

Getting Started with Lucidum

Lucidum Release 3.2.0

© Copyright 2022, Lucidum, Inc.

All rights reserved.

LIMITATION OF LIABILITY AND GENERAL DISCLAIMER

ALL INFORMATION AVAILABLE IN THIS GUIDE IS PROVIDED "AS IS," WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED. LUCIDUM™ AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT.

Although Lucidum[™] has attempted to provide accurate information on this Site, information on this Site may contain inadvertent technical inaccuracies or typographical errors, and Lucidum[™] assumes no responsibility for the accuracy of the information. Information may be changed or updated without notice. Lucidum[™] may also make improvements and / or changes in the products or services described in this Site at any time without notice.

Copyrights and Trademarks

Lucidum and the Lucidum logo are trademarks of Lucidum, Inc. in the United States, other countries, or both.

Below is a list of trademarks and service marks that should be credited to Lucidum, Inc. The ® and ™ symbols reflect the trademark registration status in the U.S. Patent and Trademark Office and may not be appropriate for materials to be distributed outside the United States.

• Lucidum™

The absence of a product or service name, slogan or logo from this list does not constitute a waiver of Lucidum's trademark or other intellectual property rights concerning that name, slogan, or logo. Please note that laws concerning use of trademarks or product names vary by country. Always consult a local attorney for additional guidance.

Other

If any provision of this agreement shall be unlawful, void, or for any reason unenforceable, then that provision shall be deemed severable from this agreement and shall not affect the validity and enforceability of any remaining provisions. This is the entire agreement between the parties relating to the matters contained herein. In the U.S. and other jurisdictions, trademark owners have a duty to police the use of their marks. Therefore, if you become aware of any improper use of Lucidum Trademarks, including infringement or counterfeiting by third parties, report them to Lucidum's legal department immediately. Report as much detail as possible about the misuse, including the name of the party, contact information, and copies or photographs of the potential misuse to: legal@lucidum.io

Table of Contents

| Introduction | 4 |
|--|----|
| First Step: User Accounts and Proxy Server | 5 |
| User Accounts | 5 |
| Proxy Server | 6 |
| Second Step: Connectors | 7 |
| Lucidum Home Page | 9 |
| Pie Charts | 10 |
| User Pie Chart | 11 |
| Asset Pie Chart | 12 |
| Data Pie Chart | 13 |
| Lists | 14 |
| Risk Score | 14 |
| New User Found | 14 |
| New Asset Found | 16 |
| New Data Found | 18 |
| Data Ingestion Flow | |
| Introduction to Report Center | 20 |
| UI Elements in Report Center | 20 |
| Viewing Dashboards | 21 |
| UI Elements in Charts | 22 |
| Use Cases for Report Center | 25 |
| All Assets and All Users | 25 |
| Assets Not Managed in Active Directory or LDAP | 26 |
| Assets without an Endpoint Agent | 27 |
| Assets without Encryption | 28 |
| Assets with End-of-Life Operating Systems | 28 |
| Disabled Users (Zombies) | 29 |
| Viewing Details in a Chart | |

Introduction

This Getting Started document includes information about the first few days with Lucidum and some examples of the type of information and insights you can expect.



First Step: User Accounts and Proxy Server

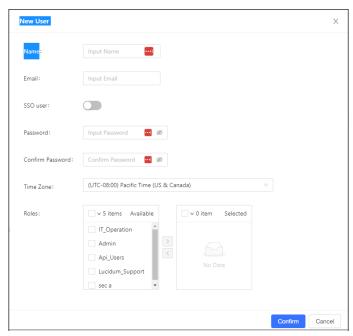
On day-one, the first steps to get up and running with Lucidum include:

- Creating user accounts.
- If you want Lucidum to ingest data from on-premises hardware and software, you must configure a proxy server.

Your Lucidum Account Representative will guide you through these tasks.

User Accounts

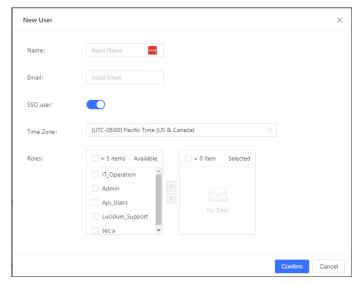
Lucidum includes role-based accounts, out of the box.



To define accounts in Lucidum, you provide:

- User Name
- Email address
- Password
- Time Zone
- Role

Lucidum integrates with most SSO providers. If your organization uses SSO, you need only specify the correct user name, email address, and toggle the SSO button.



