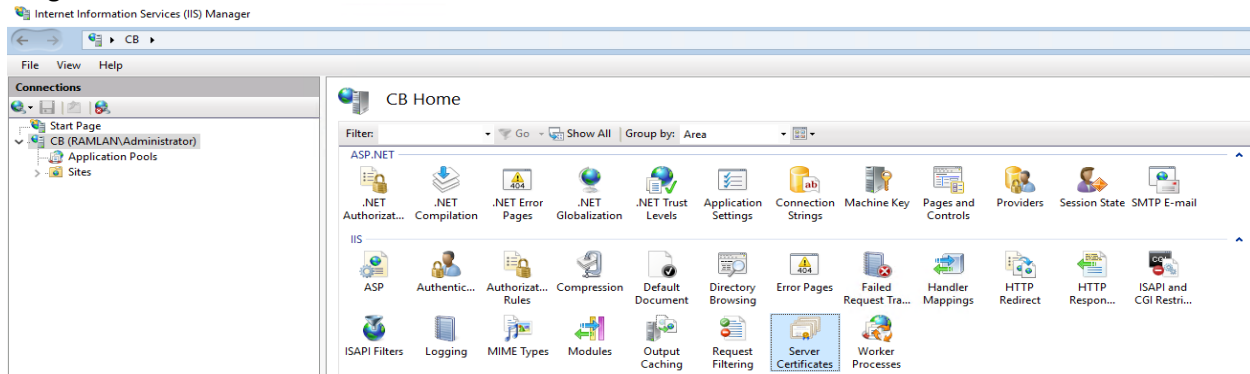


How to implement SSL for SQL Server Reporting Service (SSRS)

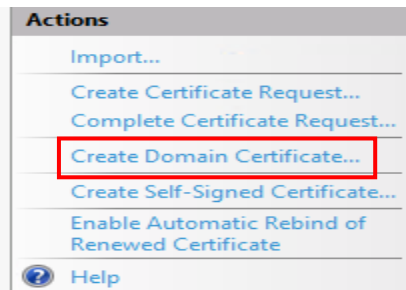
In this post, I will show you the steps involved in configuring SSL for SSRS. Within the lab, I am running Local Certificate Authority on the Domain Controller. This is required in order to generate internal SSL certificate for SSRS. If you don't have Local CA check this link - <https://www.azure365pro.com/how-to-install-certificate-authority-on-windows-server-2012/>

Import the Server Certificate from Your Domain Certificate Authority:

I will be performing this on Configuration Manager Server (CB.RAMLAN.CA). Open IIS Manager from Programs list.



Double click Server Certificates and click Create Domain Certificate



Create Certificate



Distinguished Name Properties

Specify the required information for the certificate. State/province and City/locality must be specified as official names and they cannot contain abbreviations.

Common name:	<input type="text" value="CB.RAMLAN.CA"/>
Organization:	<input type="text" value="RAMLAN INC"/>
Organizational unit:	<input type="text" value="SCCM"/>
City/locality	<input type="text" value="TORONTO"/>
State/province:	<input type="text" value="ONTARIO"/>
Country/region:	<input type="text" value="CA"/>

Previous

Next

Finish

Cancel



Online Certification Authority

Specify the certification authority within your domain that will sign the certificate. A friendly name is required and should be easy to remember.

Specify Online Certification Authority:

RAMLAN-DC-CA\DC.RAMLAN.CA

Select...

Example: CertificateAuthorityName\ServerName

Friendly name:

HTTPS\$SRSS

Previous

Next

Finish

Cancel

File View Help

Connections

- Start Page
- CB (RAMLAN\Administrator)
 - Application Pools
 - Sites

Server Certificates

Use this feature to request and manage certificates that the Web server can use with websites configured for SSL.

