

Tableau Server Study Guide

Architecture and Planning

- **Topology**
 - **Identify client components**
 - Tableau Desktop
 - tabcmd
 - Web browser
 - **Identify server components**
 - Application
 - Background Tasks
 - VizQL
 - Data Engine
 - Data Server
 - Repository
 - Gateway
 - **Understand best practices for Tableau scalability and configuration**
 - **Very small deployments**
(i.e. proof-of-concepts or initial evaluations, 1-2 concurrent users)
 - 4 cores, 2.0 GHz or higher minimum recommended CPU
 - 32-bit version: Dual-core, 2.0 GHz or higher minimum recommended CPU
 - 8 gigabytes minimum system memory
 - 32-bit version: 4 gigabytes minimum system memory
 - 1.5 gigabytes minimum free disk space
 - **Small deployments**
(i.e. less than 25 concurrent users)
 - 4 cores, 2.0 GHz or higher minimum recommended CPU
 - 8 gigabytes minimum system memory
 - 5 gigabytes minimum free disk space
 - **Medium deployments**
(i.e. less than 100 concurrent users)
 - 8 cores, 2.0 GHz or higher minimum recommended CPU
 - 32 gigabytes minimum system memory
 - 50 gigabytes minimum free disk space
 - **When to Add Workers and Reconfigure?**
 - More than 100 concurrent users: If your deployment is user-intensive (>100 simultaneous viewers), it's important to have enough VizQL processes—but not so many that they exceed your hardware's capacity to handle them. Also, enabling the Tableau Server Guest User account can increase the number of potential simultaneous viewers beyond the user list you may think you have. The administrative view User Activity can help you gauge this.
 - Heavy use of extracts: Extracts can consume a lot of memory and CPU resources. There's no one measurement that qualifies a site as extract-intensive. Having just a few, extremely large extracts could put your site in this category, as would having very many small extracts. Extract heavy sites benefit from isolating the data engine process on its own machine.
 - Frequent extract refreshes: Refreshing an extract is a CPU-intensive task. Sites where extracts are frequently refreshed (for example, several times a day) are often helped by

- more emphasis on the background process, which handles refresh tasks. Use the Background Tasks administrative view to see your current refresh rate
 - Troubleshooting performance: If views are slow to load or server performance is generally slow, there could be several causes. See General Performance Guidelines on the previous page as well as Improve Server Performance on the next page.
 - Downtime potential: If your server system is considered mission critical and requires a high level of availability, you can configure it so there's redundancy for the server processes that handle extracts, the repository, and the gateway.
- **Architect Tableau Server configuration based on user requirements and resources**
 - **Optimizing for Extracts**
 - The data engine process stores extracts and answers queries; the background process refreshes extracts. Because both are demanding of CPU resources, the best approach to improving performance for an extract-intensive deployment is to isolate these two processes from one another, and from the other server processes. This may take three machines. See pg. 225-228
 - **Optimizing for Users and Viewing**
 - The VizQL server process handles loading and rendering views for Tableau Server users. If you are trying to optimize your deployment for a high number of users and a lot of view interaction, this is the process you should focus on. See pg. 225-228
 - **How Many Processes to Run**
 - This topic assumes that you are running the 64-bit version of Tableau Server on a 64-bit operating system. In this situation, two instances of each process should meet your needs. If your machine only meets the minimum RAM requirement for Tableau Server, which is 8 GB, your limit should be one instance of each process. This limitation does not appear to apply to the backgrounder or VizQL.
 - **Background Process**
 - A single background process can consume 100% of a single CPU core, and sometimes even more for certain tasks. As a result of this, the total number of instances you should run depends
 - on the machine's available cores—as well as on what you're trying to improve. The deployment examples below uses N to represent the machine's total number of cores, and each suggests a different strategy where the background process is concerned. When in doubt, start with the low end of the suggested range and assess performance before increasing the number.
 - **Data Engine and Repository Processes**
 - There are scenarios where the data engine process should be isolated on its own node—such as if you are trying to improve an extract-intensive deployment and you want to emphasize querying more than extract refreshes. The deployment examples provide specifics. Because the data engine stores real-time data, transferring it is a multi-phased procedure. Move the Data Engine and Repository Processes on page 34 describes how to do it. Another reason to isolate the data engine (and/or the repository) is to minimize your deployment's potential for downtime. See High Availability on page 43 for details. Unless
 - you're configuring for high availability, the repository can usually remain on the primary Tableau Server.