Proxy Server

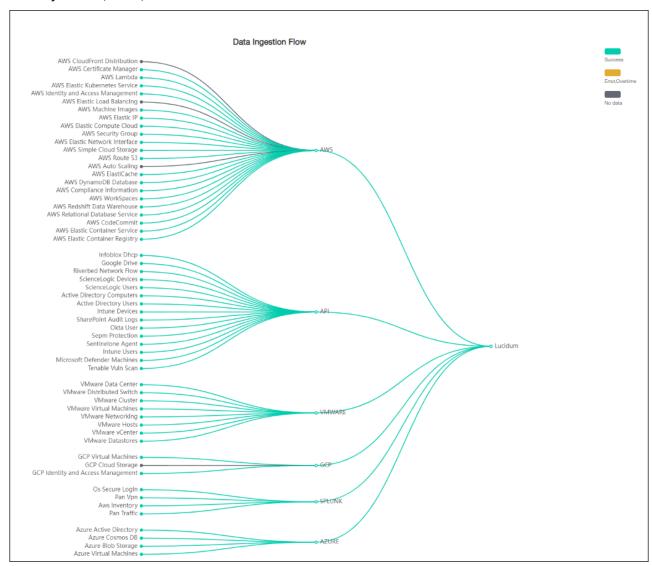
A proxy server allows Lucidum running on your SaaS account to fetch data securely from your on-premises assets.

For details, contact your Lucidum Account Representative and see the online documentation for Proxy Server (https://docs.lucidum.io/lucidum-help-center/Working-version/website/proxyserver).

Second Step: Connectors

To start using your Lucidum system and gaining insights into the security of your environment, you must first allow Lucidum to learn about your environment. To do this, Lucidum uses *connectors*.

Connectors enable Lucidum to ingest data from your environment and discover, identify, and classify assets, data, and users.



Lucidum includes pre-built connectors for the most commonly used solutions for security, vulnerability scanning, cloud, data warehouse, identity management, logs, network, endpoint management, IP management, file sharing, and devops. For details on connectors, see the online documentation for *Connectors* (https://docs.lucidum.io/lucidum-help-center/Workingversion/website/using-connectors).

To configure a connector, you provide credentials that allow Lucidum secure, read-only access to a deployed solution.

During deployment, your Lucidum Account Representative will work with you to determine which solutions to ingest data from and help you set up connectors.

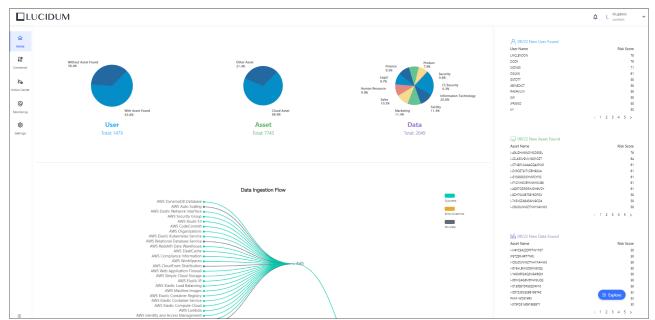
After ingesting data from connectors, Lucidum displays data on the home page and in dashboards.

Lucidum Home Page

After you have configured connectors, Lucidum can start ingesting data and displaying information about your environment. By default, Lucidum ingests data every 24 hours. After 24 hours, information appears on the **Home** page.

If you want to start ingesting data immediately, you can go to Monitoring > Data Ingestion Trigger and click **Ingest Data** to immediately start ingesting data.

The **Home** page is a convenient way to see what data Lucidum has ingested and check for any previously unknown users or assets.



By default, the home page displays three types of graphics:

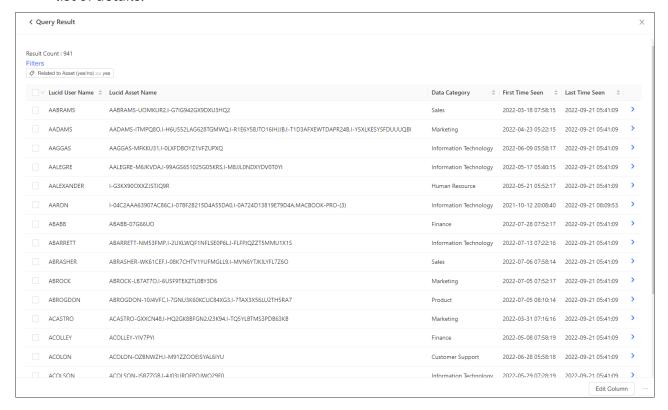
- · Pie-charts about Users, Assets, and Data
- Lists of:
 - users found and their associated risk scores
 - · assets found and their associated risk scores
 - data found and their associated risk scores
- Data Ingestion Flow that shows incoming data sources and the status of the connection to those data sources

Pie Charts

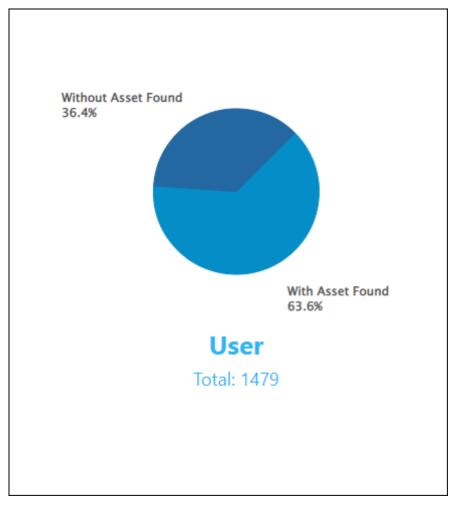
The default pie charts are for User, Asset, and Data.



