DISASTER RECOVERY GUIDE

**CLOUD SERVICE FOR
WEB-BASED SCHOOL ADMINISTRATION AND MANAGEMENT
SYSTEM
(WEBSAMS)**

Version 5.0

May 2023

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Background

This document is to support disaster recovery of the WebSAMS of schools when the production site (EDB contractor's data centre) of the Cloud Service for WebSAMS is in a disaster situation, and cannot resume service in a short period of time.

During disaster situation of the production site, school can restore the offsite backup data to the original WebSAMS server located in school campus (referred to as WebSAMS DR Server in this document). The WebSAMS DR server will then provide production service to school users during the disaster period.

Points to Note before Disaster Recovery (DR)

1. This guide is prepared to cater for extreme situation only as in normal situation, the Cloud server could be resumed in a short period of time.

2. By the design of the backup mechanism of the Cloud Service for WebSAMS, WebSAMS data backup files will remain encrypted in the same way throughout the DR procedures until school decrypts them in the WebSAMS DR Server.

3. By the design of the backup mechanism of the Cloud Service for WebSAMS, the latest backup is produced during the daily server maintenance and system backup hours before the event.

4. The WebSAMS DR Server should have installed the latest windows and antivirus updates.

5. The network infrastructure of the WebSAMS DR Server should be retained as recommended in "Kick-Start Guideline for WebSAMS Implementation".

6. Necessary passwords (as listed below) should be arranged by school before performing the DR procedures,
   - Windows Administrator account password of the WebSAMS DR server
   - Windows BitLocker encryption password of the WebSAMS Cloud Server
   - WebSAMS account **sysadmin** password
   - CDS School Key

7. Necessary passwords (as listed below) should be ready if school needs to preview report template during edit or directly connect the WebSAMS data via ODBC.
   - Windows account password of the Crystal Reports workstation (The Windows account should have Windows administrator rights)
   - The passwords of the following accounts for connecting the WebSAMS data via ODBC
   - genuser

- fmpuser
- stfuser

DR Procedures

Assume the Production Site has announced disaster status, and school decides to perform the DR procedures.

1   School acquire the data backup file

There are 2 ways to acquire the data backup file.

1.1   The school could download the data backup file from the **Cloud Service Management** page in WebSAMS before the disaster happens,
Security   Module   →   Cloud   Service   Management   →   WebSAMS Management → Download Database Backup
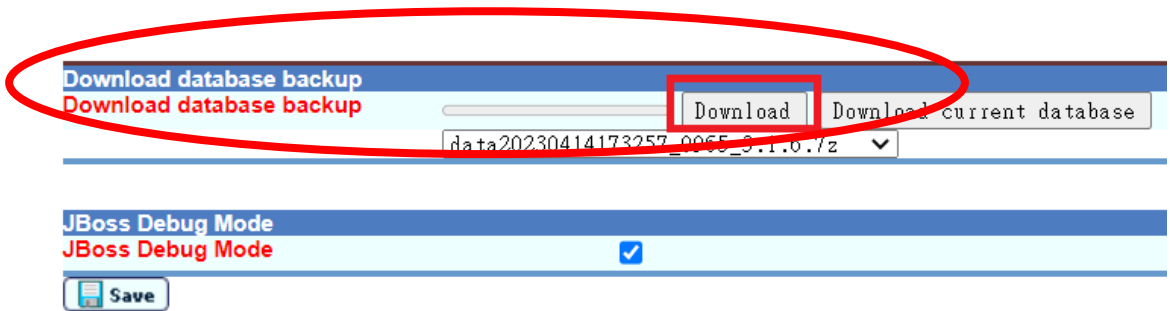
or,

1.2   Contact your School Liaison Officer (SLO) of the WebSAMS team to request for a data backup file.   DVD(s) containing the data backup file provided by the cloud helpdesk will be prepared for the school to collect from EDB office.

(a) The data backup file name can be referred as below:

File Format	dataYYYYMMDDHHMMSS_{SUID}_{Build No}.7z
Example	data20230509031333_8401_3.1.6.7z

(b) However, if the data backup file is larger than 4.7GB (which exceeded the maximum capacity of a DVD), the data backup file will be split and zipped into multiple DVDs.   The file format will be changed as follows :
dataYYYYMMDDHHMMSS_{SUID}_{Build No}-DVD.7z.00x
Below is the example that the data backup file is split into 3 files.

Data20230509031333_0427_3.1.6-DVD.7z.001	9/5/2023 16:13	001 File	4,587,520 KB
Data20230509031333_0427_3.1.6-DVD.7z.002	9/5/2023 16:13	002 File	4,587,520 KB
Data20230509031333_0427_3.1.6-DVD.7z.003	9/5/2023 16:13	003 File	1,882,977 KB

2 Health check and housekeeping of the WebSAMS DR Server

If school requests data backup file through SLO, it normally takes 1-2 working days to prepare the DVD. Before data recovery, school can perform the following preparation work on their WebSAMS DR server:
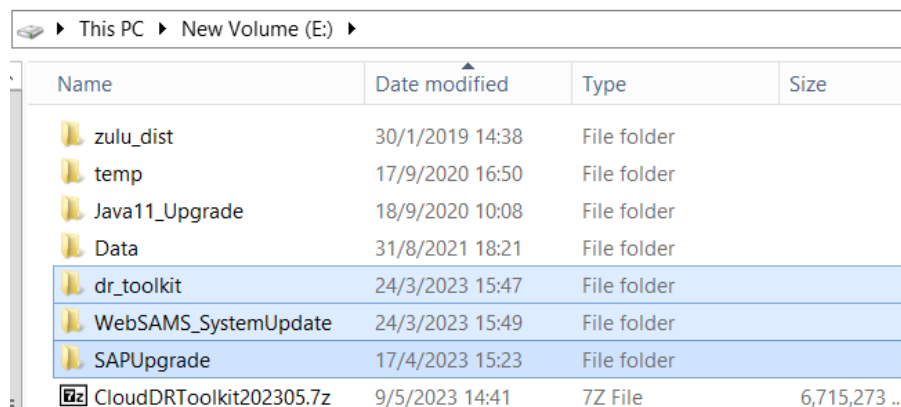
2.1 Install latest Windows updates.

2.2 Install latest virus/malware definition, and perform a full scan on the server.

2.3 Make sure at least C drive and E drive have at least 60GB free disk space.

3 Uninstall SQL Anywhere 16 and SAP Crystal Server 2013

3.1 Download the DR Toolkit zip file from the following URL, and save it to E: drive on the WebSAMS DR server.

https://cdr.websams.edb.gov.hk/Files/cloud/Reference/CloudDRToolkit202305.7z

3.2 Extract the zip file under E: drive. After the extraction, three folders named **SAPUpgrade**, **WebSAMS_SystemUpdate** and **dr_toolkit** will be shown in E: drive of the WebSAMS DR Server.