Filter: Go Show All Group by: No Grouping

Name	Issued To	Issued By	Expiration Date	Certificate Hash	Certificate Stor
	46daab66-1061-4670-8075-86...	MS-Organization-P2P-Access...	23-Dec-2019 11:24:09 AM	BCE949873C1156A630DB984F...	Personal
	46daab66-1061-4670-8075-86...	RAMLAN-DC-CA	19-Jan-2021 11:32:38 AM	751A3800DC13CAA1D747438...	Personal
ConfigMgr SQL Server Identifi...	46daab66-1061-4670-8075-86...	MS-Organization-P2P-Access...	14-Oct-2019 4:30:17 PM	1F390210D746853EF5FFCCD9...	Personal
	CB.RAMLAN.CA	CB.RAMLAN.CA	13-Dec-2118 4:16:08 PM	DBB7832122D8567D25C5F657...	Personal
HTTPS\$SRSS	CB.RAMLAN.CA	RAMLAN-DC-CA	21-Dec-2021 11:16:00 AM	856A40398AA1545981530517...	Personal
SMS Token Signing Certificate	SMS Token Signing	SMS Token Signing	13-Dec-2118 4:49:53 PM	927707F5C96D218384203DE48...	Personal
Veeam Agent Certificate	95c69e6a-eea8-4c2e-9125-78...	Veeam Backup Server Certific...	06-Feb-2029 1:49:37 PM	30D573D00D76D635CAE87516...	Personal
WMSVC-SHA2	WMSvc-SHA2-CB	WMSVC-SHA2-CB	03-Jan-2029 3:38:22 PM	965537AB111C394222DFA059...	Personal

Prepare SSRS for the Server Certificate:

Open SSRS from Program List

Administrator

CB

Network

Control Panel

Logs

Administrator

Programs

Apps

Favorites

Documents

CB

Settings

Search

Help and Support

Run...

Log Off Administrator...

Disconnect

Shut Down...

Windows Server 2019 Datacenter

Hard Disk Sentinel

Maintenance

Microsoft Deployment Toolkit

Microsoft Endpoint Manager

Microsoft Office Tools

Microsoft Power BI Desktop

Microsoft Silverlight

Microsoft SQL Server 2017

Microsoft SQL Server Reporting Services

Microsoft SQL Server Tools 17

Microsoft System Center

Patch My PC Publishing Service

Recast RCT

Startup

Veritas Backup Exec

Visual Studio 2017

Windows Accessories

Windows Administrative Tools

Windows Ease of Access

Windows Kits

Windows PowerShell

Windows System

Access

Acrobat Reader DC

Excel

OneDrive

OneDrive for Business

OneNote 2016

Outlook

PowerPoint

Project

Publisher

Server Manager

Skype for Business

Visio

Visual Studio 2017 (SSDT)

Visual Studio Installer

Word

Analysis Services

Configuration Tools

Integration Services

Performance Tools

SQL Server 2017 Import and Export Data (32-bit)

SQL Server 2017 Import and Export Data (64-bit)

Reporting Services Configuration Manager

SQL Server 2017 Configuration Manager

SQL Server 2017 Error and Usage Reporting

SQL Server 2017 Installation Center (64-bit)

On the Report Server Configuration Connection window, click on the Connect button.

The screenshot shows the 'Reporting Services Configuration Connection' window. At the top, it says 'SQL Server 2017 Reporting Services'. Below that, a message reads: 'Please specify a server name, click the Find button, and select a report server instance to configure.' There are two input fields: 'Server Name:' with the value 'CB' and a 'Find' button next to it; and 'Report Server Instance:' with a dropdown menu showing 'SSRS'. At the bottom, there are two buttons: 'Connect' (highlighted with a blue border) and 'Cancel'.

Back on the Report Server Configuration Manager window, select Service Account.

