



JOHNSON & JOHNSON TECHNOLOGY SERVICES
<p>ENTERPRISE DATA LAKE</p> <p>SERVICE DELIVERY PLAN</p>
<p>EDL-SDP-001</p> <p>VERSION: 1.00</p>

ROLE	NAME AND TITLE	SIGNATURE AND DATE
REVIEW AND APPROVAL:		
Product Owner	AMANY BASILY, GTS DIRECTOR, DATA & ANALYTICS	
Service Owner	PRASHANT DUBEY, IT GTS SENIOR MANAGER, BIG DATA	
Technical Owner	MICHAEL BENEDETTI IT MANAGER	
Independent Quality/CSV	CASSANDRA KING TQ MANAGER, DATA & ANALYTICS	

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1 PURPOSE

This Plan identifies the process and deliverables that are required to design and deploy Cloudera Enterprise Data Lake (EDL) Solution to new cluster within SDDC. This ensures that it is designed and deployed in alignment with the System Development Life Cycle (SDLC) and applicable IT supporting processes. It also ensures documented evidence exists to demonstrate that this infrastructure/service is suitable for its intended purpose and use.

The Plan establishes the means to provide objective evidence that Cloudera Enterprise Data Lake (EDL) Solution (CDH 5.11.2) can be tested against the requirements as defined in the Release Backlog. Testing is documented in such a manner as to allow independent verification that all requirements have been met, as defined required testing in the system testing strategy contained herein.

Testing will begin with the installation of Cloudera Enterprise Data Lake (EDL) Solution (CDH 5.11.2) in the Development, Quality and Production environments. The Installation Checklist will document the installation steps to ensure a consistent and reproducible process.

2 SCOPE

The scope of the project is to migrate the Development (DEV), Quality Assurance (QA) and Production (PROD) environments of Cloudera Enterprise Data Lake (EDL) platform to new cluster within SDDC.

2.1 OUT OF SCOPE:

- Disaster Recovery (DR) is out of scope for this compliance plan.

3 DEFINITIONS

3.1 TERMS AND ACRONYMS

Term/Acronym	Definition
AOR	Architecture Operational Review
BCM	Business Continuity Management
BI	Business Intelligence
CAPA	Corrective and Preventive Actions

Service Delivery Plan

CDH	Cloudera Distribution of Hadoop
CRM	Customer Relationship Management
DEV	Development Environment
DIA	Data Integration Analytics
DR	Disaster Recovery
ERP	Enterprise Resource Planning
EDC	Enterprise Data Center (e.g. Raritan, MOPS and Beerse)
EDL	Enterprise Data Lake
GxP	Good x Practices where X stands for Clinical, Manufacturing, Laboratory
IAPP	Information Asset Protection Policy
IQOQ	Installation Qualification/Operational Qualification
JJTS	Johnson & Johnson Technology Services
MSA	Master Service Agreement
PROD	Production environment
QA	Quality Assurance
SCS	Security Configuration Standards
SDDC	Software Defined Data Center
SDDC Pod	Software Defined Data Center Pod - qualified storage repository
SDLC	Systems Development Life Cycle
SOP	Standard Operating Procedure
WI	Work Instruction

4 REFERENCES

Document ID	Title
GDL-1538	Roles and Responsibilities
GDL-1548	SDLC Glossary
SDLC-6752	PRJ-0136212 Enterprise Data Lake Charter
SDLC-12425	Enterprise Data Lake Compliance Analysis
SOP-5981	SDLC Infrastructure
SDLC-1705	Software Development Life Cycle
TMP-7831	Service Delivery Plan

5 INFRASTRUCTURE/SERVICE OVERVIEW

The EDL is a foundational capability of the Data Integration Analytics (DIA) IT Strategy. The EDL resolves data integration challenges between disparate source systems (ERP, CRM, etc.) by bringing all types of data together, in any format or volume, in full fidelity ready for exploration and analysis to drive business decisions.

Enterprise Data Lake platform is an on-premise platform hosted in Raritan Data Center. EDL is a qualified storage repository with advanced analytic capabilities that can store structured and unstructured data in any format with flexible schema-on-read data structures that do not require a stable data model to load and analyze data. This accelerates the time and effort required to produce analytics because a data model is not required.

There are three environments (Development (DEV), Quality Assurance (QA) and Production (PROD)) that are on-premise hosted on SDDC pod infrastructure in Raritan Data Center and will be migrated to new cluster within SDDC.

6 COMPLIANCE PLAN

6.1 COMPLIANCE STRATEGY

The project will follow the SDLC v8.0 Infrastructure Procedure for deploying Cloudera Enterprise Data Lake (EDL) Solution. All components of the project will be documented via the recommend J&J infrastructure SDLC templates.

