

Building Beautiful Dashboards with Power BI





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Building Beautiful Dashboards with Power BI

Introduction & Getting Started

Transforming Data

Visualizations

Publishing & Sharing



Introduction



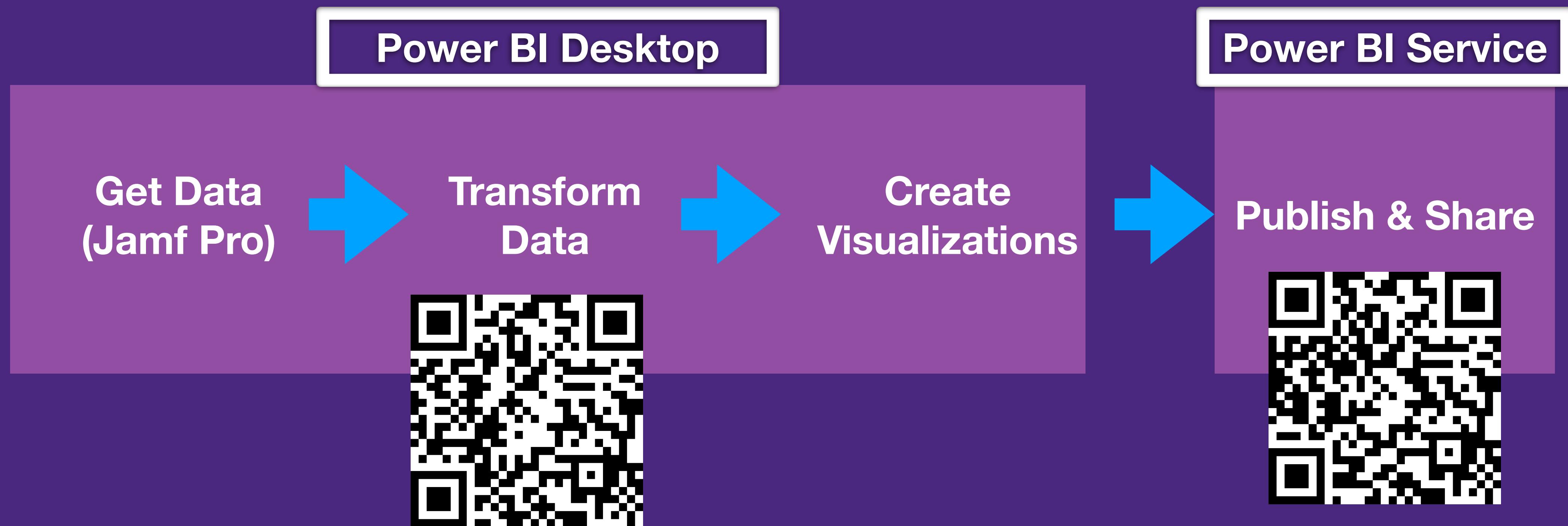
Iowa State Introduction

- IT highly distributed across campus
 - 50+ Sites on single Jamf Pro instance
 - Individual site admins for academic units
- Why Power BI?
 - Understand our Apple environment and share with others

What is Power BI

- Collection of services, apps, connectors to turn data into interactive visuals
- Primarily consists of:
 - Power BI Desktop App
 - Power BI Service (SaaS)
- Pre-Built Jamf Pro Integration for Power BI

Power BI Workflow



Getting Started

- Power BI account in Jamf with Read rights
 - Computer Extension Attributes
 - Computers
 - Mobile Devices
 - Smart Computer Groups
 - Smart Mobile Groups
 - Static Computer Groups
 - Static Mobile Groups

Getting Started

- Install Power BI Desktop from Microsoft Store
- Start Power BI Desktop
 - Setup Jamf Pro Connector
 - Jamf Training Module covers in detail

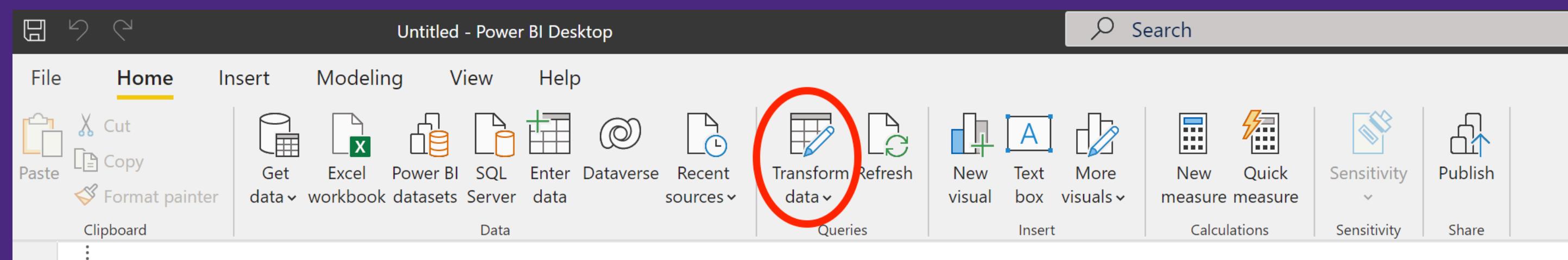


Transforming Data



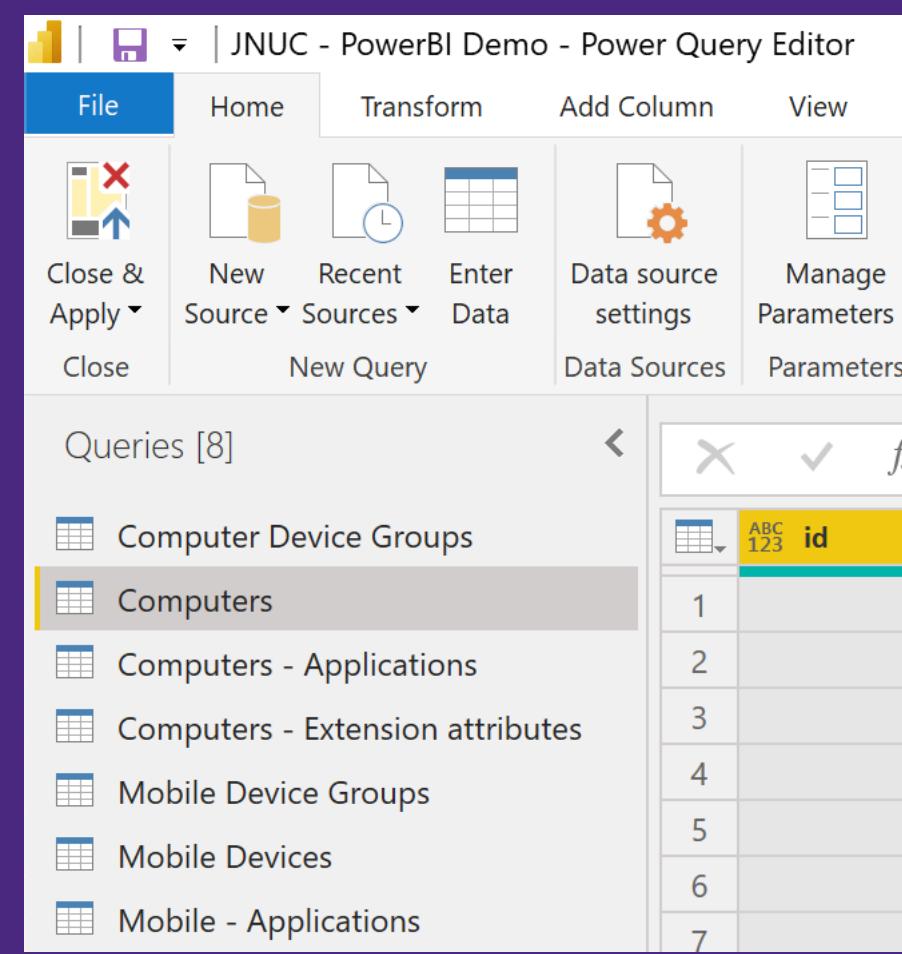
Transforming Data

- Shape Jamf data to make it more useful
 - Uses Power Query Editor
 - Click Transform Data



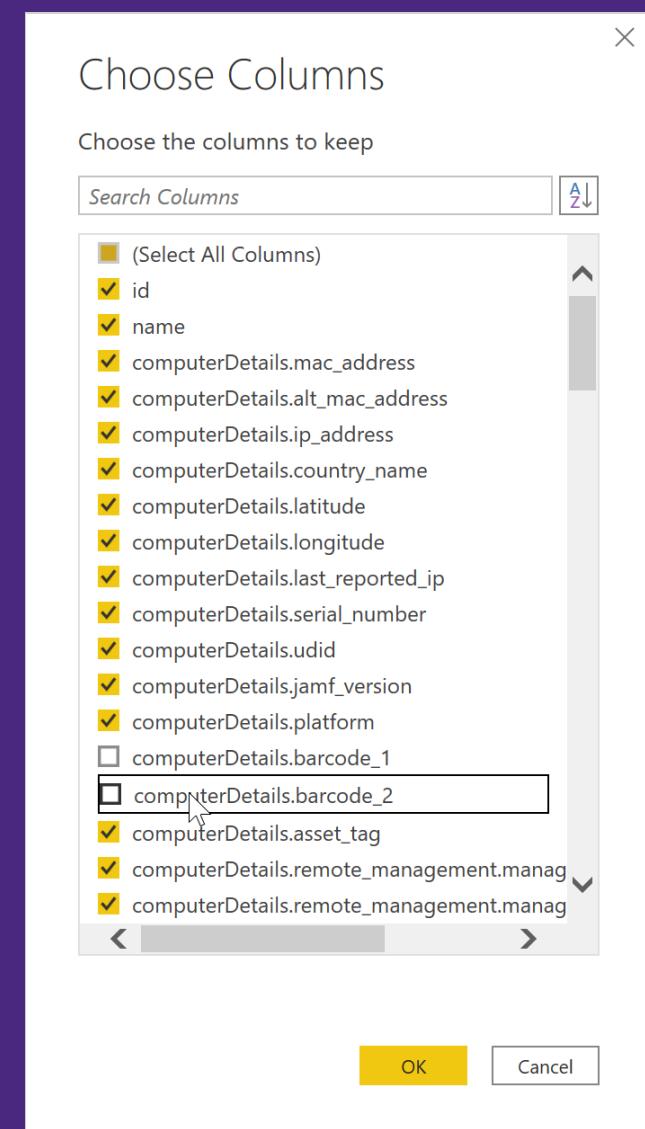
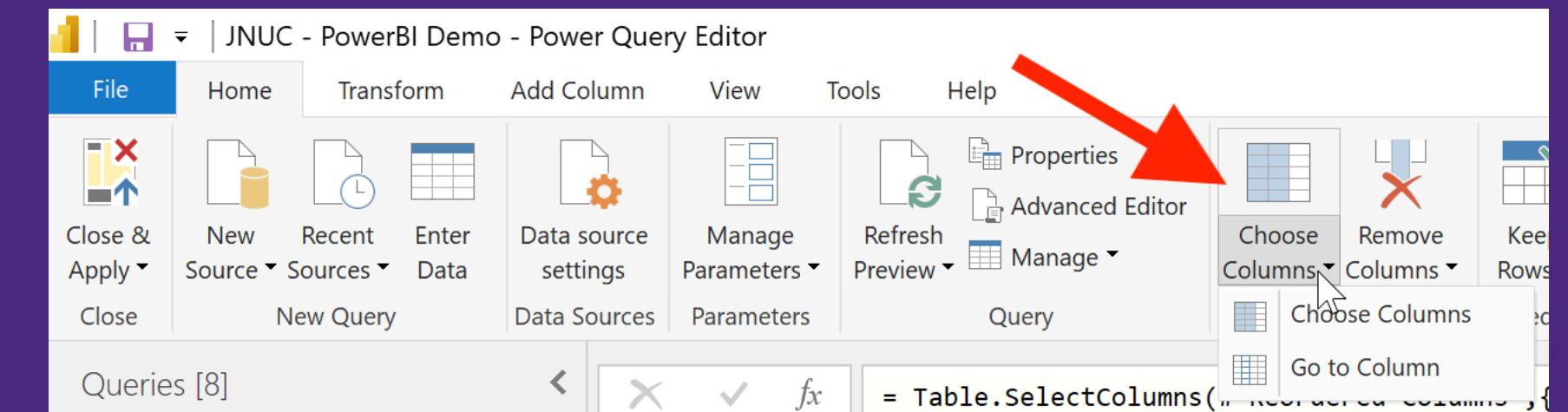
Query Editor Introduction

- Select Computers
 - Refresh Data if prompted
 - Each row is a computer
 - Each column is an inventory item
- Only a preview of the dataset
- All computers may not be shown



