Designing Optimum SAS Architectures

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Agenda

• What is an architecture?
• What is a SAS architecture?
• Requirements
• Building blocks – jigsaw or lego?
• GCSE Computer Science revision [test to follow]
• Recipes & choosing your dish
• Some key points
• Questions?
Warning!

This presentation contains analogies (and maybe the odd idiom) and a few generalisations.
What is architecture?

"the fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution.” [ANSI/IEEE Standard 1471-2000]

"formal description of a system, or a detailed plan of the system at component level to guide its implementation", or

"the structure of components, their interrelationships, and the principles and guidelines governing their design and evolution over time.“ [TOGAF]
What is architecture?

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Architecture domains

Business

Data

Application

Technology
Business and Data

• Business
  • People and organisation
  • Processes
  • Objectives
  • Flows
  • Events
  • Metrics

• Data
  • Sources
  • Flows
  • Interfaces
  • Integrity
  • Volumes
  • Currency
What is a SAS architecture?

• It’s an architecture with SAS in ?!

• Designing an architecture with SAS requires the same disciplines and structured approach

• Ensure that the layers of architecture supports the business need

• Requires understanding of SAS software and characteristics

• Analytics does create some specific requirements – which can be challenging and differ from many operational systems
Analytics characteristics

- Complex problems
- Ever larger volumes of data
- Intensive Processing
- Less predictable workloads
- Mission critical
Requirements - What do you want?

- Fundamental part of any project
- Without them how do you know what to deliver?
- How do you know what you have delivered is correct?
- Functional
- Non-functional
  - Performance, Availability, Scalability, Security …
Building blocks

Only one solution – which is fixed

Many possible solutions – to meet different needs
Key building blocks for SAS

Where are the instructions?

- Requirements – mainly non-functional
- Enterprise strategy, policy and standards
GCSE Computer Science
Recipes & choosing your dish

… or in architect speak – “topologies”

“The way in which constituent parts are interrelated or arranged”
SAS Topology (SAS9.4)
Monolithic
Multi-tier
Scale out – SAS Grid / Clusters
Back to the GCSE ...
What will it be for you?

- Which topology is most appropriate?
  - Non function requirements
  - Enterprise standards & building blocks

- The ultimate objective has to be to deliver a solution to meet to the business need
Key points

• Understand what it is you are trying to achieve
• Start with the business, not the technology
• Understand the nature of the application
• Tailor technology to match the need “Not all servers are born equal”
• Keep it simple (or at least try)
• Test it, and then test it again – including performance, volume, resilience …
• Plan for life beyond go-live - evolution
• Expect things to change – adaptable and flexible
• Don’t forget the routine things (like backup/restore, housekeeping, archiving)
Summary

• Definitions of architecture
• Domains (BDAT pyramid)
• Requirements (shape)
• Building blocks and topologies
• Key points
Further reading

- TOGAF: https://www.opengroup.org/togaf/

- SAS Global Forum Papers:
  - “Understanding the Anatomy of a SAS® Deployment: What's in My Server Soup?”
  - “Best Practices for Implementing High Availability for SAS® 9.4”

- SAS Support Site
Thank you!

www.SAS.com