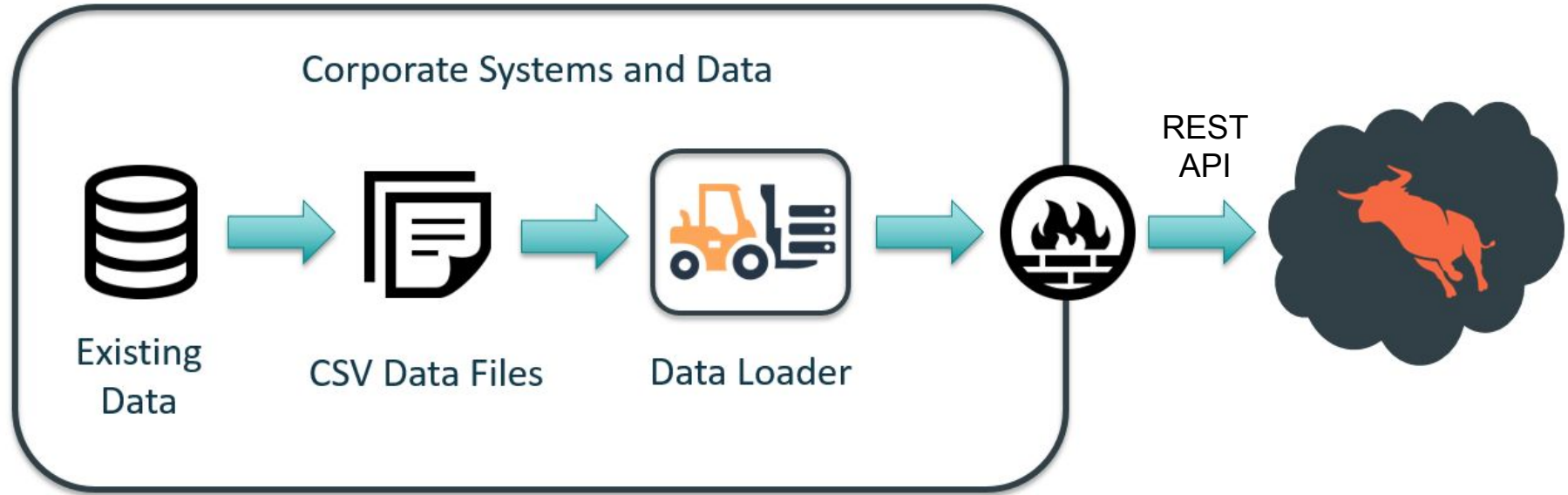


ENGAGE

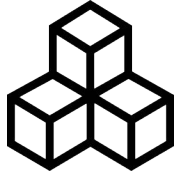
Data Loader

Nathan Dickerson

Data Loader: Mass Import/Update

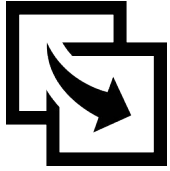


Migrate your existing data into Bullhorn



Supports the Entire Bullhorn Data Model

Mass uploads from a client's existing CRM



Replaces legacy custom uploader

Mass updates records in Bullhorn



Supports Insert, Update, Delete, Convert, Attach

Data Loader by the Numbers

15 - Integrators (*Kyloe, Newberry, Professional Services, etc.*)

75 - Corporations Loaded (*...and counting*)

