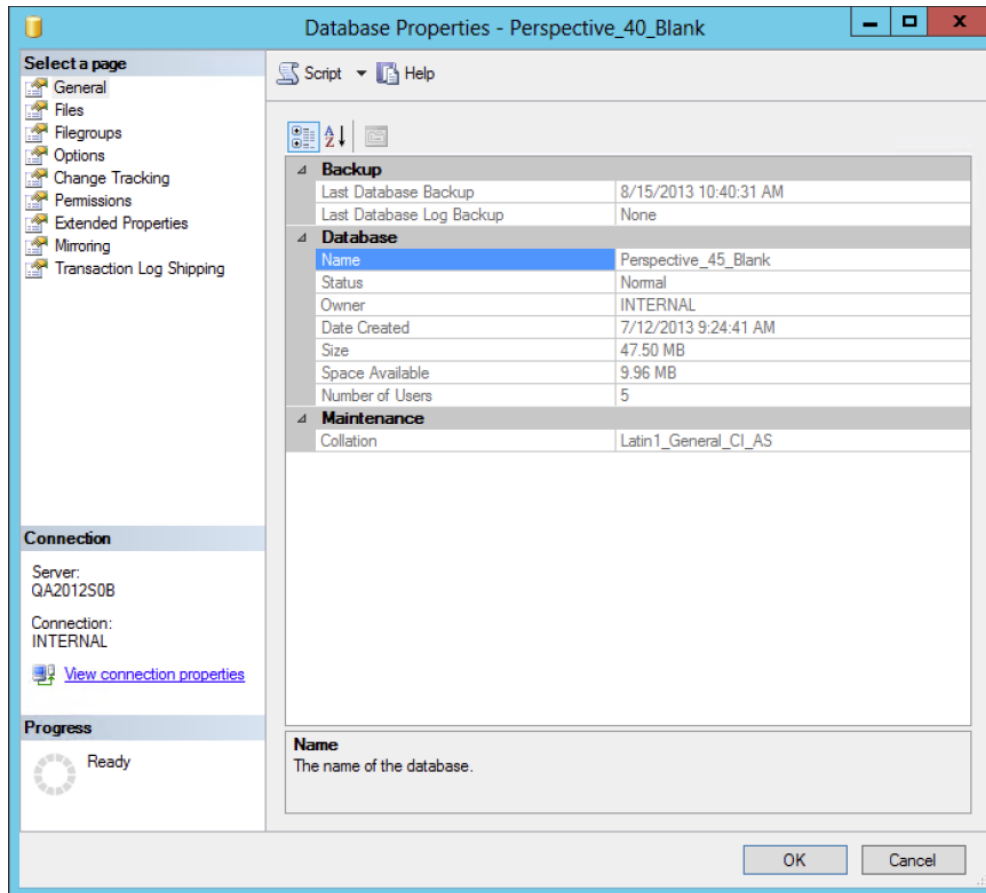
Only SQL Server Enterprise Edition is supported for indexing on audit tables. If you're upgrading Perspective using a non-enterprise version of SQL Server, you'll encounter errors related to indexing on audit tables. However, you will still be able to successfully upgrade despite these error messages, as they will not negatively affect the application.

Database Upgrade

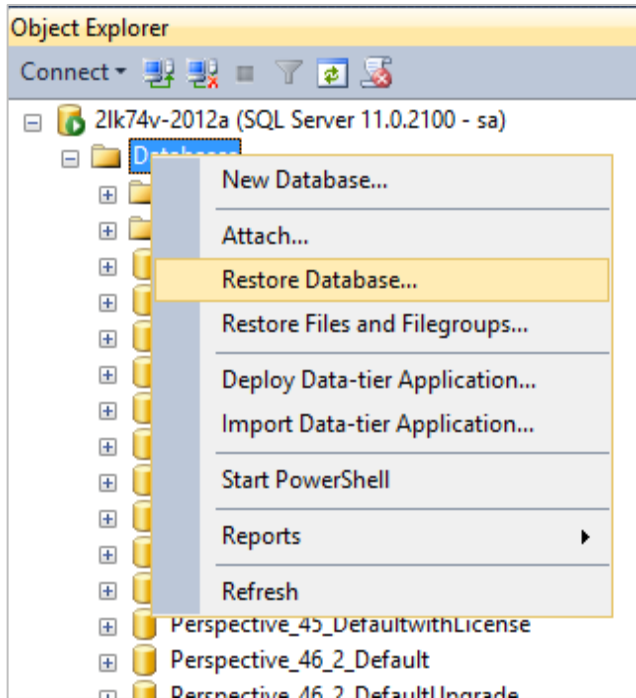
Note: The following instructions are for updating from 4.5 or later to 5.2. To update from Version 4.0 or earlier, visit the [Resolver Support](#) site and refer to the Perspective Update Instructions 1.0 to 5.2 document.

1. Back up your Perspective SQL database.
2. Back up the **Perspective_Default.config** file in the Perspective Services Virtual Directory. This file contains all necessary information on how your system was configured.
3. Ensure that your database is already upgraded to **Perspective v.4.5** (i.e. `SELECT DatabaseVersion_NV FROM tblSystemSettings`).
4. In the **Compatibility Settings** of your SQL database, ensure your database is in compatibility mode for **SQL Server 2012 (110)**.

If it's not, open the **Microsoft SQL Management Studio**, expand **Databases**, right-click your Perspective database and select **Properties**. On the left-hand column, select **Options**. In the **Compatibility level** field, select **SQL Server 2012 (110)**.

