

Tableau Server Platform Monitoring

Customers choose Tableau Server as their modern analytics platform because it gives their company a competitive advantage. Tableau quickly empowers users to transform data into the right decisions that drive the business. To accomplish this IT provides trusted data to business users who then rapidly self-serve their analytic needs.

Tableau is a mission critical service and administrators need to proactively monitor their Tableau deployment to identify and address potential issues. As the usage of Tableau becomes pervasive within an organization, more hardware, network, databases, applications, and enterprise tools will become integrated with the platform. Understanding how these tools interoperate is a key concern for monitoring, both from a troubleshooting and performance perspective.

In addition to routine monitoring of Tableau Server usage, Tableau also recommends that deployments be routinely analyzed to determine their hardware utilization and predicted capacity limits.

This whitepaper describes the various mechanisms available to monitor Tableau Server and understand usage across your organization.

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Infrastructure Monitoring

At the most basic level, any application can only be as reliable as the hardware that it is running on. Thus it is important that the underlying infrastructure of your Tableau Server deployment – be it physical servers or virtual machines, be routinely monitored for capacity constraints to prevent overtaxing the system. In particular, we recommend monitoring CPU, memory usage, disk I/O, and network bandwidth. This can be done using the Windows Performance Monitor built into the OS. If you are deploying on virtual platforms (e.g. VMware, HyperV, or Citrix) or public cloud (e.g. AWS, MS Azure, Microsoft, GCP), these platforms have their own tools for monitoring the health of their virtual machines. These tools usually have support for automatically monitoring your infrastructure and alerting you when your preset thresholds are exceeded.

Monitoring Tableau Server Usage and Performance

Once you have monitoring in place for the underlying infrastructure, you will want to start monitoring metrics that are specific to Tableau Server, such as average load times for views, most popular workbooks and data sources, users, disk usage, latency on extracts, etc. Tableau provides a number of tools to help you with this. Some of the tools built into Tableau Server include the admin views, status page, and e-mail alerts.

Overall Server Health

Administrators can monitor the state of individual processes on the Tableau Server status page. This provides administrators with an understanding of the overall health of the server by displaying the server processes across all nodes as well as the status of the active and passive Repositories. For more information about the different Tableau Server processes please see the [Tableau Server Admin Guide](#).

Server Status			
Process Status			
The real-time status of processes running in Tableau Server.			
Process	Primary 10.0.1.11	Worker 1 10.0.1.12	Worker 2 10.0.1.13
Cluster Controller	✓	✓	✓
Gateway	✓	✓	✓
Application Server		✓ ✓	✓ ✓
VizQL Server		✓ ✓	✓ ✓
Cache Server		✓ ✓	✓ ✓
Search & Browse	✓	✓	✓
Backgrounder		✓	✓
Data Server		✓	✓
Data Engine		✓	✓
File Store		🔄 Synchronizing	🔄 Synchronizing
Repository		✓	✓






  Active  Busy  Passive  Unlicensed  Down Status unavailable

Figure 1. Tableau Server Status Page showing the health of individual processes

Tableau Server can also send email alerts to server administrators when there is a system failure via the Tableau Server Configuration utility. This utility can also provide early warning of disk space capacity issues.