- Clicking on a slice of any of the pie charts displays a detailed list of users, assets, or data.
- For example, in the User pie chart, clicking on the slice for with Asset Found displays this
 list of details:



User Pie Chart

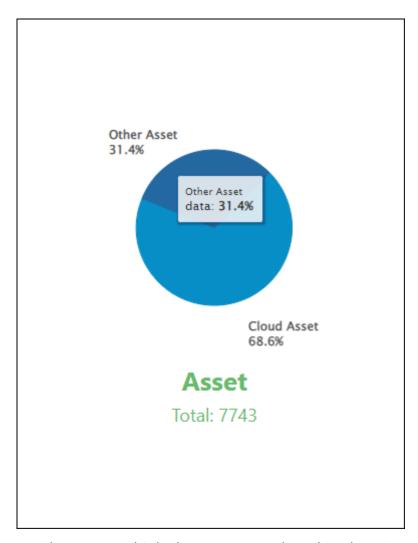


Lucidum uses machine learning to verify and de-duplicate all the users in your environment. Lucidum then aligns users with assets.

By default, the **User Pie Chart** displays:

- Users for whom Lucidum cannot find linked assets
- Users for whom Lucidum has found linked asset
- Clicking on a slice displays details about the users in the slice.

Asset Pie Chart

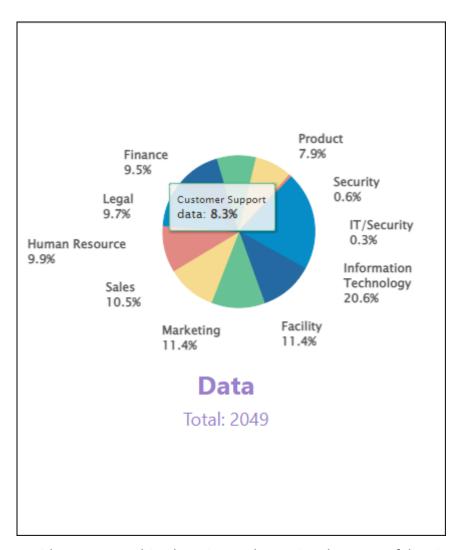


Lucidum uses multiple data sources and machine learning to discover all the assets in your environment.

By default, the **Asset Pie Chart** displays:

- Cloud assets
- Non-cloud assets
- Clicking on a slice displays details about the assets in the slice.

Data Pie Chart



Lucidum uses machine learning to determine the types of data in your environment. Lucidum then aligns that data with assets and users.

By default, the **Data Pie Chart** displays all the types of data in your environment.

Clicking on a slice displays details about the data in the slice.

Lists

The Home page includes lists of most recently found Users, most recently found Assets, and most recently found data. These lists include a *Risk Score*.

Risk Score

Lucidum calculates Risk Score using proprietary rule-based algorithms and machine learning algorithms. The risk score comprises information that Lucidum has discovered about the asset or user combined with the security risk for the data associated with the asset or user.

The lowest possible risk score is "1". The highest possible score is unbounded; there is no defined highest possible value for risk score.

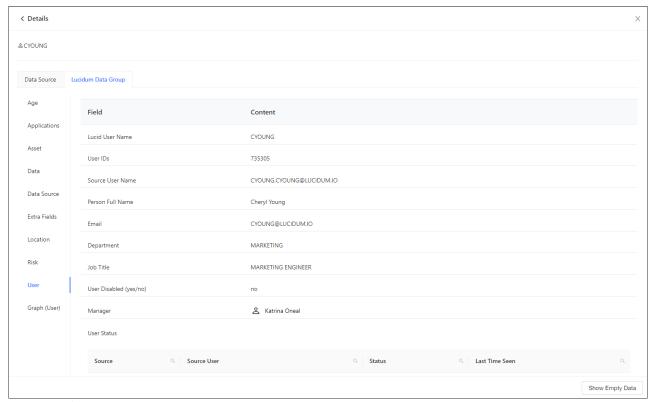
Risk score changes only if you mitigate the risks that Lucidum has discovered about the asset or user. For example, if Lucidum determines that an asset does not include endpoint protection, you can reduce the risk score for that asset by installing endpoint protection.