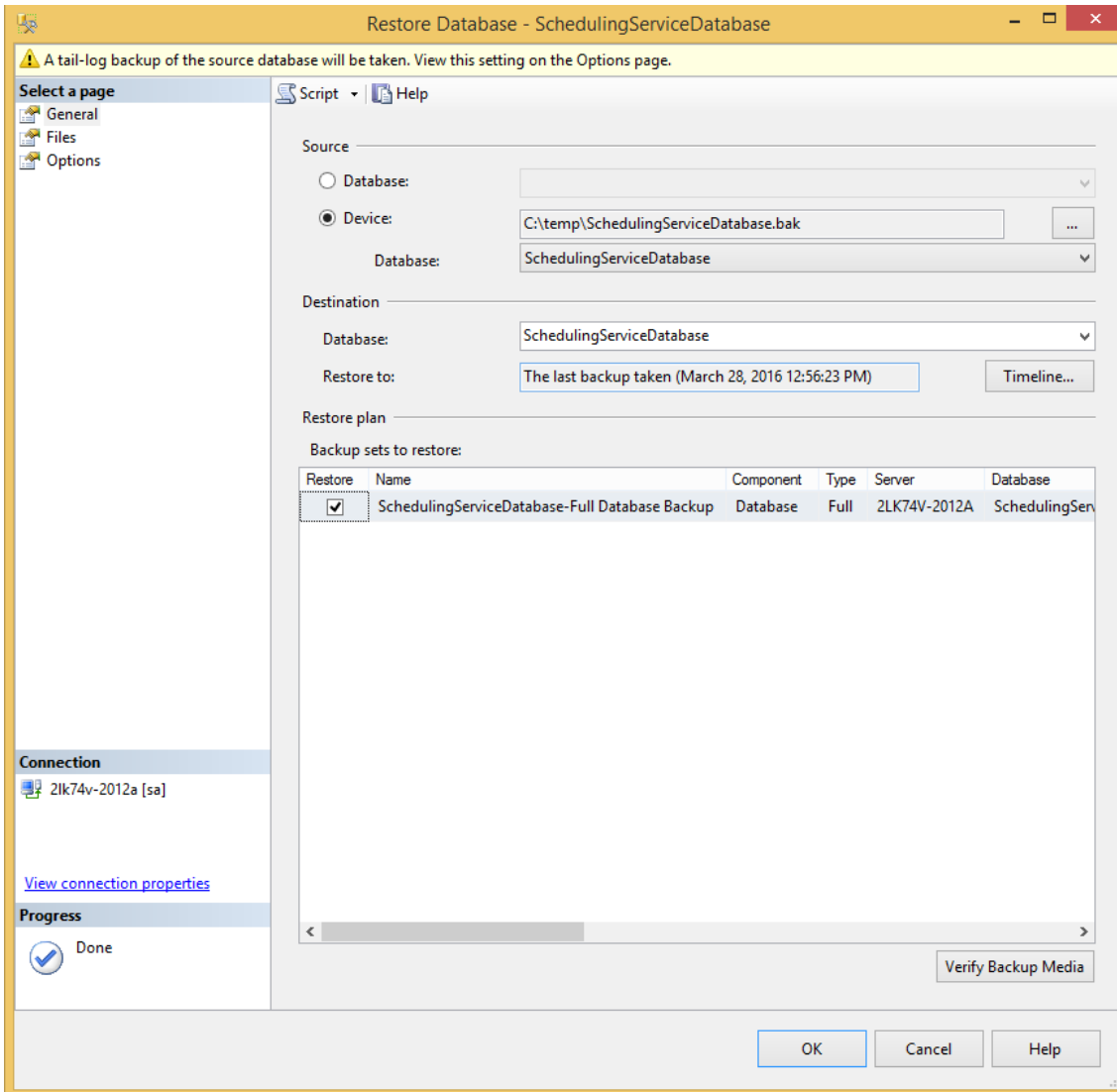


5. Legacy update scripts are provided in the previous updates folder with this installation. Please verify which version of Perspective you are running before proceeding with upgrading your database. If you require assistance please contact Technical for assistance.
6. Update the Perspective database using the **Perspective Install > Database Setup > Update** folder. Using a SQL query tool (e.g., SQL Server Management Studio), execute update scripts against the Perspective database.
 - a. Run **SQLScript_Update_45_To_46.sql**.
 - b. Run **SQLScript_Update_4.6.0_to_4.6.1**.
 - c. Run **SQLScript_Update_4.6.1_to_4.6.2**.
 - d. Run **SQLScript_Update_4.6.2_to_5.0.0.sql**.
 - e. Run **SQLScript_Update_5.0.0_to_5.1.0.sql**.
 - f. Run **SQLScript_Update_5.1.0_to_5.1.1.sql**.
 - g. Run **SQLScript_Update_5.1.1_to_5.2.sql**.