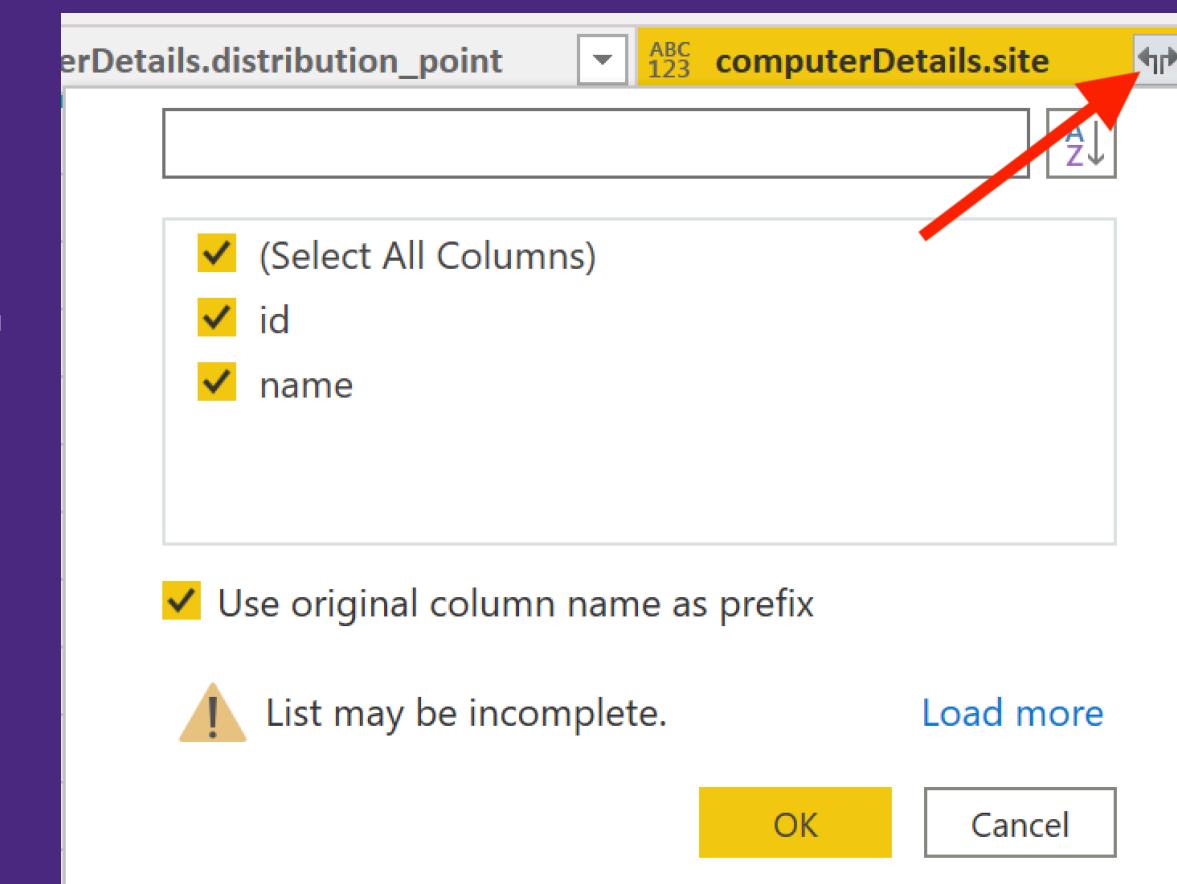
Query Editor Cleanup

- Certain fields we don't use
 - Declutter by removing them
- From Home Tab
 - Choose Columns
 - Uncheck unwanted columns
 - Click OK



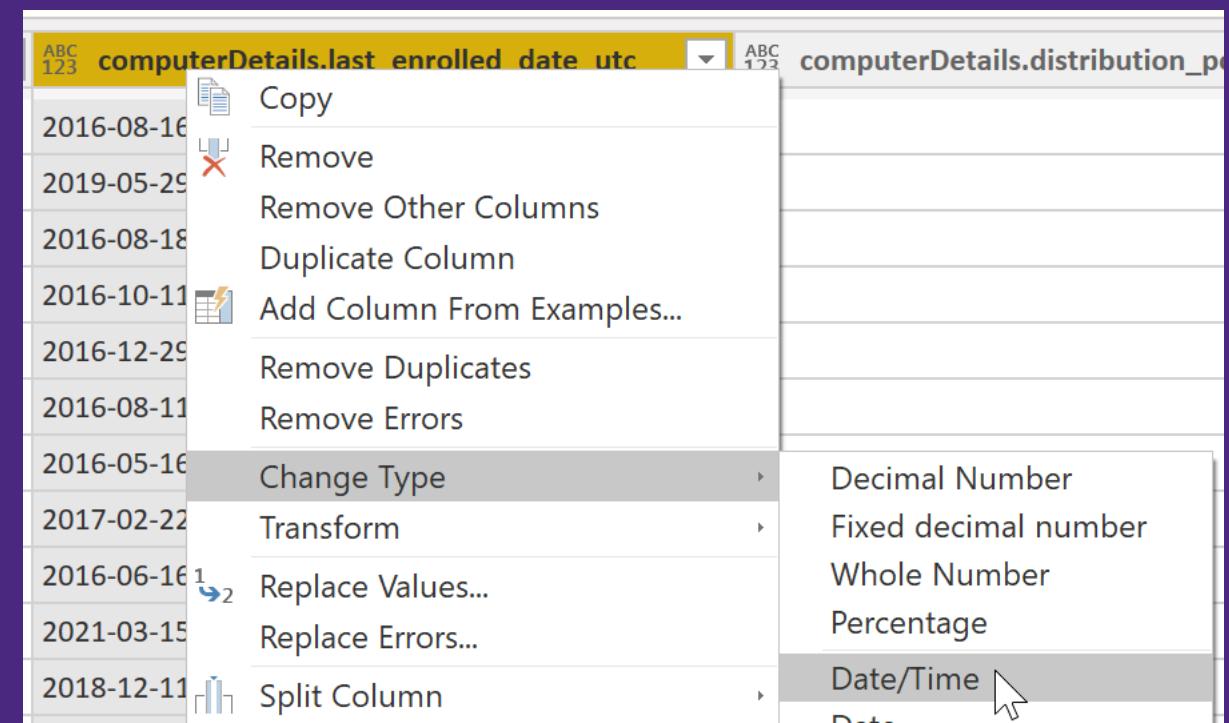
Query Editor Expand Columns

- A Column may be a ‘record’ with a set of fields
- Expand icon in the column header
 - Click OK
- Do the same for
 - ComputerDetails.management_status



Query Editor Data Types

- Dates auto set the type as Text
- Right click column header
 - Change Type
 - Date/Time
 - Icon changes to calendar



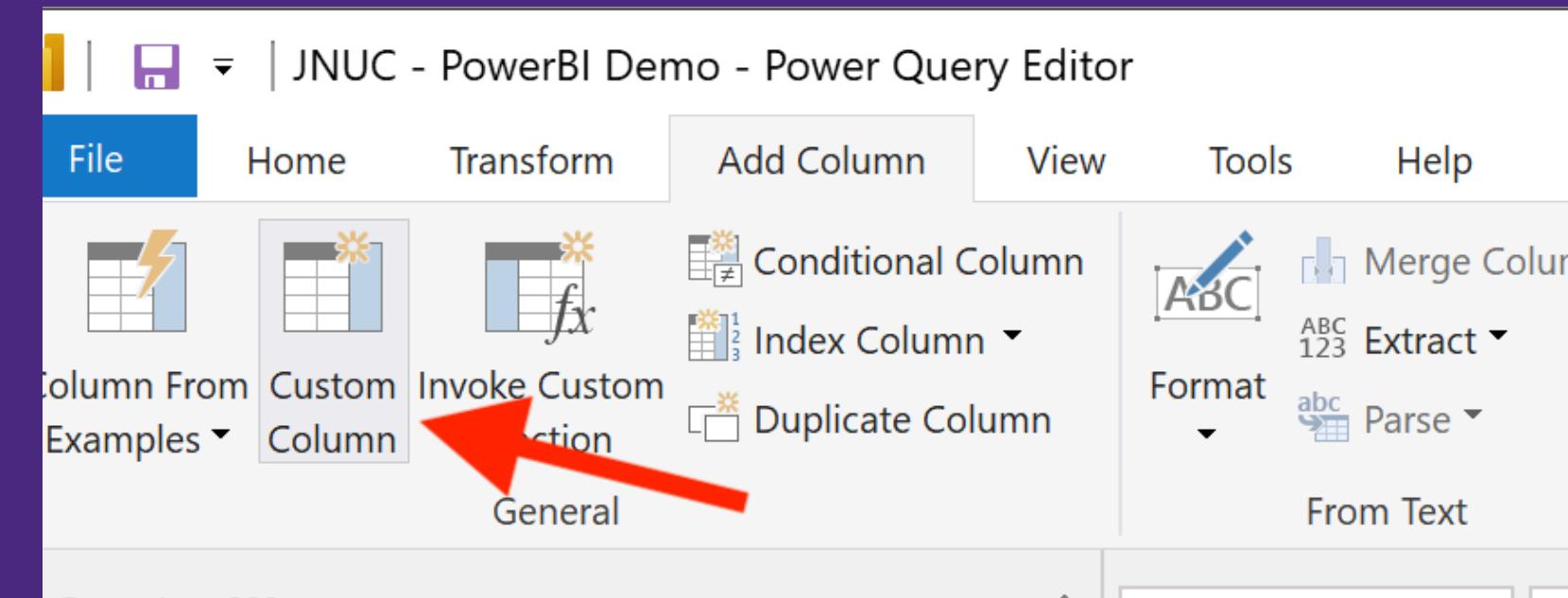
computerDetails.last_enrolled_date_utc
8/16/2016 3:50:27 PM
5/29/2019 9:53:25 AM
8/18/2016 10:01:34 AM
10/11/2016 1:34:09 PM
12/29/2016 1:30:09 PM
8/11/2016 2:03:29 PM

Query Editor Calculated Columns

- Column that specifies major release as Catalina or Big Sur
 - OS Version is given to us by build number (19H1417) or version (10.15.7)
 - RegEx is not supported in Power BI

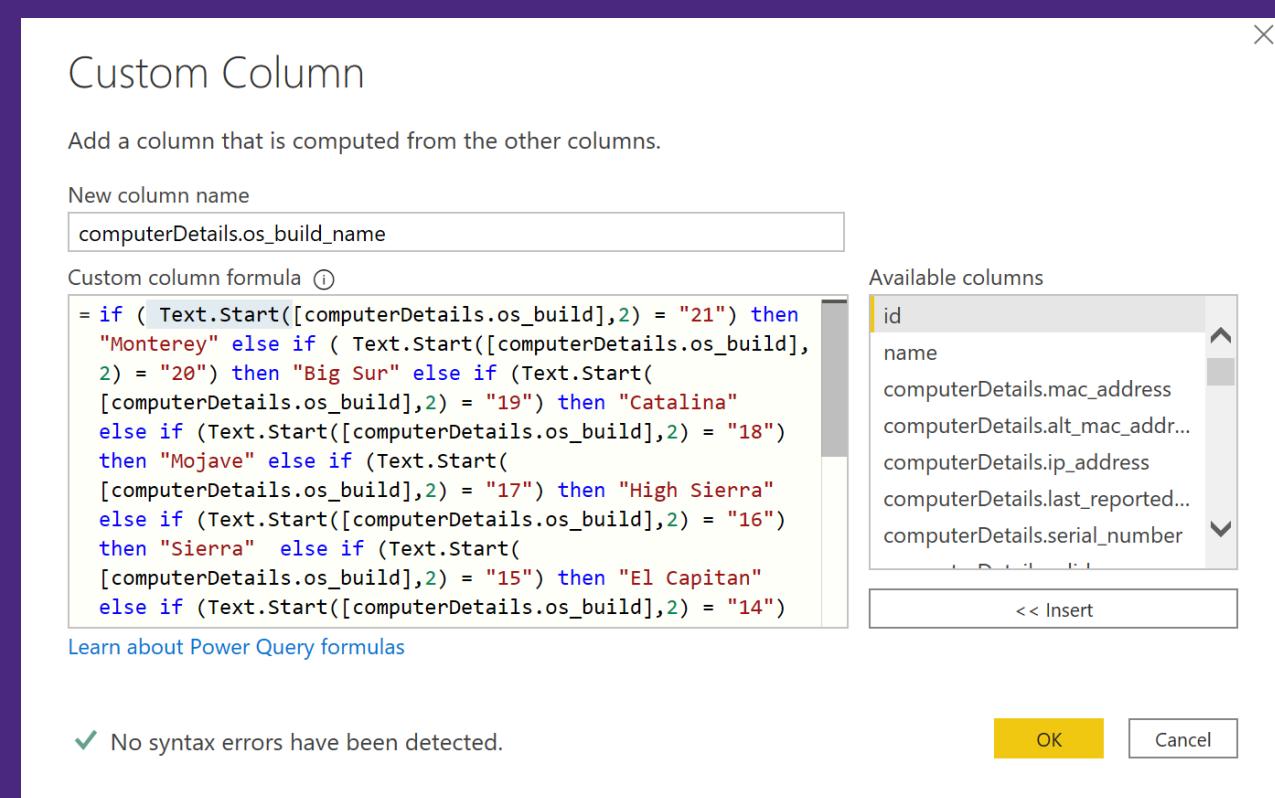
Query Editor Calculated Columns

- Uses DAX or M formula language
- From Computers query
 - Click Add Column tab
 - Click Custom Column



