



Tableau Server

Permissions, Roles, and Content Authorization

This document covers aspects of Tableau Server authorization.

1. [Permissions and authorization in the abstract](#)
2. [Real-world examples](#)
3. [Best-practices from an implementation and management perspective](#)
4. [Glossary and definition of permission assignments](#)

Additional Resources for Tableau Server on the web:

System Admin Video	http://www.tableausoftware.com/learn/tutorials/on-demand/system-administration
Content Admin Video	http://www.tableausoftware.com/learn/tutorials/on-demand/tableau-server-content-administration
Classroom Trainings	http://www.tableausoftware.com/learn/training
Administrator Guide	http://onlinehelp.tableausoftware.com/current/server/en-us/admin.htm
Online Help	http://onlinehelp.tableausoftware.com/current/server/en-us/help.htm

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1. Permissions and authorization in the abstract

Tableau Server authorization security (e.g. “What permissions are required to perform actions once logged into Tableau Server”) is designed to be both robust and easy to maintain.

However, it is imperative to understand the flow of security “allowances” and “denials” prior to implementing a solution. This document describes at a high level how Tableau Server authorization works.

There are some immutable “truths” to Tableau Server authorization worth getting out of the way right at the beginning of the discussion. These are:

- “System Administrator” - user accounts assigned this right (at the global level) have absolute control over the entire Tableau Server installation, regardless of any further content permissions assigned to that user.
- “Content Administrator” - user accounts assigned this right (on a site by site basis) have absolute control over the entire Tableau “site” to which they have been assigned, regardless of any further content permissions assigned to that user.
- “Project Leader” – user accounts assigned this right (at the project level) have absolute control over the content in that project.
- “Publisher” – a user who is allowed to publish workbooks will always have absolute control over those workbooks.

Anything else listed in this document will be over-riden by the above statements.

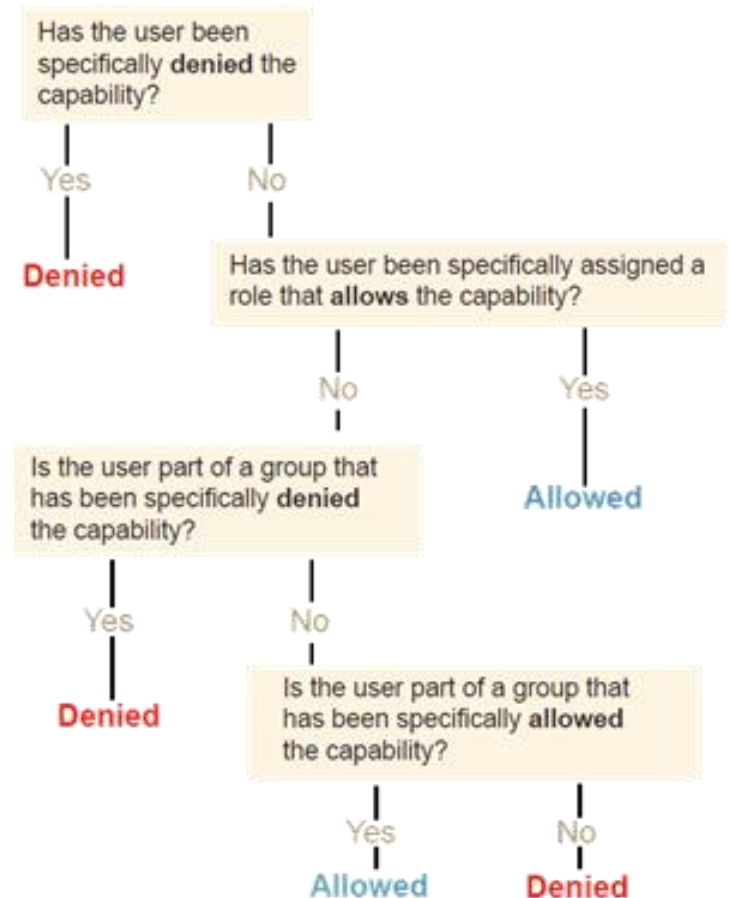
A second set of “truths” that permeate the Tableau Server authorization scheme are

- User specific permissions always outweigh/trump group permissions, and
- Denial assignment always outweigh/trump allowance assignments.