The screenshot shows the 'SQL Server 2017 Reporting Services Configuration Manager' window. The title bar indicates 'Reporting Services Configuration Manager: CB\SSRS'. On the left, a 'Connect' sidebar lists various settings, with 'Service Account' selected. The main pane is titled 'Service Account' and contains the instruction: 'Specify a built-in account or Windows domain user account to run the report server service.' Under 'Report Server Service Account', it says 'Choose an option to set the service account and then click Apply.' There are two radio buttons: 'Use built-in account:' (selected) and 'Use another account:'. The 'Use built-in account:' option has a dropdown menu showing 'Virtual Service Account'. Below these are fields for 'Account (Domain\user):' and 'Password:'. At the bottom, there is a 'Results' section.

Set the account to Network Service and click Apply.

This screenshot is similar to the previous one, but the dropdown menu for 'Use built-in account:' now shows 'Network Service' instead of 'Virtual Service Account'. The 'Results' section at the bottom is empty. At the bottom right of the window, there are three buttons: 'Copy', 'Apply' (highlighted with a blue border), and 'Exit'.

Click on the “...” button.

Backup Encryption Key [X]

Specify the name and location of a file that will contain the copy of the key. You must specify a password that is used to lock and unlock the file.

File Location: ...

Password:

Confirm Password:

[?] OK Cancel

Give encryption key a name and save the file to your documents. Click ok.

Backup Encryption Key [X]

Specify the name and location of a file that will contain the copy of the key. You must specify a password that is used to lock and unlock the file.

File Location: ...

Password:

Confirm Password:

[?] OK Cancel

Click ok.

SQL Server Connection Dialog [X]

Specify administrator login credentials for applying grant rights script for the new windows service account.

Specify a SQL Server instance:

Server Name:

Specify an account with administrator privileges:

Credentials Type:

Username:

Password:

[?] OK Cancel

Below you will see the list of steps that are completed.

Reporting Services Configuration Manager: CB\SSRS

SQL Server 2017 Reporting Services Configuration Manager

Connect

- CB\SSRS
- Service Account**
- Web Service URL
- Database
- Web Portal URL
- E-mail Settings
- Execution Account
- Encryption Keys
- Subscription Settings
- Scale-out Deployment
- Power BI Integration

Service Account

Specify a built-in account or Windows domain user account to run the report server service.

Report Server Service Account
Choose an option to set the service account and then click Apply.

☒ Use built-in account: Network Service

☐ Use another account:
Account (Domain\user):
Password:

Results

- ✓ Creating Encryption Key Backup
- ✓ Stopping report server "SSRS" on CB.
- ✓ Setting Windows Service Identity to Built-In Account
- ✓ Creating a Grant Rights script for NT Authority\NetworkService
- ✓ Assigning ReportingServices Rights to User
- ✓ Starting report server "SSRS" on CB.
- ✓ Removing url http://+:80
- ✓ Reserving url http://+:80
- ✓ Removing url http://+:80
- ✓ Reserving url http://+:80
- ✓ Restoring Encryption Key

Copy

Apply Exit

Setup SSRS to Use the Server Certificate:

Open Report Server Configuration Manager and select Web Service URL node. In the HTTPS Certificate drop-down, select the friendly name of the certificate that you created earlier and click ok.

Reporting Services Configuration Manager: CB\SSRS

SQL Server 2017 Reporting Services Configuration Manager

Connect

- CB\SSRS
- Service Account
- Web Service URL**
- Database
- Web Portal URL
- E-mail Settings
- Execution Account
- Encryption Keys
- Subscription Settings
- Scale-out Deployment
- Power BI Integration

Web Service URL

Configure a URL used to access the Report Server. Click Advanced to define multiple URLs for a single Report Server instance, or to specify additional parameters on the URL.

Report Server Web Service Virtual Directory
Virtual Directory:

Report Server Web Service Site identification
IP Address:
TCP Port:
HTTPS Certificate:
HTTPS Port: Advanced...

