



MANAGED APPLICATION RETIREMENT SERVICES

Service description & additional conditions

Date:

09.02.2021

IMPRINT

Publisher

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hereinafter referred to as – Telekom

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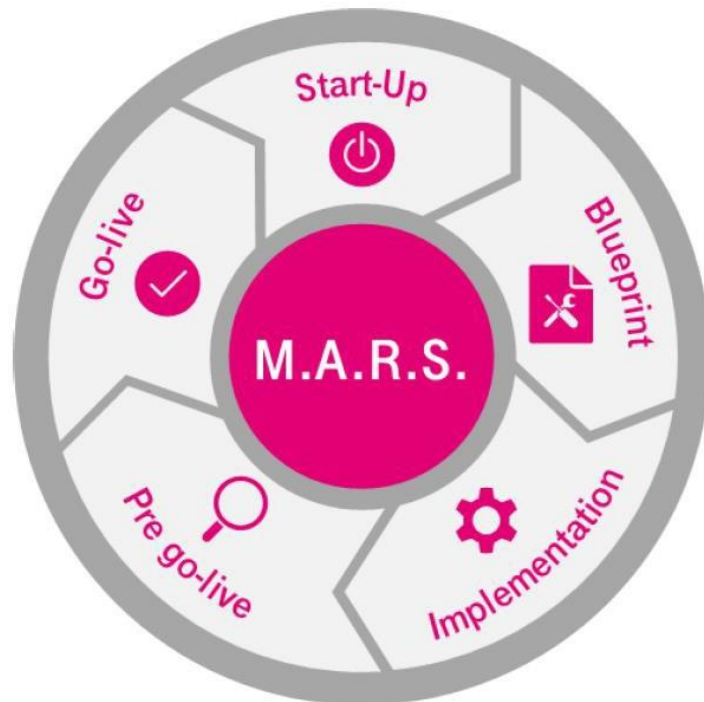
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1 INTRODUCTION

Managed Application Retirement Services (M.A.R.S.) is a solution offered by T-Systems for maintenance of structured and unstructured historical data from the post-production SAP and non-SAP systems via a web frontend as SaaS.



2 FUNCTIONS

2.1 Web Frontend

The web frontend offers the customer the following functions:

- Log in to the M.A.R.S. application
- Authorisation management for users
- Access to historical data via views and reports
- Retrieval of documents

2.2 Historization Application

M.A.R.S. is a service to historize data. It allows searching data from the source application as well as the retirement of different source applications (see the following Figure 1, see chapter 1), because the data can be accessed via the historization application:



Figure 1 Historization Application overview

The architecture of the M.A.R.S. service is based on a standardized cloud infrastructure and standard software components. The following figure 2 provides an overview of the basic architecture with the flow of data during migration and historization in M.A.R.S.:

