Ahsay Backup

Ahsay Online Backup Manager v8

Quick Start Guide for FreeBSD

Ahsay Systems Corporation Limited

18 June 2021

Copyright Notice

Trademarks

Disclaimer

Revision History

Date	Descriptions	Type of modification
5 February 2021	Added MariaDB in Ch. 6.5 and 7	Modification
7 April 2021	Updated Ch. 8; Added sub-chapters for the detailed process diagrams in Ch. 8.1, 8.2, 8.2.1, 8.2.2 and 8.3	New / Modification
18 June 2021	Added note on free trial in Ch. 5 and Appendix F	New

Table of Contents

1 Overview

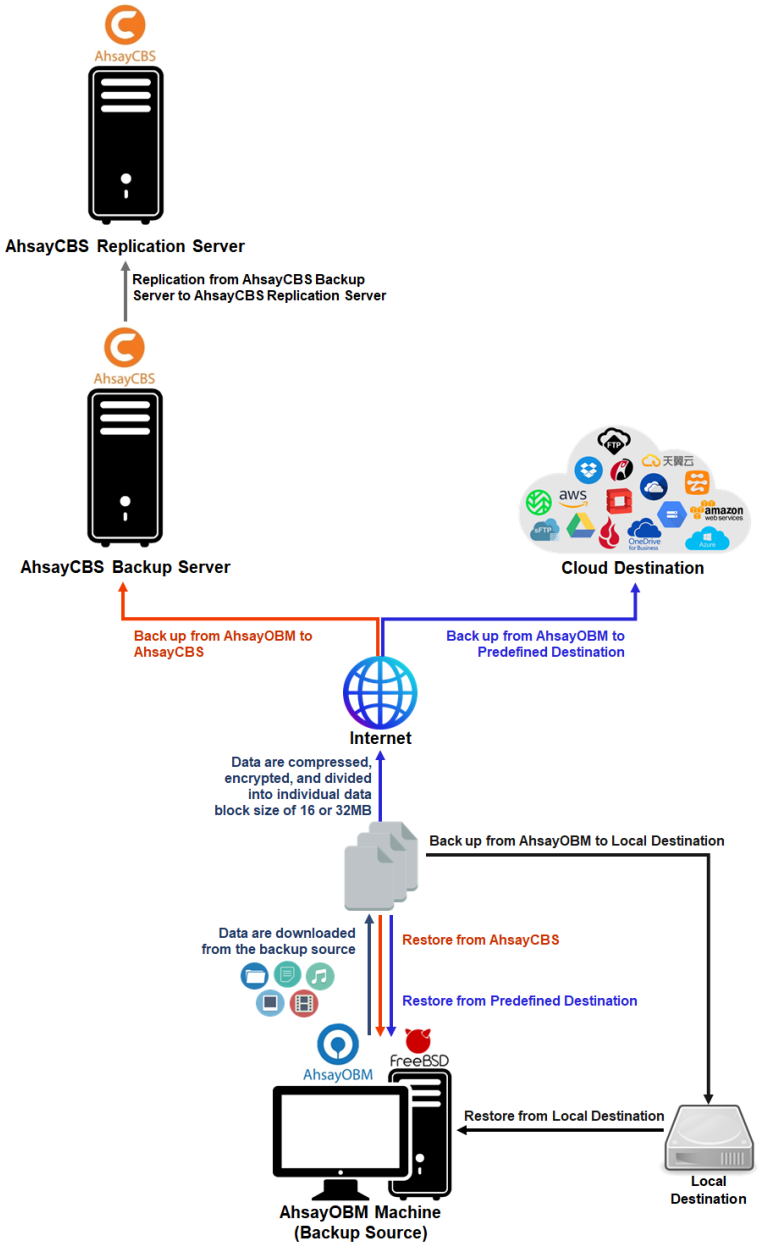
1.1 What is this software?

Ahsay brings you specialized client backup software, namely AhsayOBM, to provide a comprehensive backup solution for protecting file(s) / folder(s) on your machine, with a wide variety of backup destinations (major cloud storage service providers, FTP/SFTP, local drive, etc.) of your choice.

1.2 System Architecture

Below is the system architecture diagram illustrating the major elements involved in the backup process among the backup machine, AhsayOBM and AhsayCBS.

In this user guide, we will focus on the software installation, as well as the end-to-end backup and restore process using AhsayOBM as a client backup software.



2 System Requirements

2.1 Supported Platforms

Refer to the following KB article for the list of supported operating systems:

FAQ: Ahsay Software Compatibility List (SCL) for version 8.1 or above
http://wiki.ahsay.com/doku.php?id=public:8001

2.2 Packages

The following packages have to be present in the FreeBSD machine to enable installation and normal operations of AhsayOBM version 8.

- curl https://www.freshports.org/ftp/curl/

The 'curl' command is used by the AhsayOBM sh script installer to download components from AhsayCBS server during the installation process.

- tar https://www.gnu.org/software/tar

The 'tar' command is used by the AhsayOBM gz installer to uncompress and extract installation files or components downloaded from the AhayCBS backup server onto the FreeBSD machine.

- psmisc http://psmisc.sourceforge.net/

The 'psmisc' package which contains the 'fuser' components must be installed for AhsayOBM on FreeBSD, for the auto update agent (AUA) process to work properly.

- Openjdk8 https://www.freebsd.org/java/

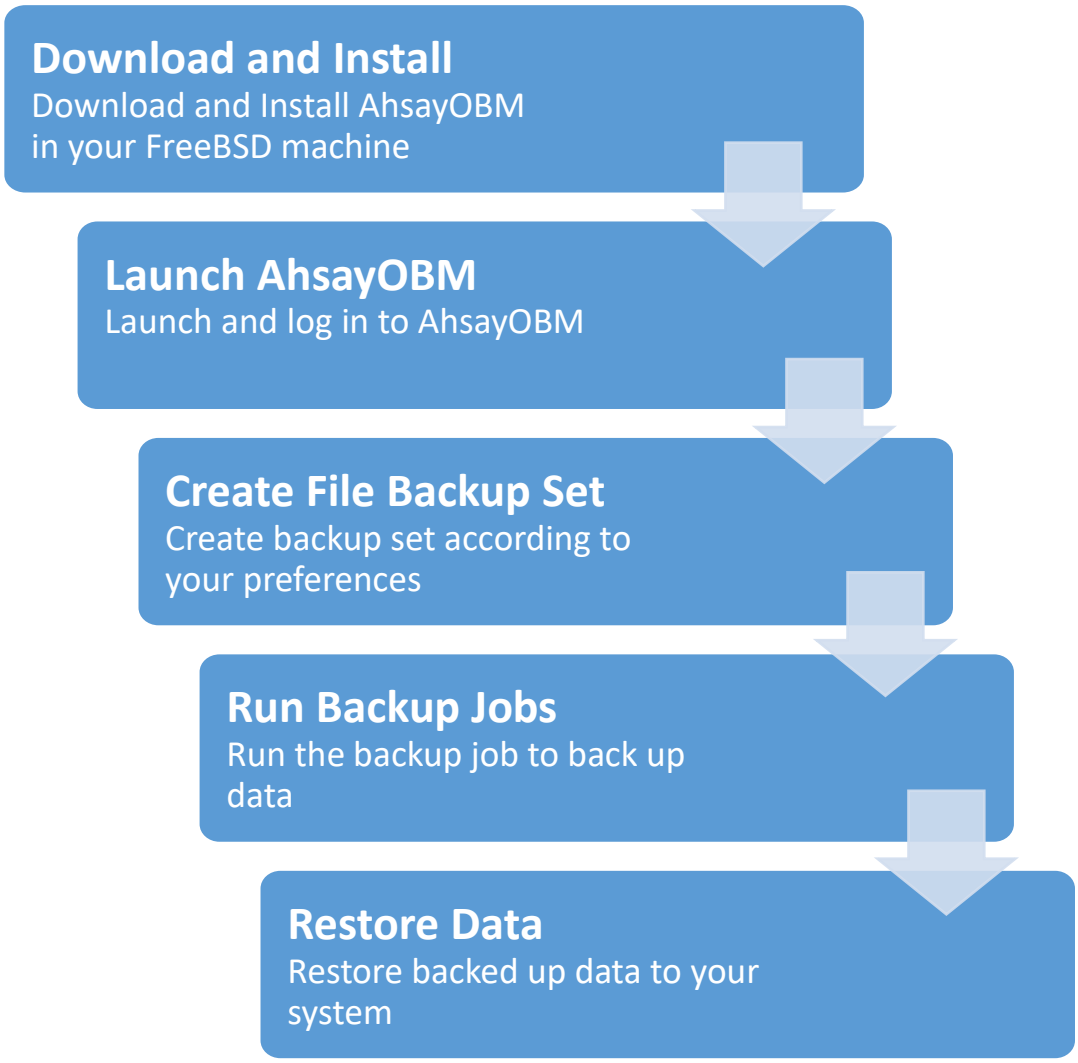
The 'openjdk8' package must be installed for AhsayOBM on FreeBSD since this is the reference implementation of Java SE.

- GNU LIBC 2.14 https://www.gnu.org/software/libc/

The installed 'GNU LIBC' version must at least be 2.14 for OpenJDK 8 to work.

3 Getting started

This quick start guide will walk you through the following 5 major parts to get you started with using AhsayOBM.



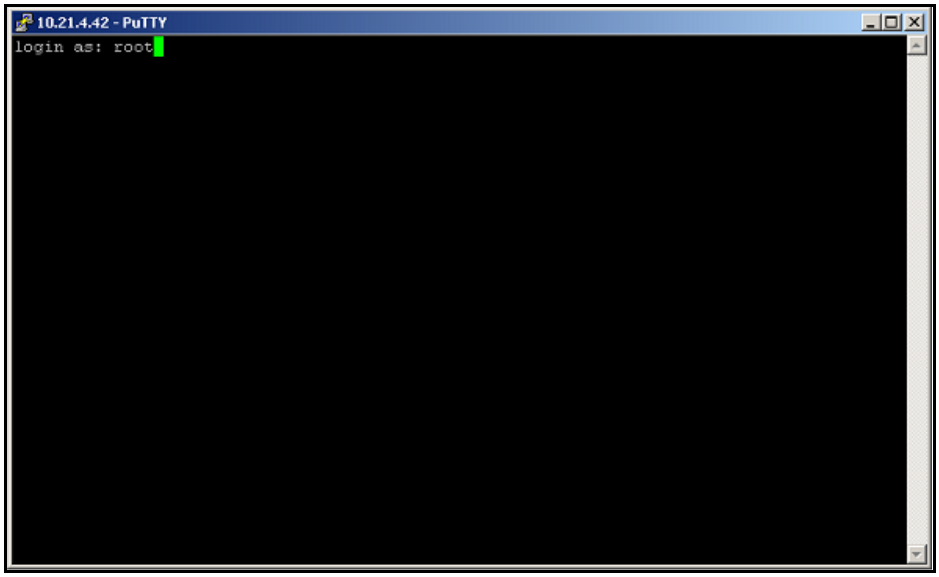
4 Download and Install AhsayOBM

There are two installation modes of AhsayOBM, online installation and offline installation. Below is the table of comparison between online installation and offline installation.

	Online Installation	Offline Installation
Installation Time	➢ Takes more time as it needs to download the binary and component files (80MB to 132MB depending on operating system) each time the installation is run. ➢ Online installer size is 6KB to 3.5MB depending on operating system as it contains only the initial installation package files.	➢ Takes less time as all the necessary binary and component files are already available in the offline installer and offline installer can be downloaded once but reused many times. ➢ Offline installer size is 80MB to 132MB depending on operating system as it contains all the necessary binary and component files.
Deployments	➢ Suitable for single or small amount of device installations. ➢ Suitable for sites with fast and stable internet connection as internet connection is needed each time when an installation is run. ➢ A slow internet connection will result in longer installation time and interrupted or unstable internet connection may lead to unsuccessful installation. ➢ Ensures the latest version of the product is installed.	➢ Suitable for multiple or mass device installations. ➢ Suitable for client sites with metered internet connections as once the offline installer is downloaded, internet connection is not needed each time when an installation is run. ➢ May need to update the product version after installation if an older offline installer is used.

4.1 Online Installation

1. Login to the FreeBSD machine via a ssh client using the root account.



2. Create a new directory to install AhsayOBM.

```
# mkdir -p /usr/local/obm
# cd /usr/local/obm
```

3. Download the AhsayOBM sh installation script file from your backup service provider's website:

4. Go to the download page and right click on **SH online installer** link, then **Copy Link Address** to copy the URL of the AhsayOBM installer.

5. Execute the curl command with the copied URL to download the AhsayOBM installer to the FreeBSD machine.

***Note**: After pasting the URL, delete ?dlName=obm-freebsd-443-10.90.10.84-https-0O.sh*

```
# cd /usr/local/obm
# curl -Ok https://10.90.10.84/cbs/download/obm-nix-443-
10.90.10.84-https-0O.sh
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 21908  100 21908    0     0  12811      0  0:00:01  0:00:01
--:--:-- 13181
```

6. Execute the AhsayOBM install script by using the sh command.

***Note**: The .sh script file should be placed under the directory path where you want to install the AhsayOBM application.*

***Workaround**: If the script does not run, add executable permissions first to the AhsayOBM install script by running the chmod 755 script then install it by executing it*
 # chmod 755 obm-nix-443-10.90.10.84-https-0O.sh
 # ./ obm-nix-443-10.90.10.84-https-0O.sh

```
# sh obm-nix-443-10.90.10.84-https-0O.sh
Log Time: Mon Jan 14 15:18:14 HKT 2019
Host address: https://10.90.10.84:443
No JVM package is defined
Downloading file... app-common.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 34.9M  100 34.9M    0     0   348k      0  0:01:42  0:01:42
--:--:--  241k
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... app-native-nix-x64.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  527k  100  527k    0     0  1020k      0 --:--:-- --:--:--
--:--:-- 1034k
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... app-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 11780  100 11780    0     0  11686      0  0:00:01  0:00:01
--:--:-- 11898
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... aua-common.tar.gz
```

```
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 13.7M  100 13.7M    0     0  9602k      0  0:00:01  0:00:01
--:--:-- 9728k
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... aua-native-nix-x64.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  440k  100  440k    0     0  1393k      0 --:--:-- --:--:--
--:--:-- 1397k
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... aua-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100   976  100   976    0     0   1272      0 --:--:-- --:--:--
--:--:--  1304
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... util-common.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  4829  100  4829    0     0  31769      0 --:--:-- --:--:--
--:--:-- 31769
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... util-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 75426  100 75426    0     0   170k      0 --:--:-- --:--:--
--:--:--  171k
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... properties-common.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 3218k    0 3218k    0     0  1140k      0 --:--:--  0:00:02
--:--:-- 1140k
Download file completed
Untar component file to /tmp/_obm.190114151814
Downloading file... app-inst-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  165k  100  165k    0     0   228k      0 --:--:-- --:--:--
--:--:--  230k
Download file completed
```

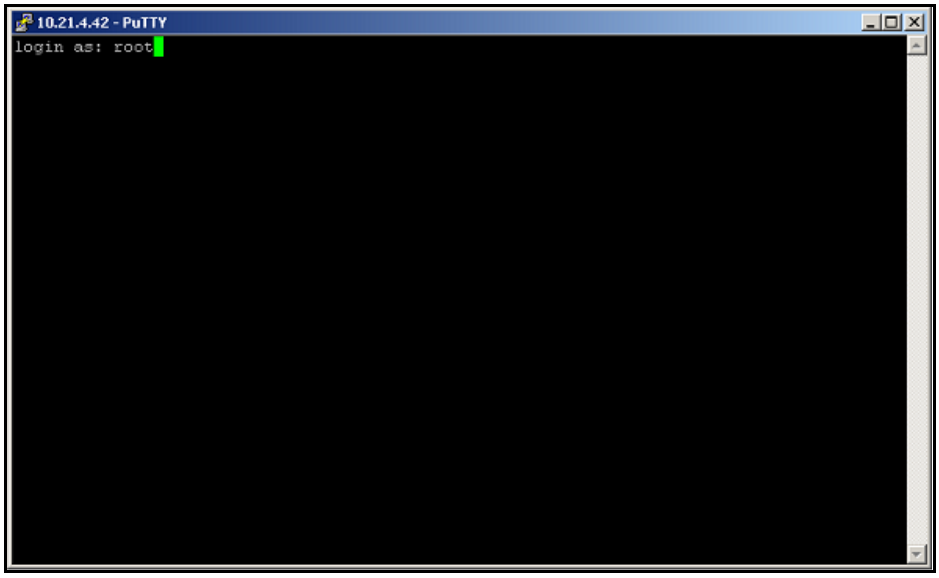
```
Untar component file to /tmp/_obm.190114151814
Downloading file... aua-inst-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 48999  100 48999    0     0  88445      0 --:--:-- --:--:--
--:--:-- 90907
Download file completed
Untar component file to /tmp/_obm.190114151814
  No old application found, begin fresh install
```

7. When asked to enter your java 1.8 home, enter /usr/local/openjdk8 which is the default OpenJDK 1.8 path but may be a different path depending on the installed java. You will see **Done** once the installation is finished.

```
Please enter your java 1.8 home:
/usr/local/openjdk8
Copy java 1.8 from /usr/local/openjdk8
Install Application Path: /usr/local/obm
Done
```

4.2 Offline Installation

1. Login to the FreeBSD machine via a ssh client using the root account.



2. Create a new directory to install AhsayOBM.

```
# mkdir -p /usr/local/obm
# cd /usr/local/obm
```

3. Download the AhsayOBM *.tar.gz file from your backup service provider's website:

4. Go to the download page and right click on **TAR GZ offline installer** link to copy the URL of the AhsayOBM installer.

5. Use the curl command to download the AhsayOBM installer from your backup service provider's website onto the FreeBSD machine.

***Note**: The tar.gz installation file should be placed under the directory path where you want to install the AhsayOBM application*

```
# curl -Ok https://10.90.10.84/cbs/download/obm-freebsd.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
```

```
                                 Dload  Upload   Total   Spent
Left  Speed
100 53.3M    0 53.3M    0     0   609k      0 --:--:--  0:01:29
--:--:-- 1090k
```

6. Unzip and extract the installation files using the tar command.

```
# tar xvfz obm-freebsd.tar.gz
x app.pkg/version.txt
x app.pkg/app-common.tar.gz
x app.pkg/app-native-nix-x64.tar.gz
x app.pkg/app-native-nix-x86.tar.gz
x app.pkg/app-nix-obm.tar.gz
x app.pkg/aua-common.tar.gz
x app.pkg/aua-native-nix-x64.tar.gz
x app.pkg/aua-native-nix-x86.tar.gz
x app.pkg/aua-nix-obm.tar.gz
x app.pkg/util-common.tar.gz
x app.pkg/util-nix-obm.tar.gz
x app.pkg/properties-common.tar.gz
x app.pkg/app-inst-nix-obm.tar.gz
x app.pkg/aua-inst-nix-obm.tar.gz
x app.pkg/app-native-nix-others.tar.gz
x app.pkg/aua-native-nix-others.tar.gz
x obm-freebsd.sh
```

7. Run the sh obm-freebsd.sh script to extract the files.

```
# sh obm-freebsd.sh
Log Time: Mon Jan 14 15:44:20 HKT 2019
Using package in /usr/local/obm/app.pkg
Package version: 8.1.0.10
No JVM package is defined
Untar app-common.tar.gz to /tmp/_obm.190114154420
Untar app-native-nix-x64.tar.gz to /tmp/_obm.190114154420
Untar app-nix-obm.tar.gz to /tmp/_obm.190114154420
Untar aua-common.tar.gz to /tmp/_obm.190114154420
Untar aua-native-nix-x64.tar.gz to /tmp/_obm.190114154420
Untar aua-nix-obm.tar.gz to /tmp/_obm.190114154420
Untar util-common.tar.gz to /tmp/_obm.190114154420
Untar util-nix-obm.tar.gz to /tmp/_obm.190114154420
Untar properties-common.tar.gz to /tmp/_obm.190114154420
Untar app-inst-nix-obm.tar.gz to /tmp/_obm.190114154420
Untar aua-inst-nix-obm.tar.gz to /tmp/_obm.190114154420
  No old application found, begin fresh install
```

8. Enter the path where your java 1.8 is located /usr/local/openjdk8 which is the default OpenJDK 1.8 path but may be a different path depending on the installed java. You will see **Done** once the installation is finished

```
Please enter your java 1.8 home:
/usr/local/openjdk8
Copy java 1.8 from /usr/local/openjdk8
Install Application Path: /usr/local/obm
Done
```

When completed successfully AhsayOBM will be installed in the following location **/usr/local/obm**.

4.3 AhsayOBM Scheduler Service Check

The AhsayOBM scheduler service is used to kick automated or scheduled backup jobs, to check if the AhsayOBM scheduler service is running use the **ps** command.

```
# ps
  PID TT  STAT    TIME COMMAND
  675 v0  Is+  0:00.00 /usr/libexec/getty Pc ttyv0
  676 v1  Is+  0:00.00 /usr/libexec/getty Pc ttyv1
  677 v2  Is+  0:00.00 /usr/libexec/getty Pc ttyv2
  678 v3  Is+  0:00.00 /usr/libexec/getty Pc ttyv3
  679 v4  Is+  0:00.00 /usr/libexec/getty Pc ttyv4
  680 v5  Is+  0:00.00 /usr/libexec/getty Pc ttyv5
  681 v6  Is+  0:00.00 /usr/libexec/getty Pc ttyv6
  682 v7  Is+  0:00.00 /usr/libexec/getty Pc ttyv7
13176  0  Ss   0:02.89 -csh (csh)
14442  0  S    0:14.70 /usr/local/obm/jvm/bin/bschJW -Xms128m -
Xmx768m -Dsun.ni
14470  0  R+   0:00.00 ps
```

1. To manually start the scheduler service, use the **/usr/local/obm/bin/Scheduler.sh** script.

2. To manually stop the scheduler service, use the **/usr/local/obm/bin/StopScheduler.sh** script.

4.4 AhsayOBM check rc.conf file

To check if the obmscheduler is enabled use the cat command. If you do not see 'obmschedule_enable="YES"', add the entry in the rc.conf file by using a text editor like vi. This is to ensure that the AhsayOBM scheduler service will startup automatically when the FreeBSD machine powers on or when it is rebooted.

```
# cat /etc/rc.conf
hostname="FreeBSD103"
ifconfig_vmx0="inet 10.16.30.22 netmask 255.252.0.0"
defaultrouter="10.16.0.1"
sshd_enable="YES"
# Set dumpdev to "AUTO" to enable crash dumps, "NO" to disable
dumpdev="AUTO"
firewall_enable="NO"
cbs_enable="YES"
cbsnfs_enable="YES"
obmscheduler_enable="YES"
```

5 Starting AhsayOBM

To startup AhsayOBM and connect to AhsayCBS, you need to use the **RunConfigurator.sh** script to configure the backup server URL, port and proxy server settings (if applicable) and enter the user id and password.

Please contact your backup service provider to obtain your user login and password and backup server URL settings.

For first time login, this will be the screen displayed. If you want to create a free trial account. please proceed to Appendix F. Otherwise, continue with the steps below.

```
# cd /usr/local/obm/bin
# sh RunConfigurator.sh
Startup Ahsay Online Backup Manager ...
User Configuration file not found
Create a new Configuration file at directory
[/root/.obm/config]


Login Menu (No configuration files found)
-----------------------------------------
  (1). Login
  (2). Free Trial
  (3). Quit
-----------------------------------------
Your Choice:
```

NOTE

The Free Trial Registration option may not be available. This depends on the settings of your backup service provider. Please contact your backup service provider for more information.

But for subsequent login, this will be the screen displayed.

```
# cd /usr/local/obm/bin
# sh RunConfigurator.sh
Startup Ahsay Online Backup Manager ...
Config file found

Login Menu
----------
  (1). Login
  (2). Change Network Settings
  (3). Forgot Password
  (4). Quit
----------
Your Choice:
```

Once the AhsayOBM started, login menu will be displayed. If you want to modify the **network settings** before you log in, select option **(2)**.

```
Login Menu
----------
   (1). Login
   (2). Change Network Settings
   (3). Forgot Password
   (4). Quit
----------
Your Choice: 2


Network Setting
---------------
   (1). Backup Server URL [10.16.30.22]
   (2). Port [80]
   (3). Protocol [http]
   (4). Proxy Setting [Not in Use]
   (5). Save and Return
   (6). Discard and Return
---------------
Your Choice:
```

Otherwise, select option **(1)**. Input your login name and password to log in.

```
Login Menu
----------
   (1). Login
   (2). Change Network Settings
   (3). Forgot Password
   (4). Quit
----------
Your Choice: 1

Login Name : sample
Password : ********************


Please wait while verifying user account with server...
Your profile has been downloaded and updated.


Main Menu
---------
   (1). List Backup Sets
   (2). Delete Backup Set
   (3). Export Backup Set Settings to XML
   (4). Import Backup Set Settings from XML
   (5). Generate new Backup Set Settings Template
   (6). Change Language [English]
   (7). Update Profile Settings
   (8). Quit
```

```
---------
Your Choice:
```

- If Multi-Factor Authentication is enabled, press Enter to continue then provide your country code, phone number and email. A passcode will be sent to the phone number provided. Enter the passcode to continue logging in. The MFA Configuration screen will only be displayed when you log in for the first time.

```
MFA Configuration
Multi-Factor Authentication is enabled for helping safeguard access
to your account. Please provide a phone number to setup in the
first-time login.
Press Enter to continue...

-----------------------------------
Supported Country List:
Andorra (+376)
United Arab Emirates (+971)
Afghanistan (+93)
Antigua and Barbuda (+1268)
Anguilla (+1264)
Albania (+355)
Armenia (+374)
Angola (+244)
Argentina (+54)
American Samoa (+1684)
Austria (+43)
Australia, Christmas Island, Cocos (Keeling) Islands (+61)
Aruba (+297)
Åland Islands, Finland (+358)
Azerbaijan (+994)
Bosnia and Herzegovina (+387)
Barbados (+1246)
Bangladesh (+880)
Belgium (+32)
Burkina Faso (+226)
Bulgaria (+359)
Bahrain (+973)
Burundi (+257)
Benin (+229)
Bermuda (+1441)
Brunei (+673)
Bolivia (+591)
Brazil (+55)
Bahamas (+1242)
Bhutan (+975)
Botswana (+267)
Belarus (+375)
Belize (+501)
DR Congo (+243)
Central African Republic (+236)
Republic of the Congo (+242)
Switzerland (+41)
```

Ivory Coast (+225)
Cook Islands (+682)
Chile (+56)
Cameroon (+237)
China (+86)
Colombia (+57)
Costa Rica (+506)
Cuba (+53)
Cape Verde (+238)
Cyprus (+357)
Czechia (+420)
Germany (+49)
Djibouti (+253)
Denmark (+45)
Dominica (+1767)
Dominican Republic (+1809)
Algeria (+213)
Ecuador (+593)
Estonia (+372)
Egypt (+20)
Eritrea (+291)
Spain (+34)
Ethiopia (+251)
Fiji (+679)
Falkland Islands, South Georgia (+500)
Micronesia (+691)
Faroe Islands (+298)
France (+33)
Gabon (+241)
Grenada (+1473)
Georgia (+995)
French Guiana (+594)
Guernsey, Isle of Man, Jersey, United Kingdom (+44)
Ghana (+233)
Gibraltar (+350)
Greenland (+299)
Gambia (+220)
Guinea (+224)
Guadeloupe, Saint Barthélemy, Saint Martin (+590)
Equatorial Guinea (+240)
Greece (+30)
Guatemala (+502)
Guam (+1671)
Guinea-Bissau (+245)
Guyana (+592)
Hong Kong (+852)
Honduras (+504)
Croatia (+385)
Haiti (+509)
Hungary (+36)
Indonesia (+62)
Ireland (+353)
Israel (+972)

