

Enabling Governed Data Access with Tableau Data Server



Ask Yourself...

- Do you want to centrally manage data access for your users while enabling ad-hoc exploration?
- Are you struggling to manage the proliferation of duplicate data sources?
- Do you want to refresh extracts once and automatically update all connected workbooks?
- Do you want to provide centralized metadata management with the ability to author a calculation once to create a standard definition of the field?
- Are you tired of having to deploy database drivers on each user's local machine?
- Do you want to simplify how your users access data stored in your databases?

If you found yourself replying 'yes' to any of these questions, then Data Server is the answer.

Table of Contents

The Benefits	4
Where is Data Server?	5
Data Server's Impact	6
Published Data Sources	7
Metadata Model	8
Data Standards Checklist	9
Certified Data Sources	10
Tableau Server Permissions	11
Site Roles & Responsibilities	12
Publish & Certify Workflows	13-14
Monitor Status & Usage	15
Start Your Trial	16

The Benefits

Tableau Server has many built-in features to promote security, governance, data exploration, and collaboration. Data Server, which is part of Tableau Server, is arguably the most powerful of these tools.

For IT, Data Server satisfies security, governance, and monitoring requirements and hides the complexity of your data architecture from business users. It allows you to centrally manage live connections or extracted data sets as well as database drivers.

At the same time, Data Server enables business users to have trust and confidence that they are using the right data so they can explore it the way they want and discover new insights that drive business value.

From soft guidelines to firm boundaries for the usage of Tableau, organizations need to design their own governance processes, complete with defined roles and responsibilities that everyone understands.

When IT becomes the business enabler, informed users will have confidence in the data and will reap the benefits of governed data access.

- **Secured and governed access** — Provide the right data to the right audience in a secure, governed operational model.
- **Data quality and reliability** — Fact-based decisions are made with good data.
- **Build trust and confidence** — Establish confidence when using trusted data to drive business value.
- **Consistent user experience** — Document processes in an easily-referenceable format – transparent and understandable by all.
- **Performance and scalability** — Reduce the proliferation of data and content through governance processes.

Where is Data Server?

By installing Tableau Server, you immediately have the ability to share curated metadata models with Data Server, including standard calculations.

In Tableau Desktop, users with the appropriate permissions can:

- Connect to Data Server like connecting to any other database:
 1. Choose **Tableau Server** from the connection list.
 2. Authenticate.
 3. Select the data source.
- Manage permissions, manually refresh, or delete a Published Data Source by accessing **Data Sources** on Tableau Server.



Connect

To a File

Microsoft Excel

Text file

JSON file

PDF file

Spatial file

Statistical file

More...

To a Server

Tableau Server

Microsoft SQL Server

MySQL

Oracle

Amazon Redshift

More...

Saved Data Sources

Sample - Superstore

World Indicators

In Tableau Server



+ a b | e a u

Default

Content

Users

Groups

Sche

Projects 18

Workbooks 21

Views 39

Data Sources 16

▼ 0 items selected

	Name	Views: All	Workbook
<input type="checkbox"/>	Orders + Returns	2	1
<input type="checkbox"/>	Orders (Sample - Superstore) Extract	5	1

In Tableau Desktop

Connected to Tableau Server as Michael Hetrick

Search

	Data Source	Live/Las
<input type="checkbox"/>	Orders + Returns	Live
<input type="checkbox"/>	Orders (Sample - Superstore) Extract	2016 S
<input type="checkbox"/>	Marketing Data	Live
<input type="checkbox"/>	Loan (TestV1)	Wednes

Data Server's Impact

Publishing Data Sources

Curating & Sharing Metadata Models

Establishing Data Standards

Designating Certified Data Sources

Managing Permissions for Data Access

Establishing Processes for Publishing & Certifying

Monitoring Usage & Status

Published Data Sources

Data Server provides a centralized metadata model and data management for your organization using Published Data Sources. With the appropriate permissions, users can share live connections or extracted data sets they've defined by publishing data sources on Tableau Server. When a data source is published, other users can connect to it from their workbooks, as they do other types of data. When the data in a Published Data Source is updated, all workbooks that connect to it pick up the changes.

In addition to helping your users create data consistency and reliability, using Data Server offers advantages to you as the administrator. Because multiple workbooks can connect to one data source, you can minimize the proliferation of embedded data sources and save on storage space and processing time. When someone downloads a workbook that connects to a Published Data Source that in turn has an extract connection, the extract stays on the server, reducing network traffic.

