

# Distributing Content using App Workspaces



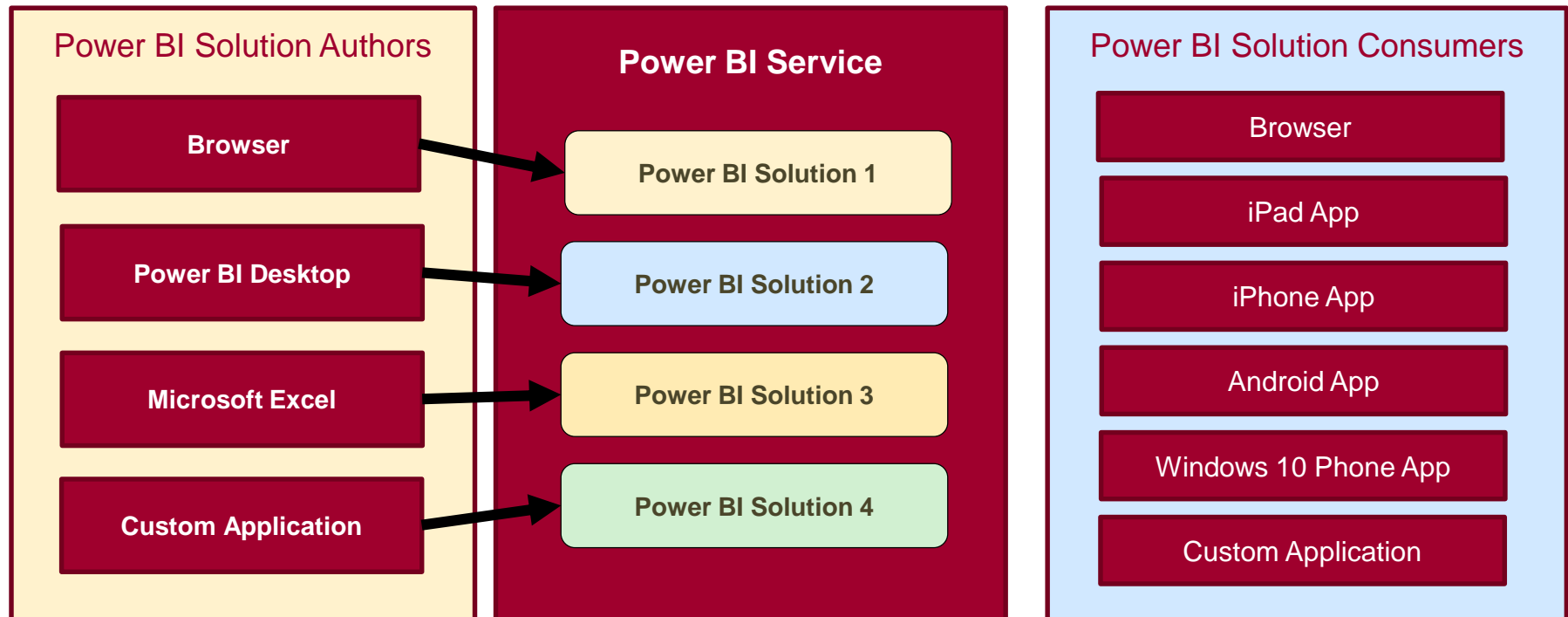
# Agenda

- Understanding the Role of App Workspaces
- Publishing App Workspaces and Installing Apps
- Updating Apps and Managing App Lifecycle
- Understanding Power BI Premium and Capacities
- Configuring App Workspaces and Dedicated Capacity
- Distributing Power BI Content to Free License Users



# Power BI Authors and Consumers

- Power BI support for authors and consumers
  - BI solution authors have a choice in authoring tools
  - BI solutions consumers can use wide range of devices



# Distributing a Custom Solution

- Strategies for sharing reports and dashboards
  - Dashboard sharing and report sharing
  - Read-only App Workspaces
  - Organization Content Packs (supports staged updates)
  - Power BI Apps (supports staged updates)