Taken in order, this means there are levels at work here: 1 = Grant Group, 2 = Deny Group, 3 = Grant User, 4 = Deny User, and 5 (fully denied because nothing was ever specified in the first place, i.e., Tableau’s default state is to “deny” a permission in the absence of any other information)

Thus, there is a very specific order of permissions, outlined in the graphic shown below, which is stated textually as follows:

*“Given a set of possible permissions and authorizations for an object, Tableau Server will look for the **largest** integer/level possible in determining if a user is allowed to perform a particular action: 1 = Grant Group, 2 = Deny Group, 3 = Grant User, 4 = Deny User, and 5 = fully denied.”*





2. Real world examples

Let's look at a few simple business examples using screenshots from an actual Tableau Server installation.

A) **Data Restriction:** A group called "Casual Users" that can never download the underlying data or download the workbook

What the permission assignment looks like:

	Allow	Deny	Inherited
General			
View:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Write:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Delete:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Download File:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Move:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Set Permissions:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Workbook			
Filter:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Add Comment:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
View Comments:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
View Summary Data:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
View Underlying Data:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Export Image:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Share Customized:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Data Source			
Connect:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Project			
Project Leader:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

What the end result looks like. A user "Erin" who is part of the "Casual Users" group will *not* see a "download workbook" link, and also will *not* see the underlying data tab, only the summary tab. They can download the "summary" data but not the row-by-row raw data.

Summary				
Zip Code	Latitude (generated)	Longitude (generated)	SUM(Sales)	AGG(Profit Ratio)
84663	40.1329	-111.3618	\$21,649	6.82%
27006	35.9438	-80.4365	\$26,288	21.80%
80001	39.8028	-105.0861	\$22,886	19.19%
98103	47.6745	-122.3429	\$18,303	5.15%
06703	41.5541	-73.0461	\$33,450	21.23%
32122	29.2381	-81.036	\$2,996	-2.20%
29808	33.4518	-81.8508	\$24,966	9.02%
77037	29.8919	-95.3937	\$10,234	0.02%
68001	41.3331	-96.9504	\$69,774	16.46%
60406	41.655	-87.6815	\$16,042	5.23%
11769	40.7377	-73.1301	\$18,029	10.46%
62444	39.2445	-88.7619	\$37,697	-1.53%
81221	38.3577	-105.1415	\$12,413	22.19%
05544	42.6489	-71.1827	\$61,430	8.85%

2. Real world examples (continued)

- B) **Content Management Restriction:** A user “William” who can never delete content, move content, or set permissions on content, but can still publish.

Add / Edit Permissions

Users
 Groups
 Both

- All Users
- Casual Users
- admin
- Casual User
- Chris
- Erin
- Publisher User
- Sales Rep User
- Tableau Software
- William**

Role:

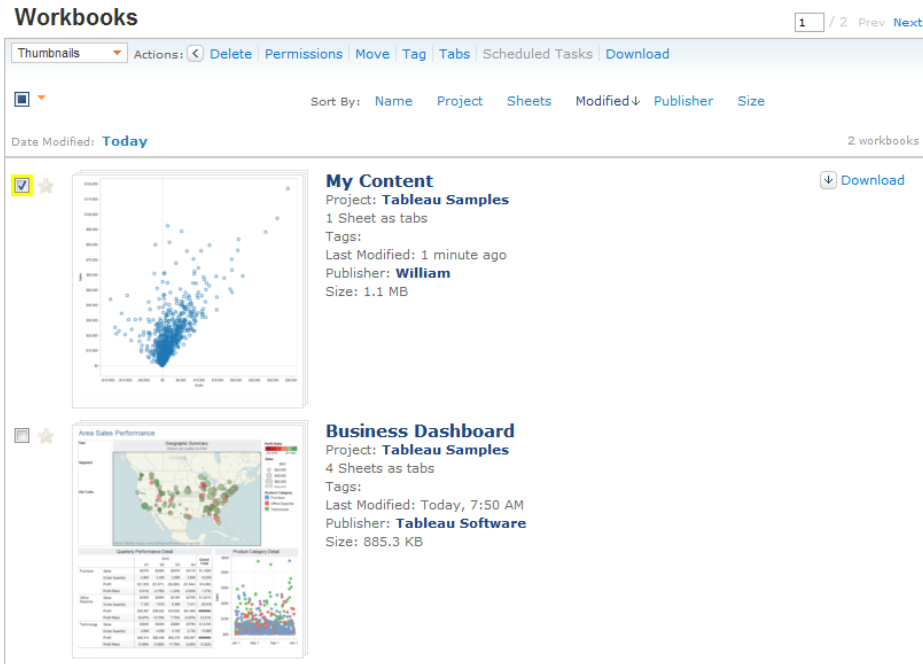
	Allow	Deny	Inherited
General			
View:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Write:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delete:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Download File:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Move:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Set Permissions:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Workbook			
Filter:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add Comment:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
View Comments:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
View Summary Data:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
View Underlying Data:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Export Image:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share Customized:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Source			
Connect:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Project			
Project Leader:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

