
Local Database Server Setup Guide for Schools (English Version)

August 2022

Education Bureau

Table of Contents

1.	Assumption	3
2.	Procedures of Allowing Connection to Database	5
3.	Operations of WebSAMS Database.....	11
3.1	Collect the cloud WebSAMS database backup files	11
3.2	Start WebSAMS database	13
3.3	Configure ODBC in Crystal Reports Workstation.....	16
3.4	Shutdown WebSAMS database after use.....	17

1. Assumption

This guideline document assumes a school should have the following prepared:

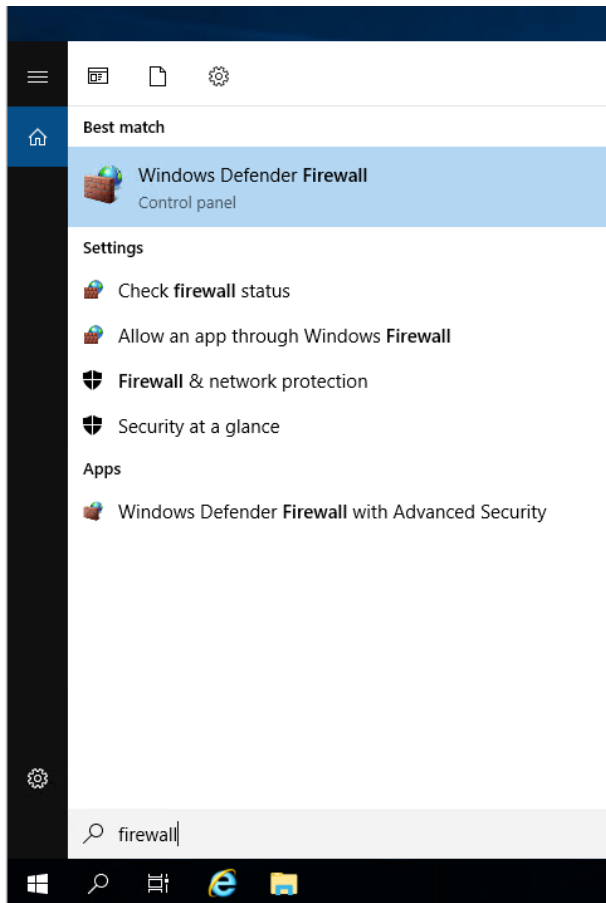
- School already has a Windows server, installed with latest Windows updates;
- The server is located in a safe and secured location, both physically and on network level;
- Encryption is enabled to protect the server e.g. hard disk encryption provided by the server hardware, or Windows BitLocker encryption technology;
- School has installed Anti-Virus software on the server, with the latest version patches and virus definitions;
- The server is installed with the 7-zip software, which can be download from <https://www.7-zip.org/>
- School has applied the Windows Operating System (OS) hardening configurations (Please refer to the other document: Windows Server Hardening Guide);
- School has installed SAP Sybase SQL Anywhere 17 software (Please refer to the other document: SAP SQL Anywhere 17 Installation Guide) on the Windows server;
- School has installed SAP Crystal Reports Designer 2020 and set up ODBC on the Crystal Reports workstation PC (Please refer to the other document: Crystal Reports Designer 2020 Installation Guide);
- School should know data decryption password of the cloud WebSAMS database backup files;
- [How to change/reset the data decryption password for cloud schools 2018-2021]
Please refer to the following documents - User Manual for Cloud Service Management Page:
https://cdr.websams.edb.gov.hk/Files/cloud/Reference/User%20Manual%20for%20Cloud%20Service%20Management%20Page_Chi%20v1.1.pdf
- [How to change/reset the data decryption password for cloud schools 2022]
Please refer to the following documents - User Manual for Cloud Service Management Page:
https://cdr.websams.edb.gov.hk/Files/cloud/Reference/User%20Manual%20for%20Cloud%20Service%20Management%20Page_Chi_linux%20v1.3.pdf
- School should know how to connect VPN to the cloud platform. For guideline, please refer to the following documents to perform VPN connection:
 - Cloud schools 2018:
<https://cdr.websams.edb.gov.hk/Files/cloud/Reference/Pilot%20Cloud%20WebSAMS%20VPN%20connection%20guide.pdf>
 - Cloud schools 2019:
<https://cdr.websams.edb.gov.hk/Files/cloud/Reference/Pilot%20Cloud%20WebSAMS%20VPN%20connection%20guide%202019.pdf>
 - Cloud schools 2020:
<https://cdr.websams.edb.gov.hk/Files/cloud/Reference/Pilot%20Cloud%20WebSAMS%20VPN%20connection%20guide%202020.pdf>

- Cloud schools 2021:
<https://cdr.websams.edb.gov.hk/Files/cloud/Reference/Cloud%20WebSAMS%20VPN%20connection%20guide.pdf>
- Cloud schools 2022:
<https://cdr.websams.edb.gov.hk/Files/cloud/Reference/Cloud%20WebSAMS%20VPN%20connection%20guide%202022.pdf>

