[SAS on Azure]

The Challenge

The use of high performance computation environments has become a crucial part in today's IT business world. At the same time topics such as cost savings and data security are becoming increasingly important. How do these aspects fit together? Microsoft Azure, and cloud computing in general, has revolutionized the way developers and organizations utilize software and IT architecture. It has given users unprecedented access to virtually unlimited computing power and storage, on an as-needed basis. In addition the Microsoft Azure Cloud meets the highest requirements for data security and data protection, such as GDRP.

HMS is a SAS Gold Partner and a Microsoft Gold Partner for Cloud and Data Analytics.
HMS assumes the role of a primary partner for customers who want to utilize the advantages of the Azure Cloud together with the broad application spectrum of SAS Software.

The HMS service can be divided into two basic models:

1 [SAS on Azure] Consulting Service Model

Our BYOL Consulting Service is supporting customer who are already in possession of all necessary SAS and Microsoft licenses to operate SAS on Azure.
Our goal is to enable the customer to create the best possible operating conditions for the SAS application in the Azure Cloud. Main success criteria are user-friendliness, scalability, performance, integration capability in Azure and data security.

Consulting approach in a nutshell:

- ✓ Requirement Workshops
- ✓ Proof of Concepts
- ✓ Cost Assumptions for Operations
- ✓ SAS and Azure Installation, Customization and Configuration
- ✓ Integration of SAS with Azure Services and third-party services
- ✓ Evaluation and Implementation of Data Security Concepts
- ✓ Automatic Resource Management

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The HMS concept can be divided into two basic models:

2   **[SAS on Azure] MSP SaaS Model**

Microsoft Cloud Solution Provider

In the second model, HMS acts as a Managed Services Provider (MSP). Here the customer does not need his own Microsoft Cloud licenses. HMS provides a Microsoft Azure Cloud Subscription and the customer brings his own SAS license (BYOL). The customer consumes a SAS Software as a Service (SaaS) which is fully managed by HMS. HMS offers tailor-made services from the individual setup of the Azure infrastructure to the installation & monitoring of the SAS application. Through our extensive maintenance and consulting services we relieve our customers of the work around the Azure infrastructure. Our Consultants always pay special attention to security-relevant aspects and to maintaining good system performances. The basic services here includes for example:

IT Support & Change Management

- ✓ OS updates and patches
- ✓ Defragment hard disks
- ✓ Time sync
- ✓ SSL Certificates
- ✓ Virtual Machine Management
- ✓ Troubleshooting or restarting processes
- ✓ Processing of fault reports that are submitted via the ticket system.

Proactive infrastructure monitoring and alerting

- ✓ Check operating system logs and events for errors. If necessary, troubleshoot.
- ✓ Monitoring of Azure workloads
- ✓ Cloud Health checks
- ✓ Monitoring and supervision of administrative batch processes

Security Management & Identity Protection

- ✓ Virus protection
- ✓ Integrity checks
- ✓ Management Azure Security Services
- ✓ Log file Analysis
- ✓ Auditing of system

SAS Application Management

- ✓ Hotfixes & Upgrade to newer version
- ✓ Backup & Recovery of application data
- ✓ Monitoring of administrative batch processes
- ✓ Monitoring that SAS processes (e.g. metadata server, web server, etc.) run stable. Troubleshooting or restarting of processes.
- ✓ Regular "cleanup" of SAS processes: Terminate zombie processes, delete remaining SASWORK folders.
- ✓ regular scanning of SAS server logs for errors