Query Editor Calculated Columns

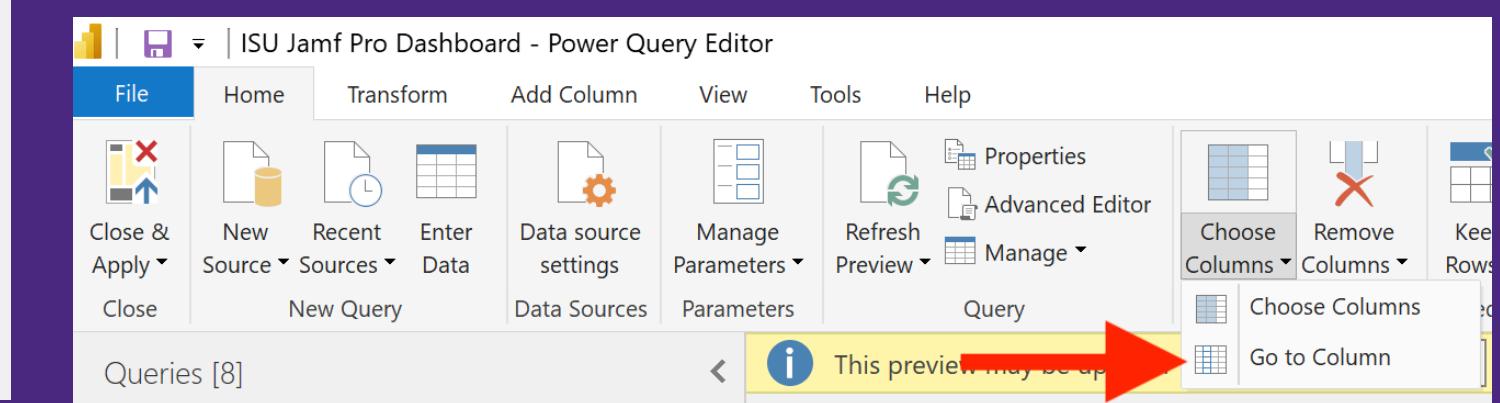
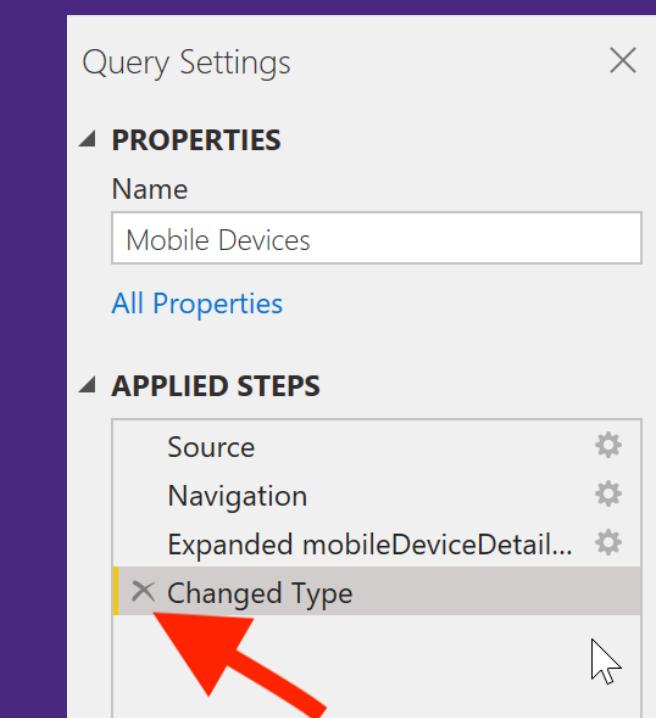
- Name the New Column
- Insert formula code
- Click OK
- Values populate in new column



ABC 123	computerDetails.os_build_name
	Big Sur
	Mojave
	Mojave
	Mojave
	Catalina
	Mojave

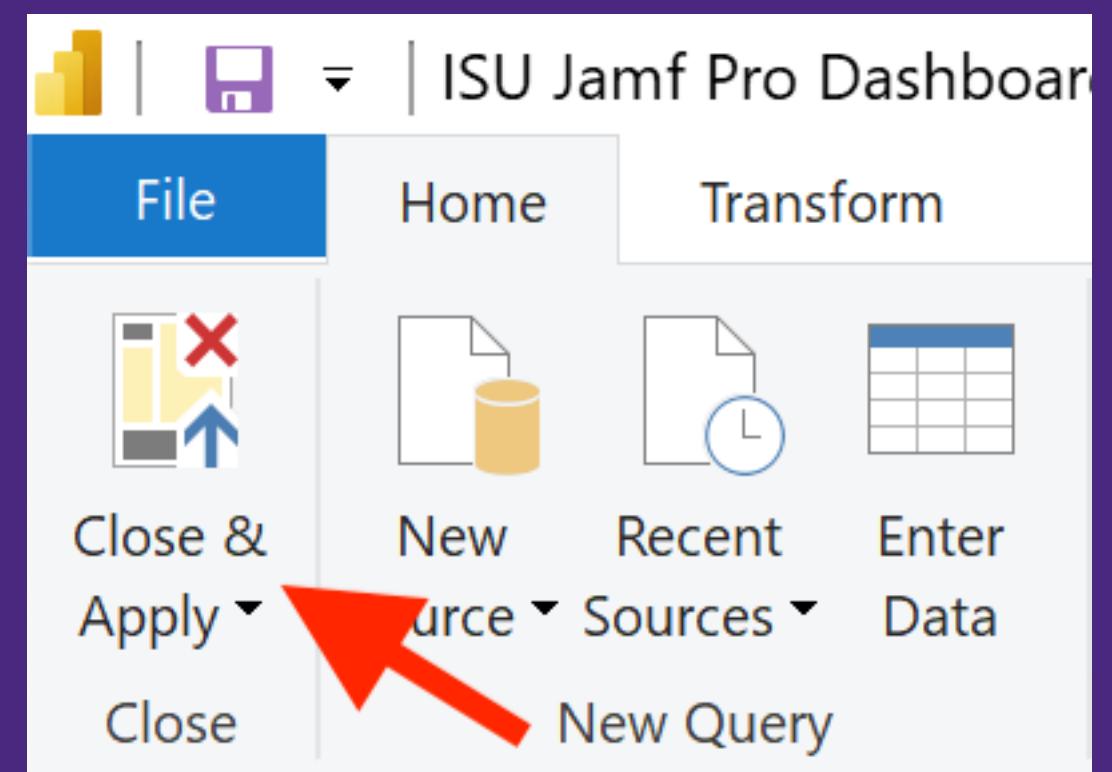
Query Editor Tips

- Mess Up?
 - Right hand column
 - Click X next to step
- Quickly go to Column
 - Choose Column - Go To Column



Query Editor Finish

- When finished click Close & Apply
- This will force a recalculate
 - Coffee break



Visualizations

What are Measures

- Useful for counts, sums, averages of items
 - Number of iMacs
 - Number Macs running macOS Big Sur
- Thanks to Slingpine
- <https://go.iastate.edu/4WTPS5>

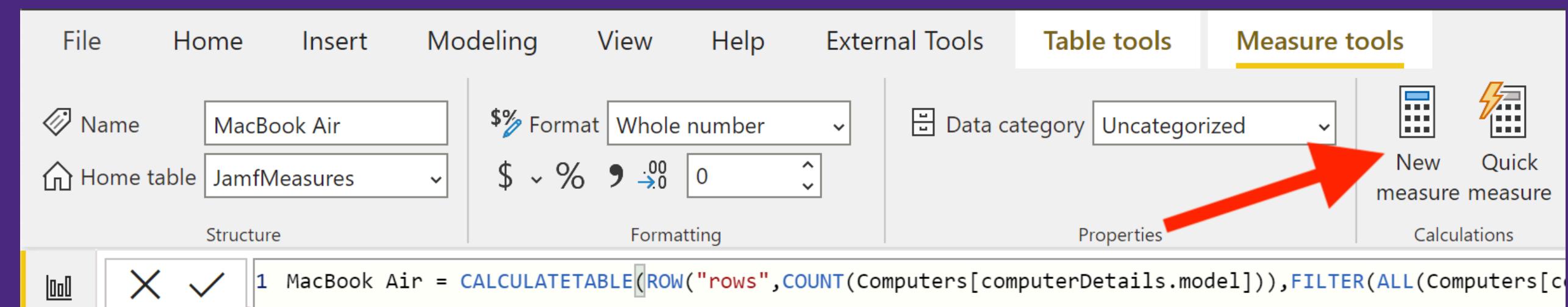


Measures

- Calculations built off of DAX, similar to Excel
- Calculated when they are used in a visualization (on-the-fly)
- Can reference other measures
 - This is considered best practice

Creating Measures

- From Home Tab
 - New Measure
 - Rename Measure
 - Enter DAX formula



Measure macOS Versions

- Uses our custom calculated column
- Count Macs with 10.15
 - macOS 10.15 =
CALCULATETABLE(ROW("rows",COUNT(Computers[computerDetails.os_build_name])),FILTER(ALL(Computers[computerDetails.os_build_name]),SEARCH("Catalina",Computers[computerDetails.os_build_name],1,0)))

Measure Apple Silicon Macs

- Count of Apple Silicon Macs
 - Apple Silicon =
CALCULATETABLE(ROW("rows",COUNT(Computers[computerDetails.processor_architecture])),FILTER(ALL(Computers[computerDetails.processor_architecture]),SEARCH("arm64",Computers[computerDetails.processor_architecture],1,0)))

Measures Tip

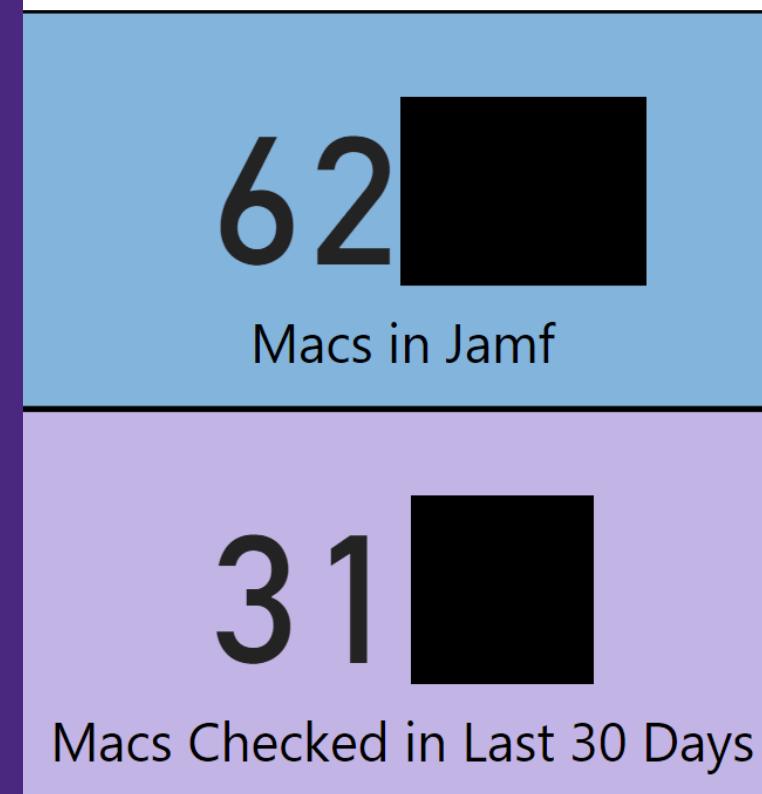
- Put all Measures in another query
 - Clean and easy to find
 - <https://go.iastate.edu/KNHST5>



Getting started with Visualizations

- The Jamf Power BI: Module 2 is great introduction to the interface
- <https://go.iastate.edu/R87QAF>