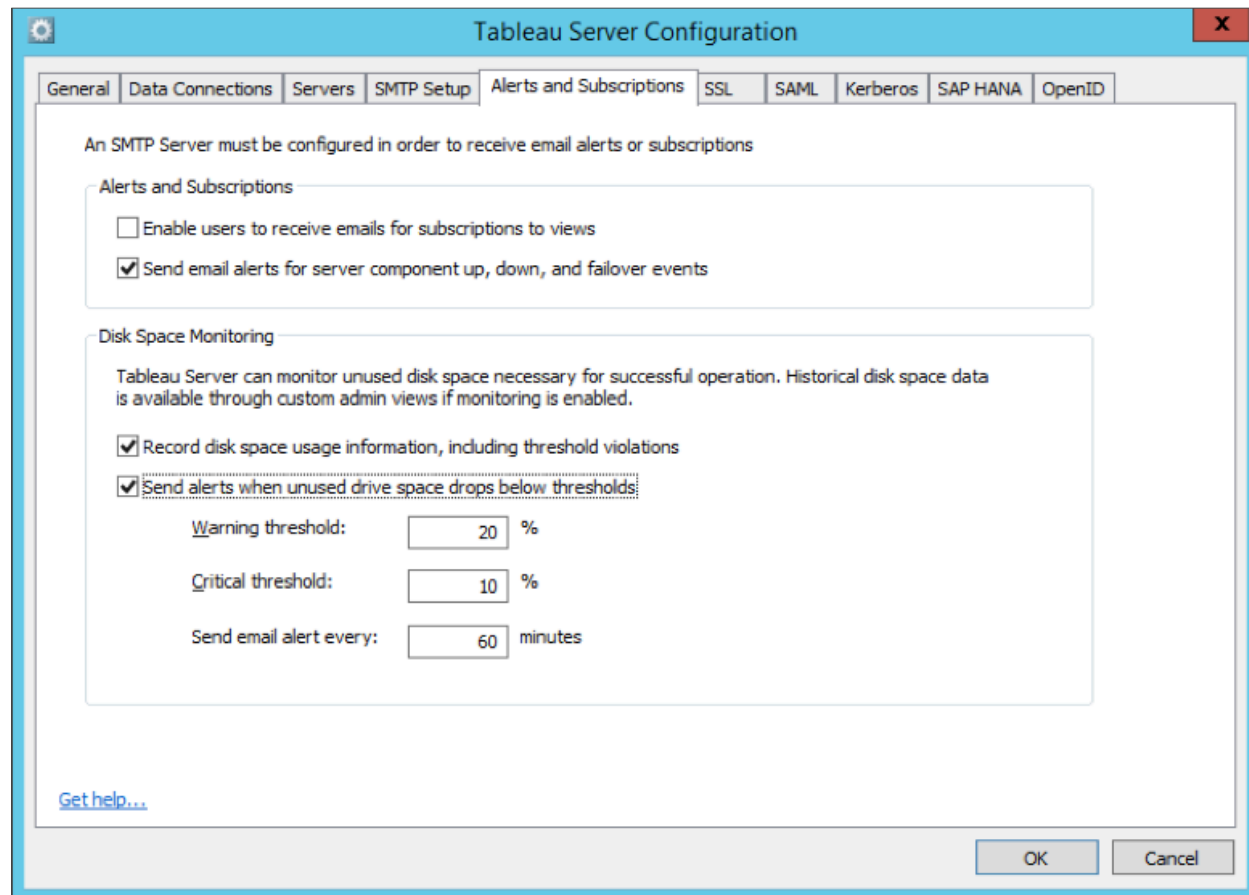


Figure 2. Setting up health alerts using the Tableau Server Configuration Utility

Integrating with Third-party Monitoring Tools

In addition to monitoring system health using Tableau Server's built-in mechanisms, you can also remotely receive a machine-readable XML version of each processes status. You will need to enable remote access to the server and use the appropriate URL for your instance:

```
http://<my_tableau_server>/admin/systeminfo.xml
```

This returns a `status.xml` file, which can parse the server's status and integrate into other systems or monitoring tools:

```
<systeminfo xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <machines>
    <machine name="my_tableau_server">
      <repository worker="my_tableau_server:8060" status="Active"
        preferred="false"/>
      <dataengine worker="my_tableau_server:27042" status="Active"/>
      <applicationserver worker="my_tableau_server:8600" status="Active"/>
      <apiserver worker="my_tableau_server:8000" status="Active"/>
      <vizqlserver worker="my_tableau_server:9100" status="Active"/>
      <dataserver worker="my_tableau_server:9700" status="Active"/>
      <backgrounder worker="my_tableau_server:8250" status="Active"/>
      <gateway worker="my_tableau_server:80" status="Active"/>
      <searchandbrowse worker="my_tableau_server:11000" status="Active"/>
      <cacheserver worker="my_tableau_server:6379" status="Active"/>
      <filestore worker="my_tableau_server:9345" status="Active" pendingTransfers="0"
        failedTransfers="0" syncTimestamp="2015-02-27T20:30:48.564Z"/>
      <clustercontroller worker="my_tableau_server:12012" status="Active"/>
      <coordination worker="my_tableau_server:12000" status="Active"/>
    </machine>
  </machines>
  <service status="Active"/></systeminfo>
```