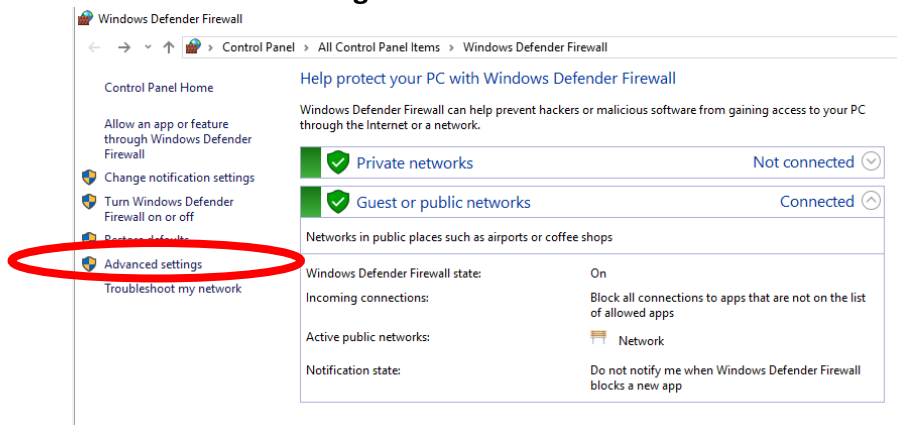
2. Procedures of Allowing Connection to Database

Please go through the following procedures only once, if the connection to Database Server is not yet enabled.

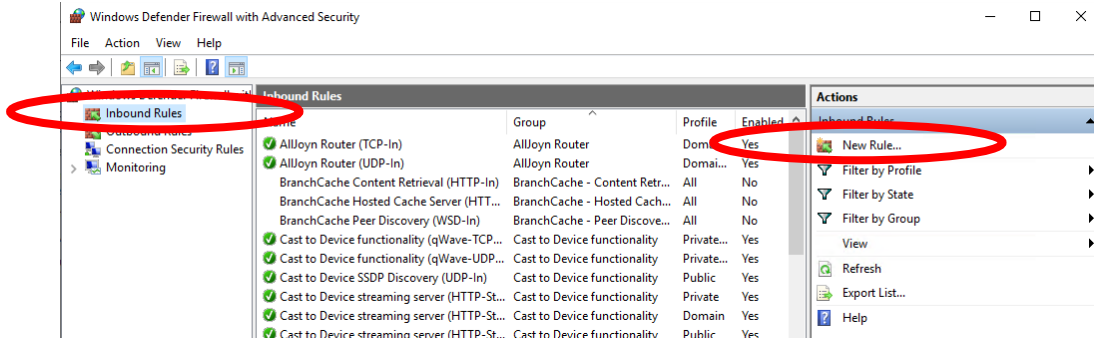
- In Windows Desktop search box, search **firewall**. Then click **Windows Defender Firewall**.