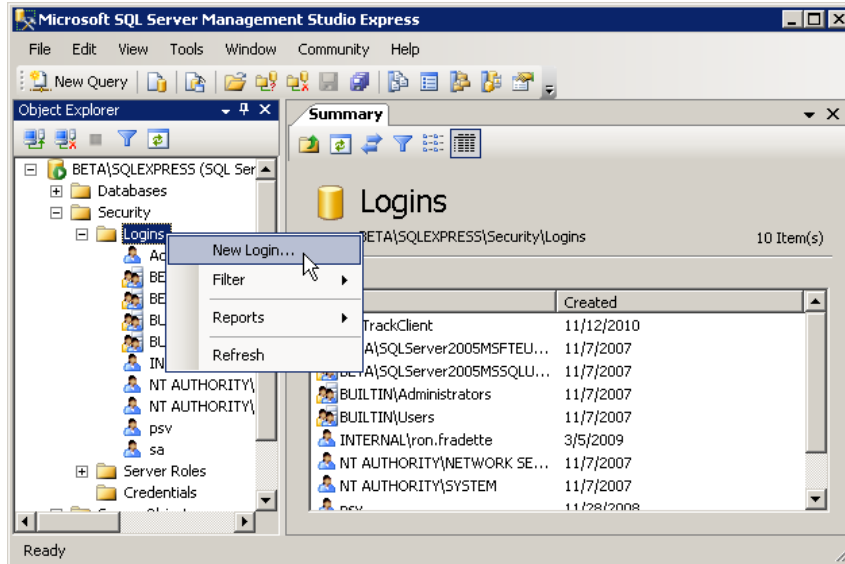


3. Navigate to the location of **Dispatching Schedule Service** database backup file.

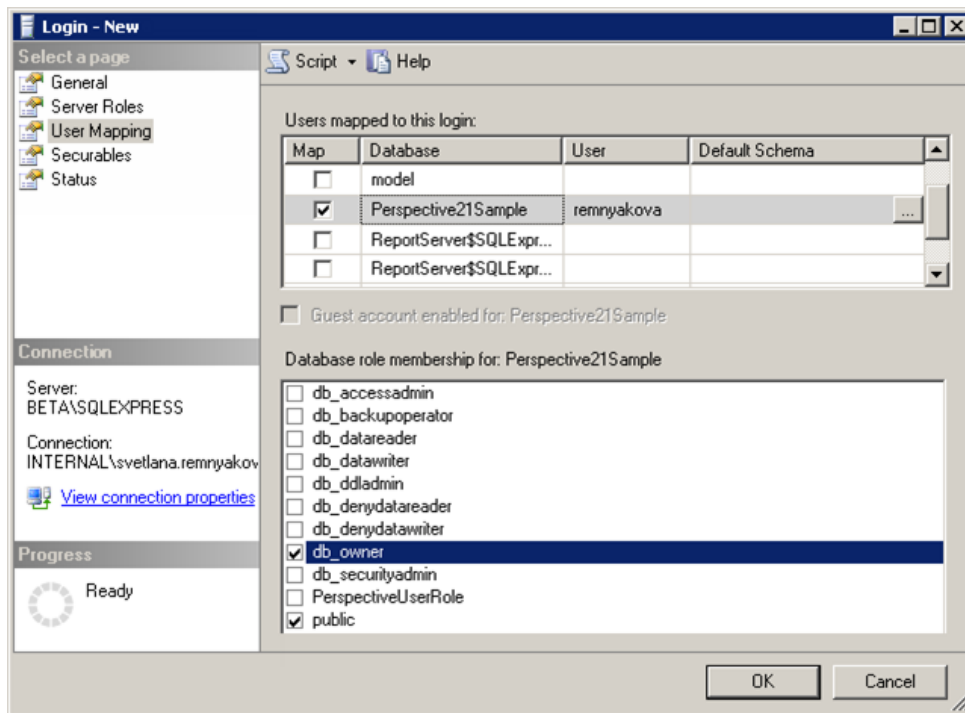
*Note: Standard backups are found in **Perspective Install > Database Setup > New**. If you're unsure which database to use, contact your Perspective Administrator.*



4. Click **OK** to restore
5. Create a new SQL user that will be used by Perspective to connect to the SQL Server:
 - a. Launch Microsoft SQL Server Management Studio. In the menu on your left, expand the **Security** node, right-click **Logins**, and select **New Login**.



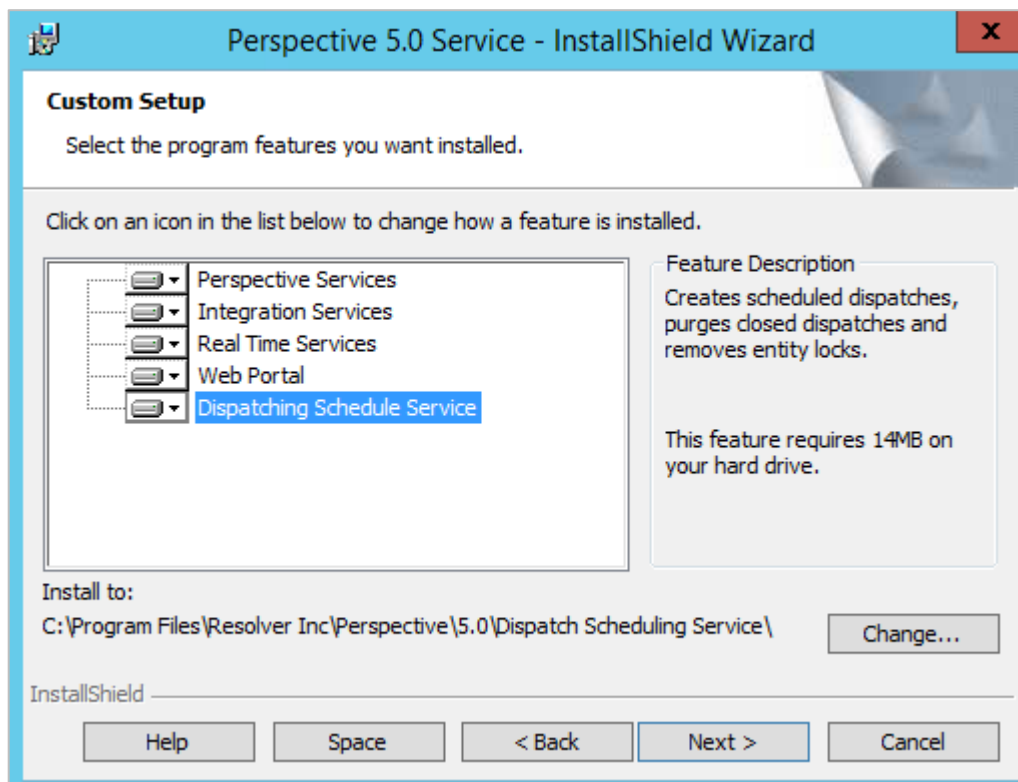
- b. In the **Login – New** form, under the **General** page, type in the **Login Name** and modify the rest of the options according to your preference.
- c. Open **User Mapping**. For both the **Dispatch Scheduling Service** and **Service Clustering** databases, ensure the account has either **db_owner** **OR** **db_datareader** and **db_datawriter** role membership rights, then click **OK**.