New User Found

The **New User Found** list displays the last ten users found by Lucidum.

| User Name | Risk Score |
|------------|---------------|
| CYOUNG | 90 |
| CWILSON | 90 |
| ECORDOVA | 86 |
| JLEE | 81 |
| MGRIFFIN | 62 |
| SW | 57 |
| KNICOLAS | 57 |
| MWHITE | 52 |
| CENSMINGER | 52 |
| KY | 49 |
| | < 1 2 3 4 5 > |

- The list displays the user name and the risk score associated with that user. The user with the highest risk is listed first.
- Clicking on a user name displays the **Details** page for that user.

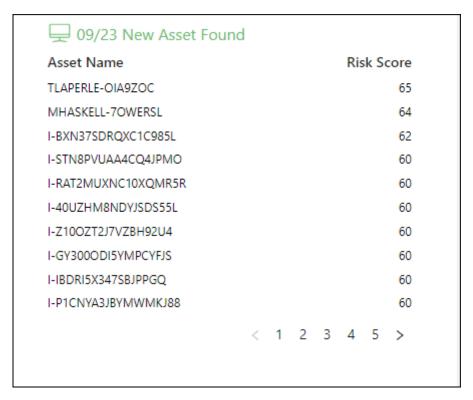


The **Details** page includes two tabs: **Data Source** and **Lucidum Data Group**.

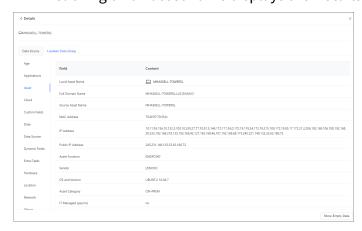
- The *Lucidum Data Group* tab is the deduplicated and extrapolated information derived from ingested information and machine learning. From this tab, you can view details about the user in multiple categories. For example, if you click *Data*, you will see the type of data accessed by this user account.
- The Data Source tab displays the raw data ingested from hardware and software in your environment.

New Asset Found

The **New Asset Found** list displays the last ten assets found by Lucidum.



- The list displays the asset name and the risk score associated with that asset. The asset with the highest risk is listed first.
- Clicking on an asset name displays the **Details** page for that asset.



The **Details** page includes two tabs: **Data Source** and **Lucidum Data Group**.

- The *Lucidum Data Group* tab is the deduplicated and extrapolated data derived from ingested data and machine learning. From this tab, you can view details about the asset in multiple categories. For example, if you click *Applications*, you will see the applications associated with the asset.
- The **Data Source** tab displays the raw data ingested from hardware and software in your environment.

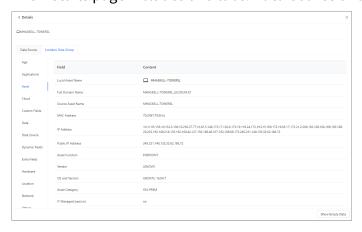
New Data Found

The **New Data Found** list displays the last ten data stores found by Lucidum.



- The list displays the data store name and the risk score associated with that asset. The data store with the highest risk is listed first.
- Clicking on a data store displays the **Details** page for that data store.

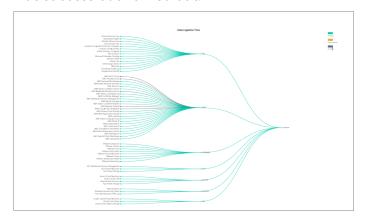
The **Details** page includes two tabs: **Data Source** and **Lucidum Data Group**.



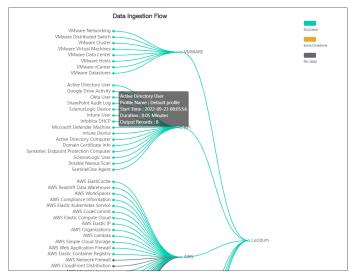
- The *Lucidum Data Group* tab is the deduplicated and extrapolated information derived from ingested information and machine learning. From this tab, you can view details about the data store in multiple categories. For example, if you click *Asset*, you will see details about the asset where the data store resides.
- The Data Source tab displays the raw data ingested from hardware and software in your environment.

Data Ingestion Flow

The **Data Ingestion Flow** chart shows all the sources of data and if the last ingestion by Lucidum was successful or timed out.



Mousing over the solid circle next to a data source displays information about the last time Lucidum ingested data from that data source.



Introduction to Report Center

After Lucidum has ingested data, you can view dashboards and charts in Report Center. These dashboards and Charts provide insights into your environment.