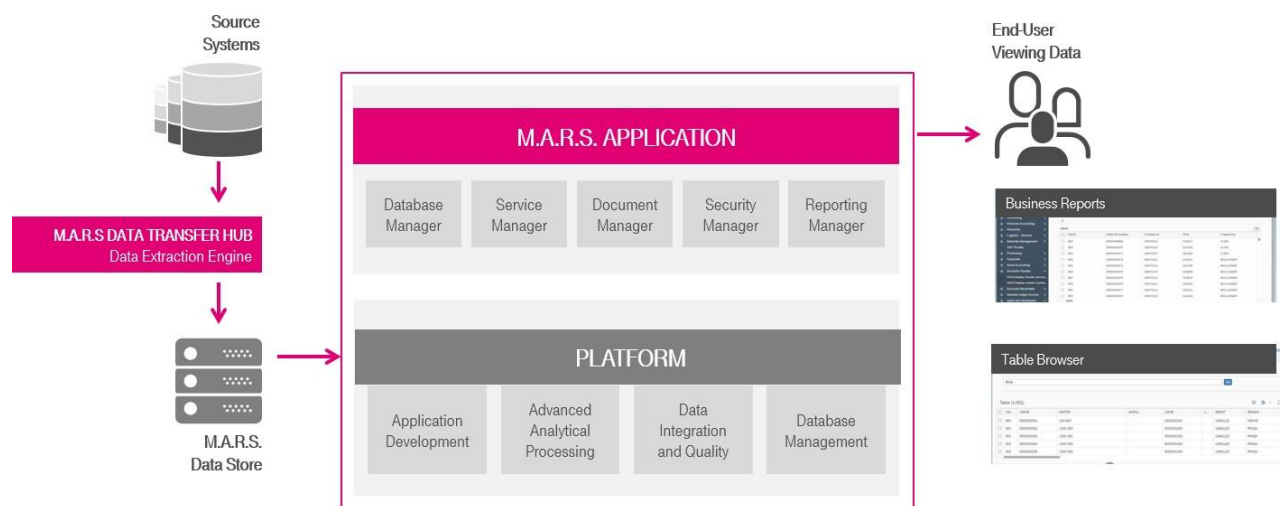


Figure 2 M.A.R.S. Application

3 SERVICES BY TELEKOM

3.1 Service Provision

Telekom sets up the customer's M.A.R.S. environment and configures it according to the order. There is an administrator account for these virtual servers available to the system administrator.

The customer will receive an e-mail about the provision of the service in which the access data is contained. With the sending of the e-mail, at the latest from the start of use, the provision is completed.

3.2 Place of Service Provision

The services are provided from data centres in the EU.

3.2.1 Services

Within the regular operation of M.A.R.S. service, Telekom delivers the following regular services based on:

Management and Administration Computing Resources

- Control functions for virtual machines (VM)
- Creation, start, stop, restart, image compilation, establishing and deletion of connections to a console

Management and Administration Storage / Backup-Components

- Display, creation, editing, monitoring and deletion of storage volumes and backups
- Creation and maintenance of containers and objects

Management Platform - Access and Security

- Display, creation, editing, monitoring and deletion of security groups and rules
- Viewing, creation, editing and deletion of key pairs

Management and Administration Network

- Display of network topology. Creation, editing and deletion of public networks
- Creation and management of subnets
- Assignment of IP addresses to virtual machines and deletion thereof
- Creation, editing and deletion of VPN4 tunnels

Historization Application and Database

- Installation and configuration
- Installation the historization application on the application server
- Installation and configuration of Microsoft SQL Server database and initial configuration of the archive application

- Configuration of the automatic startup and stop processes, setup of the monitoring and backup processes
- Setup of the communication and support processes for the Third Level Support
- Setup of the defined user for the Customer for the read-only access to the data via HTTPS
- Maintenance of the archive database as well as historization application and all necessary processes within the service classes agreed upon in the contract
- Active maintenance of the operational readiness of the archive system within the operating hours
- Manual start and termination of the application processes, if necessary, within the operating hours and within the service classes agreed upon in the contract
- Processing of messages from the Customer during the service time
- Deletion of data and documents after expiration of the retention period upon request and approval of the Customer

3.2.2 Backup Policy

Telekom provides the customer with the following predefined backup policies:

- **Daily backup on file system basis** (storage of 14 generations), applicable to databases and all related file systems which are also subject to a change mode.
- **Monthly full backup**, applicable to all completed databases in read-only mode on file system basis as a long-term backup (storage of 12 generations) after the project completion.

3.2.3 Support Services

Telekom's support is the customer's central point of contact.

The following support services are included into M.A.R.S. service:

- Handling of errors by the Second Level and Third Level Support during the operating hours with service time of 1 day starting from the receipt of an error notification per e-mail by Telekom.
- Maintenance of historization application and MS SQL database including implementation of hotfixes, recommended patches and problem-related patches.
- Deletion of all data and documents at the termination of the service, upon request and approval of the Customer and controlled by a separate rundown project (at the Customer's expense).
- Termination of the archive service at the end of the contract term.
- Errors in operation of M.A.R.S. service should be reported in German or English to the following e-mail address: Support.MARS@t-systems.com
- Changes to configurations are coordinated with the appropriate contact or administrators as part of the service.