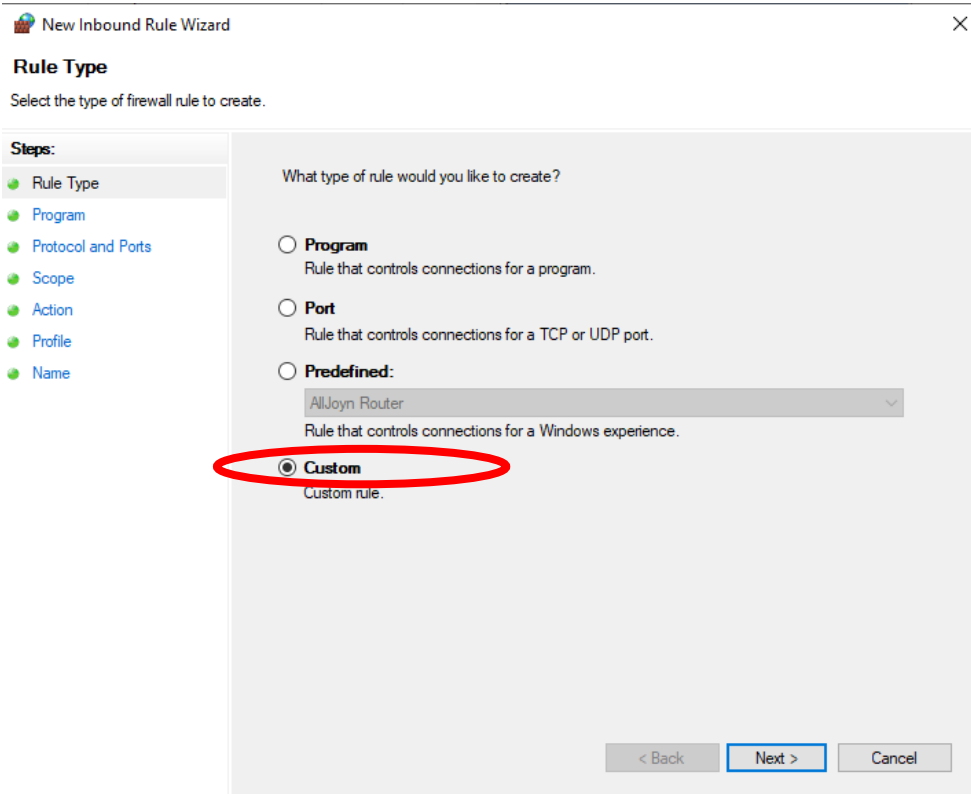
- Click **Advanced settings**



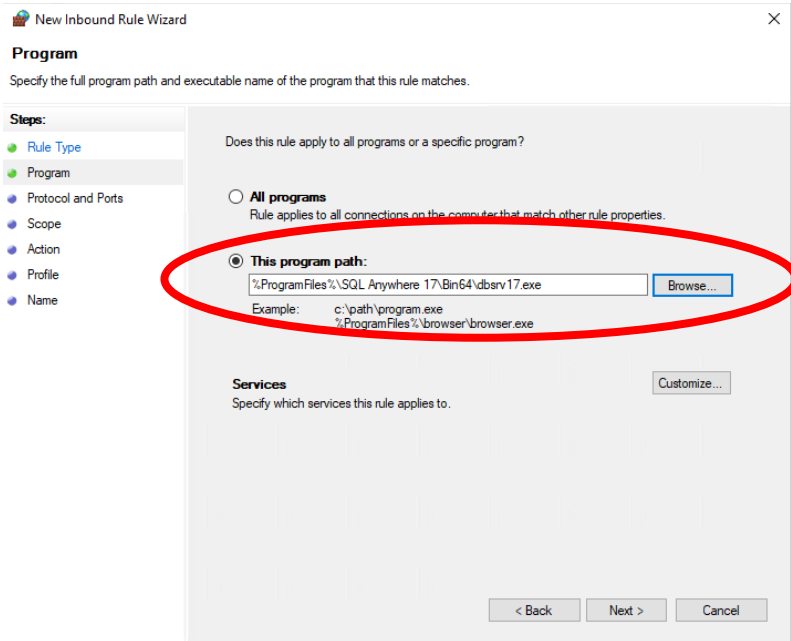
- Inbound Rules → New Rule...



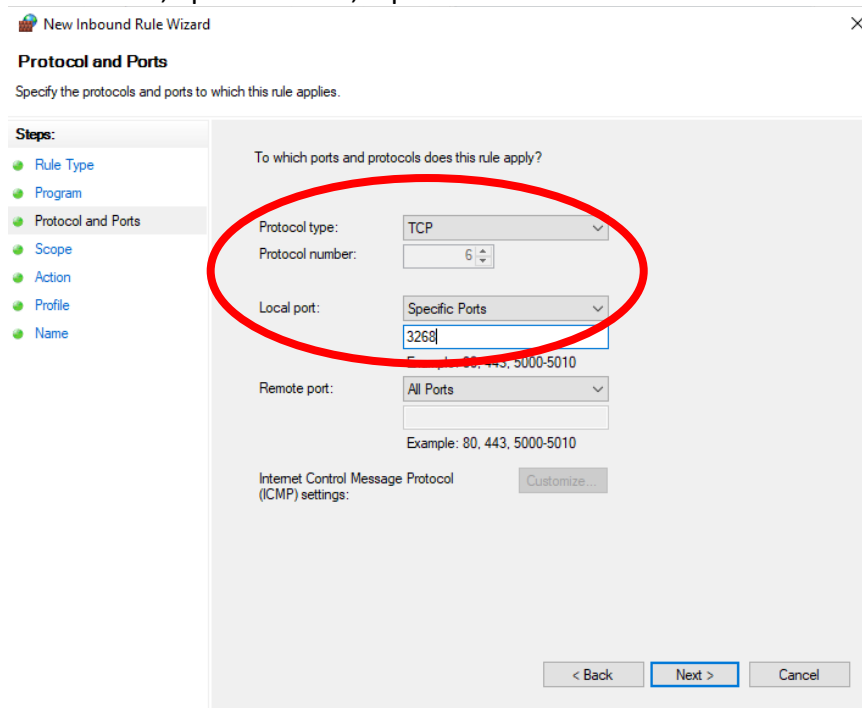
- Under Step "Rule Type",
Choose Custom.