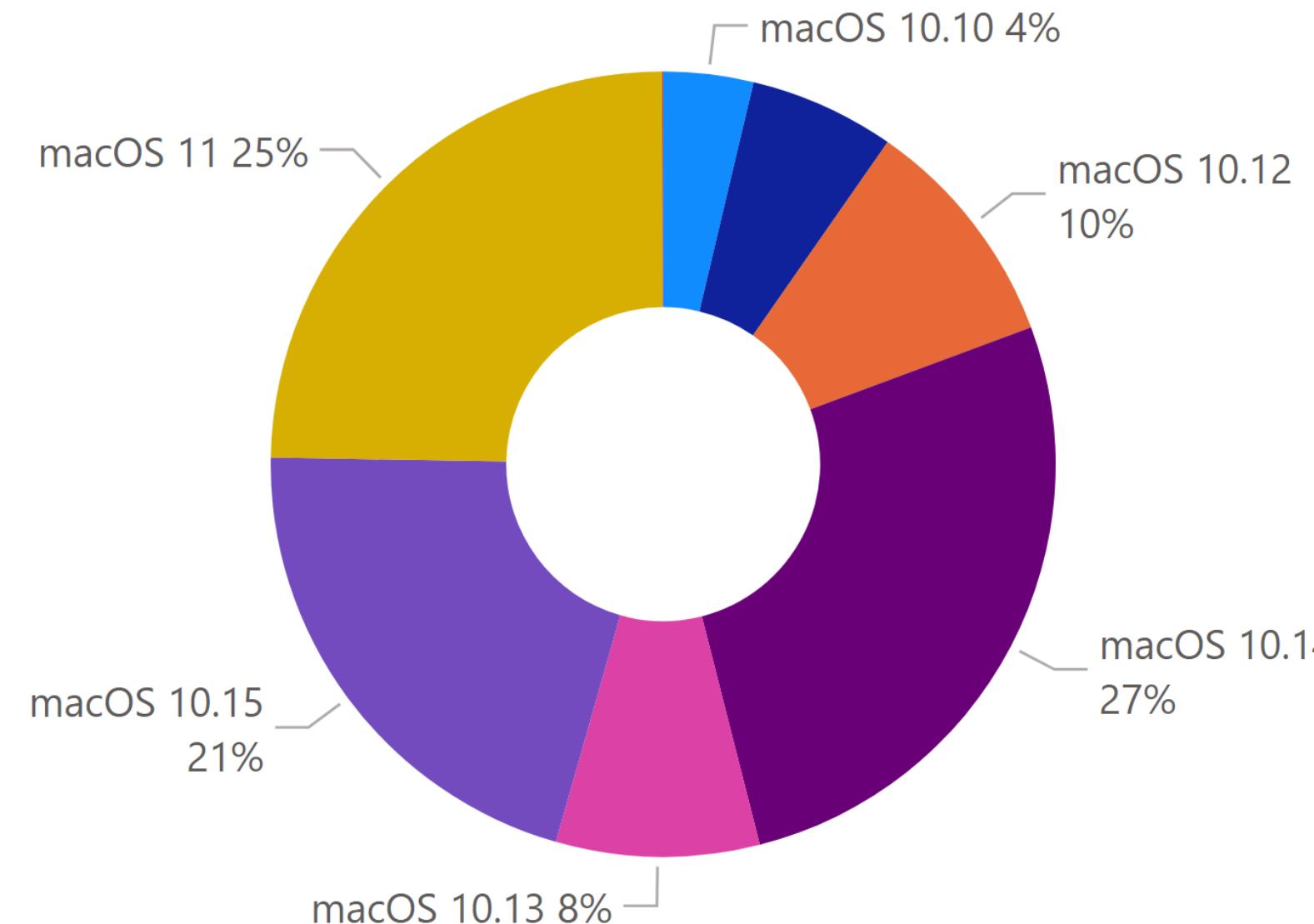
20
Desktop

42
Laptop

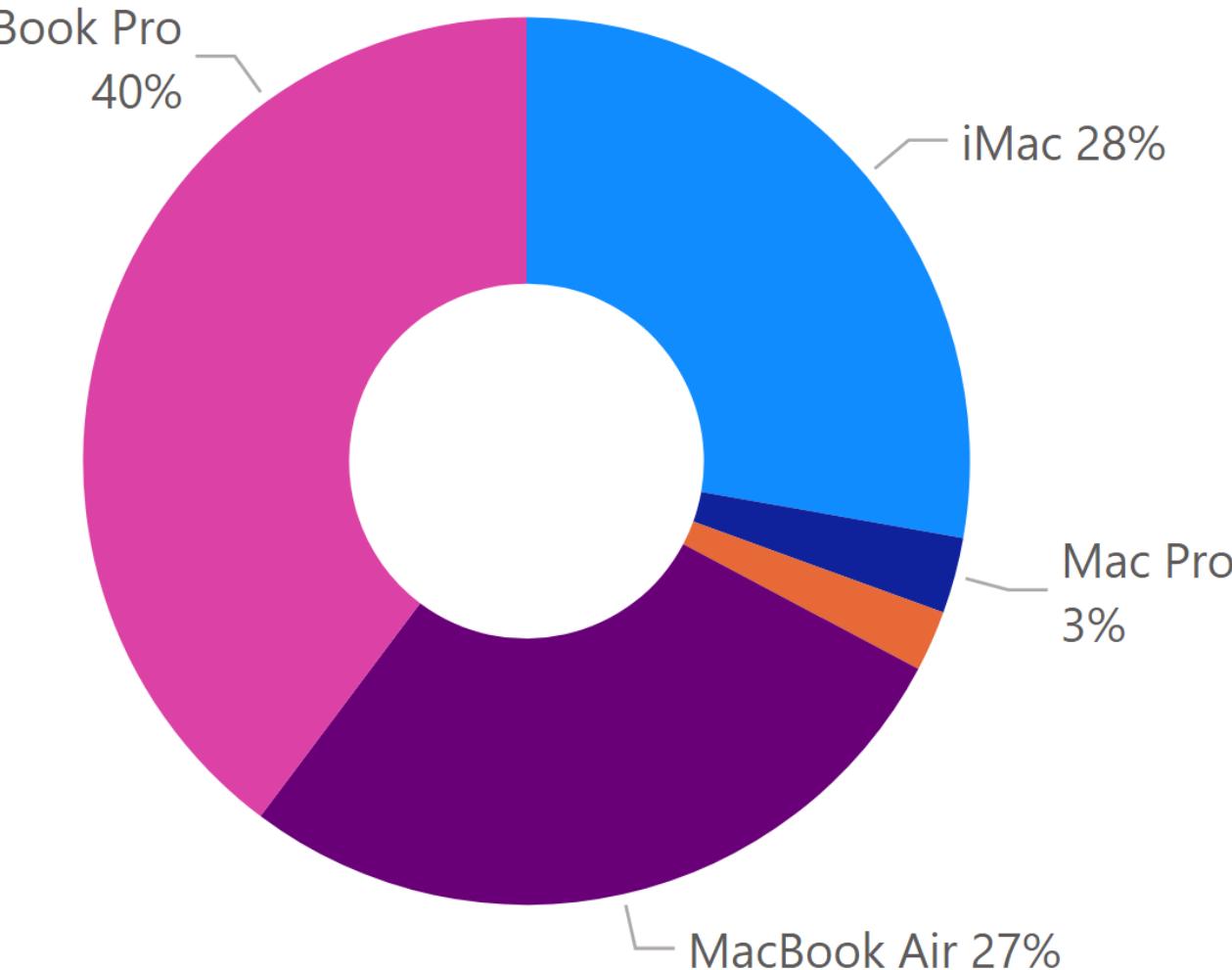
30
Enrolled via DEP

43
Enrolled in Last 30 days

MacOS by Version



Mac By Model



Filter by Architecture

- Select all
- arm64
- i386
- x86_64

Filter by Managed

- Select all
- FALSE
- TRUE

Filter by Jamf Site

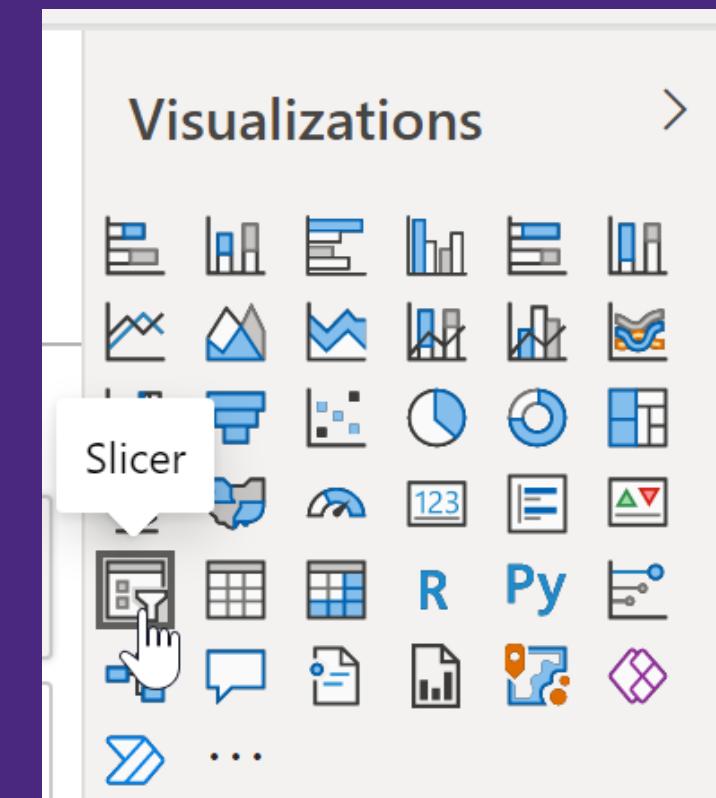
- Search
- Athletics
 - Biology IT
 - Biology IT Labs
 - BUS

Why this visualization?

- Summary of Macs in our environment
 - Model, OS Version, Enrollment, Check-in
 - Filter On
 - Site
 - Managed
 - Architecture (Apple Silicon/Intel)

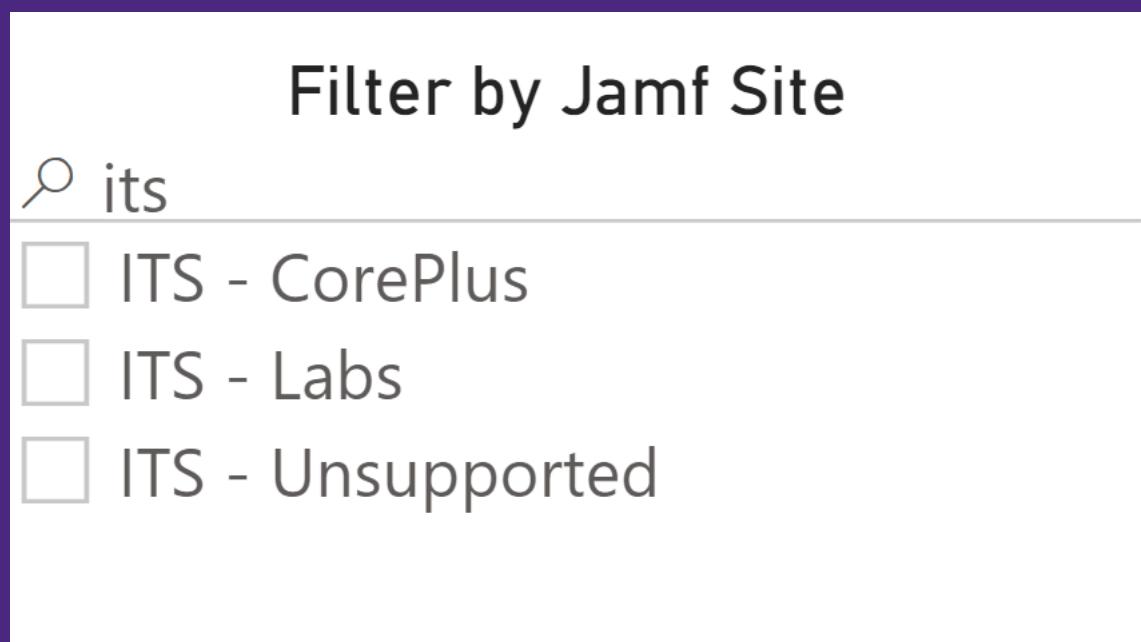
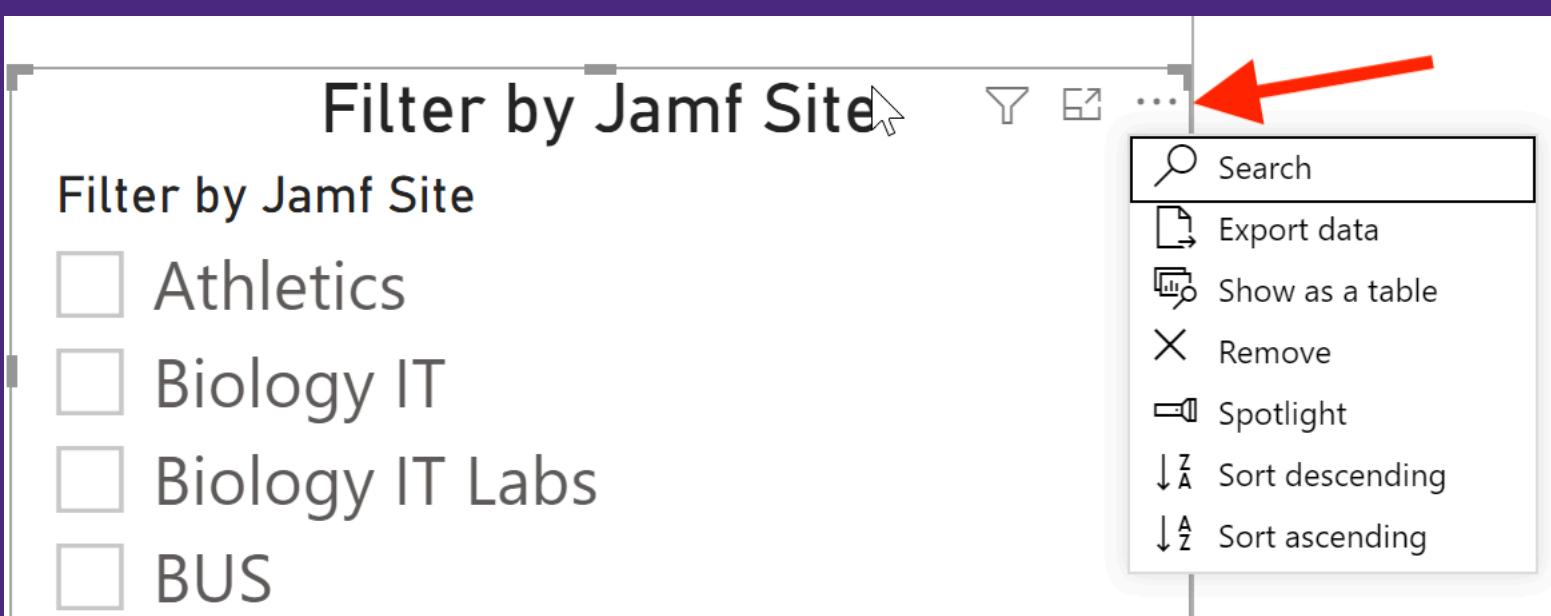
Slicers