# Old Distribution Model



# New Distribution Model



# Agenda

- ✓ Content Distribution in Power BI
  - App Workspaces
    - Organizational Content Packs
    - Publishing Apps
    - Power BI Premium



# Understanding App Workspaces

- App workspaces required for team-based development
  - Assets in personal workspaces can only be edited by one person
  - Assets in app workspace can be edited by multiple team members
- App workspaces provide secure, updatable deployment
  - App workspace can be secured using private membership
- App workspaces central to mainstream distribution model
  - App workspace and its content is published as a Power BI app
  - Power BI app can be installed by content consumers
  - Power BI app content consumable via browser and mobile apps





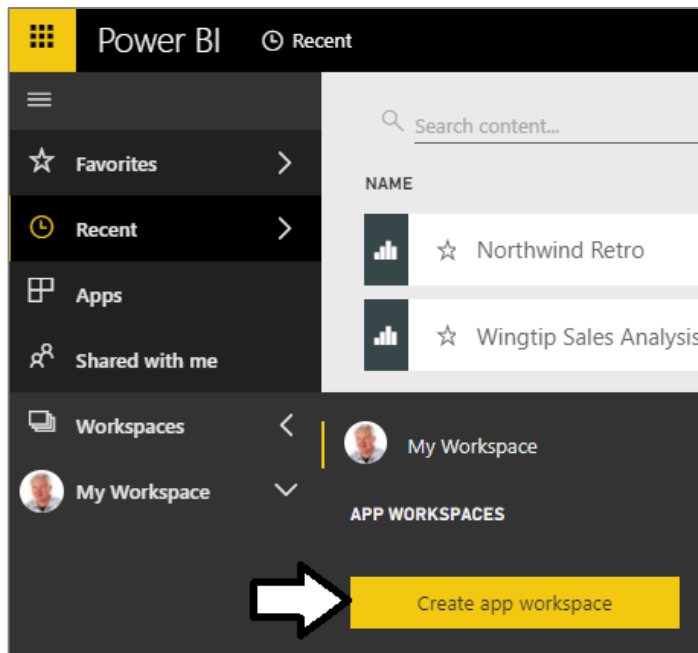
# What Exactly is an App Workspace?

- App Workspace is Power BI resource container
  - Provides storage for datasets, reports and dashboards
- App Workspace created as Office 365 Group
  - Acts as both a security group and distribution list
  - Requires provisioning SharePoint team site
- Light App Workspaces are on MSFT Roadmap
  - Lightweight workspaces should be here by end of 2018
  - Lightweight workspaces will not have SharePoint site



# Creating an App Workspace

- You create app workspace using browser




# App Workspace Settings

- Name
- Private or Public
  - Private is the norm
- Editable or Read-only
  - Setting only applies to members
  - Admins can always edit content
- Membership
  - Admins can edit membership
  - Members can edit content