Name	Date modified	Type	Size
zulu_dist	30/1/2019 14:38	File folder	
temp	17/9/2020 16:50	File folder	
Java11_Upgrade	18/9/2020 10:08	File folder	
Data	31/8/2021 18:21	File folder	
dr_toolkit	24/3/2023 15:47	File folder	
WebSAMS_SystemUpdate	24/3/2023 15:49	File folder	
SAPUpgrade	17/4/2023 15:23	File folder	
CloudDRToolkit202305.7z	9/5/2023 14:41	7Z File	6,715,273 ...

This PC ▶ New Volume (E:) ▶

3.3 Inside the folder E:\SAPUpgrade, double click 01UninstallSAP.bat
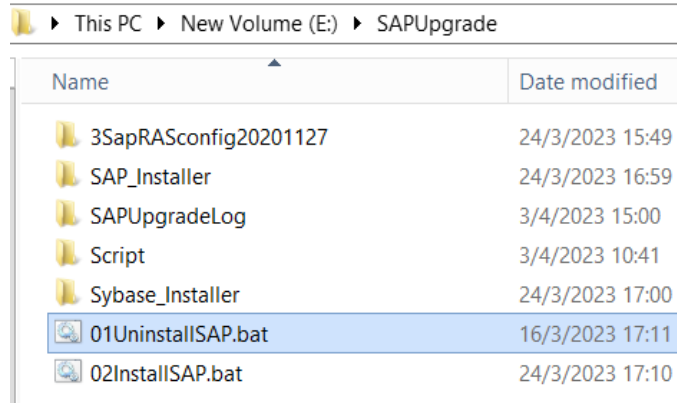
3.4 Commands will prompt and show the progress of the uninstallation of the software.
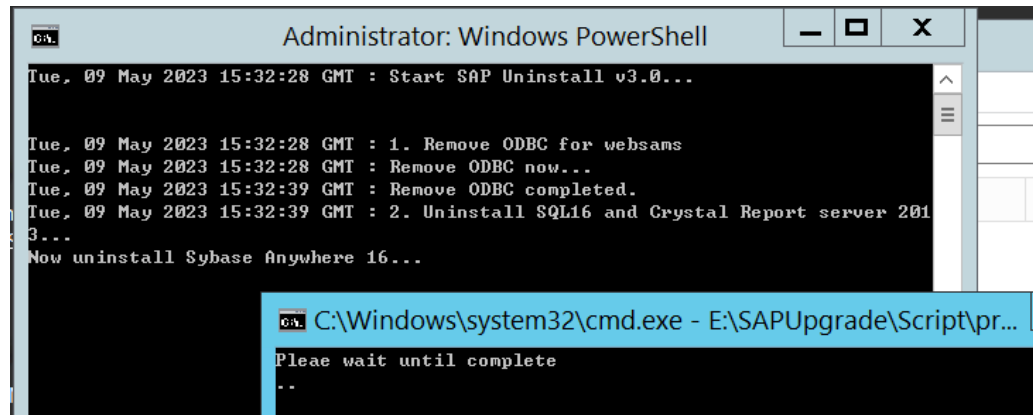
3.5 When the uninstallation is completed, the following screen will be shown. Press <Enter> key to reboot the server. The server will then reboot automatically.

If the message "Both SQL16 and Crystal Report Server 2013 were uninstalled." is not shown, please send all the log files to EDB to check the problem. The log files are located in the folder **E:\SAPUpgrade\SAPUpgradeLog\01UninstallSAP**.
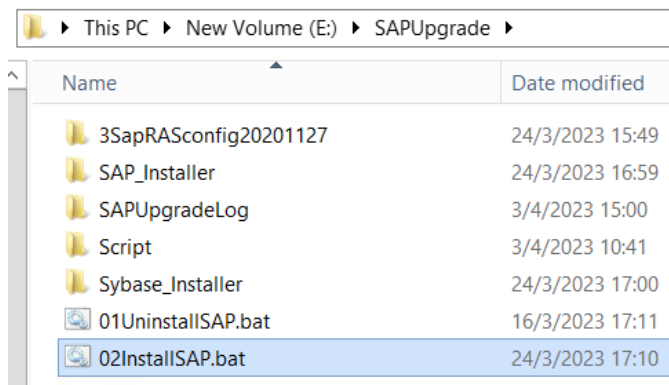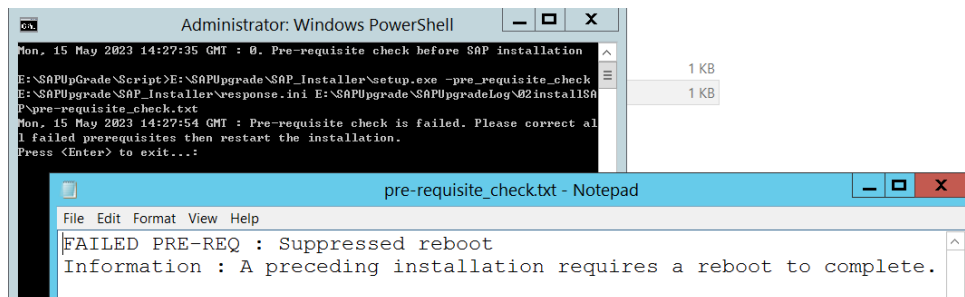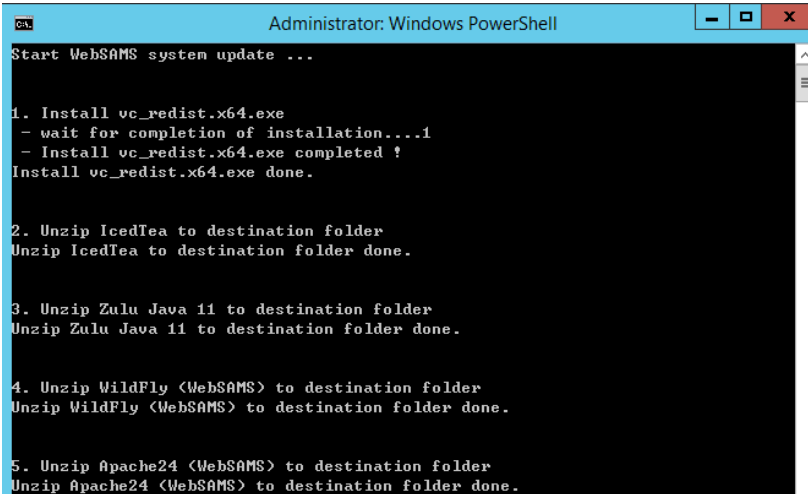
4 Install SQL Anywhere 17 and SAP BusinessObjects BI platform 4.3

