Sequencia’s approach to building cloud solutions is unique, representing the nexus of state of the art, application aware, systems design and engineering for complex application deployment in a cloud infrastructure. Our methodology encompasses best practices for defining, specifying, designing and engineering cloud systems supporting complex large-scale applications. It is based on our team’s deep and comprehensive knowledge of cloud technologies, service provider scale deployments, video and media applications.

Methodology Overview

Sequencia’s cloud solution methodology, depicted below in Figure 1, consists of seven modules that are used to break down and deliver system solutions to real, complex business problems. The initial phase starts with gaining insight into the current operation and business objectives; continues with architecture and design phases during which Sequencia prepares detailed architecture, design and planning documentation; moves to development and engineering phases where the designs are built, tested and proven; then on to a deployment phase where the solution is implemented, scaled and rolled out with the required transformation of process and organization; and finishes with an optimization phase where deployed solutions are evaluated for performance against original expectations, and tuned accordingly.

Figure 1: Sequencia Cloud Solution Methodology
Each stage’s deliverables affirm the plan or indicate needed adjustments, and provide the foundation for the next phases. The early phases prioritize and scope the build and migration activities on the application services that will have the largest initial benefit while maintaining alignment with broader business goals. Sequencia can also prove out solutions by conducting a proof-of-concept, engineering and operationalizing the events for a particular application service.

Our methodology assumes that any cloud migration program is repeatable, as application services are defined as logically constructed sets (application systems) formulated during the early phases, but not necessarily migrated to the cloud in parallel. Thus a large scale, comprehensive program for cloud migration and management is established on the back end of the methodology to deploy these services and ensure a smooth rollout and post rollout operation. Sequencia acts as the system integrator for the cloud deployment, establishing and managing a broad, continuous, end-to-end program for integrating and implementing the cloud solution, and subsequent iterations, in production. The program includes the management of implementation, including organizational, resource, skill, process and governance changes that can be overlooked by the technology.

**Application Services Approach**

Our approach is not about virtualizing IT applications or simply standing them up in “the cloud”. We focus on core business, revenue driving applications, and then model the applications as “application services” – decoupled from physical infrastructure – in a cloud-based environment. We define the application service based on two primary elements:

1. **Core application functionality.** Without being constrained by existing application technology, we identify the essential functional requirements of the application, and
2. **Application-specific operational metamodel.** We identify the system operations requirements for running the service in shared cloud infrastructure. This includes the resource types needed for initial provisioning, policies for how the application will be deployed, application priority, application scaling (up and down), triggers for elastic events, application behavior in the event of infrastructure or application components failures, etc.
Next, we model the application services with common shared infrastructure as an “application system” meta-model (see Figure 2). For example, a core business application of a cable company might be the Electronic Program Guide (EPG). We would model the core requirements of the EPG as an application service. The model would optimize the application service through a virtual deployment with elastic infrastructure and implementing a high availability (HA) policy. Then we would design an application system meta-model that would incorporate other applications sharing the infrastructure.

Further, the architectures we design ultimately incorporate the ability to design (model), provision, manage, and monitor application services and the computing resources they share. These capabilities are provided by an Application Lifecycle Management (ALM) System for Cloud. The ALM operates continuously on the virtual platform and handles dynamic events for all applications, at any stage of operation in the cloud, including:

- Intelligent Resource Assignment – Making certain high priority jobs always get the resources they need across Compute, Network and Storage Hypervisor Systems
- Elastic Expansion and Contraction of Applications – Dynamically adding and subtracting applications and their resources as jobs ebb and flow
- Automated Fail Over for Fault Tolerant Systems – Creating, synchronizing and operating fault tolerant application pairs across multiple physical clouds and multiple network links
- Automated Fault Correlation and Remediation – Detecting and automatically remediating application faults, whether caused by operator, code or infrastructure failures.
- Modeling and Capacity Management – Real-time capacity management across all applications, including forecasting and alarming on system expansion requirements.
- Automated Policy Implementation – Intelligent, contextual implementation of system and application policies normally handled by humans operators.
- Multi-Tenant Containment – Run multiple stations in a single cloud, or share resources across development, quality assurance and production tenants with total security that production won’t be affected by test.

**Enrollment**

The Enrollment module of the Sequencia methodology defines the specific steps of our methodology that transform business goals, system policies, and application rules into objective models and software objects that Sequencia’s ALM software, Genesys, can run and automate. These steps are detailed in the figure below.
Unlike many of our competitors, we do not have an overarching approach to cloud that fits all our clients. Our approach is technology agnostic and non-prescriptive, leveraging a unique modular service management framework, and ensuring that our cloud systems designs integrate with the best and most appropriate technology for the customer and their services. We have successfully employed this approach at multiple client engagements. To learn more about our approach, methodology, client engagements, or Genesys, please visit our website at www.sequenciainc.com or email us at info@sequenciainc.com.