



# Deploying Power BI to the Enterprise

Navigating the maze of options in Power BI

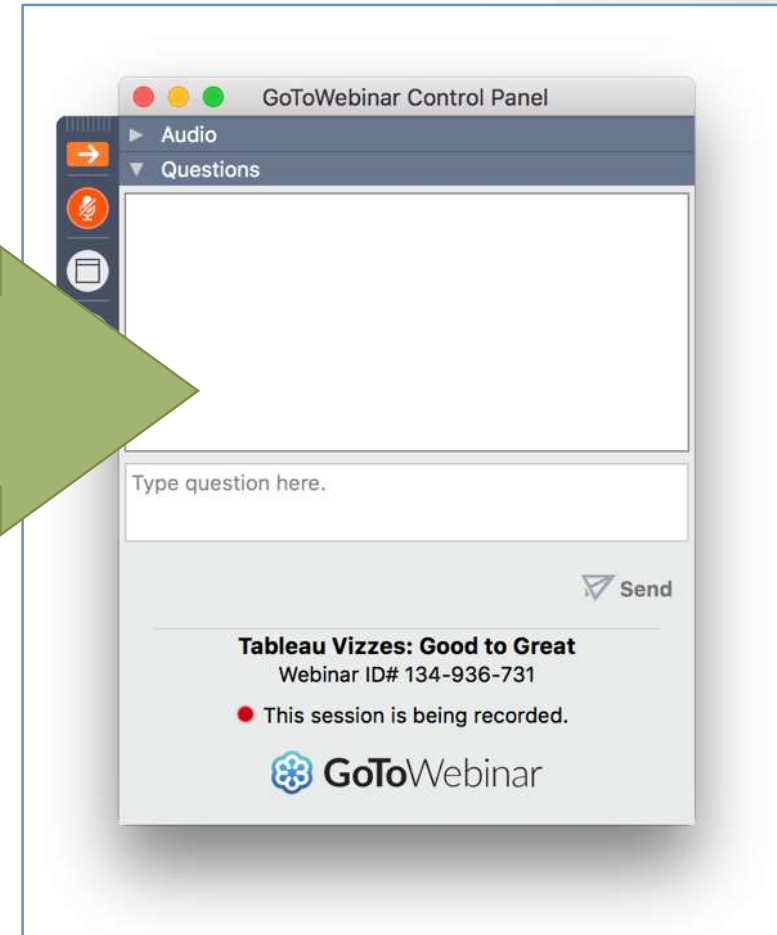


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BUSINESS  
STRATEGY



**IBM COGNOS REPORTING TOOLS: FEATURE SET COMPARISON**  
Visual Reference Guide



FEATURES



**A COMPARISON OF POWER BI, TABLEAU & COGNOS**  
Differentiators Demo'd



FEATURES



# Agenda

Introductions

Enterprise Power BI components

Pro or Premium: what do we need?

Dataflows for data preparation

Dataset query modes for performance and security

Senturus overview

Additional resources

Q&A





# Introductions



**Steve Reed-Pittman**

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**Adam Harper**

Senior Microsoft Architect  
Senturus, Inc.



**Michael Weinbauer**

Director  
Senturus, Inc.

# Poll #1

Where is Power BI currently used in your organization?  
(select one)

- One or more departments
- One or more divisions/business units
- Enterprise-wide
- Not currently used

# Poll #2

Which versions of Power BI do you use today? (select all that apply)

- Power BI Free
- Power BI Pro
- Power BI Premium
- None

# Deploying Power BI to the enterprise



# Power BI is a fast-evolving platform

- New features and enhancements are released monthly
- Always visit Microsoft's documentation site for the latest feature information

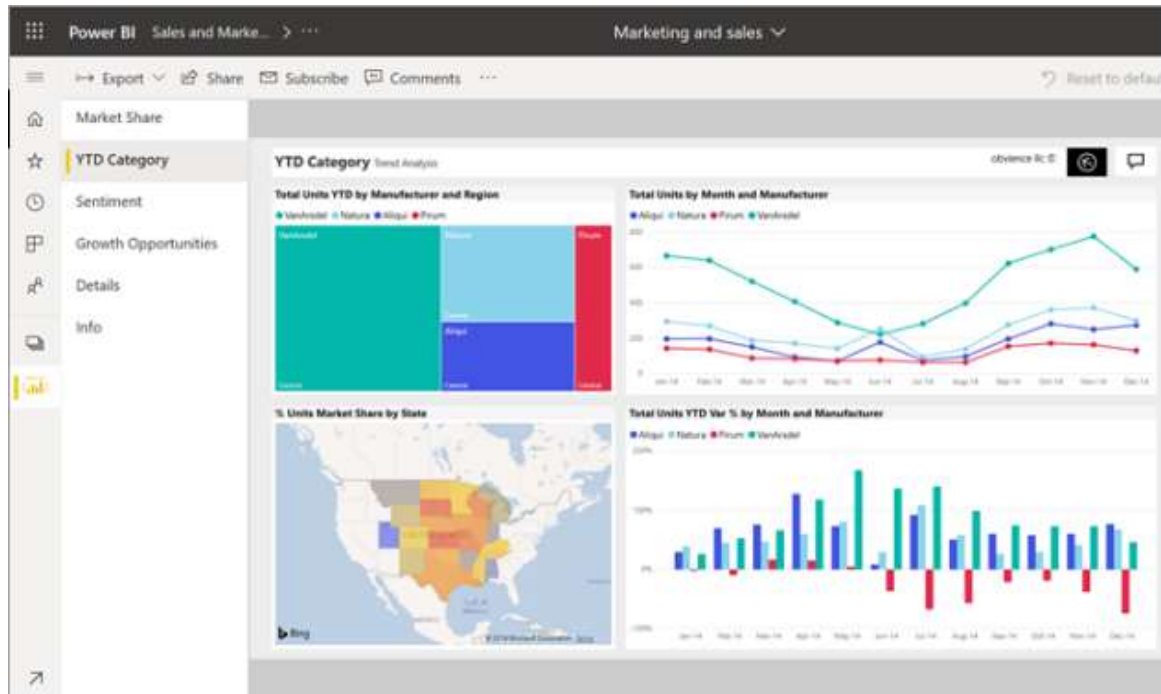
# Enterprise Power BI components

# Commonly-used components

- Power BI Pro
- Power BI Service
- Power BI Premium
- Power BI Gateway
- Power BI Report Server
- Other applications and services (SSRS, SSAS, Azure)

