Ei Dynamics Data Integration Solution

For

Ei Dynamics is a certified Procore Partner and offers a robust data integration and reporting solution for Procore Construction Management Software.

Ei Dynamics Business Process Management software can be used to:

- **Replicate** your complete Procore database from the Cloud into a local on premise SQL database
- **Synchronize** data between Procore and 3rd party databases or ERP systems
- **Transform** and load data between Procore and 3rd party databases or ERP systems

Situation/Problem:

Most construction companies that use Procore also have an on premise ERP system for accounting and job costing. Most companies manually setup information such as vendors, cost codes and jobs in both systems. Additionally, as costs are incurred or budgets are entered or updated this type of information is also manually updated in one or the other system so that accurate reports and information can be generated in both systems. Additionally, since Procore's data is stored up in the cloud, reporting on that data is limited to the tools and reports that Procore provides native to their cloud based system. Industry standard tools like Crystal Reports, Microsoft SQL Reporting Services and Excel cannot be used to build custom reports or compare Procore's data with other on premise data.

Manually updating information is redundant, prone to human error and time consuming. Moreover, the inability to have full access to your Procore data for analytical and reporting purposes can be frustrating and lead to a lot of manual downloading and copying and pasting of information into programs like Excel where further manual manipulation of the data occurs.

Companies typically purchase Procore to gain operational efficiencies in the field but this should not be at the expense and burden of the back office causing the accounting department to spend more time and effort to keep the Procore information in sync with the accounting system and to spend manual effort to extract the data and report on it in a way that makes sense for management.

Construction Solutions that Ei Dynamics integrates with:

- Sage 300 CRE
- Sage 100 Contractor
- Foundation Software
- Viewpoint
- Dexter Chaney
- Jonas
- JD Edwards
- Accubuild

Solution:

Ei Dynamics has the ability to seamlessly keep Procore data synchronized with other ERP systems and databases. Ei Dynamics can also replicate your entire Procore database into a local on premise SQL Server database where the data can then be reported against using standard reporting and analytical tools widely available.

Replication: using Ei Dynamics' replication engine, the entire Procore database can be can be localized into an on premise SQL Server database thereby providing the ability to report on and analyze all of your Procore data effectively and efficiently using standard industry reporting tools like Crystal Reports, Microsoft SQL Reporting Services and Excel.

Synchronization: In most cases, Ei Dynamics' can eliminate the manual aspect of updating information between Procore and most local ERP/Accounting systems and can automatically synchronize the data based on user defined rules and logic.

Transformation: Generally, not all data will be stored the same way in both Procore and the local ERP/Accounting system. If this is the case, Ei Dynamics can handle the rules and business logic to manipulate and transform data into the correct format when pulling or pushing information between Procore and the destination system.

Data Replication

Ei Dynamics can replicate Procore data into a local SQL Server database. By replicating Procore data into a local SQL database companies gain full access to their data for reporting and analytical purposes.

Some common benefits include…

- Ability to use standard reporting and analytical tools such as Crystal Reports, Microsoft SQL Reporting Services and Excel to report against and analyze Procore data
- Ability to compare and analyze Procore data against other local accounting and on premise data
- Enjoy faster performance from being located on a secure and local area network

Web Services:

Ei Dynamics communicates with Procore using their REST API and Oauth2 as their standard authorization method. Ei Dynamics can seamlessly communicate with any REST API including but not limited to Procore .

Examples of other REST based API's: Google, DropBox, Facebook, Twitter, etc.