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2. Real world examples (continued)

B) Content Management Restriction (continued)

Notice that “William” can still set permissions, delete, or move his *own* content! This is one of the immutable rules (look for the blue links for “Delete”, “Permissions” and “Move”):

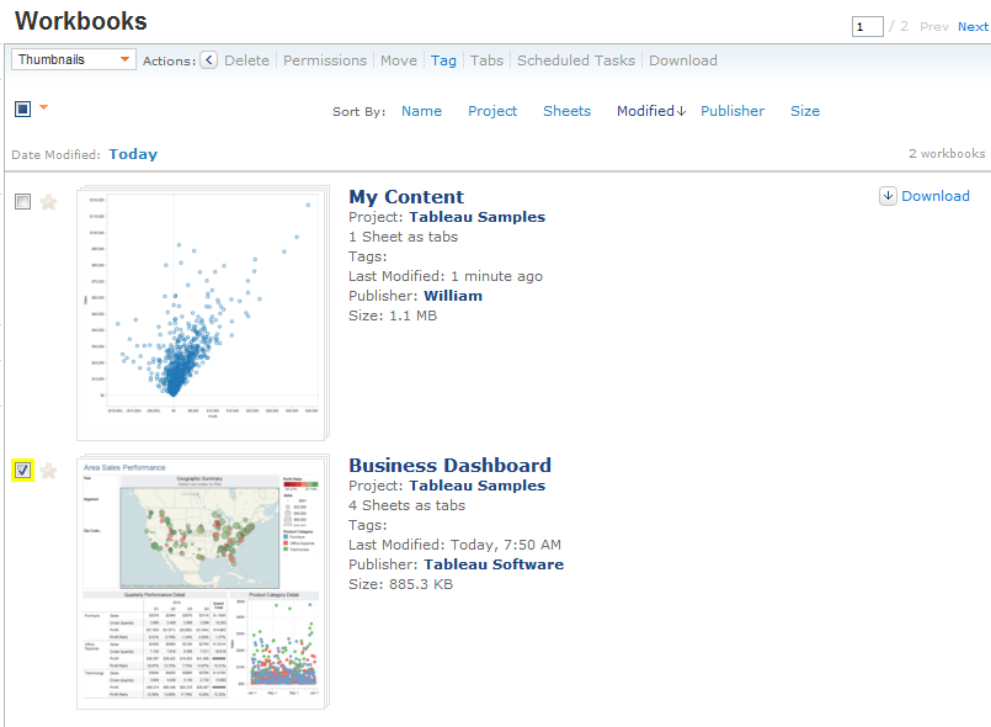


The screenshot shows the Tableau Workbooks interface. At the top, there are navigation options: 'Thumbnails', 'Actions' (with links for Delete, Permissions, Move, Tag, Tabs, Scheduled Tasks, Download), and a page indicator '1 / 2 Prev Next'. Below this, there are sorting options: 'Sort By: Name Project Sheets Modified↓ Publisher Size'. The date modified is 'Today' and there are '2 workbooks' listed.

The first workbook is 'My Content', which is selected with a yellow checkmark. It is part of the 'Tableau Samples' project, has 1 sheet as tabs, and was last modified 1 minute ago by 'William'. Its size is 1.1 MB. The thumbnail shows a scatter plot. The 'Actions' menu for this workbook shows 'Delete', 'Permissions', and 'Move' in blue, indicating they are available to the user.

