

### Setting up Reporting with Parallels Remote Application Server

• Parallels Remote Application Server 19.2

In this article, we are going to review the setup process of Parallels Remote Application Server Reporting Service, which requires Microsoft SQL Server Reporting Services (SSRS) and uses SQL Server Express Edition installed on one separate host.

#### **Pre-requisites**

- 1. Create a dedicated Active Directory account that will be used to view the reports called *rasreportingview*
- 2. Make sure that the account which will be used for Microsoft SQL Server and Reporting Services installation is a domain account and has local administrative permissions on the RAS Reporting server. If required, add the account to the local Administrators group manually or using Group Policies.
- 3. The same domain account from step 2 can be used for both SQL Server and SSRS deployment and configuration (make sure you assign an SQL Administrator role).
- 4. Microsoft .NET Framework 3.5 and 4.5 (or higher) are installed on the RAS Reporting server.

#### Microsoft SQL Server Installation and Configuration

#### Installation

If you are planning to use SQL Server 2022 Express Edition, make sure you install the latest version. The installer can be downloaded at <a href="https://www.microsoft.com/en-us/download/details.aspx?id=104781">https://www.microsoft.com/en-us/download/details.aspx?id=104781</a>.

To install Microsoft SQL Server:

1. Launch the installer and select **Download Media**:

## SQL Server 2022

# **Express Edition**

## Select an installation type:

## Basic

Select Basic installation type to install the SQL Server Database Engine feature with default configuration.

## Custom

Select Custom installation type to step through the SQL Server installation wizard and choose what you want to install. This installation type is detailed and takes longer than running the Basic install.

SQL Server transmits information about your installation experience, as well as other usage and performar the product. To learn more about data processing and privacy controls, and to turn off the collection of the documentation

2. In the "Which package would you like to download" section, select **Express Core**:

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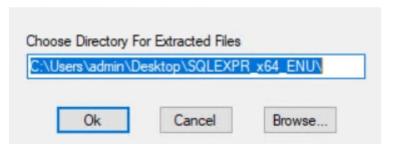
## SQL Server 2022

# Express Edition

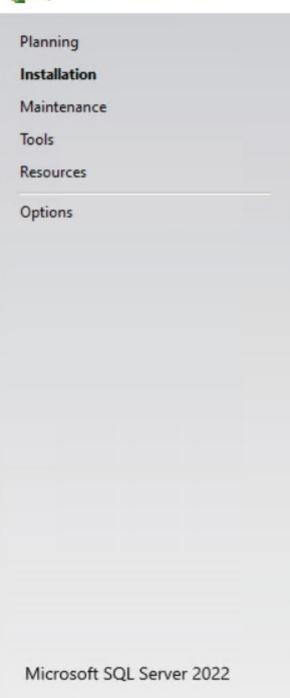
## Specify SQL Server installer download

## SELECT LANGUAGE English WHICH PACKAGE WOULD YOU LIKE TO DOWNLOAD? $\odot$ Express Core (266 MB) SQL Server Engine only Express Advanced (544 MB) SQL Server Engine, Full Text Services, and Reporting Services $\circ$ LocalDB (60 MB) Lightweight version of Express Edition with all of its programmability features, but ru Or, go to the Microsoft Azure portal to provision SQL Server in the cloud SELECT DOWNLOAD LOCATION \*: **Browse** C:\Users\Public\Downloads Close < Pr

- 3. Specify the download folder and click **Download** to save the **SQLEXPRx64.msi** file.
- 4. Run the **SQLEXPRx64.msi** installer.
- 5. Select a temporary folder to save installer binaries:









#### New SQL Server standalone installation or add features to

Launch a wizard to install SQL Server 2022 in a non-clust features to an existing SQL Server 2022 instance.



#### Install SQL Server Reporting Services

Launch a download page that provides a link to install SC internet connection is required to install SSRS.



#### Install SQL Server Management Tools

Launch a download page that provides a link to install SC SQL Server command-line utilities (SQLCMD and BCP), S SQL Server Profiler and Database Tuning Advisor. An inte install these tools.



#### Install SQL Server Data Tools

Launch a download page that provides a link to install SC provides Visual Studio integration including project system SQL Database, the SQL Server Database Engine, Reporting Integration Services. An internet connection is required to



#### Upgrade from a previous version of SQL Server

Launch a wizard to upgrade a previous version of SQL Se Click here to first view Upgrade Documentation

- 6. In the SQL Server Installation Center, click on New SQL Server stand-alone installation or add features to an existing installation.
- 7. On the **License Terms** page, accept the license terms:

#### License Terms

To install SQL Server 2022, you must accept the Microsoft Software License Terms.