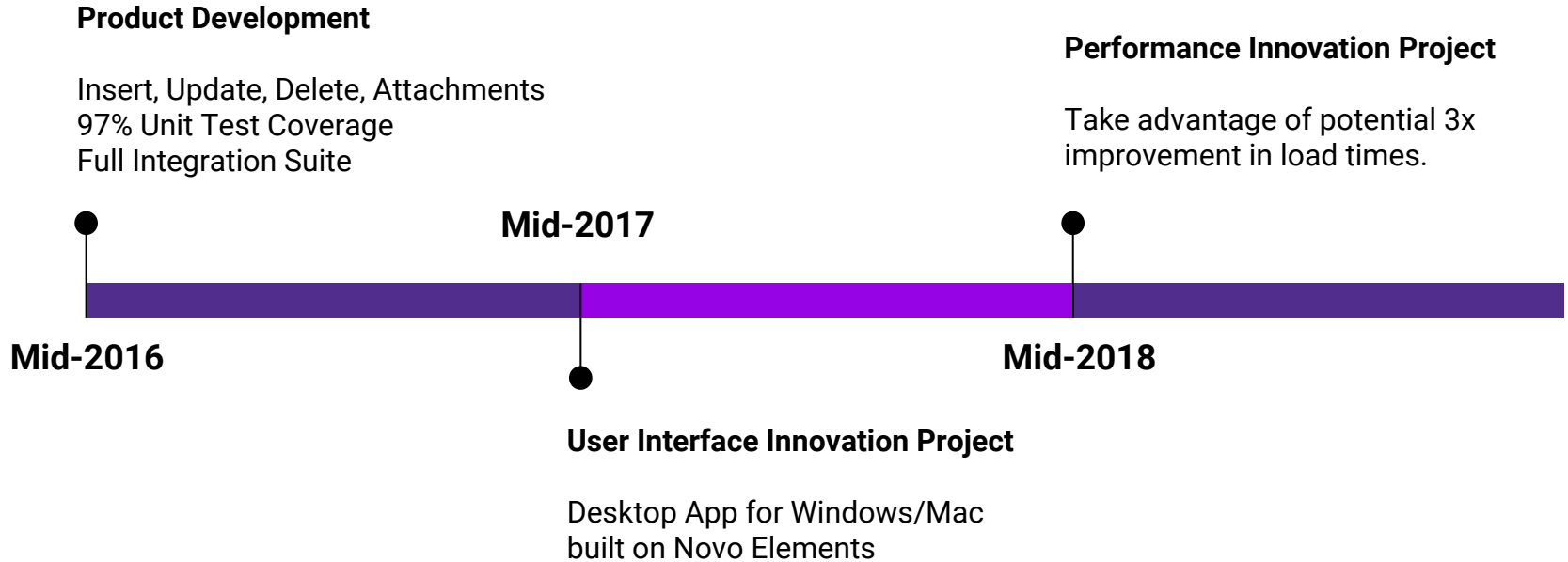
13M - Average Records Per Corporation Migration

1M - Average Daily Records Loaded

80 - Resolved GitHub Issues

~30 - Internal Users (Support, Professional Services, etc.)

