

**MH CARGO VIEWER (MHCGOVIEWER)**

**SYSTEM OPERATION DOCUMENT**

**MAB/GROUP IT/SOD/ MHCGOVIEWER /1.4**

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1. - MANUAL ADMINISTRATION

# RECORD OF REVISION

| **No.** | **Description Of Changes** | **Issue No.** | **Revision No.** | **Author** | **Effective Date** |
| --- | --- | --- | --- | --- | --- |
| 1 | Original | 1 | 0 | Eswar Babu | 31-Dec-15 |
| 2 | Updated SOD in new format | 1 | 1 | Rakesh C Raman | 15-May-16 |
| 3 | Updated DCT Changes | 1 | 2 | Eswar Babu | 12-Apr-17 |
| 4 | Back-up and Recovery, description about azure recovery services vault used for Azure VM Backup. | 1 | 3 | Anoop TK | 28-Dec-17 |
| 5 | Updated AMS SDM and application support details | 1 | 4 | RajashekarReddy Kasireddy | 27-Sep-19 |
|  |  |  |  |  |  |

# LIST OF EFFECTIVE PAGES

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| **Part** | **Page** | **Issue No.** | **Revision No.** | **Effective Date** |  | **Part** | **Page** | **Issue No.** | **Revision No.** | **Effective Date** |
| 1 | 1-1 | 1 | 1 | 15-05-16 |  |  |  |  |  |  |
|  | 1-2 | 1 | 1 | 15-05-16 |  |  |  |  |  |  |
|  | 1-3 | 1 | 1 | 15-05-16 |  |  |  |  |  |  |
|  | 1-4 | 1 | 4 | 27-09-19 |  |  |  |  |  |  |
|  | 1-5 | 1 | 1 | 15-05-16 |  |  |  |  |  |  |
|  | 1-6 | 1 | 1 | 15-05-16 |  |  |  |  |  |  |
| 2 | 2-1 | 1 | 1 | 15-05-16 |  |  |  |  |  |  |
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| 4 | 4-1 | 1 | 1 | 15-05-16 |  |  |  |  |  |  |
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|  | 4-13 | 1 | 3 | 28-12-17 |  |  |  |  |  |  |
|  | 4-13 | 1 | 4 | 27-09-19 |  |  |  |  |  |  |
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| Wan Mohd Husni Wan Hussein | AMS | AMS SDM |

Table 1

# LIST OF ABBREVIATIONS

The following are the abbreviations used for the purpose of simplification.

|  |  |
| --- | --- |
| **Abbreviation** | **Denote** |
| AMS | Application Maintenance & Support |
| MD | Managing Director |
| NRM | Network and Revenue Management |
| SOD | System Operating Document |
| AD | Active Directory |
| MAB | Malaysia Airlines Berhad |

Table 2

# CONDITION OF USE

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1. - MANUAL BACKGROUND

# INTRODUCTION

This is the MH Cargo Viewer SOD, hereinafter referred to as “the Policy” provides comprehensive operating procedures within the scope and application herein defined in Part 2 Section 3.0 for Malaysia Airlines Berhad (MAB).

The MH Cargo Viewer application is come under BCD 4 and the SLA are applicable as per the policy.

# PURPOSE

The objective of this document is to provide relevant information required to operate and support a completed project, ready for implementation and handover to IT Operations.

# SCOPE AND APPLICATION

This document covers relevant information required to operate and support the system in production environment. This covers the maintenance operation of the system, database and interfaces.

# DEFINITION OF TERMS

|  |  |  |
| --- | --- | --- |
|  | **Term** | **Description** |
| 1 | DB | Database |
| 2 | DSL | Domain Specific Language |
| 3 | AD | Active Directory |
| 4 | OS | Operating System |
| 5 | AWB | Air Way Bill |
| 6 | CAR | Cargo Reference Record |
| 7 | MASGO | Mas Kargo System |
| 8 | App | Application |