India (+91)
Iraq (+964)
Iran (+98)
Iceland (+354)
Italy (+39)
Jamaica (+1876)
Jordan (+962)
Japan (+81)
Kenya (+254)
Kyrgyzstan (+996)
Cambodia (+855)
Kiribati (+686)
Comoros (+269)
Saint Kitts and Nevis (+1869)
South Korea (+82)
Kuwait (+965)
Cayman Islands (+1345)
Kazakhstan (+76)
Laos (+856)
Lebanon (+961)
Saint Lucia (+1758)
Liechtenstein (+423)
Sri Lanka (+94)
Liberia (+231)
Lesotho (+266)
Lithuania (+370)
Luxembourg (+352)
Latvia (+371)
Libya (+218)
Morocco, Western Sahara (+212)
Monaco (+377)
Moldova (+373)
Montenegro (+382)
Madagascar (+261)
Marshall Islands (+692)
Macedonia (+389)
Mali (+223)
Myanmar (+95)
Mongolia (+976)
Macau (+853)
Martinique (+596)
Mauritania (+222)
Montserrat (+1664)
Malta (+356)
Mauritius (+230)
Maldives (+960)
Malawi (+265)
Mexico (+52)
Malaysia (+60)
Mozambique (+258)
Namibia (+264)
New Caledonia (+687)
Niger (+227)

Norfolk Island (+672)
Nigeria (+234)
Nicaragua (+505)
Netherlands (+31)
Norway (+47)
Nepal (+977)
Niue (+683)
New Zealand, Pitcairn Islands (+64)
Oman (+968)
Panama (+507)
Peru (+51)
French Polynesia (+689)
Papua New Guinea (+675)
Philippines (+63)
Pakistan (+92)
Poland (+48)
Saint Pierre and Miquelon (+508)
Puerto Rico (+1787)
Palestine (+970)
Portugal (+351)
Palau (+680)
Paraguay (+595)
Qatar (+974)
Romania (+40)
Serbia (+381)
Russia (+7)
Rwanda (+250)
Saudi Arabia (+966)
Solomon Islands (+677)
Seychelles (+248)
Sudan (+249)
Sweden (+46)
Singapore (+65)
Slovenia (+386)
Slovakia (+421)
Sierra Leone (+232)
San Marino (+378)
Senegal (+221)
Somalia (+252)
Suriname (+597)
SouthSudan (+211)
São Tomé and Príncipe (+239)
El Salvador (+503)
Syria (+963)
Swaziland (+268)
Turksand Caicos Islands (+1649)
Chad (+235)
Togo (+228)
Thailand (+66)
Tajikistan (+992)
Timor-Leste (+670)
Turkmenistan (+993)
Tunisia (+216)

```
Tonga (+676)
Turkey (+90)
Trinidad and Tobago (+1868)
Taiwan (+886)
Tanzania (+255)
Ukraine (+380)
Uganda (+256)
United States, Canada (+1)
Uruguay (+598)
Uzbekistan (+998)
Saint Vincent and the Grenadines (+1784)
Venezuela (+58)
British Virgin Islands (+1284)
United States Virgin Islands (+1340)
Vietnam (+84)
Vanuatu (+678)
Samoa (+685)
Kosovo (+383)
Yemen (+967)
Mayotte, Réunion (+262)
South Africa (+27)
Zambia (+260)
Zimbabwe (+263)
-------------------------------------
The list above shows all the supported countries and corresponding
country code
Please enter your country code.
Country code : +63
Enter Phone number : 1234567890

There is no contact email address defined in your account.
Please enter an email address for account recovery.
Email : sample@email.com
We will send you a SMS message with passcode to your entered phone
number: Philippines (+63) - 1234567890. Continue?
(1). Yes, send SMS message
(2). Change country code
(3). Modify phone number
(4). Cancel
Your Choice : 1

A SMS message with a passcode was already sent to the phone number
Philippines (+63) - ******7890 (Expiry time: 06/13/2019 15:39)
Please enter the passcode with AWKQ prefix to continue login.
Passcode : 722458
```

- This will be the screen displayed for subsequent log ins. Select the phone number to receive the passcode.

```
MFALogin
--------
Please select phone number to receive passcode via SMS message to
continue login.
(1). Philippines (+63) - ******7890
(2). Philippines (+63) - ******1234
Your Choice : 1

A SMS message with a passcode was already sent to the phone number
Philippines (+63) - ******7890 (Expiry time: 06/13/2019 15:51)
Please enter the passcode with FCAK prefix to continue login.
Passcode : 481267
```

If the password is forgotten, choose **(3)** on the login menu and input the login name. A link to reset the password will be sent to the email you provided in the AhsayCBS server.

```
Login Menu
----------
  (1). Login
  (2). Change Network Settings
  (3). Forgot Password
  (4). Quit
----------
Your Choice: 3

Login name: sample
```

Select option **(4)** to exit the Login menu.

```
Login Menu
----------
  (1). Login
  (2). Change Network Settings
  (3). Forgot Password
  (4). Quit
----------
Your Choice: 4

Exit Configurator Utility
```

6 AhsayOBM Main Menu

Once you have successfully logged on to AhsayOBM, the M**ain Menu** will be displayed.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice:
```

6.1 List Backup Sets

By selecting option **(1)**, the list of backup sets you have created will be shown.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 1


Select a Backup Set to show more details
----------------------------------------
  (1). FreeBSD Backup
  (2). Daily Backup
  (3). AhsayOBM Backup
----------------------------------------
Your Choice:
```

To show more details of a specific backup set, choose a backup set to display.

```
Select a Backup Set to show more details
----------------------------------------
  (1). FreeBSD Backup
  (2). Daily Backup
  (3). AhsayOBM Backup
----------------------------------------
Your Choice: 1

Name                  : FreeBSD Backup
Owner                 : freebsd103
Type                  : FILE
Selected Source       : /root/Documents
Selected Source       : /home
Selected Source       : /root/temp
Deselected Source     : /usr/local/obm
Encryption Key        : abc123
Encryption Algorithm  : AES
Encryption Mode       : CBC
Encryption Key Length: 256

Press Enter to continue...
```

No backup set will be shown if no backup set has been created yet.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 1
No backup set has been created yet.
```

6.2 Delete Backup Set

Select option **(2)** from the main menu if you wish to delete a backup set.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 2


Choose your backup set to delete
--------------------------------
  (1). FreeBSD Backup
  (2). Daily Backup
  (3). AhsayOBM Backup
--------------------------------
Your Choice:
```

Select a backup set you want to delete. Once selected, choose “Y” to confirm deletion and the backup set will be deleted successfully.

***Note**: If you choose “Y”, the backup set and all its backed-up date will be deleted.*

```
Choose your backup set to delete
--------------------------------
  (1). FreeBSD Backup
  (2). Daily Backup
  (3). AhsayOBM Backup
--------------------------------
Your Choice: 2

Name                 : Daily Backup
Owner                : freebsd103
Type                 : FILE
Encryption Key       : abc123
Encryption Algorithm : AES
Encryption Mode      : CBC
Encryption Key Length: 256

Are you sure you want to delete this backup set? (Y/N) ? y
Backup set deleted
```

6.3 Export Backup Set Settings to XML

This feature is used to export a backup set to XML file if you want to modify the backup set settings.

To do this, select option **(3)** on the main menu.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 3


Choose your backup set to generate XML file
-------------------------------------------
  (1). FreeBSD Backup
  (2). AhsayOBM Backup
-------------------------------------------
Your Choice: 1
```

Select a backup set. An XML file will be generated and exported to the **/root/.obm/config** directory.

Note: The **/root/.obm/config** folder cannot be changed.

```
Choose your backup set to generate XML file
-------------------------------------------
  (1). FreeBSD Backup
  (2). AhsayOBM Backup
-------------------------------------------
Your Choice: 1


XML file successfully exported to /root/.obm/config/backupSet.xml

Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
```

```
   (5). Generate new Backup Set Settings Template
   (6). Change Language [English]
   (7). Update Profile Settings
   (8). Quit
---------
Your Choice:
```

Note: To see the list of all configurable items with their available options, please refer to Appendix B File Backup Set XML Template (with explanation).

To see instructions on how to configure the backup set setting, please refer to number **3 Configuring Backup Set Settings** in Chapter 7.2.

6.4 Import Backup Set Settings from XML

This option allows user to import the updated backupSet.xml file to the AhsayCBS server.

Select option **(4)** to import the backup set XML file.

```
Main Menu
---------
   (1). List Backup Sets
   (2). Delete Backup Set
   (3). Export Backup Set Settings to XML
   (4). Import Backup Set Settings from XML
   (5). Generate new Backup Set Settings Template
   (6). Change Language [English]
   (7). Update Profile Settings
   (8). Quit
---------
Your Choice: 4

Backup Set 'FreeBSD Backup' already exist. Confirm overwrite? (Y/N) ?
 y
XML imported, uploading to server...

XML successfully uploaded to server

Main Menu
---------
   (1). List Backup Sets
   (2). Delete Backup Set
   (3). Export Backup Set Settings to XML1
   (4). Import Backup Set Settings from XML
   (5). Generate new Backup Set Settings Template
   (6). Change Language [English]
   (7). Update Profile Settings
   (8). Quit
```

To see if the modification of the backup set settings is successful, select option **(1)** from the main menu and select the imported XML file.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 1

Select a Backup Set to show more details
----------------------------------------
  (1). FreeBSD Backup
  (2). AhsayOBM Backup
----------------------------------------
Your Choice: 1

Name                 : FreeBSD Backup
Owner                : freebsd103
Type                 : FILE
Selected Source      : /root/Documents
Deselected Source    : /usr/local/obm
Encryption Key       : abc123
Encryption Algorithm : AES
Encryption Mode      : CBC
Encryption Key Length: 256

Press Enter to continue...
```

6.5 Generate new Backup Set Settings Template

This feature is used to create a new backup set. The supported backup set types are **File, MySQL Database, MariaDB, Oracle Database Server** and **IBM Domino.**

Select option **(5)** on the main menu then select **(1). File** to generate a File Backup Set Template to the /root/.obm/config directory.

Note: To see example of a **File Backup Setting**, please refer to Appendix C Example File Backup Set Setting.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 5


Choose a template from a backup set type
----------------------------------------
  (1). File
  (2). MySQL Database
  (3). MariaDB
  (4). Oracle Database Server
  (5). IBM Domino
----------------------------------------
Your Choice: 1

XML file successfully exported to /root/.obm/config/backupSet.xml

Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice:
```

6.6 Change Language Settings

This option allows user to modify the language settings. Select option **(6)** on the main menu then choose the selected language.

Note: The list of available languages depends on the backup service provider.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 6


Select
------
  (1).  English
  (2).  العربية
  (3).  Euskara
  (4).  Català
  (5).  Česky
  (6).  Dansk
  (7).  Nederlands
  (8).  Suomi
  (9).  Français
  (10). Deutsch
  (11). Ελληνικά
  (12). עברית
  (13). Magyar
  (14). Bahasa Indonesia
  (15). Italiano
  (16). 日本語
  (17). 한국어
  (18). Lietuvių
  (19). Norsk
  (20). Polski
  (21). Português (Brasil)
  (22). Português (Portugal)
  (23). на русском
  (24). Slovenščina
  (25). Español
  (26). Svenska
  (27). ภาษาไทย
  (28). Türkçe
```

```
   (29). Tiếng Việt
   (30). 簡体中文
   (31). 繁體中文
   (32). Cancel
------
Your Choice: 1


Main Menu
---------
   (1). List Backup Sets
   (2). Delete Backup Set
   (3). Export Backup Set Settings to XML
   (4). Import Backup Set Settings from XML
   (5). Generate new Backup Set Settings Template
   (6). Change Language [English]
   (7). Update Profile Settings
   (8). Quit
---------
Your Choice:
```

6.7 Update Profile Settings

This option allows user to modify the profile settings.

From the main menu, select option **(7)** to update profile settings.

```
Main Menu
---------
   (1). List Backup Sets
   (2). Delete Backup Set
   (3). Export Backup Set Settings to XML
   (4). Import Backup Set Settings from XML
   (5). Generate new Backup Set Settings Template
   (6). Change Language [English]
   (7). Update Profile Settings
   (8). Quit
---------
Your Choice: 7


Profile Menu
------------
   (1). Display Name
   (2). Contacts
   (3). Time Zone [GMT+08:00 (HKT)]
   (4). Encryption Recovery [Enabled]
   (5). Change Password
   (6). Return
------------
Your Choice:
```

To create a **display name**, select option **(1)** on the profile menu and input a display name.

```
Profile Menu
------------
  (1). Display Name
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Enabled]
  (5). Change Password
  (6). Return
------------
Your Choice: 1

Display name : John Backup

Display name is updated!

Profile Menu
------------
  (1). Display Name [John Backup]
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Enabled]
  (5). Change Password
  (6). Return
------------
Your Choice:
```

Select option **(2)** to see the list of contact(s).

```
Contacts
--------
  (1). List
  (2). Update
  (3). Add
  (4). Delete
  (5). Save and Return
  (6). Discard and return
--------
Your Choice: 1

Name: John Cruz II, Email: John2000@gmail.com
```

Choose option **(3)** to update an existing contact. Input the contact name of an existing contact you wish to update and fill in the new information.

```
Contacts
--------
  (1). List
  (2). Update
  (3). Add
  (4). Delete
  (5). Save and Return
  (6). Discard and return
--------
Your Choice: 2

Enter contact name : John Cruz II
Name : Luis Stark
Email : Stark3000@gmail.com
Send me encrypted email (S/MIME) (Y/N) ? n
Address : Blakewood City
Company : Ahsay
Website : www.ahsay.com
Phone 1 : 8214544
Phone 2 : 8225515
```

To check if is updated successfully, choose option (1) on the main menu to display contact list.

```
Contacts
--------
  (1). List
  (2). Update
  (3). Add
  (4). Delete
  (5). Save and Return
  (6). Discard and return
--------
Your Choice: 1

Name: Luis Stark, Email: Stark3000@gmail.com
```

Add a new contact by selecting option **(3)**. Fill in the information of the new added contact.

```
Contacts
--------
  (1). List
  (2). Update
  (3). Add
  (4). Delete
  (5). Save and Return
  (6). Discard and return
--------
Your Choice: 3
Name : Jason Webb
```

```
Email : Jwebb@gmail.com
Send me encrypted email (S/MIME) (Y/N) ? n
Address : Michigan State
Company : Ahsay
Website : www.ahsay.com
Phone 1 : 8221121
Phone 2 : 8221212

Contacts
--------
   (1). List
   (2). Update
   (3). Add
   (4). Delete
   (5). Save and Return
   (6). Discard and return
--------
Your Choice: 1

Name: Luis Stark, Email: Stark3000@gmail.com
Name: Jason Webb, Email: Jwebb@gmail.com
```

To delete a contact, select option **(4)** from the contact menu and input the contact name you wish to delete.

```
Contacts
--------
   (1). List
   (2). Update
   (3). Add
   (4). Delete
   (5). Save and Return
   (6). Discard and return
--------
Your Choice: 4

Enter contact name : Luis Stark

Contacts
--------
   (1). List
   (2). Update
   (3). Add
   (4). Delete
   (5). Save and Return
   (6). Discard and return
--------
Your Choice: 1

No contact exists
```

Choose option **(5)** to save settings and return to the profile menu.

```
Contacts
--------
  (1). List
  (2). Update
  (3). Add
  (4). Delete
  (5). Save and Return
  (6). Discard and return
--------
Your Choice: 5


Profile Menu
------------
  (1). Display Name [John Backup]
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Enabled]
  (5). Change Password
  (6). Return
------------
Your Choice:
```

If you want to discard the changes you have made, select option **(6)**.

```
Contacts
--------
  (1). List
  (2). Update
  (3). Add
  (4). Delete
  (5). Save and Return
  (6). Discard and return
--------
Your Choice: 6


Profile Menu
------------
  (1). Display Name [John Backup]
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Enabled]
  (5). Change Password
  (6). Return
------------
Your Choice:
```

If you want to modify the time zone, select option **(3)** on the profile menu. The list of the available time zones will be displayed.

```
Profile Menu
------------
  (1). Display Name [John Backup]
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Enabled]
  (5). Change Password
  (6). Return
------------
Your Choice: 3


Select
------
  (1).   GMT-11:00 (NUT)
  (2).   GMT-11:00 (SST)
  (3).   GMT-10:00 (CKT)
  (4).   GMT-10:00 (HADT)
  (5).   GMT-10:00 (HST)
  (6).   GMT-10:00 (TAHT)
  (7).   GMT-09:00 (AKDT)
  (8).   GMT-09:00 (GAMT)
  (9).   GMT-08:00 (PDT)
  (10).  GMT-08:00 (PST)
  (11).  GMT-07:00 (MDT)
  (12).  GMT-07:00 (MST)
  (13).  GMT-06:00 (CST)
  (14).  GMT-06:00 (EAST)
  (15).  GMT-06:00 (GALT)
  (16).  GMT-05:00 (CDT)
  (17).  GMT-05:00 (COT)
  (18).  GMT-05:00 (ECT)
  (19).  GMT-05:00 (EST)
  (20).  GMT-05:00 (GMT-05:00)
  (21).  GMT-05:00 (PET)
  (22).  GMT-04:30 (VET)
  (23).  GMT-04:00 (ACT)
  (24).  GMT-04:00 (ADT)
  (25).  GMT-04:00 (AMT)
  (26).  GMT-04:00 (AST)
  (27).  GMT-04:00 (BOT)
  (28).  GMT-04:00 (CLT)
  (29).  GMT-04:00 (EDT)
  (30).  GMT-04:00 (GYT)
  (31).  GMT-04:00 (PYT)
  (32).  GMT-03:30 (NST)
  (33).  GMT-03:00 (ART)
  (34).  GMT-03:00 (BET)
  (35).  GMT-03:00 (BRT)
  (36).  GMT-03:00 (FKT)
```

(37). GMT-03:00 (GFT)
(38). GMT-03:00 (PMDT)
(39). GMT-03:00 (SRT)
(40). GMT-03:00 (UYT)
(41). GMT-03:00 (WGST)
(42). GMT-02:00 (FNT)
(43). GMT-02:00 (GST)
(44). GMT-01:00 (AZOST)
(45). GMT-01:00 (CVT)
(46). GMT-01:00 (EGST)
(47). GMT-01:00 (EGT)
(48). GMT+00:00 (BST)
(49). GMT+00:00 (GMT)
(50). GMT+00:00 (IST)
(51). GMT+00:00 (UTC)
(52). GMT+00:00 (WEST)
(53). GMT+00:00 (WET)
(54). GMT+01:00 (CET)
(55). GMT+01:00 (WAT)
(56). GMT+02:00 (CAT)
(57). GMT+02:00 (CEST)
(58). GMT+02:00 (EEST)
(59). GMT+02:00 (EET)
(60). GMT+02:00 (IDT)
(61). GMT+02:00 (SAST)
(62). GMT+03:00 (ADT)
(63). GMT+03:00 (AST)
(64). GMT+03:00 (EAT)
(65). GMT+03:30 (IRST)
(66). GMT+04:00 (AMST)
(67). GMT+04:00 (AZST)
(68). GMT+04:00 (GEST)
(69). GMT+04:00 (GST)
(70). GMT+04:00 (MSD)
(71). GMT+04:00 (MUT)
(72). GMT+04:00 (RET)
(73). GMT+04:00 (SAMST)
(74). GMT+04:00 (SCT)
(75). GMT+05:00 (AQTST)
(76). GMT+05:00 (MAWT)
(77). GMT+05:00 (MVT)
(78). GMT+05:00 (PKT)
(79). GMT+05:00 (TFT)
(80). GMT+05:00 (TJT)
(81). GMT+05:00 (TMT)
(82). GMT+05:00 (UZT)
(83). GMT+05:30 (IST)
(84). GMT+05:30 (LKT)
(85). GMT+06:00 (ALMST)
(86). GMT+06:00 (BDT)
(87). GMT+06:00 (BTT)
(88). GMT+06:00 (IOT)
(89). GMT+06:00 (KGST)

```
  (90).  GMT+06:00 (YEKST)
  (91).  GMT+07:00 (CXT)
  (92).  GMT+07:00 (ICT)
  (93).  GMT+07:00 (JAVT)
  (94).  GMT+07:00 (NOVT)
  (95).  GMT+08:00 (BNT)
  (96).  GMT+08:00 (BORT)
  (97).  GMT+08:00 (CST)
  (98).  GMT+08:00 (HKT)
  (99).  GMT+08:00 (KRAT)
  (100). GMT+08:00 (MYT)
  (101). GMT+08:00 (PHT)
  (102). GMT+08:00 (SGT)
  (103). GMT+08:00 (ULAT)
  (104). GMT+08:00 (WST)
  (105). GMT+09:00 (IRKST)
  (106). GMT+09:00 (JAYT)
  (107). GMT+09:00 (JST)
  (108). GMT+09:00 (KST)
  (109). GMT+09:00 (PWT)
  (110). GMT+09:30 (CST)
  (111). GMT+10:00 (ChST)
  (112). GMT+10:00 (DDUT)
  (113). GMT+10:00 (EST)
  (114). GMT+10:00 (PGT)
  (115). GMT+10:00 (TRUT)
  (116). GMT+10:00 (YAKT)
  (117). GMT+11:00 (KOST)
  (118). GMT+11:00 (NCT)
  (119). GMT+11:00 (PONT)
  (120). GMT+11:00 (SBT)
  (121). GMT+11:00 (VLAT)
  (122). GMT+11:00 (VUT)
  (123). GMT+12:00 (ANAST)
  (124). GMT+12:00 (FJT)
  (125). GMT+12:00 (GILT)
  (126). GMT+12:00 (MAGT)
  (127). GMT+12:00 (MHT)
  (128). GMT+12:00 (NRT)
  (129). GMT+12:00 (NZST)
  (130). GMT+12:00 (PETST)
  (131). GMT+12:00 (TVT)
  (132). GMT+12:00 (WAKT)
  (133). GMT+12:00 (WFT)
  (134). GMT+13:00 (TKT)
  (135). GMT+13:00 (WST)
  (136). Cancel
------
Your Choice: 98


Profile Menu
------------
```

```
  (1). Display Name [John Backup]
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Enabled]
  (5). Change Password
  (6). Return
------------
Your Choice:
```

Select option **(4)** on the profile menu to modify the **encryption key settings**. If this feature is on, an encryption key will be uploaded after running a recovery backup.

```
Profile Menu
------------
  (1). Display Name [JohnOBM]
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Disabled]
  (5). Change Password
  (6). Return
------------
Your Choice: 4

Upload encryption key (Y/N) ? y

Encryption recovery setting is updated!

Profile Menu
------------
  (1). Display Name [JohnOBM]
  (2). Contacts
  (3). Time Zone [GMT+08:00 (HKT)]
  (4). Encryption Recovery [Enabled]
  (5). Change Password
  (6). Return
------------
Your Choice:
```

If you wish to update your password, select option **(5)** from the profile menu. Input your old password and replace it with a new one. Re-enter your new password and it will be updated.

```
Profile Menu
------------
   (1). Display Name [JohnOBM]
   (2). Contacts
   (3). Time Zone [GMT+08:00 (HKT)]
   (4). Encryption Recovery [Disabled]
   (5). Change Password
   (6). Return
------------
Your Choice: 5

Old password : ******************
New password : ******************
Re-Enter new password : ******************

Password is updated!

Profile Menu
------------
   (1). Display Name [JohnOBM]
   (2). Contacts
   (3). Time Zone [GMT+08:00 (HKT)]
   (4). Encryption Recovery [Disabled]
   (5). Change Password
   (6). Return
------------
Your Choice:
```

6.8 Quit

Select this option to exit AhsayOBM.

```
Main Menu
---------
   (1). List Backup Sets
   (2). Delete Backup Set
   (3). Export Backup Set Settings to XML
   (4). Import Backup Set Settings from XML
   (5). Generate new Backup Set Settings Template
   (6). Change Language [English]
   (7). Update Profile Settings
   (8). Quit
---------
Your Choice: 8

Exit Configurator Utility
```

7 Creating a File Backup Set using ssh

In order to run scheduled backups a backup set must be created. There are two ways to create a File Backup Set. One is to create it using AhsayCBS while another way is editing the XML file using ssh. If you prefer to create a File Backup Set using AhsayCBS, refer to the AhsayCBS v8 User's Guide for more information.

1. To create a File backup set select **(5). Generate new Backup Set Settings Template** from the menu.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 5
```

2. Select **(1). File** to generate a File Backup Set template file to the **/root/.obm/config** directory.

```
Choose a template from a backup set type
----------------------------------------
  (1). File
  (2). MySQL Database
  (3). MariaDB
  (4). Oracle Database Server
  (5). IBM Domino
----------------------------------------
Your Choice: 1


XML file successfully exported to
/root/.obm/config/backupSet.xml


Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit

Your Choice:
```

3. **Configuring Backup Set Settings.**

   To configure the backup set setting you need to edit the **/root/.obm/config/backupSet.xml** file using a text editor, for example vi

You can either quit the RunConfigurator.sh script or open a new ssh session to edit the backupSet.xml file.

Please refer to Appendix A, B, and C for details and examples on how to create backup sets using the **backupSet.xml** file.

Notes:

i. *Before importing the backupSet.xml file please remove any unused destinations and backup schedule settings. Otherwise the following error will be displayed* ***"Failed to import XML file (Reason: Value of Name is empty!)"*** *when trying to import the backupSet.xml file.*

ii. *Setup of the following cloud storage destinations; OneDrive, OneDrive For Business, DropBox, and Google Drive are not supported in FreeBSD environment, as these cloud storage destinations require authentication using a web browser.*

4. **Importing the updated backupSet.xml file to AhsayOBM**

After you have edited the backupSet.xml file with your chosen backup settings you need to import the settings back to AhsayOBM so they can be uploaded to AhsayCBS backup server in order to create the backup set.

For example: to create a new file backup set called “bsdguide” with encryption enabled and user password encryption settings.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 4

New backup set created.
Enable Encryption (Y/N) ? Y

Choose Encryption Type
----------------------
  (1). Default
  (2). User password
  (3). Custom
----------------------
Your Choice: 2

XML imported, uploading to server...

XML successfully uploaded to server
```

5. Verify the Backup Set Settings

To verify the uploaded backup set settings are correct select **(1). List Backup Sets** and then select the backup set you wish to verify, for example backup set named bsdguide.

```
Main Menu
---------
  (1). List Backup Sets
```

```
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice: 1

Select a Backup Set to show more details
----------------------------------------
  (1). bsdguide
----------------------------------------
Your Choice: 1

Name                  : bsdguide
Owner                 : freebsd11
Type                  : FILE
Selected Source       : /usr/local/docs
Deselected Source     : /root/.obm
Deselected Source     : /usr/local/obm
Deselected Source     : /root/tmp
Destination Name      : AhsayCBS, Type: OBS
Encryption Key        : abc123$%
Encryption Algorithm : AES
Encryption Mode       : CBC
Encryption Key Length: 256

Press Enter to continue...
```

Congratulations! The backup set configuration is now complete!

Notes:

i. We would like to stress that it is very important to keep a separate record of your encryption key in a safe place, as you will not be able to restore your data without the correct encryption key.

ii. If you re-install AhsayOBM or install AhsayOBM on another machine the encryption key will be required for restoring data from the backup set.