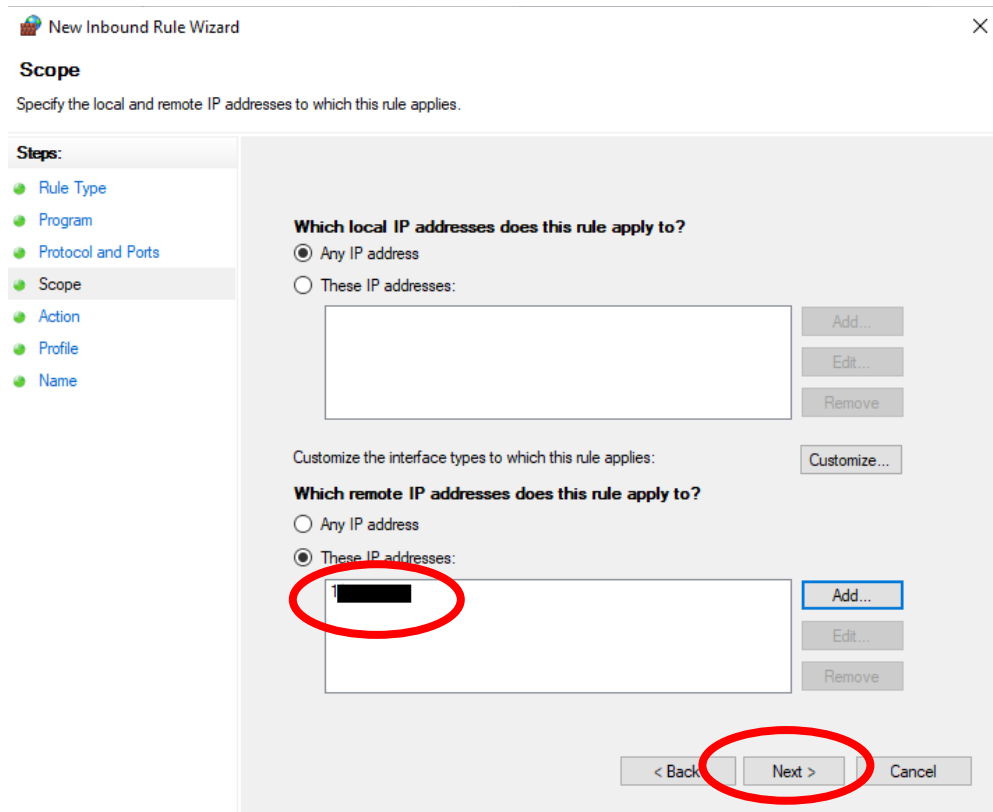
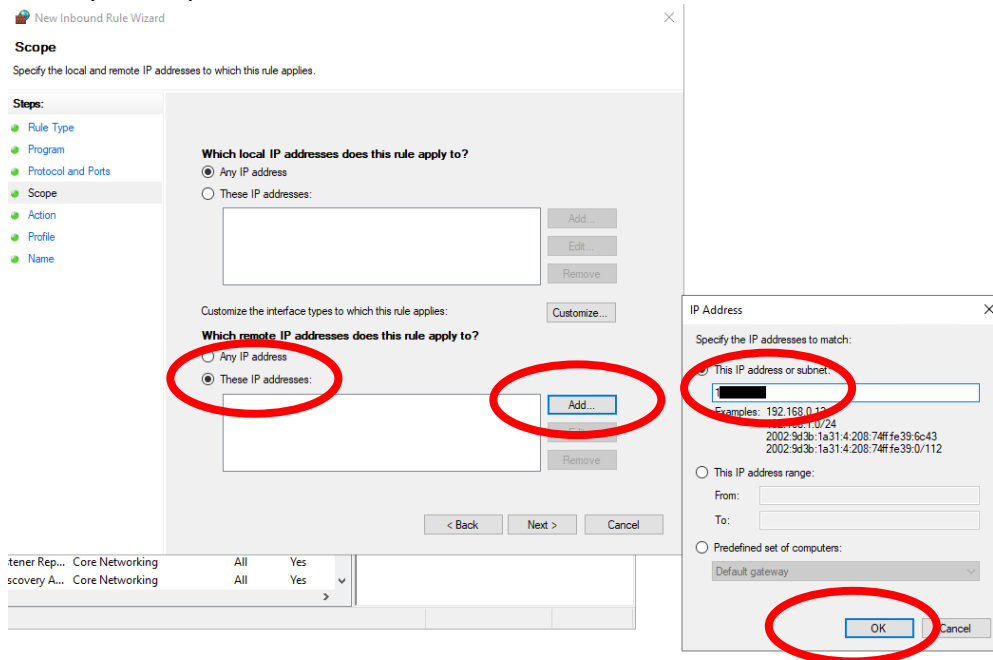
- Under Step “**Program**”,
In **This program path**, click **Browse** to choose the file path
C:\Program Files\SQL Anywhere 17\Bin64\dbsrv17.exe



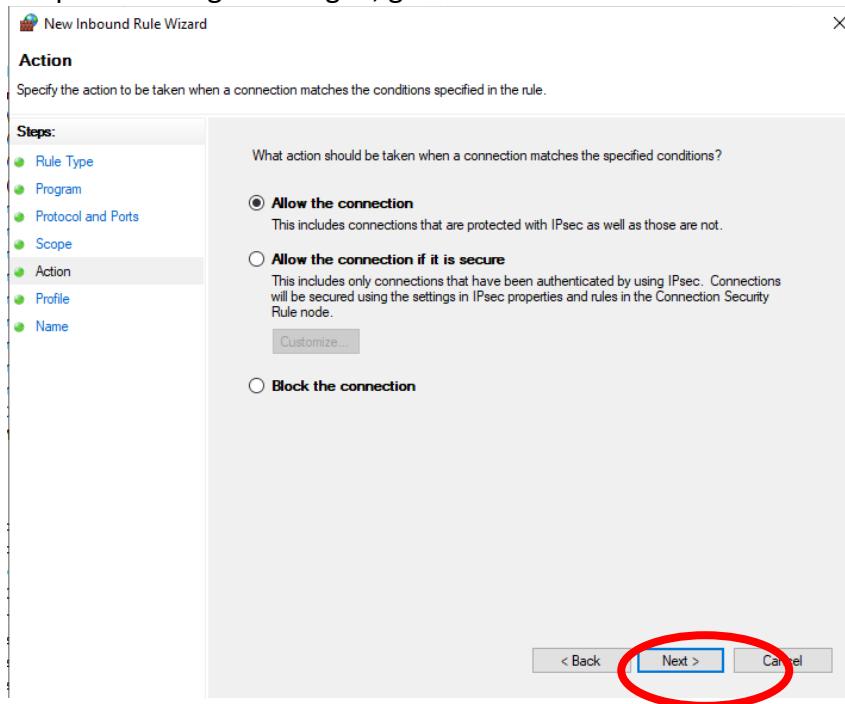
- Under Step “**Protocol and Ports**”,
Choose **TCP**, **Specific Ports**, input **3268**.