Table 3

1. – OVERVIEW OF BUSINESS PROCESS

# OVERVIEW OF BUSINESS PROCESS

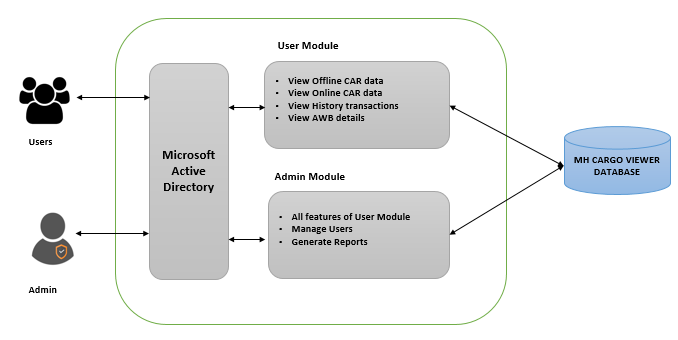


Figure 1:Business Process Flow

1. - MANUAL CONTENT TITLE

# SYSTEM OVERVIEW

The existing MASGO system has decommissioned and all the Cargo data available in MASGO system need to be transferred to other system before decommission.

MASGO holds 2 years of Cargo data in system including offline and online. MASGO holds 15days old CAR record and 150 days old AWB records. All the CAR /AWB’s older than the above were purged and written into CMT and AWX tapes respectively.

So the new system (MH Cargo Viewer) will be built with 2 years of historic data. User can view data as per need.

The objective of MH Cargo Viewer Project is

* CAR and AWB data from MASGO system will be extracted and provided in flat files to MHCGO system. MHCGO system will load data from these flat files to MHCGO database.
* MHCGO will provide CAR Loader Utility to parse and load CAR flat file from MASGO system to MHCGO database
* MHCGO will provide AWB Loader Utility to parse and load AWB flat file from MASGO system to MHCGO database
* “View CAR” Feature to view CAR for given CAR number.
* “View History” feature will also be available in the UI to view history of transactions happened for the CAR.
* “View AWB” Feature to view AWB for given AWB number.
* “View History” feature will also be available in the UI to view history of transactions happened for the AWB.
* User Management Screen to manage Users of MHCGO. Also various features that can be accessed by any User will be controlled through this feature.

# SYSTEM CONCEPT DIAGRAM

**Production and Development environment isolation**

This project aim is to implement the MH Cargo Viewer in MAB Data Center. Only through secure applications the data can be accessed from MHCGO. Files will be loaded to the system to make the data available for the MHCGO.

For the user management, registered user is all from the MAB Active Directory, the login and password will be also retrieved from the AD using LDAP protocol.

Database hosted in MAB DC and the applications can access data only thru MAB network. MHCGO will read data from files loaded through the application. It will not update or modify source data.

Data Consent at Source if any will be taken into account before using the data.

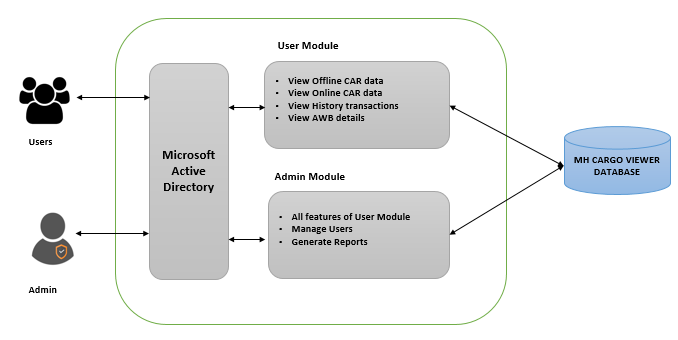


Figure 2

# INTERFACES

### 4.3.1. User Interfaces

CAR and AWB data from MASGO system will be extracted and provided in flat files to MH Cargo Viewer system. MH Cargo Viewer system will load data from these flat files to MH Cargo Viewer database.

The following are the User interfaces in the MH Cargo Viewer System

1) User Management

2) View AWB

3) View CAR

### 4.3.2. System Interfaces

The application is using LDAP to authenticate user while login into application. User can login into application using MH domain credentials and it will be validated using LDAP validator.