Preparation

- **Versions**
 - **Identify the current version of Tableau Server including Worker**
 - tabcmd version

- Footer of any Tableau Server page
 - **Obtain the latest release of Tableau Server and Worker**
 - <https://licensing.tableausoftware.com/esdalt/>
 - **Access Tableau Server release notes**
 - <http://www.tableausoftware.com/support/releases>
 - **Research configuration and installation details with Tableau Online Help**
 - <http://onlinehelp.tableausoftware.com/current/server/en-us/help.htm>
- **Hardware Requirements**
 - **RAM requirements**
 - POC (64-bit) – 8GB
 - POC (32-bit) – 4GB
 - Small (<25 users) – 8GB
 - Medium (<100 users) – 32GB
 - Enterprise (>100 users) – 32GB or more
 - **CPU requirements**
 - POC (64-bit) – 4-core
 - POC (32-bit) – 2-core
 - Small (<25 users) – 4-core
 - Medium (<100 users) – 8-core
 - Enterprise (>100 users) – 16-core
 - **Hard disk requirements**
 - POC (64-bit) – 1.5GB
 - POC (32-bit) – 1.5GB
 - Small (<25 users) – 5GB
 - Medium (<100 users) – 50GB
 - Enterprise (>100 users) – 50GB or more
 - **Access requirements with Tableau Online Help**
 - <http://onlinehelp.tableausoftware.com/current/server/en-us/help.htm>
- **Software Requirements**
 - **List supported operating systems**
 - Tableau Server is available in 32-bit and 64-bit versions. You can install Tableau Server on Windows Server 2003 R2 SP2 or higher, Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows 7, Windows 8, or Windows 8.1. The 64-bit version of Tableau Server on a 64-bit operating system is recommended. You may install Tableau Server on virtual or physical platforms.
 - **Understand browser requirements**
 - Android Browser (Android 3.2 or later)
 - Apple Safari 3.x or later, including Safari on the iPad (iOS 5.1.1 or later)
 - Microsoft Internet Explorer 7 or later
 - Mozilla Firefox 3.x or later (not supported on mobile devices)
 - Google Chrome, including on Android devices
 - Tableau Mobile iPad and Android Apps available
 - **Identify the SMTP server**
 - On the command line type “nslookup” Enter
 - “set type=mx” Enter
 - Address (ex. Hotmail.com)
 - On the Alerts and Subscriptions tab of the Tableau Server configuration menu add the SMTP server identified
 - **Explain the purpose and benefits of a dedicated server**
 - The purpose of running Tableau Server on a dedicated server is to prevent Tableau Server having to compete for resources with other applications / services. Additionally, running on a dedicated server can help prevent conflicts with ports needed by Tableau Server.
 - **Understand ant-virus issues**

- Anti-virus scans can degrade performance on Tableau Server due to virus scans during the execution of processes. Tableau Server program Folders (C:\Program Files) and data folders (C:\ProgramData\) should be excluded from active and continuous antivirus scans. Additionally, some anti-virus programs can block Tableau's access to the Postgres database.
 - **Understand port configuration and potential conflicts for required software or server machines**
 - Tableau Server's gateway listens on port 80, which is also used by Internet Information Services (IIS) by default. If you are installing Tableau Server on a machine that's also running IIS, you should modify the Tableau's gateway port number to avoid conflict with IIS.
 - **Research software requirements with Tableau Online Help**
 - <http://onlinehelp.tableausoftware.com/current/server/en-us/help.htm>
- **Licensing**
 - **Core and user licensing differences and location**
 - Core based licenses mean that you pay for a license for each core processor on the server that hosts Tableau Server
 - User based licensing limits you to a specific number of named users that can access Tableau Server
 - Primary licensing is the gateway
 - **Activate and update any type of license key**
 - Manage Product Keys in Tableau Server Monitor
 - **Execute steps for offline activation**
 - http://onlinehelp.tableausoftware.com/current/server/en-us/help.htm#activate_off.htm
- **Process Configuration**
 - **Describe the function of each Tableau Server process**
 - Application Server – Handles the web application, supports browsing and searching. It only consumes noticeable resources during infrequent operations, like publishing a workbook with an extract, or generating a static image for a view. Its load can be created by browser-based interaction and by tabcmd.
 - Background – Executes server tasks, including extract refreshes, 'Run Now' tasks, and tasks initiated from tabcmd. It is a single-threaded process where multiple processes can be run on any or all machines in the cluster to expand capacity. The backgrounder normally doesn't consume much process memory, but it can consume CPU, I/O, or network resources based on the nature of the workload presented to it.
 - Data Engine – Stores data extracts and answers queries. The data engine's workload is generated by requests from the VizQL Server process. It is the component that loads extract into memory and performs queries against them. Memory consumption is primarily based on the size of the data extracts being loaded. The 64-bit binary is used as the default on 64-bit operating systems, even if 32-bit Tableau Server is installed. The data engine is multi-threaded to handle multiple requests at a time. Under high load it can consume CPU, I/O, and network resources, all of which can be a performance bottleneck under load. At high load, a single instance of the data engine can consume all CPU resources to process requests.
 - Data Server – Handles connections to Tableau Server data sources. Because it's a proxy, it's normally only bound by network, but it can be bound by CPU with enough simultaneous user sessions, Its load is generated by browser and Tableau Desktop-based interaction and extract refresh jobs for Tableau Server data sources.
 - Repository – Tableau Server database, stores workbook and user metadata. Normally consumes few resources. It can become a bottleneck in rare cases for very large deployments (thousands of users) while performing operations such as viewing all workbooks by user or changing permissions.
 - VizQL Server – Loads and renders views, computes and executes queries. Consumes noticeable resources during view loading and interactive use from a web browser. Can be CPU bound, I/O bound, or network bound. Process load can only be created by browser-based interaction. Can run out of process memory.