Finally, if a connection requires a database driver, you need to install and maintain the driver only on the server, instead of on each user's computer. If you use Tableau Online, all supported drivers are available to data sources published to your site.

Publishing your metadata model is as simple as choosing **Publish to Server...** from the context menu of the data source you are connected to, entering your credentials, and specifying data source permissions.

The screenshot shows the Tableau Desktop interface. A context menu is open over a data source, with the option 'Publish to Server...' highlighted in orange. The menu includes options such as 'Edit Data Source...', 'Refresh', 'View Data...', 'Rename...', 'Duplicate', 'Close', 'Extract Data...', 'Use Extract', 'Extract', 'Edit Data Source Filters...', 'Replace Data Source...', 'Assume Referential Integrity', 'Date Properties...', 'Edit Aliases...', 'Add to Saved Data Sources...', 'Export Data to CSV...', and 'Properties...'. The background shows a worksheet named 'Sheet 1' with a bar chart titled 'Sales' by 'Category' and 'Sub-Category'. The chart displays sales data for various categories, with the highest sales for 'Furniture'.

Category	Sub-Category	Sales
Furniture	Office Furniture	\$350,000
Furniture	Home Furniture	\$210,000
Furniture	Outdoor Furniture	\$120,000
Furniture	Bar Furniture	\$90,000
Furniture	Bedroom Furniture	\$230,000
Furniture	Kitchen Furniture	\$205,000
Furniture	Living Room Furniture	\$110,000
Furniture	Dining Room Furniture	\$80,000

