# TA5896 - Design how Service Management and Monitoring will be implemented in TAS based on the requirements for messaging between producers and consumers defined in the TAS Architecture

Rally link for this task: <https://rally1.rallydev.com/#/120708787896d/detail/task/164232018564?fdp=true>

## SDD Section: New subsection under Section 6.5.1

## DEA User Stories that this design addresses:

## DEA 04.02.02 Technical Design. Acceptance Criteria #3: Application design ensures secure communication between the layers happens via loosely coupled interface components, which is verified by technical review / participation.

## DEA 04.02.03 Data Handling. Acceptance Criteria #1: The application logic access and data is managed via a data access layer or established data services instead of directly accessing the database.

## DEA 04.04.01 System Availability. Acceptance Criteria #1: Required analysis is completed to identify the achievable QoS levels for applicable Enterprise Technical Metrics for Availability, and to determine how these will be monitored.

## DEA 04.04.02 System Monitoring. Acceptance Criteria #2: This system has capabilities in place for end-to-end monitoring for performance and security.

## DEA 04.04.06 Capacity and Scalability. Acceptance Criteria #12: The solution s components are designed to scale out and to operate on a series of loosely coupled commodity platforms; the solution is verified to scale-out without requiring code changes.

## DEA 04.04.08 Virtualization. Acceptance Criteria #4: The solution deployment topology is based on studies to determine optimal performance between remote dependencies, and supported by a plan that includes methods, tools, and processes for ongoing monitoring and reporting.

* DEA 04.05.02 Design and Documentation. Acceptance Criteria #10: 100% of the solution software architecture models include a context diagram that indicates the sub-systems and services associated with the system.
* DEA 04.05.04 Programming Standards. Acceptance Criteria #2: Applicable VA Enterprise Design Patterns are implemented.

Develop design details for Service Management and Monitoring in EDI TAS.

The TAS architecture includes a layered approach that implements services at different layers. There is a Health Monitoring system that includes health check endpoints implemented within the TAS architecture. This system will be used to determine the status of TAS services and the associated infrastructure components including the Mule ESB.

Mule ESB includes built in monitoring capabilities. The Runtime Manager in Mule enables monitoring of applications and message flows and captures flow metrics and allows for implementation of alerts and notifications based on specific conditions. The message-based routing implemented in Mule ESB message flows for the 130+ VistA instances will make use of the monitoring in Mule to determine the uptime and status of specific connectivity and availability of VistA instance web endpoints.

The proxying and load balancing implemented in NGINX for services can be monitored with built in capabilities such as Live Activity Monitoring. Servers and endpoints can be included in dashboards. Endpoints and caches can be monitored and managed from the dashboards. Connectivity status can be monitored to identify problems.

Microsoft Azure services available in the MCCF MAG environments will also be used for service management and monitoring. Application Insights can be used to perform diagnostics, performance management and analytics for specific service endpoints.

All of the monitoring capabilities described above have the ability to track service performance metrics, provide alerts and notifications, and can display monitoring data in configurable dashboards to enable analysis and real-time decision making for changes in service configurations. There are also APIs available to enable automation of actions such as deploying additional service instances in response to demand.