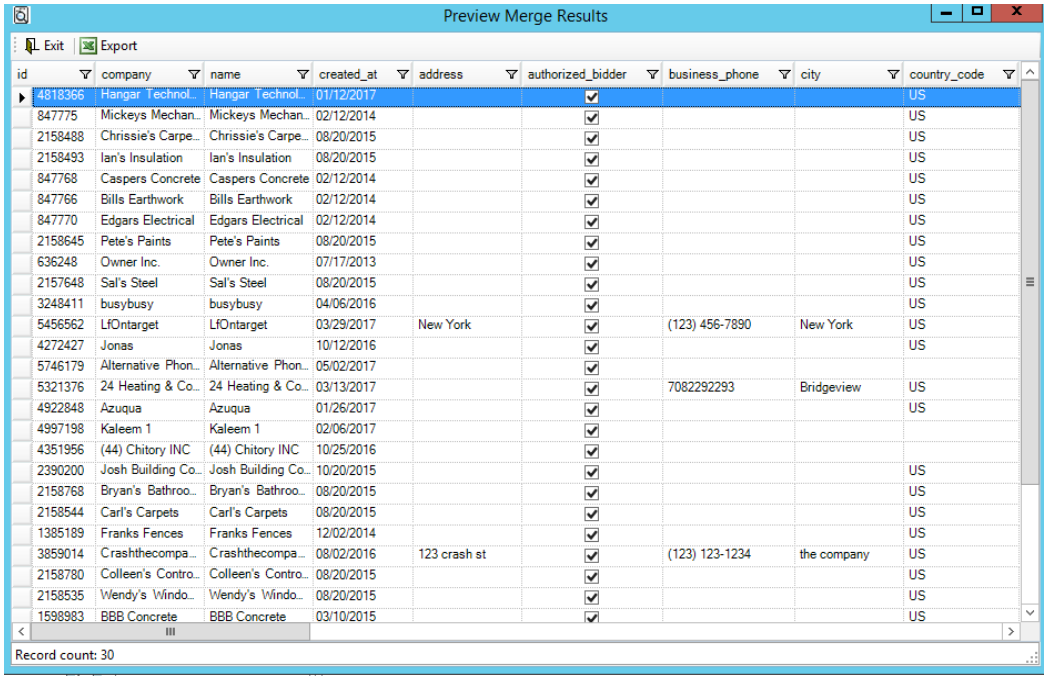
Supported REST HTTP Requests:
GET – retrieve data (json, xml, html, text, etc)
POST – submit data
PUT – place or transfer data like files up to a web server
PATCH – update existing data
DELETE – remove data

Most web services return data in either an XML or JSON data format. Ei Dynamics eliminates the complexity of JSON or XML and automatically transforms the data into a data table format that is easily recognized and understandable by most individuals.

Sample Json:

```
{"value": "New", "onclick": "CreateNewDoc()"},
{"value": "Open", "onclick": "OpenDoc()"},
{"value": "Close", "onclick": "CloseDoc()"}
```

Sample transformation of JSON by Ei Dynamics into a table:

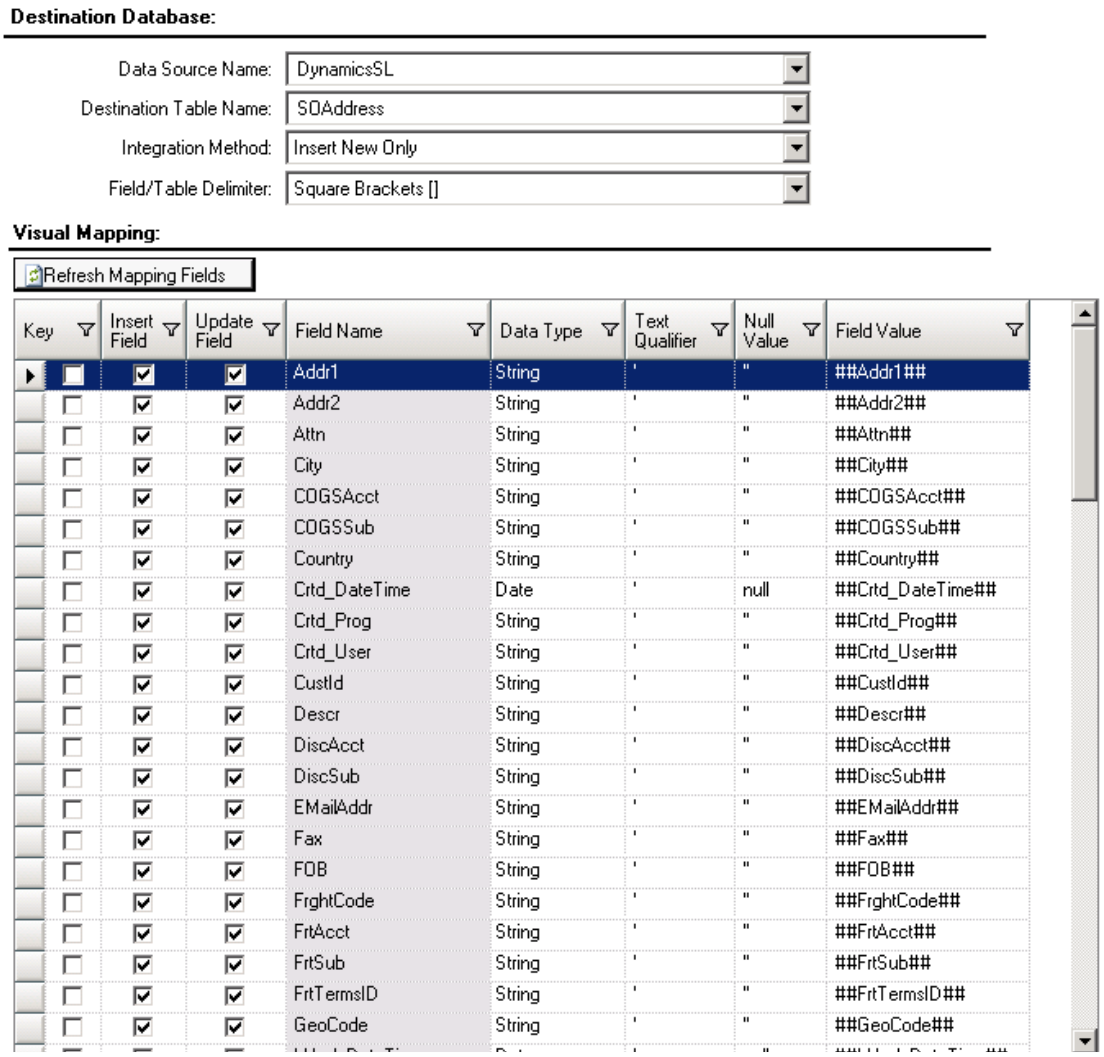


id	company	name	created_at	address	authorized_bidder	business_phone	city	country_code
4818366	Hangar Technol...	Hangar Technol...	01/12/2017		☑			US
847775	Mickeys Mechan...	Mickeys Mechan...	02/12/2014		☑			US
2158488	Chrissie's Carpe...	Chrissie's Carpe...	08/20/2015		☑			US
2158493	Ian's Insulation	Ian's Insulation	08/20/2015		☑			US
847768	Caspers Concrete	Caspers Concrete	02/12/2014		☑			US
847766	Bills Earthwork	Bills Earthwork	02/12/2014		☑			US
847770	Edgars Electrical	Edgars Electrical	02/12/2014		☑			US
2158645	Pete's Paints	Pete's Paints	08/20/2015		☑			US
636248	Owner Inc.	Owner Inc.	07/17/2013		☑			US
2157648	Sal's Steel	Sal's Steel	08/20/2015		☑			US
3248411	busybusy	busybusy	04/06/2016		☑			US
5456562	LfOntarget	LfOntarget	03/29/2017	New York	☑	(123) 456-7890	New York	US
4272427	Jonas	Jonas	10/12/2016		☑			US
5746179	Alternative Phon...	Alternative Phon...	05/02/2017		☑			
5321376	24 Heating & Co...	24 Heating & Co...	03/13/2017		☑	7082292293	Bridgeview	US
4922848	Azuqua	Azuqua	01/26/2017		☑			US
4997198	Kaleem 1	Kaleem 1	02/06/2017		☑			
4351956	(44) Chitory INC	(44) Chitory INC	10/25/2016		☑			
2390200	Josh Building Co...	Josh Building Co...	10/20/2015		☑			US
2158768	Bryan's Bathroo...	Bryan's Bathroo...	08/20/2015		☑			US
2158544	Carl's Carpets	Carl's Carpets	08/20/2015		☑			US
1385189	Franks Fences	Franks Fences	12/02/2014		☑			US
3859014	Crashthecompa...	Crashthecompa...	08/02/2016	123 crash st	☑	(123) 123-1234	the company	US
2158780	Colleen's Contro...	Colleen's Contro...	08/20/2015		☑			US
2158535	Wendy's Windo...	Wendy's Windo...	08/20/2015		☑			US
1598983	BBB Concrete	BBB Concrete	03/10/2015		☑			US

Data Integration:

Ei Dynamics has several different methods for pulling Procore data and pushing the data elsewhere. The most common approach involves using Ei Dynamics' Visual Data Integrator which utilizes a point and click interface to visually map data points between Procore and a destination database .