Report Server Web Service URLs
URLs: <http://CB:80/ReportServer>
<https://CB.RAMLAN.CA:443/ReportServer>

Add a Report Server HTTPS Binding

Identification

IP Address:
HTTPS Port:
Certificate:
URL: <https://CB.RAMLAN.CA:443/Reports>

OK Cancel

Reporting Services Configuration Manager: CB\SSRS

SQL Server 2017 Reporting Services Configuration Manager

Connect

- CB\SSRS
- Service Account
- Web Service URL**
- Database
- Web Portal URL
- E-mail Settings
- Execution Account
- Encryption Keys
- Subscription Settings
- Scale-out Deployment
- Power BI Integration

Web Service URL

Configure a URL used to access the Report Server. Click Advanced to define multiple URLs for a single Report Server instance, or to specify additional parameters on the URL.

Report Server Web Service Virtual Directory
Virtual Directory:

Report Server Web Service Site identification
IP Address:
TCP Port:
HTTPS Certificate:
HTTPS Port: Advanced...

Report Server Web Service URLs
URLs: <http://CB:80/ReportServer>
<https://CB.RAMLAN.CA:443/ReportServer>

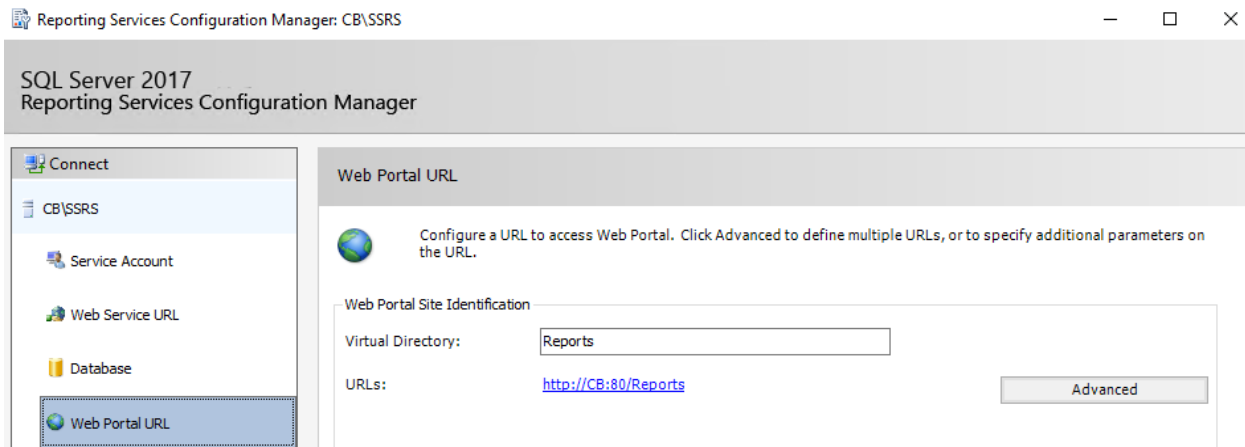
Results

- ✓ Removing url http://+:80
- ✓ Reserving url http://+:80
- ✓ Reserving url https://CB.RAMLAN.CA:443
- ✗ Create certificate binding.
- ✓ Removing url https://CB.RAMLAN.CA:443
- ✓ Reserving url https://CB.RAMLAN.CA:443
- ✓ Create certificate binding.
- ✓ Stopping report server "SQLServerReportingServices" on CB.
- ✓ Starting report server "SQLServerReportingServices" on CB.

