



Leap Into Adaptive Integration with Microservices

LEAP INTO ADAPTIVE INTEGRATION WITH MICROSERVICES

Requirements for integration continue to change—often within very short time periods. The explosion of connected devices and cloud applications that we are currently seeing ensures frequent changes to end points, messaging protocols, data formats, and data load. How well is your enterprise adapting?

DON'T GET CAUGHT FLAT-FOOTED

Imagine maintaining or using a monolithic application that has millions of lines of code. Every time a fix or enhancement is required, you must rebuild and retest the entire application. Worse, even if you needed to scale only one function of the application, you'd end up scaling the entire application several times over.

Clearly, over time, it has become exponentially more complex to not only create, but also manage and innovate within a monolithic architecture paradigm.

This is certainly true of integration systems such as enterprise service buses (ESBs), which rely heavily on network logic and processing. With this type of traditional architecture, every new application or data source added to the integration mix requires building out adapters and connectors to retrofit the message canonicals that ESBs understand. Couple this unwieldy process with potentially millions of lines of code—all dependent upon each other—and you are left with an expensive, time-consuming, and inefficient way to integrate in today's fast-changing integration landscape.

"SAP's popular enterprise Enterprise Resource Planning (ERP) has been estimated to contain over 250 million lines of code."

Information Systems: What Every Business Student Needs to Know, Efreem G. Mallach, August 2015

STAY ON YOUR TOES WITH A MODULAR INTEGRATION ARCHITECTURE

To keep pace with ever-growing numbers of applications, devices, and data sources requiring integration, enterprises are beginning to shift away from traditional ESB integration architecture to modular architectures that break the task into many tiny independent processes. These independent processes are called microservices and, in stark contrast to monolithic architectures, a microservice can contain as few as 10 lines of code.

Microservices adhere to the principle of "smart end points and dumb pipes," which is the same principle that the Internet is built on. Within an integration context, this means that integration logic no longer resides in the network, but rather in end points that can then be accessed using APIs over REST. New applications and data sources don't have to conform to the specific messaging formats carried by the network in order to talk to each other, making integration processes more agile and adaptive.

Many successful Internet companies—Amazon, eBay, Google, Netflix, Twitter, etc.—have moved to microservices to reduce the coordination overhead (and fear) that slows down change in a monolithic codebase.

InfoQ, The Benefits of Microservices, Abel Avram, March 2015

ADAPTIVE INTEGRATION STARTS WITH THESE MICROSERVICES ADVANTAGES

	IN A MODULAR MICROSERVICES ARCHITECTURE...	IN A MONOLITHIC ARCHITECTURE...
SCALABILITY	Microservices can be scaled up (or down) independently of other microservices allowing for very targeted, on-demand scaling. This keeps application costs and complexity low.	Scaling of monolithic applications consists of running multiple copies behind a load balancer, which requires complex caching strategies. Furthermore, if one area of the application needs scaling, you have to scale the entire application.
MAINTAINABILITY	Because microservices code is single-minded in purpose, development teams can build enhancements and fixes faster with smaller lines of code—and deploy and maintain them independent of each other.	Application updates require rebuilding of the entire application stack. To ensure there are no unintended consequences in other areas of the application or its dependencies, developers need a comprehensive understanding of the overall architecture before enhancements and fixes can be deployed.
QUALITY CONTROL	With microservices, you no longer have to perform regression testing across all system functionality—only on the microservice and integration end points—making releases faster and more stable.	QA gets tougher with every release as the entire stack (which is only growing in size) needs to go through build and regression testing from environment to environment before being placed into production.
FREQUENT DEPLOYMENTS	Due to ease of maintainability and quality control, frequent deployments are realistic, allowing the enterprise to respond to changing integration requirements with more agility.	Due to complexities in maintainability and quality control, deployment cycles tend to grow longer, compromising the enterprise's ability to innovate or fix issues in a timely manner.
BEST OF BREED TECHNOLOGY STACKS	Since microservices are independent and addressable through APIs, you can build different functionalities with a best of breed technology stack, maximizing innovation.	Monolithic architectures limit enterprises to one technology stack from which to solve all problems. This requires trade-offs resulting in the dampening of innovation.
RESILIENCE	An unavailable or broken microservice will not bring down your entire application.	One bug can bring down your entire application.

THE LIAISON ALLOY PLATFORM IS BUILT ON MICROSERVICES

The Liaison ALLOY™ Platform not only supports integration with microservices, it is built on microservices, enabling us to pass on all of the above advantages to our customers.

About ALLOY

ALLOY is a cloud-based integration and data management platform. Conceived from the ground up to directly address the disruptive technologies complicating today's integration operations, ALLOY provides integration as fully managed services. It's the first integration solution categorized under a new market category known as Data Platform as a Service (dPaaS), which offers a better approach to integrating the enterprise. Learn more about dPaaS and the industry's first ever dPaaS solution at www.liaison.com/liaison-alloy-platform.

About Liaison Technologies

As a leader in cloud integration solutions since 2000, Liaison Technologies is shaping the integration marketplace with innovative solutions designed to meet today's toughest data challenges. From complex integration to data management to the brave new frontiers of Big Data, our secure solutions break down data silos, reduce inefficiencies, and uncover actionable insights.