Scheduling Services

Note: This section applies to users installing an edition of Perspective with the Dispatch application. If you're not installing an edition of Perspective with Dispatch, skip this section.

1. Navigate to install location of the scheduling service. If you completed a default installation of Perspective Services, it's located at **C:\Program Files\Resolver Inc\Perspective\5.2\Dispatch Scheduling Service**. If you completed a custom installation, this location is the path that was specified in the InstallShield Wizard.



2. Open the **Connections.xml** file.
3. Enter the service folder information to show the Integration Services virtual directory (i.e. **<servername>/integrationservices**).

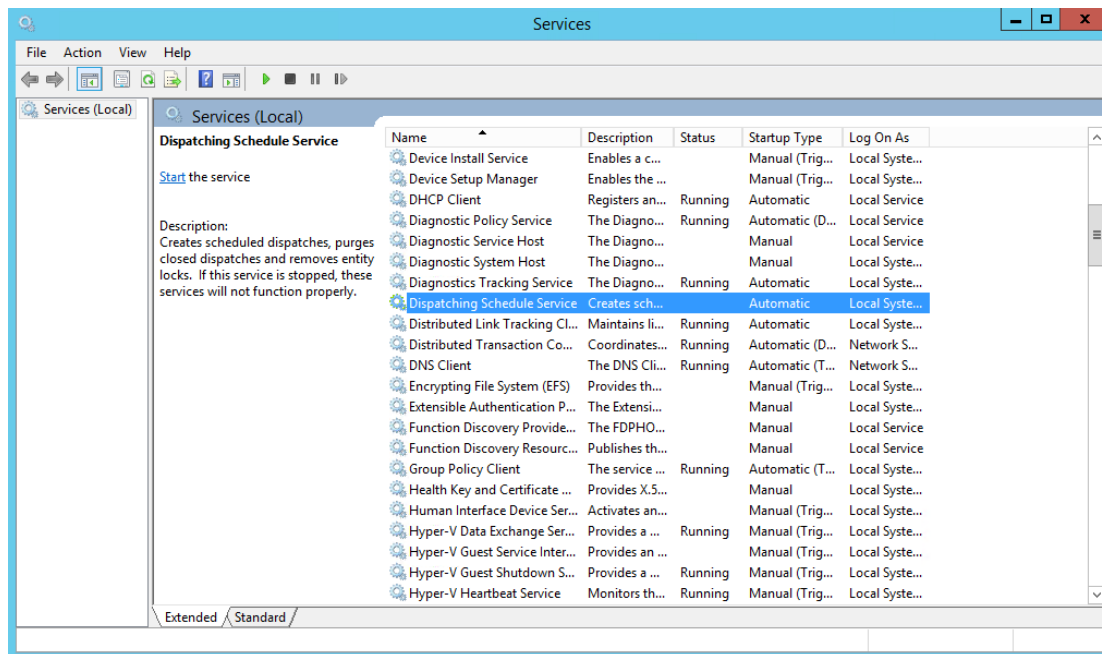
*Note: If **Scheduling Services** and **Integration Services** are installed on the same machine, the Service Folder element(s) in the **Connections.xml** file must contain either an IPv4 address or the localhost alias.*

4. Save your changes to the **Connections.xml** file then close.
5. Open the **SchedulingServices.exe.config** file.

- Under **appSettings**, enter the database connection string to point to the Scheduling Service database. For example:

```
<add key="DataBaseConnectionString" value="Data
Source==<dbserver\dbinstance>;Initial Catalog=<dbname>;user
id=<user>;password=<password>;Application Name=Integration Services" />
```

- Save your changes to the **SchedulingServices.exe.config** file then close.
- Open **Windows Services**.
- Click on **Dispatching Schedule Service**.



- Click the ▶ icon or right-click **Dispatching Schedule Service** then click **Start**.

Updating SQL Reports

- Update reports using the **Perspective Install > Reports Setup** folder (please refer to **Perspective Installation Guide** for more detailed outline of SQL reports setup):
 - Edit the **PublishServerReports.bat** file to target the SQL Reporting Services server.
 - Save and execute the file.

Note: If you're using Windows authentication, additional configuration of the Reports data source may be required.

SAML Authentication for SSO

The following section provides instructions on configuring Perspective Service Manager to implement SSO, however, prior to completing these steps, you must confirm your identity provider (IdP) supports **SAML 2.0 through service provider initiated SSO**. SSO is supported for use with the Enterprise edition of Perspective.

Your IdP will also need to provide you with instructions on adding and configuring new and existing Perspective users directly through their service, as IdP configurations will vary.

