



# **COMPUTER OPERATING PROCEDURES MANUAL**

## **CLOUD SERVICE FOR WEB-BASED SCHOOL ADMINISTRATION AND MANAGEMENT SYSTEM (WEBSAMS) 2018-2021 FOR SCHOOL**

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## TABLE OF CONTENTS

1.	PURPOSE .....	1-1
2.	BACKGROUND .....	2-1
3.	SCOPE .....	3-1
4.	CLOUD SERVICE MANAGEMENT PAGE IN WEBSAMS .....	4-1
5.	CLOUD HELPDESK .....	5-1
6.	COMMUNICATION NETWORK CONFIGURATION.....	6-1
7.	ACCOUNT/PASSWORD/KEY/EQUIPMENT FOR CLOUD.....	7-1
8.	COMPUTER SYSTEM INFORMATION (WEBSAMS SERVER ON THE CLOUD).....	8-1
8.1	IMPORTANT SYSTEM INFO .....	8-1
8.1.1	URL to access the WebSAMS .....	8-1
8.1.2	Software configuration .....	8-1
8.1.3	System files .....	8-1
8.1.4	The 7-zip software .....	8-1
8.2	COMPUTER SYSTEM OPERATING - NORMAL .....	8-2
8.2.1	Power ON/OFF the WebSAMS server on the cloud.....	8-2
8.2.2	Reboot the WebSAMS server on the cloud .....	8-2
8.2.3	Start/Stop the Training Instance.....	8-2
8.2.4	Windows Administrator password change.....	8-2
8.2.5	BitLocker password change .....	8-3
8.2.6	Update malware signature of anti-malware software .....	8-3
8.2.7	Windows OS Updates .....	8-4
8.2.8	WebSAMS Upgrade .....	8-4
8.2.9	School campus Internet IP address change .....	8-4
8.2.10	Password management .....	8-4
8.3	COMPUTER SYSTEM OPERATING – ABNORMAL .....	8-5
8.3.1	Taking screen dumps .....	8-5
8.3.2	Fault reporting procedures .....	8-6
8.4	APPLICATION OPERATING – RESTART .....	8-7
8.5	OPERATION HOUSEKEEPING JOBS .....	8-8
8.5.1	Server Log checking .....	8-8
8.5.2	Server reboot .....	8-8
8.5.3	WebSAMS data backup .....	8-8
8.5.4	Training Instance Data backup .....	8-9

## 1. PURPOSE

The purpose of this document is to provide details on how to conduct operational tasks for the WebSAMS servers of schools participated in the Cloud Service for WebSAMS 2018-2021.

## 2. BACKGROUND

The WebSAMS is an administrative computer system currently used by around 1,000 public sector schools, including government, aided and caput schools as well as local schools under the Direct Subsidy Scheme (DSS schools) in Hong Kong. It also performs electronic data exchange with the Education Bureau (EDB) / other related parties through Communication and Delivery System (CDS).

Originally, the WebSAMS is a school-based system with servers installed and operated in each school campus. Since 2018, the Cloud Service for WebSAMS has relocated the WebSAMS of a number of schools from school campus to an EDB contractor's cloud platform for centralized server management and operational support.

### 3. SCOPE

The Cloud Contractor is responsible for most of the maintenance and operational tasks of the hardware and software hosted on the cloud (e.g. routine data backup, file housekeeping, monitoring, etc.). These tasks are out of the scope of this document. **This document mainly focuses on the operation procedures responsible by school staff.**

The WebSAMS server and network architecture on the cloud is not completely the same as that in school campus. The roles of HTTP Server and WebSAMS router on the cloud are replaced by some other enterprise grade equipment and maintained by the Cloud Contractor, relieving workload of school staff on related operational tasks. Nevertheless, relevant sections of the [WebSAMS Security Guide and Recommended Practice](#) continue to apply on the cloud. School staff do not need to login the Operating System (OS) of the Cloud Server to perform operational tasks. Most of the operational tasks (e.g. startup/stop of WebSAMS) are automated. The remaining tasks can be performed through,

- a) the **Cloud Service Management** page in WebSAMS; and
- b) the **Cloud Helpdesk**, a helpdesk service provided by the Cloud Contractor

WebSAMS on the cloud will provide online service between **0600 and 0100**. It will be offline for maintenance (e.g. backup, file housekeeping, etc.) between **0100 and 0600** under normal operation.