# WARRANTY AND MAINTENANCE PERIOD

|  |  |  |
| --- | --- | --- |
| **Item** | **Start Date** | **End Date** |
| Technical cutover to production | 31 Mar 2016 | 31 Mar 2016 |
| AMS Support | After 3 weeks from the operational cutover | 30 Sep 2018 |

Table 4

# ROLES AND RESPONSIBILITIES

| **Role** | **Responsibilities** |
| --- | --- |
| Midrange Team | * Responsible for maintaining web server. * Responsible for troubleshooting infrastructure related problems. |
| DBA Team | * Responsible for maintaining database |
| Application Support  (AMS) | * Responsible for uploading application in web server * Responsible for monitoring system performance * Responsible for providing application support * Responsible for deploying application and publishing it to user. * Responsible for maintaining application second level support |
| MAB Helpdesk | * As single point of contact to coordinate when MH Cargo Viewer problems occurred. * Responsible to coordinate problem reporting to the respective supporting team. |

Table 5

# TECHNICAL SPECIFICATIONS

### 4.6.1. Hardware Specifications

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Hostname** | **IP Address** | **Environment** | **OS Version** | **CPU** | **RAM** | **Location** | **Processor Speed** |
| MASG-1MFMIGAPP1 | 10.221.4.18 | Production | RHEL 7.2 | 2 | 4 | Azure VM,Public Cloud, Singapore | E5-2673 v3 @ 2.40GHz |
| MASG-3MFMIGAPP-LX | 10.221.12.20 | UAT | RHEL 7.2 | 2 | 4 | Azure VM,Public Cloud, Singapore | E5-2660 0 @ 2.20GHz |

Table 6

### 4.6.2. Software Specifications

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **Software** | **Specifications** |
| 1 | App Server | Tomcat 9.0.0.M11 & Apache- 2.4.23 |
| 2 | Monitoring application | Tivoli |
| 3 | Programming Language – UI | Java, Web services & JSP, JavaScript, JQuery |
| 4 | Programming Language – DB | MySQL |
| 5 | Front-end **(Browser Support)** | Best viewed in Chrome 18+ |
| 6 | Database | MySQL |
| 7 | Operating System | Windows/Linux |

Table 7

### 4.6.3. Communication / Network Specification

|  |  |  |
| --- | --- | --- |
| **Sl No** | **Category** | **Configuration** |
| 1 | Protocol | Server: TCP/IP  Client: TCP/IP |

Table 8

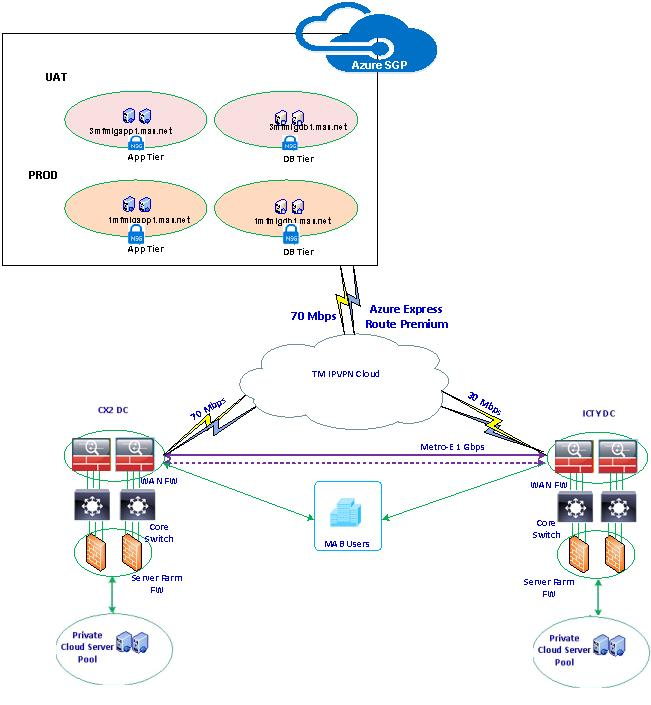


Figure 3 :Network Diagram

### 

### 4.6.4. User And Equipment Locations

Users need an appropriate browser to access the application. Supported browsers are listed in Section 4.6.2 [Front-end **(Browser Support)**].

