Inventory Automation: Bridging UT Data Silos

The University of Texas at Austin School of Information

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Problem

The School of Information IT and Purchasing teams currently utilize parallel, manually-maintained, isolated inventory systems. For regulatory and functional purposes, neither system can be discarded. This leads to significant duplications of effort and occasional confusion when the systems disagree.

My objective was to access the official UT inventory and build a tool which will allow the School of Information IT team to use the official, centralized dataset as its primary data source.

Process

Research
- Interviewed IT and Purchasing stakeholders
- Identified metadata that should agree between systems

Access
- Three routes to access official inventory dataset from mainframe
  - Manual text export with limited data
  - Authenticated web crawl
  - Cross department collaboration

Integrate
- Selected and configured web frontend with required feature set and API for integration

Automate
- Cron scheduled server tasks
  - Pull new dataset
  - Clean for ingest
  - Add or update inventory via API

Results

- https://inventory.ischool.utexas.edu
- Automation limitation due to authentication method
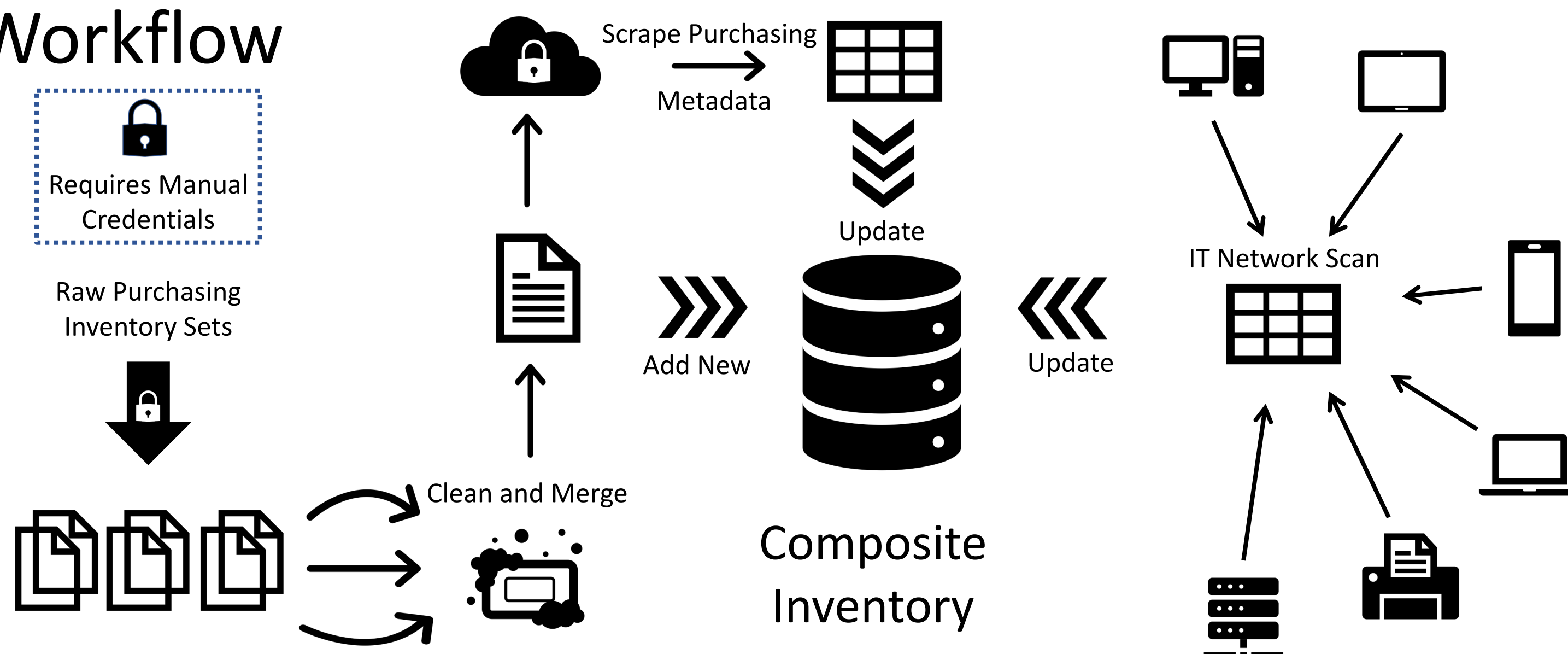- Evaluating stretch goal: checkout system

Next Steps

- Continue meeting with development teams in other UT departments regarding access collaboration
- Extend integration with network scan data
- Checkout system
- Training

Workflow

Scrape Purchasing Metadata

Requires Manual Credentials

Raw Purchasing Inventory Sets

Clean and Merge

Add New — Update — Update

Composite Inventory

IT Network Scan

NAME	IP	OS	MODEL	SERIAL	MEMORY	MANUFA
colorqube 8570dt	10.		ColorQube 8570DT		512MB	Xerox
Lab BW printer	10.		LaserJet P4515		128MB	Hewlett-
Plotter - Designjet T7100	10.		Designjet T7100		501.2MB	Hewlett-
doctoral	10.		LaserJet 1320 series		16MB	Hewlett-
static-10-1	10.		KONICA MINOLTA bizhub 283		2.3GB	KONICA
ir-adv 4235	10.		iR-ADV 4235 29.04		2GB	Canon
npi321d76	10.		LaserJet 400 M401dne		256MB	Hewlett-
soi-plotter-old	10.		Designjet 4500ps		250.0MB	Hewlett-

iSchool Inventory — Dashboard

570 total assets	0 total licenses
0 total accessories	0 total consumables

Recent Activity

Date	Admin	Action	Item	Target
2019-11-22 03:42 PM		create new	ZENBOOK UX305FA-ASM1 (889798)	
2019-11-22 03:42 PM		create new	ZENBOOK UX305FA-ASM1 (889798)	
2019-11-22 03:42 PM		create new	ZENBOOK UX305FA-ASM1 (889799)	
2019-11-22 03:42 PM		create new	ZENBOOK UX305FA-ASM1 (889799)	