## 4. CLOUD SERVICE MANAGEMENT PAGE IN WEBSAMS

A new sub-section under the Security Module is added for WebSAMS on the cloud. It contains the following sub-menu and functions:

- OS Administration (操作系統管理)
  - Change Windows Administrator Password (更改視窗管理員密碼)
  - Reset Windows Administrator Password (重設視窗管理員密碼)
  - Change BitLocker Password (更改BitLocker密碼)
  - Reset BitLocker Password (重設BitLocker密碼)
  - Download BitLocker Recovery Key (下載BitLocker修復金鑰)
- Reboot Windows OS (重啟操作系統)
- WebSAMS Management (網上校管系統管理)
  - Download Database Backup (下載資料庫備份)
  - JBoss Debug Mode (JBoss偵錯模式)
  - Training Instance (培訓系統)
  - WebSAMS Log (網上校管系統日誌)
  - WebSAMS Upgrade (網上校管系統版本升級)
  - Execute Hotfix Patch (執行修補程式)

This document only advises which functions should be used for school to perform related operational tasks. For detailed procedures of using these functions, please refer to the [User Manual for Cloud Service Management Page](#).

This **Cloud Service Management** page can only be accessed when school staff are logging in WebSAMS by

- VPN Workstation; and
- WebSAMS user accounts belonging to one of the following user groups,
  - SCHOOL\_HEAD (School Head)
  - CS\_ADMIN (Cloud Service Administrator)
  - CS\_SUPP (Cloud Service Support)

The functions under OS Administration can only be accessed by CS\_ADMIN group users.



## 5. CLOUD HELPDESK

A helpdesk service is provided by the Cloud Contractor for schools to make service requests related to the WebSAMS server on the cloud, from simple enquiry of server health status to server reboot/backup.

Each school should authorise staff to act as the contact persons for the **Cloud Helpdesk**. Only these authorised staff can make service requests through the **Cloud Helpdesk**. The **Cloud Helpdesk** will verify the identity of the requester before providing any service.

The **Cloud Helpdesk** can be reached by either phone call or email:

<https://cdr.websams.edb.gov.hk/聯絡我們/>

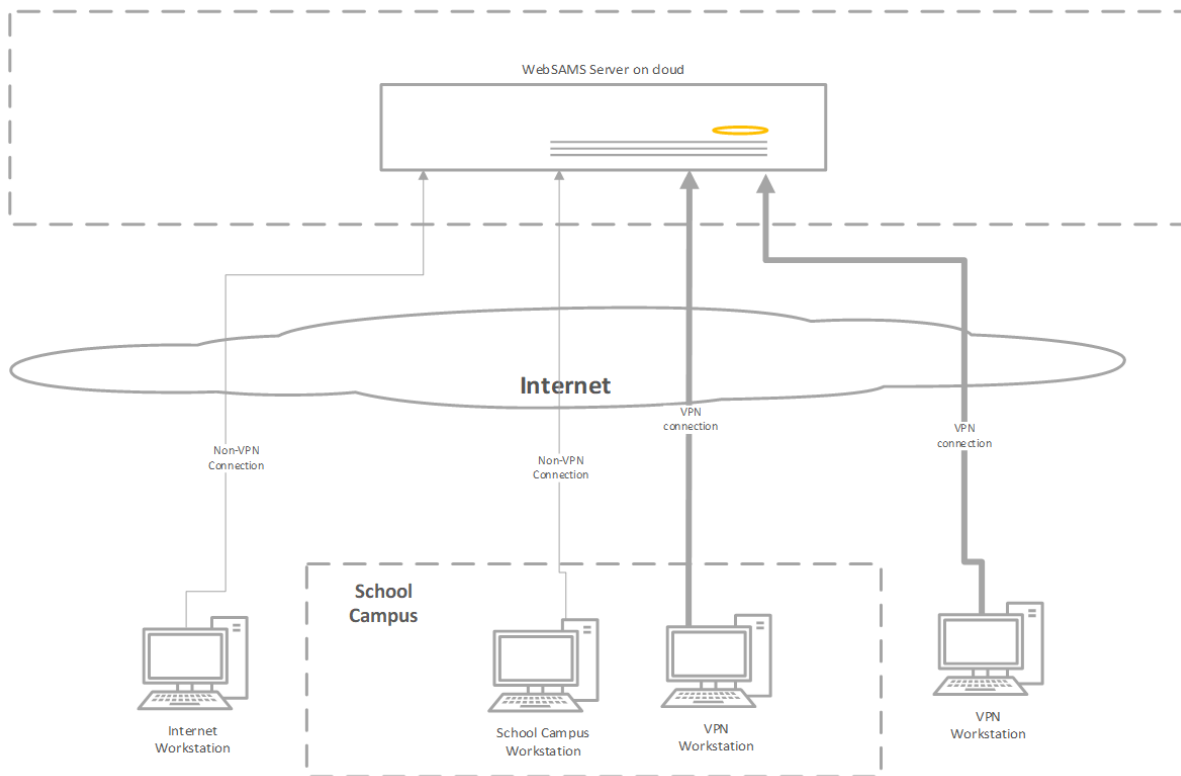
Operation hours: 0600 to 0100

### Important Note

The **Cloud Helpdesk** is only responsible for the cloud server-related requests. For enquiry or support request of the functions in WebSAMS, please contact **WebSAMS Helpdesk**:

<https://cdr.websams.edb.gov.hk/聯絡我們/>

## 6. COMMUNICATION NETWORK CONFIGURATION



School staff can access WebSAMS by 3 types of workstations.

### VPN Workstation

A VPN workstation refers to any PC that has established a Virtual Private Network (VPN) connection with the cloud. VPN login username, password and token will be required for the connection. This type of workstation is equivalent to **WebSAMS workstation** in original WebSAMS architecture at school campus. It has full access right to WebSAMS, and is the only type of workstation that can,

- Access the **Cloud Service Management** page in WebSAMS

### School Campus Workstation

A school campus workstation refers to any PC that is located inside the school campus. To identify the school campus workstation, Internet IP addresses of the school campus need to be configured in WebSAMS. It is equivalent to the **ITED workstation** in original WebSAMS architecture at school campus.

### Internet Workstation

An Internet workstation refers to any PC that does not belong to the above 2 types of workstation. It is equivalent to the **Internet Workstation** in original WebSAMS architecture at school campus.

## 7. ACCOUNT/PASSWORD/KEY/EQUIPMENT FOR CLOUD

Before migrating to the cloud, some user accounts/passwords/keys and related equipment (e.g. VPN token) are set up by the school itself or assigned to each school by EDB or the Cloud Contractor to support the operation of the cloud platform. The items are summarized as follows:

Service Area	Account / Password / Key / Equipment	Required when
VPN Connection	VPN user name	The VPN login process requires all 3 information: VPN user name, password and the VPN token.
	VPN password	
	VPN token to generate a unique one-time passcode for VPN login	
Helpdesk Service provided by the Cloud Contractor	Helpdesk identity verification system user name	These 3 information: user name, password, and PIN are required for Helpdesk operator to verify the identity of the requester under different situations.
	Helpdesk identity verification system password	PIN is required during phone call to the Cloud Helpdesk.
	Helpdesk phone PIN	User name and password are required for specific service requests such as server reboot/backup. Helpdesk operator will send an email to the requester, with an URL to a login system. School staff need to login the system to identify him/herself.