- **Verify if a process is running**
 - tabadmin status -v
 - Admin page
- **Verify correct processes are running on the appropriate servers**
 - tabadmin status -v
 - Admin page
- **Understand the differences between simple distributed environments, redundant environments for disaster recovery and high availability**
 - A simple distributed environment is any worker that is made available to run additional processes
 - Redundant environments should be located in separate environments and configured and synchronized using backups and restores on a periodic basis to ensure that the backup environment is ready to take over in an event of a problem with the production environment
 - High availability environments are a 4-node cluster with one primary, a failover primary and two workers. The primaries typically only run the gateway while the workers run all processes, specifically the data engine / repository with the 2nd worker providing standby data engine / repository services.
- **Data Source Identification and Administration**
 - **Identify required ports**
 - 80 – Gateway
 - 443 – SSL
 - 3729 – Tableau Server Setup
 - 3730 – 3731 – Tableau worker servers
 - 8000 – 8059 – Application server (increase for each app server process)
 - 8060 – PostgreSQL database
 - 8061 – Firebird
 - 8062 – Discovery in a distributed HA environment
 - 8080 – Solr and Tomcat HTTP
 - 8755 – Tableau Administrative process
 - 9090 – Process that performs replication in a distributed HA environment
 - 9100 – 9199 – VizQL (increase for each VizQL process)
 - 9700-9899 – Data Server (increase for each Data server process)
 - 27000 – 27009 – Workers and primary server to communicate licensing information in distributed and HA environments (one additional port is dynamically chosen for workers and the primary server to communicate licensing info in distributed and HA environments. You can specify a fixed port, 27010 is recommended. If the primary is in a DMZ, specific port must be specified.
 - 27042 – Data engine. Tableau Server installs with one data engine process. There can be up to two data engine processes per node, on up to two nodes in a cluster
 - 27043 – Data engine initialization in a distributed environment that's been configured for HA
 - 8300 – 8359 – Application server JMX
 - 8550 – Background monitor JMX
 - 9095 – Service monitor JMX
 - 9400 – 9499 – VizQL server JMX
 - 10000 – 10299 – Data server JMX
 - **Verify runtime user permissions on the database**
 - Test connection from the Edit screen under Data Connections on the admin tab
 - Additionally, you can run a refresh extract and confirm that it runs properly
 - **Identify, locate and install database drivers**
 - <http://www.tableausoftware.com/support/drivers>

Server process	Requires database driver?
VizQL	yes
Application server	yes
Data server	yes
Background	yes
Data engine (extract storage)	no
Repository	no
Gateway	no

- Understand file, relational and cube differences

- File – Tableau Server user account must have permissions to a network directory to connect to a file. Additionally, the FULL file path must be specified and exclude any user specified paths, such as network drives (ex. H:\)
- Relational – Tableau Server user account must have at least read access to a relational data source. Additionally, Tableau Server must have appropriate drivers installed to access the DB.
- Multidimensional (cube) data sources have certain characteristics that make them unique in Tableau. Cube data sources do not support pass-through connections. This means that when a cube data source is published, you cannot make a connection from Tableau Server using the data source. It also means you cannot create a workbook using the data source in Tableau Server. Publishing a cube data source to Tableau Server gives you the ability to store the data source on the server. However, to use the data source, you must download the data source to Tableau Desktop and use it locally. To download a published data source you need:
 - The **Download/Web Save As** permission for the data source
 - Correct drivers installed and ports opened on computer running Tableau Desktop

- Understand extract and live connection differences

- **Extract**
 - If published as a data source users must have permission to connect to the data source and Tableau Server Run As account requires access to connect to the data source to refresh as needed
- **Live Connections**
 - **Database login account:** When you create a data source that connects to a live database, you choose between authenticating to the database through Windows NT or through the database's built-in security mechanism.
 - **Authentication mode:** When you publish a data source or a workbook with a live database connection, you can choose an **Authentication mode**. Which modes are available depends on what you choose above.
 - **User filters:** You can set filters in a workbook or data source that control which data a person sees in a published view, based on their Tableau Server login account.

