Key Characteristics

An Ed-Fi REST API's key characteristics provide specific benefits to educational organizations. Security and privacy of data and data systems are primary concerns for all implementations and are addressed in an Ed-Fi REST API. The level of abstraction available with an Ed-Fi REST API also allows for a variety of use cases.

Benefits

An Ed-Fi REST API may be used to facilitate flexibility in a variety of situations where different applications and/or data stores need to consume, exchange, or manipulate education data. The major benefits of an Ed-Fi-aligned API are described below:

- **Data store and application agnosticism.** Education organizations gain greater control over their application data infrastructure when they can use a common API that may be implemented or consumed by any number of vendors. Storage engines (implementing an Ed-Fi REST API) may be selected to meet exact availability, distribution, and scalability needs. Applications (consuming an Ed-Fi REST API) all interoperate in real time, on common data, freeing education organizations to select product suites and/or individual applications that target specific user needs.
- **Data migration simplified.** In much the same way that the Ed-Fi XML Data Exchange Framework creates a simpler migration path from one source of education data to another, the Ed-Fi REST API removes the need to migrate the data at all. Client applications that access a data store with an Ed-Fi REST API can be replaced without data migration.
- **Data consistency between applications.** Educational organizations use many applications. Often, these applications use similar core entities such as student, school, and class. When changes are needed for any of these core entities, the entities must be updated in several systems. Inconsistencies often do not become apparent until the data is combined into a central repository for cross-reporting purposes. An Ed-Fi REST API enables a common repository for core entities, so consistency is maintained across applications at all times.
- **Simplified infrastructure.** The IT staff at many educational organizations are overtaxed with ever-increasing system management, desktop support, and reporting requirements. Each additional application and data repository represents additional "surface area" that must be managed, monitored, maintained, and secured. Infrastructure may be simplified by using an Ed-Fi REST API instead of trying to synchronize between proprietary data stores or application-specific APIs.
- **Open infrastructure.** An Ed-Fi REST API is built on current industry best practices and standard HTTP verbs. Therefore, an Ed-Fi REST API neither requires nor precludes cloud-based providers (e.g., data repositories) or consumers (e.g., desktop or mobile applications), or data store topology (relational or document storage). The educational organization has the choice to use any of these technologies.

Security

Security is necessarily a major concern for all organizations that deal with education data. An Ed-Fi REST API addresses those security concerns in specific ways. Security, in this context, consists primarily of three activities:

- Identifying users and client applications seeking access to information (i.e., authentication)
- Establishing access policies to information (i.e., authorization)
- Enforcing those access policies

An Ed-Fi REST API platform containing personally identifiable data or data about which there are privacy concerns will limit access to authenticated and authorized client applications. Even systems that deal only with public data should secure access by authorizing and authenticating all access. More details and guidance regarding security are provided in the API Implementation Design Guidelines section.

Application Use Cases

An Ed-Fi REST API provides organizations developing systems that exchange education information with a wide variety of possible scenarios. The following examples represent only a sampling of the most compelling use cases:

- **As a shared application data repository.** A state (or large district) can have a combination of extremely large and extremely small schools. A large school often has more specialized roles than a small one. An enterprise Student Information System (SIS) that suits the needs of a large school may be quite different from the SIS appropriate for a smaller school. Using an Ed-Fi REST API, each school can use a SIS that is tailored to their specific needs. State or district users can then generate reports across all schools using a software package that meets its

REST API Specification Documentation Contents

Find out more about the Ed-Fi REST API:

needs without requiring data exports from any school. Each application has direct access to the most current information.

- **As an enabler for "best of breed" applications.** A school district may prefer their SIS for day-to-day use, but need to integrate with data from another system to leverage best-practice, off-the-shelf analytics. With the Ed-Fi REST API, a more capable reporting package can be used to supplement the capabilities of their preferred SIS.

- **As the data foundation for targeted "applets."** Small, highly focused applications can use an existing Ed-Fi REST API to provide parents, teachers, and administrators with web or smartphone applications that target specific needs. Imagine a smartphone application that a high school principal can use to verify the names and class schedule for a student found wandering the halls, or an SMS notification application that informs parents the same day that their child missed a key assignment or examination.

- **As a secure source for research data.** Researchers spend much of their time collecting and standardizing education data in order to perform analysis. One time-consuming aspect of this process is stripping away personal data in order to maintain student privacy. This means that researchers analyze data that is months, or even years, out of date. The Ed-Fi REST API can provide near real-time, de-identified data to researchers in a common, secure format.

- **As a simplified data reporting infrastructure.** School districts spend a significant amount of time collecting and reporting information to their state education agencies (SEAs). Multiple departments within the SEA often request the same information. Each data collection takes time. Using an Ed-Fi REST API, a school district can authorize the SEA to directly access only the specific information it needs, thus reducing the time spent by the school district providing redundant information.

- **As an interface for public information.** Most school districts have websites that list information such as school names, grades served at each school, attendance statistics, bell schedules, and available courses. If their websites used the Ed-Fi REST API as a source for the information, this public information could be provided automatically based on the most current information available—without the need to update web pages manually.