The Librarian's Guide to
WEB SERVICES

SirsiDynix

The Librarian's Guide to
WEB SERVICES

Contents

What, When, and Why of Web Services

If you know your Java from your XML from your JSON, this intro is not for you; skip down to "Why SD APIs and Web Services." If coding acronyms tend to spike your anxiety levels: this intro is for you. This intro is to help you understand what a web service is, why it is useful, and how it can benefit your library. Let's dig in.

APIs: An Intro for the Rest of Us

Computers process and communicate information in languages like HTML, Java, and PHP. These programming languages are best for computers, but not necessarily for humans. At its most basic, an API, or Application Programming Interface, is a framework for a conversation between computers or applications.

All information that hits your screen, has been translated from a programming language into human-readable content for you. When communicating from computer-to-computer or application-to-application, your information remains in code. In the back-and-forth exchange of information, however, not all programming languages are equal. Languages that can be thorough and robust for certain contexts can prove inefficient, cumbersome, or even dangerous in other contexts, like open web communication. An API provides a solution; it serves as a safe and efficient vehicle for sending and receiving data between computers.

In addition to security and efficiency, APIs also fulfill the need for establishing a standard between devices. Just as not all humans communicate in the same languages, not all computers or applications communicate in the same languages. Different types of computers—like a desktop and a

Acronym Glossary

LSP: Library Services Platform

ILS: Integrated Library System

API: Application Programming Interface

SDK: Software Development Kit

> *"Web Services means your team can access the core architecture of your LSP to create customizations that help you meet demands and serve the unique needs of your patrons."*

server—need to communicate, but might operate in different languages. APIs are the translator. An API establishes the framework that different applications and computer-types can use to communicate with one another.

Web Services—a Type of API

APIs and Web Services are closely related tools; more specifically, Web Services are a type of API. While APIs can be used for all types of communicating, Web Services is the specific type of API used to communicate over a network, such as the web.

The distinction between APIs and Web Services could be compared to the difference between apples and fruit. (Web services = apples, APIs = fruit.) All apples are fruit, but not all fruit are apples. In the same manner, all Web Services are APIs, but not all types of APIs are classified as Web Services.

You Already Use Web Services

Web Services are becoming commonplace. Chances are you take advantage of multiple Web Services every time you are online. A popular web app comprised of Web Services is

Gmail. When you sign in to your Gmail account, the HTML for your inbox page is loaded. As you navigate from one email to the next, the request you send to the Gmail server is a Web Service. The request from your computer to open each email seeks new data from the Gmail server, without requesting to load an entirely new web page. The request is returned from the server and you are able to read your emails quickly and efficiently, using minimal bandwidth.

Why SD APIs and Web Services?

No two libraries are exactly the same. Every population has its own unique needs. The BLUEcloud LSP is crafted to be a robust out-of-the-box solution for all libraries, while also anticipating the need for customization. The BLUEcloud LSP is ready-to-go, no need to customize. But, APIs and Web Services give you the option to customize.

Web Services means your team can access the core architecture of your LSP to create customizations that help you meet demands and serve the unique needs of your patrons. APIs and Web Services give you the power to shape your LSP as you see fit.

3

Traditional vs. BLUEcloud

LSP architecture can be aptly compared to brick and mortar architecture. Think of a normal LSP like a tract home. This is your traditional LSP that takes care of your basic library functions, but customization options (APIs and Web Services) are built on to the solution as an afterthought. If you want to customize, your vendor hands you a stud-finder and a hammer—only the most basic tools for making a house your own.

BLUEcloud is different. Customization is not an afterthought. BLUEcloud is built on Web Services—the same Web Services we give you access to. We write the Web Services first, then build our apps using those Web Services. This from-the-ground-up approach gives you maximum flexibility and power in your architecture. The Web Services are not an addition, they are the very core of BLUEcloud. This foundation is what sets BLUEcloud apart from other LSP and API offerings.

In contrast to the conventional LSP tract home, the BLUEcloud LSP is a home with architecture built to be flexible and fluid.

With a BLUEcloud Web Services subscription our architect provides you the complete blue-prints and leaves behind the entire construction tool kit. **This subscription gives you developer-level access to the code of your system.** Like a home, your LSP is yours to make of it what you want. Feel free to tear down a wall here, put in a window there, move the kitchen to the attic if you like, or merge with the house next door—things can be customized according to your preferences.