Admin Views

Tableau recommends administrators regularly spend time understanding the usage patterns of their server nodes and how the application is performing throughout the day. In particular, administrators should pay attention to the most popular vizzies and dashboards on Tableau Server and how they are being accessed, as well as the underlying systems and databases that supply the data. Administrators should also keep a close eye on background tasks, such as extract refreshes and subscriptions, to make sure they are executing on time and during off-peak hours.

The easiest way to do these tasks and answer most other platform questions is with Tableau Server's built-in server admin views. These pre-built views are accessed via the Server Status page of the Tableau Server web experience. Admin views help you see the different types of server and site activity, including the number of views rendered, concurrent users, and most popular content. This [help article](#) provides an overview of each individual view and the information that it contains.

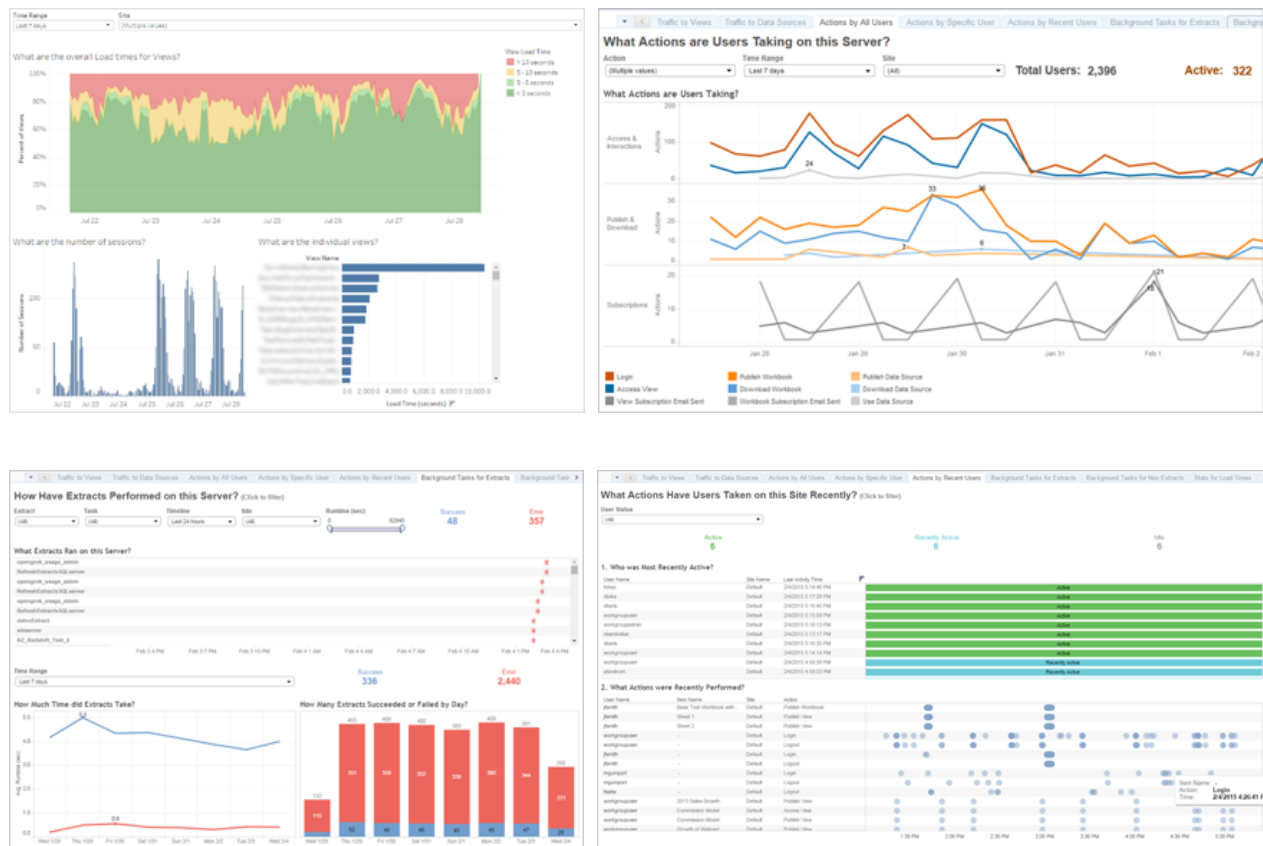


Figure 3. Setting up health alerts using the Tableau Server Configuration Utility