### 4.6.5. File Management

##### 4.6.5.1. Libraries And Files

|  |  |
| --- | --- |
| **Libraries and Files** | **Location (Mount point)** |
|  | /TPF\_Repository |
| Tomcatadmin Home Directory | /home/tomcatadmin |
|  | /appstorage |
|  | /archive |
| Apache | /usr/local/apache |
| Appadmin Home Directory | /home/appadmin |
| Tomcat | /tomcat |

Table 9

##### 4.6.5.2. DBMS setup

NA

# TECHNICAL OPERATIONS GUIDE

1. Prepare the following files as for data loading. All AWB files should in one folder For example

* AWB.txt. >> store this under /home/appadmin/MKASampleFiles/AWB/
* AWB\_History.txt >> store under /home/appadmin/MKASampleFiles/AWB\_History/

Specify the path name in DB where the above files are stored for processing

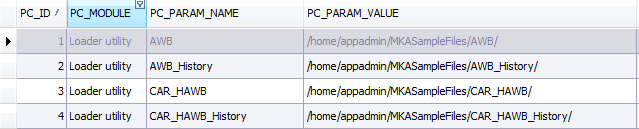


Figure 4

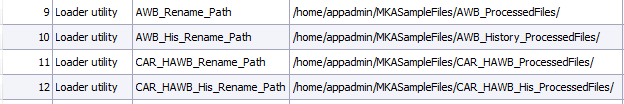
1.  Also need to specify the path where the files to move after processing

Figure 5

Note: if the tomcat version in deployment server is 8 then the war should be generated using tomcat 8 from local.

Deploy the war under /tomcat/apache-tomcat-9.0.0.M11/webapps. Once the deployment is completed then it will start the application automatically and it will load data from the above files to

* DB.AWB.txt. >> Data are saved into AWB\_STORE and AWB\_DATA
* AWB\_History.txt >> data are saved into AWB\_STORE and AWB\_HISTORY\_DATA
* CAR\_HAWB.txt >> data are saved into CAR\_STORE/ HAWB\_STORE and CAR/HAWB\_DATA
* CAR\_HAWB\_History.txt >> data are saved into CAR\_HISTORY\_DATA/ HAWB\_HISTORY\_DATA

### 4.7.1. Installation Procedures

* Application will be deployed in Tomcat Server in war file format by AMS Team. The below is the Tomcat Server URL.

**http://1mfmigapp1.mas.net:8080**

### 4.7.2. Backup And Recovery

Application are being backed using DR server. Database will be backed up on daily basis.

**Azure VM Backup**

Azure recovery Services vault is an entity that stores all the backups and recovery points that have been created over time. The vault also contains the backup policies that will be applied to the virtual machines being backed up

When the Recovery services initiates a backup job at the scheduled time, it triggers the backup extension to take a point-in-time snapshot. The Azure Recovery service uses the VMSnapshot extension in Windows, and the VMSnapshotLinux extension in Linux. The extension is installed during the first VM backup.

Once the Azure Backup service takes the snapshot, the data is transferred to the vault. To maximize efficiency, the service identifies and transfers only the blocks of data that have changed since the previous backup.

When the data transfer is complete, the snapshot is removed and a recovery point is created

**OS Backup:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Hostname** | **# of Versions** | **Frequency** | **Schedule** | **Remarks** |
|
| MASG-1MFMIGAPP1 | 6 | Every Saturday | 5.30 PM MYT | Monthly first Saturday backup retention is 3 months |
| MASG-1MFMIGDB1 | 6 | Every Saturday | 5.30 PM MYT | Monthly first Saturday backup retention is 3 months |
| MASG-3MFMIGAPP-LX | 4 | Every Saturday | 5.30 PM MYT | Monthly first Saturday backup retention is 2months |
| MASG-3MFMIGDB-LX | 4 | Every Saturday | 5.30 PM MYT | Monthly first Saturday backup retention is 2months |

Table 10

**Database Backup:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Hostname** | **VERSION** | **Frequency** | **Schedule** | **Remarks** |
| MASG-1MFMIGDB1 | 5.7 | Daily | 11:00 PM MYT | FileSystem: /mysqlbackup  Backup retention is 15 days |
| MASG-3MFMIGDB | 5.7 | Daily | 12:00 PM MYT | FileSystem: /mysqlbackup  Backup retention is 15 days |

Table 11

### 4.7.3. System Startup and restart

|  |  |  |
| --- | --- | --- |
| **Hostname** | **Server Function** | **Application Startup Procedure** |
| MASG-1MFMIGAPP1 | Production Application | /tomcat/apache-tomcat-9.0.0.M11/bin/startup.sh |
| MASG-1MFMIGAPP1 | Production Application | /usr/local/apache/bin/apachectl start |