#### License Terms

Global Rules

Microsoft Update

Product Updates

Install Setup Files

Install Rules

Azure Extension for SQL Server

Feature Selection

Feature Rules

Feature Configuration Rules

Installation Progress

Complete

SQL Server 2022 Express Edition

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I accept the license terms and Privacy Statement

SQL Server transmits information about your installation experience as performance data. Azure Arc connection also transmits the configuration and protect your SQL Server instance using Azure Portal and services. Processing and privacy controls, and to turn off the collection of certain documentation.

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8. On the Microsoft Update page, if required, select Use Microsoft Update to check for updates:

## **Microsoft Update**

Use Microsoft Update to check for important updates

#### **Install Rules**

Setup rules identify potential problems that might occur while running Setup. Failures must be corrected can continue.

License Terms

Global Rules

Microsoft Update

Install Setup Files

#### Install Rules

Azure Extension for SQL Server

Feature Selection

Feature Rules

Instance Configuration

Server Configuration

**Database Engine Configuration** 

Feature Configuration Rules

Installation Progress

Complete

Operation completed. Passed: 4. Failed 0. Warning 1. Skipped 0.

Hide details <<

View detailed report

Result	Rule
	Machine Learning Server shared feature support
<b>Ø</b>	Consistency validation for SQL Server registry keys
<b>Ø</b>	Computer domain controller
4	Windows Firewall
<b>Ø</b>	Microsoft .NET Framework 4.7.2, or newer, is required

## **Azure Extension for SQL Server**

Azure Extension for SQL Server is required to enable Microsoft Defender for Cloud, Purview, and Azure

License Terms Global Rules	Azure Extension for SQL Server	To install Azure extension for SQ account or a service principal to
Microsoft Update		instance to Azure. You also need Resource Group, Region, and Te
Install Setup Files		registered. For more information https://aka.ms/arc-sql-server.
Azure Extension for SQL Serv	Use Azure Login	
Feature Selection Feature Rules Instance Configuration Server Configuration	<ul> <li>Use Service Principal</li> <li>Azure Service Principal ID*</li> <li>Azure Service Principal Secret*</li> </ul>	
Database Engine Configuration Feature Configuration Rules		
Installation Progress Complete	Azure Subscription ID*	
	Azure Resource Group*	
	Azure Region*	
	Azure Tenant ID*	
	Proxy Server URL (optional)	

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11. On the **Feature Selection** page, select only Database Engine Services.

### **Feature Selection**

Select the Express features to install.

License Terms			
Global Rules	<ul> <li>Looking for Reporting Service</li> </ul>	es? <u>Download it from the web</u>	
Microsoft Update	Features:	Feature descri	
Install Setup Files Install Rules Azure Extension for SQL Server Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Installation Progress	Instance Features  Database Engine Services  SQL Server Replication Shared Features Redistributable Features	Includes the I for storing, p	
Complete	Select All Unselect All	Drive C: 994 N	
	Instance root directory:	C:\Program Files\Microsoft SQL Serv	
	Shared feature directory:	C:\Program Files\Microsoft SQL Serv	
	Shared feature directory (x86):	C:\Program Files (x86)\Microsoft SQ	

12. On the **Instance Configuration** page, under **Named instance**, either leave the default SQLEXPRESS or enter the custom name (in upper case). Here, **RASREPORTING** will be used:

## **Instance Configuration**

Specify the name and instance ID for the instance of SQL Server. Instance ID becomes part of the installa

License Terms Global Rules Microsoft Update	Default instance     Named instance: *	RASREPORTING			
Install Setup Files Install Rules Azure Extension for SQL Server	Instance ID:	RASREPORTING			
Feature Selection Feature Rules Instance Configuration Server Configuration	SQL Server directory: C:\Program Files\Microso  uration  Installed instances:		C:\Program Files\Microsoft SQL Server\MSSQL		
Database Engine Configuration Feature Configuration Rules	Instance Name	Instance ID	Features	Ed	
Installation Progress Complete					

12. On the **Server Configuration** page, specify accounts, which will be running SQL Server services services should be set to start automatically. We will use default accounts:

## Server Configuration

Specify the service accounts and collation configuration.