*Which ones do you need? It depends...*

# Power BI Pro



## What it is

- A per-user license which enables sharing and collaboration features in Power BI

## Who needs it?

- **Every** user who *creates and publishes* shared content
- **Any** user who needs to *view or interact* with shared content -- *UNLESS the shared content is published in Power BI Premium*

## Pricing model

- Per-user

# Power BI service



## What it is

- Cloud capacity for creating, publishing and sharing Power BI content
- *Note: The Power BI service operates on a “shared capacity” basis (compute resources are not reserved for exclusive use)*

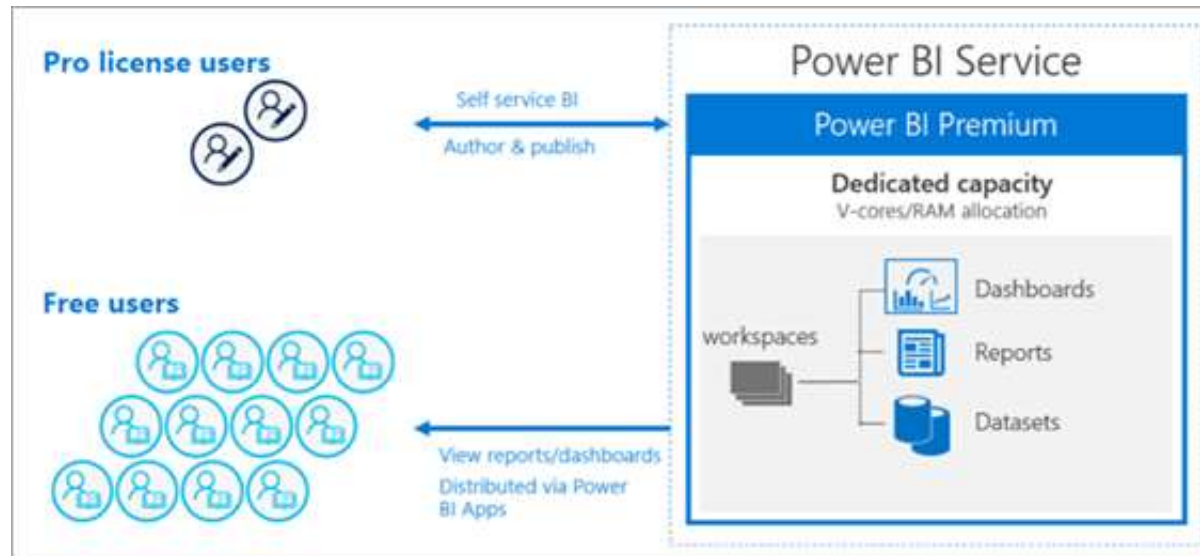
## What is it used for?

- Power BI Pro licensed users can use the Power BI service to *distribute and consume* shared content

## Pricing model

- Free

# Power BI Premium



## What it is

- Dedicated cloud capacity for creating, publishing and sharing Power BI content
- Allows Power BI free users to access shared content
- Includes significant additional enterprise-level features (including paginated reporting, on-premises report server, bring-your-own data lake and more)

## What is it used for?

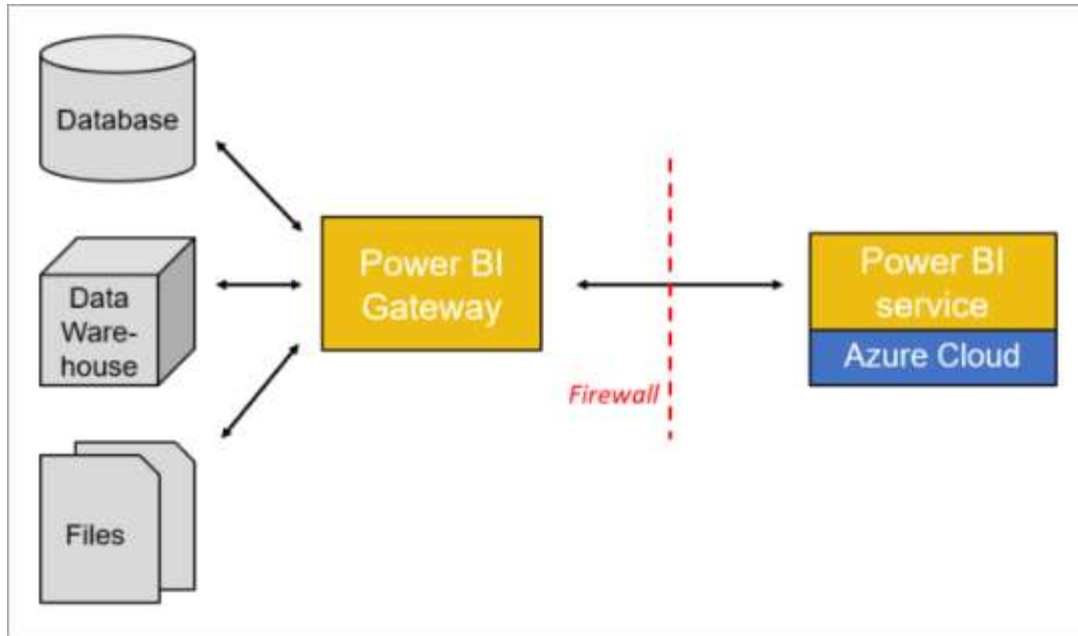
- Power BI *free* users can use Power BI Premium to *consume* content that has been shared by Pro users
- Power BI Pro-licensed users can use Power BI Premium to *distribute and consume* shared content