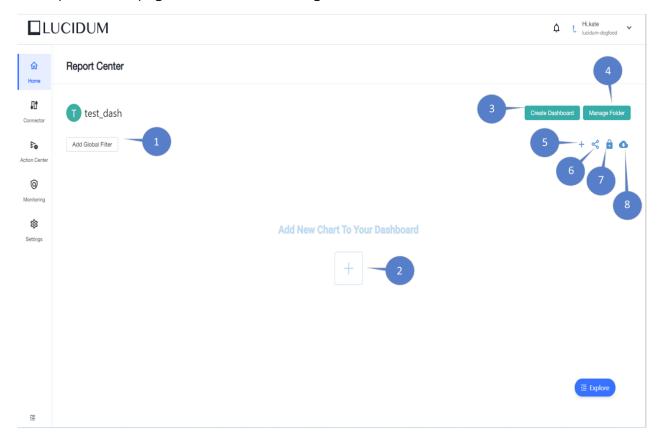
This chapter provides an overview of Report Center, charts, and dashboards to help you navigate the user interface.

UI Elements in Report Center

To view Report Center:

- 1. Log in to your Lucidum system.
- 2. In the left menu, click Home > Report Center.

The Report Center page includes the following elements:



- 1. Add Global Filter. Opens the Query Builder, where you can define a parent query that affects all queries and all charts in the dashboard.
- 2. Add New Chart to Your Dashboard. Opens the New Chart dialog, where you can select the filters, Summary, and Chart Settings.
- 3. **Create Dashboard**. Opens the Create Dashboard dialog, where you can define the basic properties of a new dashboard (Name, Folder, Set as default dashboard) and import data from an existing dashboard.
- 4. **Manage Folder**. Opens the Manage Folder dialog, where you can create new folders, edit existing folders, copy existing folders, and delete folders. Lucidum requires that each Dashboard be stored in a folder. Lucidum provides a default folder, called Default.
- 5. **Add New Chart**. Opens the New Chart dialog, where you can select the filters, Summary, and Chart Settings.
- 6. Forward Dashboard. Displays the Forward Dashboard dialog, where you can share a dashboard with other Lucidum users.
- 7. **Unlock Dashboard**. Allows you to toggle on and off a lock for the dashboard. When unlocked, you can edit the layout of a dashboard.
- 8. Export Layout/Export JSON File.
 - Export Layout allows you to print a dashboard or save it to PDF.
 - Export JSON File exports the current dashboard to a JSON file and downloads the file. The JSON file can then be imported into another user's Lucidum instance, via the Create Dashboard dialog.

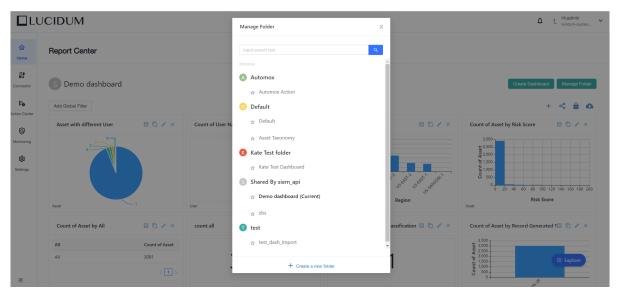
Viewing Dashboards

A dashboard is a page that displays one or more graphical charts. Each chart appears in its own pane and displays graphs, tables, and text. Each dashboard provides at-a-glance visibility into the assets, users, and data in your environment and the policies or compliance that matters most to you.

Before you can display data in dashboards and charts, you must configure Lucidum to ingest data from your environment and then trigger data ingestion.

To view a dashboard:

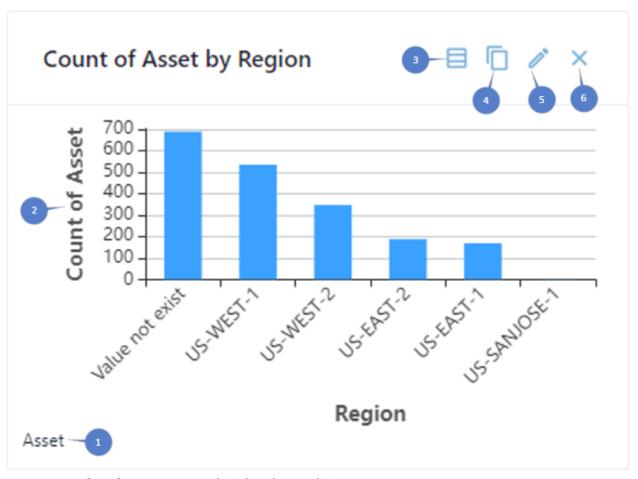
- 1. Log in to your Lucidum system.
- 2. In the left menu, click **Home > Report Center**.
- 3. Click Manage Folder.
- 4. From the **Manage Folder** dialog, choose an existing Dashboard.



- 5. When you click on a dashboard name, that dashboard is loaded into the Report Center.
- 6. In the Manage Folders dialog, the selected dashboard is marked with "(Current)".
- 7. To view another dashboard, repeat steps 3-4.