6. **Verify the Backup Schedule**

To verify if the scheduled backup settings are correct, check the AhsayOBM scheduler log (**debug.log**) located in **/root/.obm/log/Scheduler** folder.

```
# cat /root/.obm/log/Scheduler/debug.log
[2020/07/15 17:17:06][info] Scheduler Version='8.3.4.0'
[2020/07/15 17:17:06][info] OS Name='FreeBSD 11.1-RELEASE-p1'
Version='11.1-RELEASE-p1'
[2020/07/15 17:17:06][info] Java Vendor='Oracle Corporation'
Version='1.8.0_181'
[2020/07/15 17:17:06][info] Computer Name='freebsd11'
[2020/07/15 17:17:06][info] User='FreeBSDUser''
[2020/07/15 17:17:06][info] Starting UserScheduler ...
[2020/07/15 17:17:06][info] UserScheduler started.
[2020/07/15 17:22:07][info] Loading profile...
[2020/07/15 17:22:07][info] Loading profile from server ...
[2020/07/15 17:22:12][info] Loading profile from server ...
Completed
```

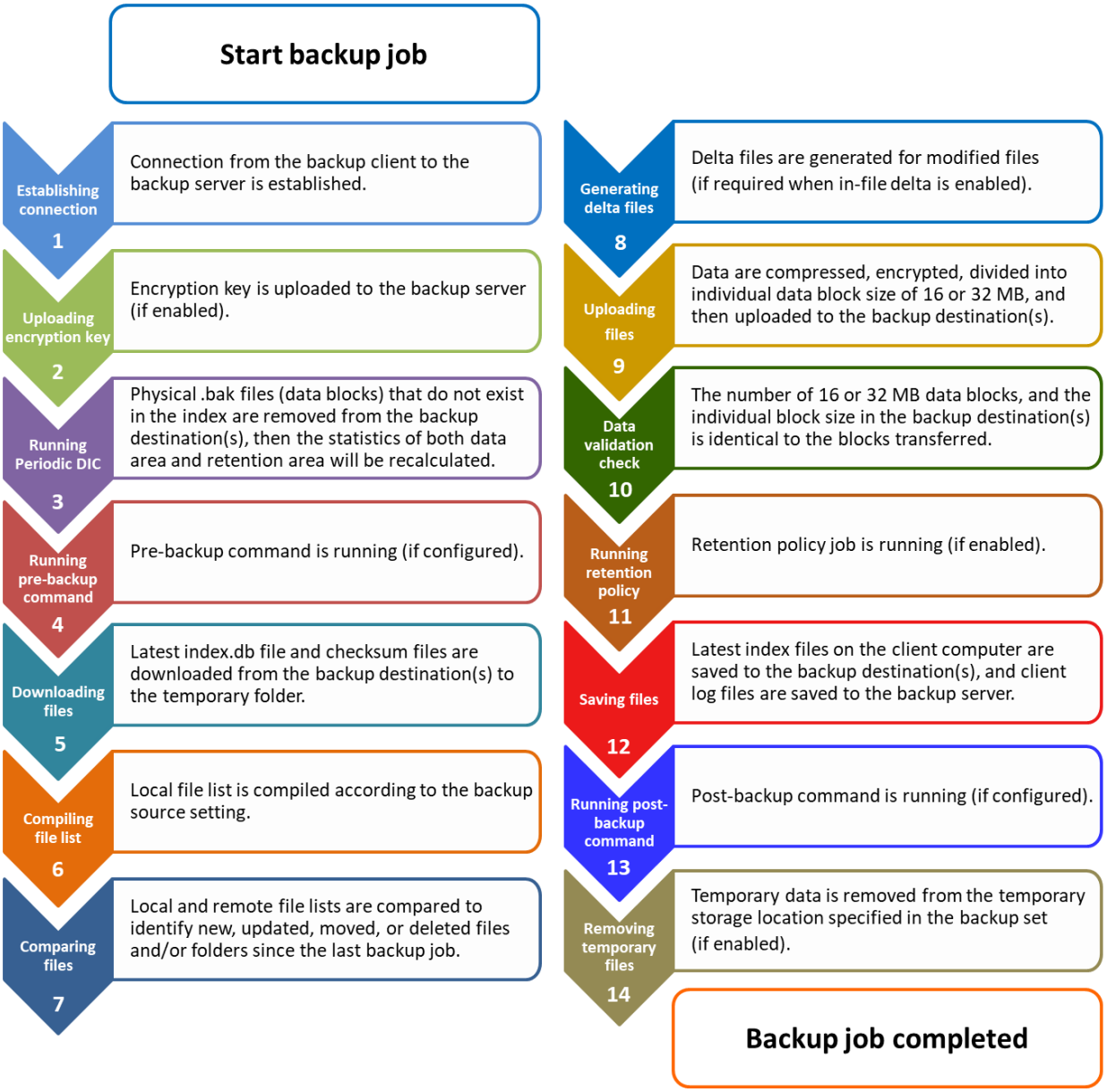
```
[2020/07/15 17:22:12][info] Loading profile... Completed
[2020/07/15 17:22:12][info] Profile is reloaded from server.
Reloading scheduler ...
[2020/07/15 17:22:12][info] [bsdguide (1594804619772)] Start
scheduler.
[2020/07/15 17:22:12][info] Profile is reloaded from server.
Reloading scheduler ... Completed
[2020/07/15 17:22:12][info] [bsdguide (1594804619772)]  Next
backup will run in 2 hr 37 min 47 sec.
```

The AhsayOBM scheduler service connects to the AhsayCBS backup server every 5 minutes to retrieve the latest profile updates. It will display a countdown of when the scheduled backup job(s) will be kicked off.

8 Overview on the Backup Process

The following steps are performed during a file backup job. For an overview of the detailed process for Steps **3**, **5, 10** and **12**, please refer to the following chapters.

- Periodic Data Integrity Check (PDIC) Process **(Step 3)**
- Backup Set Index Handling Process
  - Start Backup Job **(Step 5)**
  - Completed Backup Job **(Step 12)**
- Data Validation Check Process **(Step 10)**



8.1 Periodic Data Integrity Check (PDIC) Process

For AhsayOBM v8.3.6.0 (or above), the PDIC will run on the first backup job that falls on the corresponding day of the week from **Monday to Friday**.

To minimize the impact of the potential load of large number of PDIC jobs running at the same time on the AhsayCBS server, the schedule of a PDIC job for each backup set is automatically determined by the result of the following formula:

PDIC schedule = ***%BackupSetID% modulo 5***
or
%BackupSetID% mod 5

The calculated **result** will map to the corresponding day of the week (i.e., from Monday to Friday).

0	**Monday**
1	**Tuesday**
2	**Wednesday**
3	**Thursday**
4	**Friday**

NOTE: The PDIC schedule cannot be changed.

Example:

Backup set ID: 1594627447932

Calculation: 1594627447932 mod 5 = ***2***

2	**Wednesday**

In this example:

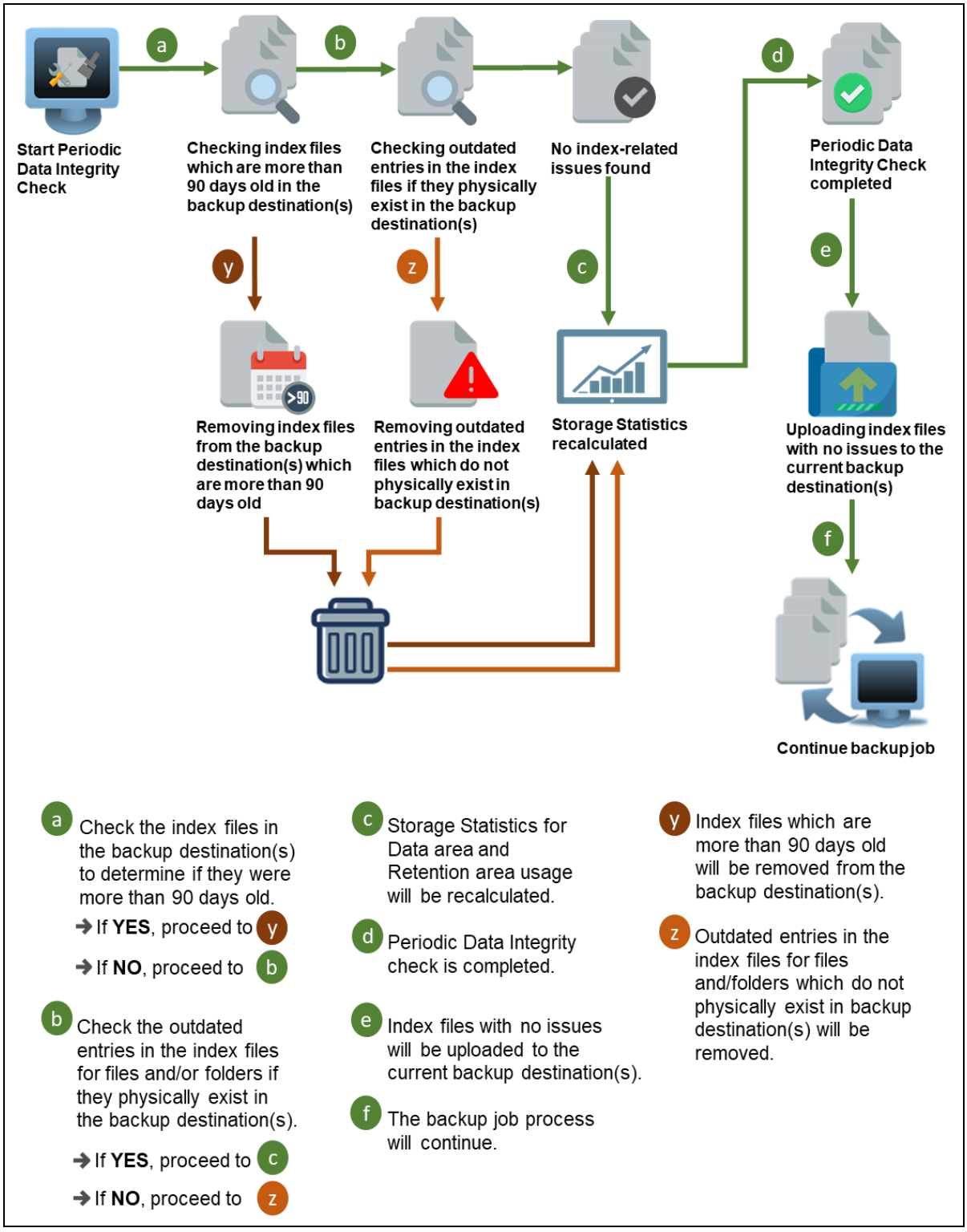
- the PDIC will run on the first backup job that falls on Wednesday; or
- if there is no active backup job(s) running from Monday to Friday, then the PDIC will run on the next available backup job.

NOTE

Although according to the PDIC formula for determining the schedule is ***%BackupSetID% mod 5***, this schedule only applies if the previous PDIC job was actually run more than 7 days prior.

Under certain conditions, the PDIC may not run strictly according to this formula. For example:

1. If AhsayOBM was upgraded to v8.5 (or above) from an older version v6, v7, or pre-8.3.6.0 version. In this case, the PDIC job will run on the first backup job after upgrade.
2. If backup jobs for a backup set are not run on a regular daily backup schedule (for example: on a weekly or monthly schedule), then the PDIC job will run if it detects that the previous PDIC job was run more than 7 days ago.



a Check the index files in the backup destination(s) to determine if they were more than 90 days old.

→ If **YES**, proceed to y

→ If **NO**, proceed to b

b Check the outdated entries in the index files for files and/or folders if they physically exist in the backup destination(s).

→ If **YES**, proceed to c

→ If **NO**, proceed to z

c Storage Statistics for Data area and Retention area usage will be recalculated.

d Periodic Data Integrity check is completed.

e Index files with no issues will be uploaded to the current backup destination(s).

f The backup job process will continue.

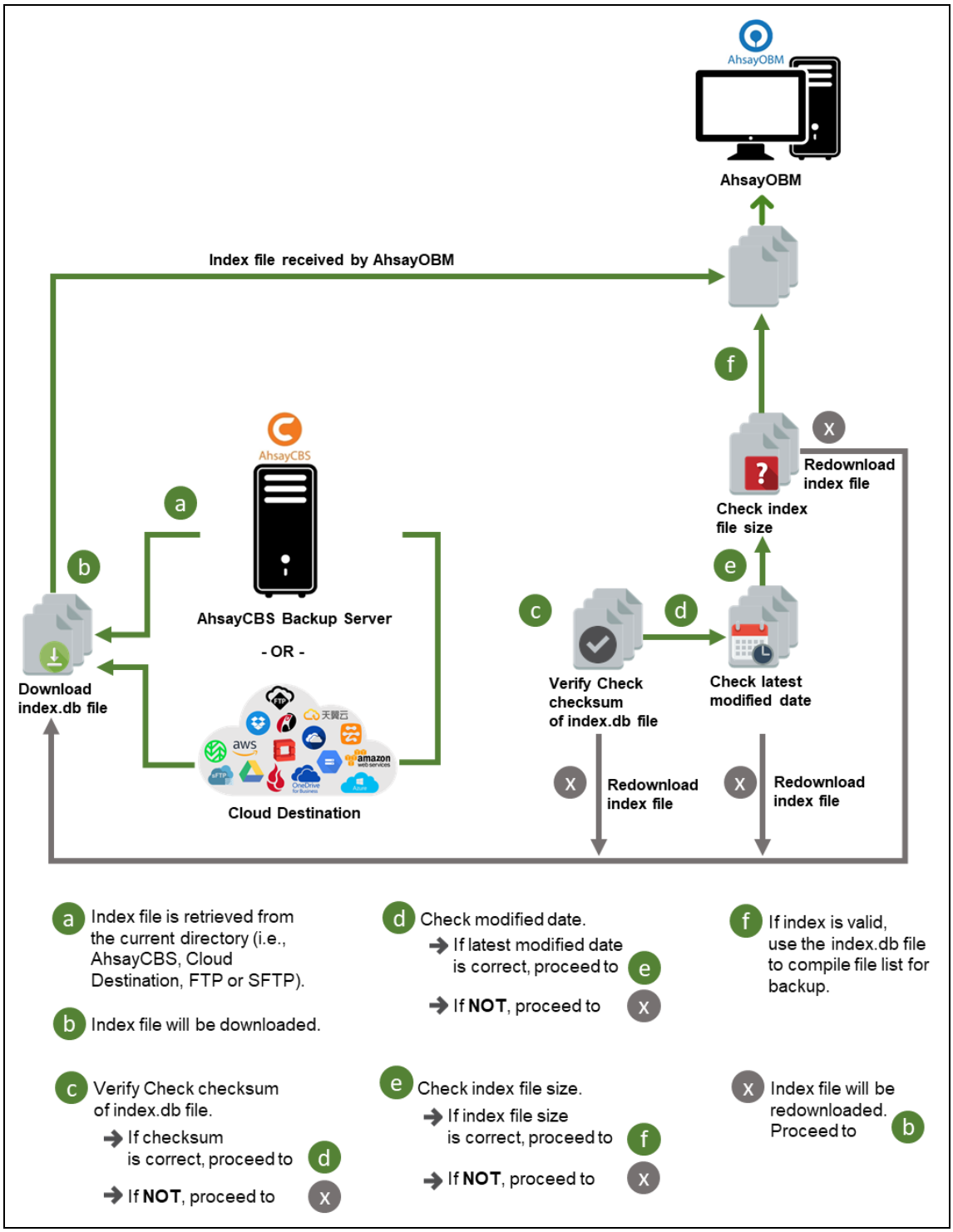
y Index files which are more than 90 days old will be removed from the backup destination(s).

z Outdated entries in the index files for files and/folders which do not physically exist in backup destination(s) will be removed.

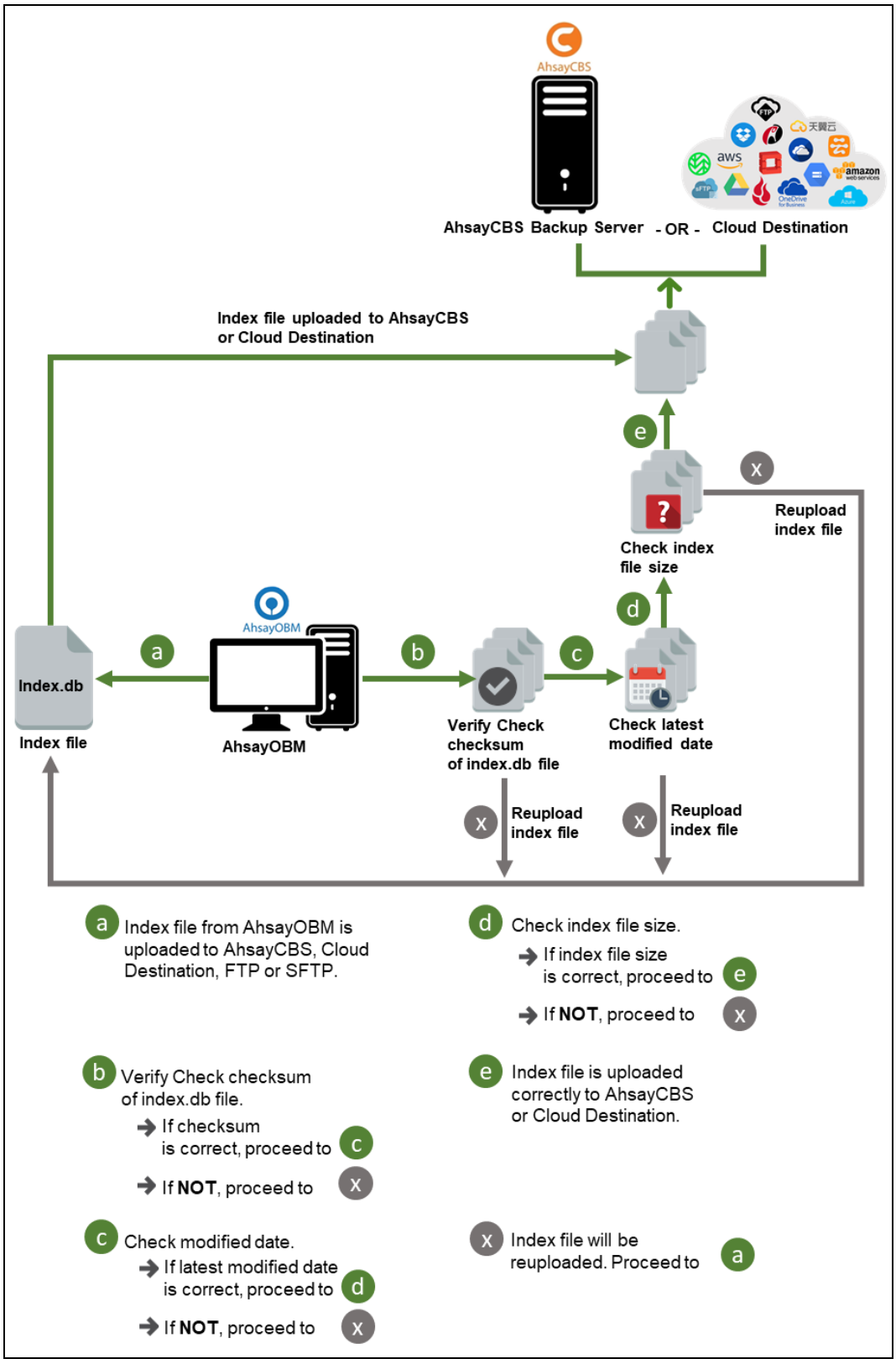
8.2 Backup Set Index Handling Process

To minimize the possibility of index related issues affecting backups, each time index files are downloaded from and uploaded to backup destination(s); the file size, last modified date, and checksum is verified to ensure index file integrity.

8.2.1 Start Backup Job

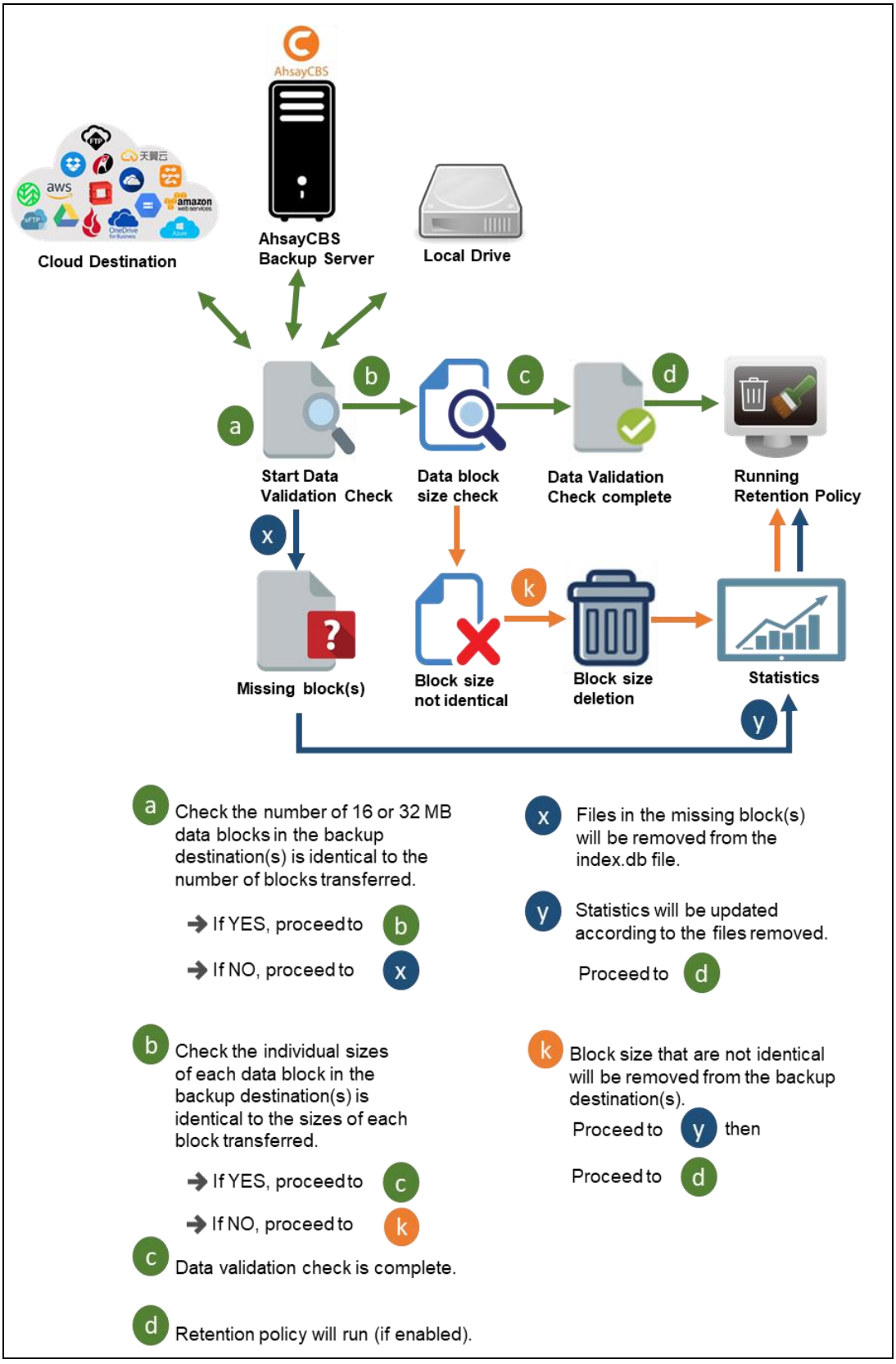


8.2.2 Completed Backup Job



8.3 Data Validation Check Process

As an additional measure to ensure that all files transferred to the backup destination(s) are received and saved correctly, both the number of 16 or 32 MB data block files and the size of each block file are checked again after the files are transferred.



9 Running Backup Jobs

Use the **RunBackupSet.sh** script to start a backup job manually.

```
# cd /usr/local/obm/bin
# sh RunBackupSet.sh
-
Using APP_HOME       : /usr/local/obm
Using SETTING_HOME   :
Using JAVA_HOME      : /usr/local/obm/jvm
Using JAVA_EXE       : /usr/local/obm/jvm/bin/java
Using JAVA_OPTS      : -Xrs -Xms128m -Xmx768m -
XX:MaxDirectMemorySize=512m -client -
Dsun.nio.PageAlignDirectMemory=true
Using JNI_PATH       : -Djava.library.path=.
Using CLASSPATH      : .:./cb.jar
-
Running Backup Set - '' ...
[2020/07/15 17:52:23] [info] [-] Start [ AhsayOBM v8.3.4.0 ]
[2020/07/15 17:52:24] [info] [-] Saving encrypted backup set
encryption keys to server...
[2020/07/15 17:52:26] [info] [1594804757538] Start Backup ... [In-
File Delta: Full]
[2020/07/15 17:52:26] [info] [1594804757538] Using Temporary
Directory /root/temp/1594804619772/OBS@1594804757538
[2020/07/15 17:52:59] [info] [-] Start running pre-commands
[2020/07/15 17:52:59] [info] [-] Finished running pre-commands
[2020/07/15 17:53:05] [info] [1594804757538] Downloading server file
list...
[2020/07/15 17:53:08] [info] [1594804757538] Downloading server file
list... Completed
[2020/07/15 17:53:09] [info] [1594804757538] Reading backup source
from hard disk...
[2020/07/15 17:53:11] [info] [1594804757538] [New Directory]... /
[2020/07/15 17:53:11] [info] [1594804757538] [New Directory]...
/root
[2020/07/15 17:53:11] [info] [1594804757538] [New Directory]... /usr
[2020/07/15 17:53:11] [info] [1594804757538] [New Directory]...
/usr/local
[2020/07/15 17:53:11] [info] [1594804757538] [New Directory]...
/usr/local/docs
[2020/07/15 17:53:11] [info] [1594804757538] Reading backup source
from hard disk... Completed
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/BackupSolution.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/File snapshot testing.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/File snapshot testing1.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/File snapshot testing2.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/File snapshot testing4.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/File snapshot testing3.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/File snapshot testing5.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/LogFile.txt"
```

```
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/LogFile_2017.txt"
[2020/07/15 17:53:15] [info] [1594804757538] [New File]... 100% of
"/usr/local/docs/LogFile_2018.txt"
[2020/07/15 17:56:42] [info] [1594804757538] Start validating the
presence and size of backup data in destination "AhsayCBS"...
[2020/07/15 17:56:43] [info] [1594804757538] File:
"1594804619772/blocks/2020-07-15-17-52-20/0/000000.bak", Size:
2,080, OK
[2020/07/15 17:56:43] [info] [1594804757538] Finished validating the
presence and size of backup data in destination "AhsayCBS"
[2020/07/15 17:56:43] [info] [1594804757538] Total New Files = 10
[2020/07/15 17:56:43] [info] [1594804757538] Total New Directories =
5
[2020/07/15 17:56:43] [info] [1594804757538] Total New Links = 0
[2020/07/15 17:56:43] [info] [1594804757538] Total Updated Files = 0
[2020/07/15 17:56:43] [info] [1594804757538] Total Attributes
Changed Files = 0
[2020/07/15 17:56:43] [info] [1594804757538] Total Deleted Files = 0
[2020/07/15 17:56:43] [info] [1594804757538] Total Deleted
Directories = 0
[2020/07/15 17:56:43] [info] [1594804757538] Total Deleted Links = 0
[2020/07/15 17:56:43] [info] [1594804757538] Total Moved Files = 0
[2020/07/15 17:56:45] [info] [1594804757538] Saving encrypted backup
file index to 1594804619772/blocks at destination AhsayCBS...
[2020/07/15 17:56:49] [info] [1594804757538] Saving encrypted backup
file index to 1594804619772/blocks/2020-07-15-17-52-20 at
destination AhsayCBS...
[2020/07/15 17:56:51] [info] [-] Start running post-commands
[2020/07/15 17:56:51] [info] [-] Finished running post-commands
[2020/07/15 17:56:51] [info] [1594804757538] Deleting temporary file
/root/temp/1594804619772/OBS@1594804757538
[2020/07/15 17:56:59] [info] [1594804757538] Backup Completed
Successfully
```

10 Restoring Data

1. To restore files that have been backed up from your backup destination, you need to use the **Restore.sh** script by using a text editor like vi to configure the restore settings like :

