

# Single Server Installation and Configuration of Parallels RAS Reporting Service with SQL Server 2022 and Microsoft SSRS 2022

- Parallels Remote Application Server 18.0
- Parallels Remote Application Server 18.2
- Parallels Remote Application Server 19.1
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- Parallels Remote Application Server 18.1
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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

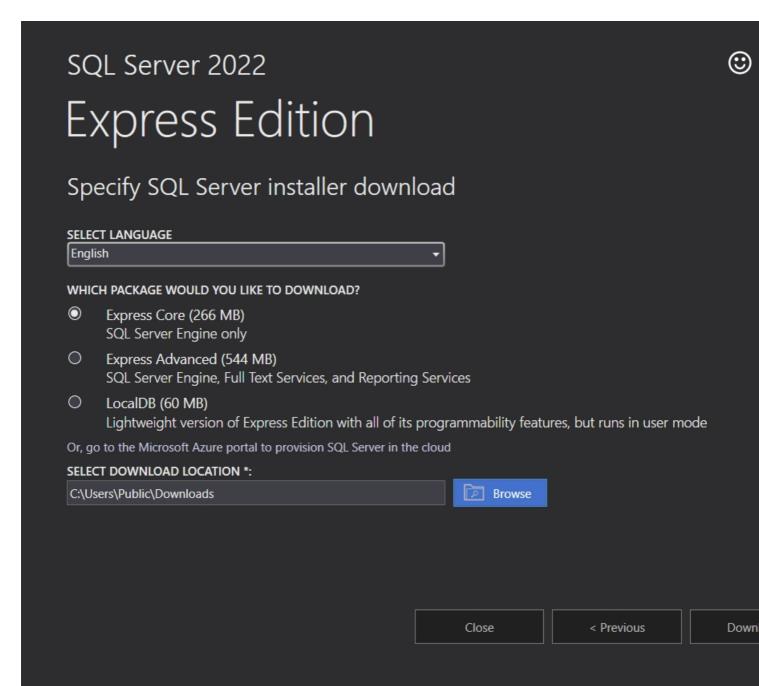
Select Custom installation type to step through the SQL Server installation wizard and choose what you want to install. This installation type is detailed and takes longer than running the Basic install.

# Download Med

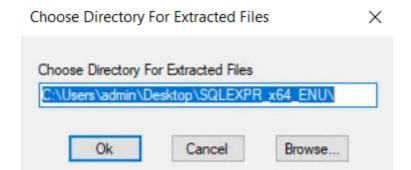
Download SQL Server setu now and install them later machine of your choice.

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

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



- 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:



Planning
Installation
Maintenance
Tools
Resources
Options

Microsoft SQL Server 2022



#### New SQL Server standalone installation or add features to an existing insta

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



#### Install SQL Server Reporting Services

Launch a download page that provides a link to install SQL Server Reportin internet connection is required to install SSRS.



#### Install SQL Server Management Tools

Launch a download page that provides a link to install SQL Server Manage SQL Server command-line utilities (SQLCMD and BCP), SQL Server PowerS SQL Server Profiler and Database Tuning Advisor. An internet connection is install these tools.



#### Install SQL Server Data Tools

Launch a download page that provides a link to install SQL Server Data Too provides Visual Studio integration including project system support for Mi SQL Database, the SQL Server Database Engine, Reporting Services, Analysi Integration Services. An internet connection is required to install SSDT.



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

Launch a wizard to upgrade a previous version of SQL Server to SQL Server 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

# YOU MUST ACCEPT THE SOFTWARE LICENSE TERMS. SEE BELOW. read the full license terms provided at (aka.ms/useterms).

DATA COLLECTION. The software may collect information about you use of the software and send that to Microsoft. Microsoft may use this information to provide services and improve Microsoft's products and Your opt-out rights, if any, are described in the product documentation features in the software may enable collection of data from users of y applications that access or use the software. If you use these features data collection in your applications, you must comply with applicable including getting any required user consent, and maintain a prominent policy that accurately informs users about how you use, collect, and she data. You can learn more about Microsoft's data collection and use in product documentation and the Microsoft Privacy Statement at

https://go.microsoft.com/fwlink/?LinkId=521830 Vou agree to comple

	I accept the license terms and	Privacy	Statement
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SQL Server transmits information about your installation experience as well as other usage a performance data. Azure Arc connection also transmits the configuration data to allow you and protect your SQL Server instance using Azure Portal and services. To learn more about processing and privacy controls, and to turn off the collection of certain information, see the documentation.