4.1 After the server reboot, double click E:\SAPUpgrade\02InstallSAP.bat to start installation.
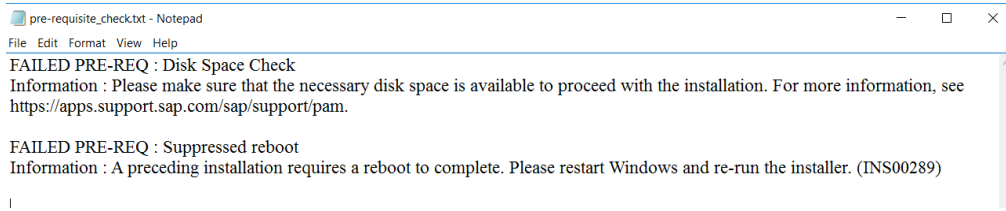
4.2 There will be pre-requisite checking before the installation. If the pre-requisite check is failed, a log file will be shown. Please correct all failed pre-requisites then restart step 4.1

Below is an example of the log file. This example indicated the C drive free space is not enough for the installation, and a server reboot is required
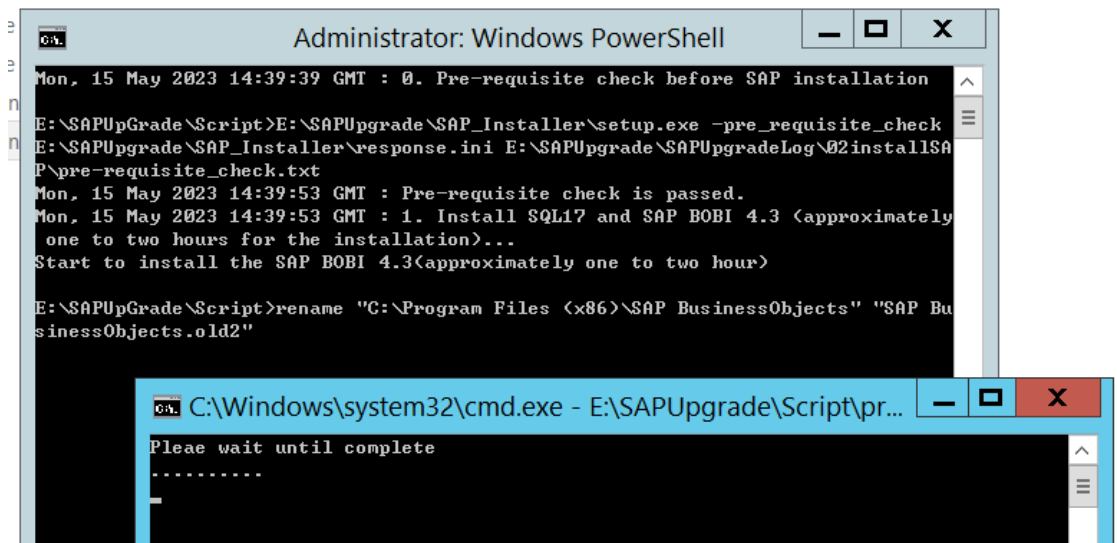
before the installation.
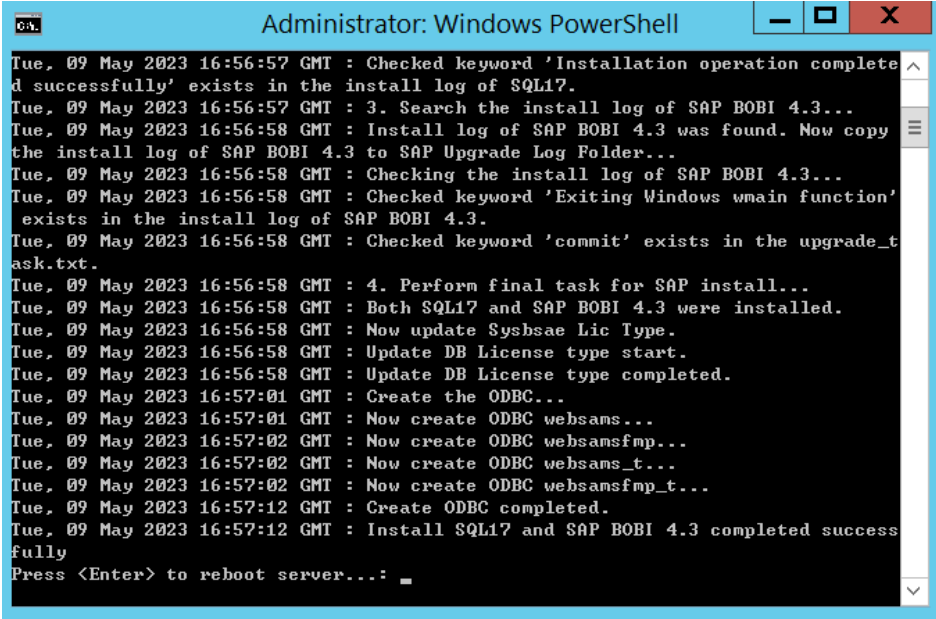
4.3 If the pre-requisite check is passed, the installation will be started. Commands will prompt and show the progress of the installation of the software. Please note the installation will be run approximately one to two hours.

4.4 When the installation is completed, the following screen will be shown. Press <Enter> key to reboot the server. The server will then reboot automatically.

If the message "Install SQL17 and SAP BOBI 4.3 completed successfully" is not shown, please send all the log files to EDB to check the problem. The log files are located in the folder **E:\SAPUpgrade\SAPUpgradeLog\ 02installSAP**.

5   Execute the WebSAMS System Change Toolkit

5.1   Inside the folder **E:\WebSAMS_SystemUpdate**, double click **Start.bat**.
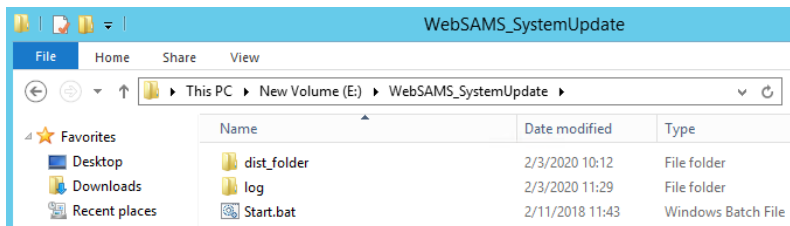
5.2   Commands will prompt and show the progress of the system update.
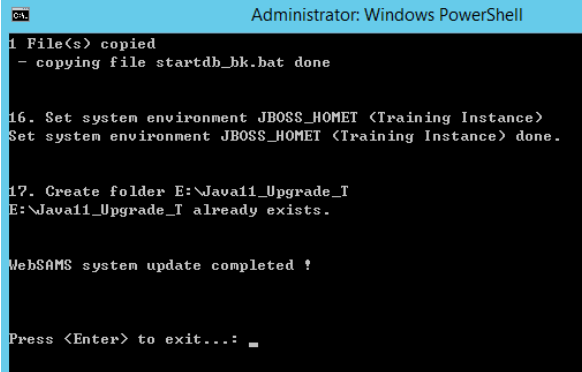
5.3   When the process of system update is completed, the following screen will be shown.   Press <Enter> key to exit the WebSAMS system update.
If the message "WebSAMS system update completed !" is not shown, please

send all the log files to EDB to check the problem.   The log files are located in the folder **E:\WebSAMS_SystemUpdate\log**.