The Compliance Analysis for the EDL Migration consolidates the results of a Compliance Assessment for the referred system/application. This plan determines the corresponding activities and deliverables in alignment with the Software Development Life Cycle SOP, which will be performed and produced in order to fulfill the applicable requirements. The EDL Migration has been classified as low risk GxP.

This plan provides and defines, at a high-level, overall validation concepts for the EDL migration. In addition, this plan shall ensure that system meets intended business needs and provides a high degree of assurance that the system will perform as intended throughout its production use. This plan determines the corresponding activities and deliverables in alignment with the SDLC Infrastructure SOP and Q-CSV framework, which will be performed and produced in order to fulfill the applicable requirements.

Service Delivery Report will provide the summary of validation activities carried out and any deviations to this plan.

6.2 SUPPLIER ASSESSMENT

IT Internal Suppliers comply with relevant local and corporate SDLC requirements.

The following external suppliers are in scope and were assessed to determine their suitability and their ability to provide agreed upon services during and after the project:

- Supplier (Cloudera Inc.) was chosen through supplier and technology assessment with sourcing that was starting in Q4 2014. MSA and formal contracts was completed on March 2015.

6.3 COMPLIANCE ROLES AND RESPONSIBILITIES

This section identifies the compliance roles and responsibilities for each deliverable. Personnel may fulfill multiple roles provided independence of review/approval is maintained (i.e., individuals may not review/approve their own work). Personnel changes may occur during execution of the project.

Role Definitions per GDL-1538.

Role	Name/Title
IT Product Owner	Amany Basily IT Director, Data Platforms
Service Owner/IT Operations SME	Prashant Dubey Senior Manager, Big Data
Technical Owner	Michael Benedetti Technology Manager
ISRM/Security SME	Michelle Fouraker MANAGER, INFORMATION SECURITY
Independent Quality/CSV	Cassandra King TQ Manager, Data & Analytics
Engineer	Ajai Omtri DBA

6.4 COMPLIANCE DELIVERABLES

This section identifies the infrastructure compliance deliverables for the project.

Deliverables	Classification	Approver Roles	Justification and Rationale
Compliance Analysis	Expected	Product Owner Privacy Service Owner Records Manager ISRM CSV	Refer to SDLC-12425 (version 5.0) Compliance Analysis for Enterprise Data Lake. No updates are required as part of this project.
IT Product Backlog	Expected	N/A	N/A, Existing Infrastructure Requirements Specification will be reviewed for updates.
IT Release Backlog	Expected	N/A	N/A, Existing Infrastructure Requirements Specification will be reviewed for updates.

Service Delivery Plan

Deliverables	Classification	Approver Roles	Justification and Rationale
Business Impact Assessment	Conditional	N/A	Processed and stored through BCM process. Filename: APP000010021456-BIA-RA-2015. No updates required as part of this project.
BIA- Risk Assessment	Conditional	N/A	Processed and stored through BCM process. Filename: APP000010021456-BIA-RA-2015. No updates required as part of this project.
Service Delivery Plan	Expected	IT Product Owner Service Owner IT Technical Owner ISRM/Security SME Independent Quality	This document
Infrastructure Requirements Specification	Expected	N/A	Requirements were reviewed for updates (SDL-69300 and there are no new or changed requirements as part of the migration.
Infrastructure Design Specification	Expected	IT Technical Owner Engineer	Update existing design specification (SDLC-12555).
IAPP Physical Security of Information Assets Questionnaire	Expected	N/A	Existing IAPP questionnaire will be evaluated for updates
IAPP Internally Deployed Application Questionnaire	Expected	N/A	Defined by Information Asset Protection Policy
System Test Scripts	Expected	Service Owner IT Technical Owner Tester Independent Quality	

Service Delivery Plan

Deliverables	Classification	Approver Roles	Justification and Rationale
Test Defect Form	Expected	Service Owner IT Technical Owner Tester Independent Quality	
System Test Report	Expected	N/A	Will be consolidated in Infrastructure Compliance Report
SOP's and Wi's	Expected	Service Owner IT Operations SME Independent Quality	Update existing SOPs/WIs
Infrastructure Compliance Report	Expected	IT Product Owner Service Owner IT Technical Owner ISRM/Security SME Independent Quality	
Production Readiness Checklist	Expected	Engineer IT Operations SME	
Operating Level Agreements	Conditional	N/A	N/A, Not a new service. Support model is not changing
Hyper Care Transition Plan	Conditional	N/A	N/A, Not a new service. Support model is not changing

7 SYSTEM TEST PROTOCOL

7.1 SYSTEM TESTING STRATEGY

The testing strategy for EDL Migration will include both informal testing within Development environment and formal testing within QA and PROD environment. Formal testing will consist of test scripts for both pre and post migration, as applicable.

EDL team will ensure that adequate testing shall be performed to ensure that the cluster is running optimally and is able to communicate with the EDL eco system tools for ingestion and consumption of data. Testing for data accuracy and completeness will be covered in system testing by the application team. It is the responsibility of the application team to provide evidence and formal approval of post system testing confirming the successful baseline testing.