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Next >

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

License lerms
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

Microsoft Update offers security and	other important updates for Windows and other
software, including SQL Server 2022.	Updates are delivered using Automatic Updates,
the Microsoft Update website.	

Use Microsoft Update to check for updates (recommended)

Microsoft Update FAQ

Microsoft Privacy Statement

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Next >

9. On the Install Rules page, click Next

## **Install Rules**

Setup rules identify potential problems that might occur while running Setup. Failures must be corrected before Setup 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	Status
	Machine Learning Server shared feature support	Passed
	Consistency validation for SQL Server registry keys	Passed
	Computer domain controller	Passed
4	Windows Firewall	Warning
	Microsoft .NET Framework 4.7.2, or newer, is required	Passed

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10. On the Azure Extension for SQL Server page, uncheck Azure Extension for SQL Server.

# **Azure Extension for SQL Server**

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

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

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

# **Feature Selection**

Select the Express features to install.

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	Features:    Feature description:		abase Engine, the essing and secure provides controlled to the essing and secure essence for the essence of the		
	Select All Instance root dir Shared feature d Shared feature d	lirectory:	C:\Program Files\Microsoft SQL Server\ C:\Program Files\Microsoft SQL Server\ C:\Program Files (x86)\Microsoft SQL Server\		
				< Back	Next >

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 installation path.

License Terms	O Default instance			
Global Rules	Named instance: *	RASREPORTING		
Microsoft Update				
Install Setup Files				
Install Rules	Instance ID:	RASREPORTING		
Azure Extension for SQL Server				
Feature Selection				
Feature Rules	SQL Server directory:	C:\Program Files\Mic	rosoft SQL Server\MSS	QL16.RASREPORTING
Instance Configuration	Installed instances:			
Server Configuration	installed installces.			
Database Engine Configuration	Instance Name	Instance ID	Features	Edition
Feature Configuration Rules				
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:

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# **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

S	ervice Accounts Collation			
	Microsoft recommends that you use	a separate account for each	SQL Server service.	
	Service	Account Name	Password	Sta
	SQL Server Database Engine	NT Service\MSSQL\$RAS		Aut
	SQL Server Browser	NT AUTHORITY\LOCAL		Aut
	This privilege enables instant file into information disclosure by allowing Click here for details	-		This

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Next >

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 degree of parallelism, Memory limits, and Filestream settings.

License Terms	Server Configuration	Data Directories	TempDB	Memory	User Instances	FILESTREAM
Global Rules Microsoft Update Install Setup Files	Specify the authenti	ication mode and	administrat	tors for the	Database Engin	e.
Install Rules	Authentication Mod	-				
Azure Extension for SQL Server	Windows authen	tication mode				
Feature Selection	Mixed Mode (SQ	L Server authentica	ation and V	Vindows a	uthentication)	
Feature Rules Instance Configuration	Specify the passwor	d for the SQL Serv	er system a	dministrat	or (sa) account.	
Server Configuration	Enter password:					
Database Engine Configuration	Confirm password:					
Feature Configuration Rules	Specify SQL Server a	dministrators —				
Installation Progress Complete	ras\admin (admin) ras\rasreportingviev NT AUTHORITY\SYS	v (rasreportingviev	w)		Server administra ss to the Databas	
	Add Compatible	Add B				