WebSAMS server on the cloud	Windows Administrator password	School's data on the cloud is protected by these passwords and keys.  For daily operation of WebSAMS on the cloud, school does not need to enter the Windows Administrator password. It is required only when unexpected problem occurred and login to the Windows OS is needed.
	Windows BitLocker password	Microsoft Windows BitLocker technology is used to encrypt school's data drive, which does not affect the operation of WebSAMS program. Hence, for daily operation of WebSAMS on the cloud, school does not need to enter the BitLocker password nor provide the Recovery Key for decryption. The BitLocker password or Recovery Key is used when unexpected problem occurred and manual decryption of the server drive is needed to salvage the data inside.
	Windows BitLocker Recovery Key	However, when school downloads WebSAMS data backup and the Recovery Key from the new <b>Cloud Service Management</b> page in WebSAMS, the BitLocker password is used to protect these downloaded files. After downloading, school staff need to key-in the BitLocker password to extract the files from protected file archive.

## 8. COMPUTER SYSTEM INFORMATION (WEBSAMS SERVER ON THE CLOUD)

### 8.1 IMPORTANT SYSTEM INFO

#### 8.1.1 URL to access the WebSAMS

<https://xxxxx.sams.edu.hk>

Note: xxxxx is the part of cloud WebSAMS URL determined by different schools.

#### 8.1.2 Software configuration

The software used by WebSAMS on the cloud is similar to the original WebSAMS at school campus and is listed as follows:

- SAP Sybase SQL Anywhere
- SAP Crystal Server
- WildFly Application Server
- Dyna Font

But some software version should be newer than original school server, due to software version update.

#### 8.1.3 System files

##### **WebSAMS database backup file**

School staff can download the encrypted, latest backup file of the WebSAMS database produced during the daily maintenance hours (0100 – 0600) via the Cloud Service Management page at **Security > Cloud Service Management > WebSAMS Management > Download Database Backup**.

##### **System log files**

If requested by the WebSAMS helpdesk, school staff can download and submit the WebSAMS log files for troubleshooting via the Cloud Service Management page at **Security > Cloud Service Management > WebSAMS Management > WebSAMS Log**.

#### 8.1.4 The 7-zip software

Some downloaded files (e.g. WebSAMS data backup, BitLocker Recovery Key) are encrypted in the 7-zip file format (.7z). The 7-zip software will be required to decrypt them.

7-zip software can be downloaded from:

<https://www.7-zip.org/>

## 8.2 COMPUTER SYSTEM OPERATING - NORMAL

### 8.2.1 Power ON/OFF the WebSAMS server on the cloud

School staff cannot directly power ON/OFF the WebSAMS server on the cloud. Please contact the **Cloud Helpdesk** to make a service request.

### 8.2.2 Reboot the WebSAMS server on the cloud

School staff can contact the **Cloud Helpdesk** to make a service request. Alternatively, school staff can reboot by themselves as follows,

1. Connect VPN and login WebSAMS by a SCHOOL\_HEAD, CS\_ADMIN or CS\_SUPP group user account.
2. Go to **Security > Cloud Service Management > Reboot Windows OS**.

### 8.2.3 Start/Stop the Training Instance

1. Connect VPN and login WebSAMS by a SCHOOL\_HEAD, CS\_ADMIN or CS\_SUPP group user account.
2. Go to **Security > Cloud Service Management > WebSAMS Management > Training Instance**

### 8.2.4 Windows Administrator password change

#### **If school staff have the existing password**

1. Connect VPN and login WebSAMS by a SCHOOL\_HEAD or CS\_ADMIN group user account.
2. Go to **Security > Cloud Service Management > OS Administration > Change Windows Administrator Password**.