The second workbook is 'Business Dashboard', which is not selected. It is also part of the 'Tableau Samples' project, has 4 sheets as tabs, and was last modified today at 7:50 AM by 'Tableau Software'. Its size is 885.3 KB. The thumbnail shows a dashboard with a map and two tables. The 'Actions' menu for this workbook shows 'Delete', 'Permissions', and 'Move' in grey, indicating they are not available to the user.

However, “William” cannot do so on other content within that same project (notice that the links are now greyed out since William selected a book that he did not publish):



This screenshot is identical to the previous one, but the selection has changed. The 'Business Dashboard' workbook is now selected with a yellow checkmark, and its 'Actions' menu (Delete, Permissions, Move) is now in blue. Conversely, the 'My Content' workbook is no longer selected, and its 'Actions' menu is now in grey.

2 . Real world examples (continued)

- C) **Usage Restriction:** A user “Erin” who can interact with a visual in the most minimal manner. This user can use Tableau “actions” if they have been designed, but no other filters will show up. Nor can this user download the content, export to PDF, or similar. “Erin” can still save a Tableau “customized view” and also add Tableau “tags”.

Add / Edit Permissions

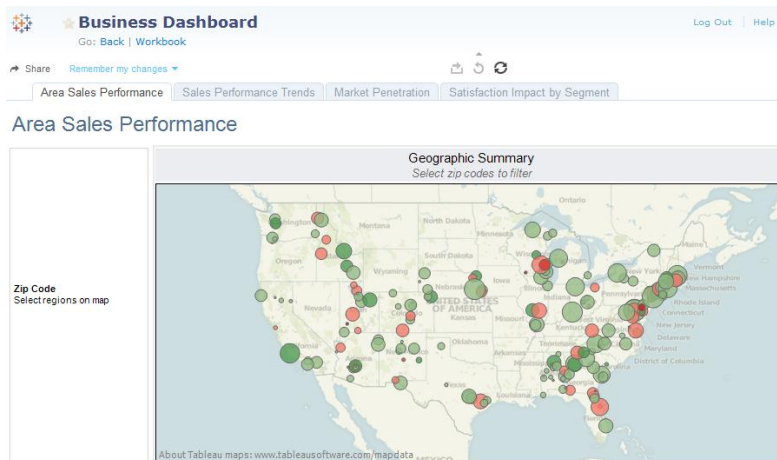
Users
 Groups
 Both

- All Users
- Casual Users
- admin
- Casual User
- Chris
- Erin
- Publisher User
- Sales Rep User
- Tableau Software
- William

Role: Custom

	Allow	Deny	Inherited
General			
View:	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Write:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Delete:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Download File:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Move:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Set Permissions:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Workbook			
Filter:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Add Comment:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
View Comments:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
View Summary Data:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
View Underlying Data:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Export Image:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Share Customized:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Data Source			
Connect:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Project			
Project Leader:	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Erin cannot interact with the view shown below – a shipping Tableau sample with quick filters. These filters should appear to the left of the map. Notice that the filters are gone.



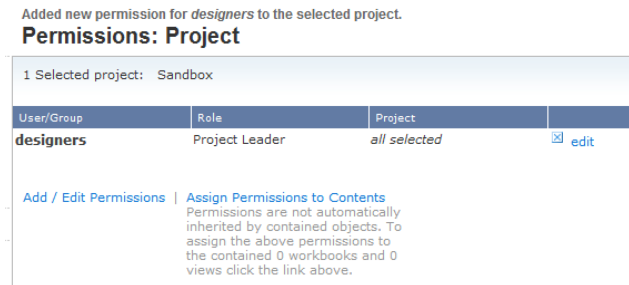
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3. Best-practices from an implementation and management perspective

Listed below are some elegant best-practices that Tableau recommends. These are not hard and fast rules, but general guidelines to implementing a successful installation of Tableau Server.