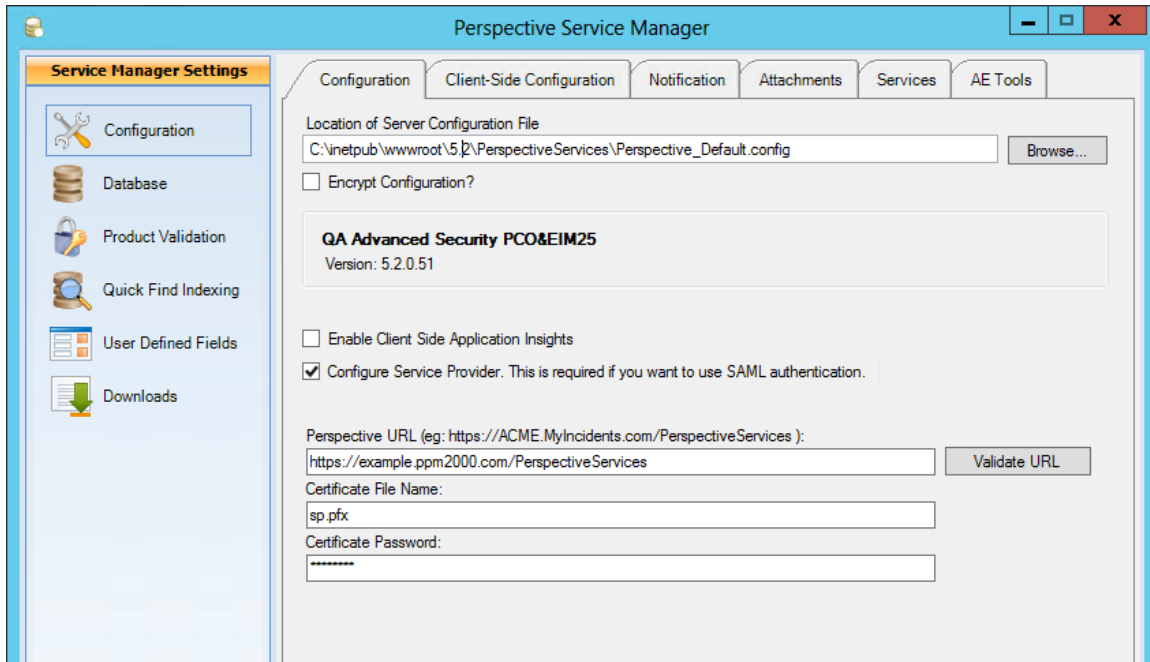
NOTE: If you're using AD FS to configure SAML, see the [Set Up SSO with AD FS](#) article on the Resolver Support site for instructions after following the steps below.

1. Open **Service Manager**.
2. Click **Configuration** in the pane to the left if it's not already open.
3. Select the **Configure Service Provider** checkbox.
4. Enter your Perspective Services URL in the **Perspective URL** field, then click **Validate**.

*Note: The URL you enter in this field must **exactly** match what has been entered into your IdP's configurations, including the case (upper-case or lower-case letters) and slash (/ or \) direction.*

5. Enter the server certificate file name in personal exchange format (.pfx) in the **Certificate File Name** field and enter a password in the **Certificate Password** field. For testing purposes, a sample .pfx file has been included in the installation package with a file name of **sp.pfx** and a password of **password**. This information is required so that the services (Perspective, Dispatch, Dashboard, etc.) can securely communicate with the identity provider.
6. Save a copy of the certificate file to ***PerspectiveInstallationPath*\PerspectiveServices\SAML\Certificates**. This file usually has a .pfx extension and will also need to export the private keys.

Note: If you chose the default certificate file, the file was saved at this location during installation.



After completing the above steps, you'll need to select how you will input the identity provider's details. See the **Identity Provider Configuration** section for information on uploading a metadata file or metadata URL or see **Manual Settings** for instructions on inputting the data manually.

Identity Provider Configuration

The settings below allow you to import your IdP's configurations directly into Service Manager via a metadata file or metadata URL, which is obtained from your IdP.

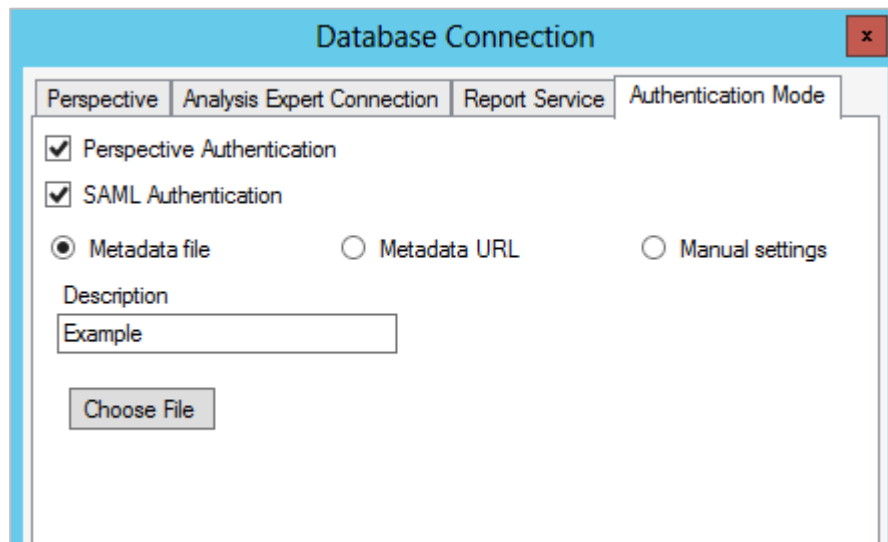
1. In Service Manager, click **Database** in the pane to the left.
2. Double-click a database to edit it.
3. Click the **Authentication Mode** tab.
4. Select the **SAML Authentication** checkbox.

Note: If this option is unavailable, the service provider information has not been properly configured in steps 3 and/or 4 in the section above.