License Terms

Global Rules

Microsoft Update

Install Setup Files

Install Rules

Azure Extension for SQL Server

Feature Selection

Feature Rules

Instance Configuration

#### Server Configuration

Database Engine Configuration Feature Configuration Rules Installation Progress Complete Service Accounts Collation

Microsoft recommends that you use a separate account for each SQ

Service	Account Name
SQL Server Database Engine	NT Service\MSSQL\$RAS
SQL Server Browser	NT AUTHORITY\LOCAL

Grant Perform Volume Maintenance Tasks privilege to SQL Serve

This privilege enables instant file initialization by avoiding zeroing to information disclosure by allowing deleted content to be access

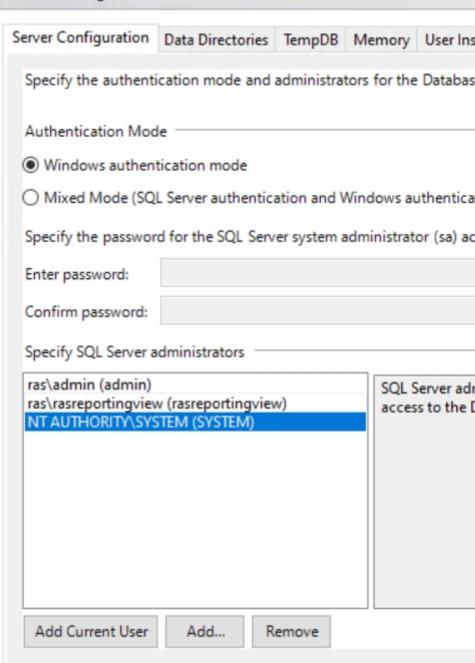
Click here for details

- 13. On the **Database Engine Configuration** page, add
  - 1. ♦ AD Administrator
    - ♦ NT Authority\System
    - ♦ Domain account that will be used for viewing reports (e.g., **rasreportingview** used in RAS Reporting by default)

### **Database Engine Configuration**

Specify Database Engine authentication security mode, administrators, data directories, TempDB, Max deparallelism, Memory limits, and Filestream settings.

License Terms
Global Rules
Microsoft Update
Install Setup Files
Install Rules
Azure Extension for SQL Server
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
<b>Database Engine Configuration</b>
Feature Configuration Rules
Installation Progress
Complete



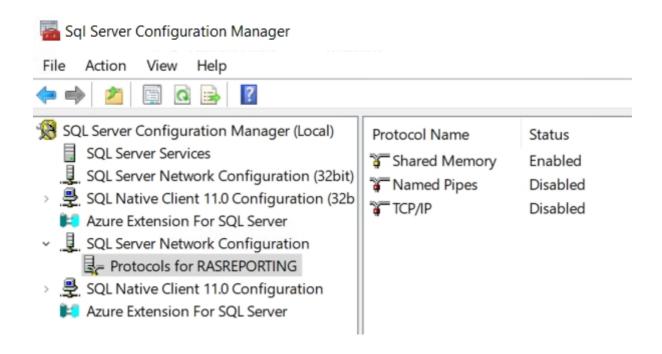
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- 14. Click Next.
- 15. On the **Complete** page, click **Close** once the installation is finished.

### **SQL Server Remote access Configuration**

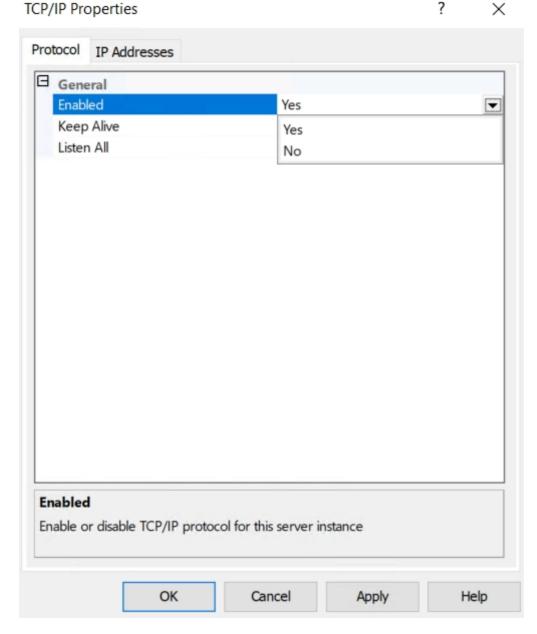
To enable remote connections to the SQL Server instance, you need to enable TCP/IP and set port 1433 for all IP addresses:

1. Open **Start > SQL Server 2022 Configuration Manager** and go to **SQL Server Network Configuration > Protocols** for <Instance-name> (e.g. **Protocols for RASREPORTING**):