Admin views are available at two different levels—at the server level, accessible only to server administrators, and at the individual site level, available to the server administrator as well as the individual site administrator. Below is an example of the list of built-in admin views accessible to a Site Administrator. For Tableau Online customers, only the site level admin views are accessible. Note that there are some admin views that are only available at the server level, such as Background Task Delays, Server Disk Space, Desktop License Usage, and Desktop License Expiration.

The screenshot shows the Tableau Server interface with the 'Status' tab selected. The main heading is 'Site Status'. Underneath, there is a section titled 'Analysis' with the subtitle 'Dashboards that monitor site activity.' Below this is a table listing various administrative views.

Dashboard	Analysis
Traffic to Views	Usage and users for published views.
Traffic to Data Sources	Usage and users for published data sources.
Actions by All Users	Actions for all users.
Actions by Specific User	Actions for a specific user, including items used.
Actions by Recent Users	Recent actions by users, including last action time and idle time.
Background Tasks for Extracts	Completed and pending extract task details.
Background Tasks for Non Extracts	Completed and pending background task details (non-extract).
Stats for Load Times	View load times and performance history.
Stats for Space Usage	Space used by published workbooks and data sources, including extracts and live connections.

Figure 4. Site-Level Administrative Views on Tableau Server

In addition to the pre-built administrative views, you can also use Tableau Desktop to query and build your own custom analyses of server activity. To do this, you connect to and query tables in the Tableau Server Postgres repository using one of two built-in user profiles: “tableau” or “readonly”. More information on this can be found in the following [help article](#).

Tableau Server Logs

If you want to perform more detailed analysis of server usage and performance, you can do so using the robust Tableau Server Log files. A detailed list of the various log files, the information they contain, and their location can be found in this [help article](#).

Of particular note, there is a *request ID* associated with every incoming request found in the Apache log. This *request ID* is used throughout the server logs and can be used to associate log entries with individual requests.

Many customers use third party log parsing and monitoring tools to ingest Tableau Server logs, parse out the various metrics of interest, and then monitor them over time. You can also use Logshark (see below) to do analysis and visualization of Tableau Server logs.

Additional Monitoring Tools for Tableau Server

Tableau has developed and made several open source tools available for use with Tableau Server, including TabMon and Logshark. These tools were initially built to help us monitor and manage our internal Tableau Public and Tableau Online instances. While these tools are not officially supported, these tools enable advanced monitoring capabilities and provide insights on your Tableau Server health and usage at no additional cost.

TabMon

TabMon is an open source tool for monitoring a Tableau Server cluster. This tool was built by the Tableau support team for internal troubleshooting. Administrators can use it to easily gather metrics from their Tableau Server deployment and analyze the data using Tableau.

You can use TabMon to monitor physical (CPU, RAM, HD), network, cache-hit ratio, request latency, active sessions, and much more. TabMon records system health and application metrics out of the box. It collects built-in metrics like Windows Perfmon, Java Health, and Java Mbean (JMX) counters on Tableau Server machines across a network. It displays the data in a clean, unified structure, making it easy to visualize in Tableau Desktop.

More information on the TabMon project can be found [here](#).