5. Select how you want to input the identity provider information:
 - **Metadata file:** This option will require that you obtain a metadata file from your IdP to import the SSO configurations into Service Manager. When downloading a metadata file from your IdP, the certificate is usually extracted and saved in your **My**

Documents folder, but it must be moved to ***PerspectiveInstallationPath*\PerspectiveServices\SAML\Certificates** after it's been downloaded.

To use this option, after downloading the file, enter the name of your IdP in the **Description** field, which will appear to users with the phrase "Login with [IdP]" on the login screens, then click **Choose File** to upload the metadata file.



- **Metadata URL:** This option will require that you obtain a metadata URL that will import the SSO configurations into Service Manager. After obtaining the URL, enter the name of your IdP in the **Description** field, which will appear to users with the phrase "Login with [IdP]" on the login screens. Enter a valid metadata URL from your IdP in the **Metadata URL** field, then click **Import**. The URL will import the required configurations and should be similar to the following:

<https://adfs.example.com/FederationMetadata/2007-06/FederationMetadata.xml>

*Note: The URL you enter in the **Metadata URL** field must **exactly** match what has been entered into your IdP's configurations, including the case (upper-case or lower-case letters) and slash (/ or \) direction.*

The screenshot shows a dialog box titled "Database Connection" with a close button (X) in the top right corner. The dialog has four tabs: "Perspective", "Analysis Expert Connection", "Report Service", and "Authentication Mode". The "Authentication Mode" tab is selected. Inside this tab, there are three checked checkboxes: "Perspective Authentication", "SAML Authentication", and "Manual settings". Below these are three radio buttons: "Metadata file", "Metadata URL" (which is selected), and "Manual settings". There is a "Description" text box containing the word "Example". Below that is a "Metadata URL" text box containing the URL "https://adfs.example.com/FederationMetadata/2007-08/Federat". To the right of the URL box is an "Import" button.

6. Click **OK**, then save your changes.

Manual Settings

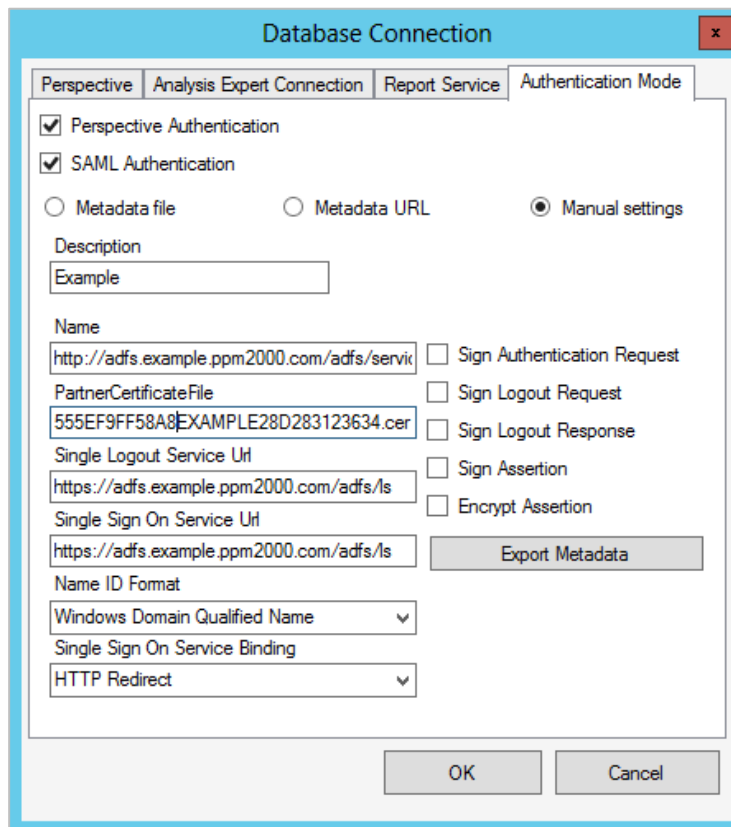
If you're not importing metadata via a file or URL, you must configure your IdP's settings manually. Contact your IdP for instructions on obtaining the required information.

1. In Service Manager, click **Database** in the pane to the left.
2. Double-click a database to edit it.
3. Click the **Authentication Mode** tab.
4. Select the **SAML Authentication** checkbox.

Note: If this option is unavailable, the service provider information has not been properly configured.

5. Select the **Manual settings** option.
6. Complete the following fields:
 - **Description:** The name of your IdP, which will appear to users with the phrase "Login with [IdP]" on the login screens.
 - **Name:** The exact name of the IdP as provided by the IdP.
 - **Partner Certificate File:** Used to verify the assertions have come from the IdP. This file must be saved to the ***PerspectiveInstallationPath*\PerspectiveServices\SAML\Certificates** folder.

- **Single Logout URL:** The URL from which the IdP accepts logout requests.
- **Single Sign On Service:** The URL from which the IdP accepts SSO requests.
- **Name ID Format:** The username format provided to the IdP.
- **Single Sign On Service Binding:** The binding used by the IdP to authenticate (usually HTTP Redirect).
- **Sign Authentication Request:** Select this checkbox if the authentication request should be signed.
- **Sign Logout Request:** Select this checkbox if the logout request should be signed.
- **Sign Logout Responses:** Select this checkbox if the logout response should be signed.
- **Sign Assertion:** Select this checkbox if the assertions should be signed.
- **Encrypt Assertions:** Select this checkbox if the assertions should be encrypted.