6   Execute DR Toolkit

6.1   Copy the data backup file(s) (refer to sections 1.1 and 1.2) into E: drive of the WebSAMS DR Server.   The file should be in 7z format.

6.2   Inside the folder **E:\dr_toolkit**, double click **Start.bat**.

6.3   Commands will prompt and show the progress of the **DR Toolkit**.   Type "Y" and press <Enter> if the specified file is the latest data backup file.

If multiple files formatted as "dataYYYYMMDDHHMMSS_{SUID}_{Build No}-DVD.7z.00x" are found in the E: drive (please refer to section 1.2(b)), the DR Toolkit will first automatically extract the data backup file from the multiple files.
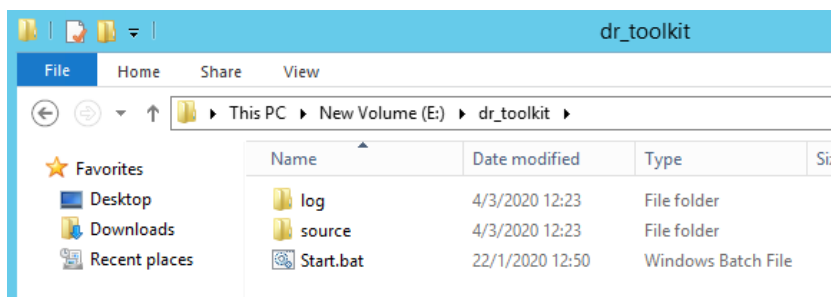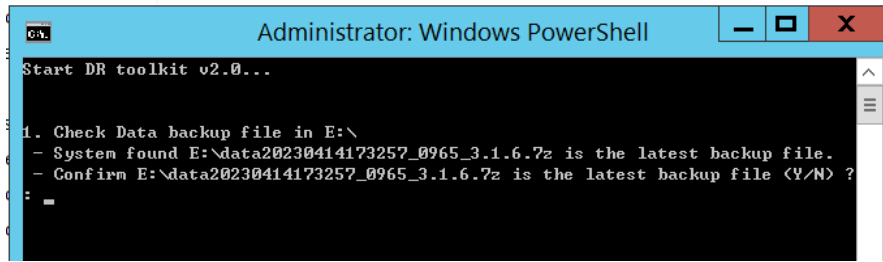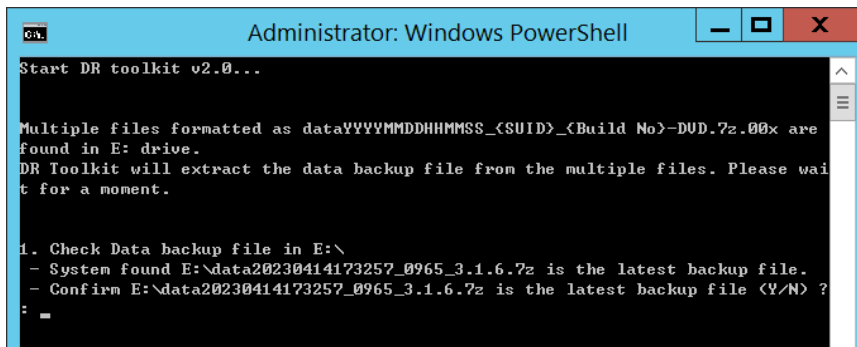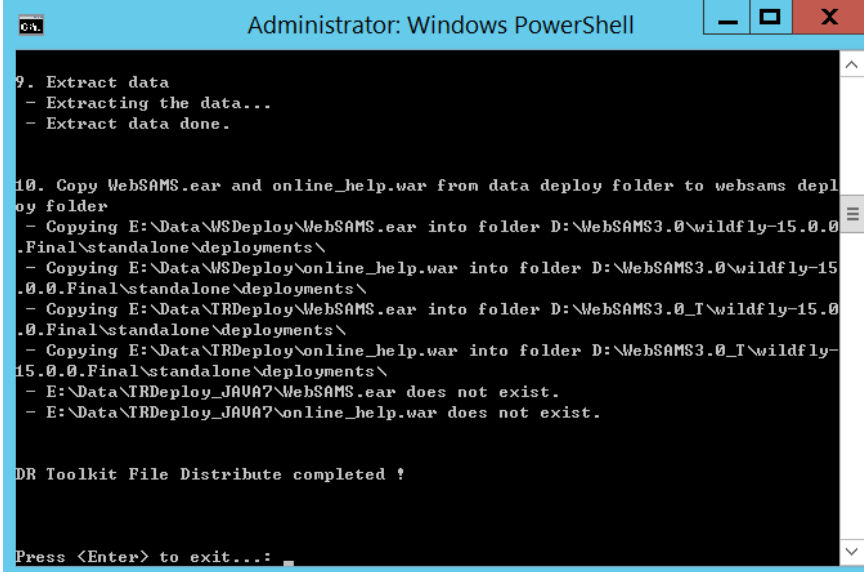

6.4   In below screen, enter the Windows BitLocker password of WebSAMS **Cloud Server** and press <Enter>.
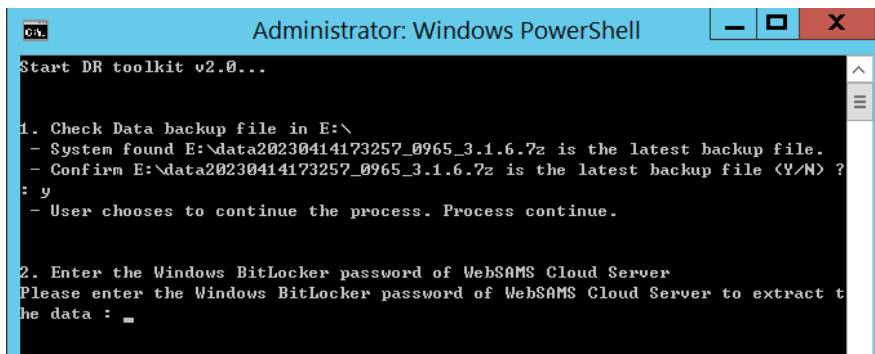
6.5   The **DR toolkit** will continue to process.   When the process of **DR toolkit** is completed, the following screen will be shown.   Press <Enter> key to exit the **DR toolkit**.

If the message "DR Toolkit File Distribute completed !" is not shown, please send all the log files to EDB to check the problem.   The log files are located

in the folder **E:\dr_toolkit\log**.