3.3 Service Components (in accordance with the price list)

As an overview of the service characteristics, please find below a description of the components of M.A.R.S. service.

3.3.1 Platform, Storage and License

Plattform und Application Operation

M.A.R.S. includes all software licenses required for the smooth operation of the applications and databases. Telekom operates the M.A.R.S. environment within the following service levels:

- Application operation for historization solution
- Server database

Storage

The historical data sets are stored in the block storage.

M.A.R.S. Licenses

Includes the licenses for the historization tool:

- Measurement based on uncompressed storage used
- No compression is possible with this service

3.3.2 Software Lifecycle

Within the scope of the contractually agreed services, Telekom is responsible for the maintenance of the software life cycle. The service scope includes installation of hotfixes, patches and major release upgrades for MS SQL Server database, SAP HANA, historization application with all the related middleware components. In this context, Telekom follows the requirements of the particular software manufacturer.

Telekom reserves the right to replace the underlying software with another software equivalent in quality, function and having appropriate certificates.

Any costs incurred by such a change should be covered by Telekom.

3.3.3 Application User Support

In addition to the described services, Telekom provides user support for the application. In case of any questions concerning use of the application, please write at the following e-mail address:

usersupport.MARS@t-systems.com

A member of the team will contact the user within one working day and provide appropriate support in using the application or propose a solution to the problem.

Support in handling the application:

- Pre-qualification (what problem occurs where)
- Analysis/ localization 'Handling problem' in menu control, user management, views, reports
- Development and provision of a suggested solution

If it is an evident software error, the problem description will be forwarded to 3rd level support for further analysis.

3.4 Service Level / Service Classes

There are service hours, response time and service classes defined for M.A.R.S. service.

In this context, service hours refer to a supervised time period during which e.g. incidents are dealt with. Service response time is defined further in Chapter 3.4.2 and specifies how quickly a message from the Customer should be responded to. Telekom and the Customer have set up service classes 1 to 4 for M.A.R.S. service that are described in 3.4.3.

3.4.1 Service Hours

The service hours refer to the agreed time when the staff of the Contractor is available to provide services for the Customer (attended operating time). The rest of the time is referred to as unattended operating time. Error handling by the Second Level Support of the Contractor is performed only during the service hours.

The Customer may request in writing at short notice an extension of service hours beyond the time agreed upon in the Service Level Agreements. Conditions for such an extension should be mutually agreed upon by the Customer and Telekom beforehand. As a rule, such requirements should be announced at two working days' notice.

| Service Characteristics | Wert |
|-------------------------|---|
| Service Hours | Monday – Friday, 09:00 a.m. – 05.00 p.m. CET / CEST |

3.4.2 Service Response Time

Based on the respectively agreed service classes and the fact that historized data sets have to be accessed sporadically, the service is classified as "business critical low". Therefore, there is no prioritization for support (e.g. usually used in ticketing systems).

These are the following response times:

- **Initial response:** Within one calendar day (equivalent to the service hours) after the receipt of the support request by the Contractor.
- **Problem resolution:** Within a reasonable time.

3.4.3 Service Classes

Service classes help to define up-time and guaranteed online availability of M.A.R.S. services for the Customer. The following standard service class is offered:

| 'M.A.R.S Standard' Platform |
|--|
| <p>Up-time: 24 hrs x 7 days = 730 hours / months (fulltime)</p> <p>Max. downtime: 11 hrs / months</p> <p>Maintenance window: 2 hrs / months with additional max 8 hrs per quater</p> |

The up-time of the service defined by the service classes is only a minimum requirement.

3.4.4 Service Transfer Point

At the transfer point, Telekom's responsibility for the services described ends.

The transfer point is the exit point from the data center connection (internet or VPN connection). The availability of the services is measured at the transfer point.

3.4.5 Availability

An IT system is considered to be available if the respective service is available to the customer at the defined service transfer point. This means in direct reference to M.A.R.S.:

The SaaS application runs and is accessible via the agreed communication interface (e.B. via Internet Site-to-Site VPN connection).