- Slicers allow user to sort and filter report
 - Filter by Sites
 - Filter by managed devices
 - Filter by arm64/Intel

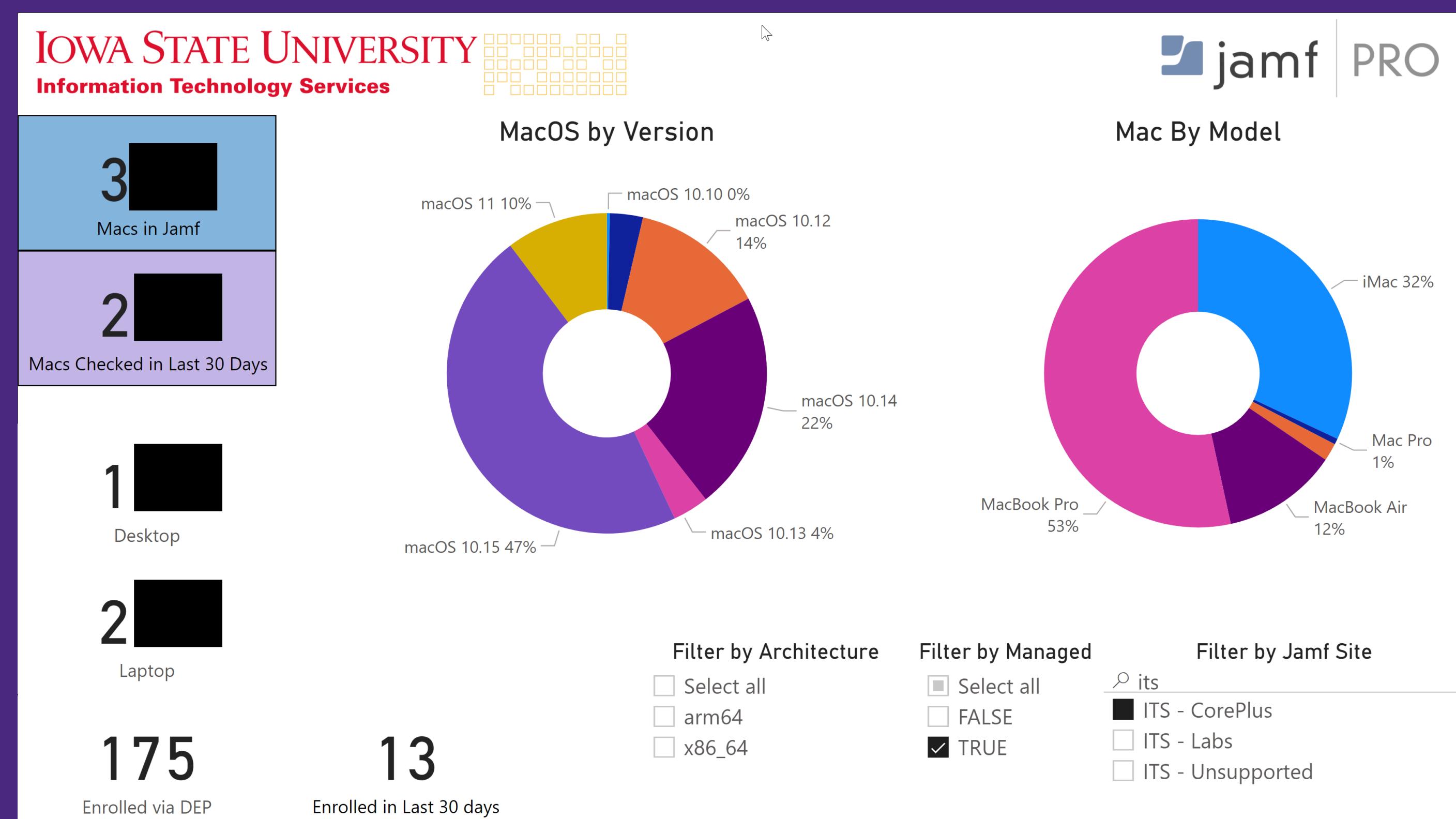


Slicers Search Tip

- To Add Search
 - Click on 3 dots on slicer
 - Click Search
 - Makes slicer searchable



Summary using Slicers



Visualization App Search

- Identify Macs with specific app (on-the-fly)
 - Filter by Site
 - Filter by App name
 - Filter by App version
- Total number of Macs with app / version

Visualization App Search

Computer Name	Site	Application Name	Application Version	Username	Real Name	Last Check-In
MacBook Pro	B	AAM Registration Notifier.app	10.0.0.40	li		8/27/2021 10:42:50 PM
MacBook Pro	B	AAM Registration Notifier.app	3.0.64.0	li		8/27/2021 10:42:50 PM
MacBook Pro	B	AAM Registration Notifier.app	7.0.0.485	li		8/27/2021 10:42:50 PM
MacBook Pro	B	AAM Updates Notifier.app	9.0.0.281	li		8/27/2021 10:42:50 PM
MacBook Pro	B	AAMLauncherUtil.app	10.0.0.49	li		8/27/2021 10:42:50 PM
MacBook Pro	B	AASlapp.app	10.0.0.40	li		8/27/2021 10:42:50 PM
MacBook Pro	B	ACCFinderBundleLoader.app	2.2.0.256	li		8/27/2021 10:42:50 PM
MacBook Pro	B	Acrobat Update Helper.app	1 . 0 . 22	li		8/27/2021 10:42:50 PM
MacBook Pro	B	Activity Monitor.app	10.14	li		8/27/2021 10:42:50 PM
MacBook Pro	B	Adobe Acrobat Updater.app	1 . 0 . 22	li		8/27/2021 10:42:50 PM
MacBook Pro	B	Adobe Application Manager.app	10.0.0.49	li		8/27/2021 10:42:50 PM
MacBook Pro	B	Adobe Application Updater.app	3.7.5.291	li		8/27/2021 10:42:50 PM
MacBook Pro	B	Adobe Flash Player Install Manager.app	34.0.0.184	li		8/27/2021 10:42:50 PM
MacBook Pro	B	adobe_licutil.app	10.0.0.34	li		8/27/2021 10:42:50 PM
MacBook Pro	B	adobe_licutil.app	7.0.1.109	li		8/27/2021 10:42:50 PM
MacBook Pro	B	adobe_licutil.app	Adobe License Utility 2.0.0.10 (BuildVersion: 2.0; BuildDate: Tue Jul 05	li		8/27/2021 10:42:50 PM

Filter by Jamf Site **Filter by Application Name** **Filter by Application Version**

Search Search Search

(Blank)
 Athletics
 Biology IT
 Biology IT Labs
 BUS
 CALS - Admin IT
 CALS - AGRON
 CALS - ANSCI
 CVM
 DOR
 DSN - Faculty
 DSN - Labs
 DSN - Students

Select all
 (Blank)
 .app
 Video Media Player.app
 @_time.app
 🎩 Sudoku Daily.app
 --.app
 0xED.app
 1&1 Surf-Stick.app
 1_1 drop_stock.exe
 1_1 interface_prefs.exe
 1_2 doc_color.exe
 1_2 traits_box.exe

(Blank)
 "10.0.0.192"
 "10.0.1.285"
 "11.0.0.243"
 "11.0.1.266"
 "11.5.0.476"
 "11.5.1.499"
 "11.5.4.613"
 "11.5.5.676"
 "5.5.0.257"
 "6.0.1.240"
 "7 0 0 118"

725.28K
Computers with Selected App

Visualization App Search Main

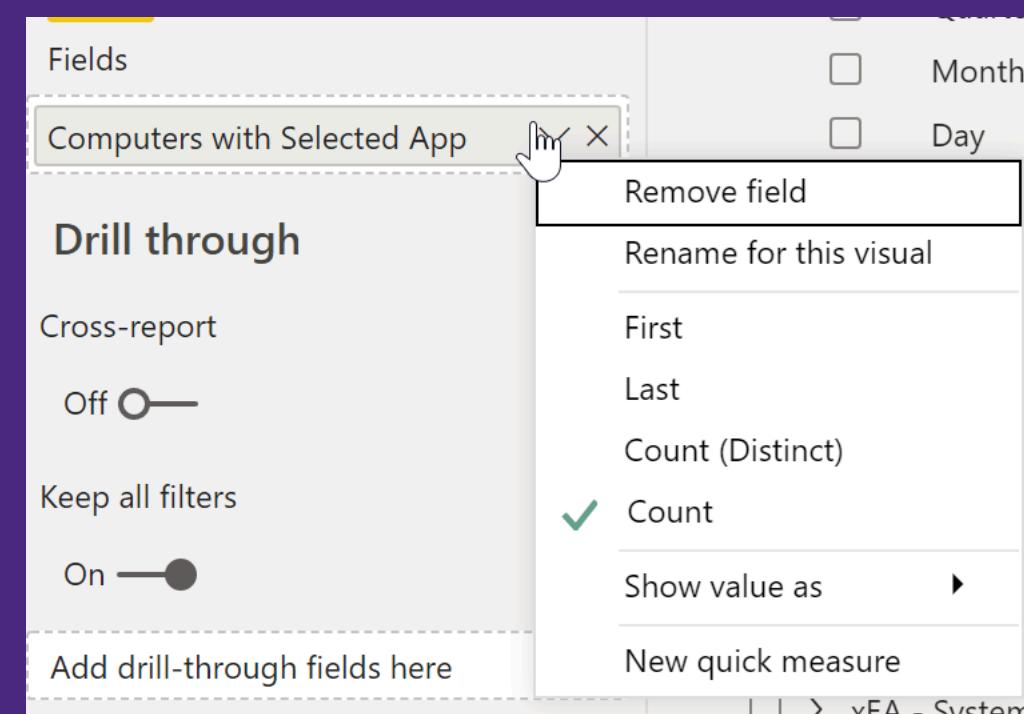
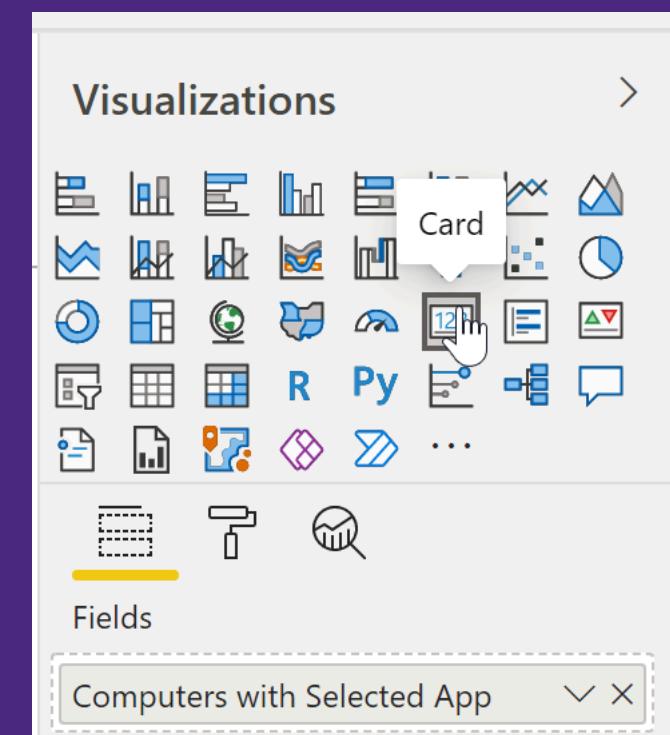
- Computers
 - name, site.name, username, real_name, last_contact_time
- Applications
 - computerApplications.name and version