6.6 Startup WebSAMS application as if it is before migrating to cloud. (Please note the shortcut "3. Start JBoss" is replaced by "3. Start Wildfly")
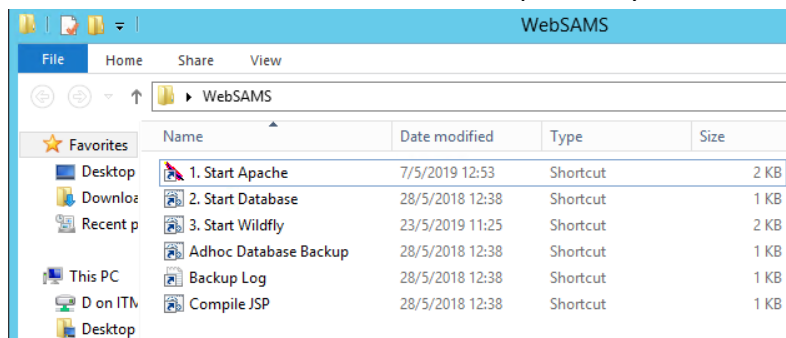
7 **Reconfigure the Crystal Report workstation (optional)**
This setting is NOT required if the school does not preview report template during editing.

7.1 Login the Crystal Report workstation (the workstation installed with SAP Crystal Reports 2020 software) by a Windows account with administrator rights.

7.2 Go to Windows Start menu and type **odbc** to search for **ODBC Data Sources Administrator (64-bit)**.

7.3 Click **System DSN** tab > click **websams** of SQL Anywhere 17 > click **configure**.

7.4   Under **Login** tab in ODBC Configuration, change the **Host** value to be the IP
address of the WebSAMS DR Server.
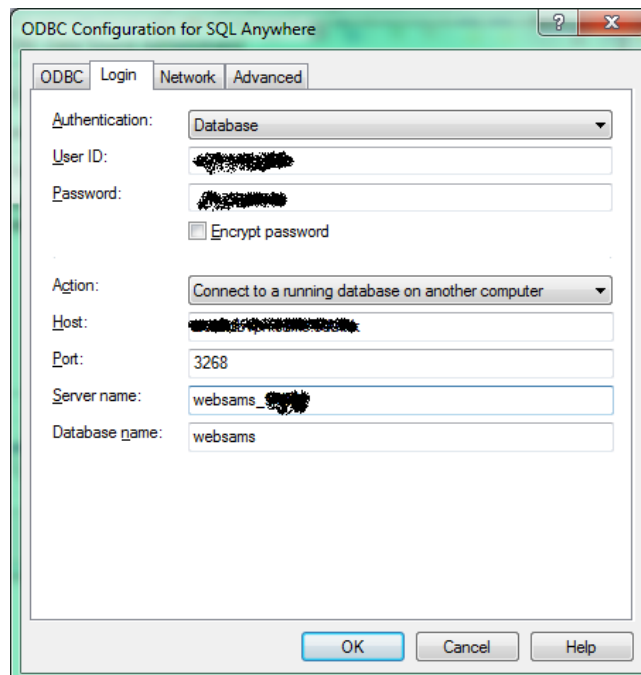
7.5   Under the **ODBC** tab, click **Test Connection**.   Enter any database user name
(e.g. genuser, stfuser) and password.   Connection should be successful.

8   Input ITED network IP Address into WebSAMS

8.1   On a WebSAMS workstation (the workstations located within the WebSAMS network segment), open WebSAMS by Chrome web browser and the original WebSAMS URL before migration to cloud.

8.2   Login with **sysadmin** account.

8.3   Go to **Security module > Configuration > System Configuration**, check **Enable ITED Access**.

8.4   Go to **Security Module > Configuration > IP Config**, check if there is any **IP Address Group** that match with the ITED network addresses.   If no, click **Add**.

8.5   Enter a group name and the IP addresses of the ITED network.
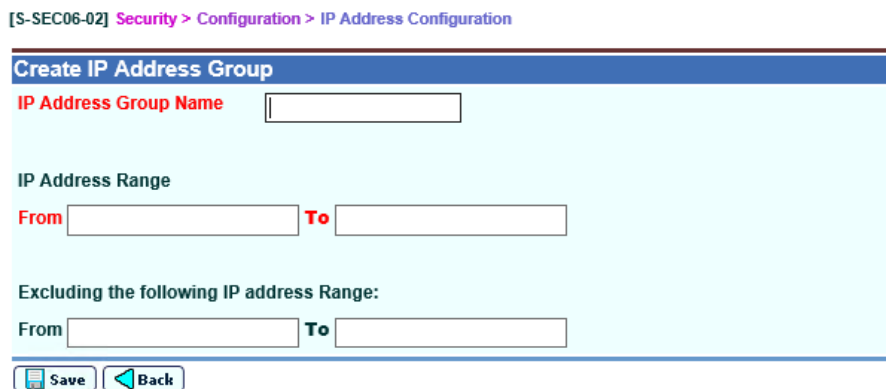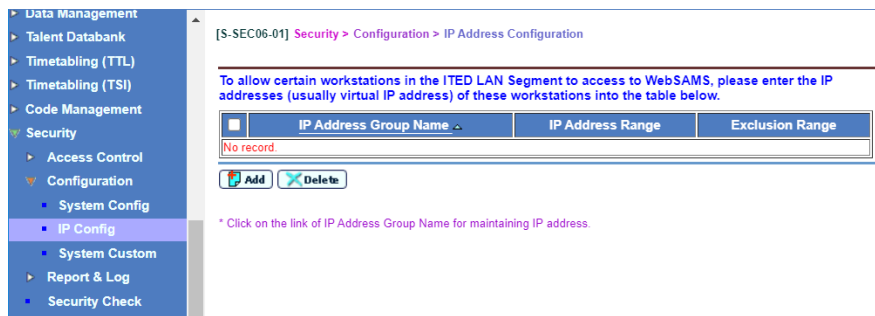
8.6   Click **Save**.

9   Configure SMTP settings for WebSAMS (Optional)

This setting is NOT required if school does not use email functions in WebSAMS.

9.1 On the WebSAMS workstation, with WebSAMS opened and logged in as sysadmin.

9.2 Go to **Security module > Configuration > System Configuration**.

9.3 If school is using the Email module, the option **Enable E-mail Function** should be checked.

9.4 For the field SMTP Server of ISP subscribed by School, change the value to the IP address or domain name of the SMTP server used by school before migration to cloud.

9.5
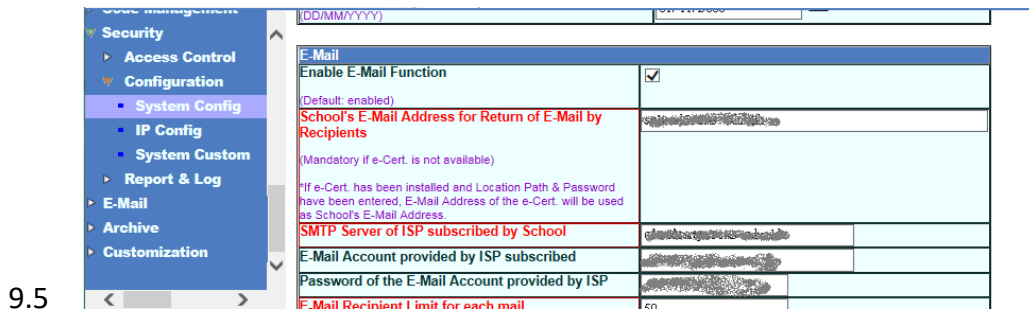
9.6 Click **Save**.