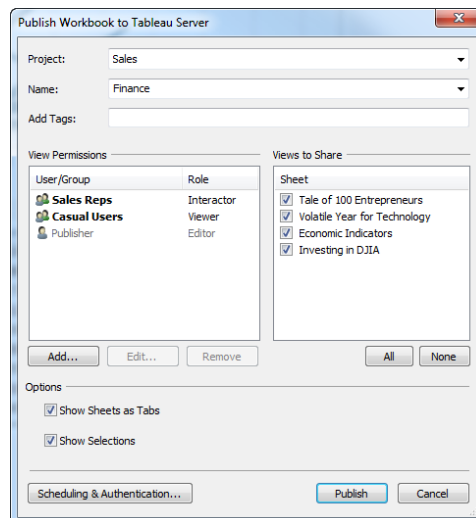
- **Create and use a “testing” project**

Nothing hurts more than making live changes to a production system, only to have your user community cry out in anguish because you have removed a critical permission. Tableau Server allows you to create unlimited numbers of projects, so why not use one of them for testing purposes? Here is a screenshot of a project called “Sandbox” with only one Tableau group called “designers” assigned to it:



- **Create and use projects as security “containers” that have a specific security profile.**

All default security settings that you add to a Tableau project are automatically included when you publish workbooks or data sources to that project. Your workbooks inherit the overall “profile” of the security whenever you publish. Here is a screenshot of the Tableau Desktop publishing experience. The two groups listed (“Sales Reps” and “Casual Users”) were *not* data-entered by the publisher. They were there to begin with.



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3. Best-practices from an implementation and management perspective (continued)

- **Always remember to ‘Assign to content’ whenever you make a change to project security**

While this is not a required step, it is highly recommended. Any security changes you make to a project will *not* automatically cascade down to workbooks inside of that project. Here is a screenshot of the “Assign To Contents” link:



- **Whenever possible, avoid setting permissions at the “view” level.**

Tableau authorization settings can be configured at the Project, Workbook, and individual View level. While it is possible to have “exceptions to the rule” down to the view level, this may quickly spiral out of control from a management perspective. It is reasonable from time to time to assign permissions for a workbook here or there, but it should be avoided whenever possible. If you feel like your security has become too complex, you can refer to the previous suggestion “Assign Permissions to Contents” – this would overwrite and wipe out any one-off assignments you have implemented.

- **Create a project leader for each project**

When you create a new Tableau Server “project”, we recommend assigning a user to be in charge of that project. You can even edit the project description to include their name and email. That syntax looks like this:

Name:
Tableau Samples

Description: (867 characters remaining)
A set of sample workbooks provided by Tableau Software. This project is maintained by "Debby North":mailto:dnorth@tableausoftware.com

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3. Best-practices from an implementation and management perspective (continued)

The end result looks like this:

staging <i>No description</i>	# Workbooks:	0
Tableau Samples A set of sample workbooks provided by Tableau Software. This project is maintained by Debby North	# Workbooks:	7
WebOPS <i>No description</i>	# Workbooks:	0

- **Use the “Default” project as a permissions template for all other projects.**

This is because all new projects will inherit permissions from this “default” project.

This is perhaps one of the most important best-practice tips available. Tableau ships with a built-in project called “Default” that cannot be deleted. The shipping permission settings for this “default” project are to allow “all users” (a built-in group) some basic abilities to view content. You have options here.

One option is to *make the default project restrictive*, and to explicitly *deny all permissions*. In this scenario, all new projects created will inherit this concept of “deny” from the default project – this could be useful for organizations that desire a locked down environment with “allowance” being the exception and not the rule.

Another option is to *make the default project interactive but read-only with no access to underlying data*. By disabling “View Underlying Data” and “Download Workbook” for the default project, all new projects (and thus their content) will inherit these permissions – this could be useful for organizations that want to standardize on visualization access, while still restricting data and workbook access.

A third option is simply to *remove “all users” from the “default” group*. This means any new projects created are truly a blank canvass from a security perspective – this option could be useful for organizations that do not have a standard in place, or those organizations where the standards change from project to project.

These are choices, and your actual deployment can differ and be fully customized.