### Create an app workspace

Name your workspace

Workspace ID




 Available

Private - Only approved members can see what's inside ▼

Members can edit Power BI content ▼

Add workspace members

Add

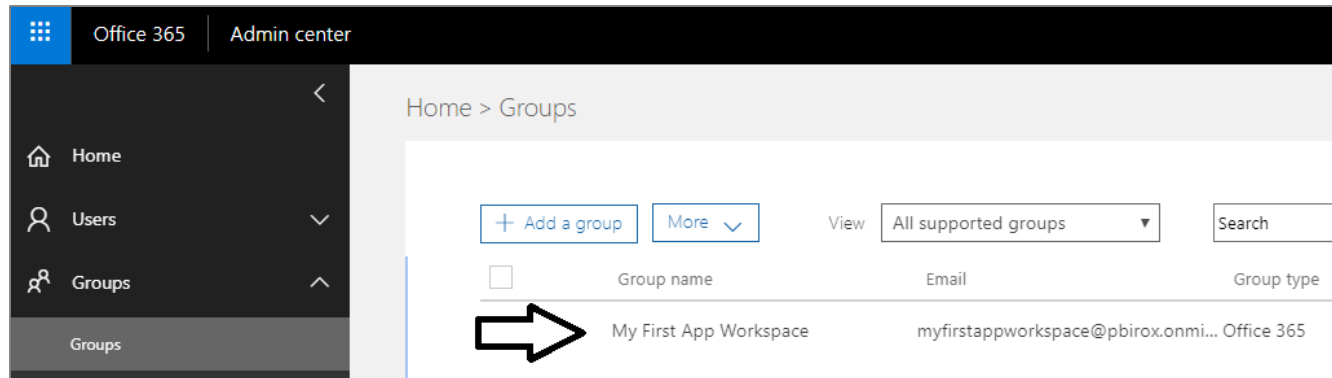
tedp@pbiox.onmicrosoft.com	Admin	▼	
austinp@pbiox.onmicrosoft.com	Member	▼	
maxwells@pbiox.onmicrosoft.com	Member	▼	

Save

Cancel

# App Workspace - Behind the Scenes

- Created as an Office 365 group
  - Group creates email alias for sending messages to all members



- xplplxp



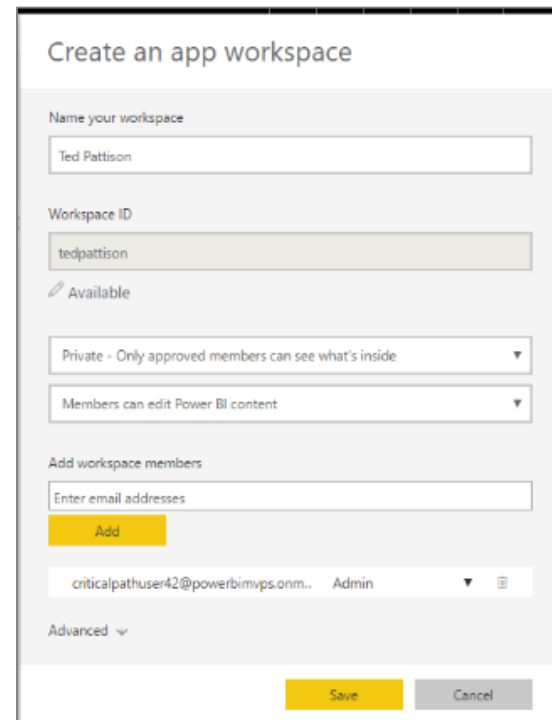
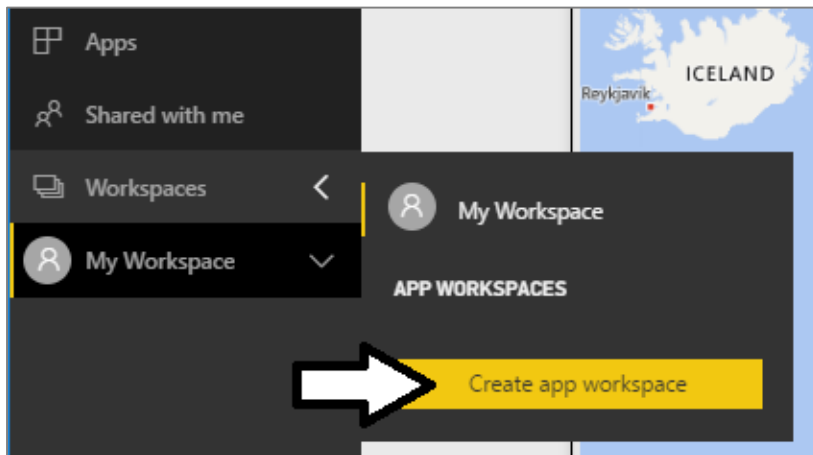
# App Workspace – The Office 365 Group

- Office 365 group provisions SharePoint team site
  - Accessible to workspace members users through Outlook Online
    - Provides conversations, files, calendar, OneNote Notebook, etc.