UI Elements in Charts

Each chart includes the following elements:



- 1. **Type of entity** represented in the chart. Choices are:
 - Asset. An entity that stores, transmits, or processes data. Assets include laptops, workstations, servers, virtual machines, cloud instances, and docker containers. Lucidum uses connectors to ingest data from assets.
 - User. An entity that uses authentication and is associated with assets. Lucidum uses connectors (for example, for Microsoft Active Directory, Okta, cloud IAM account, HR software) to ingest data about users. Lucidum uses AI algorithms to de-duplicate users and align users with assets.
 - Asset-IP Mapping. Output from Lucidum AI algorithms that maps each asset to its IP address.
 - User-IP Mapping. Output from Lucidum AI algorithms that maps each user to its associated IP addresses.
- 2. The **Chart Title, Chart Type, and data** for the chart. The data in the chart is defined by the query and the Summary for the chart.
- 3. **Query Result**. Displays a table populated with the results of the query for the chart. You can also click through to view additional details about the data for each chart.
- 4. **Copy**. Allows you to copy the chart to an existing dashboard.

- 5. **Edit**. Displays the Edit Chart dialog, where you can edit the query, Chart Title, Chart Type, Subtitle, and X Axis Title for the chart.
- 6. **Delete**. Removes the chart from the current dashboard.

Use Cases for Report Center

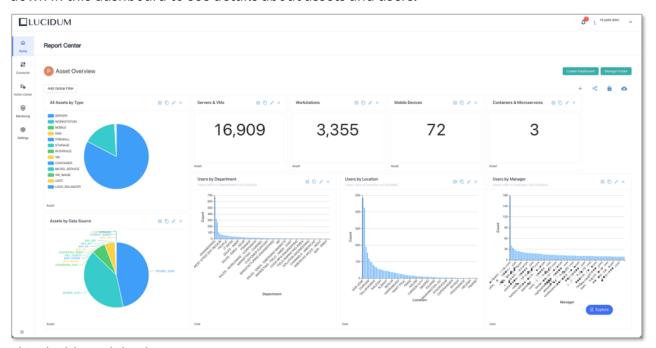
After Lucidum has ingested data, you can view dashboards and charts in Report Center. These dashboards and charts provide insights into your environment.

This chapter will show some common use cases for dashboards.

All Assets and All Users

Lucidum finds uses connected data sources and machine learning to find all devices, all users, all data and correlates them.

This dashboard provides an overview of the assets and users in your environment. You can drill down in this dashboard to see details about assets and users.



This dashboard displays:

- All assets by type
- List of all servers and VMs
- · List of all workstations
- List of mobile devices

- · List of containers and microservices
- All assets by data source
- · All users by department
- All users by location
- · All users by manager
- You can click on any chart to drill down for more information(see page 30).

Assets Not Managed in Active Directory or LDAP

This dashboard displays assets that have been found by Lucidum yet are not managed by Active Directory. In this dashboard, assets that are not in Active Directory are considered "unknown".



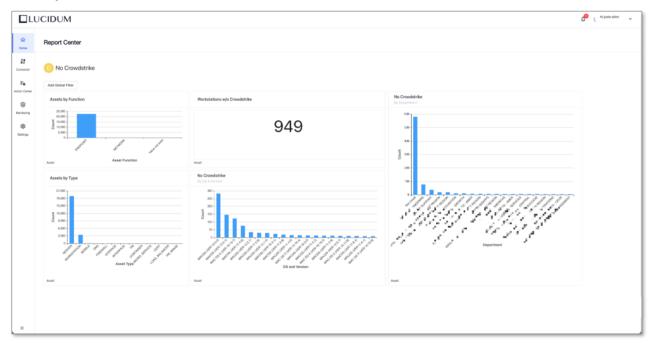
The dashboard displays:

- · Count of all unknown assets.
- Unknown assets and their known risks
- Unknown assets without endpoint protection
- Unknown assets with critical vulnerabilities
- Unknown assets with high vulnerabilities
- Unknown assets with critical CVEs
- Unknown assets and the services that are listening on those assets
- Unknown assets that are accessing files in the environment
- Unknown workstations without VPN

- · Unknown assets by type
- Unknown assets by department
- You can click on any chart to drill down for more information(see page 25)..

Assets without an Endpoint Agent

Here is a dashboard for a customer who uses Crowdstrike Falcon for endpoint management and security. This dashboard shows all assets where Crowdstrike Falcon is not installed.

