TABLEAU CONFERENCE
Deploying Tableau at Enterprise Scale in the Cloud

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Enterprise Analytics / Tableau
Enterprise Analytics supports Tableau’s mission of driving self-service analytics across an enterprise.

We provide highly available and accurate data sources and governance that enable, rather than restrict, self-service at scale.
Calvin has moved to the cloud
Agenda

Authentication and User Provisioning
Connecting to On-premises Data with Tableau Bridge
Connecting to Cloud Data
Tableau Server Considerations
Authentication and User Provisioning
Tableau Online Authentication Types

**Tableau**
This is the default authentication type for Tableau Sites, and is always enabled.

**Enable an additional authentication method**

- **Google**
  This allows you to use OpenID as your users' authentication method

- **SAML**
  This allows you to set up your SAML provider to work with Tableau so your users can sign in to this Tableau Site with SAML (e.g. Okta, OneLogin, etc.)

**Follow the steps below to use SAML for single sign-on.**

1. **Export metadata from Tableau Online**
   - Select an option for obtaining metadata required by the Identity Provider (IdP)
   - Export an XML file that contains the metadata

2. **External Step: Enter metadata in your Identity Provider (IdP)**
   - Go to your IdP's website and follow the instructions they provide to connect to a service provider.
   - Depending on your IdP, you will either import the metadata file that you exported in the Entity ID, ACS URL, and certificate information.

3. **External Step: Export metadata from your Identity Provider (IdP)**
   - Get metadata that Tableau Online can use to connect to your IdP. Follow your metadata file or for creating a metadata file on your own.

4. **Import metadata file into Tableau Online**
   - IdP metadata file
   - IdP entity ID
   - SSO Service URL
   - Test Connection
Sign in to Tableau Online

Email address

Password

Remember me

Forgot password

Sign In

Sign Up

Sign In

Email

Password

Remember me

Sign In
Tableau Server Authentication Types

Active Directory/LDAP identity stores
   Kerberos/SSPI
   Mutual SSL

SAML/OpenID IdPs
   SAML can be configured server-wide and/or site-specific

Local
   Default authentication type requiring no additional configuration steps
   Username and password
   No password policies (strength requirements, lockout on failed attempts, etc.)
User Provisioning

Add users to site manually
Enter usernames individually
Import via CSV
Specify authentication type

Automation Options
Active directory/LDAP group synchronization—Tableau Server
System for Cross-domain Identity Management (SCIM)—Tableau Online
   Downstream applications kept in sync
   Currently supported with OneLogin (Okta coming soon—in Beta)
Tabcmd—script with Python / PowerShell
Connecting to On-premises Data with Tableau Bridge
Tableau Bridge

Allows you to keep *behind-the-firewall* data sources fresh

Separate installer from Tableau Desktop (new for 2018.2)

Schedule refresh jobs for extracts or live connections

On-premises data (Extracts & Live)

File-based data, i.e. Excel, CSV (Extracts only)

Cloud data accessible only from within a private network and not from the public internet
i.e. Amazon RDS or databases residing in VPC (Extracts only)
Tableau Bridge Uses Tableau Data Server

Data sources in workbooks must be published rather than embedded.

Develop a data source naming convention to help others know what they’re connecting to and prevent redundancy.

Use certification and to help users find trusted data via Recommendations.
Tableau Bridge—Publishing

Publish workbook and its data sources in one step

Live and/or extract data sources

Can include embedded data sources that connect to accessible Cloud data
Tableau Bridge Extract Refresh

Flexible scheduling
 Refresh as frequent as every 15 minutes

Full and/or incremental schedules

Multiple schedules supported

Database credentials stored in the Bridge client

On-demand refresh job can be triggered from the client
Tableau Bridge Client Assignment

Change Refresh Schedule

Choose a computer to refresh the extract for the data source "FlightInfo_05_percent (flight_data)".

- **Tableau Online**
  
  My data is stored in the cloud. Tableau Online can access the data and refresh the extract directly.

- **A computer on my network**

  My data is maintained on my network. The selected computer will send data updates to Tableau Online. Learn how to add a computer to the list.

To complete the refresh settings, open the Tableau Bridge client on the selected computer, and embed your database credentials in this data source's connection.

Refresh this extract on
Select where to run refreshes...

Tableau Bridge

Status: Connected tabid-us-west-2a-prod-datasync...

FlightInfo_05_percent (flight_data)

Mode: **Application**

Edit Database Credentials

To complete the refresh, select the data source name...

Data Source: FlightInfo_05...