10 Re-enable the Windows Scheduled Tasks related to WebSAMS

10.1 Go to **Windows Start menu > Administrative Tools > Task Scheduler**.

10.2 Re-enable the tasks **WebSAMS post-backup** and **WebSAMS pre-backup**.
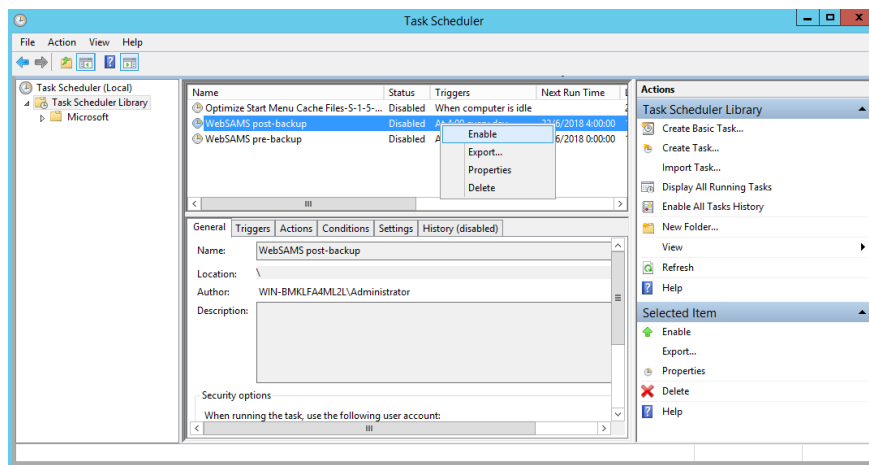
11 User Acceptance Test

School should test the normal functions of WebSAMS.

11.1 Please refer to Annex I for the procedures and complete section 1 of Annex II.

11.2 Random check some school data in WebSAMS to see if there is any irregularity.

12 CDS Registration

12.1 Log into the WebSAMS System in any workstation.

12.2 Go to CDS > Registration on the left menu.   In the "Registration" screen, click **Start**.

12.3 Input the correct CDS School Key and click **Encrypt**.

12.4 Click **Encrypt**.   CDS registration is said to be completed when Current

Status change to **Registered**.
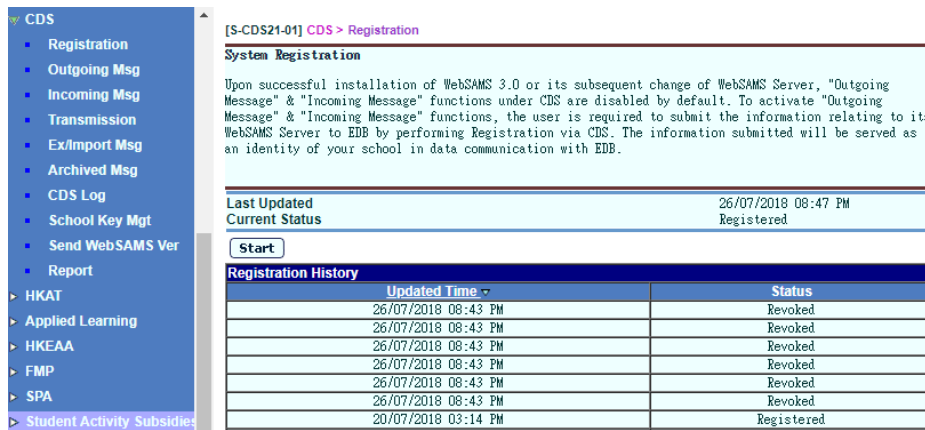
12.5 Go to CDS > Send WebSAMS Version.　　Click **Start** to send Version Number.
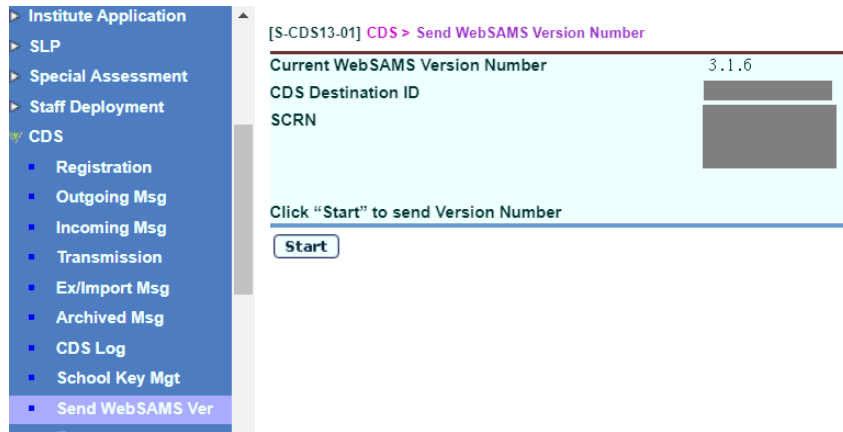
12.6 Go to CDS > Outgoing Message > Maintain Message screen.　　Click the message "SCRN, WebSAMS versions" and then encrypt the message.

12.7 The message status should become "Processing".

[S-CDS01-01] CDS > Outgoing Message > Maintain Message

Encryption is successful!! Message(s) is sending at backend.

Maintain Message   Process Message   Upload Data

Page 1 ∨ of 27 ▶ Bottom

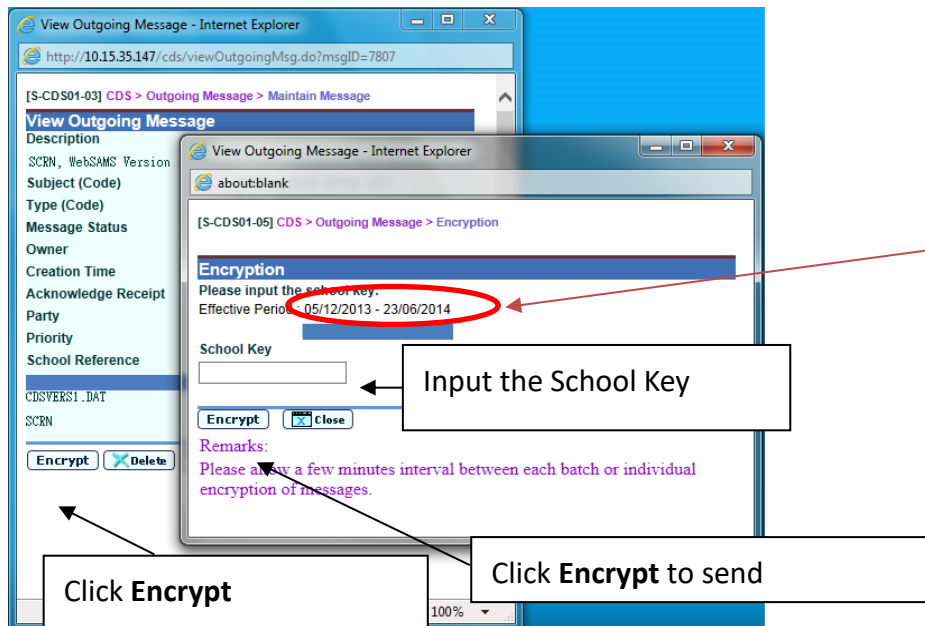|		Message Status	Description	Creation Time ▽	Ack Time	Subject (Code)	Type (Code)	Party	Priority	School Reference	Owner
📎	☐	Processing	SCRN, WebSAMS Version	2 8 10:23 AM		SAMS version setup (AI)	Data (DAT)	EDB	Normal		super1