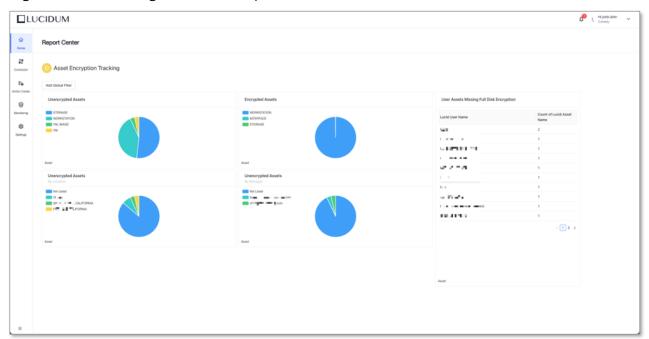


The dashboard includes charts for:

- Assets without Crowdstrike by function (endpoint or network)
- Assets without Crowdstrike by type (server, workstations, firewall, etc.)
- · Workstations without Crowdstrike
- · Assets without Crowdstrike by department
- Assets without Crowdstrike by operating system
- You can click on any chart to drill down for more information(see page 25).

Assets without Encryption

Here is a dashboard about all assets with unencrypted data storage. This is especially useful for organizations working on SOC-2 compliance.



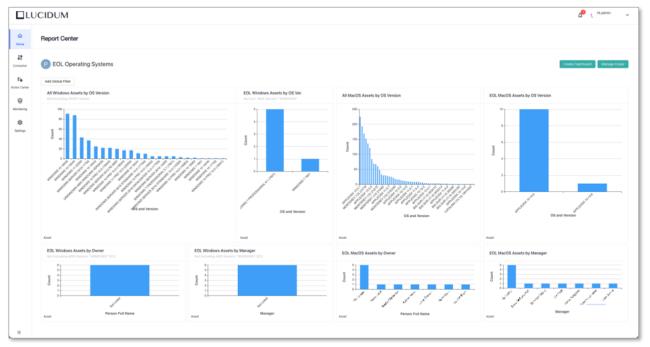
The dashboard includes charts for:

- Unencrypted assets by type
- · Encrypted assets by type
- Unencrypted assets by location
- Unencrypted assets by manager
- Users whose assets are not encrypted

You can click on any chart to drill down for more information(see page 25).

Assets with End-of-Life Operating Systems

This dashboard displays information about assets running operating systems that are no longer supported by the operating system vendor. Therefore, the vendor no longer releases security patches for these operating systems.

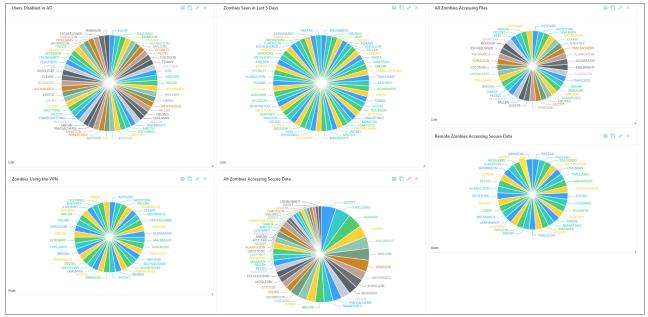


This dashboard includes charts for:

- All Windows assets, sorted by OS version
- Windows assets using EOL operating systems
- All Macintosh assets, sorted by OS version
- Macintosh assets using EOL operating systems
- Windows assets using EOL operating systems, by owner
- Windows assets using EOL operating systems, by manager
- · Windows assets using EOL operating systems, by owner
- Windows assets using EOL operating systems, by manager
- Macintosh assets using EOL operating systems, by owner
- Macintosh assets using EOL operating systems, by manager
- You can click on any chart to drill down for more information(see page 25).

Disabled Users (Zombies)

Here's a dashboard about users who have been disabled in Active Directory but still appear active in the environment. These accounts are known as zombie accounts and create a security risk.



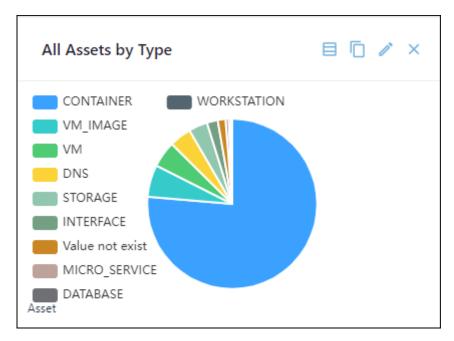
This dashboard includes charts for:

- All users who have been disabled in Active Directory
- All users who have been disabled in Active Directory yet have been seen in the environment in the last 5 days
- All users who have been disabled in Active Directory yet have accessed files in the environment in the last 5 days
- All users who have been disabled yet have logged in to the VPN in the last 5 days
- All users who have been disabled in Active Directory and whose accounts allow access to secure assets
- All users who have been disabled yet have logged in to the VPN in the last 5 days and whose accounts have access to secure assets
- You can click on any chart to drill down for more information(see page 25).

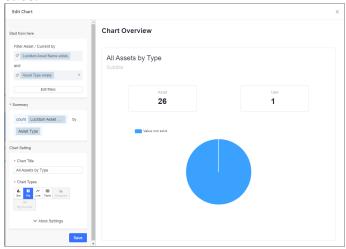
Viewing Details in a Chart

You can click on a chart and get details about the data in the chart.