- Know the benefits of a published data source

- Tableau's data server is a server component that lets you centrally manage and store Tableau Server data sources. A data source is a reusable connection to data. The data can be located either in Tableau's data engine, as an extract, or in a live relational database. For relational database connections, the information stored in the data source is used for a pass-through connection. The data source can also include customizations you've made at the field-level in Tableau Desktop, such as calculations, dimension aliases, groups, or sets. For administrators, there are many advantages to using Tableau Server data sources.

Because one data source extract can be used by many workbooks, you save on server space and processing time. Extract refreshes can be scheduled per-extract instead of per-workbook, and when a workbook using a Tableau Server data source is downloaded, the data extract stays on the server, resulting in less network traffic. Finally, if a database driver is required for a connection, you only have to install the driver once, on Tableau Server, instead of multiple times, on all your users' desktops.

- **Publish live data source connections and extracts using Tableau Desktop**
 - Right click data source and click "Publish to Server"
- **Administrate published data sources and embedded passwords**
 - Edit permissions, create new workbook, edit connection info, tag and scheduled tasks from the Data Sources screen under content
 - Embedded passwords must be enabled from the Maintenance screen by checking "Embedded Credentials" under Settings.
 - All saved data connection passwords can be cleared for users if the ability to use "Saved Passwords" is enabled.
- **Infrastructure Network**
 - **Understand network latency implications**
 - Network latency can be affected by a large number of concurrent users, or extract refreshes. Network issues typically come from the backgrounder, data engine, data server, or VizQL
 - **Explain the risks of Dynamic IP addressing**
 - Starting with version 8.1, hostname support was added to Tableau Server. This means that when you're configuring Tableau Server to work with another computer, you can use the name of that computer to identify it, instead of its static Ipv4 address. Internally, however, Tableau Server still relies on IP addresses to communicate with various services, such as Tableau workers or trusted hosts. So even if you provided the name of a computer instead of its IP address, the IP address associated with that computer can't change or be temporary. If a computer running Tableau Server gets a new IP address—for example, after a VM reboot, or in a network environment that's using DHCP—you need to run tabadmin config to update Tableau Server's configuration with the change. See the procedure below for steps.
 - **Create and troubleshoot a Run As User account**
 - Identify the account and grant it permissions for connecting to data sources with read access, provide credentials to allow Tableau Server to satisfy the NT authentication process with the data source (Microsoft SQL Server and Microsoft Analytical Services, also grant permissions to query your AD domain controller for users and groups. A user account created on the local machine that Tableau Server is running on probably won't have these permissions.
 - Confirm domain two-way trust if the machine hosting Tableau Server and the data source are on separate domains or if Tableau Server users are on a separate domain from Tableau Server or the data source.
 - Verify Tableau Service Settings – Apply on primary and workers.
 - Log on as an admin to the computer running Tableau Server. Navigate to Administrative Tools > Computer Management > Services and Applications > Services.
 - Open Services and Applications and then click services, confirm the following:

Service Name	Logon Value	Startup Value
FLEXnet Licensing Service	Local System	Manual
Secondary Login	Local System	Automatic

Service Name	Logon Value	Startup Value
Tableau Server (tabsvc)	<domain>\<username> This is the Run As user account. See below.	Automatic
Tablicsrv	Local System	Automatic

- To change the logon value for Tableau Server (tabsvc) to the run as users account, stop the tabsvc in the services window. Configure Tableau Server and enter the run as user account. Click OK and then restart Tableau Server (tabsvc).
- Prepare the Local Security policy – In the Local Security Policy screen under Administrative tools grant the Run As User Account the following permissions:
 - Log on as a service, Log on Locally
 - Remove the run as account from “Deny logon” policy
- Grant Read and Execute permissions, right click on Local Disk, select properties, select Security, click Edit, Click Add, Add username in select users, click check names, click ok, highlight user name and confirm permissions for Read & Execute
- Grand Modify permissions to “C:\Program Files\Tableau” and “C:\ProgramData\Tableau\” using the steps noted above, but starting with folders instead of “C:\”