12.8 Refresh the screen by clicking "CDS > Outgoing Msg" until the status has become "Sent" or "Received".

[S-CDS01-01] CDS > Outgoing Message > Maintain Message

Maintain Message   Process Message   Upload Data

Page 1 ∨ of 27 ▶ Bottom

		Message Status	Description	Creation Time ▽	Ack Time	Subject (Code)	Type (Code)	Party	Priority	School Reference	Owner
📎	☐	Sent	SCRN, WebSAMS Version	2 8 10:23 AM		SAMS version setup (AI)	Data (DAT)	EDB	Normal		super1

12.9 Please complete section 2 and section 3 of Annex II and submit it to the EDB.

13 Resumption of cloud service

When the cloud service resumes normal, school could migrate their data back to the cloud server following the steps in the User Guide for Migration Toolkit.
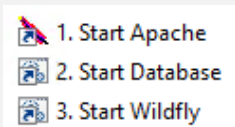
Annex I -User Acceptance Test

1. WebSAMS Application

1.1. Start-up of WebSAMS System

☞
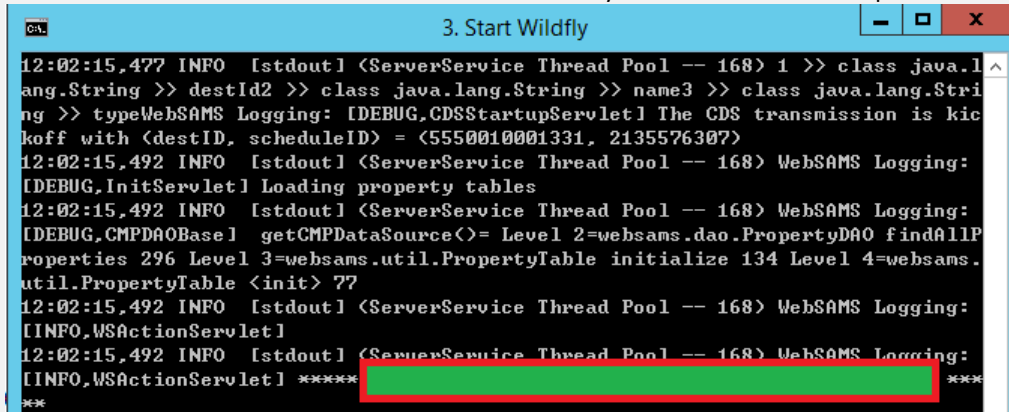
Test 1	What is the message shown in the position as masked below?
1.	In WebSAMS server, open the folder named "WebSAMS" and execute the shortcuts in sequence as shown: **Path:** Desktop > "WebSAMS" folder
2.	The Wildfly console will be launched. Wait for a few minutes until a message is shown on the screen which indicates that the WebSAMS Production System has been started up successfully.

1.2. Version of WebSAMS System

Test 2	What is the WebSAMS version shown in the position as masked below?
1.	In WebSAMS server, open Chrome web browser and go to the WebSAMS login page. Please be reminded to use the old URL before migration to cloud, not the cloud URL.

1.3. Account Name & Password

Test 3	Can you successfully log into the system with the sysadmin account?
1.	In the WebSAMS server, open Chrome web browser and go to the WebSAMS login page.
2.	Log into the "sysadmin" account.

1.4. Software Components

Test 4	Does the Anti-Virus software exist?
1.	Click "Start" > "Control Panel" > "Programs and Features"
2.	Locate the anti-virus software in WebSAMS server.
3.	Check if the anti-virus is up-to-date.

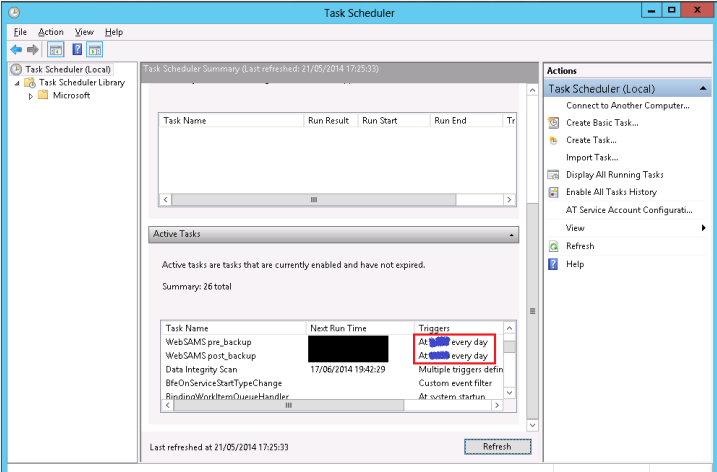| Test 5	Is your server up-to-date?
1.	Click "Start" > "Windows Setting" > "Update & security"
2.	Go to Windows Update and look for message "Your device is up to date" under Update Status.

1.5. Internet Connectivity

☞

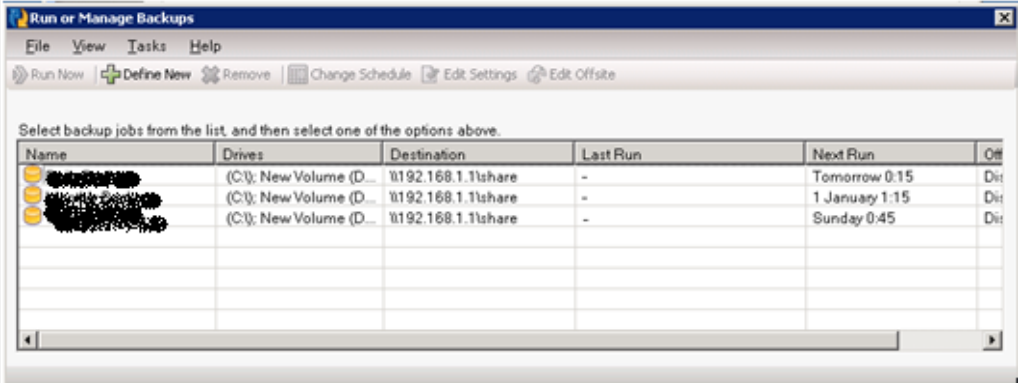| Test 6	Can the website be loaded successfully?
1.	Open web browser in the WebSAMS server and go to the EDB website. **URL:** https://www.edb.gov.hk/