Data Loader Development Plan



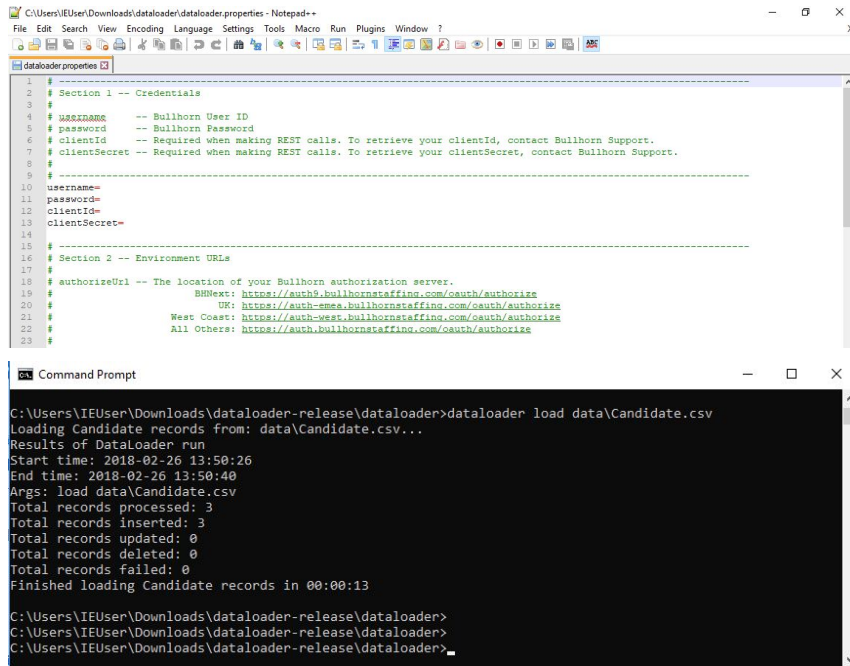
User Interface Innovation Project

ENGAGE

Data Loader User Experience

Quick Start Guide

1. Install Java if you don't have it already (you won't need the development kit for Windows) - [Windows](#) | [Mac](#)
 - i. Verify that you have the latest version of java on the command line by typing: `java -version`, which should show:
`java version "1.8"`
2. Download the dataloader.zip file from the downloads section of the [Latest Release](#)
3. Extract contents of dataloader.zip file (will extract into a `dataloader` folder)
4. Edit the file `dataloader/dataloader.properties` to enter your account information
5. Place your source CSV files in the `dataloader/data` folder. Rename them to be the name of the entity being loaded, for example: `Candidate.csv`, `Placement.csv`, etc.
6. Open a command prompt in the `dataloader` folder
7. Get familiar with the available fields (column header names) from the example files in the `dataloader/examples` folder or use the `template` command to generate an example file containing all possible fields for the entity, for example: `> dataloader template Candidate`
8. Ensure that the column names in your source CSV exist in the example and/or template CSV files
9. Run dataloader on the command line, for example: `> dataloader load data/Candidate.csv`
10. Check for status on the command line, check for error records in the file:
`dataloader/results/<InputFileName>_<Timestamp>_failure.csv`, check for successful records in the file:
`dataloader/results/<InputFileName>_<Timestamp>_success.csv`, and check for full output in the `dataloader/log` directory



The screenshot displays two windows. The top window is Notepad++ editing `C:\Users\IEUser\Downloads\dataloader\dataloader.properties`. The file contains two sections: 'Section 1 -- Credentials' with fields for `username`, `password`, `clientId`, and `clientSecret`; and 'Section 2 -- Environment URLs' with an `authorizeUrl` field. The bottom window is a Command Prompt showing the execution of `dataloader load data\Candidate.csv`. The output indicates that 3 records were processed and inserted successfully, with no updates, deletions, or failures.

```
1 #
2 # Section 1 -- Credentials
3 #
4 # username -- Bullhorn User ID
5 # password -- Bullhorn Password
6 # clientId -- Required when making REST calls. To retrieve your clientId, contact Bullhorn Support.
7 # clientSecret -- Required when making REST calls. To retrieve your clientSecret, contact Bullhorn Support.
8 #
9 # -----
10 username=
11 password=
12 clientId=
13 clientSecret=
14 #
15 #
16 # Section 2 -- Environment URLs
17 #
18 # authorizeUrl -- The location of your Bullhorn authorization server.
19 # BHMW: https://auth3.bullhornstaffing.com/oauth/authorize
20 # UK: https://auth-emea.bullhornstaffing.com/oauth/authorize
21 # West Coast: https://auth-west.bullhornstaffing.com/oauth/authorize
22 # All Others: https://auth.bullhornstaffing.com/oauth/authorize
23 #
```

```
C:\Users\IEUser\Downloads\dataloader-release\dataloader>dataloader load data\Candidate.csv
Loading Candidate records from: data\Candidate.csv...
Results of DataLoader run
Start time: 2018-02-26 13:50:26
End time: 2018-02-26 13:50:40
Args: load data\Candidate.csv
Total records processed: 3
Total records inserted: 3
Total records updated: 0
Total records deleted: 0
Total records failed: 0
Finished loading Candidate records in 00:00:13

C:\Users\IEUser\Downloads\dataloader-release\dataloader>
C:\Users\IEUser\Downloads\dataloader-release\dataloader>
C:\Users\IEUser\Downloads\dataloader-release\dataloader>
```

What users are saying...

What's the
command line?

Where does this go
on my PC?

Is there duplicate
checking?

Wait, I need to get
a new version?

Demo!

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Coming soon...