Configuration

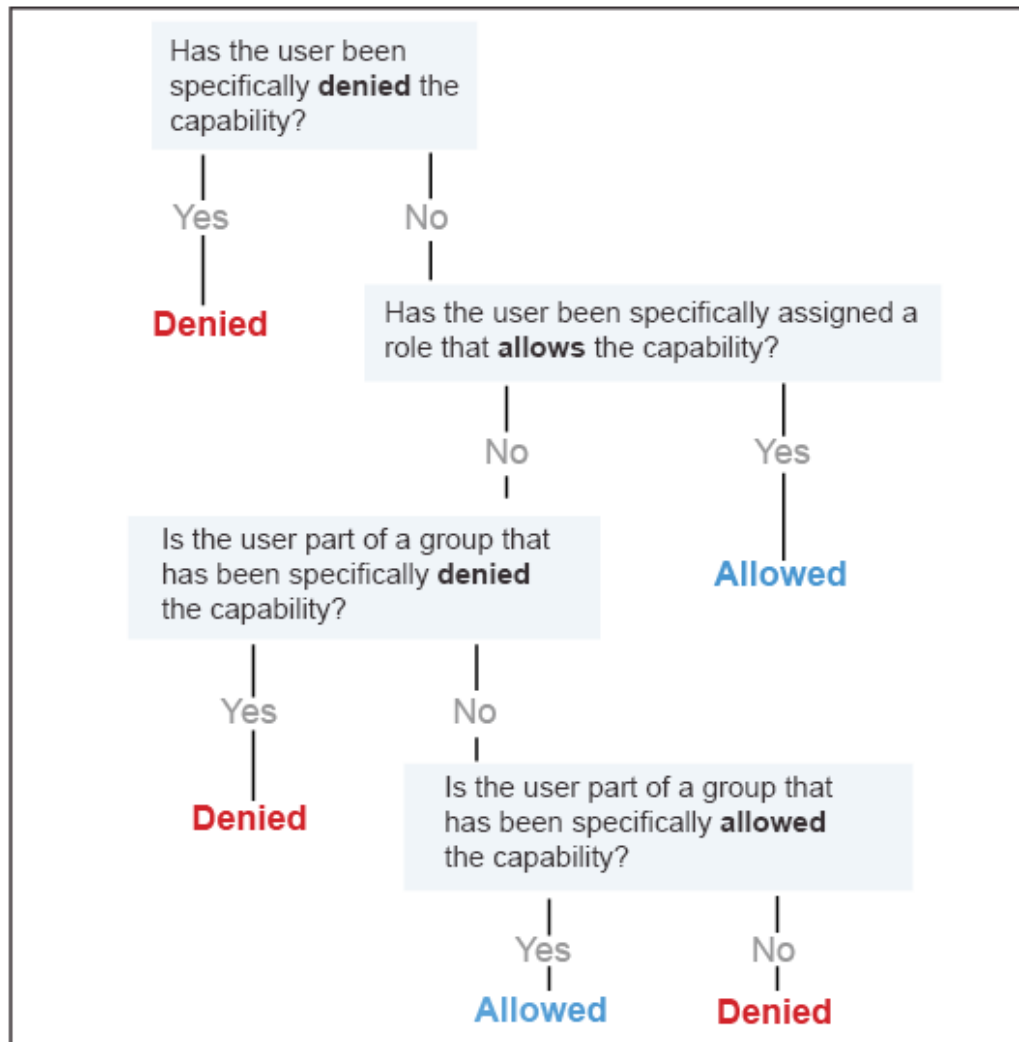
- **Windows Server Configuration**
 - **Configure cache settings for the desired performance**
 - **Refresh Less Often**—Data is cached and reused whenever it is available regardless of when it was added to the cache. This option minimizes the number of queries sent to the database. Select this option when data is not changing frequently. Refreshing less often may improve performance.
 - **Balanced**—Data is removed from the cache after a specified number of minutes. If the data has been added to the cache within the specified time range the cached data will be used, otherwise new data will be queried from the database.
 - **Refresh More Often**—The database is queried each time the page is loaded. The data is still cached and will be reused until the user reloads the page. This option will ensure users see the most up to date data; however, it may decrease performance.
 - **Apply process distribution**
 - Stop primary server
 - Install worker of same version on 2nd server
 - Configure primary server
 - Start Server
 - **Configure email alerts and subscriptions**
 - From the Tableau Configuration menu check send email alerts for server health issues and/or enable email subscriptions
 - Enter the SMTP server
 - Enter the username/password
 - Enter the port
 - Enter send email from (does not have to be real email address, but does have to be properly formatted)
 - Enter send email to
 - Enter Tableau Server URL (for links in emails)
 - **Configure SSL**
 - Acquire an Apache SSL certificate from a trusted authority or internal certificate used by the company. Wildcard certificates which allow you to use SSL with many host names within the same domain are also support