#### **If school staff have forgotten/lost the existing password**

1. Contact WebSAMS School Liaison Officer (SLO). Fill in a request form for resetting password and submit it to the EDB.

2. The EDB will enable the password reset function in WebSAMS by a CDS message. The function will only be enabled for 24 hours for school to reset the password once.
3. Connect VPN and login WebSAMS by a SCHOOL\_HEAD or CS\_ADMIN group user account.
4. Go to **Security > Cloud Service Management > OS Administration > Reset Windows Administrator Password.**

#### 8.2.5 BitLocker password change

##### **If school staff have the existing password**

1. Connect VPN and login WebSAMS by a SCHOOL\_HEAD or CS\_ADMIN group user account.
2. Go to **Security > Cloud Service Management > OS Administration > Change BitLocker Password.**

##### **If school staff have forgotten/lost the existing password**

1. Contact WebSAMS School Liaison Officer (SLO). Fill in a request form for resetting password and submit it to the EDB.
2. The EDB will enable the password reset function in the WebSAMS by a CDS message. The function will only be enabled for 24 hours for school to reset the password once.
3. Connect VPN and login WebSAMS by a SCHOOL\_HEAD or CS\_ADMIN group user account.
4. Go to **Security > Cloud Service Management > OS Administration > Reset BitLocker Password.**

#### 8.2.6 Update malware signature of anti-malware software

The Cloud Contractor will regularly update the signature. School staff do not need to perform this task for the Cloud Server. But school staff should regularly perform this task for the original WebSAMS server at school campus.

### 8.2.7 Windows OS Updates

The Cloud Contractor will regularly update the Windows OS. School staff do not need to perform this task for the Cloud Server. But school staff should regularly perform this task for the original WebSAMS server at school campus.

### 8.2.8 WebSAMS Upgrade

New WebSAMS build will be automatically installed in the Cloud Server on date determined by the EDB.

If school prefers to install the build on a later date, which also determined by the EDB, school staff can choose so by:

1. Connect VPN and login WebSAMS by a SCHOOL\_HEAD, CS\_ADMIN or CS\_SUPP group user account.
2. Go to **Security > Cloud Service Management > WebSAMS Management > WebSAMS Upgrade**.

As always, if error occurs during build installation, WebSAMS will automatically rollback to the original build.

### 8.2.9 School campus Internet IP address change

In order for WebSAMS to correctly identify School Campus Workstation, school staff should input their school campus Internet IP address into WebSAMS by:

1. Connect VPN and login WebSAMS by a SCHOOL\_HEAD or SYSTEM\_ADMIN group user account.
2. Go to **Security > Configuration > IP Config**.

#### **Important Note**

School staff should clarify with their Internet Service Provider (ISP) what Internet IP address(es) can uniquely identify their school campus.

### 8.2.10 Password management

Schools are required to change any simple password in use as soon as possible to reduce security risk. The new password should meet the minimum complexity requirements. For the details of password minimum complexity requirement, please refer to WebSAMS Central Document Repository (CDR) website [主頁 > 系統保安及系統事宜 > 系統保安 > WebSAMS Security Guide and Recommended Practice] :

[https://cdr.websams.edb.gov.hk/Files/Sys\\_sec/Security/security.pdf](https://cdr.websams.edb.gov.hk/Files/Sys_sec/Security/security.pdf)