Data Visual Integrator:



Data Replication is also generally a 'Uni-directional' process. In other words, there is a source database and a destination database. The destination database is a mirrored reflection of the source database.

Depending on the amount of data there are generally two approaches to updating the destination database:

Full Refresh - all of the records in the destination tables are completely removed and then repopulated with the data in the source database each and every time. The advantages of this approach are that it ensures that the data is completely accurate and up to date with the most current data. The disadvantage of this approach is that it can take a lot longer to process. Generally this approach would occur in the middle of the night when there are no time constraints and people are not working with the data.

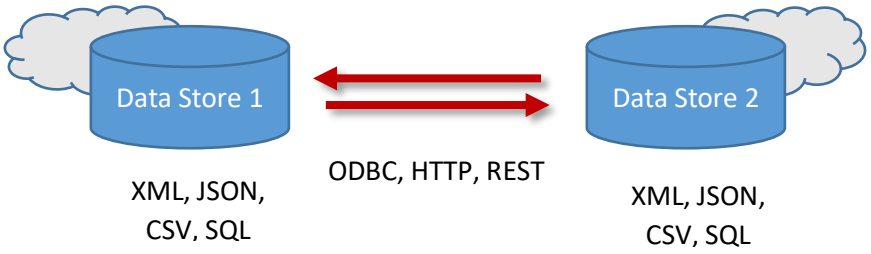
Incremental Refresh – when incrementally refreshing data, only the data that has changed between a defined timeframe or based on certain business rules is updated. Records that have been modified are removed and replaced and newly identified records are added. This approach is more difficult and reliant on various data elements of the underlying data for success and preciseness. The advantages of this approach is that the data can be updated very quickly and provide an almost real-time environment. This allows users to make changes to the source system during the day and with very little interruption have the ability to leverage and report on the changes virtually immediately. The disadvantages of this approach are that sometimes the underlying data does not have enough detail to ascertain what data has been added or modified causing situations where an Incremental Refresh may not even be an option. Additionally, if the business logic is too complicated then it must be thoroughly tested and verified against the source database after changes have been made to ensure that there is not a scenario where the end users believes they are working with a complete set of data all the while some data is missing or was not fully replicated.

Data Synchronization

Data Synchronization is the process of keeping one or more data sources in sync. In other words, someone may make a change in one system and want that change reflected in another system and vice versa.

For example, often time contractors will setup speculative jobs initially in the accounting system but then need to set those same jobs up in Procore once the job becomes live and active.

With Ei Dynamics business rules can be setup so that if a job were added in the accounting system the job would then be added to Procore automatically when the job becomes active thereby eliminating the redundant data entry requirement and the need to constantly monitor the accounting system for new jobs to be setup in Procore



Data Transformation

Data Transformation is the process of transforming and manipulating data from one data source to another. For example, Procore returns data from their API as json data but when pushing the data into most standard ODBC compliant databases the data needs to be transformed from json into a format that can be pushed into a database via a SQL query.

With Ei Dynamics data can be transformed in virtually infinite ways. The advantage that Ei Dynamics offers is its simple graphical interface provides some very powerful tools to manipulate and transform data with very little effort or technical knowledge on behalf of the consultant or end user who is setting up the logic.

Examples of Data Transformation:

XML to JSON
XML to CSV
XML to XML
Database SQL to XML
Database SQL to JSON
Database SQL to CSV

Conclusion

If you're looking for a robust solution to synchronize your Procore data into another database or ERP/accounting system, Ei Dynamics is the leading solution in the market. Ei Dynamics is a certified Procore partner and has prebuilt business logic that ships with our solution to pull Procore data and push it automatically to a local SQL Server database. For custom integration solutions, Ei Dynamics' client services department can assist with custom and unique customer requirements.

About Ei Dynamics

Ei Dynamics is an affordable Business Process Management solution that bolts on to most mid-range accounting systems and any ODBC compliant database to facilitate activities such as sending business alerts, automating the distribution of reports and rapid deployment of custom workflow processes. For more information Ei Dynamics can be reached on the web at http://www.eiDynamics.com or emailed at sales@eiDynamics.com.

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