- Place the certificate files in a folder named SSL, parallel to the Tableau Server 8.2 folder for example (C:\Program Files\Tableau\Tableau Server\SSL)
 - Open Tableau Configuration menu
 - Select the SSL tab and check “Use SSL for Server Communication” and provide the location for all available files
 - Click OK and restart the server
 - Use this log to troubleshoot validation and encryption issues. C:\ProgramData\Tableau\Tableau Server\data\tabsvc\logs\httpd\error.log
 - Cluster non-HA – If the primary is the only gateway, then only need to configure the primary
 - Cluster HA – Configure the load balancer for SSL or Configure Tableau Server for SSL (procedure below)
 - Configure the load balancer for SSL passthrough
 - Make sure that the SSL certificate you use was issued for the load balancer’s host name
 - Configure the primary as noted above
 - Place the same SSL certificate and key file that you used for the primary on each Tableau Worker that is running a gateway process. Use the same folder location on the workers that you used on the primary (nothing additional required)
- **Configure optional customizations**
 - **Change the Name**
 - Tabadmin customize name “new_name”
 - Tabadmin restart
 - **Change the logo**
 - Large size logo (up to 160 x 160, not smaller than 32 x 32) – tabadmin customize logo “file_path”
 - Small logo (32 x 32 or smaller) – tabadmin customize smalllogo “file_path”
 - Tabadmin restart
 - **Restore customizations**
 - Tabadmin customize <parameter> -d
 - <parameter> is either name or logo
- **Tableau Server Configuration**
 - **Configure Site options**
 - Admin tab, click sites and then Edit
 - **Configure user quota restrictions**
 - Admin tab, click sites and then Edit
 - **Understand who can add users**
 - System administrators (always)
 - Also site administrators when selected
 - Enables the option of “Up to server capacity” or “Maximum site users”
 - **Set storage quota restrictions**
 - Admin tab, click sites and then Edit
 - **Enable and edit site subscriptions**
 - Admin tab, click sites and then Edit
 - **Set default page for user or user group**
 - Click drop down next to user name and click “Make start page for all users”
 - **Add and configure projects**
 - Click projects under the Admin tab.
 - Click “Add” to create new project
 - Click “Edit” to change project name and description
 - Click “Permissions” to change permissions
 - Click “Delete” to remove”
 - **Use Tableau Best Practices to add groups and users**
 - Seems to vague to go in to detail
 - **Use TabAdmin to modify configuration settings, verify status, stop and start the server**

- Navigate to appropriate path and use “tabadmin” and a command from admin guide
 - **Use Tabcmd to aid in configuration and daily tasks**
 - Navigate to appropriate path and use “tabcmd” and a command from admin guide
- **Adding Users**
 - **Manually add users**
 - Navigate to Admin tab, click Users, All Users or Site Users and click “Add”
 - **Set user levels**
 - **License level**
 - From users, site users or all users you can set as Unlicensed, Viewer, Interactor
 - **Admin level**
 - From users or all users you can set as System Admin or None
 - From users or site users you can set as Site Admin or None
 - **Publisher level**
 - From users or site users you can Allow or Deny
 - **Import users via AD or CSV file**
 - From All Users or Site Users click “Import”
 - Note that in the CSV file order of columns is important and there should be no headers
 - Leave password blank when importing to AD
- **Security**
 - **Configure security and permissions**
 - **Site** – from Admin click site, check site and then edit. Use site users to determine permissions
 - **Project** – from Admin click project, check the desired project and then edit. Click permissions to edit there. You can apply permissions from a project to all content in that project
 - **Groups** – from Admin click groups to add users to groups
 - **User level** – individual users can be granted access to sites, projects, groups, data sources or workbooks. You can check permissions for a user by navigating to content, clicking permissions and typing in a user name in the check permissions box
 - **Data source level** – navigate to data sources, check desired data source and click permissions
 - **Workbook level** – when published with “Show Sheet as Tabs” all views acquire workbook permissions. Worksheets get workbook permissions during **publishing**
 - **Enable/disable guest user**
 - Enable and disable guest account from the Maintenance screen
- **Understand Permissions**
 - **System permission composition**
 - **Permission definitions**
 - **View** – View the item on Tableau Server. For workbooks using data sources a user must have both view permission for the workbook and connect permission for the data source.
 - **Web Edit** – Edit views in workbooks.
 - **Write/Web Save** – Overwrite the item on the server. Re-publish the workbook (becoming owner). Can also overwrite a workbook after editing on the server.
 - **Download/Web Save As** – Download and save an edited workbook as a new workbook.
 - **Delete**
 - **Filter** – Modify quick filters, keep only filters and exclude data
 - **Add Comments**
 - **View Comments**
 - **View Summary Data**
 - **View Underlying Data**
 - **Export Image**
 - **Share Customized**
 - **Move** – Move workbooks between projects