The screenshot displays the Outlook Online interface for a group named 'My First App Workspace'. The browser address bar shows the URL: <https://outlook.office.com/owa/?realm=pbiox.onmicrosoft.com&exsvurl=1&ll-cc=1033&modurl=0&path=/group/myfirstappworkspace@pbiox.onmicrosoft.com/...>. The top navigation bar includes 'Office 365' and 'Outlook'. The left sidebar shows a search bar and a list of folders (Inbox, Sent Items, Drafts) and groups (My First App Workspace). The main content area features a header for 'My First App Workspace' with a green circular icon containing 'MF'. Below the header, there are tabs for 'Conversations', 'Files', 'Calendar', and 'Notebook'. A message titled 'The new My First App Workspace group is ready' is displayed, dated 'Sun 4/29/2018 4:32 PM'. The message body says 'Welcome to the My First App Workspace group. Use the group to share ideas, files, and important dates.' At the bottom, there are two buttons: 'Start a conversation' and 'Add to the team site'.

# Solution Deployment using App Workspaces

- App workspaces used to deploy custom solutions
  - App workspaces required for team-based development
  - App workspace can be secured using private membership
  - App workspace used to publish apps for licensed users


A screenshot of the 'Create an app workspace' dialog box. The title is 'Create an app workspace'. It contains several fields and options: 'Name your workspace' with a text input field containing 'Ted Pattison'; 'Workspace ID' with a text input field containing 'tedpattison'; a toggle switch for 'Available' which is currently turned off; a dropdown menu for 'Private - Only approved members can see what's inside'; another dropdown menu for 'Members can edit Power BI content'; a section 'Add workspace members' with a text input field 'Enter email addresses', an 'Add' button, and a list of members showing 'criticalpathuser42@powerbimvps.onm...' with the role 'Admin'; an 'Advanced' section with a dropdown arrow; and at the bottom, 'Save' and 'Cancel' buttons.

# Creating an App Workspace

## Create an app workspace

Name your workspace

Workspace ID

 Available



☐ Public - Anyone can see what's inside

☒ Private - Only approved members can see what's inside

☐ Members can only view Power BI content

Add workspace members

Add

maxwells@cpt0926.onmicrosoft.com	Admin	▼	
austinp@cpt0926.onmicrosoft.com	Member	▼	

Public - Anyone can see what's inside

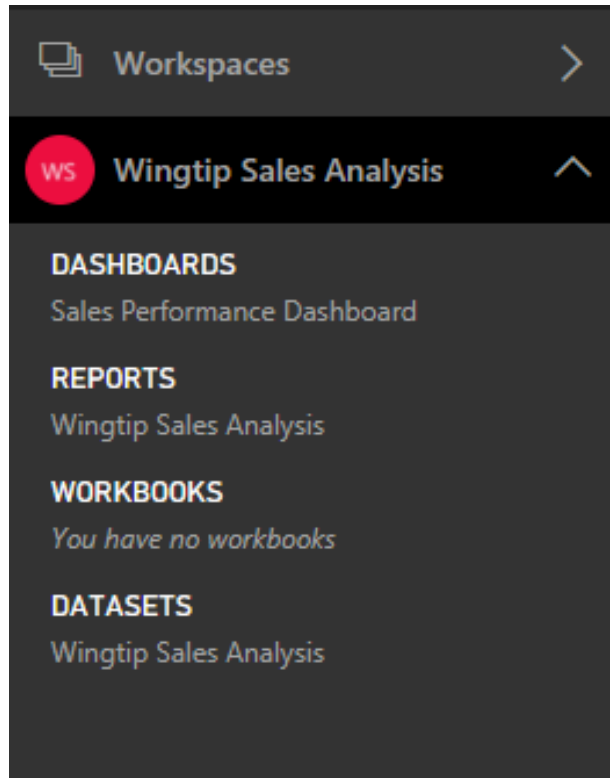
Private - Only approved members can see what's inside