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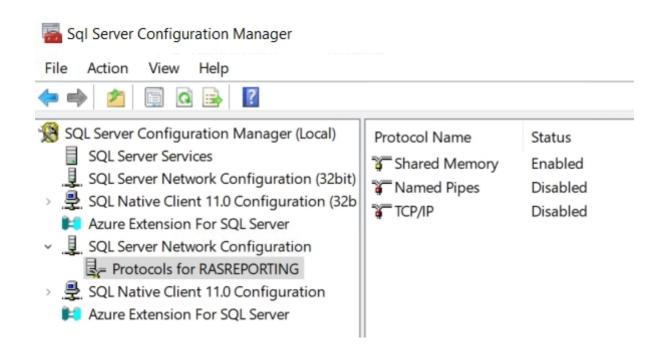
Next >

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

# **SQL Server Remote access Configuration**

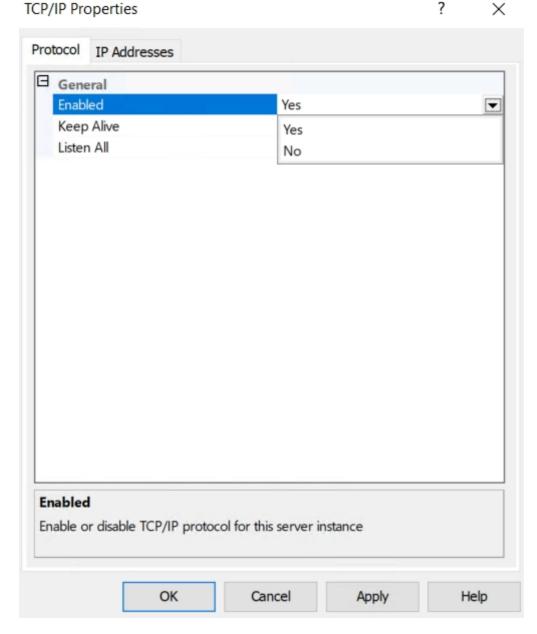
To enable remote connections to the SQL Server instance, you need to enable TCP/IP and set port 1433 for all IP addresses:

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

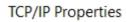


2. Right-click on TCP/IP, choose Properties, and set the Enabled option to Yes:

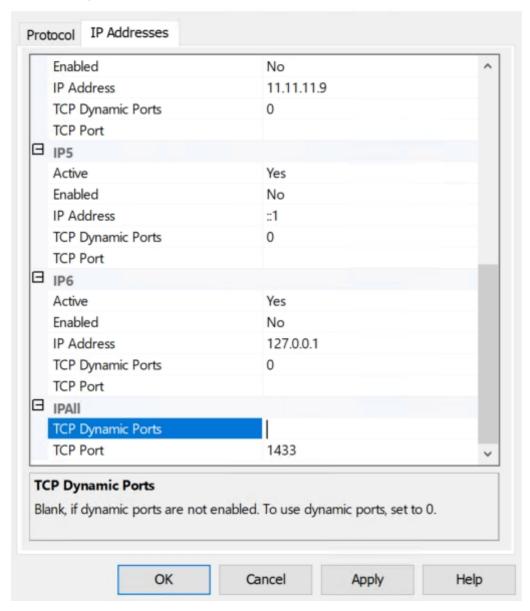
?



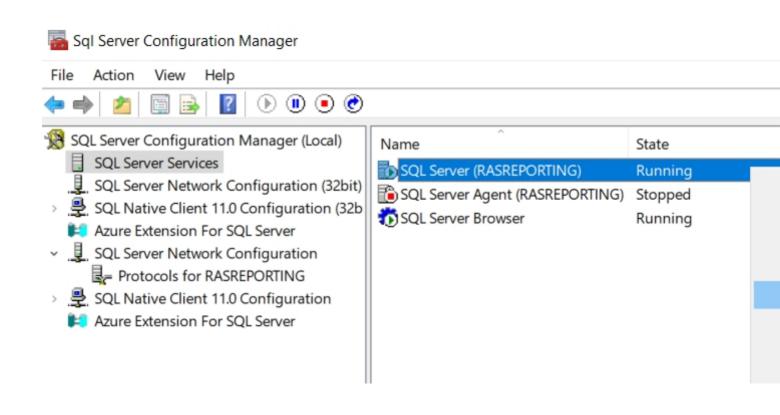
3. Select the IP Addresses tab. In the IPAll section, set TCP Dynamic Ports to blank and TCP Port to 1433:







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 Studio with Azure Data Studio

Welcome. Click "Install" to begin.