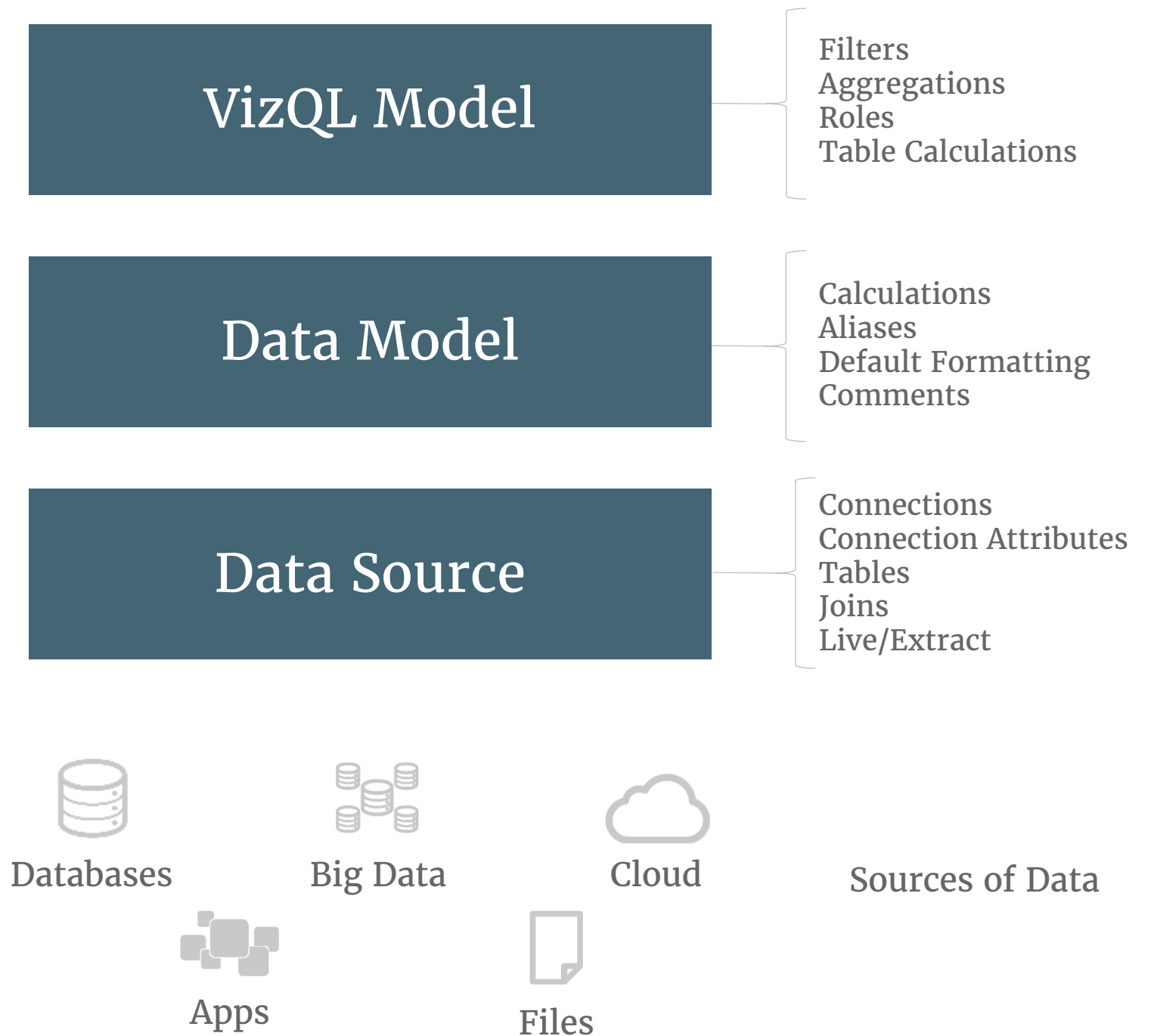
Metadata Model

Tableau created a simple, elegant, and powerful metadata system that gives users flexibility while allowing for enterprise metadata management. A metadata model can be embedded in a workbook or centrally managed as a Published Data Source with Data Server.

Data Source — The Data Source has one or more live and/or extract connections and attributes for the database, the tables, views and columns to use, and joins or custom SQL used to access the data.

Data Model — Upon connection, Tableau automatically characterizes fields as Dimensions or Measures. In addition, the Data Model stores calculations, aliases, and formatting.

VizQL Model — The VizQL Model enables users to adjust the role and aggregation of the fields at run time. This enables one user to define the base Data Source and Data Model as a collection of fields without needing to know, plan, or otherwise account for all the variations of analysis to be performed with the Data Source by other users.



Data Standards

Should your users have to think about fields named CustId or BusUnitNum or reformat numbers as currency every time they connect to the data source? Should they have to make their own calculations or determine which version of a calculated field to use? Do drill down paths exist in your organizational or product hierarchies?

Data Server solves the semantic problem for any field from any source of data. After connecting to data and creating the data model, which will become a Published Data Source, look at it from your users' perspective and see how much easier analytics will be when they have a well-formatted starting point, filtered and sized to the business questions it can answer.

By establishing a data standard using the checklist to the right, you're enabling the business with governed data access for self-service.

Published Data Source Checklist

- ✓ Filtered and sized to the analysis
- ✓ Use business-friendly naming conventions
- ✓ Set data types
- ✓ Create hierarchies
- ✓ Apply formatting (dates, numbers)
- ✓ Set FY start date, if applicable
- ✓ Add new calculations
- ✓ Remove duplicate/test calculations
- ✓ Enter comments
- ✓ Aggregate to highest level
- ✓ Hide unused fields
- ✓ Publish to Tableau Server

Certified Data Sources

In Tableau Server 10.4 and later, certifications and recommendations will help you make data sources discoverable and improve your ability to govern enterprise analytics effectively in Tableau. Both features help reduce the proliferation of redundant data models and save analysts time when trying to find good data that they can trust. After publishing a data source to Tableau Server, define a certification process so users will know the data can be trusted.

Certified Data Sources get preferential treatment in Tableau Server search results and in the smart data source recommendations algorithm so that they are discoverable and easily reusable.

Certification notes allow you to describe why a particular data source can be trusted. These notes are accessible throughout Tableau when viewing this data source.

The screenshot displays the Tableau Server interface for a data source named "TFS-CurrentWorkItemWithParents". The interface includes a header with the data source name, a "Certified by Graeme Britz" badge, and navigation tabs for Connections, Refresh Schedules, Connected Workbooks, Permissions, and Details. The main content area shows metadata such as About, Project, Owner, Tags, and Modified. A callout box labeled "Certification Badge" points to the "Certified by Graeme Britz" badge. Another callout box labeled "Certification Notes" points to the "Certification" section, which contains the text: "Certified by Graeme Britz. Specialized data source for tracing the lineage of work items down the TFSPortfolio Hierarchy. This cannot be used with nested epics or similar structures (feature under a feature). Data was prepared by Oliver Jen and is refreshed hourly." The interface also includes buttons for "Edit Description", "Move...", "Change Owner...", "Edit Tags", "View Revision History...", "Edit Certification Status", and "Delete Data Source...".