Members can edit Power BI content

Members can only view Power BI content



# Central Power BI Concepts



- **Workspace**
  - Provides user context and asset container
  - Every user has personal workspace
  - Team development requires app workspaces
- **Dashboard**
  - Consolidated view into reports and datasets
  - Custom solution entry point for mobile users
- **Report**
  - Collection of pages with tables & visualizations
  - Provides interactive control of filtering
- **Dataset**
  - Data model containing one or more tables
  - Can be very simple or very complex





# Agenda

- ✓ Content Distribution in Power BI
- ✓ App Workspaces
- Organizational Content Packs
  - Publishing Apps
  - Power BI Premium



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**DEMO**

# **Publishing an App Workspace and Installing a Power BI App**

# Agenda

- ✓ Content Distribution in Power BI
- ✓ App Workspaces
- ✓ Organizational Content Packs
- ✓ Publishing Apps
- Power BI Premium



# Premium Capacities

- Power BI workspaces run in two possible environments
  - Shared Capacities
  - Premium Capacities (*formerly known as dedicated capacities*)
- Premium capacity acts as dedicated resource
  - Premium capacity only used by single organization
  - PBIX file uploads not limited to 1GB
  - Data refresh frequency can exceed 8 times per day
  - Each premium capacity defines its own set of admins
  - *Premium capacity required to share with users without pro license*





# Power BI Licensing

- User-based licensing

Power BI (free)	Power BI Pro	Office 365 Enterprise E5
\$0.00 user/month	\$9.99 user/month	\$35.00 user/month
A cloud-based business analytics service that enables anyone to visualize and analyze data with greater speed, efficiency, and understanding. It ...	A cloud-based business analytics service that enables anyone to visualize and analyze data with greater speed, efficiency, and understanding. Power ...	The Office suite, plus email, instant messaging, HD video conferencing, 1 TB personal file storage and sharing, and advanced security, analytics and PSTN ...
Office 2016 desktop & mobile apps Not included	Office 2016 desktop & mobile apps Not included	Office 2016 desktop & mobile apps
Office 365 services	Office 365 services	Office 365 services
...	...	...

- Capacity-based Licensing

Power BI Premium P1	Power BI Premium P2	Power BI Premium P3	Power BI Premium EM3 (Month to Month)
\$4,995.00 instance/month	\$9,995.00 instance/month	\$19,995.00 instance/month	\$2,495.00 instance/month
Power BI capacity dedicated to your organization, unlocking unlimited content distribution and dependable performance. P1 offers 8 virtual cores ...	Power BI capacity dedicated to your organization, unlocking unlimited content distribution and dependable performance. P1 offers 16 virtual cores ...	Power BI capacity dedicated to your organization, unlocking unlimited content distribution and dependable performance. P1 offers 32 virtual cores ...	Embed Power BI content in your custom application, powered by 4 virtual cores of dedicated capacity. Some Premium features are disabled ...
Office 2016 desktop & mobile apps Not included	Office 2016 desktop & mobile apps Not included	Office 2016 desktop & mobile apps Not included	Office 2016 desktop & mobile apps Not included
Office 365 services	Office 365 services	Office 365 services	Office 365 services
...	...	...	...



# Premium Capacity Nodes

- Power BI Premium Purchased using Nodes
  - Node type defines v-core and RAM capabilities
  - P nodes used for embedded or service deployments
  - EM nodes used only for embedded deployments

Capacity Node	Total cores	Backend Cores	Frontend Cores	Direct Query Limits	Page renders/hour
EM1	1 v-cores	.5 cores, 3GB RAM	.5 cores		1-300
EM2	2 v-cores	1 core, 5GB RAM	1 core		301-600
EM3	4 v-cores	2 cores, 10GB RAM	2 cores		601-1,200
P1	8 v-cores	4 cores, 25GB RAM	4 cores	30 per second	1,201-2,400
P2	16 v-cores	8 cores, 50GB RAM	8 cores	60 per second	2,401-4,800
P3	32 v-cores	16 cores, 100GB RAM	16 cores	120 per second	4,801-9600