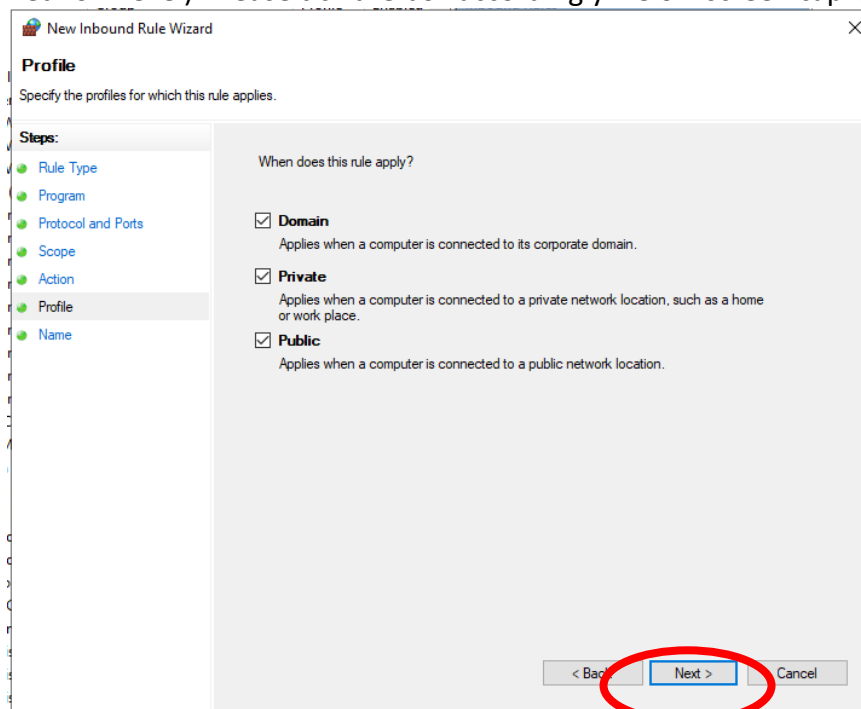
- Under Step “Scope”,
For **remote IP**, choose **These IP addresses**, click **Add...**, and input the IP address of the Crystal Reports workstation PC, click **OK**, then **Next**.



- Under Step “**Action**”,
Keep this setting unchanged, go to **Next**.



- Under Step “**Profile**”,
Below options depend on your school network, where the Windows server is located (on network level), and where your Crystal Reports workstation PC is located (on network level). Please tick the box accordingly. Below screen cap is **an example only**.



- Under Step “Name”,
Specify any name for your own easy reference. Below screen cap is **an example only**.
Then click **Finish**.

The screenshot shows a dialog box titled "New Inbound Rule Wizard" with a close button (X) in the top right corner. The main heading is "Name" with the instruction "Specify the name and description of this rule." On the left, a "Steps:" list includes "Rule Type", "Program", "Protocol and Ports", "Scope", "Action", "Profile", and "Name", with "Name" selected. The main area contains a "Name:" label above a text box containing "Allow connection to 3268" and a "Description (optional):" label above a larger empty text box. At the bottom right, there are three buttons: "< Back", "Finish" (circled in red), and "Cancel".