## Pricing model

- Capacity-based



# Power BI gateway



## What it is

- Application that creates a secure data transfer path between on-premise data and the Power BI service
- *Note: Multiple gateway nodes can be configured as a cluster for high-availability and load balancing*

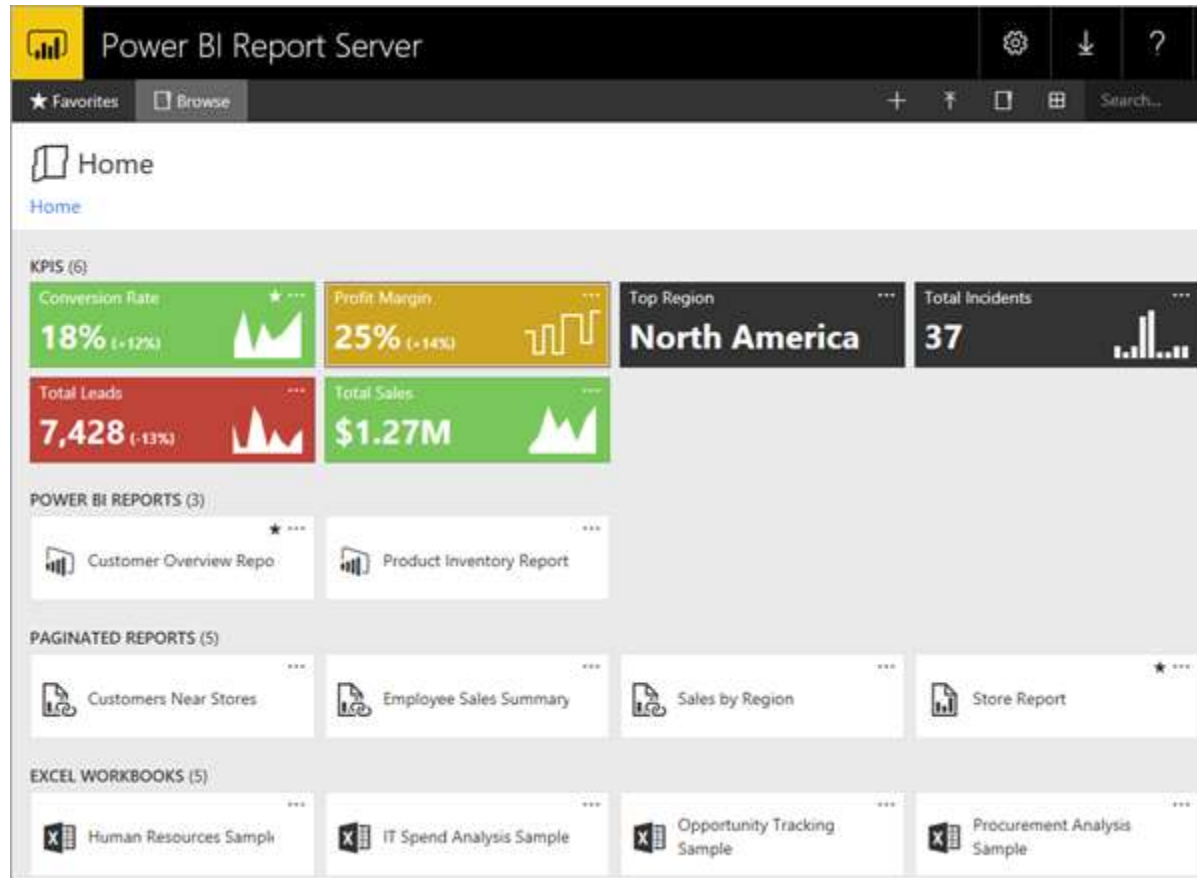
## What is it used for?

- Allows the Power BI cloud service to securely access your on-premise data sources

## Pricing model

- Free

# Power BI Report Server



## What it is

- On-premises server for Power BI reporting

## What is it used for?

- Interactive reporting
- SSRS-style paginated reporting
- Data sovereignty
- To supplement Premium cloud capacity

## Pricing model

- Included as part of Power BI Premium

# Other applications and services

## SSRS

- If you don't want to consume Premium capacity for paginated report processing, you can use SSRS for paginated reporting

## SSAS

- If you have an existing SSAS environment, you can connect directly to your SSAS data sources instead of migrating them into Power BI

# Azure services

- Azure SQL Database: *“SQL Server in the Cloud”*
  - Azure Analysis Services: *“SSAS in the Cloud”*
  - Azure Data Lake Storage: *High-performance, low-cost storage for big data*
  - Azure Data Factory: *Data movement/orchestration*
- ...and more*

# Pro or Premium: What do we need?



# User licensing (free and Pro)

## Power BI free users:

- Cannot publish shared content
- Can access shared content *only* from a Power BI Premium capacity

## Power BI Pro users:

- Can publish shared content to the Power BI service and to Power BI Premium
- Can access shared content from *both* the Power BI service and Power BI Premium



# Capacity licensing (Premium)

- Power BI Premium provides dedicated capacity and additional enterprise-level features
- Dedicated capacity guarantees that a specific amount of memory and processing power is always available for your organization's workloads
- *Note: Pro licenses are still required for users who publish shared content in Power BI Premium*

# Power BI Premium SKUs - overview

Feature		Power BI Embedded	Power BI Premium	
What is consumed?	What is consuming?	A SKUs (Azure)	EM SKUs (Office)	P SKUs (Office)
Embed artifacts from a Power BI workspace		✓	✓	✓
Power BI reports	An embedded application for your organization (user owns data)		✓	✓
	An embedded application for your customers (app owns data)	✓	✓	✓
Power BI content (with a free Power BI license)	Power BI service			✓
	Power BI mobile			✓
	MS Office apps (SharePoint / Teams)		✓	✓

**Note:** To embed Power BI content in SharePoint or Microsoft Teams, you **MUST** purchase a Power BI Premium EM SKU or higher.