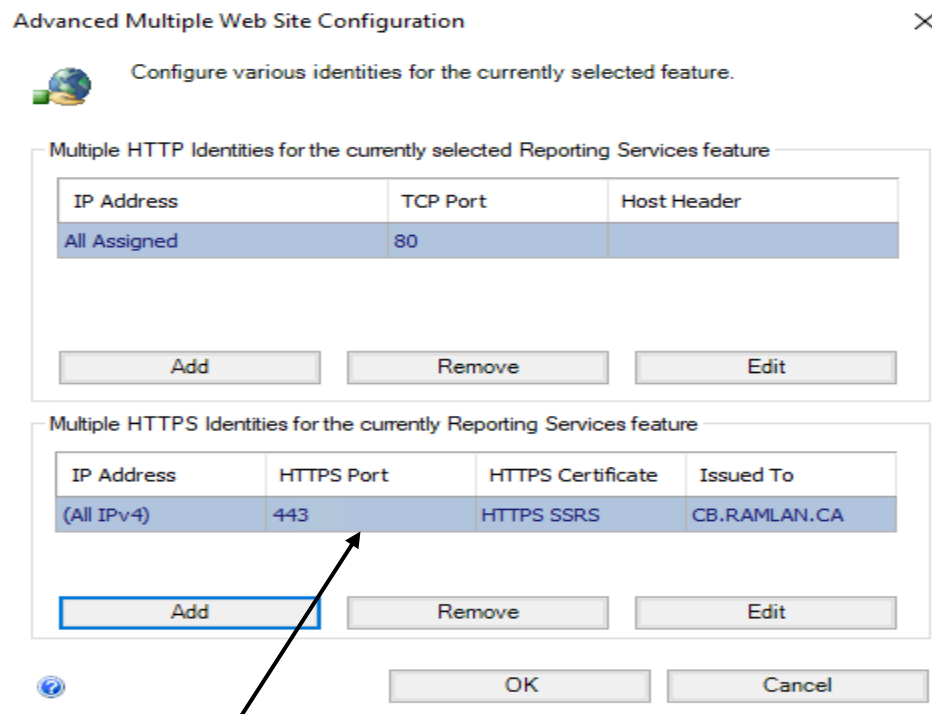
The task completed successfully.

Copy

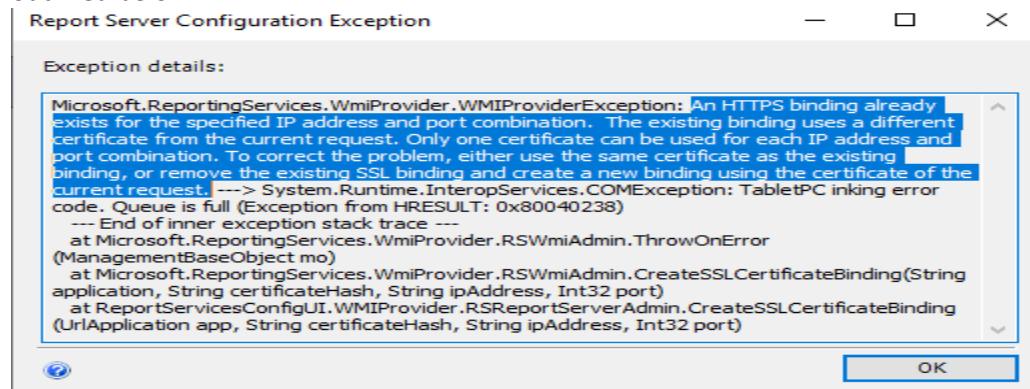
Click on the Web Portal URL node. Next, click Advanced



Under Multiple HTTPS Identities for the currently Reporting Services feature, click the Add button.



When, I clicked OK – was prompted with below error. Had to research Google for solution which is outlined below.