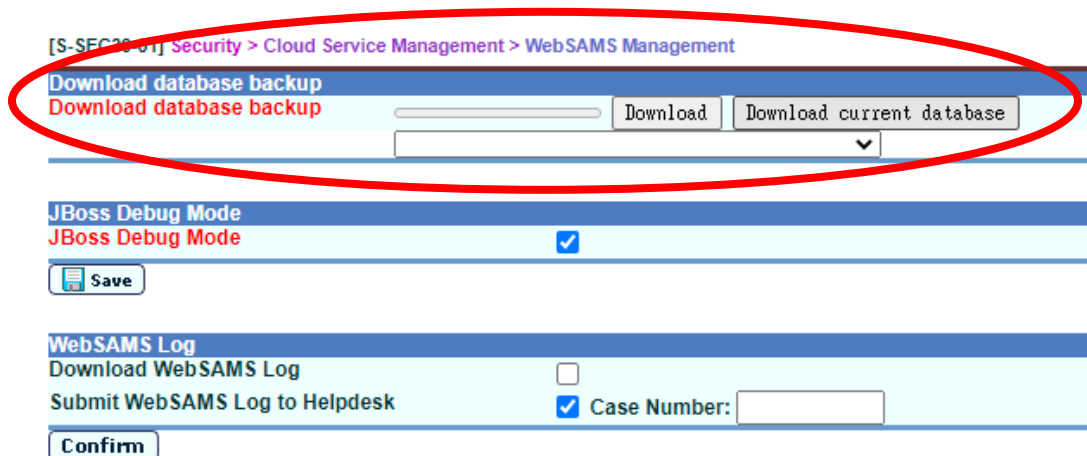
3. Operations of WebSAMS Database

3.1 Collect the cloud WebSAMS database backup files

- Pre-requisite:
 - School has a WebSAMS account which has been assigned to the following user groups: **CS_ADMIN** or **CS_SUPP**

<input checked="" type="checkbox"/>	CS_ADMIN	雲端服務管理員
<input checked="" type="checkbox"/>	CS_SUPP	雲端服務支援

- Connect the Windows server via VPN to the WebSAMS cloud platform.
- Login WebSAMS with the account mentioned above.
- Download the database backup files from the **Cloud Service Management** page in WebSAMS. **Security Module** → **Cloud Service Management** → **WebSAMS Management** → **Download Database Backup**

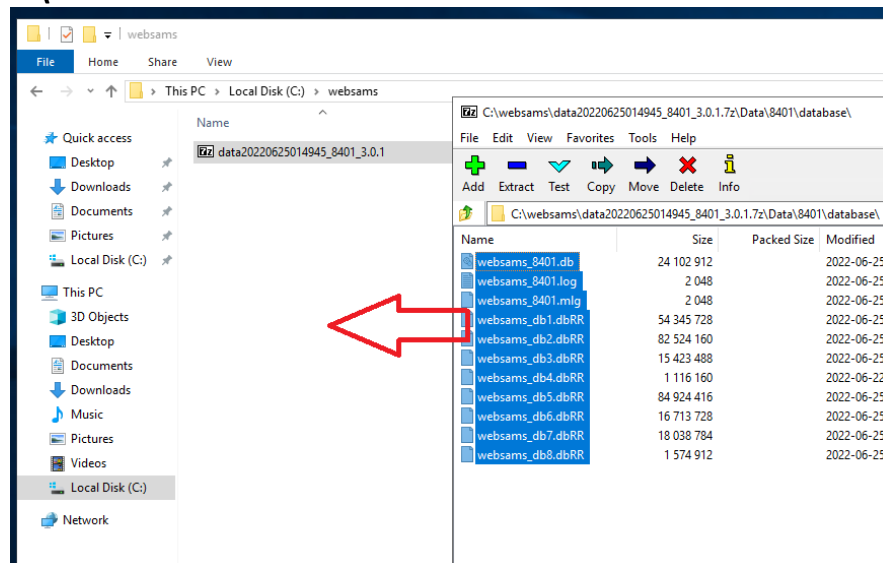


- Download to the following folder on the Windows Server. If the folder does not exist, create it:
 - C:\websams

- Extract the database backup files
 - Double-click the 7z file, the 7-zip software should start up and display content of the 7z file.
 - If the displayed content only has 1 file named XXXXXXXX.tar, double-click the .tar file as well.
 - Find the database files in following **Paths** inside the 7z file ,

7z file name	Path
dataXXXXXXXXXXXXXXXXXXXXX.7z	Data\{SUID}\database\
dbonlyXXXXXXXXXXXXXXXXXXXXX.7z	N/A You should see the database files immediately in the 7z displayed content.
dataXXXXXXXXXXXXXXXXXXXXX.tar.7z	opt\sqlanywhere17\data\
dbonlyXXXXXXXXXXXXXXXXXXXXX.tar.7z	N/A You should see the database files immediately in the 7z displayed content.

- Select all the database files, drag-and-drop them by mouse to the folder **C:\websams** .



Where {SUID} is the 4-digit ID of your WebSAMS.

- Enter the cloud data decryption password when it prompts.

3.2 Start WebSAMS database

- Open Windows Notepad, create a new file.
- Copy the following content to the new file:
- The following content are in 2 lines only.

```
set SQLLOCALE=Charset=UTF8;Language=ENGLISH;CollationLabel=UTF8

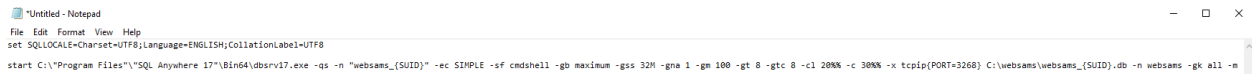
start C:\Program Files\SQL Anywhere 17\Bin64\dbsrv17.exe -qs -n
"websams_{SUID}" -ec SIMPLE -sf cmdshell -gb maximum -gss 32M -gna 1 -
gm 100 -gt 8 -gtc 8 -cl 20%% -c 30%% -x tcpip{PORT=3268}
C:\websams\websams_{SUID}.db -n websams -gk all -m
```