   - Backup Set Name -> BACKUP_SET=""
   - Backup Destination -> DESTINATION=""
   - Location of Restored Files -> RESTORE_TO=""
   - Files/Folders to be Restored -> RESTORE_FROM=""
   - Snapshot to be restored ->POINT_IN_TIME=""
   - Applying the original permission to the restore files ->RESTORE_PERMISSION=""
   - Verifying in-file delta file checksum during restore ->VERIFY_CHKSUM=""

```
# cd /usr/local/obm/bin
# vi Restore.sh

#!/bin/sh

##################################  Restore.sh
##################################
# You can use this shell script to restore backup files using
command-line.    #
# Just customize the "User Define Section" below with values
for your restore  #
# action.
#
############################################################
##################

#########################  Start: User Defined Section
########################

# ------------------------------  BACKUP_SET  ---------------
------------------
# | The name or ID of the backup set that you want to restore.
|
# | If backup set name is not in English, please use ID
instead.               |
# | e.g. BACKUP_SET="1119083740107"
|
# |  or  BACKUP_SET="FileBackupSet-1"
|
# |
|
# | You can leave this parameter blank if you have only 1
backup set.          |
# ------------------------------------------------------------
------------------
BACKUP_SET=""

# ------------------------------  DESTINATION  ---------------
------------------
# | The name or ID of the backup destination that you want to
restore from.    |
```

```
# | If backup destination name is not in English, please use
ID instead.       |
# | e.g. DESTINATION="1740107119083"
|
# |  or  DESTINATION="Destination-1"
|
# |
|
# | You can leave this parameter blank if you have only 1
destination.         |
# ------------------------------------------------------------
------------------
DESTINATION=""

# -------------------------------  RESTORE_TO  --------------
------------------
# | Directory to where you want files to be restored
|
# | set to "" to restore files to original location
|
# | e.g. RESTORE_TO="/tmp"
|
# ------------------------------------------------------------
------------------
RESTORE_TO="/root/restored"

# -------------------------------  RESTORE_FROM  --------------
------------------
# | File/Directory on the backup server that you would like to
restore         |
# | e.g. RESTORE_FROM="/Data"
|
# ------------------------------------------------------------
------------------
RESTORE_FROM="/usr/local/docs"

# -------------------------------  POINT_IN_TIME  --------------
------------------
# | The point-in-time snapshot (successful backup) that you
want to restore    |
# | from the backup server. Use "Current" for the latest
backup snapshot       |
# | e.g. POINT_IN_TIME="2006-10-04-12-57-13"
|
# |  or  POINT_IN_TIME="Current"
|
# | You can retrieve the point in time by using the
ListBackupJob.sh           |
# ------------------------------------------------------------
------------------
POINT_IN_TIME="Current"

# --------------------------  RESTORE_PERMISSION  ------------
------------------
# | set to "Y" if you want to restore file permissions
|
# | set to "N" if you do NOT want to restore file permissions
|
# ------------------------------------------------------------
------
RESTORE_PERMISSION="N"
```

```
# ----------------------------  SKIP_INVALID_KEY  ------------
-----------------
# | set to "Y" if you want to skip restore file with invalid
key               |
# | set to "N" if you want to prompt user to input a correct
key               |
# ------------------------------------------------------------
------------------
SKIP_INVALID_KEY="N"

# ------------------------------  SYNC_OPTION  ---------------
------------------
# | Delete extra files
|
# | set to "Y" if you want to enable sync option
|
# | set to "N" if you do NOT want to enable sync option
|
# | set to "" to prompt for selection
|
# ------------------------------------------------------------
------------------
SYNC_OPTION="N"

# -------------------------  REPLACE_EXISTING_FILE  ----------
------------------
# | set to "--all" to replace all existing file(s) of the same
filename        |
# | set to "--none" to skip all existing file(s) with the same
filename        |
# | set to "" to prompt for selection
|
# ------------------------------------------------------------
------------------
REPLACE_EXISTING_FILE="--all"

# ------------------------------  SETTING_HOME  --------------
------------------
# | Directory to your setting home.
|
# | Default to ${HOME}/.obm when not set.
|
# | e.g. SETTING_HOME="${HOME}/.obm"
|
# ------------------------------------------------------------
------------------
SETTING_HOME=""

# ---------------------------------  FILTER  -----------------
------------------
# | Filter out what files you want to restore
|
# | -Pattern=xxx-Type=yyy-Target=zzz
|
# | where xxx is the filter pattern,
|
# |       yyy is the filter type, whice can be one of the
following:           |
# |           [exact | exactMatchCase | contains |
containsMatchCase|          |
```

```
# |             startWith | startWithMatchCase | endWith |
endWithMatchCase]     |
# |       zzz is the filter target, which can be one of the
following:          |
# |            [toFile | toFileDir | toDir]
|
# |
|
# | e.g. FILTER="-Pattern=.txt-Type=exact-Target=toFile"
|
# ------------------------------------------------------------
------------------
FILTER=""

# -------------------------------  TEMP_DIR  ----------------
------------------
# | Directory to where you want to store restore files
temporarily             |
# | set to "" to use the temporary directory in the backup set
|
# | e.g. TEMP_DIR="/tmp"
|
# ------------------------------------------------------------
------------------
TEMP_DIR="/root/tmp"

# ----------------------------  VERIFY_CHKSUM  --------------
------------------
# | set to "Y" if you want to verify in-file delta file
checksum during restore|
# | set to "N" if you do NOT want to verify in-file delta file
checksum during |
# | restore
|
# ------------------------------------------------------------
------------------
VERIFY_CHKSUM="N"

#################  END: User Defined Section
###################
```

2. After the Restore.sh script is configured the files can be restored by running the Restore.sh script.

```
# cd /usr/local/obm/bin
# sh Restore.sh
Using APP_HOME:          : /usr/local/obm
Using BACKUP_SET         : bsdguide
Using RESTORE_FROM       : /usr/local/docs
Using RESTORE_TO         : /root/restored
Using POINT_IN_TIME      : Current
Using RESTORE_PERMISSION : N
Using TEMP_DIR           : /root/tmp
Filter Pattern not set, filter would not apply to restore
[2020-07-15 18:11:58] Start [ AhsayOBM v8.3.4.0 ]
[2020-07-15 18:11:58] OS: FreeBSD 11.1-RELEASE-p1 (freebsd11);
CPU Model: VMware-Intel(R) Xeon(R) CPU           E5520  @
2.27GHz (2261.00-MHz K8-class CPU),Intel(R) Xeon(R) CPU
E5520  @ 2.27GHz (2261.00-MHz K8-class CPU); Number of
Processors: 4; Heap Size: 65.5MB (Current) / 684MB (Maximum);
Physical Memory: 2.3GB (Free) / 4GB (Total)
```

```
[2020-07-15 18:11:58] start,Start [ AhsayOBM
v8.3.4.0 ],0,0,0,,0,0

[2020-07-15 18:11:58] Selected job: 2020-07-15-18-11-44
[2020-07-15 18:11:58] Selected source: [/usr/local/docs]
[2020-07-15 18:11:58] Info: [followLink=true
marshalTargetPath=false deleteForSync=false skipFaultKey=false
verifyDeltaFileChecksum=false restorePermission=false
[RestoreLocation] type=RAW path=[/root/restored]]
[2020-07-15 18:12:01] Initializing decrypt action...
[2020-07-15 18:12:11] Initializing decrypt action... Completed
[2020-07-15 18:12:14] Creating new directory...
"/root/restored/usr"
[2020-07-15 18:12:14] Creating new directory...
"/root/restored/usr/local"
[2020-07-15 18:12:14] Creating new directory...
"/root/restored/usr/local/docs"
[2020-07-15 18:12:14] Downloading...
"/root/restored/usr/local/docs/BackupSolution.txt" (Total 7K
bytes)
[2020-07-15 18:12:14] Downloading...
"/root/restored/usr/local/docs/File snapshot testing.txt"
(Total 7K bytes)
[2020-07-15 18:12:14] Downloading...
"/root/restored/usr/local/docs/File snapshot testing1.txt"
(Total 7K bytes)
[2020-07-15 18:12:16] file,/root/restored/usr/local/docs/File
snapshot
testing.txt,206,7282,1545028063000,,1594807936062,159480793638
7

[2020-07-15 18:12:16]
file,/root/restored/usr/local/docs/BackupSolution.txt,206,7282
,1545028063000,,1594807936062,1594807936544

[2020-07-15 18:12:16] Downloading...
"/root/restored/usr/local/docs/File snapshot testing2.txt"
(Total 7K bytes)
[2020-07-15 18:12:16] file,/root/restored/usr/local/docs/File
snapshot
testing1.txt,206,7282,1547518334000,,1594807936548,15948079365
49

[2020-07-15 18:12:16] Downloading...
"/root/restored/usr/local/docs/File snapshot testing3.txt"
(Total 7K bytes)
[2020-07-15 18:12:16] file,/root/restored/usr/local/docs/File
snapshot
testing2.txt,206,7282,1547518346000,,1594807936553,15948079365
53

[2020-07-15 18:12:16] Downloading...
"/root/restored/usr/local/docs/File snapshot testing4.txt"
(Total 7K bytes)
[2020-07-15 18:12:16] file,/root/restored/usr/local/docs/File
snapshot
testing3.txt,206,7282,1547518351000,,1594807936556,15948079365
56

[2020-07-15 18:12:16] file,/root/restored/usr/local/docs/File
snapshot
```

```
testing4.txt,206,7282,1547518363000,,1594807936557,15948079365
58

[2020-07-15 18:12:16] Downloading...
"/root/restored/usr/local/docs/File snapshot testing5.txt"
(Total 7K bytes)
[2020-07-15 18:12:16] file,/root/restored/usr/local/docs/File
snapshot
testing5.txt,206,7282,1547518367000,,1594807936564,15948079365
64

[2020-07-15 18:12:16] Downloading...
"/root/restored/usr/local/docs/LogFile.txt" (Total 7K bytes)
[2020-07-15 18:12:16] Downloading...
"/root/restored/usr/local/docs/LogFile_2017.txt" (Total 7K
bytes)
[2020-07-15 18:12:16] Downloading...
"/root/restored/usr/local/docs/LogFile_2018.txt" (Total 7K
bytes)
[2020-07-15 18:12:16]
file,/root/restored/usr/local/docs/LogFile.txt,206,7282,154502
8063000,,1594807936572,1594807936573

[2020-07-15 18:12:16]
file,/root/restored/usr/local/docs/LogFile_2017.txt,206,7282,1
545028063000,,1594807936576,1594807936576

[2020-07-15 18:12:16]
file,/root/restored/usr/local/docs/LogFile_2018.txt,206,7282,1
545028063000,,1594807936588,1594807936589

[2020-07-15 18:12:17] Restore Completed Successfully
[2020-07-15 18:12:17] end,RESTORE_STOP_SUCCESS,0,0,0,,0,0
```

3. Verify the files are restored on the machine.

```
# ls -la /root/restored/usr/local/docs
total 88
drwxr-xr-x  2 root  wheel   512 Jul 15 18:12 .
drwxr-xr-x  3 root  wheel   512 Jul 15 18:12 ..
-rwxr-xr-x  1 root  wheel  7282 Dec 17  2018
BackupSolution.txt
-rwxr-xr-x  1 root  wheel  7282 Dec 17  2018 File snapshot
testing.txt
-rwxr-xr-x  1 root  wheel  7282 Jan 15  2019 File snapshot
testing1.txt
-rwxr-xr-x  1 root  wheel  7282 Jan 15  2019 File snapshot
testing2.txt
-rwxr-xr-x  1 root  wheel  7282 Jan 15  2019 File snapshot
testing3.txt
-rwxr-xr-x  1 root  wheel  7282 Jan 15  2019 File snapshot
testing4.txt
-rwxr-xr-x  1 root  wheel  7282 Jan 15  2019 File snapshot
testing5.txt
-rwxr-xr-x  1 root  wheel  7282 Dec 17  2018 LogFile.txt
-rwxr-xr-x  1 root  wheel  7282 Dec 17  2018 LogFile_2017.txt
-rwxr-xr-x  1 root  wheel  7282 Dec 17  2018 LogFile_2018.txt
```

11 Contact Ahsay

11.1 Technical Assistance

To contact Ahsay support representatives for technical assistance, visit the Partner Portal:
https://www.ahsay.com/partners/

Also use the Ahsay Wikipedia for resource such as Hardware Compatibility List, Software Compatibility List, and other product information:
http://wiki.ahsay.com/

11.2 Documentation

Documentations for all Ahsay products are available at:
https://www.ahsay.com/jsp/en/downloads/ahsay-downloads_documentation_guides.jsp

You can send us suggestions for improvements or report on issues in the documentation by contacting us at:
https://www.ahsay.com/partners/

Please specify the specific document title as well as the change required/suggestion when contacting us.

Appendix

Appendix A File Backup Set XML Template (Raw)

```
<?xml version="1.0" encoding="UTF-8"?>
<Setting>
        <!-- This is the backup set setting -->
        <Key name="Backup Set Setting" allowMultiple="Y">
              <!-- Backup set type (Read Only) -->
              <Value data="FILE" name="Type" type="string" />
              <!-- Backup set name -->
              <Value data="" name="Name" type="string" />
              <!-- Temporary directory for storing backup files -->
              <Value data="" name="Temporary Working Directory"
type="string"/>
              <!-- Remove temporary files after backup -->
              <!-- Y: Yes -->
              <!-- N: No -->
              <Value data="Y" name="Delete temporary files after backup"
type="boolean" />
              <!-- Support of opening backup data directly without
restoration -->
              <!-- Y: Yes -->
              <!-- N: No -->
              <Value data="N" name="OpenDirect" type="boolean" />
              <!-- Select compression type -->
              <!-- GzipDefaultCompression  : Normal -->
              <!-- GzipBestSpeedCompression: Fast (Compressed size larger
than normal) -->
              <!-- SnappyDefaultCompression: Fast with optimization
 for local -->
              <!-- Leave the field blank for no compression -->
              <Value data="" name="Compression Type" type="string" />
              <!-- Backup files' permissions -->
              <!-- Y: Yes -->
              <!-- N: No -->
              <Value data="Y" name="Upload files permission"
type="boolean" />
              <!-- Follow link of the backup files -->
              <!-- Y: Yes -->
              <!-- N: No -->
              <Value data="Y" name="Follow links" type="boolean" />
              <!-- This includes the files you want to backup -->
              <!-- Copy and paste the whole <Key> to add more selected
sources -->
              <Key name="Selected Source" allowMultiple="Y">
              <!-- Please enter your file path, e.g. /root/Documents -->
              <Value data="" name="Path" type="string" />
              </Key>
              <!-- This excludes the files from the included source -->
              <!-- Copy and paste the whole <Key> to add more deselected
sources -->
              <Key name="Deselected Source" allowMultiple="Y">
              <!-- Please enter your file path, e.g. /root/Documents -->
              <Value data="" name="Path" type="string" />
              </Key>
              <!-- Settings for your scheduled backups -->
              <Key name="Schedule Settings">
```

```
                <!-- Enable scheduled backup on this computer -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="N" name="Enable" type="boolean" />
                <!-- Daily settings -->
                <!-- Copy and paste the whole <Key> to add more daily
schedules -->
                <Key name="Daily Schedule Settings" allowMultiple="Y">
                <!-- Name of schedule -->
                <Value data="Daily-Schedule" name="Name" type="string" />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                <!-- This value will be ignored if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
                <!-- This value will be ignored if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <!-- Duration can only be -1 if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="-1" name="Duration" type="integer"/>
                <!-- Interval -->
                <!-- 1   : 1 minute -->
                <!-- 2   : 2 minutes -->
                <!-- 3   : 3 minutes -->
                <!-- 4   : 4 minutes -->
                <!-- 5   : 5 minutes -->
                <!-- 6   : 6 minutes -->
                <!-- 10  : 10 minutes -->
                <!-- 12  : 12 minutes -->
                <!-- 15  : 15 minutes -->
                <!-- 20  : 20 minutes -->
                <!-- 30  : 30 minutes -->
                <!-- 60  : 1 hour -->
                <!-- 120: 2 hours -->
                <!-- 180: 3 hours -->
                <!-- 240: 4 hours -->
                <!-- 360: 6 hours -->
                <!-- 480: 8 hours -->
                <!-- 720: 12 hours -->
                <!-- A value of -1 means a non-periodic normal schedule -->
                <Value data="-1" name="Interval" type="integer" />
                </Key>
                <!-- Weekly settings -->
                <!-- Copy and paste the whole <Key> to add more weekly
schedules -->
                <Key name="Weekly Schedule Settings" allowMultiple="Y">
                <!-- Name of schedule -->
                <Value data="Weekly-Schedule" name="Name" type="string" />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                <!-- This value will be ignored if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
```

```
                <!-- This value will be ignored if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <!-- Duration can only be -1 if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <!-- Interval -->
                <!-- 1   : 1 minute -->
                <!-- 2   : 2 minutes -->
                <!-- 3   : 3 minutes -->
                <!-- 4   : 4 minutes -->
                <!-- 5   : 5 minutes -->
                <!-- 6   : 6 minutes -->
                <!-- 10  : 10 minutes -->
                <!-- 12  : 12 minutes -->
                <!-- 15  : 15 minutes -->
                <!-- 20  : 20 minutes -->
                <!-- 30  : 30 minutes -->
                <!-- 60  : 1 hour -->
                <!-- 120: 2 hours -->
                <!-- 180: 3 hours -->
                <!-- 240: 4 hours -->
                <!-- 360: 6 hours -->
                <!-- 480: 8 hours -->
                <!-- 720: 12 hours -->
                <!-- A value of -1 means a non-periodic normal schedule -->
                <Value data="-1" name="Interval" type="integer"/>
                <!-- Backup on these days of the week -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="Y" name="Sunday" type="boolean" />
                <Value data="Y" name="Monday" type="boolean" />
                <Value data="Y" name="Tuesday" type="boolean" />
                <Value data="Y" name="Wednesday" type="boolean" />
                <Value data="Y" name="Thursday" type="boolean" />
                <Value data="Y" name="Friday" type="boolean" />
                <Value data="Y" name="Saturday" type="boolean" />
                </Key>
                <!-- Monthly settings -->
                <!-- Copy and paste the whole <Key> to add more monthly
schedules -->
                <Key name="Monthly Schedule Settings" allowMultiple="Y">
                <!-- Name of schedule -->
                <Value data="Monthly-Schedule" name="Name" type="string" />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <Value data="-1" name="Duration" type="integer"/>
                <!-- Schedule date of month -->
                <!-- 1, 2, 3... 31 -->
                <!-- 32: Last -->
                <!-- Set to 0 if you want to use the format of occurrence +
criteria, e.g. Third Wednesday, instead -->
```

```
                <Value data="1" name="Schedule Date" type="integer" />
                <!-- Backup occurrence -->
                <!-- First / Second / Third / Fourth / Last -->
                <!-- If "Schedule Date" is not zero, this value will be
ignored -->
                <Value data="First" name="Occurrence" type="string" />
                <!-- Backup criteria -->
                <!-- Sunday / Monday / Tuesday / Wednesday / Thursday /
Friday / Saturday / Weekday / Weekend -->
                <!-- If "Schedule Date" is not zero, this value will be
ignored -->
                <Value data="Friday" name="Criteria" type="string" />
                </Key>
                <!-- Custom settings -->
                <!-- Copy and paste the whole <Key> to add more custom
schedules -->
                <Key name="Custom Schedule Settings" allowMultiple="Y">
                <!-- Name of schedule -->
                <Value data="Custom" name="Name" type="string" />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <Value data="-1" name="Duration" type="integer"/>
                <!-- Date for performing custom schedule backup -->
                <!-- Input in the format of YYYY-MM-DD -->
                <Value data="2020-7-15" name="Schedule Date" type="string"
/>
                </Key>
        </Key>
                <!-- This is the collection of destinations -->
                <Key name="Destination Settings">
                <!-- Concurrency level is the number of destinations to run
backup concurrently -->
                <!-- 2, 3, 4... -->
                <!-- 1 : Backup to destinations one by one sequentially -->
                <!-- -1: Backup to all destinations concurrently -->
                <Value data="1" name="Concurrency Level" type="integer" />
                <!-- AhsayCBS destination is where the files are backup to
server -->
                <Key name="AhsayCBS Destination Settings" allowMultiple="Y">
                </Key>
                <!-- Local destination means backup files are stored in your
computer -->
                <!-- Copy and paste the whole <Key> to add more local
destinations -->
                <Key name="Local Destination Settings" allowMultiple="Y">
                <!-- Name of your destination -->
                <Value data="" name="Name" type="string" />
                <!-- Directory to store your backup files -->
                <!-- e.g. /tmp -->
                <Value data="" name="Local Path" type="string" />
                </Key>
                </Key>
                <!-- This shows the in-file delta setting -->
                <Key name="In-file Delta Setting">
```

```
                <!-- Enable in-file delta backup -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="Y" name="Enable" type="boolean" />
                <!-- Default in-file delta type -->
                <!-- D: Differential -->
                <!-- I: Incremental -->
                <Value data="" name="Default Delta Type" type="string" />
                </Key>
        </Key>
</Setting>
```

Appendix B File Backup Set XML Template (with explanation)

This appendix explains all configurable items with their available options, highlighted in red, in this file backup set XML scripts.

Backup Set Setting

The following items define the basic configurations of the file backup set.

- **Backup set type** – enter the backup set type, for instance, File, MySQL etc.
- **Backup set name** – name your backup set.
- **Temporary directory for storing backup files** – Enter the directory path where you would like to have the backup files stored temporarily. The temporary directory is used for various purposes, such as storage of temporary spooled file (for database specific backup type in AhsayOBM), remote file list, local file list, temporary delta file and other files of temporary nature.
- **Remove temporary files after backup** – choose whether to remove temporary files after you finish backup.
- **Select compression type** – choose the backup compression mode among Normal, Fast, Fast with optimization for local or No compression.
- **Backup files' permissions –** choose whether to backup operating system file permission of the data selected as backup source.
- **Follow link of the backup files –** choose whether to follow an NTFS junction point or NTFS symbolic link during backup. When the follow link option is enabled, not only is the symbolic link or junction point backed up, but directories and files that the junction point links to will also be backed up.

```
<?xml version="1.0" encoding="UTF-8"?>
<Setting>
        <!-- This is the backup set setting -->
        <Key name="Backup Set Setting" allowMultiple="Y">
                <!-- Backup set type (Read Only) -->
                <Value data="FILE" name="Type" type="string" />
                <!-- Backup set name -->
                <Value data="" name="Name" type="string" />
                <!-- Temporary directory for storing backup files -->
                <Value data="" name="Temporary Working Directory"
type="string"/>
                <!-- Remove temporary files after backup -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="Y" name="Delete temporary files after backup"
type="boolean" />
                <!-- Support of opening backup data directly without
restoration -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="N" name="OpenDirect" type="boolean" />
                <!-- Select compression type -->
                <!-- GzipDefaultCompression  : Normal -->
                <!-- GzipBestSpeedCompression: Fast (Compressed size
larger than  normal) -->
                <!-- SnappyDefaultCompression: Fast with optimization
 for local -->
```

```
                <!-- Leave the field blank for no compression -->
                <Value data="" name="Compression Type" type="string" />
                <!-- Backup files' permissions -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="Y" name="Upload files permission"
type="boolean" />
                <!-- Follow link of the backup files -->
                <!-- Y: Yes -->
                <!-- N: No -->
        <Value data="Y" name="Follow links" type="boolean" />
```

Selected Source

- Enter the file path where the files you would like to backup are located.

```
        <!-- This includes the files you want to backup -->
        <!-- Copy and paste the whole <Key> to add more selected
        sources -->
        <Key name="Selected Source">
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="" name="Path" type="string" />
        </Key>
```

Deselected Source

- Enter the file path where files you would like to exclude from the backup are located.

```
        <!-- This excludes the files from the included source -->
        <!-- Copy and paste the whole <Key> to add more deselected
        sources -->
        <Key name="Deselected Source">
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="" name="Path" type="string" />
        </Key>
```

Schedule Settings

- Choose whether you would like backup jobs to be run at the scheduled time you set.

```
        <!-- Settings for your scheduled backups -->
        <Key name="Schedule Settings">
            <!-- Enable scheduled backup on this computer -->
            <!-- Y: Yes -->
            <!-- N: No -->
            <Value data="N" name="Enable" type="boolean" />
```

Daily Schedule Settings

Set backup jobs to run daily at the time you specified.

- **Start hour** – the starting hour of the backup, from 0-23. If normal backup set “Interval” to -1.
- **Start minute –** the starting minute of the backup, from 0-59. If normal backup set “Interval” to -1.
- **Duration of this backup in hours –** for how long, in hours, you would like this backup to run. Set to -1 if you would like the backup job to run until it finishes.
- **Interval –** frequency in minutes or hours when the backup would start, from 1-30 in minutes and 60-720 in hours.

```
            <!-- Daily settings -->
            <!-- Copy and paste the whole <Key> to add more daily
            schedules -->
            <Key name="Daily Schedule Settings" allowMultiple="Y">
                <!-- Name of schedule -->
                <Value data="Daily-Schedule" name="Name" type="string"
                />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                <!-- This value will be ignored if the schedule is set to
be periodic ("Interval" field contains value other than -1) -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
                <!-- This value will be ignored if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <!-- Duration can only be -1 if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="-1" name="Duration" type="integer" />
                <!-- Interval -->
                <!-- 1  : 1 minute -->
                <!-- 2  : 2 minutes -->
                <!-- 3  : 3 minutes -->
                <!-- 4  : 4 minutes -->
                <!-- 5  : 5 minutes -->
                <!-- 6  : 6 minutes -->
                <!-- 10 : 10 minutes -->
                <!-- 12 : 12 minutes -->
                <!-- 15 : 15 minutes -->
                <!-- 20 : 20 minutes -->
                <!-- 30 : 30 minutes -->
                <!-- 60 : 1 hour -->
                <!-- 120: 2 hours -->
                <!-- 180: 3 hours -->
                <!-- 240: 4 hours -->
                <!-- 360: 6 hours -->
                <!-- 480: 8 hours -->
                <!-- 720: 12 hours -->
                <!-- A value of -1 means a non-periodic normal schedule -->
                <Value data="-1" name="Interval" type="integer" />
            </Key>
```

Weekly Schedule Settings

Set backup jobs to run weekly at the time you specified.

- **Start hour** – the starting hour of the backup, from 0-23. If normal backup set “Interval” to -1
- **Start minute –** the starting minute of the backup, from 0-59. If normal backup set “Interval” to -1.
- **Duration of this backup in hours –** the duration you would like this backup to perform, in hours. Set to -1 if you would like the backup job to run until it finishes.
- **Interval –** frequency in minutes or hours when the backup would start, from 1-30 in minutes and 60-720 in hours.

- **Backup on these days of the week** – choose to enable or disable backup on each day in week.

```
            <!-- Weekly settings -->
            <!-- Copy and paste the whole <Key> to add more weekly
            schedules -->
            <Key name="Weekly Schedule Settings" allowMultiple="Y">
                <!-- Name of schedule -->
                <Value data="Weekly-Schedule" name="Name" type="string"
                />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                <!-- This value will be ignored if the schedule is set to
be periodic ("Interval" field contains value other than -1) -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
                <!-- This value will be ignored if the schedule is set to
be periodic ("Interval" field contains value other than -1) -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <!-- Duration can only be -1 if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="-1" name="Duration" type="integer" />
               <!-- Interval -->
               <!-- 1   : 1 minute -->
               <!-- 2   : 2 minutes -->
               <!-- 3   : 3 minutes -->
               <!-- 4   : 4 minutes -->
               <!-- 5   : 5 minutes -->
               <!-- 6   : 6 minutes -->
               <!-- 10  : 10 minutes -->
               <!-- 12  : 12 minutes -->
               <!-- 15  : 15 minutes -->
               <!-- 20  : 20 minutes -->
               <!-- 30  : 30 minutes -->
               <!-- 60  : 1 hour -->
               <!-- 120: 2 hours -->
               <!-- 180: 3 hours -->
               <!-- 240: 4 hours -->
               <!-- 360: 6 hours -->
               <!-- 480: 8 hours -->
               <!-- 720: 12 hours -->
               <!-- A value of -1 means a non-periodic normal schedule -->
                <Value data="-1" name="Interval" type="integer" />
                <!-- Backup on these days of the week -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="Y" name="Sunday" type="boolean" />
                <Value data="Y" name="Monday" type="boolean" />
                <Value data="Y" name="Tuesday" type="boolean" />
                <Value data="Y" name="Wednesday" type="boolean" />
                <Value data="Y" name="Thursday" type="boolean" />
                <Value data="Y" name="Friday" type="boolean" />
                <Value data="Y" name="Saturday" type="boolean" />
            </Key>
```

Monthly Schedule Settings

Set backup jobs to run monthly at the time you specified.