# Managing Premium Capacities

The screenshot displays the Power BI Admin portal interface. On the left is a dark sidebar with navigation options: Favorites, Recent, Apps, Shared with me, Workspaces, and My Workspace (selected). The main content area is titled 'Admin portal' and contains a sub-menu with 'Usage Metrics', 'Users', 'Audit logs', 'Tenant settings', and 'Capacity settings' (which is highlighted). The 'Capacity settings' section shows tabs for 'Power BI Premium' (selected) and 'Power BI Embedded'. Under 'Power BI Premium', there is a 'V-CORES' section with a progress bar indicating '8 of 8 used' out of '8 v-cores'. Below this, it shows '0 available' and a link to 'Learn more about capacity sizes'. A button 'Set up new capacity' is also present. At the bottom, a table titled 'PREMIUM CAPACITIES' lists the available capacity.

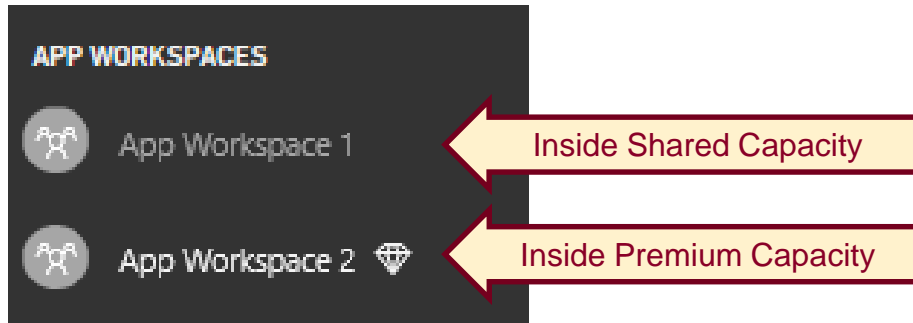
CAPACITY NAME	CAPACITY ADMINS	ACTIONS	SKU	V-CORES	STATUS
Capacity P1 #1 8GB model	datachant, djeepy1, gastoncruz, h... + 1 more		P1	8	Active