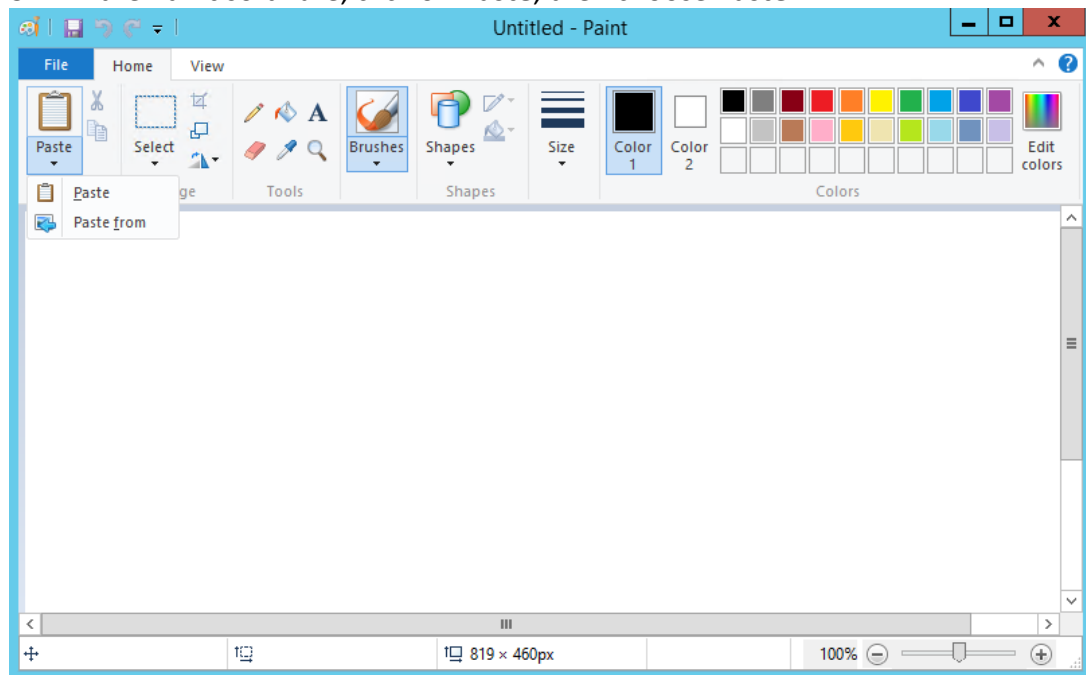


## 8.3 COMPUTER SYSTEM OPERATING – ABNORMAL

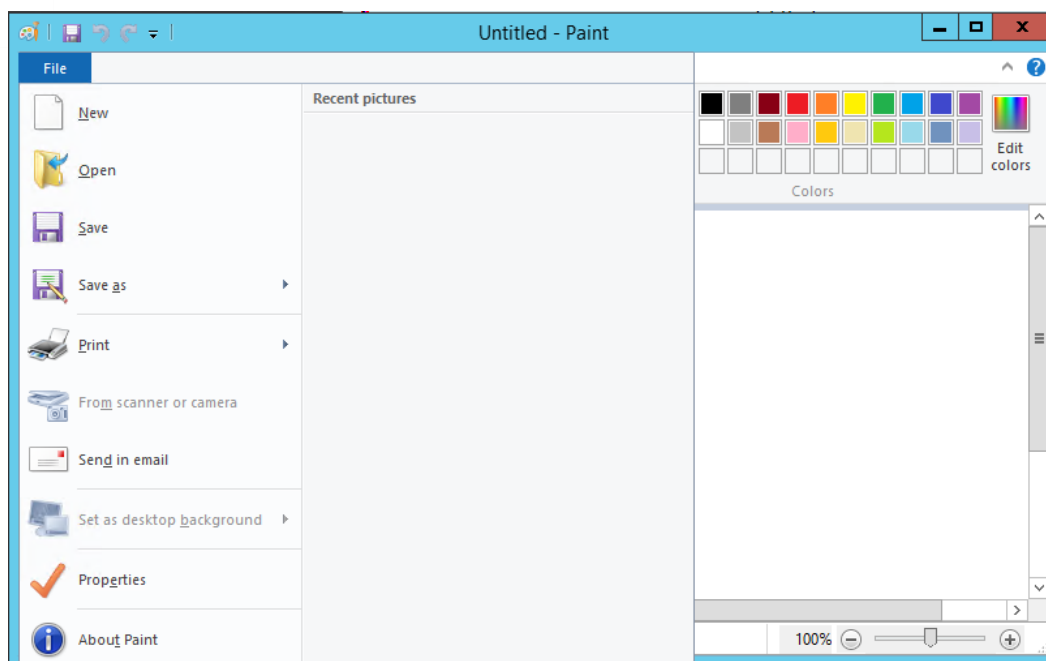
### 8.3.1 Taking screen dumps

Once there is an error occurred, system may display an error message. Capturing the screen dumps can help troubleshooting. The procedures are as follow:

1. Press **Prnt Scrn** on keyboard.
2. Open the Windows **Paint (小畫家)** software: Windows Start menu > **Search** > input 'paint' in the search field. The **Paint** software will be shown on the right side.
3. In the **Paint** software, click on **Paste**, then choose **Paste**.