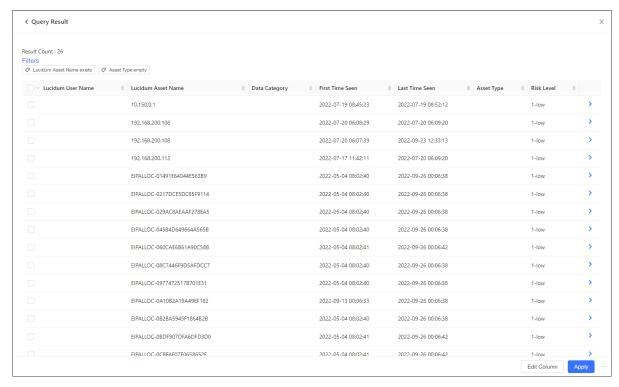
1. For example, suppose a dashboard includes this chart:



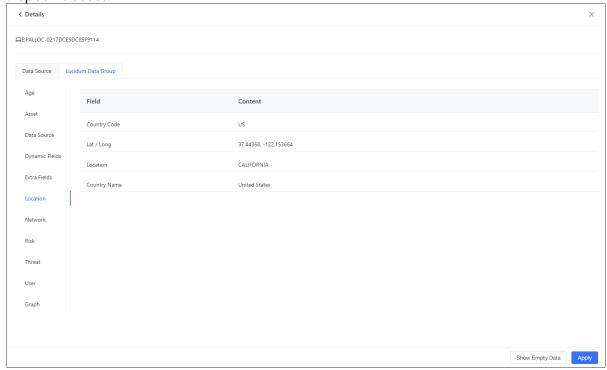
2. Clicking on the slice "Value not exist" drills down and provides more details about that slice.



- 3. We can now see that there are 26 assets without a value for "asset type".
- 4. Clicking on **Edit filters** and then **Show Result** displays the details about all the assets with no value for "asset type". You can click the **Edit Column** button to display more columns or a different set of columns.



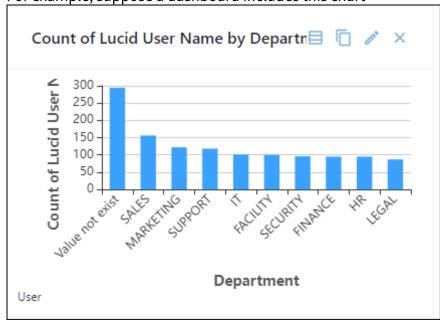
5. Clicking the blue > leads to the **Details** page, where you can view more information about a specific asset:



6. Clicking on a link on the left displays a different category of information about the asset.

You can also drill down into charts about users.

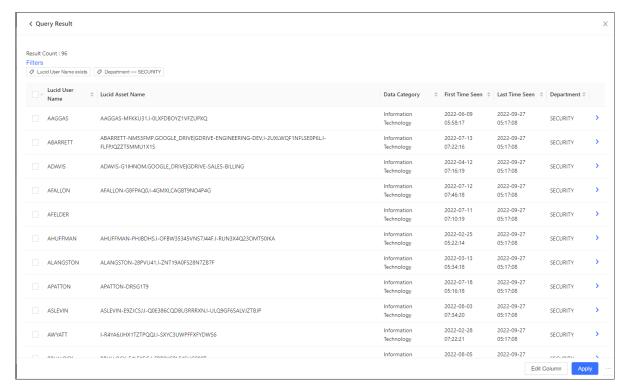
1. For example, suppose a dashboard includes this chart



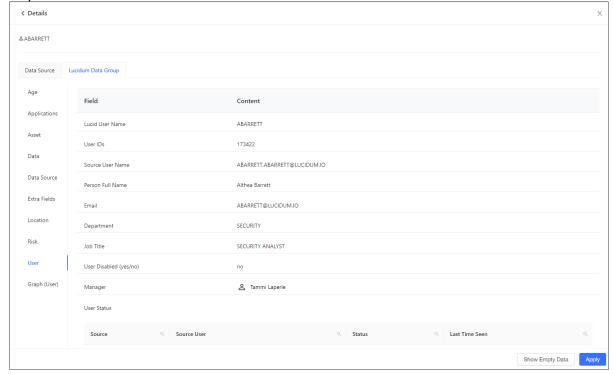
2. Clicking on the bar "Security" drills down and provides details about that bar.



- 3. We can now see that there are 96 users in the security department.
- 4. Clicking on **Edit filters** and then **Show Result** displays the details about all the users in the security department. You can click the **Edit Column** button to display more columns or a different set of columns.



5. Clicking the blue > leads to the **Details** page, where you can view more information about a specific user:



6. Clicking on a link on the left displays a different category of information about the user.