		. •			
lο	ca	ш	a	n	1

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

Change

By clicking the "Install" button, I acknowledge that I accept the <u>Privacy Statement</u> and 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 well as other usage and performance data, to Microsoft to help improve the product. To learn more about data proces 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

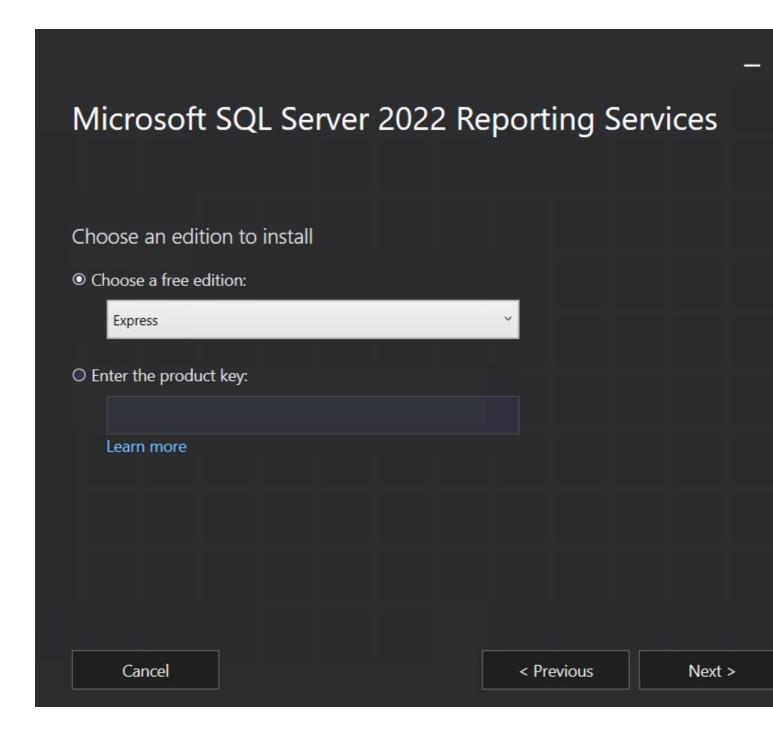
SQL Server Reporting Services 2022 is a separate component available at <a href="https://www.microsoft.com/en-us/download/details.aspx?id=104502">https://www.microsoft.com/en-us/download/details.aspx?id=104502</a>

#### 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 a usage and performance data, to Microsoft to help improve the product. To learn more about SQL Seporting Services data processing and privacy controls, please see Privacy Statement. Learn how to	Server
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).
- 4. Click **Next**:



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

# Microsoft SQL Server 2022 Reporting Services

### 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 its 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 to the extent such services or updates are accompanied by new or additional terms, in which case those different terms apply prospectively and do not alter your or Microsoft's rights relating to pre-updated software or services). IF YOU COMPLY WITH THESE LICENSE TERMS, YOU HAVE 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 USE THE 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 your

✓ I accept the license terms

Cancel

< Previous

Next >

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

# Microsoft SQL Server 2022 Reporting Services 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 server. Learn more about supported Database Engine versions and editions