Visualization App Search Slicers

- Slicers
 - Computers
 - site.name
 - Computers - Applications
 - computerApplications.name
 - computerApplications.version

Visualization App Search Count

- Computers with Selected App
 - Computers - Applications
 - computerApplications.name
 - Use Card Visualization
 - Use Count



Visualization App Search

Computer Name	Site	Application Name	Application Version	Username	Real Name	Last Check-In
A2	Eng	Microsoft Word.app	16.52.21080801	er		8/27/2021 8:50:02 PM
A3	IT	Microsoft Word.app	16.52.21080801	jw	Wit	8/26/2021 2:08:40 PM
A3	IT	Microsoft Word.app	16.52.21080801	sfr	Sor	8/27/2021 10:51:09 PM
A3	IT	Microsoft Word.app	16.52.21080801	m	Lee	8/27/2021 8:54:10 PM
A3	IT	Microsoft Word.app	16.52.21080801	aj	Cas	8/27/2021 10:12:52 PM
A3	IT	Microsoft Word.app	16.52.21080801	at	Ath	8/27/2021 10:15:55 PM
A3	IT	Microsoft Word.app	16.52.21080801	co	Cor	8/27/2021 10:56:24 PM
A3	IT	Microsoft Word.app	16.52.21080801	w	Wor	8/26/2021 8:21:03 PM
A3	Eng	Microsoft Word.app	16.52.21080801	ph	He	8/27/2021 9:22:04 PM
A3	Eng	Microsoft Word.app	16.52.21080801	jo	Sev	8/20/2021 8:28:45 PM
A3	Eng	Microsoft Word.app	16.52.21080801	cu	Cui	8/27/2021 9:49:43 PM
A3	Eng	Microsoft Word.app	16.52.21080801	sy	Yao	8/27/2021 8:44:18 PM
A4	IT	Microsoft Word.app	16.52.21080801	ca	Alm	8/27/2021 10:31:26 PM
A4	IT	Microsoft Word.app	16.52.21080801	sig	Igra	8/27/2021 9:59:17 PM
A4	IT	Microsoft Word.app	16.52.21080801	sl	Lef	8/27/2021 9:51:31 PM
A4	IT	Microsoft Word.app	16.52.21080801	br	Me	8/27/2021 8:39:35 PM

Filter by Jamf Site Filter by Application Name Filter by Application Version

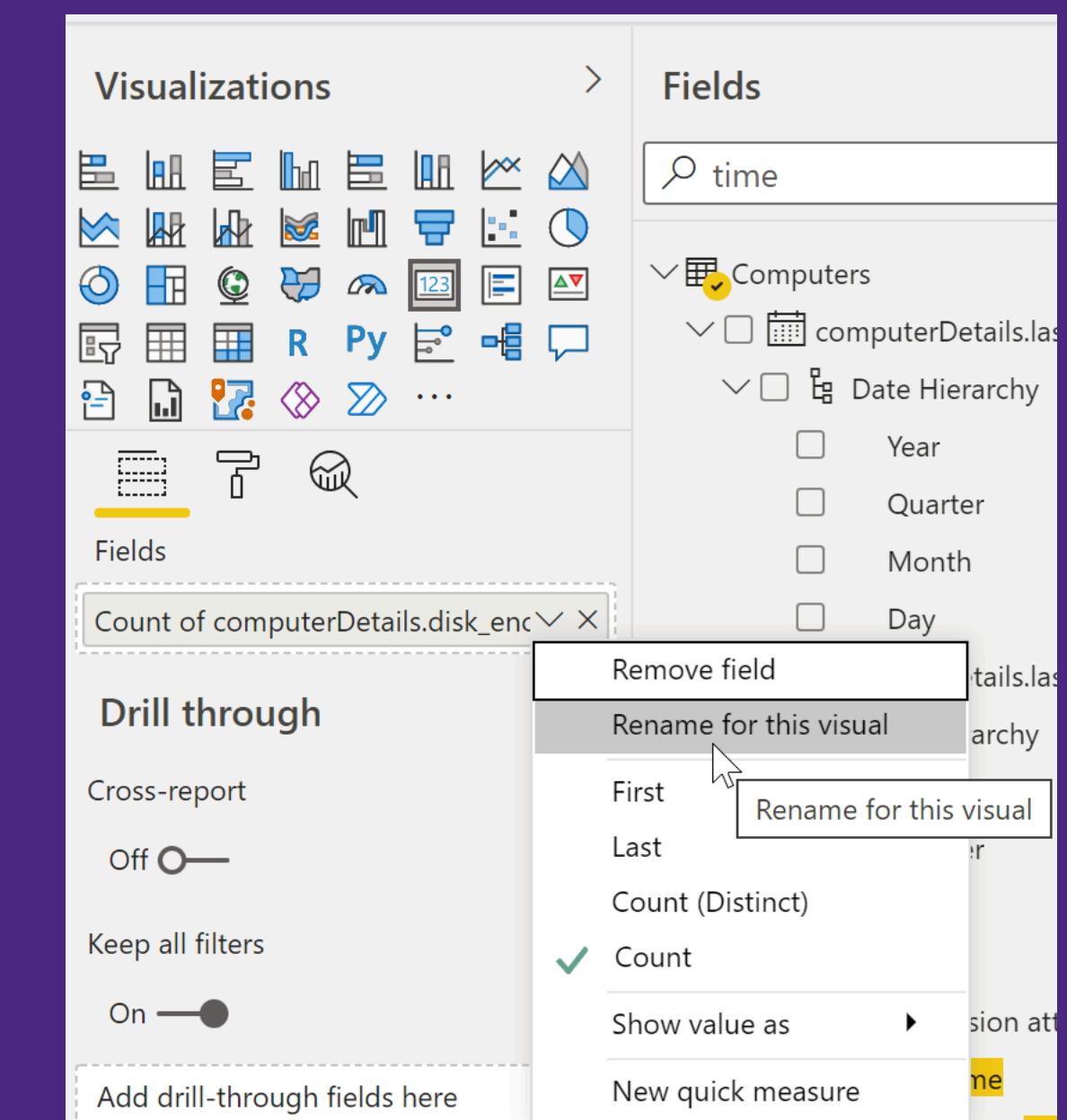
Search word 52

(Blank) Microsoft Word.app 16.13.18052304
 Athletics
 Biology IT
 Biology IT Labs
 BUS
 CALS - Admin IT
 CALS - AGRON
 CALS - ANSCI
 CVM
 DOR
 DSN - Faculty
 DSN - Labs
 DSN - Students

964 Computers with Selected App

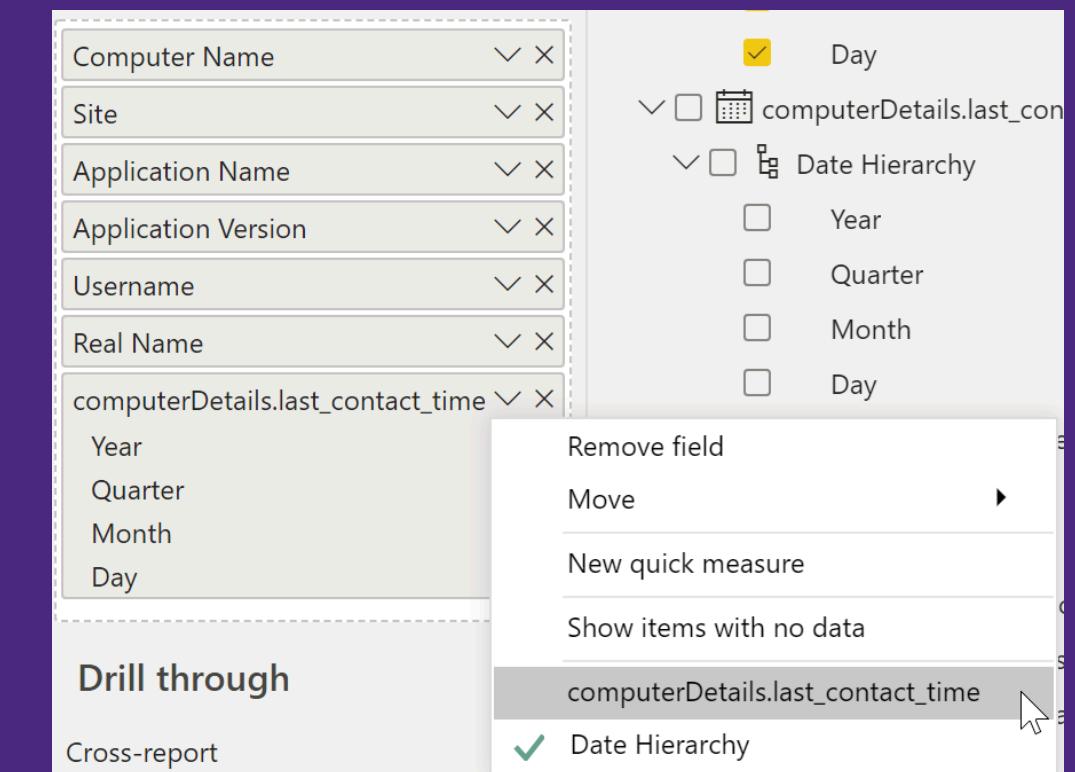
Visualization Tips

- Rename Field
 - Click on Visualization
 - Click down icon
 - Select Rename for this visual
 - Provide a new name
 - Also changes title for the visualization



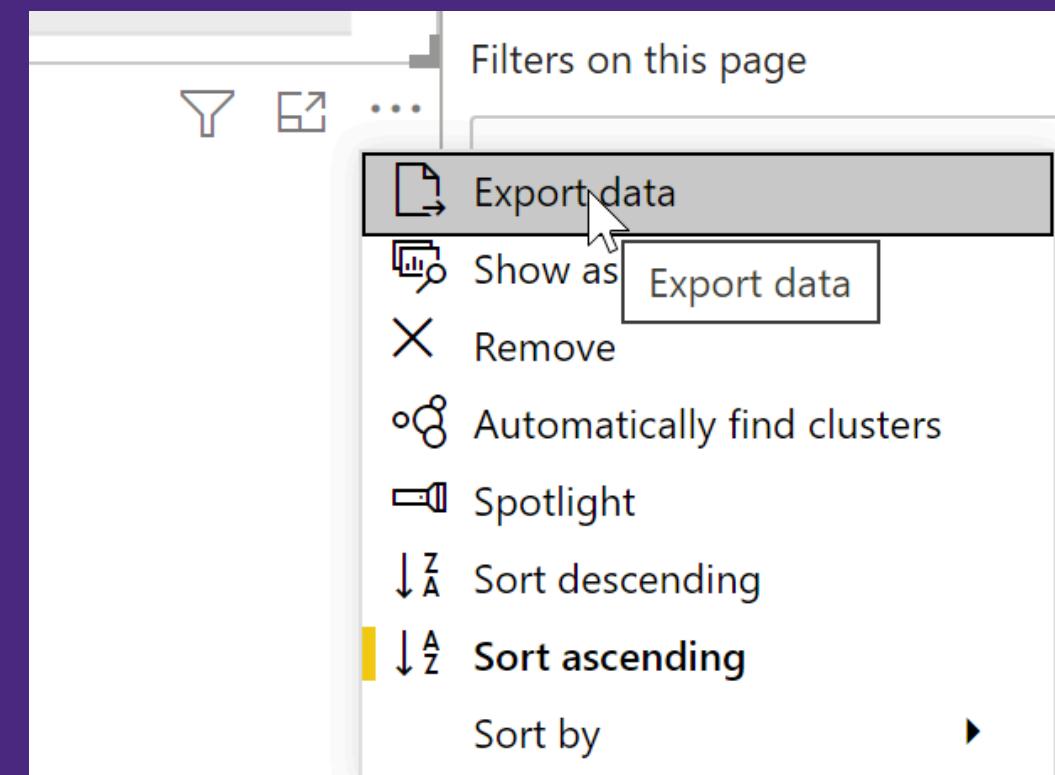
Visualization Tips

- Working with dates
 - Adding to a visual automatically includes Year, Quarter, Month, Date
 - To get full date
 - Click down icon
 - computerDetails.last_contact_time



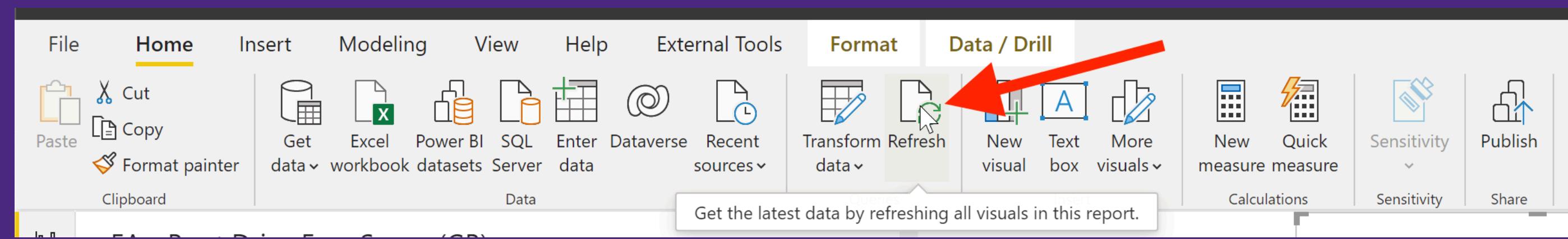
Visualization Tips

- Quickly Export Visualization
 - Click on three dots in corner
 - Select Export Data
 - Save as csv



