Product description

MACH | Orchestra

Swift data exchange in the healthcare sector requires a frictionless communications system. Whether you're synchronizing patient data or transferring clinical results electronically, it's all about connecting patient data, documents and hospitals. MACH | Orchestra enables, manages and controls communication between applications and systems. It offers a wide range of solutions and adapters to quickly and easily establish new ways of exchanging data or replace old ones. Solutions are designed and tested in the Designer, operated in the Runtime and monitored transparently and comprehensively in the Monitor.

MACH | Orchestra is a modular, very tightly integrated platform for linking all existing applications and systems within an institution.

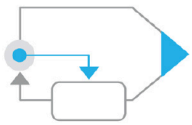
Its architecture helps to link or decouple new applications, while its modular structure supports the integration of diverse system architectures, independently of the manufacturer and the technology used.

In addition, MACH | Orchestra sports an extensible architecture and can easily be enhanced by adding optional functionality modules or through in-house development..

The various operating modes, such as microsystem (Juno), stand-alone, cluster, hybrid cloud or cloud, allow MACH | Orchestra to be scaled up unconditionally and therefore be used for any combination of institutions of any size.

MACH | Orchestra supports the service-oriented architecture paradigm (SOA), and all MACH | Orchestra components are designed to support the creation, management and control of such architecture in institutions.

MACH | Orchestra consists of three components:

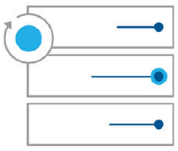


Designer

- Model scenarios
- Test functions

Monitor

- Provide interfaces
- Monitor processes
- Set variables



Runtime

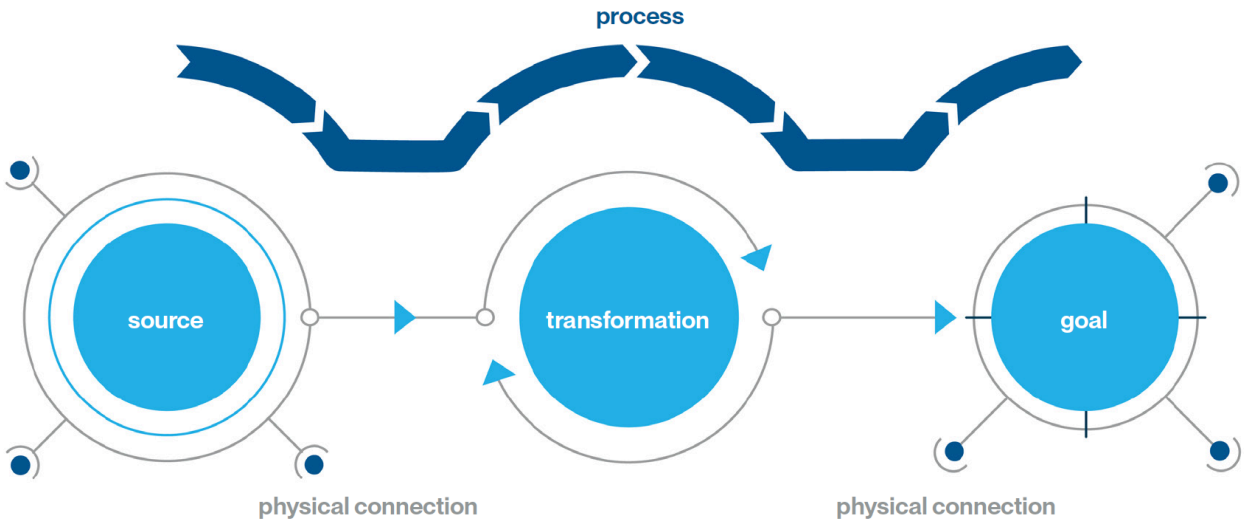
- Scale up performance
- Run servers
- Manage clusters

Modelling

In the modelling phase the interfaces are shown as scenarios, and the scenarios are modelled in the Designer.

The components within a scenario are:

- Processes
- Maps
- Channels



Process models

Process models are a central location where you can map workflows and logic in line with requirements. Business and interface processes are modelled using graphical flowcharts (BPMN).

Maps

Maps are MACH | Orchestra elements that can be used to transform and convert messages and message structures. You can either configure them graphically or by using XSLT or Java transformation.

- Graphical mapping
- Java mapping
- XSLT mapping

Channels

A number of existing channels or adapters can be used to integrate external systems via any protocols, formats and technologies. External formats are converted to a MACH | Orchestra XML format so that you can use integrated tools such as XPath or other structure-based functionality for further processing.

Administration/operation and monitoring

The MACH | Orchestra Monitor allows you to oversee and manage solutions via a browser. There are three different views in the Monitor: the business view, where you can track and manage processes; the process view, where you can call up the corresponding log files and statuses; and the administration view.

Landscapes help you maintain the technical infrastructure of a scenario. Here you can deploy or redeploy scenarios, or configure the environment-specific settings for the scenarios that are available in runtime (e.g. database connections).

In process monitoring, you can monitor current and completed processes independently of the platform. Administration, configuration and runtime are protected by a role and authorization concept.

All system events in the sources are logged and log files are created.

Standard Connectivity Adapters

The following adapters are part of the standard product or licence model:

- AS2 Client/Server
- DICOM Modality/Worklist Server
- Database BLOB Reader/Writer
- Database Outbound
- Database Reader/Listener
- Database Source Reader
- Database Target
- ESPA-X Sender/Listener
- Email Sender/Listener
- (S)FTP Outbound/Listener
- File Reader/Writer/Listener
- HTTP Caller
- HTTP POST Sender
- HTTP POST
- HTTP Sender (Parameter)
- HTTP POST Receiver General/ Parameter
- HTTP GET Receiver
- LDP Listener
- Java Outbound Channel
- LDAP Reader/Writer
- HL7 V2 MLLP Sender/Receiver
- Message Queue Sender/Receiver
- Multi File Reader
- OS Process Executor
- Orchestra Parameter Sender
- Orchestra Object Receiver
- Orchestra Parameter Receiver
- TCP Server/Client
- WebDAV Listener
- PGP Crypter
- SAP RFC Caller
- REST Client/Server
- SOAP Client/Server

Optional Connectivity Modules

- ASTM Server/Client
- DICOM Routing
- IHE Clients
- Streaming Server/Client
- Cross Community Connect

Protocols and formats

Protocols and technology adapters can be combined freely with the supported formats:

XML, JSON, PDF, CSV, EDI, HL7 V2, FHIR, SAP HCM & IDOC, XLS, TXT, DICOM, xDT, binary, and other structured data types.

These supported formats can be prepared and subsequently processed using various filtering steps.

For example: ZIP, Base64, EBCDIC, Checksum, character substitution and other user-defined filters.

Supported databases

The MACH | Orchestra architecture allows to connect to a broad range of databases using JDBC, including:

- Derby
- HyperSQL
- Informix
- MS Access
- MS SQL
- MySQL
- Oracle
- PostgreSQL
- MariaDB

Security concepts and mechanisms in MACH | Orchestra

Guaranteeing secure and stable communication is top priority. MACH | Orchestra allows to use state of the art security protocols, both in product internal configuration and in the

- TLS (SSL) protocol
- SSH (Secure Shell)
- SFTP (SSH File Transfer Protocol)
- FTPS (FTP with SSL)
- Certificate-based authentication
- Signature and encryption of
- messages

Interface developers can decide for themselves which security features to use, depending on the use case. MACH | Orchestra development works on the security-by-design principle.

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