The certification badge and notes indicate a Certified Data Source so that users will know the data can be trusted.

Tableau Server Permissions

Tableau Server permissions for data sources, which are detailed on the right, allow for granular control of what capabilities are allowed for groups or users.

In the example, Finance – Data Source Publishers group can view, connect, save, download, delete, and set permissions on data sources. This group has a Publisher permissions rule on the project so they can publish or save to the project. Members of the group include DBAs and/or Data Stewards.

Finance – Workbook Publishers group and Finance – Workbook Users + Web Edit groups can view and connect to data sources. Members of the groups include authors and consumers. The groups have Viewer permissions rule on the project so they can view its contents.

Permissions are locked to the project for workbooks and data sources, which means they cannot be modified.

Data Source Permissions

Edit permissions for the project "Finance - Data Sources".

User / Group	Project	Data Sources	Use	Edit
All Users (2)	None	None		
All-Site - Data Source Publishers (0)	Publisher	None	View, Connect, Save, Download, Delete, Set Permissions	View, Connect, Save, Download, Delete, Set Permissions
Finance - Data Source Publishers (0)	Publisher	None	View, Connect, Save, Download, Delete, Set Permissions	View, Connect, Save, Download, Delete, Set Permissions
Finance - Workbook Publishers (0)	Viewer	None	View, Connect	
Finance - Workbook Users + Web Edit (0)	Viewer	None	View, Connect	

Use

View — Open a data source

Connect — Connect to a data source

Edit

Save — Save and overwrite the data source on Tableau Server

Download — Download a data source

Delete — Delete a data source

Set Permissions — Specify permissions for a data source

Permissions Rules

Editor — Allows the user or group to connect to, download, delete, and set permissions on data sources on the server. They can also publish data sources, and as long as they are the owner of a data source they publish, they can update connection information and extract refresh schedules. (The latter two capabilities are no longer available if an administrator or project leader changes data source ownership.)

Connector — Allows the user or group to connect to the data source on the server.

Site Roles & Responsibilities

When you add users to a site on Tableau Server, you must apply a site role to them.

The site role is set at the user level (that is, not on content), to cap what a user can do with content site-wide.

The site role determines which users or groups can publish, interact with, or only view published content, or who can manage the site's users and administer the site itself.