# Power BI Premium SKUs - detail

Capacity Nodes	Total v-cores	Backend v-cores	RAM (GB)	Frontend v-cores	DirectQuery/Live Connection (per sec)	Model Refresh Parallelism	Billing	Retail Cost (Estimated / Month)	
EM1 / A1	1	0.5	3	0.5	3.75	1	Monthly / Hourly	\$ 625.00	\$ 750.03
EM2 / A2	2	1	5	1	7.5	2	Monthly / Hourly	\$ 1,245.00	\$ 1,494.03
EM3 / A3	4	2	10	2	15	3	Monthly / Hourly	\$ 2,495.00	\$ 2,994.00
A4 / P1	8	4	25	4	30	6	Hourly / Monthly	\$ 5,994.04	\$ 5,000.00
A5 / P2	16	8	50	8	60	12	Hourly / Monthly	\$ 11,994.02	\$ 10,000.00
A6 / P3	32	16	100	16	120	24	Hourly / Monthly	\$ 23,994.45	\$ 20,000.00
P4	64	32	200	32	240	48	Monthly	\$ 40,000.00	
P5	128	64	400	64	480	96	Monthly	\$ 80,000.00	

# When should you step up to Premium?

If you have more than 500 users:

- Monthly cost of P1 Premium SKU = monthly cost of 500 Pro users
- At the Premium level, Pro licenses are only required for users who need publish capability
- Free users have unlimited access to shared content that is stored in a Premium capacity

If you want dedicated compute resources that your team can administer directly:

- For security
- For performance

If you need Premium-only features, such as:

- Paginated reporting
- On-premises reporting (Power BI Report Server)
- Incremental data refresh

# Premium-only features (partial list)

## Paginated reporting

- Publish and consume paginated reports in Power BI
- Includes cloud-based and on-premises paginated reporting capabilities

## Power BI Report Server

- On-premises server with support for interactive and paginated reporting

## Power BI dataflow enhancements

- Incremental data refresh
- Bring your own data lake
- Linked entities and enhanced compute engine

*Note: This is only a partial list of some of the key Premium-only features. For a complete list of all the current Power BI Premium features, please visit Microsoft's website.*

