

**IT Charge Back Application (ITCB)**

**SYSTEM OPERATION DOCUMENT**

**MAB/GROUP IT/SOD/ITCB /V1.3**

##### Prepared by :

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##### Application Management Services (AMS)

##### Information Technology

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1. - MANUAL ADMINISTRATION

# RECORD OF REVISION

| **No.** | **Description Of Changes** | **Issue No.** | **Rev. No.** | **Author** | **Effective Date** |
| --- | --- | --- | --- | --- | --- |
| 1 | Initial Revision | 1 | 0 | Asish P Mathew | 16/05/16 |
| 2 | Updated server details | 1 | 1 | Febin Tomy | 11/11/17 |
| 3 | Updated cloud details | 1 | 2 | Nirmalkumar | 21/04/18 |
| 4 | Updated AMS SDM details | 1 | 2 | RajashekarReddy Kasireddy | 27/09/19 |
| 5 | Updated 2nd level support details | 1 | 2 | RajashekarReddy Kasireddy | 27/09/19 |
| 6 | Updated contract management details | 1 | 3 | Rajashekarreddy Karireddy | 25/06/20 |

# 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 | 16-05-16 |  |  |  |  |  |  |
|  | 1-2 | 1 | 1 | 16-05-16 |  |  |  |  |  |  |
|  | 1-2 | 1 | 2 | 27-09-19 |  |  |  |  |  |  |
|  | 1-3 | 1 | 1 | 16-05-16 |  |  |  |  |  |  |
|  | 1-4 | 1 | 2 | 27-09-19 |  |  |  |  |  |  |
|  | 1-5 | 1 | 1 | 16-05-16 |  |  |  |  |  |  |
|  | 1-6 | 1 | 1 | 16-05-16 |  |  |  |  |  |  |
| 2 | 2-1 | 1 | 2 | 11-11-17 |  |  |  |  |  |  |
|  | 2-2 | 1 | 2 | 11-11-17 |  |  |  |  |  |  |
|  | 2-3 | 1 | 2 | 11-11-17 |  |  |  |  |  |  |
| 3 | 3-1 | 1 | 2 | 11-11-17 |  |  |  |  |  |  |
|  | 3-2 | 1 | 2 | 11-11-17 |  |  |  |  |  |  |
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|  | 4-7 | 1 | 2 | 21-04-18 |  |  |  |  |  |  |
|  | 4-8 | 1 | 2 | 21-04-18 |  |  |  |  |  |  |
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|  | 4-10 | 1 | 3 | 25-06-20 |  |  |  |  |  |  |
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# DISTRIBUTION LIST

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| Wan Mohd Husni Wan Hussein | AMS Team | AMS SDM |
| Noor Hafiza Bahruddin | Group IT | IT- Service Delivery Management |

Table 1: Distribution list

# LIST OF ABBREVIATIONS

The following are the abbreviations used for simplification.

|  |  |
| --- | --- |
| **Abbreviation** | **Denote** |
| DB | Database |
| ITCB | IT-Charge Back |
| SOD | System Operation Document |
| SOW | Statement of Work |
| SMTP | Simple Mail Transfer Protocol |

Table 2: Abbreviations

# CONDITION OF USE

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1. - MANUAL BACKGROUND

# INTRODUCTION

This is the ITCB SOD, here in after 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).

# PURPOSE

The objective of this document is to provide a coherent description of the overall design of the ITCB application and enable assistance to technical and development team for supporting the application.

# SCOPE AND APPLICATION

This SOD covers all information required to operate and support the solution in production.

This SOD does not include the following:

* Application maintenance for the sub-systems interfaced by the core system.

# TERMINOLOGY

The below table depicts the terminologies used in this document.

|  |  |  |
| --- | --- | --- |
| **S.No** | Term | **Description** |
| 1. | DB | Database |
| 2. | DSL | Domain Specific Language |
| 3. | AD | Active Directory |
| 4. | OS | Operating System |
| 5. | ITCB | IT Charge Back |
| 6. | App | Application |

Table 3: Terminology

# REFERENCES

The below table depicts the document references used in this document

|  | **Document** | **Description** |
| --- | --- | --- |
| 1 | SOW\_NCR000004215\_IT Charge Back V3.0 | Statement of Work as supplied as agreed upon between ATOS and MAB |
| 2 | Technical Design Doc - IT Charge Back V3.0 | Document highlighting the Technical Design & architecture of the collaboration platform. This is supplied by ATOS |
| 3 | DDR - IT Charge Back V3.0 | Detail Solution Review Document |
| 4 | Test Plan - IT Charge Back V3.0 | Document highlighting the Test plan for the collaboration platform. This is supplied by ATOS |