Open PowerShell as Admin and run below commands

netsh http show sslcert

netsh http delete sslcert ipport=[:]:443

netsh http delete sslcert ipport=0.0.0.0:443

```
Administrator: Windows PowerShell
PS C:\Users\Administrator.RAMLAN> netsh http show sslcert

SSL Certificate bindings:
-----
IP:port           : 0.0.0.0:443
Certificate Hash   : 751a3800dc13caa1d74743bd7f320cc81f7b8470
Application ID     : {4dc3e181-e14b-4a21-b022-59fc669b0914}
Certificate Store Name : My
Verify Client Certificate Revocation : Enabled
Verify Revocation Using Cached Client Certificate Only : Disabled
Usage Check       : Enabled
Revocation Freshness Time : 0
URL Retrieval Timeout : 0
Ctl Identifier     : (null)
Ctl Store Name    : (null)
DS Mapper Usage   : Disabled
Negotiate Client Certificate : Disabled
Reject Connections : Disabled
Disable HTTP2     : Not Set
Disable QUIC      : Not Set
Disable TLS1.2    : Not Set
Disable TLS1.3    : Not Set
Disable OCSP Stapling : Not Set
Disable Legacy TLS Versions : Not Set

IP:port           : 0.0.0.0:8172
Certificate Hash   : 965537ab111c394222dfa059cb0e6ead47782279
Application ID     : {00000000-0000-0000-0000-000000000000}
Certificate Store Name : MY
Verify Client Certificate Revocation : Enabled
Verify Revocation Using Cached Client Certificate Only : Disabled
Usage Check       : Enabled
Revocation Freshness Time : 0
URL Retrieval Timeout : 0
Ctl Identifier     : (null)
Ctl Store Name    : (null)
DS Mapper Usage   : Disabled
Negotiate Client Certificate : Disabled
Reject Connections : Disabled
Disable HTTP2     : Not Set
Disable QUIC      : Not Set
Disable TLS1.2    : Not Set
Disable TLS1.3    : Not Set
Disable OCSP Stapling : Not Set
Disable Legacy TLS Versions : Not Set

IP:port           : [::]:443
Certificate Hash   : 856a40398aa1545981530517cdf1d92914224f86
Application ID     : {1d40ebc7-1983-4ac5-82aa-1e17a7ae9a0e}
Certificate Store Name : (null)
Verify Client Certificate Revocation : Enabled
Verify Revocation Using Cached Client Certificate Only : Disabled
Usage Check       : Enabled
Revocation Freshness Time : 0
URL Retrieval Timeout : 0
Ctl Identifier     : (null)
Ctl Store Name    : (null)
DS Mapper Usage   : Disabled
Negotiate Client Certificate : Disabled
Reject Connections : Disabled
Disable HTTP2     : Not Set
Disable QUIC      : Not Set
Disable TLS1.2    : Not Set
Disable TLS1.3    : Not Set
Disable OCSP Stapling : Not Set
Disable Legacy TLS Versions : Not Set

Administrator: Windows PowerShell
Disable Legacy TLS Versions : Not Set

PS C:\Users\Administrator.RAMLAN> netsh http delete sslcert ipport=[:]:443

SSL Certificate successfully deleted

PS C:\Users\Administrator.RAMLAN> netsh http delete sslcert ipport=0.0.0.0:443

SSL Certificate successfully deleted

PS C:\Users\Administrator.RAMLAN> netsh http show sslcert

SSL Certificate bindings:
-----
IP:port           : 0.0.0.0:8172
Certificate Hash   : 965537ab111c394222dfa059cb0e6ead47782279
Application ID     : {00000000-0000-0000-0000-000000000000}
Certificate Store Name : MY
Verify Client Certificate Revocation : Enabled
Verify Revocation Using Cached Client Certificate Only : Disabled
Usage Check       : Enabled
Revocation Freshness Time : 0
URL Retrieval Timeout : 0
Ctl Identifier     : (null)
Ctl Store Name    : (null)
DS Mapper Usage   : Disabled
Negotiate Client Certificate : Disabled
Reject Connections : Disabled
Disable HTTP2     : Not Set
Disable QUIC      : Not Set
Disable TLS1.2    : Not Set
Disable TLS1.3    : Not Set
Disable OCSP Stapling : Not Set
Disable Legacy TLS Versions : Not Set
```


After that click advanced and add HTTPS certificate binding. SSL binding will work.