Refresh Data

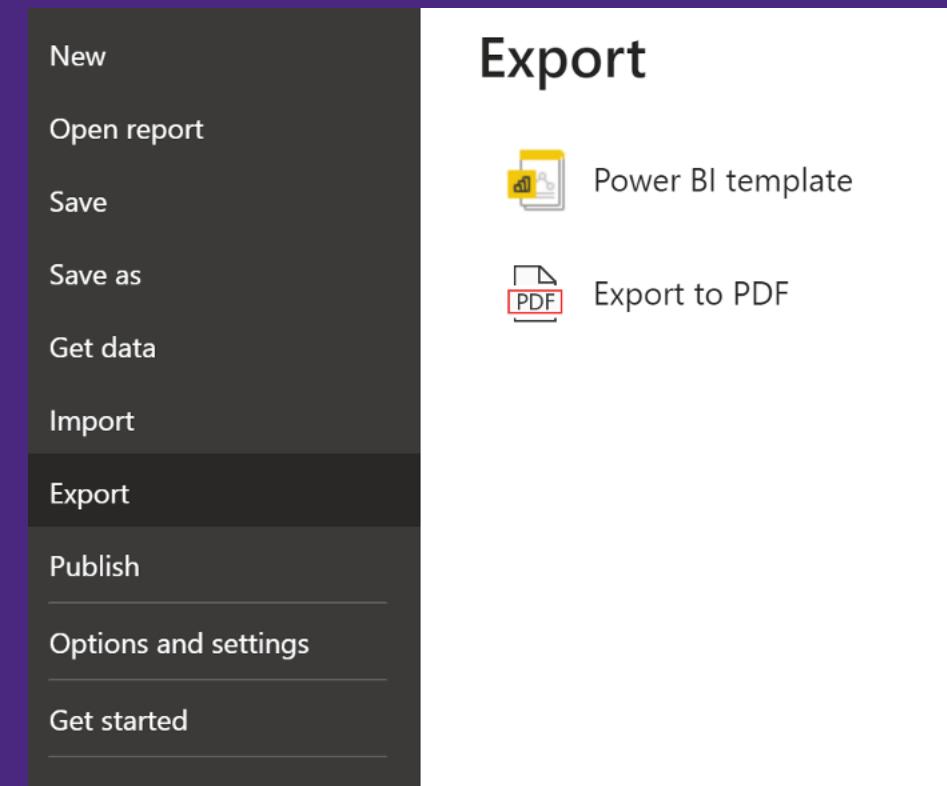
- Data from Jamf isn't refreshed automatically
 - Can force a refresh to get fresh data
 - Click Refresh from Home tab



Publish and Share

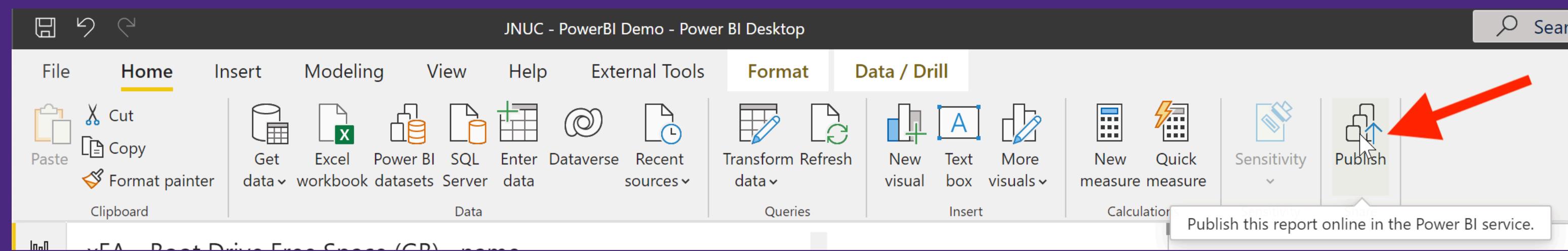
Publish

- Can just save as pbix file
 - Limited to person with the file
- Export
 - Go to File -> Export
 - Export to PDF
 - Also export to PowerBI Template



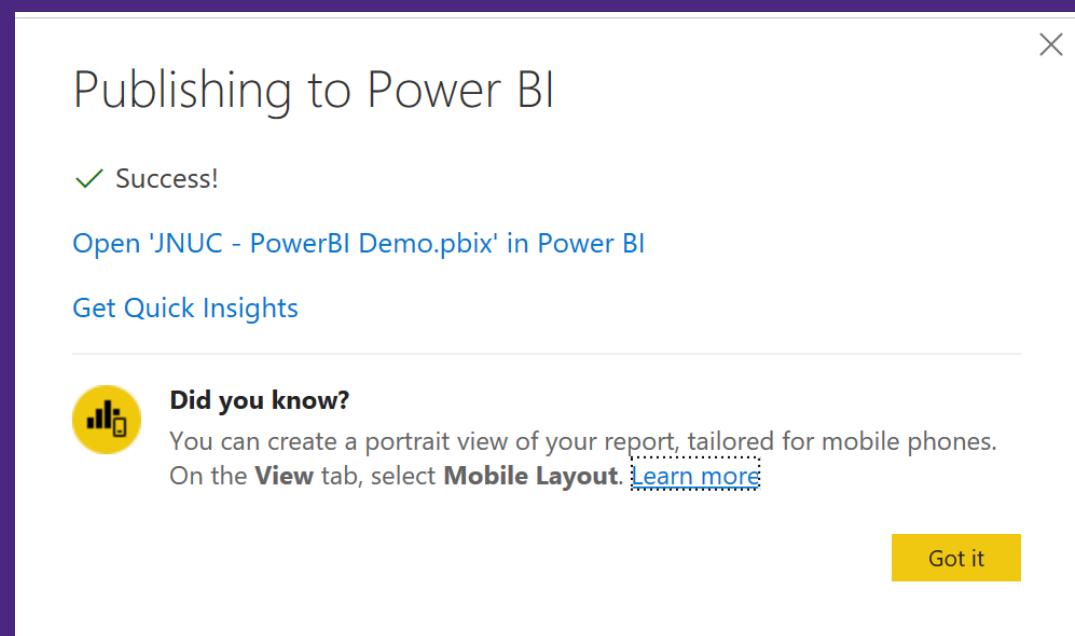
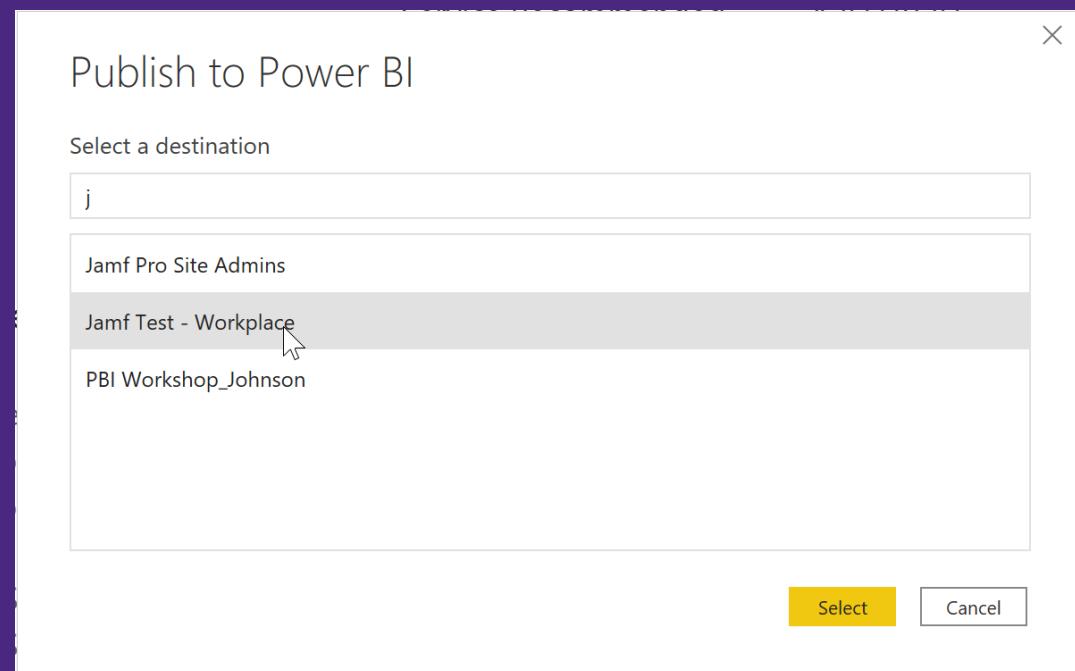
Publish

- Publish allows to share with others via web
 - Clear report settings (slicers)
 - Refresh before Publish



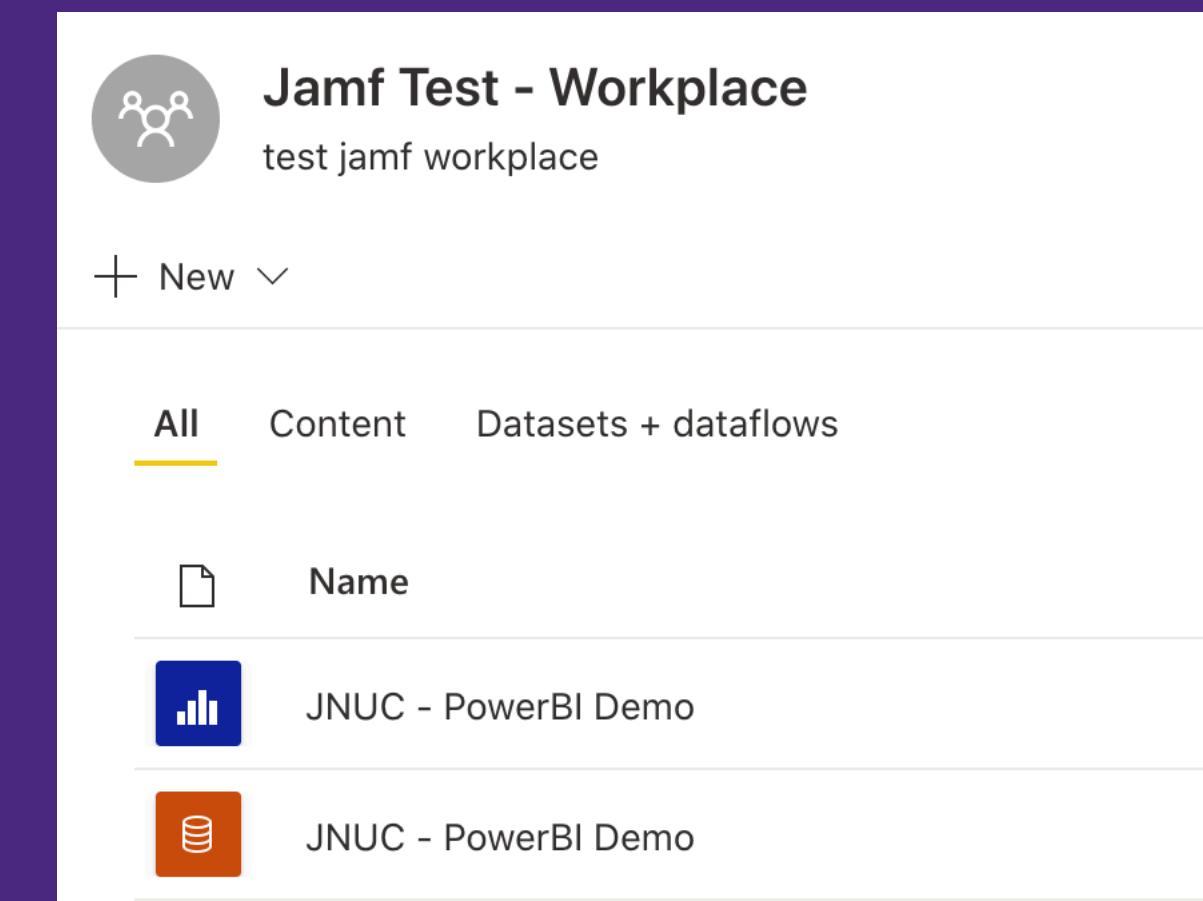
Publish

- Prompt to sign in
 - Prompt for destination
 - Select a destination
 - Wait for Success message