- **Start hour** – the starting hour of the backup, from 0-23.
- **Start minute –** the starting minute of the backup, from 0-59.
- **Duration of this backup in hours –** the duration you would like this backup to perform, in hours. Set to -1 if you would like the backup job to run until it finishes.
- **Schedule date of month** – set exact date in a month when you would like the backup to perform. Set to 0 if you would like the backup performed in a specified occurrence + criteria format, e.g. every third Wednesday of the month.
- **Backup [Occurrence + Criteria] format**
  You can set the backup to perform on a specified week (**Occurrence, First / Second / Third / Last**) and on a specified day of the week (**Criteria, Sun thru Sat**), for instance, the third Wednesday of the month.
  - **Backup occurrence –** set the week, i.e., First / Second / Third / Last. If you have set an exact date in the previous “Schedule date of month” configuration, this setting will be ignored.
  - **Backup criteria –** set a day of the week, i.e., Sunday thru Saturday. If you have set an exact date in the previous “Schedule date of month” configuration, this setting will be ignored.

```
<!-- Monthly settings -->
<!-- Copy and paste the whole <Key> to add more monthly
schedules -->
<Key name="Monthly Schedule Settings" allowMultiple="Y">
    <!-- Name of schedule -->
    <Value data="Monthly-Schedule" name="Name"
    type="string" />
    <!-- Start hour -->
    <!-- 0, 1, 2... 23 -->
    <Value data="21" name="Hour" type="integer" />
    <!-- Start minute -->
    <!-- 0, 1, 2... 59 -->
    <Value data="0" name="Minute" type="integer" />
    <!-- Duration of this backup in hours -->
    <!-- 1, 2, 3... -->
    <!-- A value of -1 means run until job finish -->
    <Value data="-1" name="Duration" type="integer" />
    <!-- Schedule date of month -->
    <!-- 1, 2, 3... 31 -->
    <!-- 32: Last -->
    <!-- Set to 0 if you want to use the format of
    occurrence + criteria, e.g. Third Wednesday, instead --
    >
    <Value data="1" name="Schedule Date" type="integer" />
    <!-- Backup occurrence -->
    <!-- First / Second / Third / Fourth / Last -->
    <!-- If "Schedule Date" is not zero, this value will be
    ignored -->
    <Value data="First" name="Occurrence" type="string" />
    <!-- Backup criteria -->
    <!-- Sunday / Monday / Tuesday / Wednesday / Thursday /
    Friday / Saturday / Weekday / Weekend -->
    <!-- If "Schedule Date" is not zero, this value will be
    ignored -->
```

```
            <Value data="Friday" name="Criteria" type="string" />
        </Key>
```

Custom Schedule Settings

Set backup jobs to run at the date and time you specified.

- **Start hour** – the starting hour of the backup, from 0-23.
- **Start minute –** the starting minute of the backup, from 0-59.
- **Duration of this backup in hours –** the duration you would like this backup to perform, in hours. Set to -1 if you would like the backup job to run until it finishes.
- **Date for performing custom schedule backup -** enter a specific date when you would like the backup to perform. The date format should be in YYYY-MM-DD.

```
        <!-- Custom settings -->
        <!-- Copy and paste the whole <Key> to add more custom
        schedules -->
        <Key name="Custom Schedule Settings" allowMultiple="Y">
            <!-- Name of schedule -->
            <Value data="Custom" name="Name" type="string" />
            <!-- Start hour -->
            <!-- 0, 1, 2... 23 -->
            <Value data="21" name="Hour" type="integer" />
            <!-- Start minute -->
            <!-- 0, 1, 2... 59 -->
            <Value data="0" name="Minute" type="integer" />
            <!-- Duration of this backup in hours -->
            <!-- 1, 2, 3... -->
            <!-- A value of -1 means run until job finish -->
            <Value data="-1" name="Duration" type="integer" />
            <!-- Date for performing custom schedule backup -->
            <!-- Input in the format of YYYY-MM-DD -->
            <Value data="2018-7-6" name="Schedule Date"
            type="string" />
        </Key>
    </Key>
```

Destination Settings

- **Concurrency level** – set the number of destinations to run backup job concurrently
- **AhsayCBS Destination Settings** – this option allows backup files to be stored on the server
- **Local Destination Settings** – this option allows backup files to be stored in your local computer. Enter the directory path where you would like the backup files to be stored.

```
    <!-- This is the collection of destinations -->
    <Key name="Destination Settings">
        <!-- Concurrency level is the number of destinations to run
        backup concurrently -->
        <!-- 2, 3, 4... -->
        <!-- 1 : Backup to destinations one by one sequentially -->
        <!-- -1: Backup to all destinations concurrently -->
        <Value data="1" name="Concurrency Level" type="integer" />
        <!-- AhsayCBS destination is where the files are backup to
        server -->
        <Key name="AhsayCBS Destination Settings" allowMultiple=
"Y">
```

```
            </Key>
            <!-- Local destination means backup files are stored in
            your computer -->
            <!-- Copy and paste the whole <Key> to add more local
            destinations -->
            <Key name="Local Destination Settings">
                <!-- Name of your destination -->
                <Value data="" name="Name" type="string" />
                <!-- Directory to store your backup files -->
                <!-- e.g. /tmp -->
                <Value data="" name="Local Path" type="string" />
            </Key>
```

In-file delta setting

In-File delta technology is an advanced data block matching algorithm with the intelligence to pick up changes (delta) in file content between two files. You can choose between **Differential** and **Incremental** in this setting.

- **Differential** - The delta is generated by comparing with the last uploaded full file only. Delta generated with this method will grow daily and uses more bandwidth. However, for restoration, the full file and a single delta is required to be restored and merged.
- **Incremental** - The delta is generated by comparing with the last uploaded full or delta file. Delta generated with this method is smaller and uses the least bandwidth. However, for restoration, the full file and all deltas chain up to the required point-in-time are required to be restored and merged. This is prone to data lost (e.g. broken delta chain).

```
        <!-- This shows the in-file delta setting -->
        <Key name="In-file Delta Setting">
            <!-- Enable in-file delta backup -->
            <!-- Y: Yes -->
            <!-- N: No -->
            <Value data="Y" name="Enable" type="boolean" />
            <!-- Default in-file delta type -->
            <!-- D: Differential -->
            <!-- I: Incremental -->
            <Value data="" name="Default Delta Type" type="string" />
        </Key>
    </Key>
</Setting>
```

Appendix C Example File Backup Set Setting

Below are the configuration parameters of the file backup set example.
This file backup set example has a normal backup schedule.

Backup Set Name	bsdguide
Temporary Working Directory	/root/tmp
Remove temporary files after backup	Yes
Compression Type	Fast
Backup file permissions	Yes
Follow Sym link	Yes
Daily schedule	9:00 PM run until completed
Destination	AhsayCBS
Backup Source	/usr/local/bin
Exclude	/root/.obm, /usr/local/obm, /root/tmp

Configurable items are highlighted in red.

```
<?xml version="1.0" encoding="UTF-8"?>
<Setting>
    <!-- This is the backup set setting -->
    <Key name="Backup Set Setting" allowMultiple="Y" >
        <!-- Backup set type (Read Only) -->
        <Value data="FILE" name="Type" type="string" />
        <!-- Backup set name -->
        <Value data="bsdguide" name="Name" type="string" />
        <!-- Temporary directory for storing backup files -->
        <Value data="/root/tmp" name="Temporary Working Directory"
type="string"     />
        <!-- Remove temporary files after backup -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="Y" name="Delete temporary files after backup"
        type="boolean" />
        <!-- Support of opening backup data directly without restoration
 -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="N" name="OpenDirect" type="boolean" />
        <!-- Select compression type -->
        <!-- GzipDefaultCompression  : Normal -->
        <!-- GzipBestSpeedCompression: Fast (Compressed size larger than
        normal) -->
       <!-- SnappyDefaultCompression: Fast with optimization for local -->
        <!-- Leave the field blank for no compression -->
        <Value data=" GzipBestSpeedCompression" name="Compression Type"
        type="string" />
        <!-- Backup files' permissions -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="Y" name="Upload files permission" type="boolean" />
        <!-- Follow link of the backup files -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="Y" name="Follow links" type="boolean" />
        <!-- This includes the files you want to backup -->
        <!-- Copy and paste the whole <Key> to add more selected sources--
        >
        <Key name="Selected Source" allowMultiple="Y">
```

```
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="/usr/local/bin" name="Path" type="string" />
        </Key>
        <!-- This excludes the files from the included source -->
        <!-- Copy and paste the whole <Key> to add more deselected sources
        -->
        <Key name="Deselected Source" allowMultiple="Y">
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="/root/.obm" name="Path" type="string" />
        </Key>
        <Key name="Deselected Source">
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="/usr/local/obm" name="Path" type="string" />
        </Key>
    <Key name="Deselected Source">
           <!-- Please enter your file path, e.g. /root/Documents -->
           <Value data="/root/tmp " name="Path" type="string" />
        </Key>
        <!-- Settings for your scheduled backups -->
        <Key name="Schedule Settings">
            <!-- Enable scheduled backup on this computer -->
            <!-- Y: Yes -->
            <!-- N: No -->
            <Value data="Y" name="Enable" type="boolean" />
            <!-- Daily settings -->
            <!-- Copy and paste the whole <Key> to add more daily schedules
            -->
            <Key name="Daily Schedule Settings" allowMultiple="Y" >
                <!-- Name of schedule -->
                <Value data="Daily-Schedule" name="Name"
        type="string" />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                 <!-- This value will be ignored if the schedule is set to
be periodic ("Interval" field contains value other than -1) -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
                <!-- This value will be ignored if the schedule is set to
be periodic ("Interval" field contains value other than -1) -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <Value data="-1" name="Duration" type="integer" />
                <!-- Interval -->
                <!-- 1  : 1 minute -->
                <!-- 2  : 2 minutes -->
                <!-- 3  : 3 minutes -->
                <!-- 4  : 4 minutes -->
                <!-- 5  : 5 minutes -->
                <!-- 6  : 6 minutes -->
                <!-- 10 : 10 minutes -->
                <!-- 12 : 12 minutes -->
                <!-- 15 : 15 minutes -->
                <!-- 20 : 20 minutes -->
                <!-- 30 : 30 minutes -->
                <!-- 60 : 1 hour -->
                <!-- 120: 2 hours -->
                <!-- 180: 3 hours -->
                <!-- 240: 4 hours -->
```

```
                <!-- 360: 6 hours -->
                <!-- 480: 8 hours -->
                <!-- 720: 12 hours -->
                <!-- A value of -1 means a non-periodic normal schedule -->
                <Value data="-1" name="Interval" type="integer" />
            </Key>
        </Key>
        <!-- This is the collection of destinations -->
        <Key name="Destination Settings">
            <!-- Concurrency level is the number of destinations to run
            backup concurrently -->
            <!-- 2, 3, 4... -->
            <!-- 1 : Backup to destinations one by one sequentially -->
            <!-- -1: Backup to all destinations concurrently -->
            <Value data="1" name="Concurrency Level" type="integer" />
            <!-- AhsayCBS destination is where the files are backup to
server --          >
            <Key name="AhsayCBS Destination Settings" allowMultiple="Y">
            </Key>
        </Key>
        <!-- This shows the in-file delta setting -->
        <Key name="In-file Delta Setting">
            <!-- Enable in-file delta backup -->
            <!-- Y: Yes -->
            <!-- N: No -->
            <Value data="Y" name="Enable" type="boolean" />
            <!-- Default in-file delta type -->
            <!-- D: Differential -->
            <!-- I: Incremental -->
            <Value data="I" name="Default Delta Type" type="string" />
        </Key>
    </Key>
</Setting>
```

While this file backup set example has a periodic backup schedule.

Backup Set Name	bsdguide
Temporary Working Directory	/root/tmp
Remove temporary files after backup	Yes
Compression Type	Fast with optimization for local
Backup file permissions	Yes
Follow Sym link	Yes
Weekly schedule	Monday to Friday every 8 hours, run until completed
Destination	AhsayCBS
Backup Source	/usr/local/bin
Exclude	/root/.obm, /usr/local/obm, /root/tmp

Configurable items are highlighted in red.

```
<?xml version="1.0" encoding="UTF-8"?>
<Setting>
    <!-- This is the backup set setting -->
    <Key name="Backup Set Setting" allowMultiple="Y" >
        <!-- Backup set type (Read Only) -->
        <Value data="FILE" name="Type" type="string" />
        <!-- Backup set name -->
        <Value data="bsdguide" name="Name" type="string" />
        <!-- Temporary directory for storing backup files -->
```

```
        <Value data="/root/tmp" name="Temporary Working Directory"
type="string"     />
        <!-- Remove temporary files after backup -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="Y" name="Delete temporary files after backup"
        type="boolean" />
        <!-- Support of opening backup data directly without restoration
 -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="N" name="OpenDirect" type="boolean" />
        <!-- Select compression type -->
        <!-- GzipDefaultCompression  : Normal -->
        <!-- GzipBestSpeedCompression: Fast (Compressed size larger than
        normal) -->
       <!-- SnappyDefaultCompression: Fast with optimization for local -->
        <!-- Leave the field blank for no compression -->
        <Value data=" SnappyDefaultCompression" name="Compression Type"
        type="string" />
        <!-- Backup files' permissions -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="Y" name="Upload files permission" type="boolean" />
        <!-- Follow link of the backup files -->
        <!-- Y: Yes -->
        <!-- N: No -->
        <Value data="Y" name="Follow links" type="boolean" />
        <!-- This includes the files you want to backup -->
        <!-- Copy and paste the whole <Key> to add more selected sources--
        >
        <Key name="Selected Source" allowMultiple="Y">
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="/usr/local/bin" name="Path" type="string" />
        </Key>
        <!-- This excludes the files from the included source -->
        <!-- Copy and paste the whole <Key> to add more deselected sources
        -->
        <Key name="Deselected Source" allowMultiple="Y">
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="/root/.obm" name="Path" type="string" />
        </Key>
        <Key name="Deselected Source">
            <!-- Please enter your file path, e.g. /root/Documents -->
            <Value data="/usr/local/obm" name="Path" type="string" />
        </Key>
    <Key name="Deselected Source">
           <!-- Please enter your file path, e.g. /root/Documents -->
           <Value data="/root/tmp " name="Path" type="string" />
        </Key>
        <!-- Settings for your scheduled backups -->
        <Key name="Schedule Settings">
            <!-- Enable scheduled backup on this computer -->
            <!-- Y: Yes -->
            <!-- N: No -->
            <Value data="Y" name="Enable" type="boolean" />
           <!-- Weekly settings -->
            <!-- Copy and paste the whole <Key> to add more weekly
            schedules -->
            <Key name="Weekly Schedule Settings" allowMultiple="Y">
                <!-- Name of schedule -->
```

```
                <Value data="Weekly-Schedule" name="Name" type="string"
                />
                <!-- Start hour -->
                <!-- 0, 1, 2... 23 -->
                <!-- This value will be ignored if the schedule is set to
be periodic ("Interval" field contains value other than -1) -->
                <Value data="21" name="Hour" type="integer" />
                <!-- Start minute -->
                <!-- 0, 1, 2... 59 -->
                <!-- This value will be ignored if the schedule is set to
be periodic ("Interval" field contains value other than -1) -->
                <Value data="0" name="Minute" type="integer" />
                <!-- Duration of this backup in hours -->
                <!-- 1, 2, 3... -->
                <!-- A value of -1 means run until job finish -->
                <!-- Duration can only be -1 if the schedule is set to be
periodic ("Interval" field contains value other than -1) -->
                <Value data="-1" name="Duration" type="integer"/>
                <!-- Interval -->
                <!-- 1  : 1 minute -->
                <!-- 2  : 2 minutes -->
                <!-- 3  : 3 minutes -->
                <!-- 4  : 4 minutes -->
                <!-- 5  : 5 minutes -->
                <!-- 6  : 6 minutes -->
                <!-- 10 : 10 minutes -->
                <!-- 12 : 12 minutes -->
                <!-- 15 : 15 minutes -->
                <!-- 20 : 20 minutes -->
                <!-- 30 : 30 minutes -->
                <!-- 60 : 1 hour -->
                <!-- 120: 2 hours -->
                <!-- 180: 3 hours -->
                <!-- 240: 4 hours -->
                <!-- 360: 6 hours -->
                <!-- 480: 8 hours -->
                <!-- 720: 12 hours -->
                <!-- A value of -1 means a non-periodic normal schedule -->
                <Value data="480" name="Interval" type="integer" />
                <!-- Backup on these days of the week -->
                <!-- Y: Yes -->
                <!-- N: No -->
                <Value data="N" name="Sunday" type="boolean" />
                <Value data="Y" name="Monday" type="boolean" />
                <Value data="Y" name="Tuesday" type="boolean" />
                <Value data="Y" name="Wednesday" type="boolean" />
                <Value data="Y" name="Thursday" type="boolean" />
                <Value data="Y" name="Friday" type="boolean" />
                <Value data="N" name="Saturday" type="boolean" />
            </Key>
        </Key>
        <!-- This is the collection of destinations -->
        <Key name="Destination Settings">
            <!-- Concurrency level is the number of destinations to run
            backup concurrently -->
            <!-- 2, 3, 4... -->
            <!-- 1 : Backup to destinations one by one sequentially -->
            <!-- -1: Backup to all destinations concurrently -->
            <Value data="1" name="Concurrency Level" type="integer" />
            <!-- AhsayCBS destination is where the files are backup to
server --          >
```

```
            <Key name="AhsayCBS Destination Settings" allowMultiple="Y">
            </Key>
        </Key>
        <!-- This shows the in-file delta setting -->
        <Key name="In-file Delta Setting">
            <!-- Enable in-file delta backup -->
            <!-- Y: Yes -->
            <!-- N: No -->
            <Value data="Y" name="Enable" type="boolean" />
            <!-- Default in-file delta type -->
            <!-- D: Differential -->
            <!-- I: Incremental -->
            <Value data="I" name="Default Delta Type" type="string" />
        </Key>
    </Key>
</Setting>
```

Appendix D Uninstall AhsayOBM (sh)

To uninstall AhsayOBM use the uninstall.sh script and then use the rm command to remove the remaining AhsayOBM files from the machine.

```
# /usr/local/obm/bin
# sh uninstall.sh
Log Time:  Mon Jan 14 15:07:39 HKT 2019

Verifying current user privilege ...
Current user has enough privilege to "uninstall".

Uninstall Ahsay Online Backup Manager from /usr/local/obm

Shutting down Scheduler
Wait 5 seconds before Scheduler exits
Kill running Ahsay Online Backup Manager
Kill Process by Image Name: /usr/local/obm/jvm/bin/bJW
Ignore Process by Image Name:
Kill Process by Image Name: /usr/local/obm/jvm/bin/bschJW
Ignore Process by Image Name:
Kill Process by Image Name: /usr/local/obm/jvm/bin/java
Ignore Process by Image Name:
Removing Scheduler script obmscheduler from service
Uninstall Service for BSD type OS

Ahsay Online Backup Manager uninstall procedure is complete!
It is now safe to remove files from /usr/local/obm


# rm -fr /usr/local/obm
# rm -fr /root/.obm
# rm -fr /root/tmp
```

Remove the obmscheduler script from /etc/rc.conf by using a text editor like vi.

```
# vi /etc/rc.conf

hostname="FreeBSD104"
ifconfig_vmx0="inet 10.16.30.22 netmask 255.252.0.0"
defaultrouter="10.16.0.1"
sshd_enable="YES"
# Set dumpdev to "AUTO" to enable crash dumps, "NO" to disable
dumpdev="AUTO"
firewall_enable="NO"
cbs_enable="YES"
cbsnfs_enable="YES"
obmscheduler_enable="YES"
```

***Note**: Removing the /root/.obm will delete the profile, configuration files and encryption created in AhsayOBM. The temporary folder created must also be removed.*

Appendix E Handling of Non-regular Files

The following non-regular files/folders such as device files, block files, virtual files systems, pseudo file systems etc will be automatically ignored if selected for backup. Backup log entries of these files/folders will not appear in the backup logs.

Example:
/proc
/dev
/sys
/run

For AhsayOBM installations on FreeBSD, these devices will not be shown on the backup source screen.

Appendix F How to Create a Free Trial Account

Users can create a free trial account when they login to AhsayOBM for the first time. Please ensure that the following requirements are met before creating your trial account:

- A valid email address which will be used for receiving notices. A welcome message will also be sent upon creation of the account which specifies the User Setting and Quota set for backup in AhsayCBS.

While here are the limitations of a trial account:

- The Free Trial button will only be displayed once, when the user login for the first time. If you cannot create a free trial account, kindly contact your backup service provider.
- Only alphanumeric characters and selected special characters, A to Z, 0 to 9, @, - and _, are allowed to be used for the Login name. While there may be some limitations on password complexity and age which is determined by the backup service provider. Please contact your backup service provider for further details.
- The add-on modules available and quota size are determined by your backup service provider.
- The trial account period is determined by your backup service provider. Please contact your backup service provider for details.

NOTE

The Free Trial Registration option may not be available. This depends on the settings of your backup service provider. Please contact your backup service provider for more information.

Follow the steps below to create a Free Trial backup account in AhsayOBM.

1. Select (2).

```
Login Menu (No configuration files found)
-----------------------------------------
  (1). Login
  (2). Free Trial
  (3). Quit
-----------------------------------------
Your Choice: 2
```

2. Configure the backup server setting.

```
Backup Server URL : 10.90.10.11
Port : 80
Protocol? (1) Http (2) Https : 1
Enable Proxy (Y/N) ? n
```

3. Enter your login name, password and email address.

```
Register Trial User
Login Name : trial
Password : ********************
Re-Enter password : ********************
Email address : name@email.com
```

```
Please wait while verifying user account with server...

Your trial account (trial) has been created on server
(10.90.10.11:80).
New configuration file has been created
```

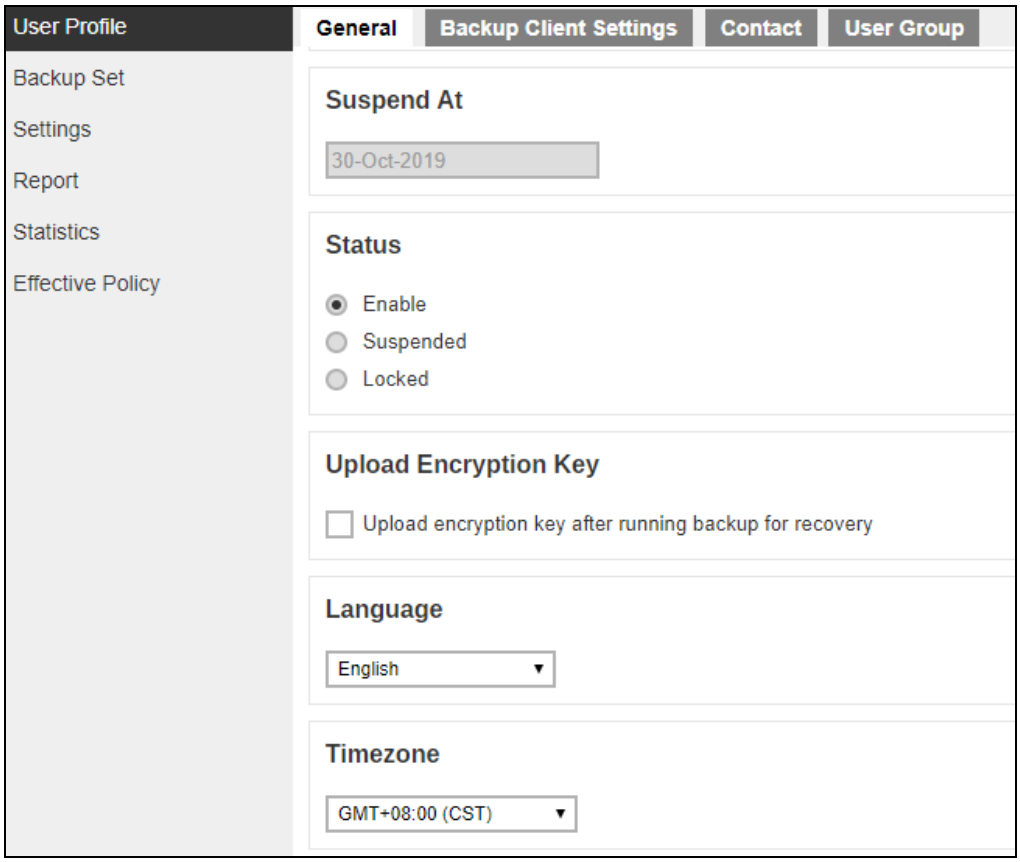
4. Once trial account is created the Main Menu will be displayed.

```
Main Menu
---------
  (1). List Backup Sets
  (2). Delete Backup Set
  (3). Export Backup Set Settings to XML
  (4). Import Backup Set Settings from XML
  (5). Generate new Backup Set Settings Template
  (6). Change Language [English]
  (7). Update Profile Settings
  (8). Quit
---------
Your Choice:
```

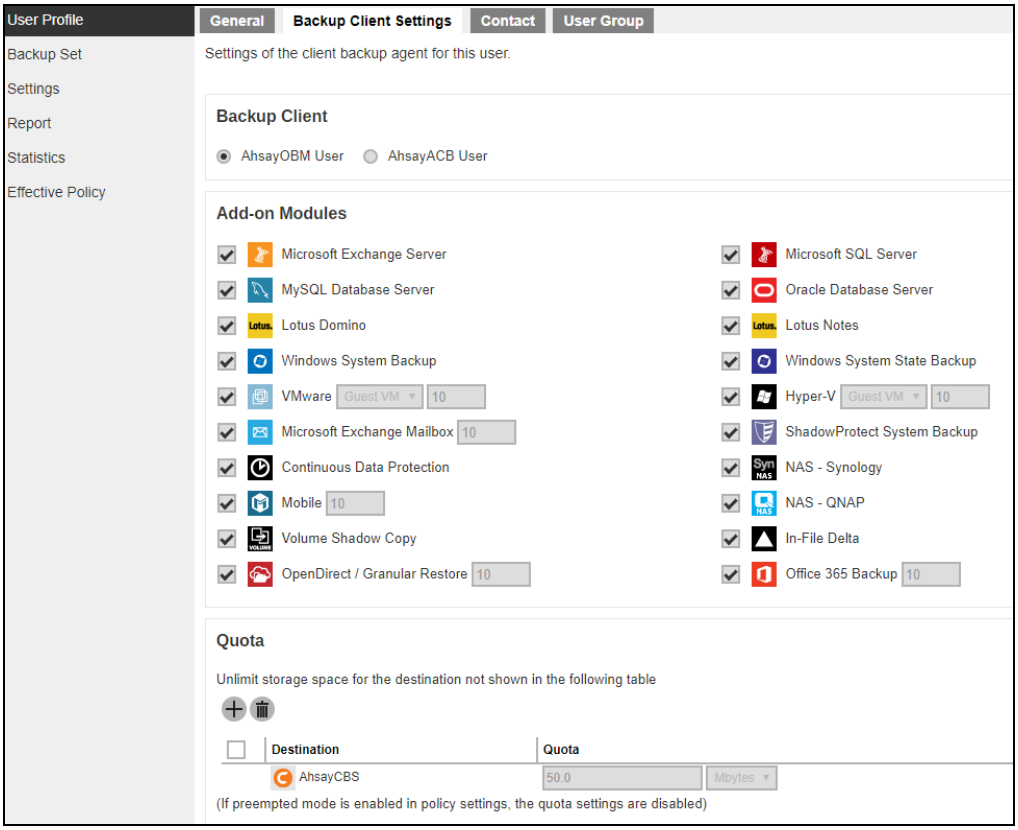
5. After creating the trial account, you need to check several things:

   - The expiry date of the trial account, which determines when it will be suspended.
   - The Language which will be used for sending reports.
   - And the Timezone, this is to ensure that your backup schedule will run at the correct time.

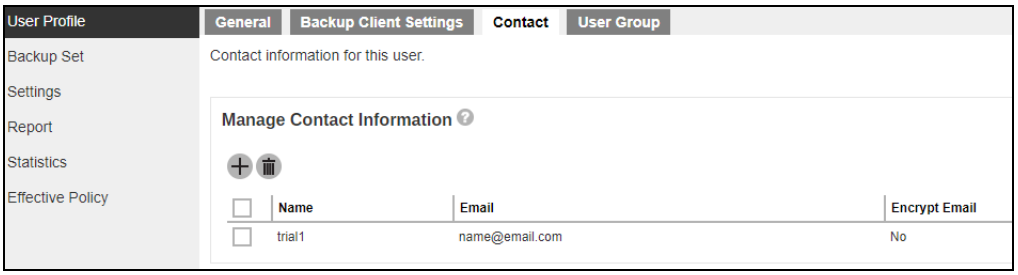
You can check this by logging in to AhsayCBS, go to **Backup / Restore > User > User Profile > General**. For more information please refer to the AhsayCBS User's Guide.