2. Right-click on TCP/IP, choose Properties, and set the Enabled option to Yes:

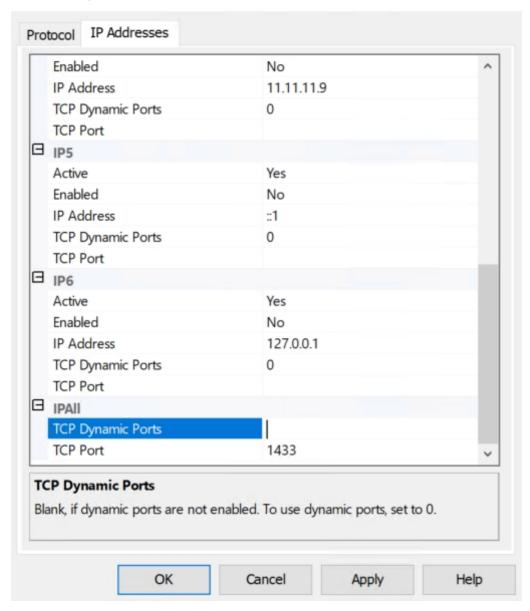
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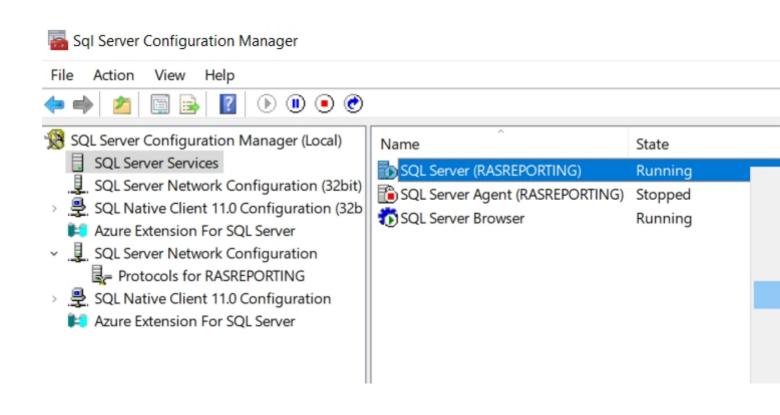
3. Select the IP Addresses tab. In the IPAll section, set TCP Dynamic Ports to blank and TCP Port to 1433:







4. Restart the SQL Server instance by right-clicking it and choosing **Restart**.



**Note:** Remote connections are enabled by default in SQL Server 2022. To verify this setting, check the **Allow remote connections to this server** option as described in the SQL Server Configuration Using Management Studio section below.

## **SQL Server Management Studio Installation**

Download the latest **SQL Server Management Studio** (SSMS) at <a href="https://learn.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms?view=sql-server-ver16#download-sql-server-management-studio-ssms?view=sql-server-ver16#download-sql-server-management-studio-ssms?view=sql-server-ver16#download-sql-server-management-studio-ssms?view=sql-server-ver16#download-sql-server-management-studio-ssms?view=sql-server-ver16#download-sql-server-management-studio-ssms?view=sql-server-ver16#download-sql-server-management-studio-ssms?view=sql-server-ver16#download-sql-server-we

1. **Run as Administrator** the SSMS-Setup-ENU.exe installer.



RELEASE 19.1

## Microsoft SQL Server Management Stu with Azure Data Studio

Welcome. Click "Install" to begin.

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C:\Program Files (x86)\Microsoft SQL Server Management Studio 19

By clicking the "Install" button, I acknowledge that I accept the <u>Privacy Statem</u> the License Terms for <u>SQL Server Management Studio</u> and <u>Azure Data Studio</u>

SQL Server Management Studio transmits information about your installation experience, as we usage and performance data, to Microsoft to help improve the product. To learn more about data and privacy controls, and to turn off the collection of this information after installation, see the documentation

Install

Close

2. On the Welcome page of the installation wizard, click **Install**. The installation is automatic and require **Restart** in the end.

Microsoft SQL Server Reporting Services Installation and Configuration

#### Installation

SQL Server Reporting Services 2022 is a separate component available at <a href="https://www.microsoft.com/en-us/download/details.aspx?id=104502">https://www.microsoft.com/en-us/download/details.aspx?id=104502</a>

To install SSRS:

- 1. Download the SQLServerReportingServices.msi installer and run it as administrator.
- 2. Click **Install Reporting Services**

# Microsoft SQL Server 2022 Reporting Services

Welcome

**Install Reporting Services** 

SQL Server Reporting Services transmits information about your installation experience, as well as usage and performance data, to Microsoft to help improve the product. To learn more about SQL Reporting Services data processing and privacy controls, please see Privacy Statement. Learn how of collection here.

3. If you install SSRS and SQL Server on the same machine, you could pick **Express** (1GB maximum memory used by the database engine. 10GB maximum database size. 1MB maximum buffer cache. CPU the lesser of one (1) socket or four (4) cores).



