Exploring the SIF Infrastructure for Postsecondary and Workforce

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Agenda

- A brief history of the modernization of SIF
- Practical examples of using SIF infrastructure for postsecondary and workforce data
- Ideas for the future
- Discussion

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Modernization of SIF

- RESTful (+) architecture
- Separation of metadata from payload
- Separation of infrastructure from data model
- Enhanced security
- Long running process support
- Performance enhancements
  - Bundled Events
  - Parallel Queue Consumers
  - “Pop and Get Next”
  - Bulk API

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Performance Test

		Total Records	Records /Second
SIF 2 Infrastructure	Mock SIS	1,063,119	295
	Digester	19,697	5
Hybrid	Mock SIS	1,063,119	295
	Digester	1,311,408	364
SIF Infrastructure 3.4	Mock SIS	215,622,600	59,895
	Digester	375,188,400	104,219

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JEDx

JEDx Initiative Summary

The U.S. Chamber of Commerce Foundation and the T3 Innovation Network launched the JEDx initiative in 2021 to develop a standardized system for collecting and using jobs and employment data. It builds on previous efforts focused on job descriptions and employment records.

JEDx Project Priorities:

- Improve federal and state reporting (starting with UI reporting).
- Enhance job description data sharing for career pathways.
- Improve job posting data for better search results.
- Empower workers/learners to manage employment records (LERs) for applications and programs.

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JEDx - hybrid API capability

JEDx API Initiative:

- Public-private partnership aiming to standardize employment data sharing.
- Phase 1 - Focuses on improving employer data reporting to government agencies (initially unemployment insurance) and job search optimization.
- Future phases include empowering workers and learners to manage their learning and employment records (LERs).

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Transcript Exchange: Iowa

- Leverage existing state reporting SIF infrastructure
- SIF + PESC colab for data mapping
  - SIF Student Demographic Summary
  - SIF Student Academic Summary
- PESC JSON Transcript Object
- SIF 3 Infrastructure for consumers
- Mapping artifact is now openly available

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Transcript Exchange: Ideas for the future

Develop a SIF-based transcript exchange to support PESC's JSON-LD Transcript standard for use by states or state higher education systems.

- **Event Management** - Trigger notifications when a transcript is updated or added.
- **Automated Validation** - Automate checks against SHACL (Shapes Constraint Language) specification and, optionally JSON schema, upon data submission to validate the structure and content of JSON-LD transcripts.
- **Error Handling** - Develop a comprehensive error handling mechanism that provides feedback on validation errors to the submitting institutions.

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Data submissions by campuses: MA

Pilot project to modernize data pipelines:

- Modeling “in house” legacy state reporting data using updated, cloud-native tools
  - Ingesting data from multiple sources
  - Validation and business rules with real-time correction in source systems
- Providing access over SIF infrastructure
  - Static reporting → Real time
  - REST API driven
- Exploring connections to support internal data syncing needs
  - Branching data stream to connect additional software consumers
  - Support internal reporting needs (e.g. IPEDS)
- Exploring the ability to leverage open standards data models

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Data Submissions: Ideas for the future

Develop a SIF implementation to support campus data submission for state higher education systems by creating a framework that can efficiently manage and standardize the flow of data across various educational institutions while ensuring data quality.

- **Scope** - Support data submission from campus to system and data transfer between campuses
- **Data Model** - Define minimal data model including objects for students, employees, courses, enrollment, grades, etc… that can be easily extended.
- **Event Driven** - Implement event model where data changes trigger notifications to subscribed systems.
- **Validation -** Implement validation rules within the SIF adaptor at the Broker to check data for accuracy and completeness before it's accepted into the system.
- **Error Handling** - Design error handling mechanisms to provide feedback on validation errors to the submitting institutions.

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Data Submission - continued

- **Event Driven** - Implement event model where data changes trigger notifications to subscribed systems.
- **Validation -** Implement validation rules within the SIF agents or at the ZIS to check data for accuracy and completeness before it's accepted into the system.
- **Error Handling** - Design error handling mechanisms to provide feedback on validation errors to the submitting institutions.

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Conclusions

- SIF infrastructure is proven and well-designed
- Implementations leveraging SIF with other data standards are already happening
- Many problems this can solve in both higher ed and workforce

Questions:

- What are the lessons learned from these implementations?
- What are the barriers to implementation?
- What can the community do, to move us forward?
- What other possibilities does this create?

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Thank you!

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