6. You also need to check the available add-on modules and quota by going to the **Backup Client Settings** tab.



7. Lastly, you need to verify if your contact details are correct by going to the **Contact** tab. If you want to add more contact information, you can add it here.



Appendix G How to Manually Upgrade AhsayOBM

Before you proceed with the upgrade of AhsayOBM to the latest version please make sure that you have read the requirements especially if upgrading from AhsayOBM v6 or v7.

To upgrade please see instructions below:

1. Download the new AhsayOBM version using curl.

   ***Note**: After pasting the URL, delete ?dlName=obm-freebsd-443-10.90.10.14-https-0O.sh*

```
# cd /usr/local/obm
# curl -Ok https://10.90.10.14/cbs/download/obm-nix-443-
10.90.10.14-https-0O.sh
% Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 22602  100 22602    0     0   329k      0 --:--:-- --:--:--
--:--:--  329k
```

2. Execute the AhsayOBM install script by using the sh command. It will first backup the user setting files before uninstalling the previous version and removing the previous application files.

```
# sh  obm-nix-443-10.90.10.14-https-0O.sh
Log Time: Tue Dec 10 15:54:53 HKT 2019
grep: /etc/*-release: No such file or directory
Host address: https://10.90.10.14:443
No JVM package is defined
Downloading file... app-common.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 42.5M  100 42.5M    0     0  28.5M      0  0:00:01  0:00:01
--:--:-- 28.4M
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... app-native-nix-x64.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  527k  100  527k    0     0  5734k      0 --:--:-- --:--:--
--:--:-- 5797k
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... app-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 12090  100 12090    0     0   368k      0 --:--:-- --:--:--
--:--:--  380k
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... aua-common.tar.gz
```

```
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 17.6M  100 17.6M    0     0  28.9M      0 --:--:-- --:--:--
--:--:-- 29.0M
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... aua-native-nix-x64.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  440k  100  440k    0     0  2545k      0 --:--:-- --:--:--
--:--:-- 2545k
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... aua-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  1038  100  1038    0     0  35793      0 --:--:-- --:--:--
--:--:-- 37071
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... util-common.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  4830  100  4830    0     0   120k      0 --:--:-- --:--:--
--:--:--  120k
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... util-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 85206  100 85206    0     0  2521k      0 --:--:-- --:--:--
--:--:-- 2600k
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... properties-common.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 3764k    0 3764k    0     0  1483k      0 --:--:--  0:00:02
--:--:-- 1483k
Download file completed
Untar component file to /tmp/_obm.191210155453
Downloading file... app-inst-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100  172k  100  172k    0     0  4668k      0 --:--:-- --:--:--
--:--:-- 4668k
Download file completed
```

```
Untar component file to /tmp/_obm.191210155453
Downloading file... aua-inst-nix-obm.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time
Time  Current
                                 Dload  Upload   Total   Spent
Left  Speed
100 54745  100 54745    0     0  1843k      0 --:--:-- --:--:--
--:--:-- 1909k
Download file completed
Untar component file to /tmp/_obm.191210155453
  Backup user setting files
    Backup log
    Backup home.txt
    Backup config.ini
    Backup afc.opt
    Backup cb.opt
  Backup finished
  Uninstall previous version...
Log Time: Tue Dec 10 15:55:03 HKT 2019
Uninstall Ahsay Online Backup Manager from /root/usr/local/obm

Shutting down Scheduler
Wait 5 seconds before Scheduler exits
Kill running Ahsay Online Backup Manager
Kill Process by Image Name: /root/usr/local/obm/jvm/bin/bJW
Ignore Process by Image Name:
Kill Process by Image Name: /root/usr/local/obm/jvm/bin/bschJW
Ignore Process by Image Name:
Kill Process by Image Name: /root/usr/local/obm/jvm/bin/java
Ignore Process by Image Name:
Removing Scheduler script obmscheduler from service
Uninstall Service for BSD type OS
Remove script obmscheduler from /usr/local/etc/rc.d
Remove shortcut /root/Desktop/obm.desktop
Remove shortcut /usr/local/share/applications/obm.desktop
Ahsay Online Backup Manager uninstall procedure is complete!
It is now safe to remove files from /root/usr/local/obm
  Remove previous application files
    Remove directory aua
    Remove file autoDiscovery.xml
    Remove directory bin
    Remove file custom.xml
    Remove file install-191210153324.log
    Remove directory ipc
    Remove directory jvm
    Remove directory licenses
    Remove directory log
    Remove file obm-nix-443-10.90.10.11-https-0O.sh
    Remove directory termsofuse
    Remove directory util
    Remove file version.txt
  Remove application files finished
```

3. When asked to enter your java 1.8 home, enter /usr/local/openjdk8 which is the default OpenJDK 1.8 path but may be a different path depending on the installed java. The backed-up user settings will be restored. You will see **Done** once the installation is finished.

```
Please enter your java 1.8 home:
/usr/local/openjdk8
Copy java 1.8 from /usr/local/openjdk8
```

```
Install Application Path: /usr/local/obm
Restore Previous Setting backup...
    Restore log
    Restore home.txt
    Restore config.ini
    Restore application opt file (afc.opt)
    Restore application opt file (cb.opt)
  Previous Setting backup restored
Done
```

Appendix H Script Files

RunConfigurator.sh

This script file is used to run AhsayOBM. To configure the parameters, open the script file in a text editor like vi.

```
# vi RunConfigurator.sh
```

Configure the following parameters:

- **SETTING_HOME** – this is the directory to your setting home. If not set, the default directory is "${HOME}/.obm".

  e.g. SETTING_HOME="/root/.obm"

- **DEBUG_MODE** – this parameter is used to enable or disable the debug mode when opening AhsayOBM.

  e.g. DEBUG_MODE="- -debug" or DEBUG_MODE=""

```
# vi RunConfigurator.sh

#!/bin/sh

############################## RunConfigurator.sh
################################
# You can use this shell to run the application
#
#########################################################################
#######

########################## START: User Defined Section
############################

# ------------------------------ SETTING_HOME -------------------------
-------
# | Directory to your setting home.
|
# | Default to ${HOME}/.obm when not set.
|
# | e.g. SETTING_HOME="${HOME}/.obm"
|
# -------------------------------------------------------------------
-------
SETTING_HOME=""

# ------------------------------ DEBUG_MODE -------------------------
-------
# | Enable/Disable debug mode
|
# | e.g. DEBUG_MODE="--debug"
|
# |  or  DEBUG_MODE=""
|
# -------------------------------------------------------------------
-------
DEBUG_MODE=""
```

```
########################## END: User Defined Section
##########################


#############################################################################
#######
#          R E T R I E V E     A P P _ H O M E     P A T H
#
#############################################################################
#######

EXE_DIR=`pwd`
SCRIPT_HOME=`dirname "$0"`
cd "$SCRIPT_HOME"
APP_BIN=`pwd`
APP_HOME=`dirname "$APP_BIN"`

#############################################################################
#######
#          R E T R I E V E     J A V A _ H O M E     P A T H
#
#############################################################################
#######

if [ "Darwin" = `uname` ]; then
    JAVA_HOME="/System/Library/Frameworks/JavaVM.framework/Home"
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "'$APP_HOME/jvm' does not exist!"
    if [ ! -n "$JAVA_HOME" ]; then
        echo "Please set JAVA_HOME!"
        exit 0
    else
        ln -sf "$JAVA_HOME" "$APP_HOME/jvm"
        echo "Created JAVA_HOME symbolic link at '$APP_HOME/jvm'"
    fi
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "Please create symbolic link for '$JAVA_HOME' to
'$APP_HOME/jvm'"
    exit 0
fi

JAVA_HOME="$APP_HOME/jvm"

# Use alternative executable name to define the GUI execution
if [ "Darwin" = `uname` ]; then
    JAVA_EXE="$JAVA_HOME/bin/java"
else
    JAVA_EXE="$JAVA_HOME/bin/bJW"
fi

# Verify the JAVA_EXE whether it is a valid JAVA Executable or not.
STRING_JAVA_VERSION="java version,openjdk version"
OUTPUT_JAVA_VERSION=`"${JAVA_EXE}" -version 2>&1`
OUTPUT_JVM_SUPPORT=0
BACKUP_IFS=$IFS
```

```
IFS=","
for word in $STRING_JAVA_VERSION; do
    if [ `echo "${OUTPUT_JAVA_VERSION}" | grep "${word}" | grep -cv "grep
${word
}"` -le 0 ]
    then
      #echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable.
 Exit \""`basename "$0"`"\" now."
      continue;
    else
      OUTPUT_JVM_SUPPORT=1
      break;
    fi
done
IFS=$BACKUP_IFS
if [ $OUTPUT_JVM_SUPPORT -eq 0 ]
then
    echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Ex
it \""`basename "$0"`"\" now."
    exit 1
fi

#########################################################################
#######
#                                S T A R T - U P
#
#########################################################################
#######


# Set LD_LIBRARY_PATH for Lotus Notes on Linux
if [ "Linux" = `uname` ]; then
    NOTES_PROGRAM=`cat "$APP_HOME/bin/notesenv"`
    LD_LIBRARY_PATH="$APP_HOME/bin:$NOTES_PROGRAM:$LD_LIBRARY_PATH"
    export NOTES_PROGRAM
else
    LD_LIBRARY_PATH="$APP_HOME/bin:$LD_LIBRARY_PATH"
fi

DEP_LIB_PATH="X64"
case "`uname -m`" in
    i[3-6]86)
        DEP_LIB_PATH="X86"
    ;;
esac
LD_LIBRARY_PATH="${APP_BIN}/${DEP_LIB_PATH}":".":"${LD_LIBRARY_PATH}"

SHLIB_PATH="$LD_LIBRARY_PATH"
export LD_LIBRARY_PATH SHLIB_PATH

# Change to APP_BIN for JAVA execution
cd "${APP_BIN}"

# Reference path will be used to avoid empty space in the parent
directory
LIB_HOME=.
JAVA_OPTS="-Xrs -Xms128m -Xmx768m -client -
Dsun.nio.PageAlignDirectMemory=true"
JNI_PATH="-Djava.library.path=$LIB_HOME"
```

```
CLASSPATH="$LIB_HOME:$LIB_HOME/cb.jar"
MAIN_CLASS=Gui

# Execute Java VM Runtime for BackupManager
echo "Startup Ahsay Online Backup Manager ... "
"${JAVA_EXE}" $JAVA_OPTS $JNI_PATH -cp $CLASSPATH $MAIN_CLASS --config
"${DEBUG_
MODE}" "${APP_HOME}" "${SETTING_HOME}"

#########################################################################
#######
#                    R E S E T          A N D          E X I T
#
#########################################################################
#######

cd "${EXE_DIR}"
exit 0
```

Once you have configured the parameters, save the changes. Use the **sh** command to run the script. The AhsayOBM Login Menu will be displayed.

```
# sh RunConfigurator.sh
Startup Ahsay Online Backup Manager ...
Config file found

Login Menu
----------
  (1). Login
  (2). Change Network Settings
  (3). Forgot Password
  (4). Quit
----------
Your Choice:
```

ListBackupSet.sh

This script file is used to display the list of backup set under your backup account. To configure the parameters, open the script file in a text editor like vi.

```
# vi ListBackupSet.sh
```

Configure the following parameters:

- **SETTING_HOME** – this is the directory to your setting home. If not set, the default directory is "${HOME}/.obm".

  e.g. SETTING_HOME="/root/.obm"

```
# vi ListBackupSet.sh


#!/bin/sh

##############################  ListBackupSet.sh
##############################
```

```
# You can use this shell script to list all backup sets available under
#
# your backup account.
#
##############################################################################
#######

########################  Start: User Defined Section
#########################

# ------------------------------  SETTING_HOME  -------------------------
-------
# | Directory to your setting home.
|
# | Default to ${HOME}/.obm when not set.
|
# | e.g. SETTING_HOME="${HOME}/.obm"
|
# ------------------------------------------------------------------------
-------
SETTING_HOME=""

#########################  END: User Defined Section
#########################

##############################################################################
#######
#          R E T R I E V E     A P P _ H O M E     P A T H
#
##############################################################################
#######

EXE_DIR=`pwd`
SCRIPT_HOME=`dirname "$0"`
cd "$SCRIPT_HOME"
APP_BIN=`pwd`
APP_HOME=`dirname "$APP_BIN"`

##############################################################################
#######
#          R E T R I E V E     J A V A _ H O M E     P A T H
#
##############################################################################
#######

if [ "Darwin" = `uname` ]; then
    JAVA_HOME="/System/Library/Frameworks/JavaVM.framework/Home"
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "'$APP_HOME/jvm' does not exist!"
    if [ ! -n "$JAVA_HOME" ]; then
        echo "Please set JAVA_HOME!"
        exit 0
    else
        ln -sf "$JAVA_HOME" "$APP_HOME/jvm"
        echo "Created JAVA_HOME symbolic link at '$APP_HOME/jvm'"
    fi
fi
```

```
if [ ! -x "$APP_HOME/jvm" ];
then
    echo "Please create symbolic link for '$JAVA_HOME' to
'$APP_HOME/jvm'"
    exit 0
fi

JAVA_HOME="$APP_HOME/jvm"
JAVA_EXE="$JAVA_HOME/bin/java"

# Verify the JAVA_EXE whether it can be executed or not.
if [ ! -x "${JAVA_EXE}" ]
then
    echo "The Java Executable file \"${JAVA_EXE}\" cannot be executed.
Exit \""`basename "$0"`"\" now."
    exit 1
fi

# Verify the JAVA_EXE whether it is a valid JAVA Executable or not.
STRING_JAVA_VERSION="java version,openjdk version"
OUTPUT_JAVA_VERSION=`"${JAVA_EXE}" -version 2>&1`
OUTPUT_JVM_SUPPORT=0
BACKUP_IFS=$IFS
IFS=","
for word in $STRING_JAVA_VERSION; do
    if [ `echo "${OUTPUT_JAVA_VERSION}" | grep "${word}" | grep -cv "grep
${word}"` -le 0 ]
    then
      #echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
      continue;
    else
      OUTPUT_JVM_SUPPORT=1
      break;
    fi
done
IFS=$BACKUP_IFS
if [ $OUTPUT_JVM_SUPPORT -eq 0 ]
then
    echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
    exit 1
fi

###############################################################################
#######
#                          J A V A     E X E C U T I O N
#
###############################################################################
#######

# Change to APP_BIN for JAVA execution
cd "${APP_BIN}"

# Reference path will be used to avoid empty space in the parent
directory
LIB_HOME=.
JAVA_OPTS="-Xrs -Xms128m -Xmx768m -client -
Dsun.nio.PageAlignDirectMemory=true"
JNI_PATH="-Djava.library.path=$LIB_HOME"
CLASSPATH="$LIB_HOME:$LIB_HOME/cb.jar"
```

```
MAIN_CLASS=ListBackupSet

echo "Using APP_HOME     : ${APP_HOME}"
echo "Using SETTING_HOME : ${SETTING_HOME}"

# API Arguments: ListBackupSet [APP_HOME] [SETTING_HOME]

# Do not include double-quote for java options, jni path, classpath and
main class
# Only apply double-quote for path to java executable and execution
arguments
"${JAVA_EXE}" $JAVA_OPTS $JNI_PATH -cp $CLASSPATH $MAIN_CLASS
"${APP_HOME}" "${SETTING_HOME}"

##########################################################################
#######
#                   R E S E T          A N D          E X I T
#
##########################################################################
#######

cd "${EXE_DIR}"
exit 0
```

Once you have configured the parameters, save the changes. Use the **sh** command to run the script. The list of backup sets will be displayed.

```
# sh ListBackupSet.sh
Using APP_HOME     : /usr/local/obm
Using SETTING_HOME :
BackupSet Name= b1, ID= 1579242821647
```

ListBackupJob.sh

This script file is used to display the list of backup jobs under a specific backup set. To configure the parameters, open the script file in a text editor like vi.

```
# vi ListBackupJob.sh
```

Configure the following parameters:

- **SETTING_HOME** – this is the directory to your setting home. If not set, the default directory is "${HOME}/.obm".

  e.g. SETTING_HOME="/root/.obm"

- **BACKUP_SET** – this is the name of the backup set which contains the backup job that you want to list. There are two (2) ways to specify the backup set; by using the *backup set name* or by *backup set ID*. If the backup set name is not in English, use the backup set ID. You can leave this blank if you only have one (1) backup set.

  e.g. BACKUP_SET="1119083740107" or BACKUP_SET="FileBackupSet-1"

- **BACKUP_DEST** – this is the name of the destination of the backup set. There are two (2) ways to specify the destination; by using the *destination name* or *destination ID*. If the

destination name is not in English, use the DestinationID. You can leave this blank if you only have one (1) backup destination.

e.g. BACKUP_DEST="1119083740107" or BACKUP_DEST="CBS"

```
# vi ListBackupJob.sh


#!/bin/sh

##############################  ListBackupJob.sh
##############################
# You can use this shell script to list all backup job which ran under
#
# this backup set.
#
#################################################################################
#######

########################  Start: User Defined Section
########################

# ------------------------------  SETTING_HOME  -------------------------
-------
# | Directory to your setting home.
|
# | Default to ${HOME}/.obm when not set.
|
# | e.g. SETTING_HOME="${HOME}/.obm"
|
# -------------------------------------------------------------------------
-------
SETTING_HOME=""

# -------------------------------  BACKUP_SET  -------------------------
-------
# | The name or ID of the backup set that you want to run
|
# | If backup set name is not in English, please use BackupSetID
|
# | e.g. BACKUP_SET="1119083740107"
|
# | or  BACKUP_SET="FileBackupSet-1"
|
# |
|
# | You can leave this parameter blank if you have only 1 backup set.
|
# -------------------------------------------------------------------------
-------
BACKUP_SET=""

# ------------------------------  BACKUP_DEST  -------------------------
-------
# | The name or ID of the destination that you want to run
|
# | If destination name is not in English, please use DestinationID
|
# | e.g. BACKUP_DEST="1119083740107"
|
```

```
# | or  BACKUP_DEST="CBS"
|
# |
|
# | You can leave this parameter blank if you have only 1 destination.
|
# -------------------------------------------------------------------------
-------
BACKUP_DEST=""

############################  END: User Defined Section
############################

#########################################################################
#######
#                 S C R I P T                          U S A G E
#
#########################################################################
#######

# Input Arguments will overwrite the above settings
# defined in 'User Defined Section'.
if [ $# -ge 1 ]; then

    if [ -n "$1" ]; then
        BACKUP_SET="$1"
    fi

    if [ -n "$2" ]; then
        BACKUP_DEST="$2"
    fi

fi

#########################################################################
#######
#         R E T R I E V E           A P P _ H O M E          P A T H
#
#########################################################################
#######

EXE_DIR=`pwd`
SCRIPT_HOME=`dirname "$0"`
cd "$SCRIPT_HOME"
APP_BIN=`pwd`
APP_HOME=`dirname "$APP_BIN"`

#########################################################################
#######
#         R E T R I E V E          J A V A _ H O M E          P A T H
#
#########################################################################
#######

if [ "Darwin" = `uname` ]; then
    JAVA_HOME="/System/Library/Frameworks/JavaVM.framework/Home"
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "'$APP_HOME/jvm' does not exist!"
```

```
    if [ ! -n "$JAVA_HOME" ]; then
        echo "Please set JAVA_HOME!"
        exit 0
    else
        ln -sf "$JAVA_HOME" "$APP_HOME/jvm"
        echo "Created JAVA_HOME symbolic link at '$APP_HOME/jvm'"
    fi
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "Please create symbolic link for '$JAVA_HOME' to
'$APP_HOME/jvm'"
    exit 0
fi

JAVA_HOME="$APP_HOME/jvm"
JAVA_EXE="$JAVA_HOME/bin/java"

# Verify the JAVA_EXE whether it can be executed or not.
if [ ! -x "${JAVA_EXE}" ]
then
    echo "The Java Executable file \"${JAVA_EXE}\" cannot be executed.
Exit \""`basename "$0"`"\" now."
    exit 1
fi

# Verify the JAVA_EXE whether it is a valid JAVA Executable or not.
STRING_JAVA_VERSION="java version,openjdk version"
OUTPUT_JAVA_VERSION=`"${JAVA_EXE}" -version 2>&1`
OUTPUT_JVM_SUPPORT=0
BACKUP_IFS=$IFS
IFS=","
for word in $STRING_JAVA_VERSION; do
    if [ `echo "${OUTPUT_JAVA_VERSION}" | grep "${word}" | grep -cv "grep
${word}"` -le 0 ]
    then
      #echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
      continue;
    else
      OUTPUT_JVM_SUPPORT=1
      break;
    fi
done
IFS=$BACKUP_IFS
if [ $OUTPUT_JVM_SUPPORT -eq 0 ]
then
    echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
    exit 1
fi

#############################################################################
#######
#                  J A V A                  E X E C U T I O N
#
#############################################################################
#######

# Change to APP_BIN for JAVA execution
```

```
cd "${APP_BIN}"

# Reference path will be used to avoid empty space in the parent
directory
LIB_HOME=.
JAVA_OPTS="-Xrs -Xms128m -Xmx768m -client -
Dsun.nio.PageAlignDirectMemory=true"
JNI_PATH="-Djava.library.path=$LIB_HOME"
CLASSPATH="$LIB_HOME:$LIB_HOME/cb.jar"
MAIN_CLASS=ListBackupJob

echo "Using APP_HOME     : ${APP_HOME}"
echo "Using SETTING_HOME : ${SETTING_HOME}"
echo "Using BACKUP_SET   : ${BACKUP_SET}"

# API Arguments: ListBackupJob [APP_HOME] [BACKUP_SET] [BACKUP_DEST]
[SETTING_HOME]

# Do not include double-quote for java options, jni path, classpath and
# main class.
# Only apply double-quote for path to java executable and execution
arguments
"${JAVA_EXE}" $JAVA_OPTS $JNI_PATH -cp $CLASSPATH $MAIN_CLASS "--app-
home=${APP_HOME}" "--backup-set=${BACKUP_SET}" "--backup-
dest=${BACKUP_DEST}" "--setting-home=${SETTING_HOME}"

#########################################################################
#######
#                   R E S E T          A N D          E X I T
#
#########################################################################
#######

cd "${EXE_DIR}"
exit 0
```

Once you have configured the parameters, save the changes. Use the **sh** command to run the script. The list of backup jobs of a specific backup set will be displayed.

```
# sh ListBackupJob.sh
Using APP_HOME     : /usr/local/obm
Using SETTING_HOME :
Using BACKUP_SET   : b1
b1 [1563501422700]
2019-07-19-12-01-07
```

RunBackupSet.sh

This script file is used to manually run a backup. To configure the parameters, open the script file in a text editor like vi.

```
# vi RunBackupSet.sh
```

Configure the following parameters:

- **BACKUP_SET** – this is the name of the backup set which you want to backup. There are two (2) ways to specify the backup set; by using the *backup set name* or by *backup set ID*. If the backup set name is not in English, use the backup set ID. You can leave this blank if you only have one (1) backup set.

  e.g. BACKUP_SET="1119083740107" or BACKUP_SET="FileBackupSet-1"

- **BACKUP_DESTS** – this is the name of the destination where you want your backup to be stored. There are two (2) ways to specify the destination; by using the *destination name* or *destination ID*. If the destination name is not in English, use the DestinationID. You can leave this blank if you only have one (1) backup destination.

  e.g. BACKUP_DESTS="1119083740107" or BACKUP_DEST="CBS"

- **BACKUP_TYPE** – this is the backup set type. You do not need to change this if you are backing up a file backup set. There are four (4) options available for this: *FILE*, *DATABASE*, *DIFFERENTIAL* and *LOG*.

  e.g. BACKUP_TYPE="FILE" for file backup

  BACKUP_TYPE="DATABASE" for full database backup

  BACKUP_TYPE="DIFFERENTIAL" for differential database backup

  BACKUP_TYPE="LOG" for log database backup

- **SETTING_HOME** – this is the directory to your setting home. If not set, the default directory is "${HOME}/.obm".

  e.g. SETTING_HOME="/root/.obm"

- **DELTA_MODE** – this is the In-File Delta setting. There are three (3) options available for this: *Incremental*, *Differential* and *Full*.

  e.g. DELTA_MODE="I" for Incremental In-file delta backup

  DELTA_MODE="D" for Differential In-file delta backup

  DELTA_MODE="F" for full file backup

  DELTA_MODE="" for using backup set in-file delta setting

- **CLEANUP_MODE** – this is used to remove obsolete files from your backup destination after a backup has been run. There are two (2) options available for this: *ENABLE-CLEANUP* and *DISABLE-CLEANUP*.

  e.g. CLEANUP_MODE="ENABLE-CLEANUP" or CLEANUP_MODE="DISABLE-CLEANUP"

- **DEBUG_MODE** – this is used to enable or disable debug for a backup job. There are two (2) options available for this: *ENABLE-DEBUG* and *DISABLE-DEBUG*.