# Dataflows for data preparation

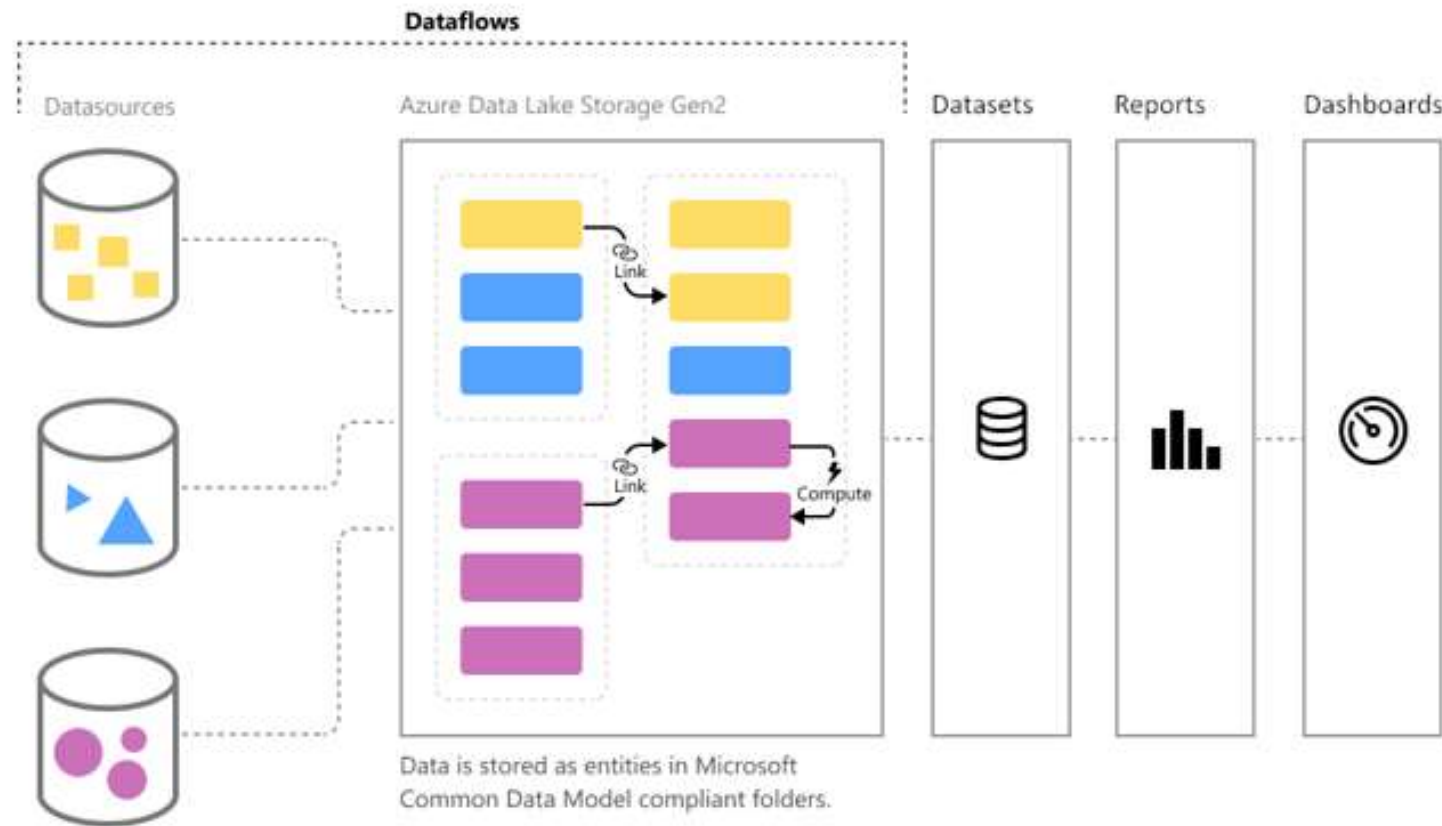


# Dataflows – overview

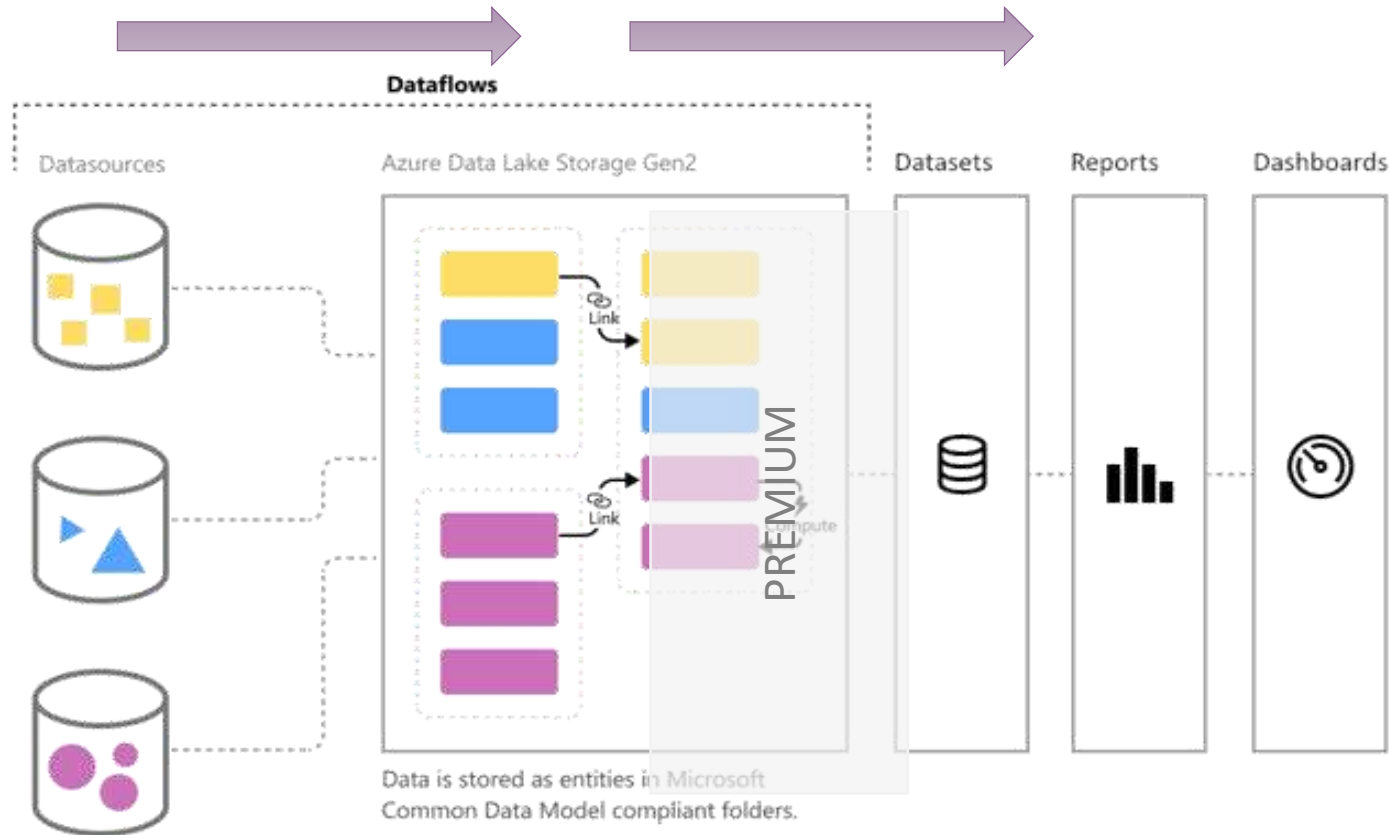
- Dataflows extract data from the sources and store the data in high-performing Azure Data Lake Storage
- Allows ETL-like data transformations and mashups in the cloud
- Ideal solution for rapid integration of disparate data from new sources (e.g. integrating new data as part of an acquisition)

# Dataflows

Bridge the gap between enterprise and self-service data preparation.



# Power BI dataflows



## What they do

- Dataflows ingest, transform, integrate and enrich big data by defining data source connections, ETL logic, refresh schedules and more

## Benefits

- Reusability across multiple datasets
- Different source refresh schedules
- Can be used as a pseudo data warehouse