- Auto-Updates (check for newer version)
- Export current data (undo capability)
- Provide field map labels
 - `parentClientCorporation` => “Parent Company”
- Delete, Convert, Load Attachments
- Load multiple files at the same time

Performance Improvement Innovation Project

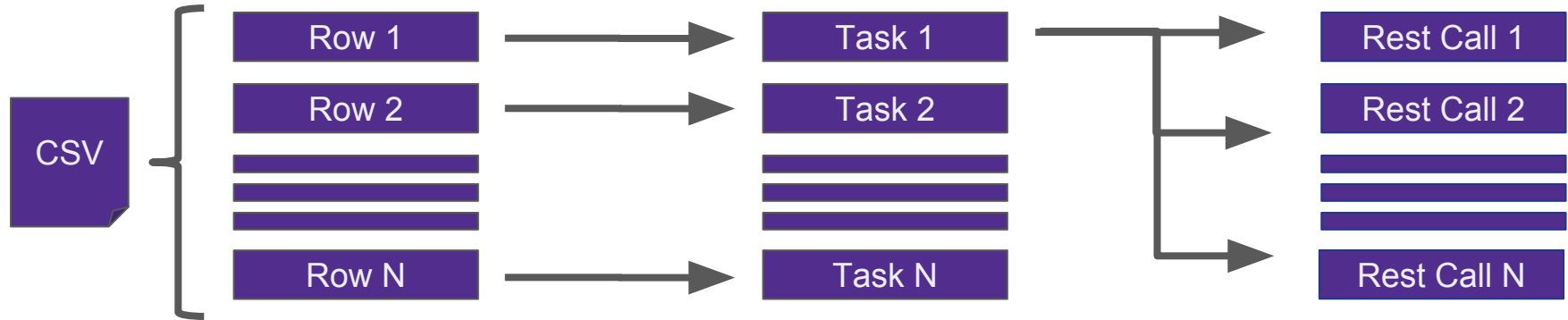
ENGAGE

Row → Task → Rest Calls

```
$> dataloader data/Candidate.csv
```

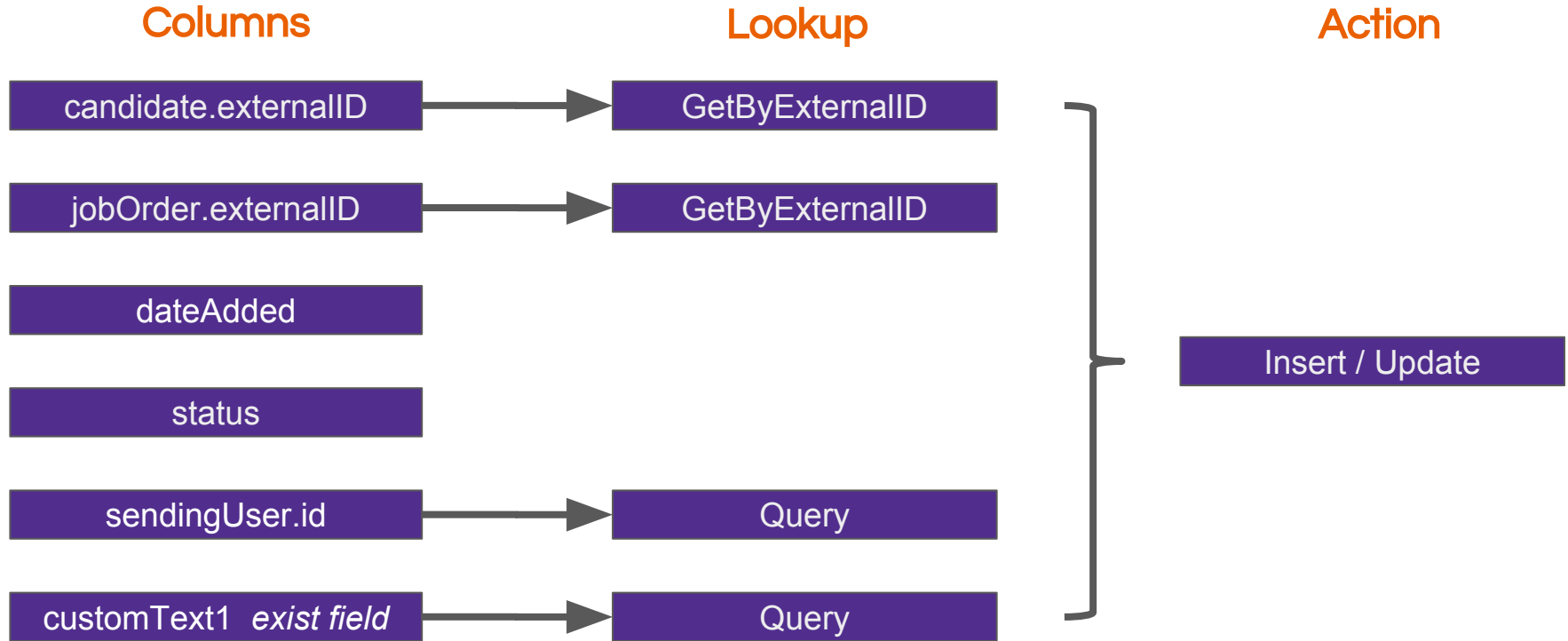
1 Row = 1 Task

1 Task = Multiple Calls



Process 1 task per thread, with up to 15 threads simultaneously

Job Submission Example



Performance Targets

Entity	# Records	Today	Future (est)
Candidate	30k	10min	3min
Candidate	1M	4hr	1hr
Notes	100k	2hr	30min
Notes	3M	10hr	2hr

Unlock new Validate and Backup Workflow Steps

Questions?

Come See Us At the Connect Booth!

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Backup Slides

ENGAGE

Planned Improvements

- Batch lookup (500 per call)
- Bundle One-To-Many Associations
 - Already done with Notes

Rest Calls For Loading

Dup Check - To-Ones - Insert/Update - To-Manys

1. **Lookup** - Duplicate Check (if field(s) are given to duplicate check against)
2. **Lookup** - One-To-One Associations (Linked Company, Primary Skill, etc.)
3. **Action** - Insert or Update Record
4. **Lookup** - One-To-Many Associations (Candidates, Skills, Categories, etc.)