Table 4: References

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1. – OVERVIEW OF BUSINESS PROCESS

# OVERVIEW OF BUSINESS PROCESS

The below figure depicts the business process of the application

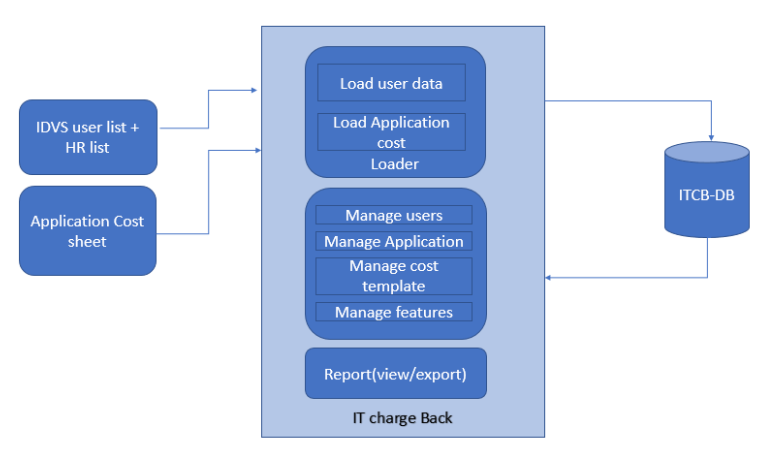


Figure 1: System Architecture

IT Charge Back Application (ITCB) was developed with the below features.

* File Upload Feature - Load Application Users - To upload application users for the current month which includes User’s information like User Id, User Name, Email, Division, Sub Division, and RC Number.
* File Upload Feature - Load Application Cost - To upload application cost details for the current month which includes costs like Maintenance Cost, Hardware Cost, and Invoice Cost etc.
* Manage Application Users Feature - To update user’s RC number and activate/deactivate users for any given application.
* Manage Application Cost Feature - To update application cost based on application, category and sub-category.
* Application based View Cost Feature - To view cost reports based on application with option to generate Excel.
* RC based View Cost Feature - To view cost reports based on RC with option to generate Excel
* Account based View Cost Feature - To view cost reports based on Account codes with option to generate Excel
* Cost Template Management Feature - To manage cost template (that need to be used to upload Application Cost details) with option to download template
* User Management Feature – To manage access management for ITCB
* User details are available with RC number and Division

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1. - MANUAL CONTENT TITLE

# 4.1 Systems overview

MAB IT has taken initiative to distribute total IT costs across all divisions, departments and responsibility center based on usages of the IT applications and IT infrastructure. IT Charge Back Application (ITCB) is developed by ATOS to manage the IT cost and reducing the manual work involved.

IT Charge Back Application (ITCB) developed with the below features.

* Load Application Users File (Upload Feature) - To upload application users for the current month which includes User’s information like User Id, User Name, Email, Division, Sub Division, and RC Number.
* Load Application Cost File (Upload Feature) - To upload application cost details for the current month which includes costs like Maintenance Cost, Hardware Cost, and Invoice Cost etc.
* Manage Application Users Feature - To update user’s RC number and activate/deactivate users for any given application.
* Manage Application Cost Feature - To update application cost based on application, category and sub-category.
* Application based View Cost Feature - To view cost reports based on application with option to generate Excel.
* RC based View Cost Feature - To view cost reports based on RC with option to generate Excel
* Account based View Cost Feature - To view cost reports based on Account codes with option to generate Excel
* Cost Template Management Feature - To manage cost template (that need to be used to upload Application Cost details) with option to download template
* User Management Feature – To manage access management for ITCB
* User details are available with RC number and Division

# 4.2 SYSTEM CONCEPT DESIGN

The overall logical system architecture is as per diagram shown below:

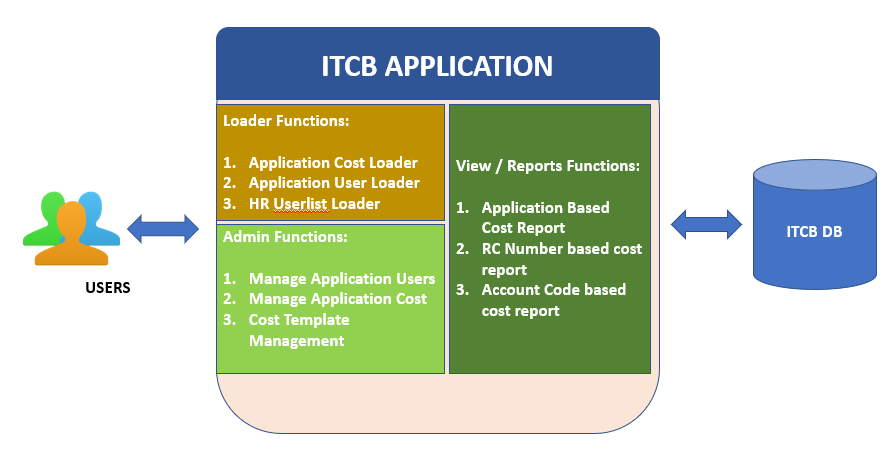


Figure 2: System design

# 4.3 INTERFACES

## 4.3.1 User Interfaces

The below table depicts the application access through browser

|  |  |  |
| --- | --- | --- |
|  | **Interfaced system** | **Description** |
| 1. | Web Browser | User can launch the application via http://itcb.mas.net/itcb |

Table 5: User Interface

## 4.3.2 System Interfaces

NA

# 4.4 WARRANTY AND MAINTENANCE PERIOD

The below table depicts the warranty and maintenance period

|  |  |  |
| --- | --- | --- |
|  | **Start Date** | **End Date** |
| Technical cut over to production | 10 Mar 2016 | 10 Mar 2016 |
| AMS Support | 10 Mar 2016 | 30 Sep 2018 |

Table 6: Warranty and Maintenance period

# 4.5 ROLES AND RESPONSIBILITIES

The below table depicts the roles and responsibilities of the support person.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Role** | **Responsibility** | **Name** | **Designation** | **Company / Department** | **Contact (Phone & Email)** |
| Onshore | Responsible for entire application | Rajashekar Reddy Kasirddy | Application Administrator | ATOS | +601123464348 |
| Offshore | Responsible for entire application | Palash Pandit | Application Administrator | ATOS | +919584530565 |

Table 7: Roles and Responsibilities

\*Note: Proper handover must be performed if there is any change to the above roles and the matrix will be updated accordingly.

**4.6** **Technical specifications**

## 4.6.1 Hardware specifications

The below table depicts the application and database servers

**Production Servers:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No** | **Hardware** | **Number** | **Location** | **Hostname/IP** |
| 1 | Application Server  (Public Cloud-Singapore) | 1 | Azure | 10.221.6.16 |
| 2 | Database Server (Public Cloud- Singapore) | 1 | Azure | 10.221.6.16 |

Table 8: Hardware Specifications

**DR/UAT Servers:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No** | **Hardware** | **Number** | **Location** | **Hostname/IP** |
| 1 | Application Server (Public Cloud-Hongkong) | 1 | Azure | 10.221.14.10 |
| 2 | Database Server (Public Cloud- Hongkong) | 1 | Azure | 10.221.14.10 |

Table 9: DR/UAT servers

## 4.6.2 Software specifications

The below table depicts the software specifications

|  |  |  |
| --- | --- | --- |
|  | **Category** | **Configuration** |
|  | Application | ITCB   1. Login 2. Manage applications 3. Reports 4. File Loader 5. Manage Cost Template 6. Manage Features 7. User Management |
|  | Programming language | JAVA 8 |
|  | Transaction Manager | Spring transaction manager |
|  | Development tool | Eclipse IDE |
|  | Database | MSSQL |
|  | Operating system | Windows server |
|  | Source Code | http://10.221.4.5/svn/SRAS/SRAS/IT Charge Back/Source\_Code/branches/Trunc\_Version |
|  | Supported Browsers | Google Chrome  Firefox  Microsoft Edge  Safari |

Table 10: Software Specification

## 4.6.3 Communication / Network Specification

The below table depicts the applications communication/network specification

|  |  |  |
| --- | --- | --- |
| **Sl No** | **Category** | **Configuration** |
| 1 | Web Protocol | Server: HTTPS |
| 2 | Mail | Mail : SMTP |

Table 11: Communication/Network specification

## 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

NA

### 4.6.5.1 Libraries and Files

The libraries for installation will be copied to SVN for each enhancement.

