State of Iowa SOA Advisory Committee

SOA Infrastructure

Version 0.1

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Document Properties

Revision History

Date	Version	Author	Comment
9/19/2007	0.1	RMT	Initial Version

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Introduction

Overview

Under the direction of the State's Technology Governance Board (TGB), a Working Group will be formed to create a recommended statewide standard for SOA Infrastructure. This standard will be submitted to the TGB for possible adoption, and will apply to new systems development going forward.

Integration and Interoperability

A key set of requirements for SOA Infrastructure will come from the set of integration challenges currently facing State agencies. These certainly include both offering and consuming web services on the Mainframe (IDMS, CICS), but will also include e-mail, various database platforms (DB2, SQL Server, MySQL, IDMS), file transfer (FTP, SFTP, SCP), and message-oriented (MQSeries, JMS, MSMQ) protocols.

Platform interoperability will also be addressed by defining a “cookbook” of recommended approaches for integrating between, e.g., PHP and .NET, J2EE and Mainframe, etc. The cookbook approach will outline both “do's” and (perhaps more importantly) “don'ts” to make interoperability as predictable as possible for new projects.

Exchange Patterns

As the State adopts SOA (or any new technical approach), it will be important to work from a set of proven patterns for exchanging data. For example, while transactional processing is very common in web systems, there will always be cases where a batch-oriented approach is the best fit (which implies moving large files). Another example would be the use of request/reply vs publish/subscribe for services.

Recommended Network Configurations

A primary risk of taking on a shared-services approach is providing easy but secure access to resources without inordinate cost. This may require some changes to the existing federated networking approach taken within the Executive Branch.

Scope

Requirements

The Working Group will identify and document the business and technical requirements for an SOA Infrastructure. Projects that are currently under way (i.e., Offsets, CJIS, I/3) should be used to gather these requirements, and to validate them when compiled. Working Group members should also bring non-project issues and strategic goals in as requirements.

Available Resources

The Working Group will build an inventory of the tools in use by State agencies that may meet any of the SOA Infrastructure requirements. Tools that are being considered or that have been used by Working Group members in other organizations can also be listed.

From the information above, the Working Group will identify the following:

1. Which requirements may be satisfied by existing tools and approaches,
2. Which requirements cannot be met with current State technology,
3. Which platform(s) and tool(s) have the most potential for re-use within the State, and with its known trading partners.

Strategy and Plan

The Working Group will create a strategy and a plan to deliver:

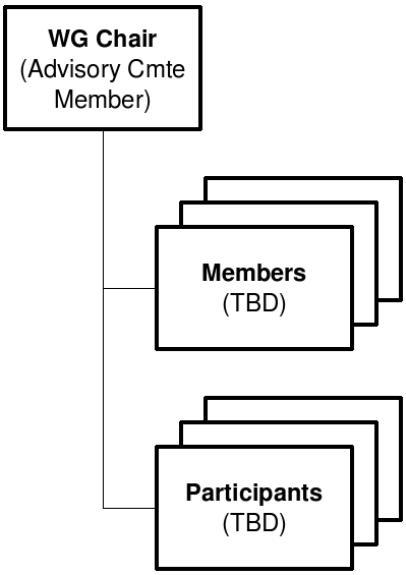
1. A recommended set of platforms and tools for SOA,
2. A list of “cookbook” integration patterns that will have high value and potential for reuse,
3. High-level design for a shared services environment (including network changes)
4. A plan to make the environment available in TEST and PRODUCTION (for all State agencies)
5. Proposed funding model(s) for the first 3 years of operation.

Group Structure

The group will be chaired by a member of the SOA Advisory Committee. The Advisory Committee is ultimately responsible for the recommendation to the TGB. The group will also include three to five Members who may vote on the proceedings of the Working Group, such as approval of plans and work products.

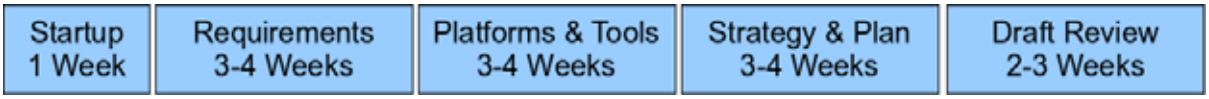
The Group will also be open for participation by any other interested party. This participation may include attendance at meetings, access to the Working Group's website, review and comment on plans and work products, or even contribution to those items. Levels of participation by non-Members will be at the discretion of the Members and Chair.

For planning purposes, Members should plan on spending about **1 hour per week** corresponding, meeting, and performing Group-related tasks. The overall duration of the project is estimated to be **12 to 16 weeks**.



Tasks and Timeline

Assuming a weekly Group meeting, the following time line represents the high-level work process. Beyond the startup step, the Group will identify more specific tasks and durations on its own. This time line is presented as a budget, not a detailed plan.



Startup: 1 Week

During the first week, the Working Group will form and establish a plan to complete its goals. The plan may involve working sessions outside of any regularly-scheduled meetings and will likely involve subsets of the Group for specific purposes.

Requirements Definition: 3-4 weeks

The Working Group will gather functional requirements (capabilities such as data transformation or adapters provided) and non-functional requirements (format or language used for the transforms, protocols supported by adapters). The requirements should be validated with the stakeholders and the JCIO.

Platforms & Tools: 3-4 weeks

The Working Group will build a list of technical items to consider and gap/fit each according to the defined requirements. Products that are currently used by State agencies must be considered. Other tools may be added to the list by consensus of the Working Group.

Strategy & Plan: 3-4 weeks

The Working Group will create a Draft of the Infrastructure Strategy and Plan, including any selected tool(s), timelines and costs for implementation. The Strategy should include any assumptions made about effort levels, funding required, and non-technical tasks like training and testing.

Draft Review: 2-3 weeks

During the Draft Review, the Draft Standard should be read and commented on by the Working Group and the JCIOs. At the end of the Draft Review period, the Group should plan to vote on the final document(s), to validate them as the Recommended Strategy and Plan for presentation to the JCIO and TGB.

Appendix: Enterprise Service Bus (ESB)

An ESB acts as an integration hub for services, allowing a service to accept input and produce output using many different data formats. For example, a web service written in Java might natively accept SOAP/HTTP connections. By layering an ESB over the web service (and having consumers call the ESB instead of directly accessing the web service), the same service can be offered up in JMS (MQ Series), FTP (file transfer), SMTP

(e-mail) and the original HTTP format.

Another common use of ESB is to translate or transform data between various formats. This can be used to translate many supported input formats into a single standard format. The underlying service would then only receive the standard format, although it would *support* many formats. This data transformation feature can be applied to input and output data for services.

An ESB can also handle common tasks like authentication and authorization, service “metering”, notification of errors, and other operational requirements.