Reporting Services Configuration Manager: CB\SSRS

SQL Server 2017 Reporting Services Configuration Manager

Connect

- CB\SSRS
 - Service Account
 - Web Service URL
 - Database
 - Web Portal URL**
 - E-mail Settings
 - Execution Account
 - Encryption Keys
 - Subscription Settings
 - Scale-out Deployment
 - Power BI Integration

Web Portal URL

Configure a URL to access Web Portal. Click Advanced to define multiple URLs, or to specify additional parameters on the URL.

Web Portal Site Identification

Virtual Directory:

URLs: <http://CB:80/Reports> <https://CB.RAMLAN.CA:443/Reports> Advanced

Results

- ✓ Reserving url https://CB.RAMLAN.CA:443
- ✓ Create certificate binding.

The certificate binding was created successfully.

Copy

Test the SSRS Website

Back on Web Service URL node, click on the HTTPS URL listed in the Report Server Web Service URLs section.

Reporting Services Configuration Manager: CB\SSRS

SQL Server 2017 Reporting Services Configuration Manager

Connect

- CB\SSRS
 - Service Account
 - Web Service URL**
 - Database
 - Web Portal URL
 - E-mail Settings
 - Execution Account
 - Encryption Keys
 - Subscription Settings
 - Scale-out Deployment
 - Power BI Integration

Web Service URL

Configure a URL used to access the Report Server. Click Advanced to define multiple URLs for a single Report Server instance, or to specify additional parameters on the URL.

Report Server Web Service Virtual Directory

Virtual Directory:

Report Server Web Service Site identification

IP Address:

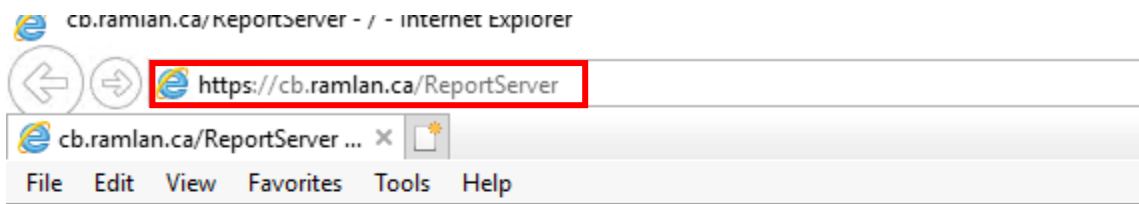
TCP Port:

HTTPS Certificate:

HTTPS Port: Advanced...