Replace {SUID} by the same 4-digit number.

e.g. if your {SUID} is 8401, then the content will look like:

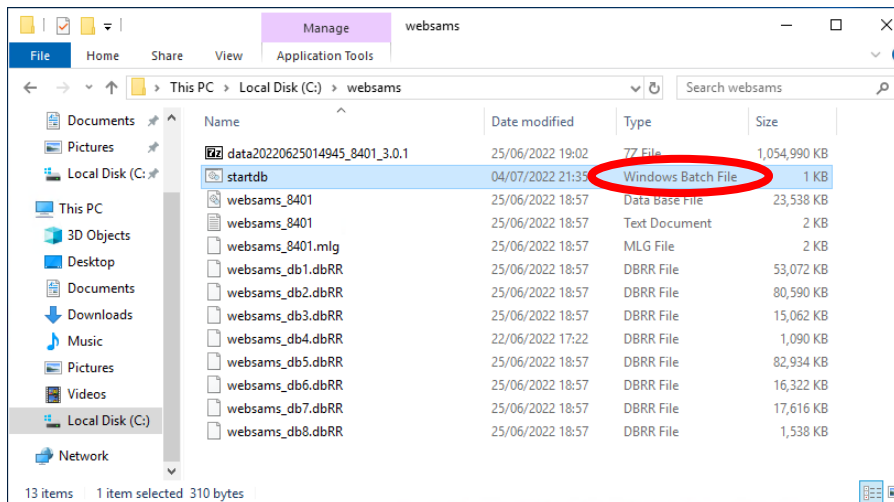
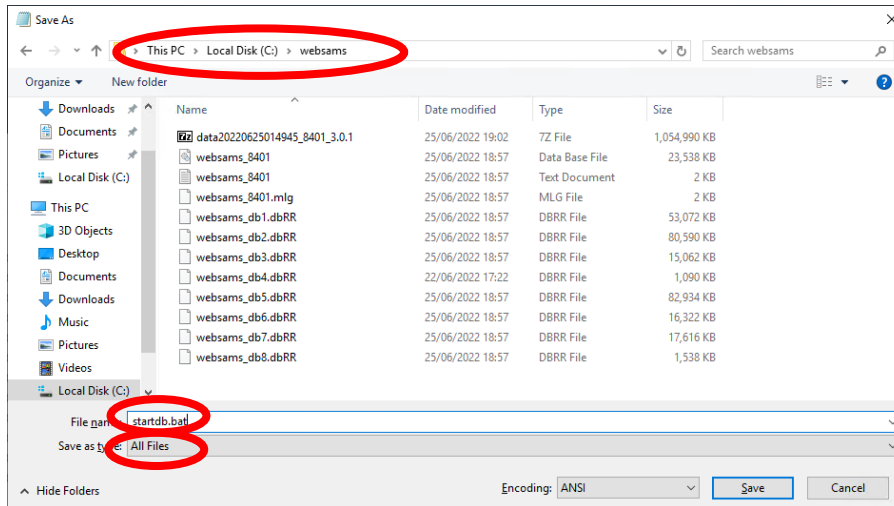
```
set SQLLOCALE=Charset=UTF8;Language=ENGLISH;CollationLabel=UTF8

start C:\Program Files\SQL Anywhere 17\Bin64\dbsrv17.exe -qs -n
"websams_8401" -ec SIMPLE -sf cmdshell -gb maximum -gss 32M -gna 1 -
gm 100 -gt 8 -gtc 8 -cl 20%% -c 30%% -x tcpip{PORT=3268}
C:\websams\websams_8401.db -n websams -gk all -m
```