What Can Web Services Give Me Access To?

SirsiDynix Web Services are web applications that provide simplified remote access to features of your SirsiDynix ILS. These are the same features that are used to power our BLUEcloud Discovery, Staff, and Marketplace applications (such as BLUEcloud Cataloging, eResource Central, MobileCirc and BLUEcloud Mobile). Web Services can also provide SirsiDynix ILS information to other applications across platforms or programming languages.

BLUEcloud Web Services uses an ROA (Resource Oriented Architecture) structure, which represents an advancement over traditional SOAP objects. Drawing on the flexible data representation of REST architecture, ROA provides a dynamic structure which maintains contract even if an object changes. ROA Web Services allows clients to inspect and adapt to resource dynamics due to product versions, configuration changes, user privileges, or even site customizations. This gives clients the power to retrieve only the values needed, reducing processing time and bandwidth use within a network.
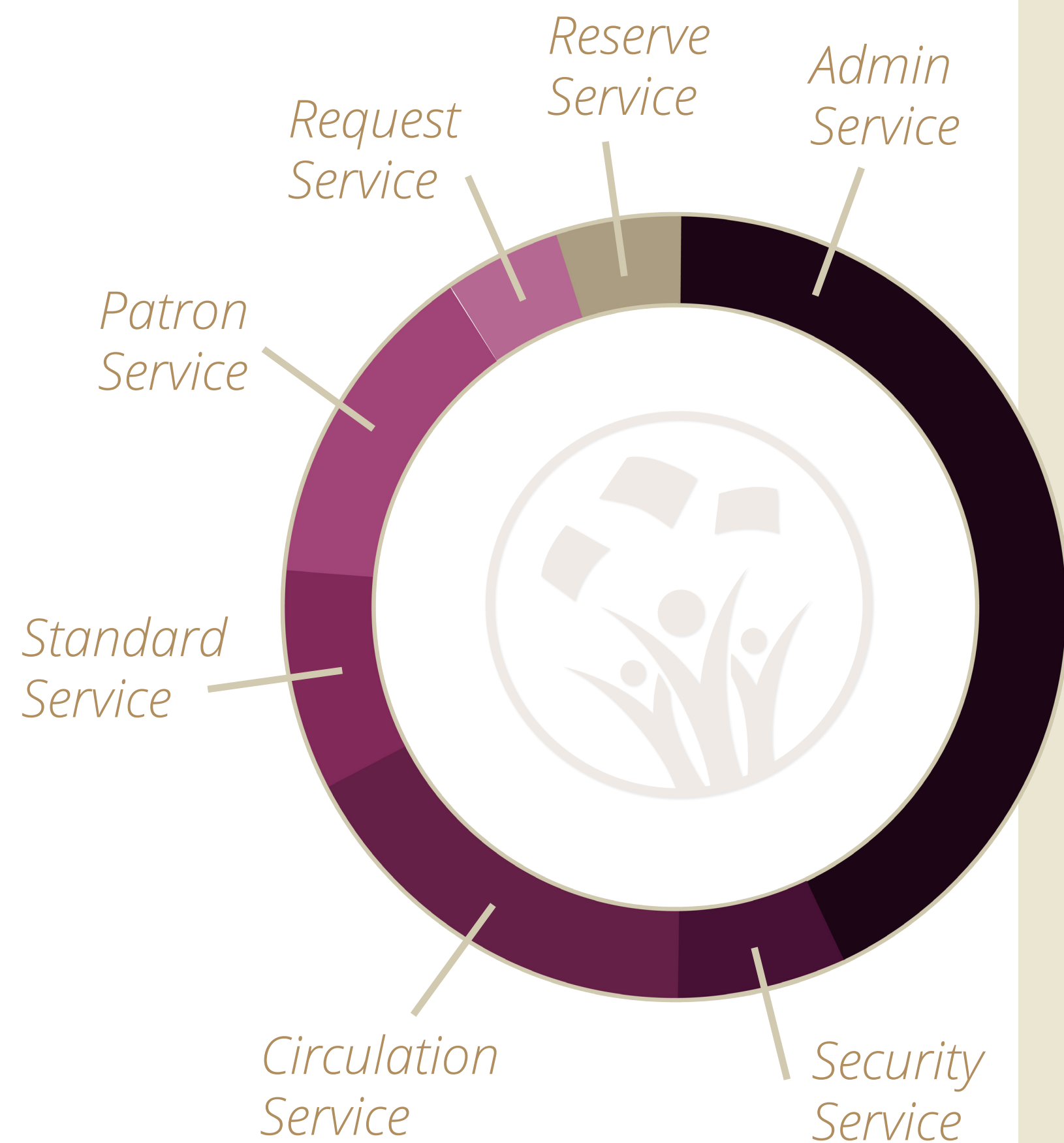
What Can I Build?