1.6. Scheduled Backup Job

☞

Test 7	Record the pre-backup and post-backup time.
1.	Open the "Task Scheduler" window in WebSAMS server. **Path:** Start > Administrative Tools > Task Scheduler

☞

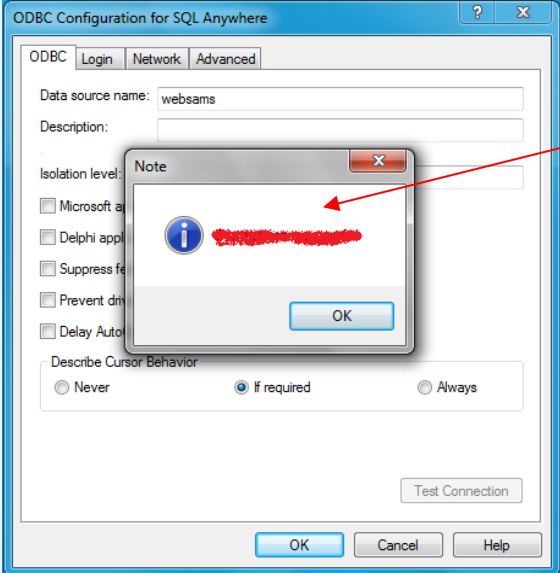| Test 8	Record the name of the 3 scheduled tasks (daily backup, weekly backup and monthly backup) for backing up the system to the NAS/DAS.
1.	Launch the application for system backup in WebSAMS server.
2.	Open the summary that listed all scheduled backup tasks and record the name of the required tasks: An example screen is shown for reference as follows:

2. WebSAMS Workstation

2.1. ODBC Test (Optional)

This test is NOT required if school does NOT use ODBC.

Test 9	What is the message as masked in screen below?
	(All the three accounts of **genuser, fmpuser** and **stfuser** should be tested one by one. **fmpuser** account is not applicable to government school.)
1.	Open the ODBC Configuration window of **websams** in **System DSN** tab. **Path:** Start > Control Panel > Administrative Tools > Data Source
2.	In Login tab, input the user name (e.g. "genuser") with the password given.
3.	Go back to ODBC tab, click "Test Connection".

Record the message

2.2. Accessing WebSAMS Website

Test 10	Can you access the WebSAMS website successfully?
1.	Select a workstation within the WebSAMS segment.
2.	Open Chrome web browser and go to the WebSAMS website by entering the URL for the WebSAMS of the school.

School Administration &
Management System

Web SAMS 網上校管系統

User ID [_____]
Password [_____]
[Login]

Central Document Repository
網上校管系統資料庫

Log on using CLO
使用統一登入系統登錄

WebSAMS Version 3.1.6
(RESTRICTED) Access to this system and the information / materials contained therein are restricted to authorized users only.
(限閱) 只容許已授權的用戶使用此系統及存取其資料
Best viewed with 800X600 resolution
Copyright © 2009. Education Bureau. The Government of the HKSAR. All Rights Reserved.

2.3. WebSAMS System Login

☞

Test 11	Can you successfully log into the WebSAMS System?
1.	In a workstation in WebSAMS segment, open Chrome web browser and go to the WebSAMS website.
2.	Log into the "sysadmin" account.

3.   Generation of Reports

☞

Test 12	Can you generate and preview the report successfully?
1.	Log into the WebSAMS System in any workstation.
2.	Select "Report" in Student module or in other modules which support "Report" function.
3.	Select the appropriate Category and Language.
4.	Click the "Search" button to view the list of reports under the Category selected.
5.	Click on the Report name to view the corresponding templates.
6.	Click on the appropriate template for producing the report.
	Report Name (ID) ▷**Admission from POA List (R-STU070-E)** ▷**Admission from SFP List (R-STU002-E)** ▷**Admission from SOA List (R-STU001-E)** ▷**Class List (with Age and Guardian English Name) (R-STU007-E)** ▷**Class List (with English Name and Sex) (R-STU004-E)** ▷**Class List (with English Name, Chinese Name and Sex) (R-STU005-E)** ▷**Class List (with English Name, Chinese Name, Sex, Nationality, Ethnicity a Home (R-STU076-E)** ▷**Class List (with English Name,Sex and School House) (R-STU006-E)** ▷**Class List (with Father and Mother Contact) (R-STU010-E)** ▷**Class List (with STRN, DOB and Guardian Chinese Name) (R-STU009-E)** ▷**Class List (with STRN, DOB and Guardian English Name) (R-STU008-E)**
7.	Click "Preview & Print".

8. The report will be shown.

Annex II - User Acceptance Checklist for school

Please complete this checklist and submit it to the WebSAMS SLO by email.

Section 1 - Acceptance Test

Date of WebSAMS Disaster Recovery (DR)**: _____**

Test Cases: Please refer to the **Annex I: User Acceptance Test** for the procedure of each test item.

Item No.	Test Items	Test Results / Answers
1. WebSAMS Application		
1.1	Start-up of WebSAMS System	Test 1 : _____
1.2	Version of WebSAMS System	Test 2 : _____
1.3	Account Name & Password	Test 3 : ☐ Yes ☐ No
1.4	**Software Components**	
	Anti-Virus	Test 4 : ☐ Yes ☐ No
	Windows Update	Test 5 : ☐ Yes ☐ No
1.5	Internet Connectivity	Test 6 : ☐ Yes ☐ No
1.6	Scheduled Backup Job	Test 7 : Pre-backup _____ Post-backup _____ Test 8 : _____ _____
2. WebSAMS Workstation		
2.1	ODBC Test (Optional)	Test 9 : **genuser** _____ **fmpuser** ☐ _____ ☐ N/A (Government school) **stfuser** _____
2.2	Accessing WebSAMS Website	Test 10 : ☐ Yes ☐ No
2.3	WebSAMS System Login	Test 11 : ☐ Yes ☐ No
3. Generation of Reports		Test 12 : ☐ Yes ☐ No

Remarks (if any):

For Office Use: (WebSAMS support Team)

Section 2 – CDS Registration

☐   I confirm that CDS is registered

Section 3 - Acknowledgement

This is to confirm that my school has conducted the above criteria test cases completely and acknowledge that disaster recovery exercise of WebSAMS is performed successfully.
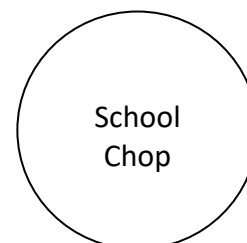
Signature of Principal   : _____

Name of Principal   : _____

Name of School   : _____

School Number   : _____

Date   : _____

School Chop

_____

For Office Use:

_____

- End –