- **Set Permissions** – Allows a user to specify permissions for an item, for workbooks this permission extends to views in a workbook
- **Connect** – Connect to a data source
- **Project Leader** – Set permissions for all items in a project and for the project itself
- **Permissions are determined in the following order**
 - Server
 - Site
 - Project
 - Workbook/Data Source
 - Sheet
- **Ramifications of permission design**
 - A user may not have access to content if they are members of a group that has explicitly been denied permission
- **Differences between allow, deny, inherit**
 - Permissions inherited from groups, unless a permissions is explicitly allowed by group membership then permission is denied
 - Allow grants permission
 - Deny means a user/group is NOT authorized

- Tableau security model



Maintenance & Administration

- **Maintain data connections**

- You can edit connection information for live database connections and for extracts that need to be refreshed by Tableau Server. For example, you may have a large number of workbooks that connect to a database on a specific database server. If the name of the server changes, you can update all of the workbooks at once so they reference the new server name. Another example is if a workbook connects to a database using a specific user name and password. You can quickly update all of the workbooks to use a different set of credentials.
- Select connections you want to modify and click edit

- **Create schedules**

- Admin > Schedules > New

- **Edit and delete subscriptions**

- Admin > Schedules > Edit (or Enable/Disable)
- Admin > Schedules > Delete

- **Perform server analysis**

- For monitoring the physical server open the "Resource Monitor"
- For Tableau Server monitoring use maintenance screens

- **Complete a safe/unsafe backup and restore**

- Unsafe backups are no longer applicable as of v 8.2, if in an earlier version you can just add `-unsafe` if trying to backup while the server is still running

- Tabadmin backup tabserv.tsbak (can also put full file path)
- Tabadmin backup tabserv.tsbak -d -t <directory path>
 - Appends date to file name
 - -t and directory path saves temp files created
- -u places the backup file in the ProgramData\Tableau\Tableau Server folder
- **Perform cleanup**
 - Tabadmin cleanup (removes log files older than seven days and http_requests entries older than seven days)
 - Tabadmin cleanup -restart (removes all log files and temporary files (leave http_requests entries untouched))
 - **Example script:**
 - Tabadmin stop
 - Tabadmin cleanup
 - Tabadmin start
 - Tabadmin cleanup
- **Add, remove, or deactivate users**
 - Can be done from users, all users or site users screens.
 - Deactivate by deleting or changing to unlicensed
- **Update licenses**
 - Stop server and “Manage Product Keys”
 - Start server
- **Start, stop or restart**
 - Tabadmin start
 - Tabadmin stop
 - Tabadmin restart
- **Use Tabadmin**
 - Navigate to directory “cd C:\Program Files\Tableau\Tableau Server\8.2
- **Contrast content and system administrator rights**
 - Too vague to go in to detail and pretty obvious
- **Connect to and analyze data from the Tableau Postgres database**
 - Enable external password using “tabadmin dbpass <password>”
 - Connect in Tableau Desktop using a Postgres connection
 - Enter server name
 - DB name is workgroup
 - Default port is 8060
 - Username is “tableau”
 - Password is whatever was set using tabadmin
- **Understand the global nature of schedules**
 - Schedules are not local to a site they are global. If you run a schedule it will run all tasks associated to that schedule regardless of site.
- **Extract and subscription schedule differences**
 - Extract schedules are used to schedule extract refreshes
 - Subscription schedules are for email subscriptions
 - All options are the same for both

Troubleshooting

- **Understand requirements of third party browser cookies**
 - When a user signs in to Tableau Server, a session cookie is stored in their local browser. The stored cookie is how Tableau Server maintains that the signed in user has been authenticated and can access the server. Because the cookie is set with the same domain or sub-domain as the browser's address bar, it is considered a first-party cookie. If a user's browser is configured to block first-party cookies, they will be unable to sign in to Tableau Server.