7. Click **OK** then save your changes.

Export Metadata

Once you've completed the configurations in the previous sections, your IdP will likely require Perspective metadata in order to complete the SSO process. This information can be exported into a file using the **Export Metadata** tool in Service Manager.

1. In Service Manager, click **Database** in the pane to the left.
2. Double-click a database to open it.
3. Click the **Authentication Mode** tab.
4. Select the **Manual Settings** option.
5. Click **Export Metadata**.
6. Navigate to the ***PerspectiveInstallationPath*\PerspectiveServices\SAML\Certificates** folder, or an alternate location you may have selected in the previous section.
7. Select a file name and location to export the metadata.





Note: It's recommended that you save the metadata file in

****PerspectiveInstallationPath*\PerspectiveServices\SAML\Metadata** in the Perspective services installation directory.*

8. Click **OK** and the metadata file will be opened. Either upload a copy of this file to your IdP server or save a copy in the ***PerspectiveInstallationPath*\PerspectiveServices\SAML\Metadata** folder if you did not choose that location in step 6.

Perspective Configurations

Once the Service Manager and IdP configurations are complete, a Perspective administrator must enter each user's SSO username (as it's configured in the IdP's settings) in the **Corporate ID** field by going to **Administration > Users > User Details**.

Linked Person Bernard, Milly R  	Role Chief Security Officer (Director) ▼
First Name Milly R	Last Name Bernard
Perspective Logon ID ets2	Corporate ID millybernard
Change Password	Approved By No Value  
<input type="checkbox"/> Change Password On Login	

If your system was previously configured for Windows authentication, you can use those credentials for SSO, including any values previously saved in the **Corporate ID** field, provided those values match the name ID format selected during setup.

See the [Perspective Administrator's Guide](#) for more information on entering this information in a user's profile.

Integration Services

Integration Services should not require any additional configuration as all SAML authentication information should be in the Perspective configuration file.

Perspective Services Update

For more information on running the installs, refer to the [Perspective Installation Guide](#).

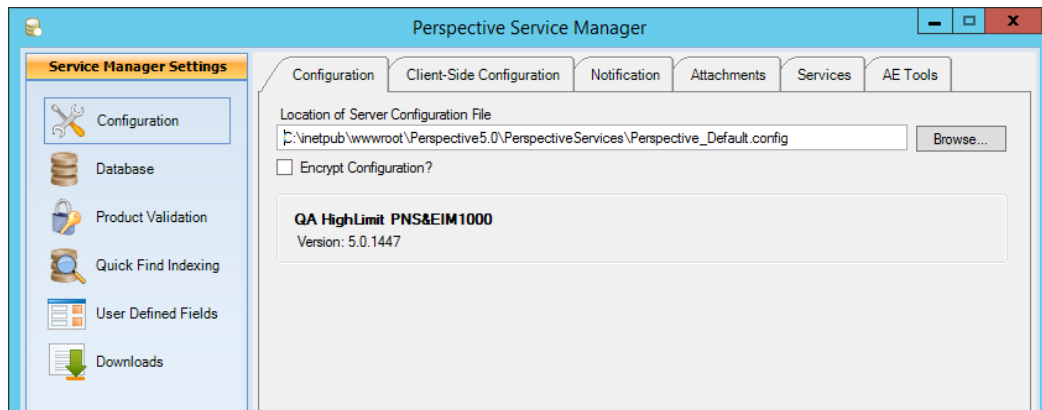
1. If you're installing an edition of Perspective with Dispatch, install the **WebSocket Protocol** on your webserver, if it is not already installed.
2. Uninstall **Perspective Services**. Click **Start** > Launch the **Control Panel** > Navigate to **Programs and Features** > Select **Perspective Services** > **Uninstall** > Follow the prompts displayed onscreen to uninstall **Perspective Services**.
3. If installed, uninstall any earlier versions of **Service Manager**. Check your Perspective directory and IIS for any remnants of your previous Perspective Services installation. Remove any remaining files or folders.
4. Install Perspective Services 5.2 using the **Perspective Install** > **Web Service Setup** > **Perspective Services** folder. Run (as an administrator) **Perspective.Services.exe** to install the updated Perspective Services.

If this is your first time working with Perspective Services, please read through the **Perspective Installation Guide**.

If you're completing a Custom Install and your edition includes the **DispatchLog** component, ensure that Real Time Services is installed. Refer to the Installation Guide for configuration details.

Note: If Perspective Services prompts you to install C++ runtime libraries, refer to the Standard Install > Perspective Services (Application Web Server) section of the Perspective Installation Guide.

5. Install Perspective Service Manager (see the **Perspective Installation Guide** for details).
6. Configure connections using Perspective Service Manager:
 - a. To access Perspective Service Manager, open it from your desktop or go to C:\Program Files\Resolver Inc\Perspective\5.2\ServiceManager\Perspective.ServerManager.exe. Launch **Perspective 5.2 Service Manager** as an **administrator**. You will be asked to provide the Database Connection information. Refer to the **Perspective Installation Guide** if needed.
 - b. Under the **Configuration** tab, verify the location specified in the **Location of Server Configuration File** field. The field should be automatically populated with the default location of the **Perspective_Default.config** file in the **Perspective Services Virtual Directory**. If necessary, use the **Browse** button to point to the correct location.



- c. Under the **Database** tab, enter the primary database information. This information can be copied from within the **Perspective_Default.config** backup file. Add secondary databases, if required.
- d. Under the **Product Validation** tab, enter your **Company Name** and **Master Key**, and click **Validate**.

Note: This step requires an Internet connection to download your encrypted license file from the licensing server. If your web server can't access the Internet, contact Technical Support at 1-877-776-2995 to get a license file for validation.