- Database: flight_data
- User Name: [input field]
- Password: [input field]

Test Connection

Save Cancel
Tableau Bridge Clients

Site admins can set up centrally-managed clients:
- Use a shared AD account
- Use service mode (runs in the background, restarts after reboot)
- Configure multiple clients to load-balance live queries
- Critical extract data sources
- No client assignment for data sources using a live connection

Users can set up their own client to refresh extracts:
- Necessary when database credentials cannot be shared with the admin
- May not be ideal for frequent refresh jobs, especially in organizations that use laptops
- Site admins choose which clients serve live queries
Tableau Bridge Administration

Tableau Bridge clients can refresh extracts and maintain connections to on-premises data. Learn more

Enable Clients to Maintain Live Connections

When you enable Tableau Bridge to maintain live connections, you can use multiple clients to maintain the live connections.

When multiple clients are connected, Tableau Online load balances the live connections across clients. If you don’t enable Tableau Bridge to maintain live connections, your users can still refresh extracts using Tableau Bridge. Learn more

Enable Tableau Bridge clients to maintain live connections to on-premises data

Client Summary

Total Clients: 207
Extract Clients: 207
Live Clients: 5

Client Status

<table>
<thead>
<tr>
<th>Computer Name</th>
<th>Owner</th>
<th>Mode</th>
<th>Type</th>
<th>Live Query Limit</th>
<th>Extracts</th>
<th>Status</th>
<th>Last Connected</th>
<th>Last Connected</th>
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</thead>
<tbody>
<tr>
<td>1ndtbrvrapv07</td>
<td>Alpo Admin</td>
<td>Service</td>
<td>Extract and Live</td>
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<td>0</td>
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<td>Alpo Admin</td>
<td>Service</td>
<td>Extract and Live</td>
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<td>Connected</td>
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<tr>
<td>ACHRISTIAN5</td>
<td>Adam Christian</td>
<td>Application</td>
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<tr>
<td>ADASILVAJUNIOR2</td>
<td>Antonio Da Silva Junior</td>
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<tr>
<td>adevar2</td>
<td>Ana Devri</td>
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<td>Extract</td>
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<td>AFORSTROM3</td>
<td>Amy Forstrom</td>
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<tr>
<td>LSHARRISON</td>
<td>Lisa Harrison</td>
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<td>Extract</td>
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<td>0</td>
<td>Connected</td>
<td>Aug 23, 2018, 1:45 AM</td>
<td>Delete</td>
</tr>
</tbody>
</table>
Connecting to Cloud Data
Connecting to Cloud Data

Whitelist Tableau Online IP addresses with data provider

Live connections and extracts
- Works for most SQL-based data
- Support for SSL encrypted connections
- Embedded or published data sources

OAuth connections
- Google BigQuery & Analytics, Dropbox, QuickBooks

Dashboard starters
- Salesforce, Eloqua, Marketo, ServiceNow
Scheduling Refreshes on Tableau Online

Pre-defined schedules
Refresh frequency up to hourly

Similar to scheduling in Tableau Server (via Backgrounder)

Job timeout limit of 2 hours
Use incremental, hide unused fields, and/or add extract filters
Monitor status for extract refresh jobs

Successful, failed, and in progress

Useful for troubleshooting when extracts from cloud data sources are stale
Tableau Server Considerations
Tableau Server Considerations

Ideal for heavy extract/embedded scenarios
   Extracting from on-premise databases concurrently

Control and Compliance
   Industry-specific regulations
   Audits for guaranteeing physical control of content and data

Guest User
   Embedded views without having to authenticate
Tableau Server Considerations

Multiple environments
QA/Failover/Production

Requires downtime for upgrades and maintenance
Optionally redirect traffic to failover environment
Script nightly backup/restore from production
Change users’ role to Explorer to effectively make failover environment “read-only”

Tableau Mobile access more complex (VPN\MDM)
Tableau Server

Linux or Windows
CentOS, RHEL, Ubuntu

On-premises Hardware

Public cloud
Amazon Web Services
Google Cloud Platform
Microsoft Azure
## Comparison Summary

<table>
<thead>
<tr>
<th>Tableau Online</th>
<th>Tableau Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentication via SAML, OpenID, or TableauID</td>
<td>Authentication via Active Directory/LDAP, SAML, OpenID</td>
</tr>
<tr>
<td>Users provisioned via list of email addresses, CSV, and SCIM</td>
<td>Group synchronization from AD/LDAP identity stores</td>
</tr>
<tr>
<td>Published data sources required when connecting to on-premise data (live connection or extracts)</td>
<td>Ideal in heavy extract environments via on-premise data</td>
</tr>
<tr>
<td>Tableau Mobile can connect with no VPN</td>
<td>VPN setup / Mobile Device Management required</td>
</tr>
<tr>
<td>Fully hosted SaaS, using Bridge client machines for connecting to on-premises data</td>
<td>On-premise hardware or public cloud</td>
</tr>
</tbody>
</table>
**RELATED SESSIONS**

**Tableau Bridge | How does it do it?**
Wednesday | 12:00 PM - 1:00 PM | MCCNO – L2 - 240

**IT @Tableau | Cloudy with 100% chance of data**
Thursday | 2:15 PM – 3:15 PM | MCCNO - L3 - 335
Thank you!
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