5. Accept the license terms on the **Review the license terms** page and click **Next**:

Review the license terms

#### MICROSOFT SOFTWARE LICENSE TERMS

#### MICROSOFT SQL SERVER 2022 EXPRESS

These license terms are an agreement between you and Microsoft Corporation (or one of affiliates). They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft services or software updates (except the extent such services or updates are accompanied by new or additional terms, in which those different terms apply prospectively and do not alter your or Microsoft's rights relating pre-updated software or services). IF YOU COMPLY WITH THESE LICENSE TERMS, YOU THE RIGHTS BELOW FOR EACH SERVER YOU PROPERLY LICENSE. BY USING THE SOFTWARE, YOU ACCEPT THESE TERMS. IF YOU DO NOT ACCEPT THEM, DO NOT US SOFTWARE. INSTEAD, RETURN IT TO THE RETAILER FOR A REFUND OR CREDIT. If you cannot obtain a refund there, contact Microsoft or the Microsoft affiliate serving you

✓ I accept the license terms

Cancel

< Previous

Ne

6. On the **Install Database Engine** page, click **Next.** 

Install Database Engine

You'll need an instance of SQL Server Database Engine to store the report server database.

Install Reporting Services only

You'll need to have or install a Database Engine instance on this server or on a different Learn more about supported Database Engine versions and editions

Cancel

< Previous

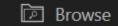
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6. On **Specify an install location** page, leave all by default and click **Install**:

Specify an install location

#### Install location

C:\Program Files\Microsoft SQL Server Reporting Services



Cancel

< Previous

Ins

7. On the **Setup completed** page, click **Configure report server.** 

### Setup completed

Setup has installed the files you need. You're ready to configure your report server.

Configure manually and customize settings

We'll start Report Server Configuration Manager for you to configure your report server

Learn more

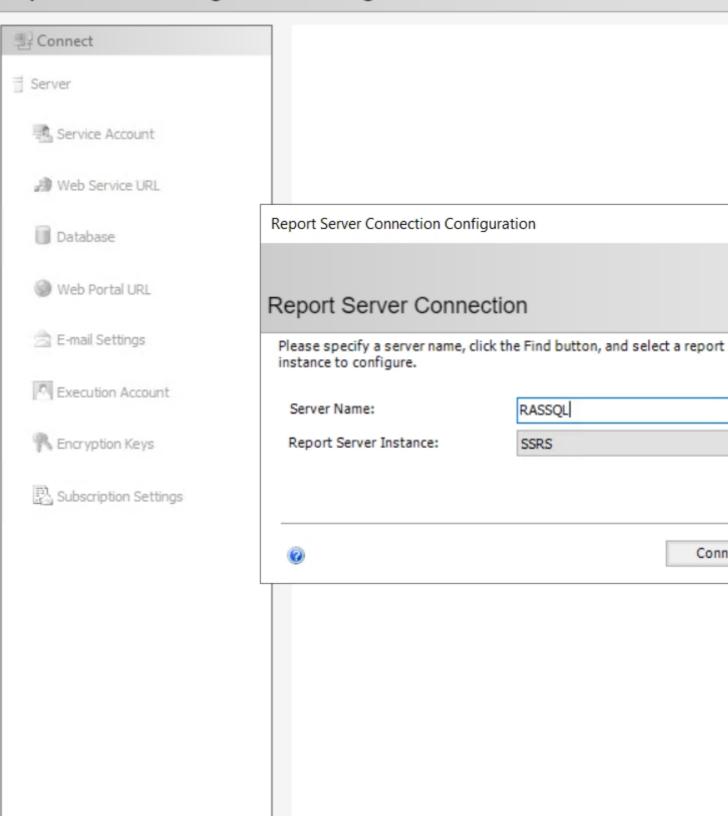
Configure report server

Cl

### Configuration

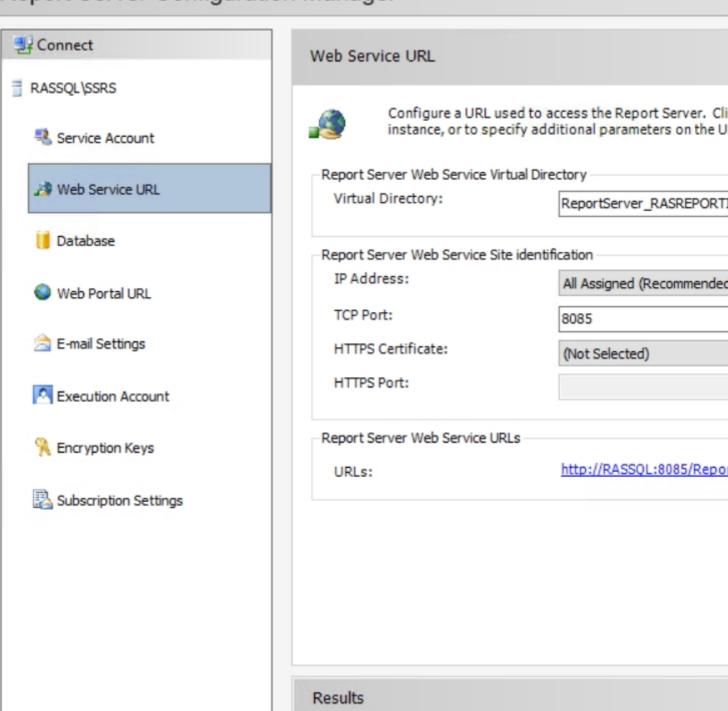
- 1. Locate and launch Report Server Configuration Manager.
- 2. Click on the **Connect** button:

## Report Server Configuration Manager



- 3. Once connected, in the left pane, click on **Web Service URL** and set the following:
- Virtual Directory: Make sure that the directory name is "ReportServer\_RASREPORTING". If you used a different name for the SQL Server instance, you should use that name instead of the "RASREPORTING" part.
- Make sure the TCP port is set to **8085** and click **Apply**:

## Report Server Configuration Manager



3:50:18.4220 | Reserving url http://+:8085

The task completed successfully.

🕢 03:50:19.0815 | Stopping report server "SQLServerReportingSe

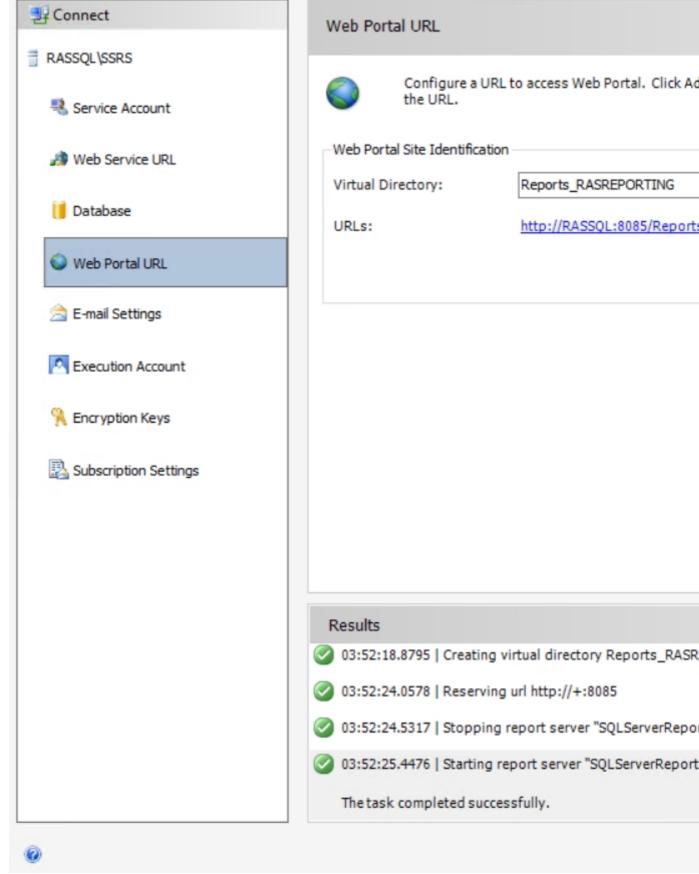
03:50:19.9932 | Starting report server "SQLServerReportingServ



4. Go to <b>Web Port</b> name for the SQ click Apply.	t <b>al URL</b> and set Virto L Server instance, yo	ual Directory to <b>Rep</b> ou should see that na	oorts_RASREPOR ame instead of the "I	<b>TIN</b> G. If you used RASREPORTING <sup>1</sup>	a different ' part. Then