  e.g. DEBUG_MODE="ENABLE-DEBUG" or DEBUG_MODE="DISABLE-DEBUG"

```
# vi RunBackupSet.sh


#!/bin/sh

##############################  RunBackupSet.sh
################################
# You can use this shell script to run any of your backup sets from the
#
# command line. Just customize the "User Defined Section" below with your
#
# values for your backup action.
#
#########################################################################
#######

########################## START: User Defined Section
############################

# ---------------------------------- BACKUP_SET --------------------------
-------
# | The name or ID of the backup set that you want to run
|
# | If backup set name is not in English, please use ID instead.
|
# | e.g. BACKUP_SET="1119083740107"
|
# |  or  BACKUP_SET="FileBackupSet-1"
|
# |
|
# | You can leave this parameter blank if you have only 1 backup set.
|
# ------------------------------------------------------------------------
-------
BACKUP_SET=""

# ---------------------------------- BACKUP_DESTS ------------------------
-------
# | The list of name or ID of the backup destinations that you want to
run.    |
# | If backup destination name is not in English, please use ID instead.
|
# | e.g. BACKUP_DESTS="1740107119083"
|
# |  or  BACKUP_DESTS="Destination-1,Destination-2"
|
# |  or  BACKUP_DESTS="ALL"
|
# |
|
# | You can specify multiple destinations in comma-separated format,
|
# | or use "ALL" to run backup for all destinations.
|
# ------------------------------------------------------------------------
-------
BACKUP_DESTS="ALL"

# ---------------------------------- BACKUP_TYPE -------------------------
-------
```

```
# | Set backup type. You don't need to change this if you are backing up
a     |
# | file backup set.
|
# | Options available: FILE/DATABASE/DIFFERENTIAL/LOG
|
# | e.g. BACKUP_TYPE="FILE"          for file backup
|
# |  or  BACKUP_TYPE="DATABASE"      for Full database backup
|
# |  or  BACKUP_TYPE="DIFFERENTIAL"  for Differential database backup
|
# |  or  BACKUP_TYPE="LOG"           for Log database backup
|
# ------------------------------------------------------------------------
-------
BACKUP_TYPE="FILE"

# --------------------------------- SETTING_HOME -------------------------
-------
# | Directory to your setting home.
|
# | Default to ${HOME}/.obm when not set.
|
# | e.g. SETTING_HOME="${HOME}/.obm"
|
# ------------------------------------------------------------------------
-------
SETTING_HOME=""

# --------------------------------- DELTA_MODE ---------------------------
-------
# | Set In-File Delta mode.
|
# | Options available: Incremental/Differential/Full (I/D/F)
|
# | e.g. DELTA_MODE="I"   for Incremental In-file delta backup
|
# |  or  DELTA_MODE="D"   for Differential In-file delta backup
|
# |  or  DELTA_MODE="F"   for Full File backup
|
# |  or  DELTA_MODE=""    for using backup set in-file delta setting
|
# ------------------------------------------------------------------------
-------
DELTA_MODE=""

# --------------------------------- CLEANUP_MODE -------------------------
-------
# | You can enable Cleanup mode to remove obsolete files from your backup
|
# | destinations after backup.
|
# | Options available: ENABLE-CLEANUP/DISABLE-CLEANUP
|
# | e.g. CLEANUP_MODE="ENABLE-CLEANUP"
|
# |  or  CLEANUP_MODE="DISABLE-CLEANUP"
|
```

```
# ------------------------------------------------------------------------
-------
CLEANUP_MODE="DISABLE-CLEANUP"

# --------------------------------- DEBUG_MODE -------------------------
-------
# | Set Debug mode.
|
# | Options available: ENABLE-DEBUG/DISABLE-DEBUG
|
# | e.g. DEBUG_MODE="ENABLE-DEBUG"
|
# |  or  DEBUG_MODE="DISABLE-DEBUG"
|
# ------------------------------------------------------------------------
-------
DEBUG_MODE="DISABLE-DEBUG"

########################## END: User Defined Section
############################


#########################################################################
#######
#                S C R I P T                          U S A G E
#
#########################################################################
#######

# Input Arguments will overwrite the above settings
# defined in 'User Defined Section'.
if [ $# -ge 1 ]; then

    if [ -n "$1" ]; then
        BACKUP_SET="$1"
    fi

fi

#########################################################################
#######
#          R E T R I E V E     A P P _ H O M E     P A T H
#
#########################################################################
#######

EXE_DIR=`pwd`
SCRIPT_HOME=`dirname "$0"`
cd "$SCRIPT_HOME"
APP_BIN=`pwd`
APP_HOME=`dirname "$APP_BIN"`

#########################################################################
#######
#          R E T R I E V E     J A V A _ H O M E     P A T H
#
#########################################################################
#######

if [ "Darwin" = `uname` ]; then
    JAVA_HOME="/System/Library/Frameworks/JavaVM.framework/Home"
```

```
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "'$APP_HOME/jvm' does not exist!"
    if [ ! -n "$JAVA_HOME" ]; then
        echo "Please set JAVA_HOME!"
        exit 0
    else
        ln -sf "$JAVA_HOME" "$APP_HOME/jvm"
        if [ ! -x "$APP_HOME/jvm" ];
        then
            echo "Please create symbolic link for '$JAVA_HOME' to
'$APP_HOME/jvm'"
            exit 0
        else
            echo "Created JAVA_HOME symbolic link at '$APP_HOME/jvm'"
        fi
    fi
fi

JAVA_HOME="$APP_HOME/jvm"
JAVA_EXE="$JAVA_HOME/bin/java"

# Verify the JAVA_EXE whether it can be executed or not.
if [ ! -x "${JAVA_EXE}" ]
then
    echo "The Java Executable file \"${JAVA_EXE}\" cannot be executed.
Exit \""`basename "$0"`"\" now."
    exit 1
fi

# Verify the JAVA_EXE whether it is a valid JAVA Executable or not.
STRING_JAVA_VERSION="java version,openjdk version"
OUTPUT_JAVA_VERSION=`"${JAVA_EXE}" -version 2>&1`
OUTPUT_JVM_SUPPORT=0
BACKUP_IFS=$IFS
IFS=","
for word in $STRING_JAVA_VERSION; do
    if [ `echo "${OUTPUT_JAVA_VERSION}" | grep "${word}" | grep -cv "grep
${word}"` -le 0 ]
    then
      #echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
      continue;
    else
      OUTPUT_JVM_SUPPORT=1
      break;
    fi
done
IFS=$BACKUP_IFS
if [ $OUTPUT_JVM_SUPPORT -eq 0 ]
then
    echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
    exit 1
fi

#########################################################################
#######
```

```
#           E X E C U T I O N     J A V A     P R O P E R T I E S
#
#########################################################################
#######

# Set LD_LIBRARY_PATH for Lotus Notes on Linux
if [ "Linux" = `uname` ];
then
    NOTES_PROGRAM=`cat "$APP_HOME/bin/notesenv"`
    LD_LIBRARY_PATH="$APP_HOME/bin:$NOTES_PROGRAM:$LD_LIBRARY_PATH"
    export NOTES_PROGRAM
else
    LD_LIBRARY_PATH="$APP_HOME/bin:$LD_LIBRARY_PATH"
fi

DEP_LIB_PATH="X64"
case "`uname -m`" in
    i[3-6]86)
        DEP_LIB_PATH="X86"
    ;;
esac
LD_LIBRARY_PATH="${APP_BIN}/${DEP_LIB_PATH}":".":"${LD_LIBRARY_PATH}"

SHLIB_PATH="$LD_LIBRARY_PATH"
export LD_LIBRARY_PATH SHLIB_PATH

#########################################################################
#######
#                         J A V A     E X E C U T I O N
#
#########################################################################
#######

# Change to APP_BIN for JAVA execution
cd "${APP_BIN}"

# Reference path will be used to avoid empty space in the parent
directory
LIB_HOME=.
JAVA_OPTS="-Xrs -Xms128m -Xmx768m -XX:MaxDirectMemorySize=512m -client -
Dsun.nio.PageAlignDirectMemory=true"
JNI_PATH="-Djava.library.path=$LIB_HOME"
CLASSPATH="$LIB_HOME:$LIB_HOME/cb.jar"
MAIN_CLASS=RunBackupSet

echo "-"
echo "Using APP_HOME       : $APP_HOME"
echo "Using SETTING_HOME   : $SETTING_HOME"
echo "Using JAVA_HOME      : $JAVA_HOME"
echo "Using JAVA_EXE       : $JAVA_EXE"
echo "Using JAVA_OPTS      : $JAVA_OPTS"
echo "Using JNI_PATH       : $JNI_PATH"
echo "Using CLASSPATH      : $CLASSPATH"
echo "-"

echo "Running Backup Set - '$BACKUP_SET' ..."

# API Arguments: RunBackupSet [APP_HOME] [BACKUP_SET] [BACKUP_DESTS]
[BACKUP_TYPE] [SETTING_HOME] [DELTA_MODE] [CLEANUP_MODE] [DEBUG_MODE]

# Do not include double-quote for java options, jni path, classpath and
```

```
# main class.
# Only apply double-quote for path to java executable and execution
arguments
"${JAVA_EXE}" $JNI_PATH -cp $CLASSPATH $JAVA_OPTS $MAIN_CLASS
"${APP_HOME}" "${BACKUP_SET}" "${BACKUP_DESTS}" "${BACKUP_TYPE}"
"${SETTING_HOME}" "${DELTA_MODE}" "${CLEANUP_MODE}" "${DEBUG_MODE}"

##########################################################################
#######
#                   R E S E T          A N D          E X I T
#
##########################################################################
#######

cd "${EXE_DIR}"
exit 0
```

Once you have configured the parameters, save the changes. Use the **sh** command to run the script. The backup will be run manually.

```
# sh RunBackupSet.sh
Using APP_HOME       : /usr/local/obm
Using SETTING_HOME   :
Using JAVA_HOME      : /usr/local/obm/jvm
Using JAVA_EXE       : /usr/local/obm/jvm/bin/java
Using JAVA_OPTS      : -Xrs -Xms128m -Xmx768m -XX:MaxDirectMemorySize=512m
-client -Dsun.nio.PageAlignDirectMemory=true
Using JNI_PATH       : -Djava.library.path=.
Using CLASSPATH      : .:./cb.jar
-
Running Backup Set - '' ...
[2020/01/17 15:00:15] [info] [-] Start [ AhsayOBM v8.3.1.0 ]
[2020/01/17 15:00:16] [info] [-] Saving encrypted backup set encryption
keys to server...
[2020/01/17 15:00:17] [info] [1579242904772] Start Backup ... [In-File
Delta: Incremental]
[2020/01/17 15:00:17] [info] [1579242904772] Using Temporary Directory
/usr/local/obm/bin/root/tmp/1579242821647/OBS@1579242904772
[2020/01/17 15:00:20] [info] [-] Start running pre-commands
[2020/01/17 15:00:20] [info] [-] Finished running pre-commands
[2020/01/17 15:00:20] [info] [1579242904772] Downloading server file
list...
[2020/01/17 15:00:20] [info] [1579242904772] Downloading server file
list... Completed
[2020/01/17 15:00:21] [info] [1579242904772] Reading backup source from
hard disk...
[2020/01/17 15:00:22] [info] [1579242904772] Reading backup source from
hard disk... Completed
[2020/01/17 15:00:22] [info] [1579242904772] [New Directory]... /
[2020/01/17 15:00:22] [info] [1579242904772] [New Directory]... /root
[2020/01/17 15:00:22] [info] [1579242904772] [New Directory]...
/root/documents
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 100% of
"/root/documents/Approach.docx"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 17% of
"/root/documents/4-Derivatives-Chain-Rule.pdf"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 32% of
"/root/documents/4-Derivatives-Chain-Rule.pdf"
```

```
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 50% of
"/root/documents/4-Derivatives-Chain-Rule.pdf"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 69% of
"/root/documents/4-Derivatives-Chain-Rule.pdf"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 79% of
"/root/documents/4-Derivatives-Chain-Rule.pdf"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 90% of
"/root/documents/4-Derivatives-Chain-Rule.pdf"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 100% of
"/root/documents/4-Derivatives-Chain-Rule.pdf"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 27% of
"/root/documents/e7KHOqrl.jpg"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 46% of
"/root/documents/e7KHOqrl.jpg"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 65% of
"/root/documents/e7KHOqrl.jpg"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 83% of
"/root/documents/e7KHOqrl.jpg"
[2020/01/17 15:00:22] [info] [1579242904772] [New File]... 100% of
"/root/documents/e7KHOqrl.jpg"
[2020/01/17 15:00:25] [info] [1579242904772] Start validating the
presence and size of backup data in destination "AhsayCBS"...
[2020/01/17 15:00:25] [info] [1579242904772] File:
"1579242821647/blocks/2020-01-17-14-59-56/0/000000.bak", Size: 737,744,
OK
[2020/01/17 15:00:25] [info] [1579242904772] Finished validating the
presence and size of backup data in destination "AhsayCBS"
[2020/01/17 15:00:25] [info] [1579242904772] Total New Files = 3
[2020/01/17 15:00:25] [info] [1579242904772] Total New Directories = 3
[2020/01/17 15:00:25] [info] [1579242904772] Total New Links = 0
[2020/01/17 15:00:25] [info] [1579242904772] Total Updated Files = 0
[2020/01/17 15:00:25] [info] [1579242904772] Total Attributes Changed
Files = 0
[2020/01/17 15:00:25] [info] [1579242904772] Total Deleted Files = 0
[2020/01/17 15:00:25] [info] [1579242904772] Total Deleted Directories =
0
[2020/01/17 15:00:25] [info] [1579242904772] Total Deleted Links = 0
[2020/01/17 15:00:25] [info] [1579242904772] Total Moved Files = 0
[2020/01/17 15:00:25] [info] [1579242904772] Saving encrypted backup file
index to 1579242821647/blocks at destination AhsayCBS...
[2020/01/17 15:00:25] [info] [1579242904772] Saving encrypted backup file
index to 1579242821647/blocks/2020-01-17-14-59-56 at destination
AhsayCBS...
[2020/01/17 15:00:27] [info] [-] Start running post-commands
[2020/01/17 15:00:27] [info] [-] Finished running post-commands
[2020/01/17 15:00:30] [info] [1579242904772] Deleting temporary file
/usr/local/obm/bin/root/tmp/1579242821647/OBS@1579242904772
[2020/01/17 15:00:33] [info] [1579242904772] Backup Completed
Successfully
```

Restore.sh

This script file is used to restore backup files to its original or alternate location. To configure the parameters, open the script file in a text editor like vi.

```
# vi Restore.sh
```

Configure the following parameters:

- **BACKUP_SET** – this is the name of the backup set which you want to restore. There are two (2) ways to specify the backup set; by using the *backup set name* or by *backup set ID*. If the backup set name is not in English, use the backup set ID. You can leave this blank if you only have one (1) backup set.

  e.g. BACKUP_SET="1119083740107" or BACKUP_SET="FileBackupSet-1"

- **DESTINATION** – this is the name of the destination where the backup set was stored. There are two (2) ways to specify the destination; by using the *destination name* or *destination ID*. If the destination name is not in English, use the DestinationID. You can leave this blank if you only have one (1) backup destination.

  e.g. DESTINATION="1119083740107" or DESTINATION="CBS"

- **RESTORE_TO** – this is the directory where you want to restore the backup file. You do not need to change this if you want the backup file to be restored to its original location.

  e.g. RESTORE_TO="" or RESTORE_TO-"/tmp"

- **RESTORE_FROM** – this is the file or directory that you would like to restore.

  e.g. RESTORE_FROM="/Data"

- **POINT_IN_TIME** – this is the specific successful backup that you want to restore. You can use *Current* if you want to use the latest backup snapshot. You can see the point in time snapshot by using the *ListBackupJob.sh* script file.

  e.g. POINT_IN_TIME="Current" or POINT_IN_TIME="2006-10-04-12-57-13"

- **RESTORE_PERMISSION** – you can set the file permission here.

  e.g. RESTORE_PERMISSION="N" or RESTORE_PERMISSION="Y"

- **SKIP_INVALID_KEY** – you can set here if you want to skip restoring the backup file with an invalid key. There are two (2) options for this: *Y* or *N*.

  e.g. SKIP_INVALID_KEY="N"

- **SYNC_OPTION** – this is the sync options if you want to delete extra files.

  e.g. SYNC_OPTIONS="Y" if you want to enable sync options

  SYNC_OPTIONS="N" if you do not want to enable sync options

  SYNC_OPTIONS="" if you want to prompt for selection

- **REPLACE_EXISTING_FILE** – you can set here if you want files with the same filename to be replaced. There are three (3) options for this: *--all, --none* or blank.

  e.g. REPLACE_EXISTING_FILE="—all" if you want to replace existing files with the same filename

REPLACE_EXISTING_FILE="—none" if you want to keep all existing files with the same filename

REPLACE_EXISTING_FILE="" if you want to be prompted for selection

- **SETTING_HOME** – this is the directory to your setting home. If not set, the default directory is "${HOME}/.obm".

  e.g. SETTING_HOME="/root/.obm"

- **FILTER** – you can filter the files that you want to be restored. You can use this format to set the filter *-Pattern=xxx-Type=yyy-Target=zzz.*

  xxx is the filter pattern

  yyy is the filter type, you have eight (8) options available for this: *exact, exactMatchCase, contains, containsMatchCase, startWith*, *startWithMatchCase*, *endWith* and *endWithMatchCase*.

  zzz is the filter target, you have three (3) options available for this: *toFile, toFileDir* and *toDir*.

  e.g. FILTER="-Pattern=.txt-Type=exact-Target=toFile"

- **TEMP_DIR** – this is the directory where the restore files will be stored temporarily. If set to "" the temporary directory in the backup set will be used.

  e.g. TEMP_DIR="/tmp"

- **VERIFY_CHKSUM** – you can set here if you want the in-file delta file checksum to be verified during restore. There are two (2) options available for this: *Y* or *N*.

  e.g. VERIFY_CHKSUM="N" or VERIFY_CHKSUM="Y"

```
# vi Restore.sh


#!/bin/sh

################################  Restore.sh
################################
# You can use this shell script to restore backup files using command-
line.    #
# Just customize the "User Define Section" below with values for your
restore  #
# action.
#
#########################################################################
#######

#########################  Start: User Defined Section
########################

# ------------------------------  BACKUP_SET  -------------------------
-------
# | The name or ID of the backup set that you want to restore.
|
# | If backup set name is not in English, please use ID instead.
|
# | e.g. BACKUP_SET="1119083740107"
|
# |  or  BACKUP_SET="FileBackupSet-1"
|
```

```
# |
|
# | You can leave this parameter blank if you have only 1 backup set.
|
# ------------------------------------------------------------------------
-------
BACKUP_SET=""

# ------------------------------  DESTINATION  --------------------------
-------
# | The name or ID of the backup destination that you want to restore
from.    |
# | If backup destination name is not in English, please use ID instead.
|
# | e.g. DESTINATION="1740107119083"
|
# |  or  DESTINATION="Destination-1"
|
# |
|
# | You can leave this parameter blank if you have only 1 destination.
|
# ------------------------------------------------------------------------
-------
DESTINATION=""

# -------------------------------  RESTORE_TO  --------------------------
-------
# | Directory to where you want files to be restored
|
# | set to "" to restore files to original location
|
# | e.g. RESTORE_TO="/tmp"
|
# ------------------------------------------------------------------------
-------
RESTORE_TO=""

# ------------------------------  RESTORE_FROM  -------------------------
-------
# | File/Directory on the backup server that you would like to restore
|
# | e.g. RESTORE_FROM="/Data"
|
# ------------------------------------------------------------------------
-------
RESTORE_FROM=""

# ------------------------------  POINT_IN_TIME  -------------------------
-------
# | The point-in-time snapshot (successful backup) that you want to
restore    |
# | from the backup server. Use "Current" for the latest backup snapshot
|
# | e.g. POINT_IN_TIME="2006-10-04-12-57-13"
|
# |  or  POINT_IN_TIME="Current"
|
# |
|
```

```
# | You can retrieve the point in time by using the ListBackupJob.sh
|
# ------------------------------------------------------------------------
-------
POINT_IN_TIME="Current"

# -------------------------  RESTORE_PERMISSION  ----------------------
-------
# | set to "Y" if you want to restore file permissions
|
# | set to "N" if you do NOT want to restore file permissions
|
# ------------------------------------------------------------------------
-------
RESTORE_PERMISSION="N"

# ---------------------------  SKIP_INVALID_KEY  ----------------------
-------
# | set to "Y" if you want to skip restore file with invalid key
|
# | set to "N" if you want to prompt user to input a correct key
|
# ------------------------------------------------------------------------
-------
SKIP_INVALID_KEY="N"

# ------------------------------  SYNC_OPTION  --------------------------
-------
# | Delete extra files
|
# | set to "Y" if you want to enable sync option
|
# | set to "N" if you do NOT want to enable sync option
|
# | set to "" to prompt for selection
|
# ------------------------------------------------------------------------
-------
SYNC_OPTION="N"

# -------------------------  REPLACE_EXISTING_FILE  --------------------
-------
# | set to "--all" to replace all existing file(s) of the same filename
|
# | set to "--none" to skip all existing file(s) with the same filename
|
# | set to "" to prompt for selection
|
# ------------------------------------------------------------------------
-------
REPLACE_EXISTING_FILE="--all"

# ------------------------------  SETTING_HOME  -------------------------
-------
# | Directory to your setting home.
|
# | Default to ${HOME}/.obm when not set.
|
# | e.g. SETTING_HOME="${HOME}/.obm"
|
```

```
# ------------------------------------------------------------------------
-------
SETTING_HOME=""

# ---------------------------------  FILTER  ----------------------------
-------
# | Filter out what files you want to restore
|
# | -Pattern=xxx-Type=yyy-Target=zzz
|
# | where xxx is the filter pattern,
|
# |       yyy is the filter type, whice can be one of the following:
|
# |           [exact | exactMatchCase | contains | containsMatchCase|
|
# |            startWith | startWithMatchCase | endWith |
endWithMatchCase]    |
# |       zzz is the filter target, which can be one of the following:
|
# |           [toFile | toFileDir | toDir]
|
# |
|
# | e.g. FILTER="-Pattern=.txt-Type=exact-Target=toFile"
|
# ------------------------------------------------------------------------
-------
FILTER=""

# ---------------------------------  TEMP_DIR  --------------------------
-------
# | Directory to where you want to store restore files temporarily
|
# | set to "" to use the temporary directory in the backup set
|
# | e.g. TEMP_DIR="/tmp"
|
# ------------------------------------------------------------------------
-------
TEMP_DIR=""

# ------------------------------  VERIFY_CHKSUM  -------------------------
-------
# | set to "Y" if you want to verify in-file delta file checksum during
restore|
# | set to "N" if you do NOT want to verify in-file delta file checksum
during |
# | restore
|
# ------------------------------------------------------------------------
-------
VERIFY_CHKSUM="N"

##########################  END: User Defined Section
##########################

#########################################################################
#######
#      R E T R I E V E           A P P _ H O M E          P A T H
#
```

```
##############################################################################
#######

EXE_DIR=`pwd`
SCRIPT_HOME=`dirname "$0"`
cd "$SCRIPT_HOME"
APP_BIN=`pwd`
APP_HOME=`dirname "$APP_BIN"`

##############################################################################
#######
#      R E T R I E V E          J A V A _ H O M E          P A T H
#
##############################################################################
#######

if [ "Darwin" = `uname` ]; then
    JAVA_HOME="/System/Library/Frameworks/JavaVM.framework/Home"
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "'$APP_HOME/jvm' does not exist!"
    if [ ! -n "$JAVA_HOME" ]; then
        echo "Please set JAVA_HOME!"
        exit 0
    else
        ln -sf "$JAVA_HOME" "$APP_HOME/jvm"
        echo "Created JAVA_HOME symbolic link at '$APP_HOME/jvm'"
    fi
fi
if [ ! -x "$APP_HOME/jvm" ];
then
    echo "Please create symbolic link for '$JAVA_HOME' to
'$APP_HOME/jvm'"
    exit 0
fi

JAVA_HOME="$APP_HOME/jvm"
JAVA_EXE="$JAVA_HOME/bin/java"

# Verify the JAVA_EXE whether it can be executed or not.
if [ ! -x "${JAVA_EXE}" ]
then
    echo "The Java Executable file \"${JAVA_EXE}\" cannot be executed.
Exit \""`basename "$0"`"\" now."
    exit 1
fi

# Verify the JAVA_EXE whether it is a valid JAVA Executable or not.
STRING_JAVA_VERSION="java version,openjdk version"
OUTPUT_JAVA_VERSION=`"${JAVA_EXE}" -version 2>&1`
OUTPUT_JVM_SUPPORT=0
BACKUP_IFS=$IFS
IFS=","
for word in $STRING_JAVA_VERSION; do
    if [ `echo "${OUTPUT_JAVA_VERSION}" | grep "${word}" | grep -cv "grep
${word}"` -le 0 ]
    then
      #echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
```

```
      continue;
    else
      OUTPUT_JVM_SUPPORT=1
      break;
    fi
done
IFS=$BACKUP_IFS
if [ $OUTPUT_JVM_SUPPORT -eq 0 ]
then
    echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
    exit 1
fi


#############################################################################
#######
#                  J A V A                  E X E C U T I O N
#
#############################################################################
#######

# Set LD_LIBRARY_PATH for Lotus Notes on Linux
if [ "Linux" = `uname` ];
then
    NOTES_PROGRAM=`cat "$APP_BIN/notesenv"`
    LD_LIBRARY_PATH="$APP_BIN:$NOTES_PROGRAM:$LD_LIBRARY_PATH"
    export NOTES_PROGRAM
else
    LD_LIBRARY_PATH="$APP_BIN:$LD_LIBRARY_PATH"
fi

# The Restore Action must be execute at path $APP_HOME/bin
cd "${APP_BIN}"

DEP_LIB_PATH="X64"
case "`uname -m`" in
    i[3-6]86)
        DEP_LIB_PATH="X86"
    ;;
esac
LD_LIBRARY_PATH="${APP_BIN}/${DEP_LIB_PATH}":".":"${LD_LIBRARY_PATH}"

SHLIB_PATH="$LD_LIBRARY_PATH"
export LD_LIBRARY_PATH SHLIB_PATH

# Reference path will be used to avoid empty space in the parent
directory
LIB_HOME=.
JAVA_OPTS="-Xrs -Xms128m -Xmx768m -XX:MaxDirectMemorySize=512m -client -
Dsun.nio.PageAlignDirectMemory=true"
JNI_PATH="-Djava.library.path=$LIB_HOME"
CLASSPATH="$LIB_HOME:$LIB_HOME/cb.jar"
MAIN_CLASS=Restore

echo "Using APP_HOME:          : ${APP_HOME}"
echo "Using BACKUP_SET         : ${BACKUP_SET}"
echo "Using RESTORE_FROM       : ${RESTORE_FROM}"
echo "Using RESTORE_TO         : ${RESTORE_TO}"
echo "Using POINT_IN_TIME      : ${POINT_IN_TIME}"
echo "Using RESTORE_PERMISSION : ${RESTORE_PERMISSION}"
```

```
echo "Using TEMP_DIR           : ${TEMP_DIR}"

# Do not include double-quote for java options, jni path, classpath and
# main class.
# Only apply double-quote for path to java executable and execution
arguments
"${JAVA_EXE}" $JAVA_OPTS $JNI_PATH -cp $CLASSPATH $MAIN_CLASS --
to="${RESTORE_TO}" --from="${RESTORE_FROM}" --backup-set="${BACKUP_SET}"
--backup-dest="${DESTINATION}" "${REPLACE_EXISTING_FILE}" --
date="${POINT_IN_TIME}" --set-permission="${RESTORE_PERMISSION}" --skip-
invalid-key="${SKIP_INVALID_KEY}" --sync="${SYNC_OPTION}" --
filter="${FILTER}" --temp-dir="${TEMP_DIR}" --verify-delta-file-
chksum="${VERIFY_CHKSUM}" --app-home="${APP_HOME}" --setting-
home="${SETTING_HOME}"

#########################################################################
#######
#                   R E S E T          A N D          E X I T
#
#########################################################################
#######

cd "${EXE_DIR}"
exit 0
```

Once you have configured the parameters, save the changes. Use the **sh** command to run the script. The restore will be run manually.

```
# sh Restore.sh
Using APP_HOME:          : /usr/local/obm
Using BACKUP_SET         :
Using RESTORE_FROM       : /root/documents
Using RESTORE_TO         : /root/restored
Using POINT_IN_TIME      : Current
Using RESTORE_PERMISSION : N
Using TEMP_DIR           : /root/tmp
Filter Pattern not set, filter would not apply to restore
[2020-01-17 15:08:18] Start [ AhsayOBM v8.3.1.0 ]
[2020-01-17 15:08:18] OS: FreeBSD 11.1-RELEASE-p1 (freebsd11); CPU Model:
VMware-Intel(R) Xeon(R) CPU           E5520  @ 2.27GHz (2261.00-MHz K8-
class CPU); Number of Processors: 4; Heap Size: 16MB (Current) / 684MB
(Maximum); Physical Memory: 2.9GB (Free) / 4GB (Total)
[2020-01-17 15:08:18] start,Start [ AhsayOBM v8.3.1.0 ],0,0,0,,0,0

[2020-01-17 15:08:18] Initializing decrypt action...
[2020-01-17 15:08:19] Initializing decrypt action... Completed
[2020-01-17 15:08:19] Creating new directory... "/root/restored/root"
[2020-01-17 15:08:19] Creating new directory...
"/root/restored/root/documents"
[2020-01-17 15:08:19] Downloading... "/root/restored/root/documents/4-
Derivatives-Chain-Rule.pdf" (Total 829k bytes)
[2020-01-17 15:08:19] Downloading...
"/root/restored/root/documents/Approach.docx" (Total 13k bytes)
[2020-01-17 15:08:19] Downloading...
"/root/restored/root/documents/e7KHOqrl.jpg" (Total 86k bytes)
[2020-01-17 15:08:32]
file,/root/restored/root/documents/Approach.docx,11646,14335,154712823100
0,,1579244912218,1579244912220
```

```
[2020-01-17 15:08:32]
file,/root/restored/root/documents/e7KHOqrl.jpg,88142,88136,1547460595000
,,1579244912232,1579244912259

[2020-01-17 15:08:32] file,/root/restored/root/documents/4-Derivatives-
Chain-Rule.pdf,637950,848925,1547110402000,,1579244912218,1579244912379

[2020-01-17 15:08:33] Restore Completed Successfully
[2020-01-17 15:08:33] end,RESTORE_STOP_SUCCESS,0,0,0,,0,0
```

Decrypt.sh

This script file is used to decrypt backup files. To configure the parameters, open the script file in a text editor like vi.

```
# vi Decrypt.sh
```

Configure the following parameters:

- **SOURCE_DIR** – this is the path of the folder that contains the backup files that you want to decrypt.

  e.g. SOURCE_DIR="/usr/local/cbs/user/LinuxTest/1563436721634/blocks"

- **ENCRYPT_KEY** – this is the encryption key the backup set. You can leave this blank if you backup set is not encypted.

  e.g. ENCRYPT_KEY="RU5DUllQVF9LRVk="

- **DECRYPT_TO** – this is the directory where you want to store the decrypted backup file.

  e.g. DECRYPT_TO="/tmp"

- **DECRYPT_FROM** – this is the file or directory that you would like to decrypt.