Power BI Service

- Go to app.powerbi.com
 - Go to the Workspace
 - 2 Files
 - Report and Dataset

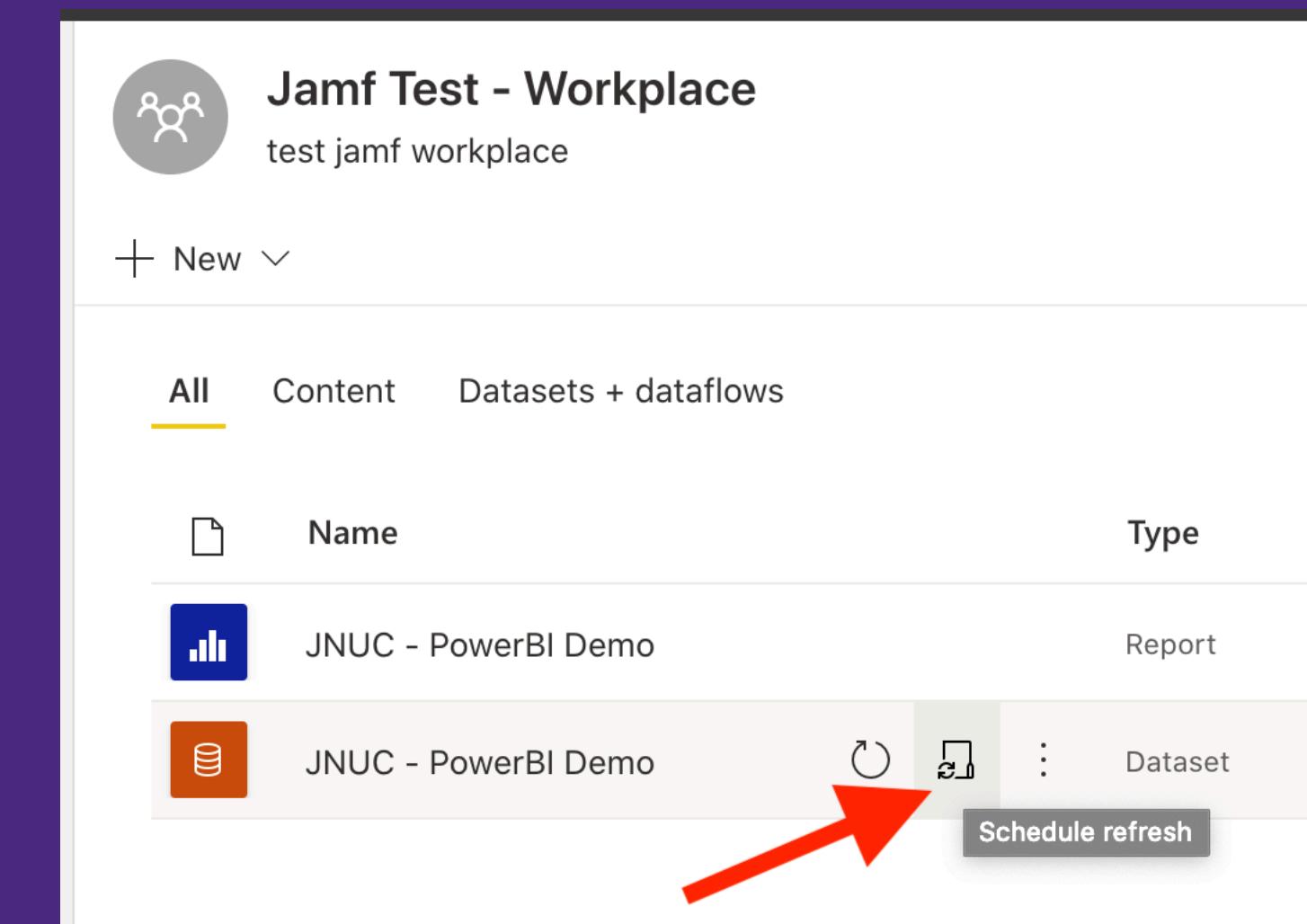


Create Power BI App

- Collection of dashboard & reports
- Created by Power BI designer
 - The person with Power BI Pro account
- Apps can be shared to groups or people
 - Permissions are easier to manage
- Docs: <https://go.iastate.edu/1P8lKA>

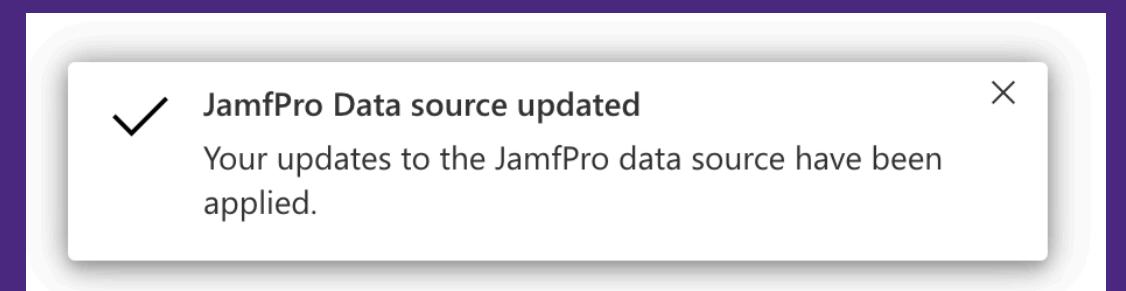
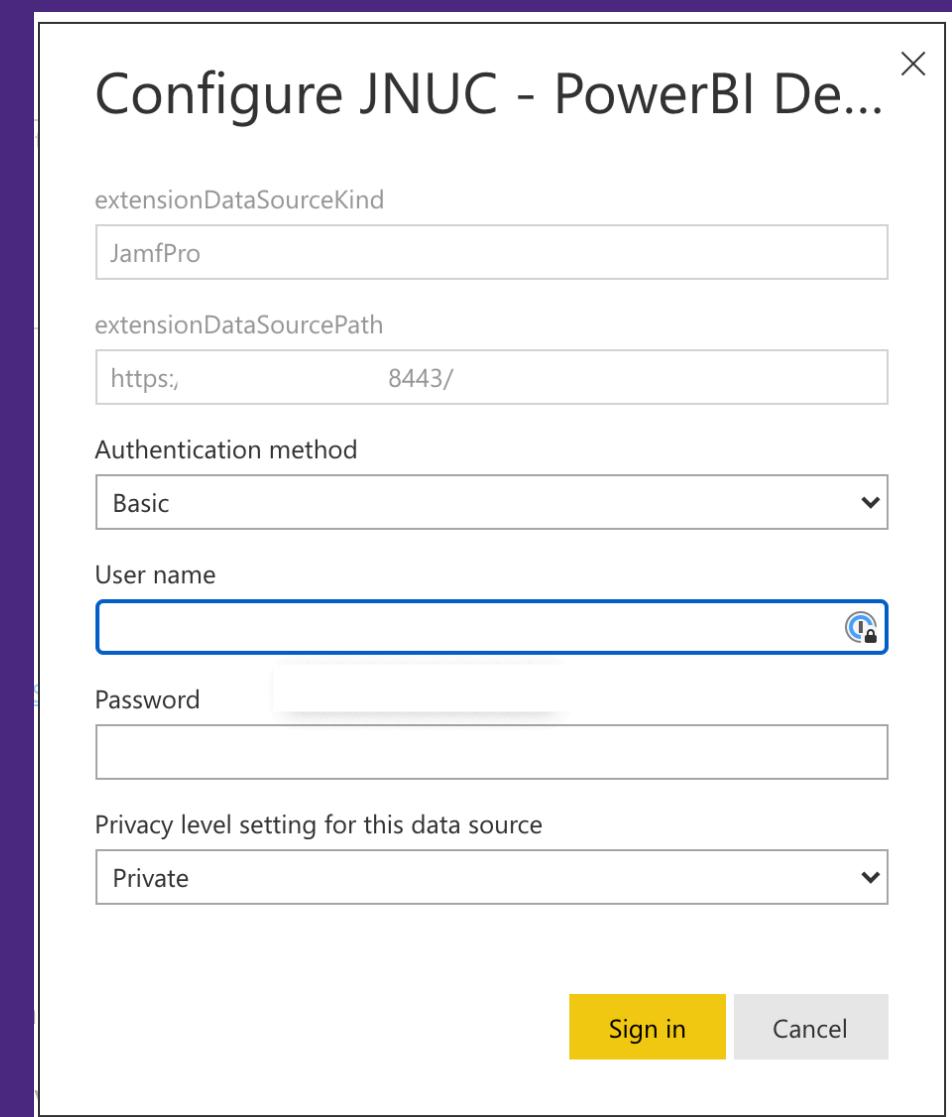
Keeping Data Current

- Scheduled Refresh keeps data current
- In Workspace
 - Find Dataset
 - Click Folder
 - Schedule Refresh



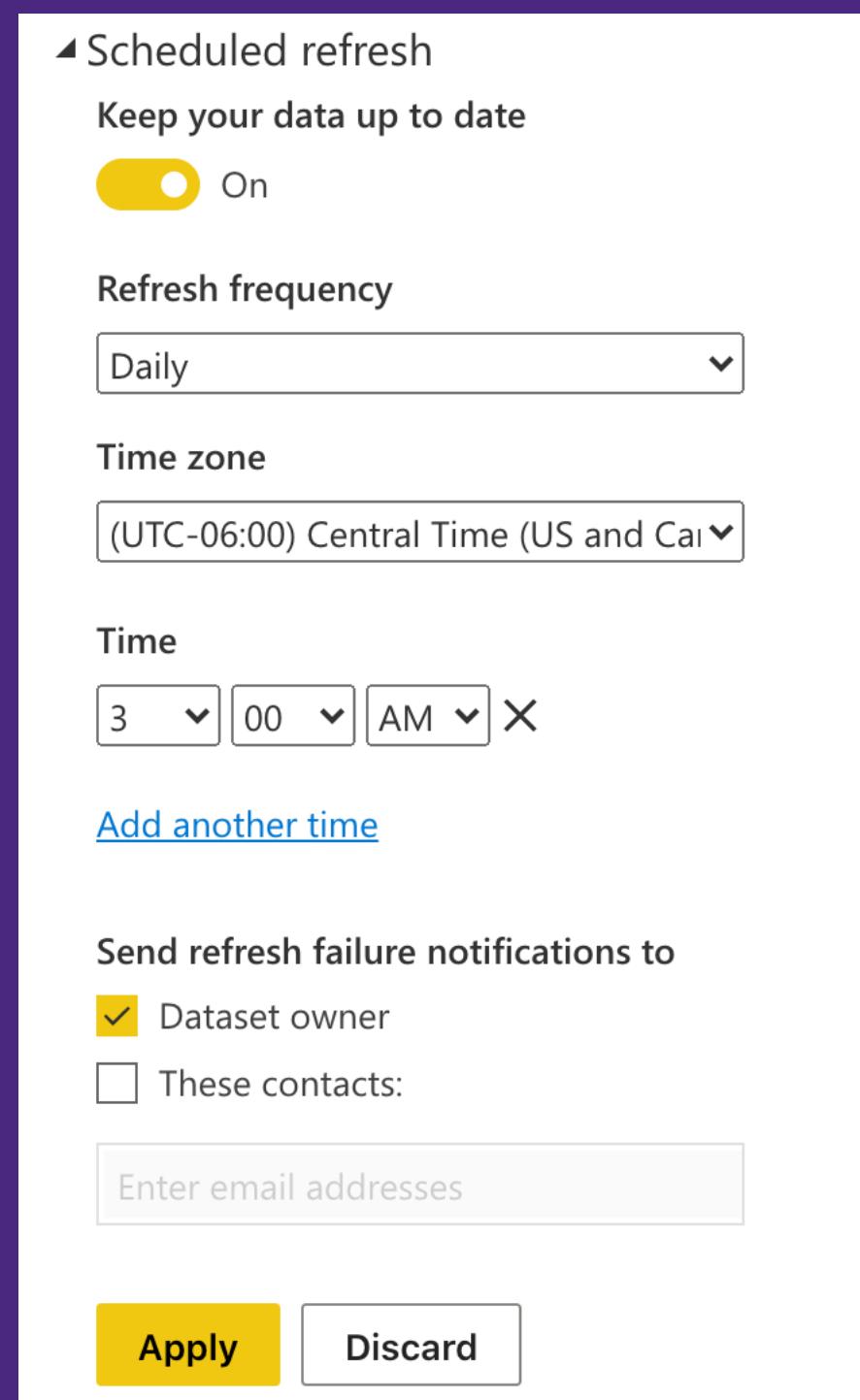
Keeping Data Current

- Error: Your Data source can't be refreshed
 - Click Edit Credentials
 - Enter Jamf Power BI info
 - Click Sign In



Keeping Data Current

- Click Scheduled refresh
- Check Keep your data up to date
 - Set refresh frequency & time zone
- Click Add another time
 - Specify time
- Click Apply



Additional Info

<https://github.com/technotica/PowerBI>



<https://community.jamf.com/t5/jamf-pro/show-off-your-reporting-dashboard/td-p/226296>

Thank you for listening!