# Dataset query modes for performance and security

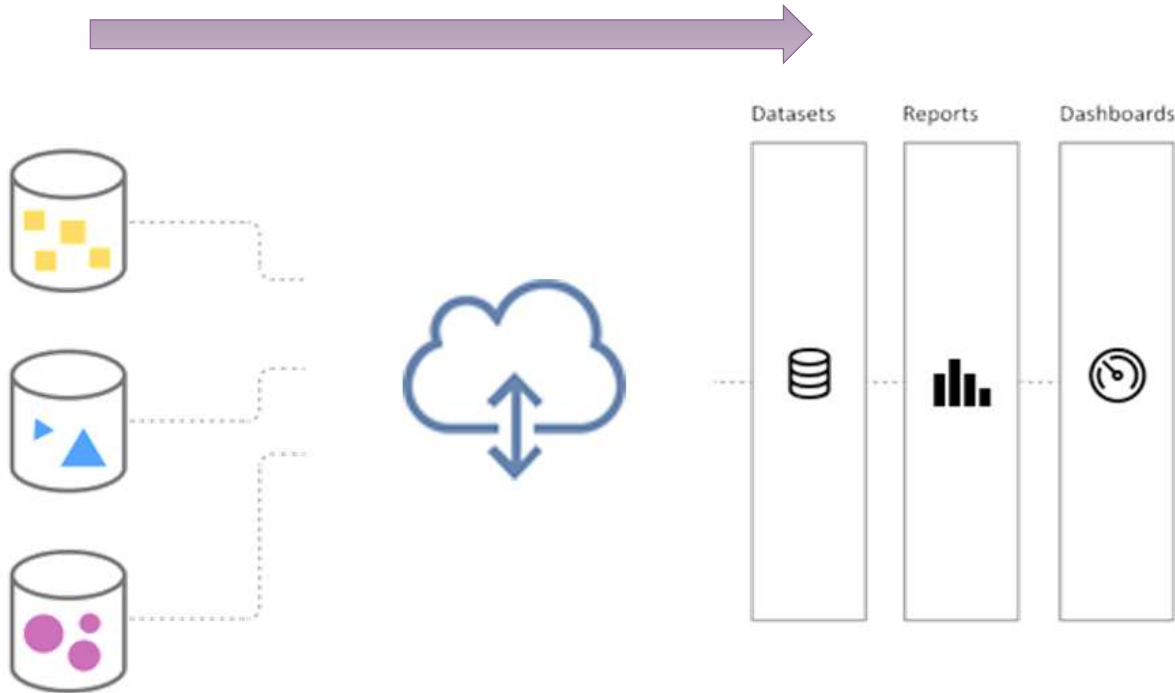
# Dataset query modes – how is the data accessed?

- Import
- DirectQuery
- Live connection
- Composite

For additional, in-depth coverage of these features, watch our recorded webinar *Power BI Modeling Use Cases: Desktop to Enterprise*:

<https://senturus.com/resources/power-bi-modeling-use-cases-desktop-to-enterprise/>

# Dataset mode: Import



## What it does

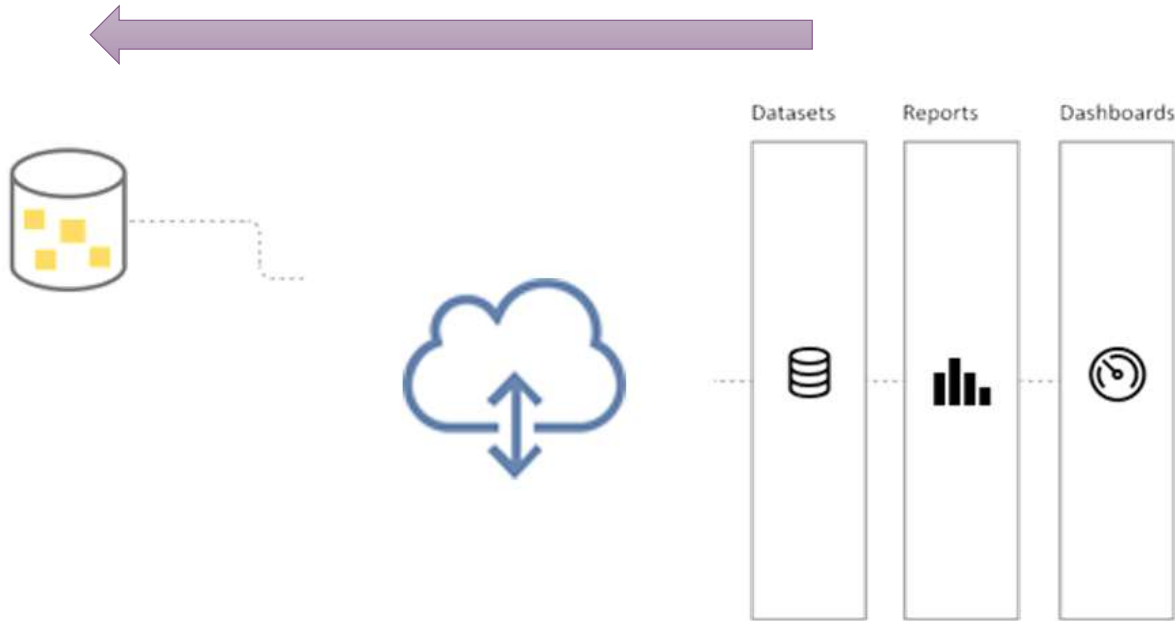
- Imports data from the source system and stores it in the Power BI data model
- Queries are executed against the imported data, rather than the underlying source system

## Reasons to use it

- Small to medium amounts of data
- Real-time data not required
- Fast performance/responsiveness