Table 12

### 4.7.4. System Shutdown

|  |  |  |
| --- | --- | --- |
| **Hostname** | **Server Function** | **Application Shutdown Procedure** |
| MASG-1MFMIGAPP1 | Production Application | /tomcat/apache-tomcat-9.0.0.M11/bin/shutdown.sh |
| MASG-1MFMIGAPP1 | Production Application | /usr/local/apache/bin/apachectl stop |

Table 13

### 4.7.5. MONITORING Tools

MH Cargo Viewer servers’ availability, Apache, Tomcat and MySQL processes will be monitored by IBM Tivoli Monitoring.

Refer to TEC Events Escalation Procedure.

### 4.7.6. Source Code Version Control

NA

### 4.7.7. Preparation Of Production Environment

##### 4.7.7.1. Network Definitions

All user PCs are connected to the Local LAN to be able to access the MH Cargo Viewer Application.

##### 4.7.7.2. Desktop Configuration

NA

### 4.7.8. Baseline Performance Information

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Activity** | **Expected Response Time** |
| 1. | Average time to insert data during file loading | Depends on the file size |
| 2. | Average time taken to load each page | < 5 seconds |

Table 14

Acceptable downtime during operation hours is based on BCD 4 plan minutes.

# MAINTENANCE AND SUPPORT

### 4.8.1. Problem Solving

The Help Desk personnel should ask the users:

* For a screenshot of the error/issue that they are facing
* For the steps that need to be performed to recreate the error/issue
* To check the same steps to recreate the error/issue on another machine
* To check if others are also facing the same error/issue

.

##### 4.8.1.1 Frequent Issues and Resolutions

|  |  |
| --- | --- |
| **Issue** | **Resolution** |
| Cannot load the Login Page | Check your internet connection and ensure you are connected to MAB VPN |

Table 15

##### 4.8.1.2 Finding Logs and Tracking issues

* Get the MH Cargo Viewer log file from the path /Apache-Tomcat/apache-tomcat-8.0.24/logs.
* Track the error log in the log file based on reference number.

### 4.8.2. Problem Categorization and Escalation

Helpdesk will analyze the problem and assign a ticket number and a severity level which is mutually agreed by the user. However, the severity will be revised downward based on business assessment and impact as shown below

|  |  |  |
| --- | --- | --- |
| **Severity** | **Code** | **Definition of Severity Level** |
| Critical | S1 | Total Biz Operation Disruption |
| High (Urgent) | S2 | Partial Biz Operation Disruption |
| Moderate (Minor) | S3 | No critical impact to Biz operations, Workaround is available |
| Low (Minor) | S4 | Problem that cause inconvenience |

Table 16

Any issues with MH Cargo Viewer, users will escalate to MAB IT HELPDESK.

Problem ticket will be created by the Level 1 MAB Helpdesk and route to the MAB second level support.

For application related problem will be assigned to AMS team, system related problem to Wintel team and database related problem to DBA team.

|  |  |  |  |
| --- | --- | --- | --- |
| **Problem Category** | **Severity Level** | **Problem Description** | **Escalation** |
| System Completely Unusable | 1 | Page not loading | MH Cargo Viewer Support Team |
| Functionality Completely Unusable | 2 | Part of the applications functionality | MH Cargo Viewer Support Team |
| Minor Functionality Error | 3 | The application as a whole is working but some small functionality is not working | MH Cargo Viewer Support Team |
| Cosmetic UI Error | 4 | The application and the concerned functionality is working but the UX is erroneous/misleading | MH Cargo Viewer Support Team |
| Issue Related to MH Cargo Viewer – data loading | 1 | Application is malfunctioning due to issue with data loading. | MH Cargo Viewer Support Team |

Table 17

### 4.8.2. Application / Technical Support

The following is the Problem Resolution Structure:

|  |  |  |
| --- | --- | --- |
| **2nd Level Support** | **Name** | Contact No/Memo |
| Application Support | AMS -SRAS | Group email : GD\_AMS\_SRAS@malaysiaairlines.com |
| System Support | TCS\_MIDRANGE | 1800817802 # 3 Option  [GD\_TCSMidrange@malaysiaairlines.com](mailto:GD_TCSMidrange@malaysiaairlines.com) |
| Database Support | TCS\_DATABASE | 1800817802 # 4 Option  [GD\_TCSDatabase@malaysiaairlines.com](mailto:GD_TCSDatabase@malaysiaairlines.com) |
| Network Support | TCS\_Network | 60378637155  60378637581/82  GD\_TCSNetwork@malaysiaairlines.com |

Table 18

# USER GUIDE

Refer the appendix section.