Web Services gives your library access to core ILS architecture and the ability to construct any number of possible enhancements, including

• Custom applications

• Custom connections to third party systems

• Custom reports

• Global edits

• Batch transactions (beyond what is built in to Symphony)

Reserve Service

Request Service

Admin Service

Patron Service

Standard Service

Circulation Service

Security Service

More specifically, the information that a library can access via Web Services and exchange with another application includes

• Key word searches (title, author, subject, ISBN, series, specific MARC tag)

• Hit list results

• Full Display of title including copy details and current status

• User authentication

• Lookup user accounts including bills, checkouts, and holds

• Patron self-renewal

• Holds management (place hold, remove hold)

• Bill Payment

Your Tools

The BLUEcloud LSP is a robust platform that comes ready to support your library, but your library can feel free to dig in, push the envelope, and stretch as you see fit. The access and tools to build your next-level LSP are all there, you just need to bring the know-how to accomplish your customizations. SirsiDynix helps to guide your way with two essential resources: the Software Development Kit (SDK), and our online Developer Community. Both are included with a subscription to Web Services.

The SirsiDynix SDK is your complete guide to using Web Services. The kit is designed to help you quickly learn about SirsiDynix Web Services and make the most of your software. Use the kit to find what you need quickly, bookmark your favorites, and always have a readily available resource. Entries are concise and include linked cross-references for learning more.

Once you are in the thick of your system don't forget that you don't have to remodel alone. An API subscription gives you membership in the SirsiDynix Developer Community, where you can access hundreds of other members' custom APIs and contribute your own. The purpose of the Developer Community is to provide a forum where API applications can be shared. Browse through hundreds of advancements that have been submitted for over 15 years. And because SirsiDynix API/Web Services are compatible from release to release, you will have the peace of mind of knowing that any investment made in developing a custom interface will be valid and usable with the next release.

Future, Not Fad

A frequent concern libraries often express is to question if APIs and Web Services are a major resource that they should be proactive about using, or if APIs are just a passing fad that will only benefit a few tech-savvy libraries.

In an interview, Marshall Breeding was asked this exact question on APIs. Breeding's response clearly reflects a belief that APIs are an asset for libraries and a cornerstone of future technology:

> APIs are the way technology works these day. It's not just in the library world; it's across all industries. There is increasing interest in being able to use APIs to solve problems that would be really expensive and hard to address otherwise…

> Libraries are increasingly involved and expected to exchange data and functionality with other business systems that surround them: in a university with other university-level business systems, authentication services, ERP systems, student management systems; a lot of the same business structures in a city or county environment…