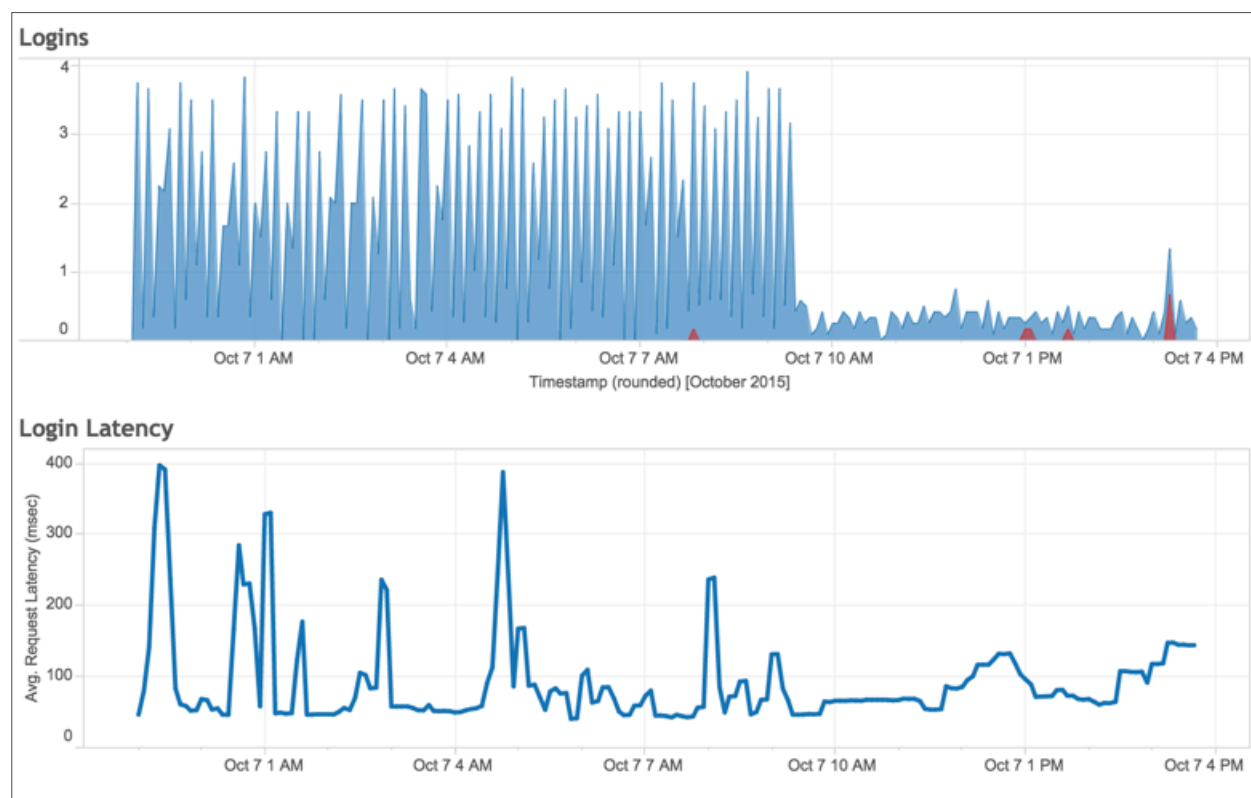


Figure 5. Visualization of selected counters collected by TabMon

Logshark

Logshark is an open source tool for visualizing and investigating information stored in the Tableau Server logs. Logshark generates a set of workbooks that provide insight into system performance, content usage, and error investigation. Logshark can be used to troubleshoot specific issues that are only recorded in the logs and to perform analysis of system metrics from log data compared to historical data.

More information on the Logshark project can be found [here](#).