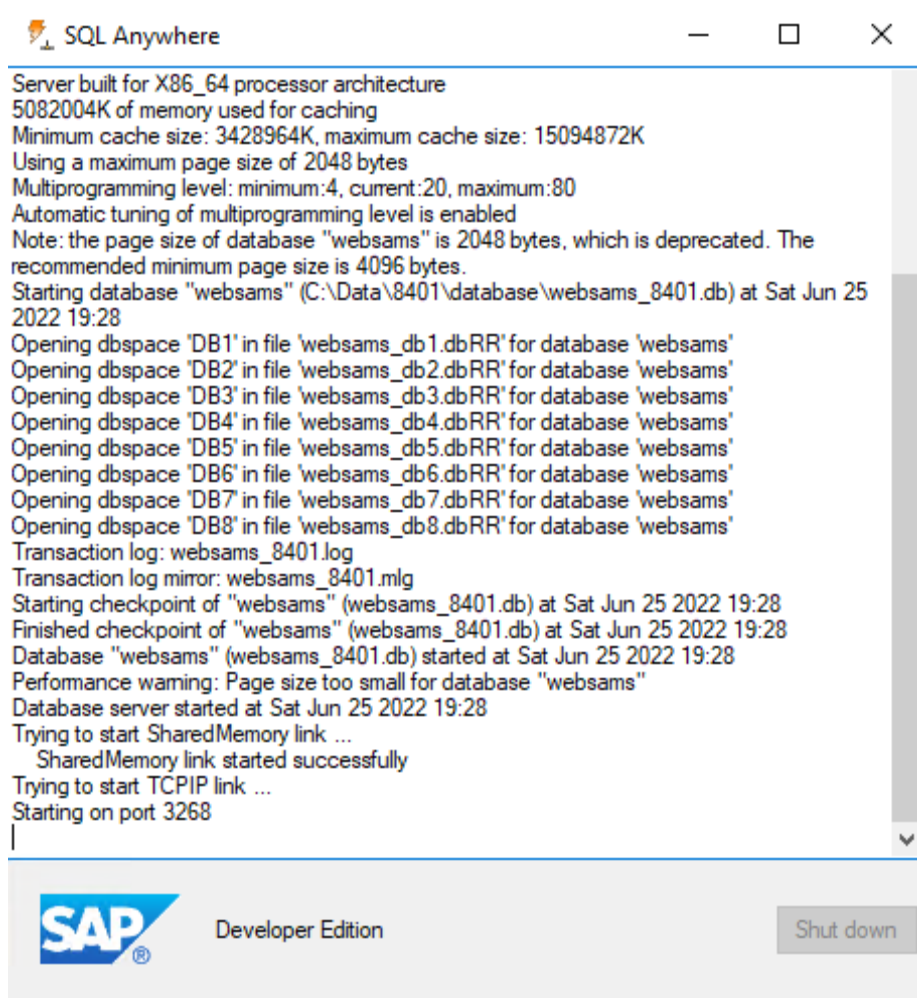


The screenshot shows a Notepad window titled "Untitled - Notepad" with a menu bar (File, Edit, Format, View, Help). The text content is identical to the code block above, with the placeholder {SUID} replaced by the example value 8401. The text is displayed in a monospaced font on a white background.

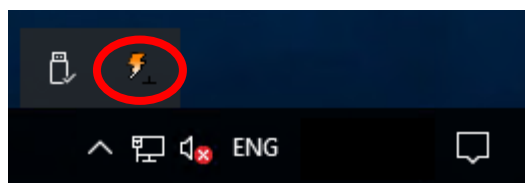
- Save the file with name “startdb.bat” under C:\websams. Make sure the file is saved as a .bat file, not .txt file.



- Double click “**startdb.bat**” to start the database.

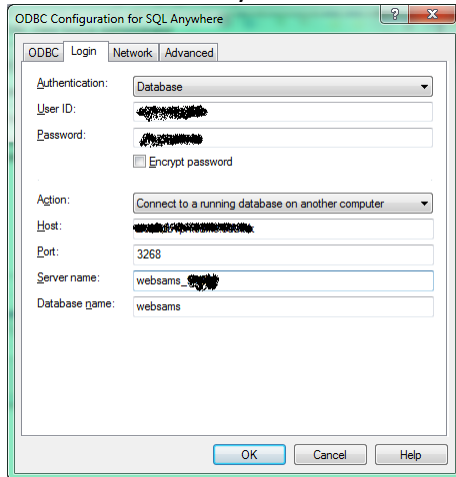


When the database is completely loaded, the window will be automatically minimized as an icon on the taskbar as follows:

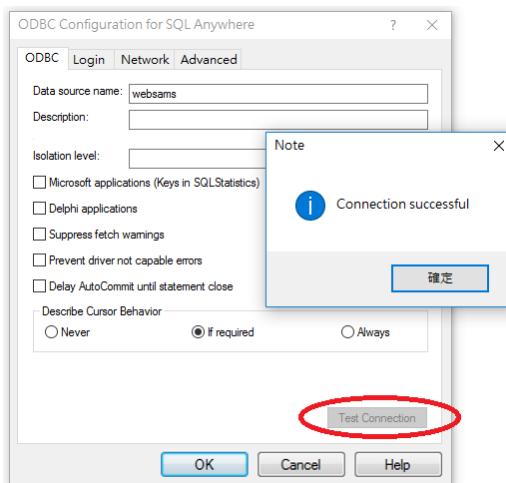


3.3 Configure ODBC in Crystal Reports Workstation

- Login the Crystal Reports workstation (the workstation installed with SAP Crystal Reports Designer 2020 software) by a Windows account with administrator rights.
- Go to Windows Start menu and type **odbc** to search for **ODBC Data Sources Administrator (64-bit)**.
- Under **ODBC Data Sources Administrator (64-bit)**, click **System DSN** tab > click **websams** of **SQL Anywhere 17** > click **configure**.
- Under **Login** tab in **ODBC Configuration for SQL Anywhere**, change the **Host** value to the **IP address** of your Windows server. Keep other fields unchanged.



- Click OK.
- Under **ODBC** tab in ODBC Configuration, click the **“Test Connection”** Button. If the message **“Connection successful”** is prompted, it means the connection is successful. User can modify the Crystal Report Templates on this Crystal Report workstation.



3.4 Shutdown WebSAMS database after use

- On the Windows server running your WebSAMS database, click SQL Anywhere icon → Shut down "websams_{SUID}".