Report Server Web Service URLs

URLs: <http://CB:80/ReportServer> <https://CB.RAMLAN.CA:443/ReportServer> ←



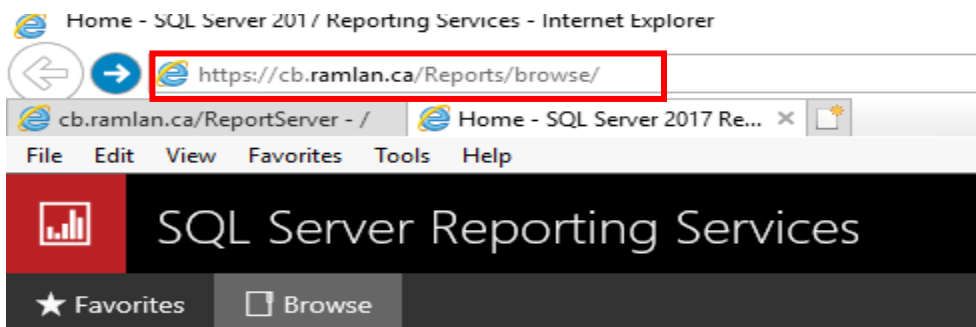
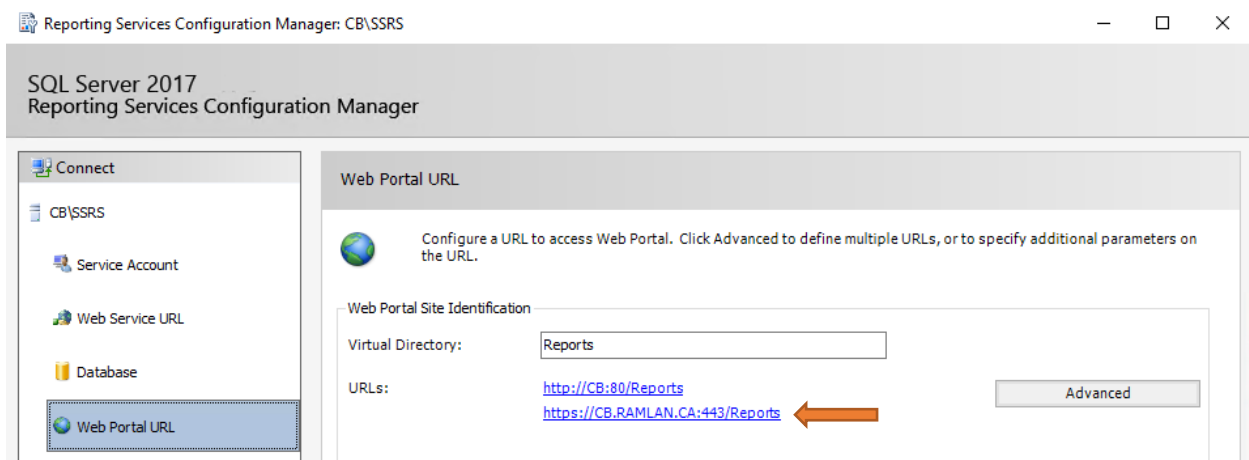
cb.ramlan.ca/ReportServer - /

January 12, 2019 3:47 PM

<dir> [ConfigMgr TOR](#)

Microsoft SQL Server Reporting Services Version 14.0.600.594

Back on Web Portal URL node, click on the HTTPS URL listed in the Reports Web Portal URLs section.



Home

[Home](#)

FOLDERS (1)

ConfigMgr_TOR

As you can see below all my reports are present and the same reports are in Configuration Manager – Monitoring section.

The screenshot displays the SQL Server Reporting Services (SSRS) web portal interface. The browser address bar shows the URL https://cb.ramlan.ca/Reports/browse/ConfigMgr_TOR. The page title is "SQL Server Reporting Services". The breadcrumb navigation shows "Home > ConfigMgr_TOR". Below the navigation bar, there is a section titled "FOLDERS (62)" which lists various report folders in a grid. The folders are organized into rows and columns, each with a folder icon and a three-dot menu. The folders listed include:

- Administrative Security
- Alerts
- Asset Intelligence
- Assets - Office Products
- BitLocker Management
- Client Push
- Client Status
- Company Resource Access
- Compliance and Settings Management
- Data Warehouse
- Device Management
- Driver Management
- Endpoint Protection
- Hardware - CD-ROM
- Hardware - Disk
- Hardware - General
- Hardware - Memory
- Hardware - Modem
- Hardware - Network Adapter
- Hardware - Processor
- Hardware - SCSI
- Hardware - Security
- Hardware - Sound Card
- Hardware - Video Card
- Migration
- Network
- Operating System
- Patch My PC Reports
- Power Management
- Replication Traffic
- Site - Client Information
- Site - Discovery and Inventory Information
- Site - General
- Site - Server Information
- Software - Companies and Products
- Software - Files
- Software Distribution - Application Monitoring
- Software Distribution - Collections
- Software Distribution - Content
- Software Distribution - Package and Program Deployment
- Software Distribution - Package and Program Deployment Status
- Software Metering
- Software Updates - A
- Software Updates - B
- Software Updates - C Deployment States
- Software Updates - D Scan
- Software Updates - E Troubleshooting
- State Migration

This concludes SSL binding to SSRS 2017.

Thanks

Ram Lan
22nd Dec 2019