# Dataset mode: DirectQuery



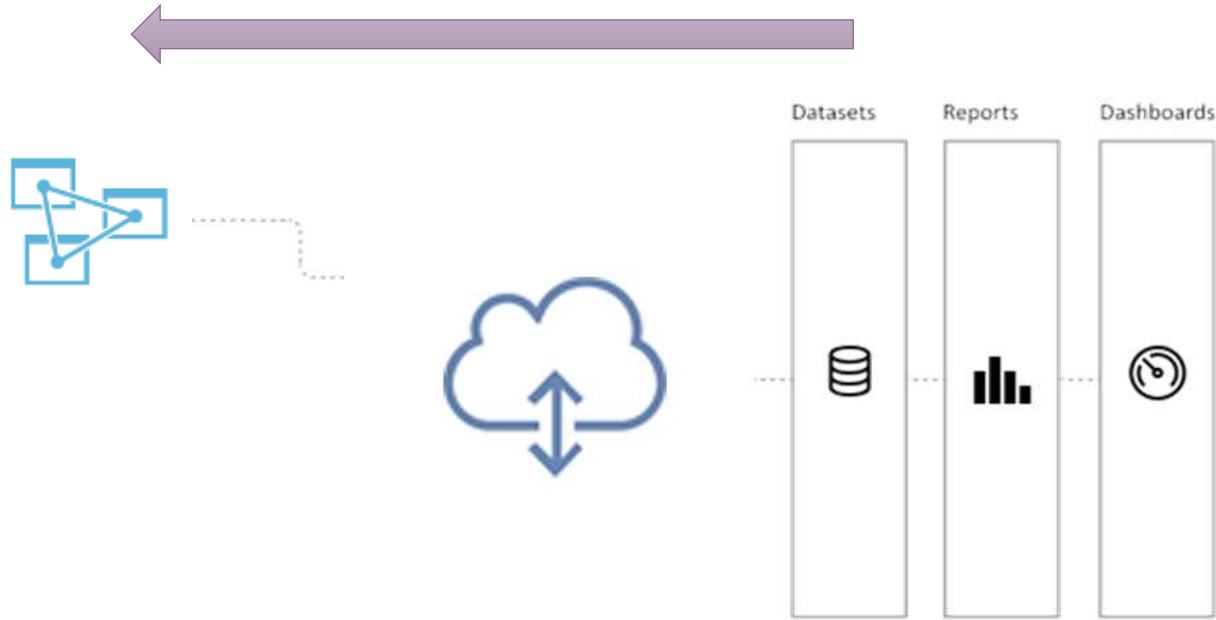
## What it does

- Performs a live query against the underlying data source (data is modeled in Power BI)

## Reasons to use it

- Large amounts of data
- Real-time data requirements
- Source security
- Data sovereignty

# Dataset mode: live connection



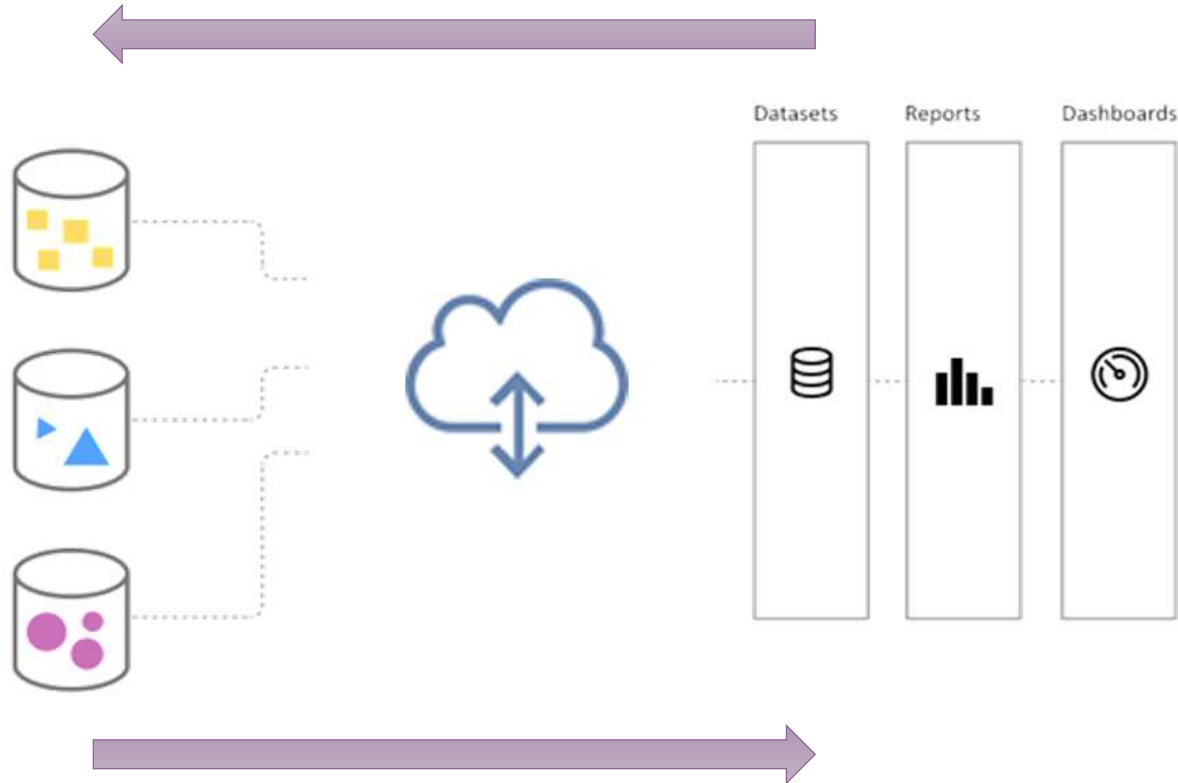
## What it does

- Performs a live query against the underlying data source (data is pre-modeled in the source)

## Reasons to use it

- Shared datasets
- On-premises SSAS
- Azure Analysis Services

# Dataset mode: composite



## What it does

- Uses a hybrid approach (query engine determines whether to use Import or DirectQuery mode)

## Reasons to use it

- Large amounts of data
- Performance optimization
- Combination of aggregate and detail data required for reporting