Times when the system is not available are considered downtime.

The downtime begins with receipt of the customer's notification to Telekom or with the determination of unavailability by Telekom. It ends with the restoration of availability.

Downtime does **not** include:

- time periods when data backup or data restoration is performed
- maintenance time agreed with the Customer
- downtime periods requested by the Customer
- periods of limited availability agreed in writing

Limited availability as a result of force majeure or events lying beyond the influence of Telekom (including disasters, war, civil war, strike and lockout) are not considered as downtime.

Availability of 'M.A.R.S. Standard' services amounts to 98.5% per calendar month and is calculated as follows:

$$\frac{\text{Service time / calendar month according to the service class - downtime per calendar}}{\text{Service time / calendar month according to the service class}} \times 100$$

Availability of 'M.A.R.S. Light' services amounts to 75% per calendar month and is calculated as follows:

$$\frac{\text{Service time / calendar month according to the service class - downtime per calendar}}{\text{Service time / calendar month according to the service class}} \times 100$$

When using 'M.A.R.S. Light', the same availability as per 'M.A.R.S. Standard' applies after 5 source systems have been historized.

Otherwise, no minimum availability applies. However, Telekom is trying to avoid performance restrictions.

3.4.6 Maintenance Window and Maintenance Time

The maintenance time is the time agreed with the customer (except in case of emergency maintenance) for work on the IT systems /platform of Telekom, which is necessary for the maintenance of an orderly operation.

Maintenance windows are set up for operationally required work on systems (hardware and software) and the infrastructure (electricity, climate, fire protection) in the data center. The maintenance work is limited to the necessary extent. The maintenance window is agreed within the framework of Service Level Agreements.

Telekom carries out regular maintenance work. If this maintenance work leads to interruptions in performance, Telekom will inform the customer in advance. Telekom strives to minimise disruption caused by maintenance work. Maintenance work is not considered downtime and is therefore not taken into account when calculating availability.

3.5 Recovery Options

The following two recovery options are defined by the Business Continuity planning that ensure the constant flow of the business processes. These are the measures which should be implemented e.g. after a failure of IT system components.

3.5.1 Recovery Point Objective

Recovery Point Objective (RPO) is the period which is acceptable between two data backups. It means maximum number of data/transactions that can be lost between the last backup and the system failure.

For M.A.R.S., the RPO is set as follows:

- 1 day, for active changes in the database during the project phase.
- 0 days, when the database is in the read-only mode and the long-term backup has already been finished.

3.5.2 Recovery Time Objective

Recovery Time Objective (RTO) is the period which is acceptable to pass from the time of failure till the full restoration of the business processes (restoration of infrastructure, data, post-processing of data, recovery of activities).

For M.A.R.S., the RTO is set as follows:

- 2 days

3.6 M.A.R.S. High Level Design

The following figure represents separate service components. The system environment is built up in 3 stages. Access to the historized data sets is provided via HTTPS protocol. It ensures encrypted end-to-end communication between the client (web browser) in the Customer network and the security proxy in the cloud target environment. The VPN (typically via IPsec and site-to-site scenario) delimits the usual Internet traffic and thereby ensures an even more secure communication.

M.A.R.S. requires no separate client. The service is accessible via a web browser.

The database server with a **Microsoft SQL database** is the third instance in the VPC Security Zone for M.A.R.S. service. The solution is based on the common storage with a separate backup policy.