  e.g. RESTORE_FROM="/Data"

- **POINT_IN_TIME** – this is the specific successful backup that you want to decrypt. You can use *Current* if you want to use the latest backup snapshot. You can see the point in time snapshot by using the *ListBackupJob.sh* script file.

  e.g. POINT_IN_TIME="Current" or POINT_IN_TIME="2006-10-04-12-57-13"

- **RESTORE_PERMISSION** – you can set the file permission here.

  e.g. RESTORE_PERMISSION="N" or RESTORE_PERMISSION="Y"

- **SKIP_INVALID_KEY** – you can set here if you want to skip decrypting the backup file with an invalid key. There are two (2) options for this: *Y* or *N*.

  e.g. SKIP_INVALID_KEY="N"

- **SYNC_OPTION** – this is the sync options if you want to delete extra files.

  e.g. SYNC_OPTIONS="Y" if you want to enable sync options

  SYNC_OPTIONS="N" if you do not want to enable sync options

  SYNC_OPTIONS="" if you want to prompt for selection

- **REPLACE_EXISTING_FILE** – you can set here if you want files with the same filename to be replaced. There are three (3) options for this: *--all, --none* or blank.

  e.g. REPLACE_EXISTING_FILE="—all" if you want to replace existing files with the same filename

  REPLACE_EXISTING_FILE="—none" if you want to keep all existing files with the same filename

  REPLACE_EXISTING_FILE="" if you want to be prompted for selection

- **SETTING_HOME** – this is the directory to your setting home. If not set, the default directory is "${HOME}/.obm".

  e.g. SETTING_HOME="/root/.obm"

- **FILTER** – you can filter the files that you want to be restored. You can use this format to set the filter *-Pattern=xxx-Type=yyy-Target=zzz.*

  xxx is the filter pattern

  yyy is the filter type, you have eight (8) options available for this: *exact, exactMatchCase, contains, containsMatchCase, startWith*, *startWithMatchCase*, *endWith* and *endWithMatchCase*.

  zzz is the filter target, you have three (3) options available for this: *toFile, toFileDir* and *toDir*.

  e.g. FILTER="-Pattern=.txt-Type=exact-Target=toFile"

- **TEMP_DIR** – this is the directory where the restore files will be stored temporarily. If set to "" the temporary directory in the backup set will be used.

  e.g. TEMP_DIR="/tmp"

- **VERIFY_CHKSUM** – you can set here if you want the in-file delta file checksum to be verified during restore. There are two (2) options available for this: *Y* or *N*.

  e.g. VERIFY_CHKSUM="N" or VERIFY_CHKSUM="Y"

```
# vi Decrypt.sh

#!/bin/sh

################################  Decrypt.sh
################################
# You can use this shell script to decrypt backup files using command-
line.    #
# Just customize the "User Define Section" below with values for your
decrypt  #
# action.
#
#########################################################################
#######

#########################  Start: User Defined Section
########################

# -------------------------------  SOURCE_DIR  --------------------------
-------
# | The path to the [<backup set ID>/blocks] folder which contains
|
```

```
# | the backup files that you want to decrypt.
|
# | This folder should located under backup destination physically.
|
# | e.g. SET SOURCE_DIR="/Users/john/backupdata/1498444438340/blocks"
|
# |      where directory "/Users/john/backupdata" is path of local
destination |
# ------------------------------------------------------------------------
-------
SOURCE_DIR=""

# -------------------------------  ENCRYPT_KEY  -------------------------
-------
# | The encrypting key of the backup data.
|
# | e.g. SET ENCRYPT_KEY="RU5DUllQVF9LRVk="
|
# |
|
# | You can leave this parameter blank if backup data is not encrypted.
|
# ------------------------------------------------------------------------
-------
ENCRYPT_KEY=""

# -------------------------------  DECRYPT_TO  -------------------------
-------
# | Directory to where you want files to be decrypted
|
# | e.g. DECRYPT_TO="/tmp"
|
# ------------------------------------------------------------------------
-------
DECRYPT_TO=""

# -------------------------------  DECRYPT_FROM  -------------------------
-------
# | File/Directory on the backup data that you would like to decrypt
|
# | e.g. DECRYPT_FROM="/Data"
|
# ------------------------------------------------------------------------
-------
DECRYPT_FROM=""

# -------------------------------  POINT_IN_TIME  -------------------------
-------
# | The point-in-time snapshot (successful backup) that you want to
decrypt    |
# | from the backup data. Use "Current" for the latest backup snapshot
|
# | e.g. POINT_IN_TIME="2006-10-04-12-57-13"
|
# |  or  POINT_IN_TIME="Current"
|
# |
|
# | You can retrieve the point in time by using the ListBackupJob.sh
|
```

```
# ------------------------------------------------------------------------
-------
POINT_IN_TIME="Current"

# --------------------------  RESTORE_PERMISSION  ----------------------
-------
# | set to "Y" if you want to restore file permissions
|
# | set to "N" if you do NOT want to restore file permissions
|
# ------------------------------------------------------------------------
-------
RESTORE_PERMISSION="N"

# ---------------------------  SKIP_INVALID_KEY  -----------------------
-------
# | set to "Y" if you want to skip decrypt file with invalid key
|
# | set to "N" if you want to prompt to input a correct key
|
# ------------------------------------------------------------------------
-------
SKIP_INVALID_KEY="N"

# -------------------------------  SYNC_OPTION  --------------------------
-------
# | Delete extra files
|
# | set to "Y" if you want to enable sync option
|
# | set to "N" if you do NOT want to enable sync option
|
# | set to "" to prompt for selection
|
# ------------------------------------------------------------------------
-------
SYNC_OPTION="N"

# --------------------------  REPLACE_EXISTING_FILE  ---------------------
-------
# | set to "--all" to replace all existing file(s) of the same filename
|
# | set to "--none" to skip all existing file(s) with the same filename
|
# | set to "" to prompt for selection
|
# ------------------------------------------------------------------------
-------
REPLACE_EXISTING_FILE="--all"

# ------------------------------  SETTING_HOME  -------------------------
-------
# | Directory to your setting home. Log files will be located inside.
|
# | Default to ${HOME}/.obm when not set.                          |
# | e.g. SETTING_HOME="/Users/john/.obm"                           |
# ------------------------------------------------------------------------
-------
SETTING_HOME=""
```

```
# ---------------------------------  FILTER  ----------------------------
-------
# | Filter out what files you want to decrypt
|
# | -Pattern=xxx-Type=yyy-Target=zzz
|
# | where xxx is the filter pattern,
|
# |       yyy is the filter type, whice can be one of the following:
|
# |           [exact | exactMatchCase | contains | containsMatchCase|
|
# |            startWith | startWithMatchCase | endWith |
endWithMatchCase]    |
# |       zzz is the filter target, which can be one of the following:
|
# |           [toFile | toFileDir | toDir]
|
# |
|
# | e.g. FILTER="-Pattern=.txt-Type=exact-Target=toFile"
|
# ---------------------------------------------------------------------
-------
FILTER=""

# ---------------------------------  TEMP_DIR  ----------------------------
-------
# | Directory to where you want to store decrypt files temporarily
|
# | e.g. TEMP_DIR="/tmp"
|
# ---------------------------------------------------------------------
-------
TEMP_DIR=""

# ------------------------------  VERIFY_CHKSUM  -------------------------
-------
# | set to "Y" if you want to verify in-file delta file checksum during
decrypt|
# | set to "N" if you do NOT want to verify in-file delta file checksum
during |
# | decrypt
|
# ---------------------------------------------------------------------
-------
VERIFY_CHKSUM="N"

##########################  END: User Defined Section
#########################

#########################################################################
#######
#      R E T R I E V E           A P P _ H O M E          P A T H
#
#########################################################################
#######

EXE_DIR=`pwd`
SCRIPT_HOME=`dirname "$0"`
cd "$SCRIPT_HOME"
```

```
APP_BIN=`pwd`
APP_HOME=`dirname "$APP_BIN"`

#############################################################################
#######
#       R E T R I E V E           J A V A _ H O M E           P A T H
#
#############################################################################
#######

if [ "Darwin" = `uname` ]; then
    JAVA_HOME="/System/Library/Frameworks/JavaVM.framework/Home"
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "'$APP_HOME/jvm' does not exist!"
    if [ ! -n "$JAVA_HOME" ]; then
        echo "Please set JAVA_HOME!"
        exit 0
    else
        ln -sf "$JAVA_HOME" "$APP_HOME/jvm"
        echo "Created JAVA_HOME symbolic link at '$APP_HOME/jvm'"
    fi
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "Please create symbolic link for '$JAVA_HOME' to
'$APP_HOME/jvm'"
    exit 0
fi

JAVA_HOME="$APP_HOME/jvm"
JAVA_EXE="$JAVA_HOME/bin/java"

# Verify the JAVA_EXE whether it can be executed or not.
if [ ! -x "${JAVA_EXE}" ]
then
    echo "The Java Executable file \"${JAVA_EXE}\" cannot be executed.
Exit \""`basename "$0"`"\" now."
    exit 1
fi

# Verify the JAVA_EXE whether it is a valid JAVA Executable or not.
STRING_JAVA_VERSION="java version,openjdk version"
OUTPUT_JAVA_VERSION=`"${JAVA_EXE}" -version 2>&1`
OUTPUT_JVM_SUPPORT=0
BACKUP_IFS=$IFS
IFS=","
for word in $STRING_JAVA_VERSION; do
    if [ `echo "${OUTPUT_JAVA_VERSION}" | grep "${word}" | grep -cv "grep
${word}"` -le 0 ]
    then
      #echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
      continue;
    else
      OUTPUT_JVM_SUPPORT=1
      break;
    fi
```

```
done
IFS=$BACKUP_IFS
if [ $OUTPUT_JVM_SUPPORT -eq 0 ]
then
    echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
    exit 1
fi

###############################################################################
#######
#                   J A V A                   E X E C U T I O N
#
###############################################################################
#######

# Set LD_LIBRARY_PATH for Lotus Notes on Linux
if [ "Linux" = `uname` ];
then
    NOTES_PROGRAM=`cat "$APP_BIN/notesenv"`
    LD_LIBRARY_PATH="$APP_BIN:$NOTES_PROGRAM:$LD_LIBRARY_PATH"
    export NOTES_PROGRAM
else
    LD_LIBRARY_PATH="$APP_BIN:$LD_LIBRARY_PATH"
fi

# The Decrypt Action must be execute at path $APP_HOME/bin
cd "${APP_BIN}"

DEP_LIB_PATH="X64"
case "`uname -m`" in
    i[3-6]86)
        DEP_LIB_PATH="X86"
    ;;
esac
LD_LIBRARY_PATH="${APP_BIN}/${DEP_LIB_PATH}":".":"${LD_LIBRARY_PATH}"

SHLIB_PATH="$LD_LIBRARY_PATH"
export LD_LIBRARY_PATH SHLIB_PATH

# Reference path will be used to avoid empty space in the parent
directory
LIB_HOME=.
JAVA_OPTS="-Xrs -Xms128m -Xmx768m -XX:MaxDirectMemorySize=512m -client -
Dsun.nio.PageAlignDirectMemory=true"
JNI_PATH="-Djava.library.path=$LIB_HOME"
CLASSPATH="$LIB_HOME:$LIB_HOME/cb.jar"
MAIN_CLASS=Decrypt

echo "Using APP_HOME:           : ${APP_HOME}"
echo "Using SETTING_HOME:       : ${SETTING_HOME}"
echo "Using SOURCE_DIR          : ${SOURCE_DIR}"
echo "Using DECRYPT_FROM        : ${DECRYPT_FROM}"
echo "Using DECRYPT_TO          : ${DECRYPT_TO}"
echo "Using POINT_IN_TIME       : ${POINT_IN_TIME}"
echo "Using RESTORE_PERMISSION  : ${RESTORE_PERMISSION}"
echo "Using TEMP_DIR            : ${TEMP_DIR}"

# Do not include double-quote for java options, jni path, classpath and
# main class.
```

```
# Only apply double-quote for path to java executable and execution
arguments
"${JAVA_EXE}" $JAVA_OPTS $JNI_PATH -cp $CLASSPATH $MAIN_CLASS --
to="${DECRYPT_TO}" --from="${DECRYPT_FROM}" --source-dir="${SOURCE_DIR}"
--key="${ENCRYPT_KEY}" "${REPLACE_EXISTING_FILE}" --
date="${POINT_IN_TIME}" --set-permission="${RESTORE_PERMISSION}" --skip-
invalid-key="${SKIP_INVALID_KEY}" --sync="${SYNC_OPTION}" --
filter="${FILTER}" --temp-dir="${TEMP_DIR}" --verify-delta-file-
chksum="${VERIFY_CHKSUM}" --app-home="${APP_HOME}" --setting-
home="${SETTING_HOME}"

#########################################################################
#######
#                   R E S E T          A N D          E X I T
#
#########################################################################
#######

cd "${EXE_DIR}"
exit 0
```

Once you have configured the parameters, save the changes. Use the **sh** command to run the script. The decryption will be run manually.

```
# sh Decrypt.sh
Using APP_HOME:          : /usr/local/obm
Using SETTING_HOME:      :
Using SOURCE_DIR         :
/usr/local/cbs/user/FreeBSD_User/1579247994566/blocks
Using DECRYPT_FROM       : /root/documents
Using DECRYPT_TO         : /root/decrypted
Using POINT_IN_TIME      : Current
Using RESTORE_PERMISSION : N
Using TEMP_DIR           : /root/tmp
Filter Pattern not set, filter would not apply to decrypt
[2020-01-17 16:39:41] Start [ AhsayOBM v8.3.1.0 ]
[2020-01-17 16:39:41] OS: FreeBSD 11.1-RELEASE-p1 (freebsd11); CPU Model:
VMware-Intel(R) Xeon(R) CPU           E5520  @ 2.27GHz (2261.00-MHz K8-
class CPU); Number of Processors: 4; Heap Size: 10.8MB (Current) / 684MB
(Maximum); Physical Memory: 163.1MB (Free) / 4GB (Total)
[2020-01-17 16:39:41] start,Start [ AhsayOBM v8.3.1.0 ],0,0,0,,0,0

[2020-01-17 16:39:41] Initializing decrypt action...
[2020-01-17 16:39:41] Initializing decrypt action... Completed
[2020-01-17 16:39:42] Creating new directory... "/root/decrypted/root"
[2020-01-17 16:39:42] Creating new directory...
"/root/decrypted/root/documents"
[2020-01-17 16:39:42] Downloading... "/root/decrypted/root/documents/4-
Derivatives-Chain-Rule.pdf" (Total 829k bytes)
[2020-01-17 16:39:42] Downloading...
"/root/decrypted/root/documents/Approach.docx" (Total 13k bytes)
[2020-01-17 16:39:42] Downloading...
"/root/decrypted/root/documents/e7KHOqrl.jpg" (Total 86k bytes)
[2020-01-17 16:39:43]
file,/root/decrypted/root/documents/Approach.docx,11646,14335,15471282310
00,,1579250383168,1579250383170
```

```
[2020-01-17 16:39:43]
file,/root/decrypted/root/documents/e7KHOqrl.jpg,88142,88136,154746059500
0,,1579250383174,1579250383184

[2020-01-17 16:39:43] file,/root/decrypted/root/documents/4-Derivatives-
Chain-Rule.pdf,637950,848925,1547110402000,,1579250383168,1579250383306

[2020-01-17 16:39:44] Restore Completed Successfully
[2020-01-17 16:39:44] end,RESTORE_STOP_SUCCESS,0,0,0,,0,0
```

RunDataIntegrityCheck.sh

This script file is used to run data integrity check on your backup set. To configure the parameters, open the script file in a text editor like vi.

```
# vi RunDataIntegrityCheck.sh
```

Configure the following parameters:

- **SETTING_HOME** – this is the directory to your setting home. If not set, the default directory is "${HOME}/.obm".

  e.g. SETTING_HOME="/root/.obm"

- **BACKUP_SET** – this is the name of the backup set which you want to run data integrity check on. There are two (2) ways to specify the backup set; by using the *backup set name* or by *backup set ID*. If the backup set name is not in English, use the backup set ID. You can leave this blank if you only have one (1) backup set. You can also run the data integrity check on all backup sets by using "*ALL*".

  e.g. BACKUP_SET="1119083740107", BACKUP_SET="FileBackupSet-1" or BACKUP_SET="ALL"

- **BACKUP_DEST** – this is the name of the destination where the backup set was stored. There are two (2) ways to specify the destination; by using the *destination name* or *destination ID*. If the destination name is not in English, use the DestinationID. You can leave this blank if you only have one (1) backup destination. This will be disregarded if BACKUP_SET="ALL".

  e.g. DESTINATION="1119083740107" or DESTINATION="CBS"

- **CRC_MODE** – you can set here if you want to run cyclic redundancy check while doing the data integrity check. There are two (2) options available: *ENABLE-CRC* or *DISABLE-CRC*

  e.g. CRC_MODE="DISABLE-CRC" or CRC_MODE="ENABLE-CRC"

```
# vi RunDataIntegrityCheck.sh

#!/bin/sh

##########################  RunDataIntegrityCheck.sh
##########################
# You can use this shell script to run any of your backup sets from the
#
# command line. Just customize the "User Defined Section" below with your
#
```

```
# values for your backup action.
#
##########################################################################
#######

########################  START: User Defined Section
#########################

# --------------------------- SETTING_HOME (Optional) --------------------
-------
# | Directory to your setting home.
|
# | Default to ${HOME}/.obm when not set.
|
# | e.g. SETTING_HOME="${HOME}/.obm"
|
# ------------------------------------------------------------------------
-------
SETTING_HOME=""

# --------------------------------- BACKUP_SET --------------------------
-------
# | The name or ID of the backup set that you want to run.
|
# | If backup set name is not in English, please use ID instead.
|
# | e.g. BACKUP_SET="1119083740107"
|
# |  or  BACKUP_SET="FileBackupSet-1"
|
# | You can use "ALL" to run data integrity check for all backup sets.
|
# | i.e. BACKUP_SET="ALL"
|
# |
|
# | You can leave this parameter blank if you have only 1 backup set.
|
# ------------------------------------------------------------------------
-------
BACKUP_SET="ALL"

# --------------------------------- BACKUP_DEST --------------------------
-------
# | The name or ID of the backup destination that you want to run.
|
# | If backup destination name is not in English, please use ID instead.
|
# | e.g. BACKUP_DEST="1740107119083"
|
# |  or  BACKUP_DEST="Destination-1"
|
# | You can use "ALL" to run data integrity check for all destinations.
|
# | i.e. BACKUP_DEST="ALL"
|
# |
|
# | You can leave this parameter blank if you have only 1 destination.
|
```

```
# | Remark: This option is ignored if BACKUP_SET="ALL"
|
# ------------------------------------------------------------------------
-------
BACKUP_DEST="ALL"

# ---------------------------------- CRC_MODE ----------------------------
-------
# | You can run Cyclic Redundancy Check (CRC) during data integrity check
|
# | Options available: ENABLE-CRC/DISABLE-CRC
|
# | i.e. CRC_MODE="ENABLE-CRC"
|
# |  or  CRC_MODE="DISABLE-CRC"
|
# ------------------------------------------------------------------------
-------
CRC_MODE="DISABLE-CRC"


############################ END: User Defined Section
############################


#########################################################################
#######
#                S C R I P T                          U S A G E
#
#########################################################################
#######

# Input Arguments will overwrite the above settings
# defined in 'User Defined Section'.
if [ $# -ge 1 ]; then

    if [ -n "$1" ]; then
        BACKUP_SET="$1"
    fi

fi

#########################################################################
#######
#          R E T R I E V E     A P P _ H O M E     P A T H
#
#########################################################################
#######

EXE_DIR=`pwd`
SCRIPT_HOME=`dirname "$0"`
cd "$SCRIPT_HOME"
APP_BIN=`pwd`
APP_HOME=`dirname "$APP_BIN"`

#########################################################################
#######
#          R E T R I E V E     J A V A _ H O M E     P A T H
#
#########################################################################
#######
```

```
if [ "Darwin" = `uname` ]; then
    JAVA_HOME="/System/Library/Frameworks/JavaVM.framework/Home"
fi

if [ ! -x "$APP_HOME/jvm" ];
then
    echo "'$APP_HOME/jvm' does not exist!"
    if [ ! -n "$JAVA_HOME" ]; then
        echo "Please set JAVA_HOME!"
        exit 0
    else
        ln -sf "$JAVA_HOME" "$APP_HOME/jvm"
        if [ ! -x "$APP_HOME/jvm" ];
        then
            echo "Please create symbolic link for '$JAVA_HOME' to
'$APP_HOME/jvm'"
            exit 0
        else
            echo "Created JAVA_HOME symbolic link at '$APP_HOME/jvm'"
        fi
    fi
fi

JAVA_HOME="$APP_HOME/jvm"
JAVA_EXE="$JAVA_HOME/bin/java"

# Verify the JAVA_EXE whether it can be executed or not.
if [ ! -x "${JAVA_EXE}" ]
then
    echo "The Java Executable file \"${JAVA_EXE}\" cannot be executed.
Exit \""`basename "$0"`"\" now."
    exit 1
fi

# Verify the JAVA_EXE whether it is a valid JAVA Executable or not.
STRING_JAVA_VERSION="java version,openjdk version"
OUTPUT_JAVA_VERSION=`"${JAVA_EXE}" -version 2>&1`
OUTPUT_JVM_SUPPORT=0
BACKUP_IFS=$IFS
IFS=","
for word in $STRING_JAVA_VERSION; do
    if [ `echo "${OUTPUT_JAVA_VERSION}" | grep "${word}" | grep -cv "grep
${word}"` -le 0 ]
    then
      #echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
      continue;
else
      OUTPUT_JVM_SUPPORT=1
      break;
    fi
done
IFS=$BACKUP_IFS
if [ $OUTPUT_JVM_SUPPORT -eq 0 ]
then
    echo "The Java Executable \"${JAVA_EXE}\" is not a valid Java
Executable. Exit \""`basename "$0"`"\" now."
    exit 1
fi
```

```
#############################################################################
#######
#            E X E C U T I O N     J A V A     P R O P E R T I E S
#
#############################################################################
#######

# Set LD_LIBRARY_PATH for Lotus Notes on Linux
if [ "Linux" = `uname` ];
then
    NOTES_PROGRAM=`cat "$APP_HOME/bin/notesenv"`
    LD_LIBRARY_PATH="$APP_HOME/bin:$NOTES_PROGRAM:$LD_LIBRARY_PATH"
    export NOTES_PROGRAM
else
    LD_LIBRARY_PATH="$APP_HOME/bin:$LD_LIBRARY_PATH"
fi

DEP_LIB_PATH="X64"
case "`uname -m`" in
    i[3-6]86)
        DEP_LIB_PATH="X86"
    ;;
esac
LD_LIBRARY_PATH="${APP_BIN}/${DEP_LIB_PATH}":".":"${LD_LIBRARY_PATH}"

SHLIB_PATH="$LD_LIBRARY_PATH"
export LD_LIBRARY_PATH SHLIB_PATH

#############################################################################
#######
#                          J A V A     E X E C U T I O N
#
#############################################################################
#######

# Change to APP_BIN for JAVA execution
cd "${APP_BIN}"

# Reference path will be used to avoid empty space in the parent
directory
LIB_HOME=.
JAVA_OPTS="-Xrs -Xms128m -Xmx768m -XX:MaxDirectMemorySize=512m -client -
Dsun.nio.PageAlignDirectMemory=true"
JNI_PATH="-Djava.library.path=$LIB_HOME"
CLASSPATH="$LIB_HOME:$LIB_HOME/cb.jar"
MAIN_CLASS=RunDataIntegrityCheck

echo "-"
echo "Using APP_HOME       : $APP_HOME"
echo "Using SETTING_HOME   : $SETTING_HOME"
echo "Using JAVA_HOME      : $JAVA_HOME"
echo "Using JAVA_EXE       : $JAVA_EXE"
echo "Using JAVA_OPTS      : $JAVA_OPTS"
echo "Using JNI_PATH       : $JNI_PATH"
echo "Using CLASSPATH      : $CLASSPATH"
echo "-"

echo "Running data integrity check for backup set - '$BACKUP_SET',
destination - '$BACKUP_DEST' ..."
```

```
# API Arguments: RunDataIntegrityCheck [APP_HOME] [SETTING_HOME]
[BACKUP_SET] [BACKUP_DEST] [CRC_MODE] [REBUILD_MODE]

# Do not include double-quote for java options, jni path, classpath and
# main class.
# Only apply double-quote for path to java executable and execution
arguments
"${JAVA_EXE}" $JNI_PATH -cp $CLASSPATH $JAVA_OPTS $MAIN_CLASS
"${APP_HOME}" "${SETTING_HOME}" "${BACKUP_SET}" "${BACKUP_DEST}"
"${CRC_MODE}" "${REBUILD_MODE}"

###########################################################################
#######
#                   R E S E T          A N D          E X I T
#
###########################################################################
#######

cd "${EXE_DIR}"
exit 0
```

Once you have configured the parameters, save the changes. Use the **sh** command to run the script. The data integrity check will be run in the backup set.

```
# sh RunDataIntegrityCheck.sh
-
Using APP_HOME       : /usr/local/obm
Using SETTING_HOME   :
Using JAVA_HOME      : /usr/local/obm/jvm
Using JAVA_EXE       : /usr/local/obm/jvm/bin/java
Using JAVA_OPTS      : -Xrs -Xms128m -Xmx768m -XX:MaxDirectMemorySize=512m
-client -Dsun.nio.PageAlignDirectMemory=true
Using JNI_PATH       : -Djava.library.path=.
Using CLASSPATH      : .:./cb.jar
-
Running data integrity check for backup set - 'ALL', destination -
'ALL' ...
[doInfo] Start [ AhsayOBM v8.3.1.0 ]
[doStart] Start data integrity check on backup set "b1(1579242821647)"
all destination, crc disabled, rebuild index disabled
[doDetail] Start processing data integrity check on backup set= "b1"
destination= "AhsayCBS"
[doLogProgress] Start processing data integrity check on backup set= "b1"
destination= "AhsayCBS"
[doLogProgress] Download valid index files from backup job "Current" to
"/usr/local/obm/bin/root/tmp/1579242821647/OBS@1579242904772/index".
[doInfo] Download valid index files from backup job "Current" to
"/usr/local/obm/bin/root/tmp/1579242821647/OBS@1579242904772/index".
[doLogProgress] Browsing "/files/1579242821647"
[doLogProgress] Browsing "1579242821647/blocks/2020-01-17-14-59-56"
[doLogProgress] Browsing "1579242821647/blocks/2020-01-17-14-59-56/0"
[doLogProgress] Processing Job "2020-01-17-14-59-56", ""
[doLogProgress] Processing Job "Current", ""
[doLogProgress] Processing Job "Current", ""
[doLogProgress] Processing Job "Current", "/root"
[doLogProgress] Processing Job "Current", "/root/documents"
[doInfo] Existing statistics of backup set= "b1" destination= "AhsayCBS":
Data area compressed size: 720kB, Data area uncompressed size: 929kB,
```

```
Data area file count: 3, Retention area compressed size: 0B, Retention
area uncompressed size: 0B, Retention area file count: 0
[doInfo] Recalculated statistics of backup set= "b1" destination=
"AhsayCBS": Data area compressed size: 720kB, Data area uncompressed
size: 929kB, Data area file count: 3, Retention area compressed size: 0B,
Retention area uncompressed size: 0B, Retention area file count: 0
[doInfo] The statistics of backup set= "b1" destination= "AhsayCBS" is
correct.
[doLogProgress] Saving encrypted backup file index to
1579242821647/blocks at destination AhsayCBS...
[doInfo] Saving encrypted backup file index to 1579242821647/blocks at
destination AhsayCBS...
[doDetail] Data integrity check on backup set= "b1" destination=
"AhsayCBS" is completed
[doLogProgress] Data integrity check on backup set= "b1" destination=
"AhsayCBS" is completed
[doEnd][INFO] Finished data integrity check on backup set
"b1(1579242821647)" all destination, crc disabled, rebuild index disabled
[doInfo] Completed data integrity check on backup set "b1(1579242821647)"
all destination, crc disabled, rebuild index disabled
```