## You may be interested in

**Power BI Premium calculator:** <https://powerbi.microsoft.com/en-us/calculator/>

## Reference guide comparing tools in the Microsoft BI suite

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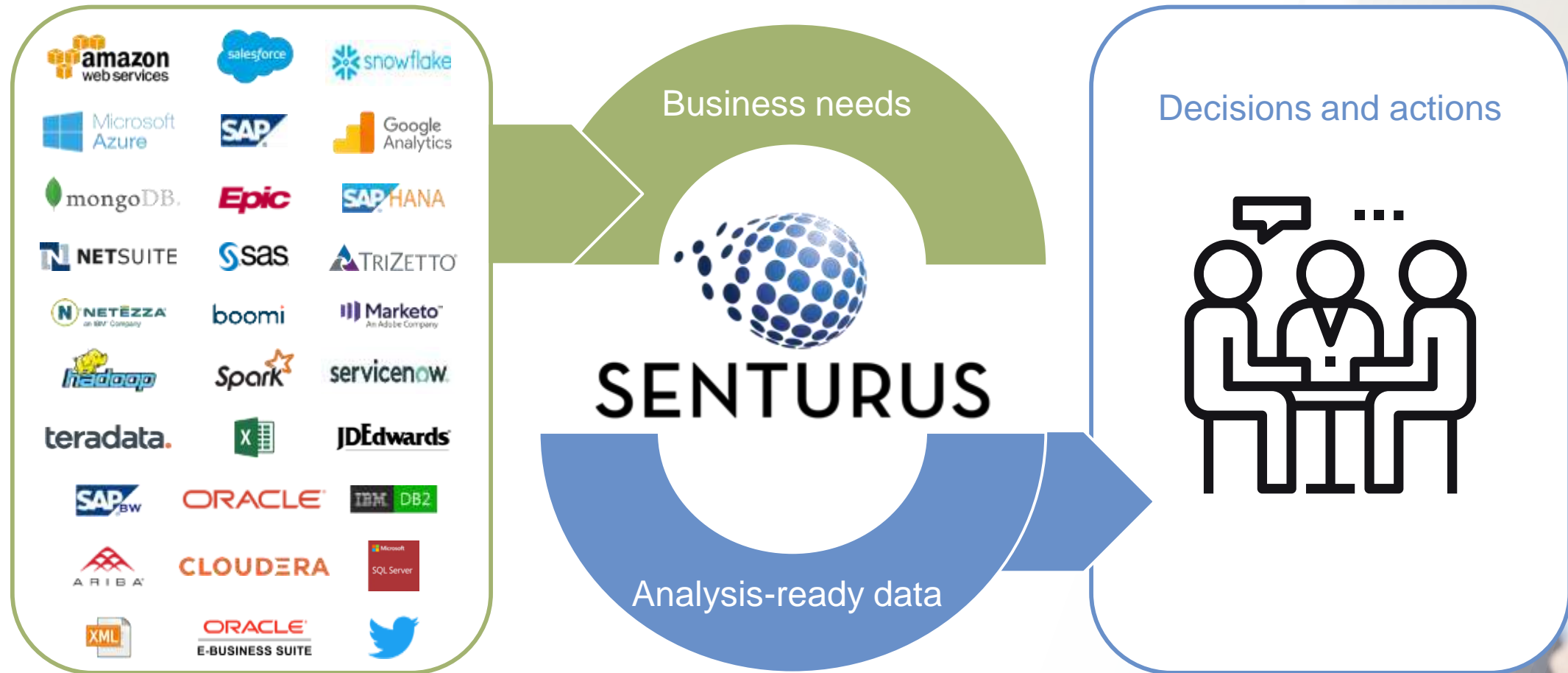
## Power BI Tenant and Admin training (includes PBI Premium)

To get your copy of the tool or learn more about training  
put a note in the chat OR email Kay Knowles at [kknowles@Senturus.com](mailto:kknowles@Senturus.com)

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# Upcoming events

## **Cognos Framework Manager vs. Data Modules**

Comprehensive comparison plus key feature gaps

Thursday, Jun 25, 2020, 11am PT/2pm ET



# Complete BI training



**Power BI**



Tailored group sessions



Mentoring



Instructor-led online courses



Self-paced learning





# Additional resources

## Unbiased product reviews



## Technical tips



## Insider viewpoints



## More on this subject



## Product demos



## Upcoming events

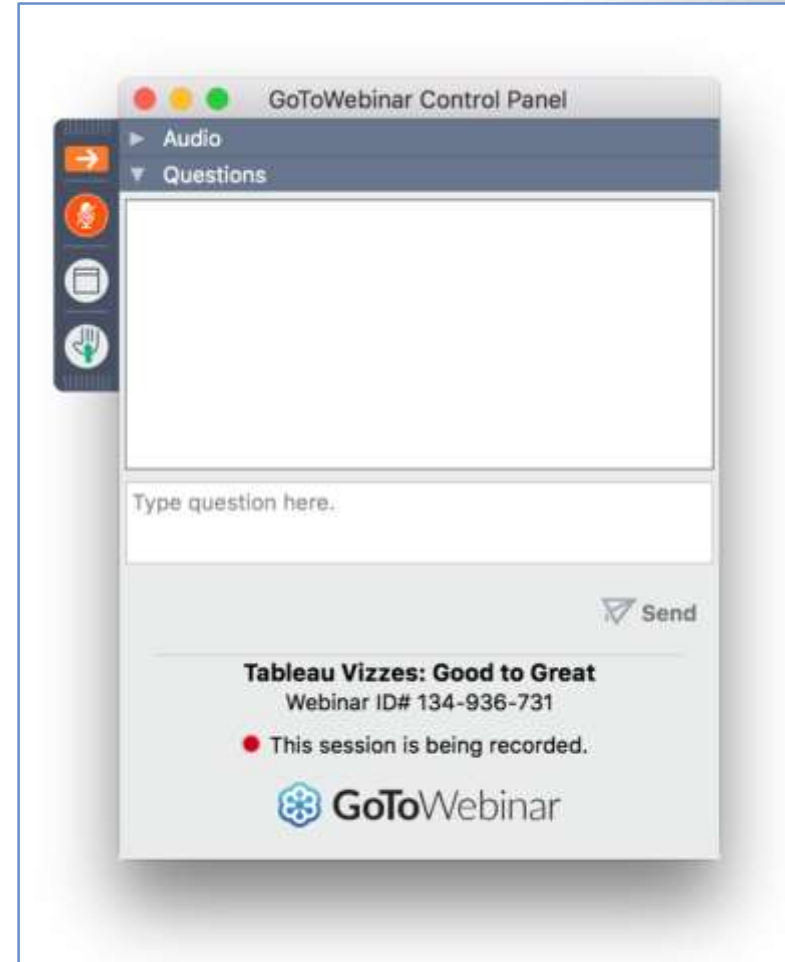


# Q & A

If your question or issue is broader than what we are able to answer today, contact us at:

[info@senturus.com](mailto:info@senturus.com)

and we will set up a free consultation.



# Thank You



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