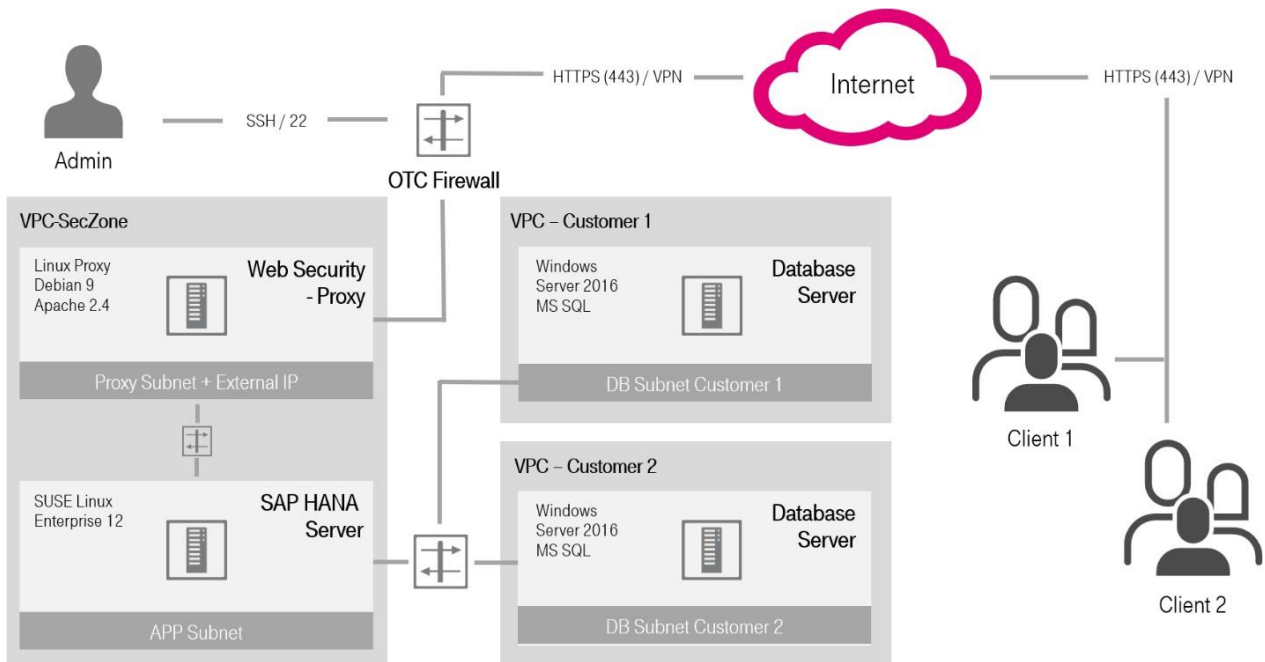


Figure 3 M.A.R.S. Environment

3.7 Unilateral Change in Services

If Telekom intends to make changes to the legal conditions, the service descriptions or price increases, the customer shall be notified of the changes in text form (e.g. by letter or e-mail) at least six weeks before they take effect. The changes shall become an integral part of the contract at the time they come into effect subject to the following conditions of items a) to b):

- a. Telekom is entitled to make unilateral changes to the legal conditions, service descriptions and prices in favour of the customer.
- b. In the event of price increases, changes to the legal conditions to the customer's disadvantage and not merely insignificant changes to the service descriptions to the customer's disadvantage, the customer shall be entitled to terminate the contract in text form without observing a period of notice at the time the changes become effective. The customer shall be expressly informed of the right of termination in the notice of amendment.

3.8 Project Support

Apart from the support activities during the operating phase of M.A.R.S., the following project services may be necessary or provided additionally during the setup or termination of the service in the project phase:

Ramp-up

The ramp-up phase describes the period from the launch of M.A.R.S. platform at the start of the project till the completion/acceptance of the retirement project.

Date Transfer

The data transfer is carried out via a Data Transfer Hub (DTH):

The Data Transfer Hub (DTH) is a central SAP system (SAP ECC 6.0 EHP 7.0 or higher), which provides the function to export data. The DTH analyzes the different components of an SAP and non-SAP system, documents the metadata and table data and transfers the data to the target database.

Set up of additional MS SQL Server

For historicized data sets, a physical limitation of 50 TB per MS SQL database server is recommended. In case this volume is exceeded, another MS SQL database server should be provided in the existing environment. This should be ordered against additional cost in accordance with the valid price sheet.