4. Click on **File, Save As**.



5. Click on the **Desktop** icon in the **Save As** window, and type in **Errormsg** in the field of **File name**.

### 8.3.2 Fault reporting procedures

If the error occurred within WebSAMS (i.e. shown in the webpages of the WebSAMS), please follow the existing reporting procedures by contacting the **existing WebSAMS Helpdesk** ( <https://cdr.websams.edb.gov.hk/聯絡我們/> ).

Otherwise, if the error is cloud platform-related, such as

- VPN cannot be connected;
- WebSAMS cannot be opened on browsers; or
- WebSAMS server is suspected to be out of service

please follow the procedures below,

1. Contact **Cloud Helpdesk** ( <https://cdr.websams.edb.gov.hk/聯絡我們/> ).
2. Report any error.
3. If there is any screen dump, send them to the **Cloud Helpdesk** through email.
4. The **Cloud Helpdesk** will assist to troubleshoot the error, or refer the case to the appropriate WebSAMS support team if necessary.

## 8.4 APPLICATION OPERATING – RESTART

Please refer to Section 8.2.2 **Reboot the WebSAMS server on the Cloud.**

## 8.5 OPERATION HOUSEKEEPING JOBS

### 8.5.1 Server Log checking

School staff can retrieve the server logs by:

1. Connect VPN and login WebSAMS by a SCHOOL\_HEAD, CS\_ADMIN or CS\_SUPP group user account.
2. Go to **Security > Cloud Service Management > WebSAMS Management > WebSAMS Log**.

### 8.5.2 Server reboot

The WebSAMS server on the cloud will be regularly rebooted by the Cloud Contractor. However, school staff can also perform ad-hoc reboot when needed.

Please refer to Section 8.2.2 **Reboot the WebSAMS server on the Cloud**.

### 8.5.3 WebSAMS data backup

#### **By the Cloud Contractor**

The WebSAMS server and data on the cloud will be regularly backed up by the Cloud Contractor.

Backup plan of the cloud platform:

Type of backup	backup time	Retention Period
Daily	During the cloud platform daily maintenance hours (0100 – 0600), before installing any new WebSAMS build and system patch	1 month
Monthly (performed on the last day of each month)	During the cloud platform daily maintenance hours (0100 – 0600), before installing any new WebSAMS build and system patch	1 year

School staff can contact the **Cloud Helpdesk** to make the following service requests:

#### **1. Recovery**

Restore the Cloud Server to the backup image of a particular day, or retrieve the encrypted data backup file of a particular day.

## 2. Ad hoc immediate backup

Produce an ad hoc backup image of the WebSAMS server (including data inside) immediately. Only 1 copy of such ad hoc backup will be kept by the Cloud Contractor.

### By School

School staff can retrieve WebSAMS data by:

1. Connect VPN to the cloud and login WebSAMS by a SCHOOL\_HEAD, CS\_ADMIN or CS\_SUPP group user account.
2. Go to **Security > Cloud Service Management > WebSAMS Management > Download Database Backup.**
3. The downloaded backup file will be a 7-zip archive of school's data. It is encrypted by the **BitLocker password**. School staff must have the 7-zip software and **BitLocker password** to extract the data.

### **Important Note**

The data backup for download is produced during the cloud platform daily maintenance hours (**0100 – 0600**).

## 8.5.4 Training Instance Data backup

### By the Cloud Contractor

The WebSAMS data backup plan specified above in section 8.5.3 backs up the Training instance data as well.

### **Important Note**

**All backup and restore of the Training Instance data by the Cloud Contractor will be performed together with WebSAMS data.** They cannot be performed separately.

### By School

School staff can back up / restore ONLY the Training Instance data (excluding the WebSAMS data) by the following procedures,

1. Connect VPN to the cloud and login WebSAMS system by a SCHOOL\_HEAD, CS\_ADMIN or CS\_SUPP group user account.
2. Go to **Security > Cloud Service Management > WebSAMS Management > Training Instance.**

### **Important Note**

For the backup performed by school,

- only 1 copy of backup will be kept on the WebSAMS server on the cloud.