- e. In the **Client-Side Configuration** sub-tab, enter the **Server URL** for the client folder if the field is empty.
- f. Verify the **Notification** and **Attachments** settings, and make any required changes.
- g. Verify the **Quick Find Indexing** and **Services** settings, and make any required changes.
- h. Click **Save Changes**, then click **Yes** when prompted for confirmation.
- i. Close Perspective Service Manager and restart IIS.

For detailed instructions on using the Perspective Service Manager, see the **Perspective Installation Guide**.

7. Launch the Perspective Version 5.2 client from the host Perspective Services default web page (e.g. <https://<servername>/PerspectiveServices>) on each client machine. Your default web page should look like the screenshot below. Refer to the *Perspective Installation Guide* for more information.

Note: Following the configuration of the Web Server, please ensure application initialization has taken place so that end users do not experience delays with initial page loading. After any IIS reset or configuration, navigate to

<https://<servername>/IntegrationServices/service.svc> (On Premise) to begin the application initialization.



IMPORTANT NOTE: The MSI URL for Version 5.0 and later has changed:

- <https://<servername>/PerspectiveServices/?opt=0>

If installing clients using the MSI package, ensure that previously installed Perspective applications on client machines have been uninstalled first. To install Perspective on client machines using the MSI package, please refer to the **[Perspective Installation Guide](#)**

Windows Authentication

Perspective 5.2 continues to support Windows authentication (non-SAML authentication); however, it is available for **Perspective only** and can no longer be enabled through Service Manager.

*Important Note: If you wish to use single sign-on authentication for all Perspective modules (Perspective, Dispatch, Dashboard, and/or Web Portal) you must enable **SAML authentication**.*

1. Open the **Perspective_default.config** file. By default, this file is located at `C:\inetpub\wwwroot\Perspective5.2\PerspectiveServices`
2. Locate the **<WindowsAuthentication>** tag.
3. Delete the **false** value in the tag and replace it with **true**.

*Note: You **cannot** enable both Windows authentication and SSO in the **Perspective_default.config** file by changing the **<SSOAuthentication>** tag's value to **true**.*

```
<MSReportServiceUser>
  User_Domain_Name;User_Login_Name;User_Password</MSReportServiceUser>
  <PerspectiveAuthentication>true</PerspectiveAuthentication>
  <WindowsAuthentication>false</WindowsAuthentication>
  <SSOAuthentication>false</SSOAuthentication>
  <PartnerIdentityProvider Name="" Description=""
```

4. Save the file.
5. Reset IIS to complete the configuration.

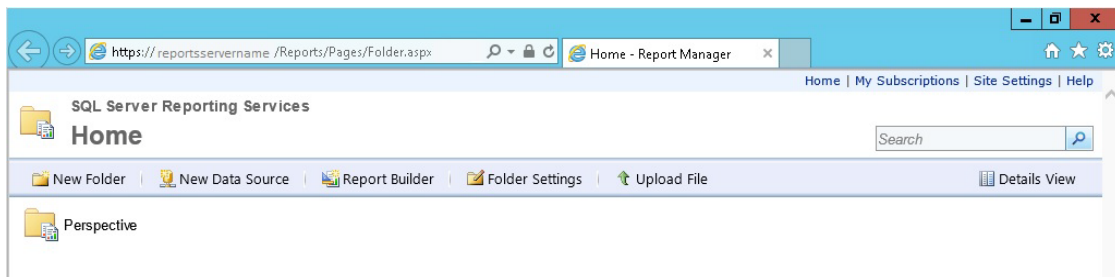
Testing Perspective Implementation

Once you have completed the steps outlined on the previous sections, please go through the following steps to ensure that all Perspective's components have been set up properly.

*Note: Following the configuration of the Web Server, please ensure application initialization has taken place so that end users do not experience delays with initial page loading. After any IIS reset or configuration, navigate to **https://<servername>/IntegrationServices/service.svc** to begin the application initialization.*

1. Go to the Perspective Services URL and confirm that the page loads properly:
https://<localhost>/perspectiveservices, where **<localhost>** is the appropriate local host address on your network.
2. Go to the Perspective Services page and confirm that the page loads properly:
https://<localhost>/perspectiveservices/service.asmx, where **<localhost>** is the appropriate local host address on your network.
3. Go to the Report Manager page and confirm that the page loads properly:
http://<reportservername>/reports, where **<reportservername>** is the appropriate address for the reports server on your network.

*Note: If your Report Manager page does not display correctly, run the **PublishServerReports.bat** file included in the **Perspective Install > Reports Setup** folder.*



4. Log on to the Perspective client—preferably not on the server itself—using your Perspective administrator user name and password.
5. Once you have logged on successfully, click on the **Reports** button in the Navigation pane (on the left-hand side of the screen) and confirm that all reports are listed. The easiest way to confirm that the client-side reports are working is to verify that there are reports listed under the **Detail Reports** heading, such as the Incident, Person and Vehicle Reports.
6. To also confirm you are connected to the correct database, run the **Workgroup List** report and verify the workgroups listed.
7. To confirm that the server-side reports are working, try running the **Test Report** under the **<Administrative Only>** node listed. If you receive an error message, see the

Troubleshooting Perspective & SQL Reporting Services on the Resolver Support site for more information.

Note: Both the Report version and database version should display as 5.2.

Contact Information

Technical Support

Toll Free: 1-877-776-2995
Phone: (780) 448-0616
Email: support@resolver.com
Website: <https://support.resolver.com>

Resolver Inc.

Toll Free: 1-888-776-9776
Phone: (780) 448-0616
Fax: (780) 448-0618
Email: information@resolver.com
Website: <http://www.resolver.com>