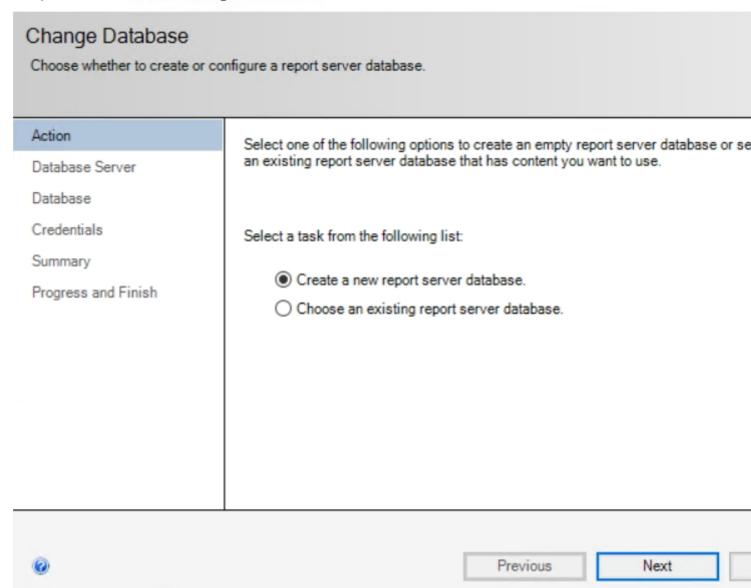
## Report Server Configuration Manager



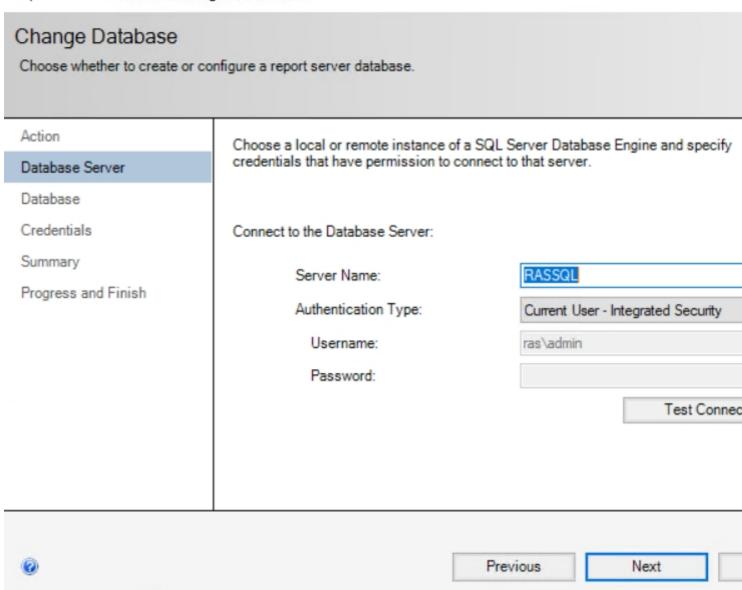
5. Click on **Database** to set up a database on the SQL host, click **Change Database**.

6. Choose Create a new report server database and click Next.

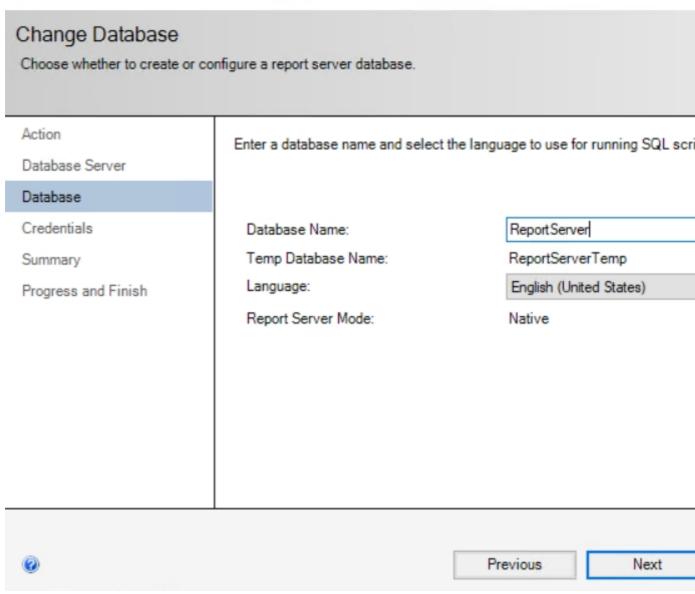
Report Server Database Configuration Wizard



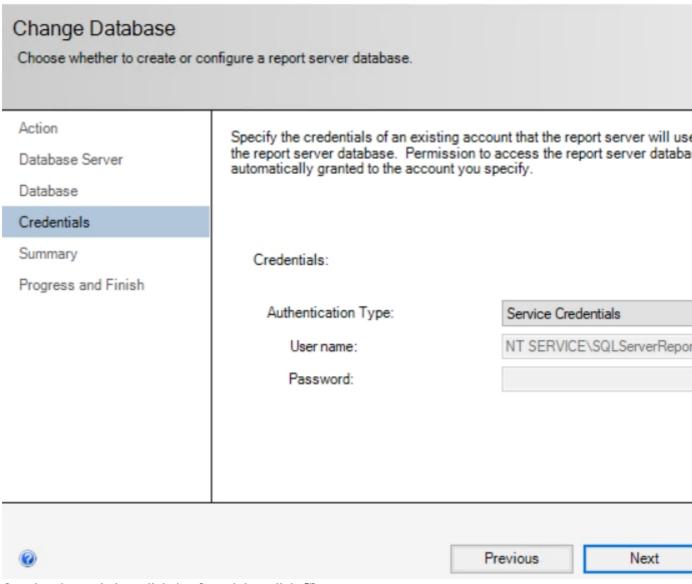
6. In the **Server Name** field, specify the SQL Server name using the Hostname\InstanceName format (case sensitive). Click **Next**.