< Previous

Next >

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

Cancel



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

# Microsoft SQL Server 2022 Reporting Services

# 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

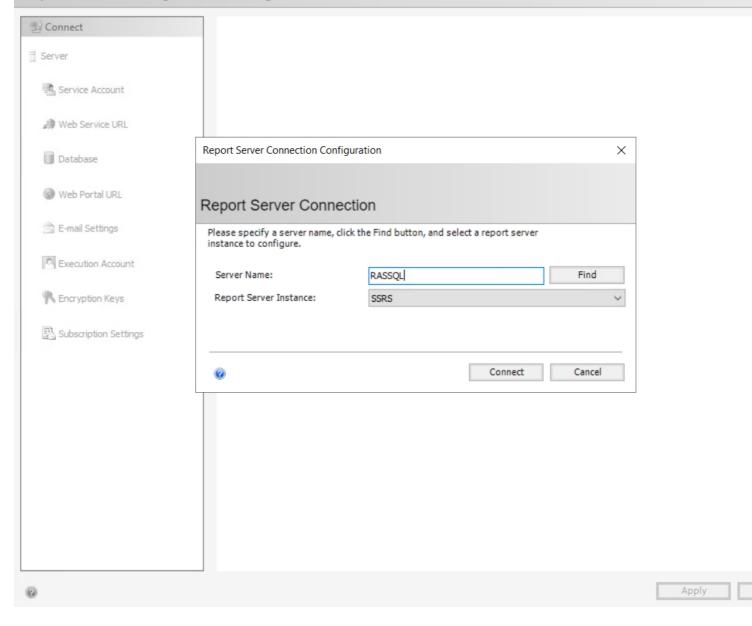
Configure report server

Close

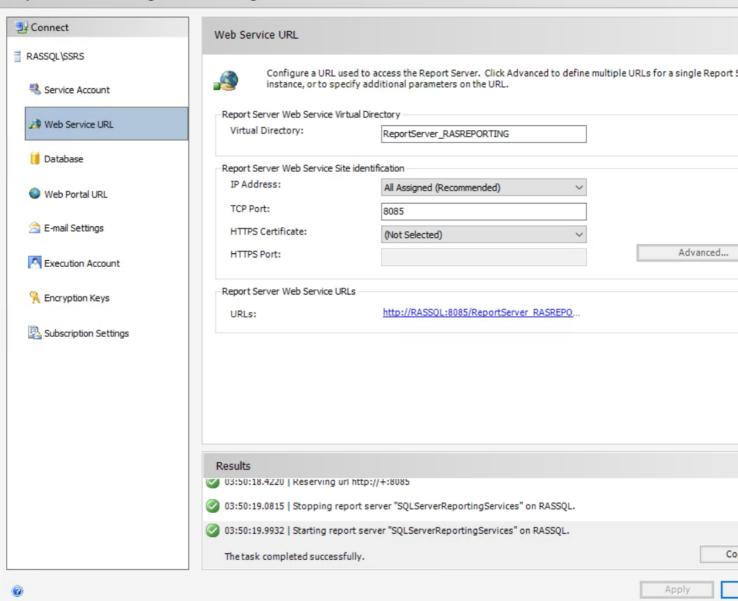
# Configuration

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

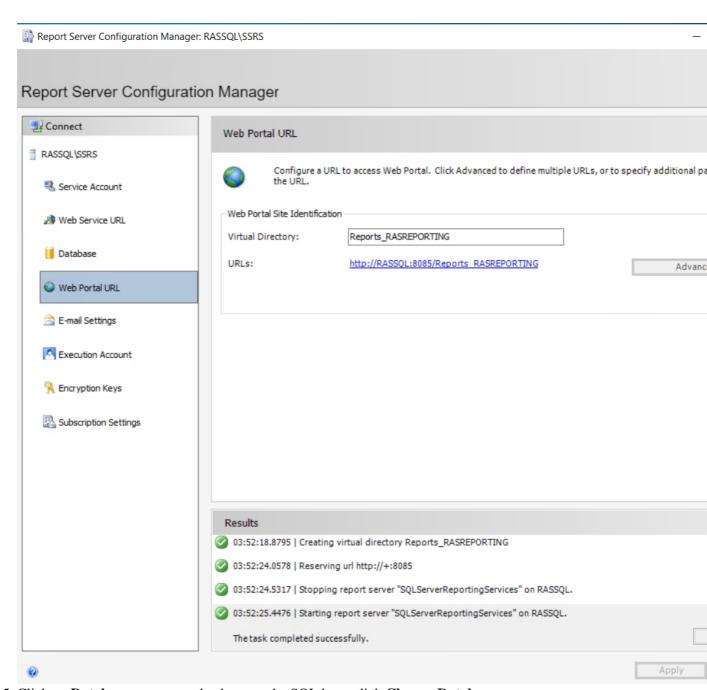
### Report Server Configuration Manager



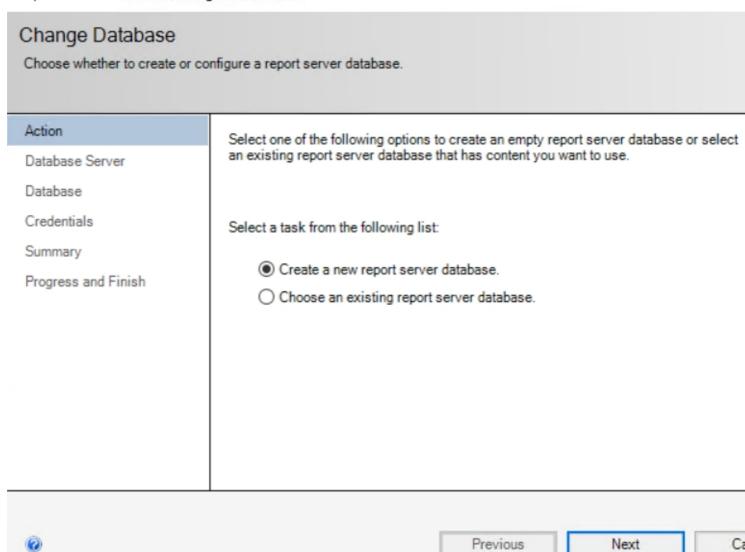
- 3. Once connected, in the left pane, click on Web Service URL and set the following:
- Virtual Directory: Make sure that the directory name is "ReportServer\_RASREPORTING". If you used a different name for the SQL Server instance, you should use that name instead of the "RASREPORTING" part.
- Make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



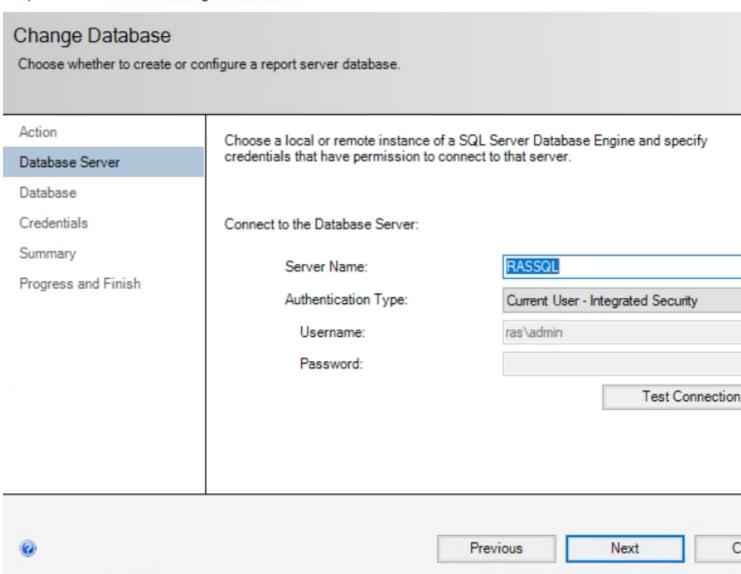
4. Go to **Web Portal URL** and set Virtual Directory to **Reports\_RASREPORTING**. If you used a different name for the SQL Server instance, you should see that name instead of the "RASREPORTING" part. Then click Apply.



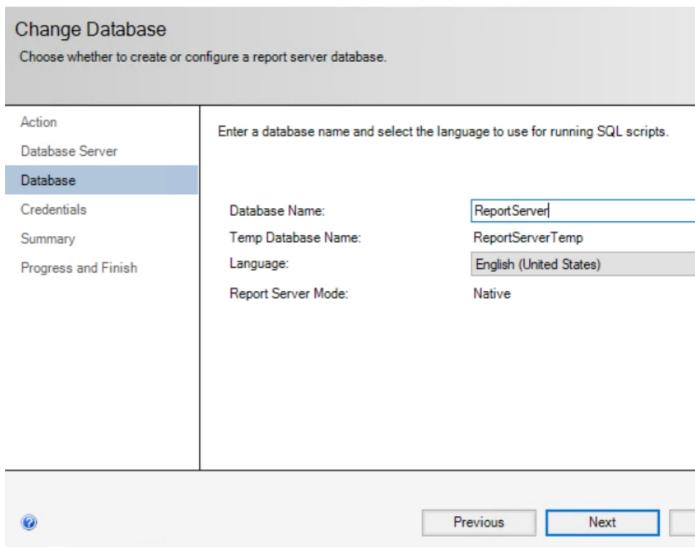
- 5. Click on **Database** to set up a database on the SQL host, click **Change Database**.
- 6. Choose Create a new report server database and click Next.