Run-down

After expiration of the service period, the Contractor and the Customer conclude a rundown agreement. This agreement defines how to plan and perform transfer of the historicized data sets to the Customer from the technical and organizational point of view. Currently, it is possible to use an encrypted data transfer via Internet VPN (IPsec) as well as a Filer-based data transfer. Upon completion, the Customer will be provided with the existing logs on completeness of the data as well as a proof of compliance.

4 PARTICIPATION OBLIGATIONS OF THE CUSTOMER

The Customer undertakes the participation obligations that are necessary to duly provide the services, particularly to deliver the following services free of charge, in time and to the necessary extent:

General Participation Services

- a. The customer agrees to unencrypted correspondence by e-mail and will always provide an up-to-date e-mail address. The customer is aware that information essential for the provision of services, such as access data, information on changes to the services and the legal conditions, as well as invoices, will be sent by e-mail.
- b. The Customer independently checks whether the data which he/she transfers to Telekom during the use of the service contains personal information and whether processing of the personal information is permitted. If the Customer wishes to allow processing of personal information, it is necessary to conclude an agreement concerning processing of personal information according to the sample provided by Telekom.
- c. The Customer agrees with exchange of correspondence via e-mail and should always provide current e-mail address.
- d. The Customer must independently and before the termination of the contract order that the service provider downloads all application data against extra fee. To meet the legal requirements, Telekom should irrevocably delete all application data of the Customer in the data center before the termination date of the contract. Other means of data transfer, back to the Customer, may be requested separately and against extra fee.
- e. The Customer independently checks and ensures compliance with all relevant and applicable legal provisions, laws, regulations and branch-specific rules related to the use of the service and provision of service by Telekom. In particular, this ensures compliance with the confidentiality obligations originating from professional activities. The Customer ensures that data subject to secrecy is stored only in presence of valid consent.
- f. The Customer provides appropriate qualified personnel to support Telekom.
- g. The Customer hands over error-free, complete and correct source data sets.
- h. The Customer provides a broadband Internet access point to establish an Internet VPN site-to-site connection in his/her network.

5 TERMINATION OF THE SERVICE

Upon termination of the services, all Customer's access possibilities to the service are deactivated. Upon the end, all resources of the Customer are deleted and released. There is a notice period of one month (until the end of month), unless otherwise agreed by contract.

6 PRICES

6.1 Payroll Accounting Process

Telekom provides the customer with a monthly invoice for the services consumed in the previous month. All prices are exclusive of taxes and charges applicable at the time of delivery and performance.

6.2 Price List

The prices of the current price list apply, which can be queried by Telekom.

7 GLOSSARY

| Term | Definition |
|----------|--|
| DTH | Data Transfer Hub |
| DB | Database |
| FTP | File Transfer Protocol |
| HANA | SAP Datenbase Technology |
| HTTP | Hypertext Transfer Protocol |
| HTTPS | Hypertext Transfer Protocol Secure |
| HRS | Hour |
| IaaS | Infrastructure as a Service |
| IP | Internet Protocol |
| IPsec | Abbreviation for Internet Protocol Security; protocol suite which enables secure communication over potentially insecure networks |
| IT | Information Technology |
| JDK | Java Development Kit |
| JRE | Java Runtime Environment |
| M.A.R.S. | Managed Application Retirement Service |
| MPLS | Multiprotocol Label Switching |
| MS | Here: Microsoft (proper name) |
| OS | Operating System |
| OTC | Open Telekom Cloud |
| RPO | Recovery Point Objective |
| RTO | Recovery Time Objective |
| SAP | Proper name; leading manufacturer of the enterprise resource planning systems |
| SaaS | Software as a Service means that the external IT service providers operate software and related infrastructure and provide them as service |
| SQL | Structured Query Language; language to develop, manage and send queries in relational databases (international standard) |
| sFTP | Secure File Transfer Protocol |
| SLA | Service Level Agreement |
| TB | Terrabyte |
| V. | Version |
| VPC | Virtual Private Cloud; private cloud which is located inside a public cloud |
| VM | Virtual Machine |
| VPN | Virtual Private Network |