### 4.6.5.2 DBMS Setup

* Total 17 tables exist in the database instance.
* Database does not use database specific features such as stored procedures.
* DB Design is attached.

The below table depicts the applications database setup

|  |  |
| --- | --- |
| **Details** | **Property** |
| DB schema | ITCB\_LIVE |
| Driver | microsoft.sqlserver.jdbc.SQLServerDriver |
| Database model | MSSQL |
| URL | jdbc:sqlserver://10.221.14.10:1433 |
| ORM | Hibernate |

Table 12: DBMS Setup

# 4.7 TECHNICAL OPERATIONS GUIDE

Technical operations on the system is limited to the following the cut-over.

* Monitoring the email alerts of failures
* Disk and Memory usage.

## 4.7.1 Installation Procedures

* ATOS team to install/deploy the application in the production server.
* Executable is in the form of WAR.

## 4.7.2 Monthly Reboot Server

N/A

## 4.7.3 Backup and Recovery

Database backup will be taken daily. In case of any disruption, system can be recovered to older date. File system backup will run on weekdays and CBMR backup once a month as per schedule.

## 4.7.4 System Startup and Restart

The below table depicts the system startup and restart process

|  |  |  |
| --- | --- | --- |
|  | **Procedure** | **Description** |
| 1. | Tomcat WAR deployment | Use the tomcat manager instance to upload and deploy the WAR |
| 2. | Tomcat WAR un-deployment | Use the tomcat manager instance to un-deploy the project ITCB |

Table 13: System Startup and Restart

### 4.7.4.1 Production Server

The below table depicts the application production server

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No** | **Hardware** | **Number** | **Location** | **Hostname/IP** |
| 1 | Application Server  (Public Cloud-Singapore) | 1 | Azure | 10.221.6.16 |
| 2 | Database Server (Public Cloud- Singapore) | 1 | Azure | 10.221.6.16 |

Table 14: Server Details

### 4.7.4.2 UAT Server

The below table depicts the application UAT server

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No** | **Hardware** | **Number** | **Location** | **Hostname/IP** |
| 1 | Application Server (Public Cloud-Hongkong) | 1 | Azure | 10.221.14.10 |
| 2 | Database Server (Public Cloud- Hongkong) | 1 | Azure | 10.221.14.10 |

Table 15: UAT server Details

## 4.7.5 System Shutdown

N/A

## 4.7.6 Monitoring Tools

Tivoli is a monitoring application that monitors files, disks, network, ports, processes etc. So, daily/periodic manual monitoring is not needed.

### 4.7.6.1 Application Monitoring Checklist

Apache (http) and Tomcat

## 4.7.7 Source Code Version Control

Executable and source code are store in the following path:

http://svn.mas.net/svn/SRAS/SRAS/IT Charge Back/

## 4.7.11 Baseline Performance Information

The below table depicts the baseline performance information

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Activity** | **Expected Response Time** |
| 1. | Average time to generate response to requests | < 10 seconds |
| 2. | Average time taken to load each page | < 5 seconds |

Table 16: Baseline Performance Information

Acceptable down time during operation hours is based on BCD4 plan.

**4.8** **Maintenance and support**

This section provides information to Help Desk personnel who are expected to receive problem or error reports from the users.

## 4.8.1 Problem Logging

The Help Desk personnel should ask the users:

For a screen shot 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

**4.8.2** **Problem Categorization and Escalation Matrix**

The below table depicts the application problem categorization and escalation matrix

|  |  |  |  |
| --- | --- | --- | --- |
| **Problem Category** | **Severity Level** | **Problem Description** | **Escalation** |
| System Completely Unusable | 1 | Page not loading | ITCB Support Team |
| Functionality Completely Unusable | 2 | Part of the applications functionality | ITCB Support Team |
| Minor Functionality Error | 3 | The application as a whole is working but some small functionality is not working | ITCB Support Team |
| Cosmetic UI Error | 4 | The application and the concerned functionality are working but the UX is erroneous/misleading | ITCB Support Team |