# ACCESSING THE APPLICATION

Users can access the application by visiting [http://mhcgoviewer.mas.net/mhcgoviewer](#_blank)/in their browsers. The compatible browsers are given in section 4.6.2 [Front-end **(Browser Support)]**.

# CONTRACT MANAGEMENT

|  |  |  |
| --- | --- | --- |
|  | **Contract** | **Parties** |
| 1. | Solution Delivery Contract And Maintenance & Support Services | Signed between MAB and ATOS |

Table 19

# HANDOVER ITEMS

The following documents / items will be handed over to Operations together with this System Operation Document during the Handover session.

1. User Guide

2. Detail Solution/Design Review Document

3. Test Plan

# INFORMATION SECURITY

NA

### 4.13.1. Audit And Compliance Requirements

| **Activity** | **Frequency** | **Responsible Party** |
| --- | --- | --- |
| Perform ID review every quarter and submit result to IRS | Quarterly | ID Admin |
| Update user access matrix and submit to IRS | Yearly | System Owner |
| Install Critical Security Patches for the application and submit report to IRS | Quarterly | System Owner |
| Perform Backup restoration | Yearly | System Owner |
| Review & update security documentation and submit to IRS:   * Super/privilege IDs and access * Security Controls Setting * Audit Logs setting * System bypass * List of connections and integration * List of used ports * Data encryption setting * Application/system schematic diagram | Yearly | System Owner |

Table 20

### 4.13.2. Password And Policy Compliance

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Password Policy Requirements** | **Yes** | **No** | **Remarks** |
|  | Password length at least 8 characters (minimum) | Yes |  | Uses LDAP authentication for login |
|  | Alphanumeric | Yes |  |  |
|  | Change temporary password at first logon | Yes |  |  |
|  | Password expiry = 90 days (maximum) | Yes |  |  |
|  | Password reuse generation = 5 (minimum) | Yes |  |  |
|  | Account lock out after 3 failed login attempts | Yes |  |  |
|  | Application shall disconnect or suspend inactive sessions= 15 Minutes | Yes |  |  |
|  | Wrong password shall be recorded in an audit log | Yes |  |  |

Table 21

### 4.13.3. User Access Matrix

The following table shows the user access matrix of the application

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **USER ID/ Common ID** | **USER TYPE** | **ACCESS LEVEL** | | | |
| **Update** | **View** | **Edit** | **Delete** |
| Admin | Administrator | N.A | N.A | N.A | N.A |
|  | Normal |  | X |  |  |

Table 22

**DOCUMENTATION AND REFERENCES**

|  |  |  |
| --- | --- | --- |
|  | **Document** | **Location of source** |
| 1. | System Operation Document | https://mabitdept.sharepoint.com/sites/MyPulse/InformationTechnology/ServiceDeliveryManagement/ |
| 2. | User Guide | https://mabitdept.sharepoint.com/sites/MyPulse/InformationTechnology/ServiceDeliveryManagement/ |

Table 23

# APPENDIX





**PATCH MANAGEMENT REPORT**

Application : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Owner **: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **Date** | **Patch / Service Pack Applied** |
| 10 Nov 2017 | OS Patching |
|  |  |
|  |  |
|  |  |

**Prepared By: Approved By:**

**.................................................... ....................................................**

**System Admin System Owner**

**BACKUP RESTORATION REPORT**

Application : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Owner **: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **Date** | **Status of Restoration** |
|  |  |
|  |  |
|  |  |
|  |  |

**Prepared By: Approved By:**

**.................................................... ....................................................**

**Backup Admin System Owner**

**NON COMPLIANCE REPORT**

Application : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Owner **: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |
| --- | --- | --- |
| **Date** | **Reference Number** | **Description** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Prepared By: Approved By:**

**.................................................... ....................................................**

**System Admin System Owner**

**END OF DOCUMENT**