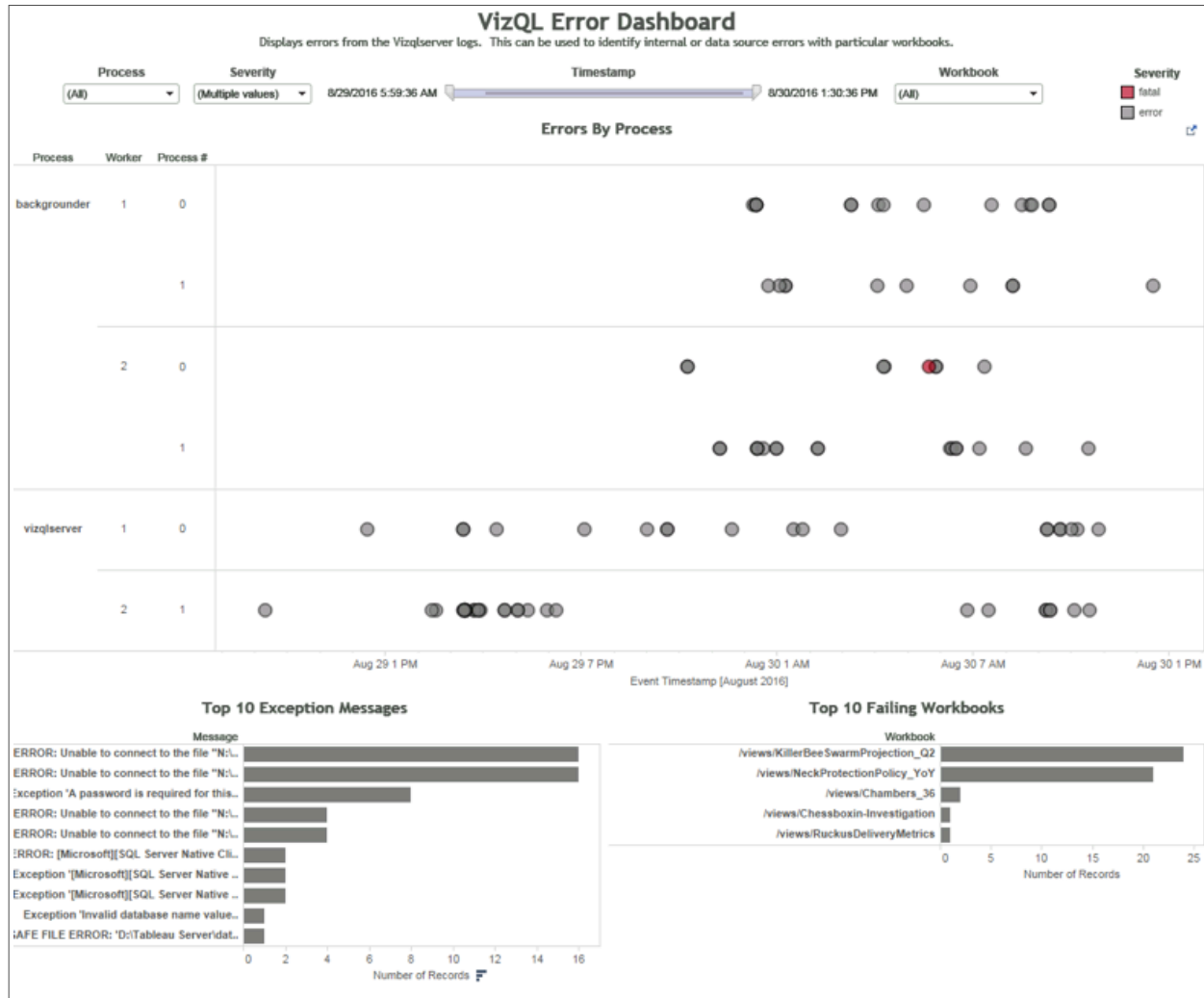


Figure 6. Workbook generated from the VizQL server log showing errors with particular workbooks

Summary

Tableau Server supports the monitoring needs of all customers; from small installations run by business users all the way up to mission critical global enterprise deployments with tens of thousands of users. Whether you want something quick and simple and accessible right out of the box or you want to build and integrate your own custom monitoring solution based on APIs, logs and performance counters, Tableau Server meets your needs.

About Tableau

Tableau helps people transform data into actionable insights that make an impact. Easily connect to data stored anywhere, in any format. Quickly perform ad hoc analyses that reveal hidden opportunities. Drag and drop to create interactive dashboards with advanced visual analytics. Then share across your organization and empower teammates to explore their perspective on data. From global enterprises to early-stage startups and small businesses, people everywhere use Tableau's analytics platform to see and understand their data.

Resources

[Evaluation Guide: How to choose the right modern BI & analytics platform](#)

[Redefining the role of IT in a modern BI world](#)

[Tableau for the Enterprise: An IT Overview](#)

[Tableau Server Scalability – Introductory overview to scaling Tableau Server across your enterprise](#)