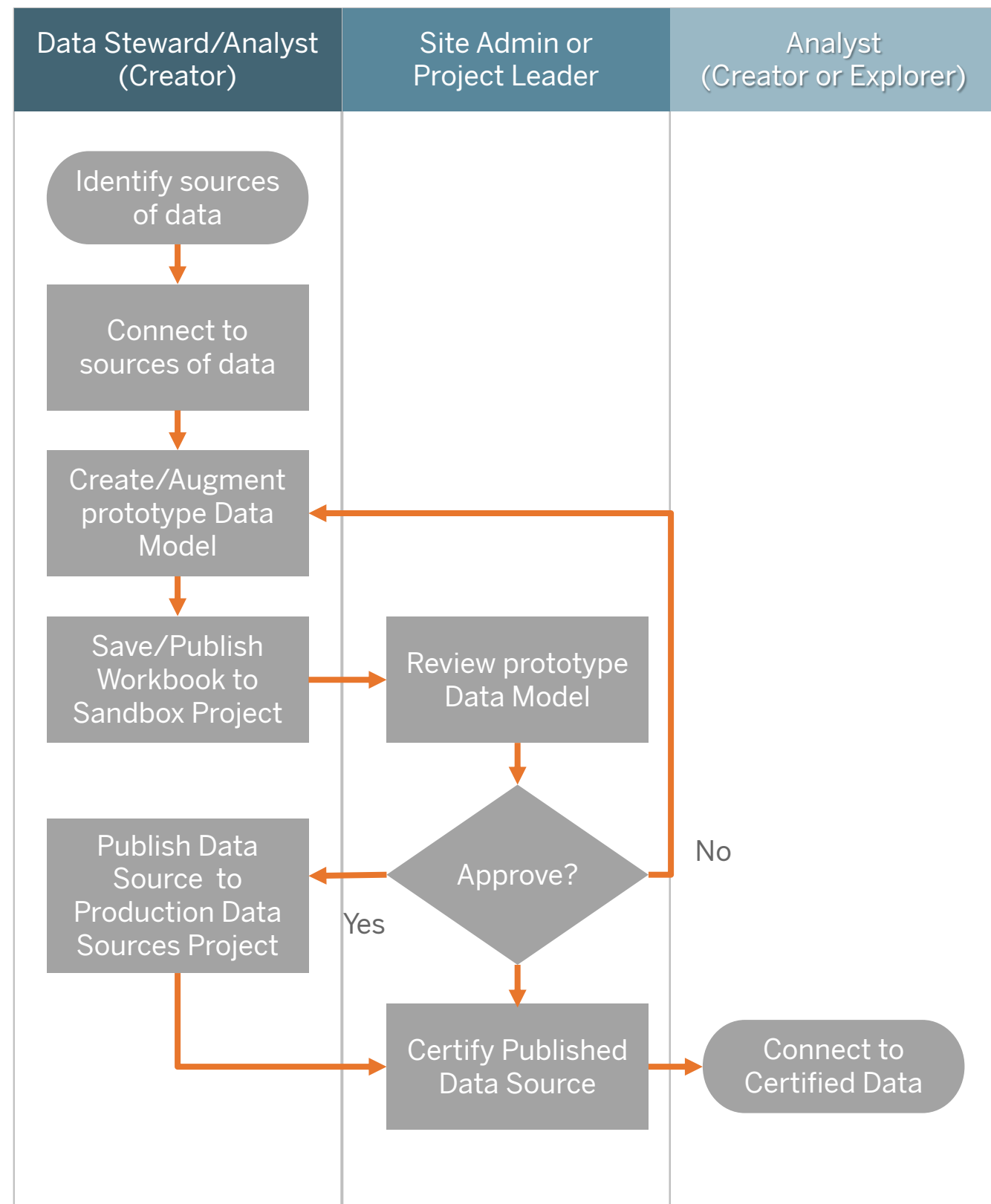
- **Server Administrator** — Server administrators install software and database drivers, configure, upgrade, monitor, maintain, and oversee security, in alignment with the organization's governance policy and processes.
- **Site Administrator/Project Leader** — Site Administrators and Project Leaders are scoped to manage a Tableau Server site or project respectively, including users, permissions, and data source certification. Server administrators delegate administrative functions to them.
- **Creator (Data Steward/Analyst)** — Creators use Tableau Desktop or Tableau Server Web Authoring to connect to data and author new data sources and dashboards, which are published and shared on Tableau Server. Data Stewards, which could be a DBA or data analyst, publish data sources.

They incorporate process definitions, policies, guidelines, and business knowledge for enterprise metadata management in compliance with organizational and/or regulatory obligations.
- **Explorer (Analyst)** — Explorers use Tableau Server Web Authoring to connect to existing data sources and author new dashboards, which are saved and shared on Tableau Server.
- **Viewer (Business User)** — Viewers can view and interact to consume content.

Direct Access Workflow

Assumption: Data Steward/Analyst has direct access to sources of data.