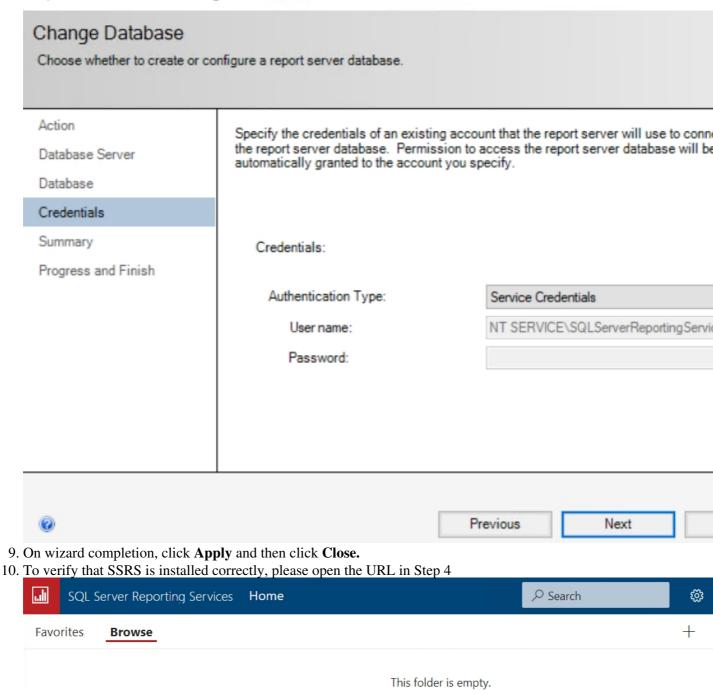
6. In the **Server Name** field, specify the SQL Server name using the Hostname\InstanceName format (case sensitive). Click **Next**.



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**.

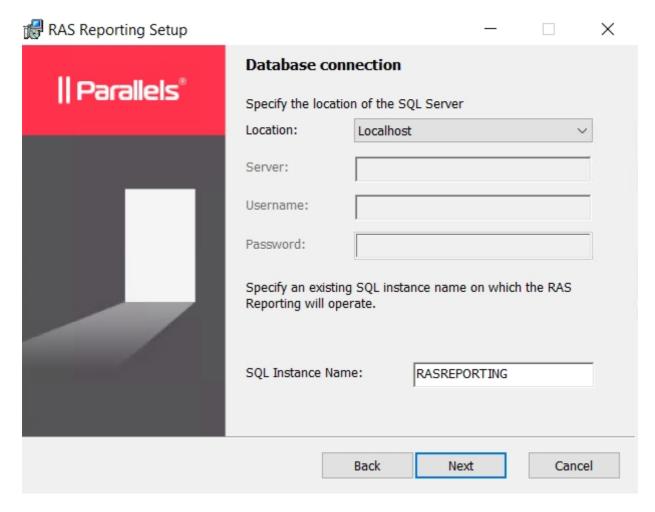


#### Installation

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 TCP port 8085 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:
<ol> <li>When installed, Parallels Reporting Service will start collecting data about newly established sessions.         Pre-existing sessions will not be included in reports.     </li> <li>Parallels Reporting Service commits the session information to the database after the user (session owner)</li> </ol>
<ul><li>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.</li><li>3. Parallels Reporting Service keeps its logs on the RAS Reporting server at the following locations:</li></ul>
%PROGRAMDATA%\Parallels\RASLogs\RAS Reporting\ReportingSetup.log
%PROGRAMDATA%\Parallels\RASLogs\RAS Reporting\reporting.log

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