The migration will be executed in a phased approach. Three (3) groupings of projects will be migrated and tested in a phased manner.

7.2 ENVIRONMENT SPECIFICATIONS

7.3 HARDWARE

Computer	Make / Model	Processor Details	Memory	Storage Specifications
SBOX	ITSUSRALSP07932 ITSUSRALSP07931 ITSUSRALSP07930 ITSUSRALSP07929 ITSUSRALSP07928	22 CPUs	360 GB	RHEL 7.4
Development	ITSUSRALSP07805 ITSUSRALSP07806 ITSUSRALSP07807 ITSUSRALSP07808 ITSUSRALSP07809 ITSUSRALSP07810 ITSUSRALSP07811 ITSUSRALSP07812 ITSUSRALSP07813	22 CPUs	360 GB	RHEL 7.4

Service Delivery Plan

	ITSUSRALSP07814 ITSUSRALSP07884 ITSUSRALSP07885 ITSUSRALSP07886			
QA	ITSUSRALSP07935 ITSUSRALSP07936 ITSUSRALSP07937 ITSUSRALSP07938 ITSUSRALSP07939 ITSUSRALSP07940 ITSUSRALSP07941 ITSUSRALSP07942 ITSUSRALSP07943 ITSUSRALSP07944 ITSUSRALSP07945 ITSUSRALSP07955 ITSUSRALSP07956	22 CPUs	360 GB	RHEL 7.4
Production	ITSUSRALSP07966 ITSUSRALSP07967 ITSUSRALSP07968 ITSUSRALSP07969 ITSUSRALSP07970 ITSUSRALSP07971 ITSUSRALSP07973 ITSUSRALSP07974 ITSUSRALSP07975 ITSUSRALSP07976 ITSUSRALSP07977 ITSUSRALSP07978 ITSUSRALSP07979 ITSUSRALSP07980 ITSUSRALSP07981 ITSUSRALSP07982	22 CPUs	360 GB	RHEL 7.4

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	ITSUSRALSP07983 ITSUSRALSP07984 ITSUSRALSP07985 ITSUSRALSP07986 ITSUSRALSP07987 ITSUSRALSP07988 ITSUSRALSP07989 ITSUSRALSP07990 ITSUSRALSP07991 ITSUSRALSP08022			
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7.4 SYSTEM SOFTWARE

Software / Component	Version	Service Pack / Patch
CDH - Cloudera Distribution for Hadoop	5.11.2	Version 5.11.2

7.5 OTHER SETTINGS

Not applicable

7.6 INFRASTRUCTURE QUALIFICATION

Infrastructure Readiness	Response	Rationale / Remarks
Has the applicable Infrastructure been qualified?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Existing SDDC cluster has been qualified. An IQOQ for the new cluster will be performed.

7.7 TEST SCRIPTS

The following will be the test scripts that will be created to qualify the Cloudera EDL platform. There may be additional test scripts and any deviations will be noted in Infrastructure Compliance Report.

Test ID Number	Test Definition/Objective	Approach
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Service Delivery Plan

EDL-1	Test whether the Cloudera Hadoop Cluster and its Services are Up and Running	Pre-migration
EDL-2	Test the total number of servers hosted in the cluster	Pre-migration
EDL-3	Test whether the Alerting system is in place for the cluster	Pre-migration
EDL-4	Test whether all the Sentry Roles from the old cluster are copied over to the new cluster.	Post Migration
EDL-5	Test whether the Metadata is back up script is backing up the data.	Pre-migration
EDL-6	The system shall be able to connect using ODBC driver	Pre-migration
EDL-7	The new cluster shall have the same number of databases as old cluster for the migrated projects.	Post Migration
EDL-8	Test Impala load balancer	Pre-migration
EDL-9	Test HUE load balancer	Pre-migration
EDL-10	Test the Cloudera Navigator is working	Pre-migration
EDL-11	Test whether the AD zone sync has happened properly	Pre-migration
EDL-12	Test whether the users have been synced to the AD groups	Pre-migration

7.8 ACCEPTANCE CRITERIA

The execution of this protocol will be considered successful when:

- The execution of the test scripts defined within this protocol is complete.
- All Test Defects are resolved prior to releasing the system into production. Any unresolved Test Defects must be listed in the Compliance Report along with a justification for releasing the system with the open Test Defects.
- The test results review by the Independent Quality is complete.

8 DOCUMENT HISTORY**8.1 SUPERSEDED DOCUMENT(S)**

- **Doc ID:** – [N/A] **Title:** – [Title] **Effective Date:** – [DD-Mmm_YYYY]

8.2 REVISION HISTORY

Version	DD-Mmm-YYYY	Author	Change Summary	Major/Minor Change
1.0	Oct-5-2018	Patrick Detwiler	Initial Release	Major