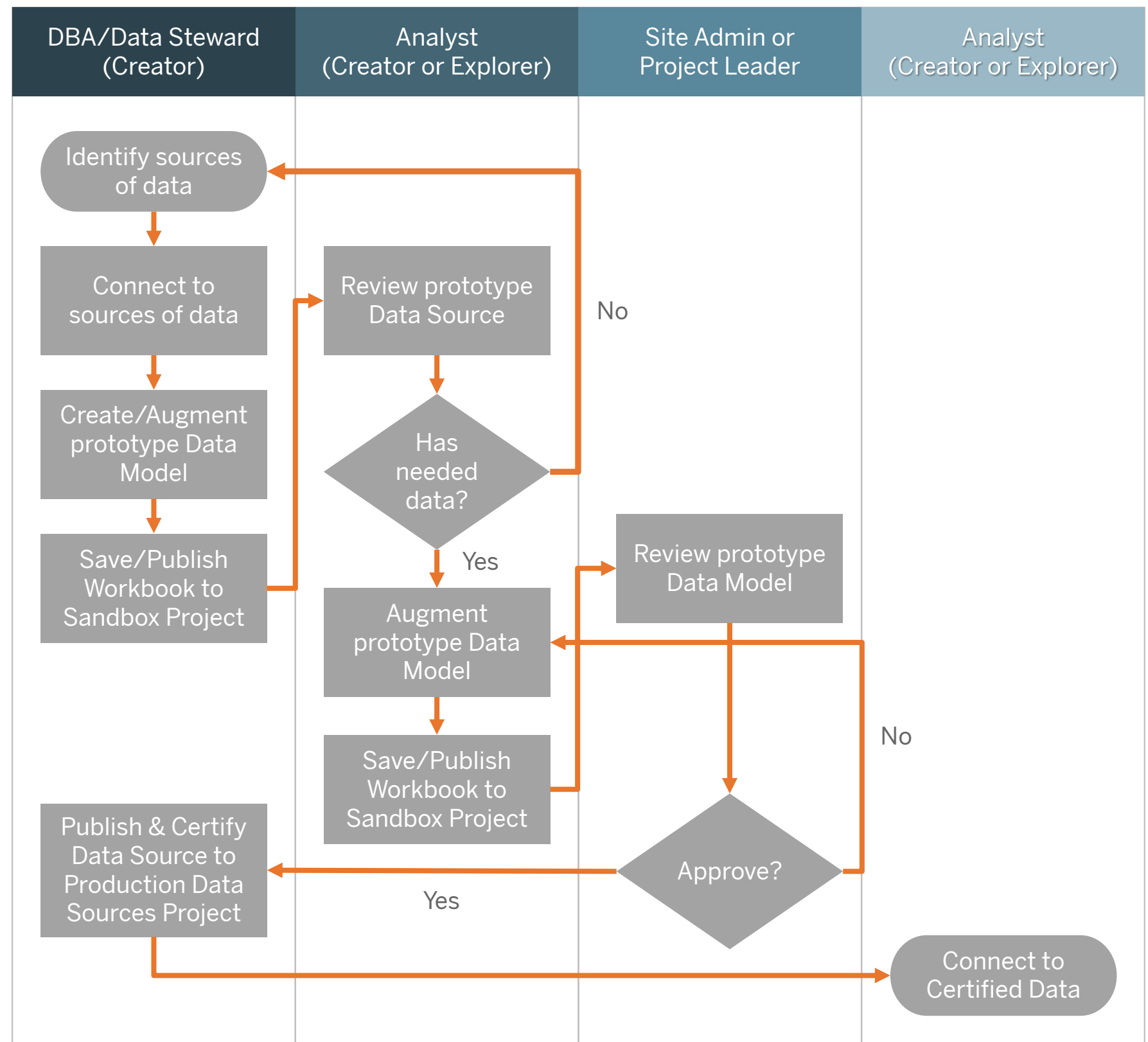
1. Appropriate sources of data are identified to answer business questions.
2. Data Steward/Analyst:
 - a. Connects to sources of data.
 - b. Creates a prototype data model.
 - c. Saves or publishes workbook to Tableau Server.
3. Site Admin or Project Leader reviews data model to ensure it complies with data standard and approves it.
4. Data Steward/Analyst publishes data source to Production Data Sources project.
5. Site Admin or Project Leader certifies data source.
6. Analysts connect to Certified Data Source to create new content based on trusted data.



Restricted Access Workflow

Assumption: Analyst does not have direct access to sources of data and relies on the DBA or Data Steward for connecting to sources of data. DBA or Data Steward is a Project Leader of the Data Sources – [Department] project.

1. Appropriate sources of data are identified to answer business questions.
2. DBA/Data Steward:
 - a. Connects to sources of data.
 - b. Creates a prototype data model.
 - c. Saves or publishes workbook to Tableau Server.
3. Analyst reviews prototype data source, augments prototype data model with new calculations, if necessary.
4. Site Admin or Project Leader reviews data model to ensure it complies with data standard and approves it.
5. Data Steward/Analyst publishes data source to Production Data Sources project and certifies it.
6. Analysts connect to Certified Data Source to create new content based on trusted data.