Table 17: Escalation Matrix

## 4.8.3 Application / Technical Support

The following is the Problem Resolution Structure:

|  |  |  |
| --- | --- | --- |
| **2nd Level Support** | **Name** | Contact No/Memo |
| ITCB | Nirmal Kumar Prabharan  Anurag Nikhil Minz | +60172817560  +60172882148 |

Table 18: Technical Support

## 4.8.4 Incident Management

The below table depicts the incident management process

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Code** | **Definition of Severity Level** | **Response Time** | **Resolution Time** |
| Critical | S1 | Total Business Operations Disruption | 1 hour | 4 continuous hours |
| Urgent | S2 | Partial Business Operations Disruption | 2 hours | 8 continuous hours |
| Minor | S3 | No critical to business operations and workaround is available | 4 Business Hours | 2 business days |
| Monitor | S4 | Problems that cause inconvenience   * Single user with no impact to operations * Issue requiring no further action beyond monitoring for follow-up if needed | 8 Business Hours | 5 business days |

Table 19: Incident Management

## 4.8.5 Escalation Matrix

The below table depicts the escalation matrix

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Type of support** | **Contact Details** |
| 1. | Level 1:  IT Helpdesk | 03 7863 2020  [Helpdesk@malaysiaairlines.com](mailto:Helpdesk@malaysiaairlines.com) |
| 2. | Level 2: Application  ITCB | ITCB: +601123464348  [GD\_AMS\_S](https://mhmail.mas.net/owa/?ae=Item&t=ADDistList&id=JAkAgRGCuE%2BeBLhj5mPdIA%3D%3D&m=0&oT=IPM.Note&oId=RgAAAAC8DjRlvs4iTaKbwEF8hSQDBwBZbHCHORbDRoZgFTG0IrW3AEQe%2F4efAABZbHCHORbDRoZgFTG0IrW3AEQxjdXzAAAJ)RAS [@malaysiaairlines.com](mailto:GD_TCS_MHSCV@malaysiaairlines.com) |
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Table 20: Escalation Matrix

# 4.9 User guide

## 4.9.1 Accessing the Application

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

4.10 Contract management

|  |  |  |
| --- | --- | --- |
|  | **Contract** | **Parties** |
| 1. | Service contract for AMS support services | Signed between MAB and ATOS |

Table 21 – Contract Management

**4.11** **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

**4.12 INFORMATION SECURITY**

## 4.12.1 AUDIT AND COMPLIANCE REQUIREMENTS

The below table depicts the 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 |
| Performed Backup restoration | Yearly | System Owner |

Table 22: Compliance Requirements

## 4.12.2 PASSWORD POLICY COMPLIANCE

The below table depicts the password 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 5 failed login attempts | Yes |  |  |
|  | Application shall disconnect or suspend inactive sessions= 15 Minutes | Yes |  |  |

Table 23: Password compliance policy

## 4.12.3 User Access Matrix

The below table depicts the user access matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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 24: User access matrix

Note: Update, Edit and Delete access level for admin is only for user management data.

**4.13 Documentation and references**

The below table depicts the documentation and references

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

Table 25: Reference Docs

# AppendiX

**DB Table Names:**

1. CB\_APP\_USR\_INFO
2. CB\_COST\_INFO
3. CB\_APP\_COST\_INFO
4. CB\_APP\_INFO
5. CB\_USER\_MAIL\_INFO
6. USER\_FEATURE\_IDENTITY
7. USER\_PROFILE
8. USER\_FEATURES
9. USER\_ROLE\_IDENTITY
10. USER\_ROLES
11. CB\_PARAM\_CONFIG
12. CB\_DIV\_INFO
13. CB\_LSY\_REF
14. CB\_SITA\_REF
15. CB\_FILE\_LOG
16. CB\_AUDIT\_LOG
17. CB\_USER\_INFO

**PATCH MANAGEMENT REPORT**

Application **:** \_\_**NIL** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

|  |  |
| --- | --- |
| **Date** | **Patch / Service Pack Applied** |
| **NIL** | **NIL** |
|  |  |
|  |  |
|  |  |

**Prepared By: Approved By:**

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

**System Admin System Owner**

**BACKUP RESTORATION REPORT**

Application **:** \_\_\_\_\_\_NIL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

**Prepared By: Approved By:**

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

**Backup Admin System Owner**

**NON COMPLIANCE REPORT**

Application **:** \_\_\_\_\_NIL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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

**Prepared By: Approved By:**

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

**System Admin System Owner**

**END OF DOCUMENT**