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3. Best-practices from an implementation and management perspective (continued)

- Use the built-in permission checker to troubleshoot permission assignments

Tableau Server has a built-in permission checker for projects, workbooks, and even individual views. This is great way to spot check permissions for users. You can even highlight an individual permission, and Tableau will highlight for you which group or user has that permission:

Permissions: View

1 Selected view: Sales Performance Trends

User/Group	Role	View	Workbook	
All Users	Interactor	<i>all selected</i>	Business Dashboard	edit
Casual Users	Custom	<i>all selected</i>	Business Dashboard	edit
Chris	Custom	<i>all selected</i>	Business Dashboard	edit
Erin	Custom	<i>all selected</i>	Business Dashboard	edit
William	Custom	<i>all selected</i>	Business Dashboard	edit

[Add / Edit Permissions](#)

Check user permissions:

Capability	Allow	Deny	Reason
View	✓		
Write		✓	Not granted by any permission for Sales Performance Trends.
Delete		✓	Not granted by any permission for Sales Performance Trends.
Filter	✓		
Add Comment	✓		
View Comments	✓		
View Summary Data	✓		
View Underlying Data	✓		
Export Image	✓		
Share Customized	✓		
Move		✓	Not granted by any permission for Sales Performance Trends.
Set Permissions		✓	Not granted by any permission for Sales Performance Trends.
Connect		✓	Not granted by any permission for Sales Performance Trends.

Click on a capability above to highlight the associated permission.

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3. Best-practices from an implementation and management perspective (continued)

- **Allow non-admin users to see all other users in the system**

If, as an administrator, you enable the setting for “Public User List” as shown on the maintenance page:

Settings	
Setting	Description
<input checked="" type="checkbox"/> Embedded Credentials	Allow publishers to attach passwords to published workbooks that will automatically authenticate web users.
<input checked="" type="checkbox"/> Scheduling	Allow publishers to assign workbooks to schedules. Embedded Credentials must also be enabled.
<input checked="" type="checkbox"/> Public User List	Allow web users to see a list of all users on the system.
<input type="checkbox"/> Saved Passwords	Allow users to save data source passwords across multiple visits and browsers.

Then all users will be able to see other users in the system, as well as their content (permissions still apply, however!) This is a great way to enable collaboration and sharing across the entire system!

The screenshot shows the Tableau interface with the 'Users' page selected. The left sidebar contains navigation options: PROJECTS, WORKBOOKS (All, By Date, By Project, By Publisher), VIEWS (All, By Date, By Project, By Publisher, By Tag), RECENTLY USED, FAVORITES, and USERS. The main content area displays the 'Users' page with a 'Recently Viewed' section listing 'Tableau Software, admin, Sales Rep User' and a 'List of All Users' section with a search box and a list of users: admin, Casual User, Chris, Erin, Publisher User, Sales Rep User, Tableau Software, and William. The top right corner shows 'Welcome, Erin | Log Out' and the bottom left corner shows 'Version 7.0.5 (Build 7000.12.0602.1810)'.

(Glossary and definition of permissions on the next page)



4. Glossary of Individual Permissions (shown for a project. Workbook level permissions will not include the last two items):

General:	
View	The ability to view the visual
Write	The ability to publish the visual, or, overwrite a published visual
Delete	The ability to delete a workbook or view
Download File	The ability to download the workbook in TWBX format
Move	The ability to move the workbook from one project to another project
Set Permissions	The ability to set permissions on the workbook or view
Workbook	
Filter	The ability to use quick filters, parameters or other interactive elements (actions and tooltips excluded)
Add Comment	The ability to add comments underneath the visual
View Comments	The ability to read comments underneath the visual
View Summary Data	The ability to pull up a window with the summary data in text form for the items selected
View Underlying Data	The ability to pull up a window with the underlying row by row data in text form for the items selected
Export Image	The ability to export the visual as an image or a PDF
Share Customized	The ability to share your customized views with other users in the system
Data Source	
Connect	The ability to connect to the data source with your identifying information (applies to published data sources only)
Project	
Project Leader	This setting overrides virtually all of the above settings, for a given project

Add / Edit Permissions

Users
 Groups
 Both

- All Users**
- Casual Users
- designers
- Sales Reps
- admin
- Casual User
- Chris
- Erin
- Publisher User
- Sales Rep User
- Tableau Software
- William

Role:

	Allow	Deny	Inherited
General			
View:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Write:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Delete:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Download File:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Move:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Set Permissions:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Workbook			
Filter:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Add Comment:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
View Comments:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
View Summary Data:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
View Underlying Data:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Export Image:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Share Customized:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Data Source			
Connect:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Project			
Project Leader:	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>