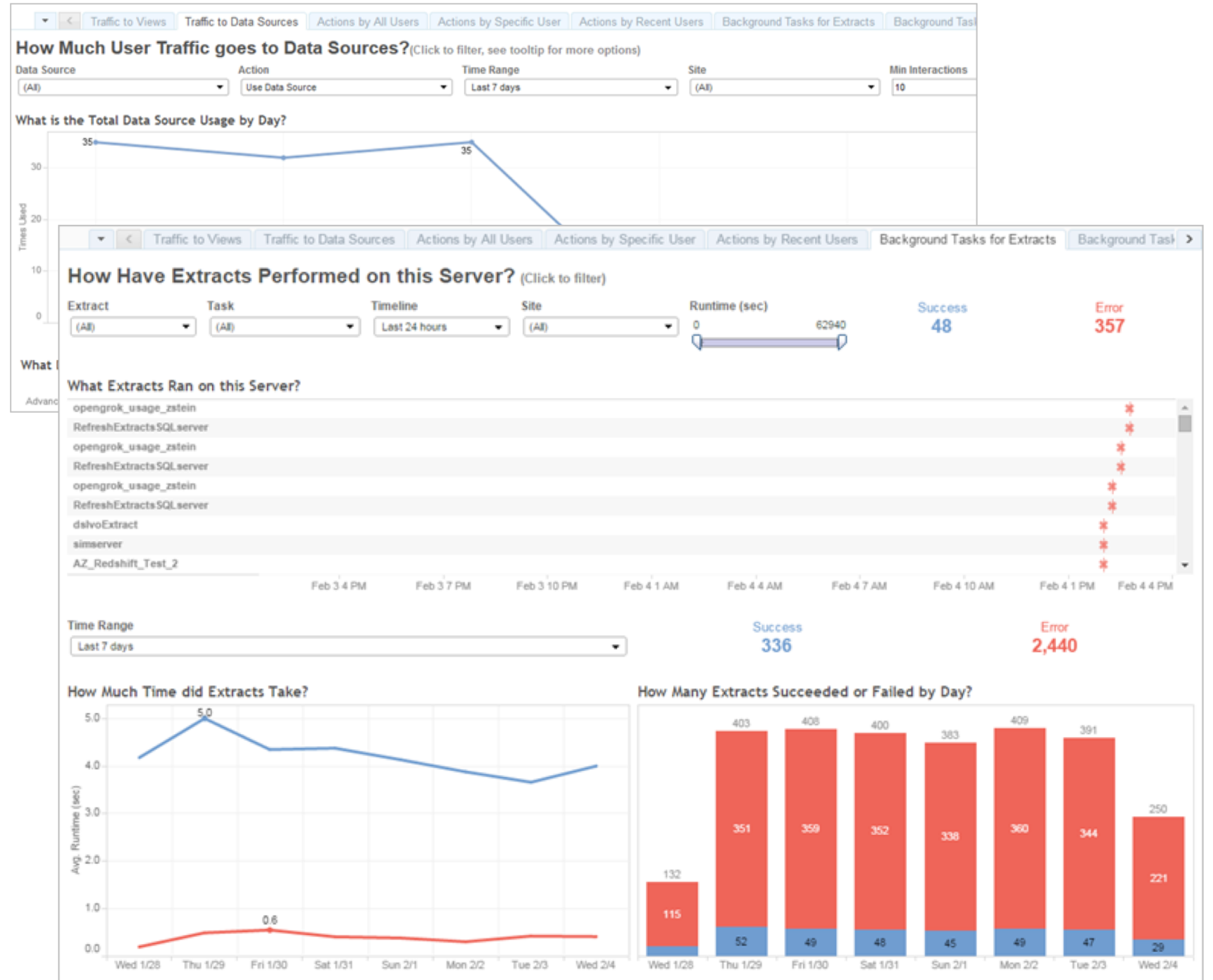


Monitor Usage & Status

With Tableau Server's administrative views, you can monitor usage and status of Published Data Sources.

The Traffic to Data Sources view gives you the ability to see usage of data sources on your Tableau Server installation. This can help you determine which data sources are most heavily used and those that are less often used. Server administrators can specify the site. Site administrators view only their site's usage data.

You can also monitor data extracts and their success or failure in Administrative Views. In the Background Tasks for Extract administrative view, a table lists the extracts that ran in the time period specified on the timeline. You will see a status of success or error to investigate further.



Start Your Free Trial

Data Server and Published Data Sources prevent the proliferation of data silos and untrusted data. Extract refreshes can be scheduled, and users across the organization will stay up to date with the same shared data and field definitions.

Start your trial of Tableau Server or Tableau Online with Tableau Prep and Tableau Desktop today to experience governed data access using Data Server and Published Data Sources.

<https://www.tableau.com/products/trial>



Tableau Server



Tableau Online



Tableau Prep



Tableau Desktop

+ a b | e a u[®]