7. On the **Database** step title the database (default ReportServer in this case)



8. Choose the preferred **Authentication Type** (In this case, **Service Credentials** are chosen). Click **Next**.



- 9. On wizard completion, click **Apply** and then click **Close**.
- 10. To verify that SSRS is installed correctly, please open the URL in Step 4

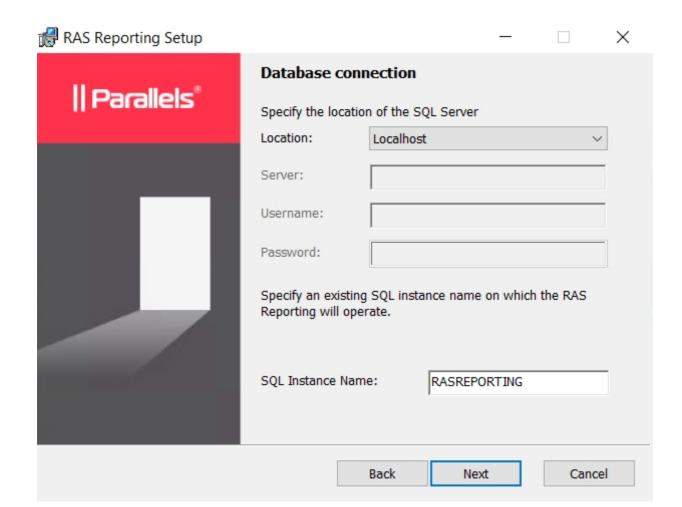
## Parallels RAS Reporting Service Installation and Configuration

#### Installation

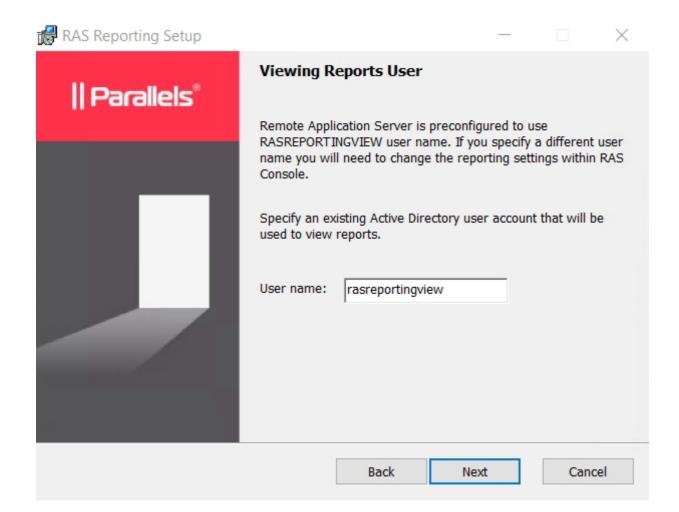
Download the latest version of Parallels Remote Application Server Reporting Service here: <a href="https://www.parallels.com/products/ras/download/links/">https://www.parallels.com/products/ras/download/links/</a>.

1. Launch the installer on the server running SQL Server Reporting Services, and for database location select - Localhost

**Note:** At the time of this writing, the SQL Server instance name is case-sensitive.



2. On the **Viewing Reports User** pane specify the domain account that will be used to view reports in the RAS Console.



3. Specify the folder where RAS Reporting should be installed. Click Next and then click Install.

4. Close the wizard once the installation is completed.

#### Configuration

Open the Parallels Remote Application Server Console and navigate to **Administration > Reporting**:

- 1. Click Enable RAS Reporting.
- 2. Specify the server with RAS Reporting installed and the port that will be used by Parallels RAS to connect to Parallels RAS Reporting Service (default port 30008)
- 3. Specify the domain user credentials and click on the **Test Connection** button. Once succeeded, click **OK** and **Apply** in the bottom-right to save the configuration changes.
- 4. It is required to add the specified port to the firewall exception list for incoming traffic on the host running SQL Server and Reporting services.

Now switch to the **Reporting** pane and make sure that you can see the list of available reports in the middle pane.

At this point, Parallels RAS will begin collecting the data and display it in reports similar to the following example:

#### Note:

- 1. When installed, Parallels Reporting Service will start collecting data about newly established sessions. Pre-existing sessions will not be included in reports.
- 2. Parallels Reporting Service commits the session information to the database after the user (session owner) is logged off. If you don't see the information about a particular user in a report, make sure the user is logged off, not just disconnected.
- 3. Parallels Reporting Service keeps its logs on the RAS Reporting server at the following locations:

%PROGRAMDATA%\Parallels\RASLogs\RAS Reporting\ReportingSetup.log

%PROGRAMDATA%\Parallels\RASLogs\RAS Reporting\reporting.log

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