> " *APIs are the way technology works these day. It's not just in the library world; it's across all industries… Systems are not isolated these days. If you have an isolated system, you are isolated as an organization.* "
>
> Marshall Breeding
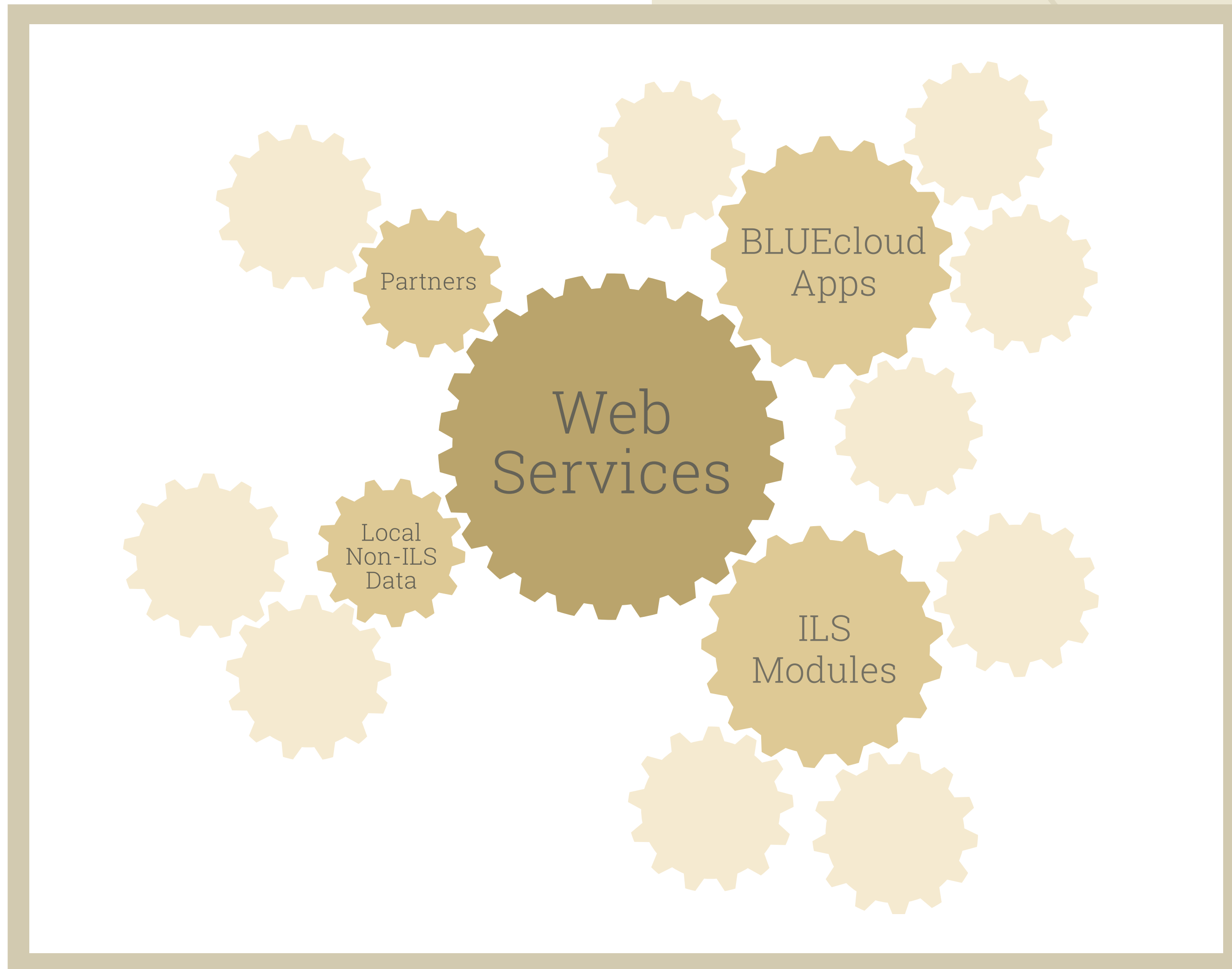
Web
Services

Partners

BLUEcloud
Apps

Local
Non-ILS
Data

ILS
Modules

Systems are not isolated these days. If you have an isolated system, you are isolated as an organization. APIs are this technology approach that make libraries less isolated because they can communicate with these other business systems, but also more flexible in their ability to develop services beyond what's delivered.

SirsiDynix wholeheartedly agrees with Breeding's perspective and that's why we have dedicated ourselves to delivering sophisticated API technology and placing it in the hands of our libraries.

Our commitment stems back to our early days when Sirsi and Dynix were still separate companies. Way back in 1983, Sirsi offered our first customer training on API customization; that same year, Dynix released a flagship product with SQL access to the database.

Over the years we have continued in our commitment, delivering more than 140 and 160 APIs for Horizon and Symphony, respectively, and more than 360 creations have been added to the developer community repository since 2003. APIs have proven to be a resource that lets libraries take their technology to the next level, and our team continues to make it easy to get you there.