5. **Action** - Insert or Update One-To-Many Associations

Longest Kyloe Data Loader Runs

Run by Kyloe on 1/11/2018 - 1/15/2018 against UK SLs

Entity	# Records	Before	After (est.)
JobSubmission	1 Million	28 hours	8 hours
Notes	1 Million	60 hours	18 hours

Estimated time with bulk find calls:

3X Improvement!!!

Verification Test Runs

Run on 2/14/2018 against BHNext

# Records	Threads	# Lookups	Duration	Savings
1,000	15	5	4:01	
1,000	15	1	1:45	58%

Estimated performance with batch lookups: (not available today)

# Records	Threads	# Lookups	Duration	Savings
1,000	15	1/100	1:15	70%

A Text Slide (Bullets)

- This is the first bullet
- This is the second bullet
 - This is a sub bullet
 - This is a sub bullet

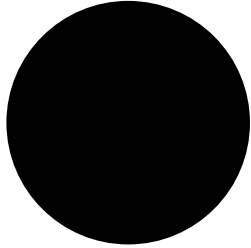
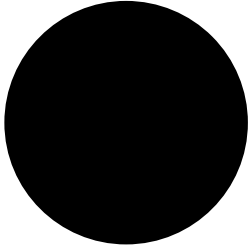
A Text Slide (No Bullets)

This is text that isn't bulleted.

This is where you could
put divider text

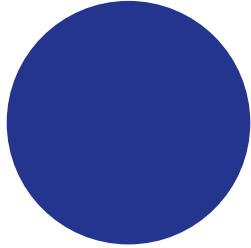
ENGAGE

Engage Colors

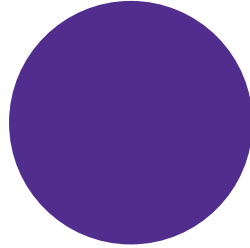


Dark Violet

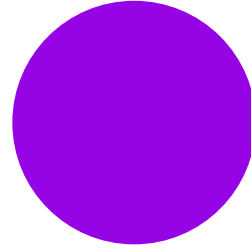
Good for dark text



Engage Blue



Engage Purple



Highlight Purple

Use sparingly



This is an accent color and should be used with bullets or as a design element (sparingly)



Secondary colors – these work well on dark backgrounds as text colors or accent colors