- When a user signs in to Tableau Server via an embedded view, or in an environment where trusted authentication has been configured, the same thing happens: a cookie is stored. In this case, however, the browser treats the cookie as a third-party cookie. This is because the cookie is set with a domain that's different from the one shown in the browser's address bar. If a user's web browser is set to block third-party cookies, authentication to Tableau Server will fail. To prevent this from occurring, web browsers must be configured to allow third-party cookies.
- **Reset Tableau user or Tableau run-as user passwords**
 - Passwords can only be reset when using local authentication
 - Tabadmin passwd <username>
- **Package log files for reporting**
 - Generate and download a snapshot of log files from maintenance screen
 - Tabadmin ziplogs (creates logs.zip in Tableau Server bin)
 - Tabadmin ziplogs mylogs.zip (changes name but same directory)
 - Tabadmin ziplogs -d 01/31/2014 mylogs.zip (creates mylogs.zip and includes logs dated 1/31/2014 to present, excludes earlier)
- **Use tabadmin validate and configure**
 - Tabadmin validate (confirms minimum requirements are met)
 - Tabadmin configure (Updates configuration by forcing an update to all files in the "ProgramData\Tableau\Tableau Server\data\tabsvc\<area>"
 - This includes refreshing the master service configuration file, workgroup.yml
 - When a config change is made it is best practice to run tabadmin config to ensure that all files are updated
- **Rebuild the search index**
 - Click on link on Maintenance screen
- **Use maintenance analysis reports**
 - Links on maintenance screen
- **Troubleshoot performance**
 - Use a 64-bit operating system and the 64-bit product
 - Add more cores and memory
 - Schedule refreshes for off-peak hours
 - Look at chacing
 - VizQL session timeout limit, setting it lower can prevent it from consuming memory and CPU
 - VizQL clear session – ends sessions when users move away from a view
 - Assess process configuration
 - Optimize for extract by isolate data engine and background from one another
 - Optimizing for Users and Viewing by adding VizQL processes, run a maximum of 4 VizQL processes, keep it to 2 if possible to allow for more use of caching
 - If only 8GB of RAM, should only run one instance of each process
 - Add background processes of background tasks are taking a long time to complete (cores / 2 for maximum number of processes, cores / 4 for recommended lowest setting). If on a machine with no other processes the maximum number is the number of cores
 - If it is a view heavy and extract heavy environment, isolate background tasks on a machine, data engine on a machine, and increase vizQL sessions on the primary
 - Optimize workbooks and extracts (hide all unused fields and aggregate data for visible dimensions)
 - Assess setting different client-side rendering thresholds
- **Create a performance recording**
 - Performance recordings are enabled on the sites menu
 - Generate a performance recording by adding ?:record_performance=yes to the end of a workbook URL
- **Create and open support requests**
 - <http://www.tableausoftware.com>
 - Click Support > Customer Portal
 - Click My Cases > Create New Case
- **Troubleshoot Tableau Desktop and Server interactions**

- Varies too much to cover here
- **Implement options for email alerts**
 - Configure on initial install or by opening configuration
 - Can change options for each site
- **Troubleshoot potential port issues**
 - Use tabadmin set [option-name value] to change default ports
 - Use tabadmin set with “-d” to restore to default value
 - Port issues can be found in “ProgramData\Tableau\Tableau Server\logs\tabadmin.log”
- **Troubleshoot anti-virus issues**
 - Deactivate anti-virus temporarily to see if performance is improved or issues fixed
 - If anti-virus is the issue add Program Files and ProgramData to Tableau Server to anti-virus exclusions
- **Understand different process flows to pinpoint issues like logging in and viewing a viz**
 - Too generic to go in to detail

Migration & Upgrade

- **Perform point version and full version upgrades**
 - If moving from 32-bit to 64-bit, first uninstall workers and install 64 bit. You must move data engine and repository before uninstalling the worker
 - Install 64-bit on each worker
 - Install 64-bit on primary
 - Before performing an upgrade to the following:
 - Check Product Maintenance Status
 - Create a “Clean” Backup by running cleanup and then running a backup
 - Tabadmin status (confirming it is running)
 - Tabadmin cleanup
 - Tabadmin stop
 - Tabadmin cleanup
 - Create backup using tabadmin backup <filename>
 - If upgrading from an older version use tabadmin to enable postgresql.use_vacuum_job if previously disabled
- **Perform a clean reinstall**
 - Uninstall and delete Tableau server directory in Program Files and ProgramData
- **Migrate to different hardware**
 - Install Tableau Server on new computer
 - Copy .tsbak file to bin folder of new server
 - Stop tableau server
 - Restore using “tabadmin restore <backup file name>”
 - If you don’t want to use the configuration then do “tabadmin restore –no-config <backup file name>”
 - Start the server
 - For distributed run the Tableau Worker Installer
 - Deactive old server keys

Interactions with Tableau Desktop

- **Publish a data source**
- **Publish a workbook**
- **Publish an extract as a data source**
- **Set automatic refresh**