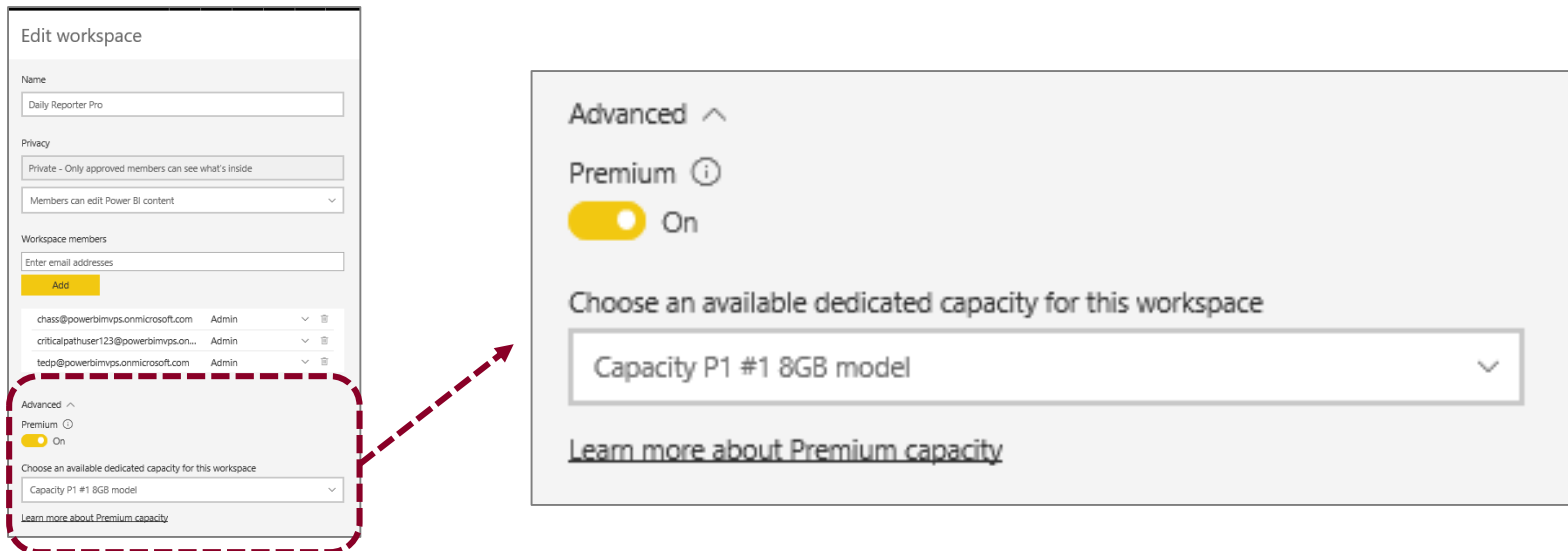


# Managing Capacities and App Workspaces

- App Workspace in Premium Capacity has diamond icon

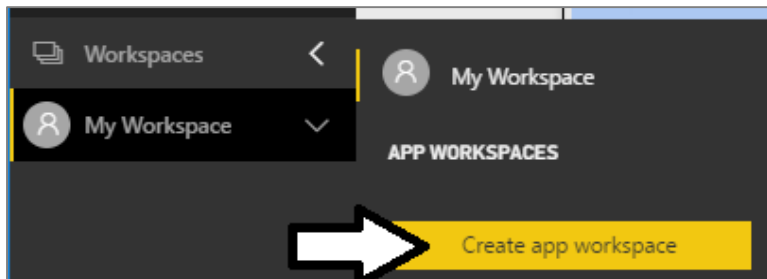


- App workspace moved into Premium capacity in Advanced settings



# Understanding App Workspaces

- App workspaces required for 3<sup>rd</sup> party embedding
  - You access working under identity of master user account
  - Master user account must be configured as app workspace admin
  - App workspace must be associated with dedicated capacity



A screenshot of the 'Edit workspace' configuration page. It includes fields for 'Name' (Sales Team), 'Privacy' (Private - Only approved members can see what's inside), and 'Members can edit Power BI content'. Below these are 'Workspace members' with an 'Add' button and a list of users. At the bottom, there is a section for 'Advanced' settings, including 'Dedicated capacity' (On) and a dropdown to 'Choose an available dedicated capacity for this workspace' (capacity0012).

Workspace members		
Enter email addresses		
<b>Add</b>		
pbiemasteruser@sharepointconfessio...	Admin	▼
tedp@sharepointconfessions.onmicro...	Admin	▼

**Advanced** ^

Dedicated capacity ⓘ  
☒ On

Choose an available dedicated capacity for this workspace  
capacity0012 ▼

Master User Account

Dedicated Capacity

# Dedicated Capacities

- Power BI workspaces run in two possible environments
  - Shared capacities
  - Dedicated capacities
- Dedicated capacity required for third party embedding
  - Customer pays capacity-based fee for processors cores and RAM
  - No need to pay Microsoft for user licenses
- Dedicated capacities come in two flavors
  - Power BI Premium capacities purchased through Office 365 SKU
  - Power BI Embedded capacities purchased through Azure SKU



# P SKUs (P is for Premium)

- All-in version which allows greatest flexibility
  - Used to provide free users with access to apps and content
  - Used to support 1<sup>st</sup> party and 3<sup>rd</sup> party embedding
  - The more you pay per month, the more resources you get

Name	Virtual cores	Memory (GB)	Peak renders/hr	Cost
P1	8	25	1-300	\$4,995/mo
P2	16	50	301-600	\$9,995/mo
P3	32	100	601-1,200	\$19,995/mo



# Managing Power BI Premium Capacities

The screenshot displays the Power BI Admin portal interface. On the left is a dark sidebar with navigation options: Favorites, Recent, Apps, Shared with me, Workspaces, and My Workspace (selected). The main content area is titled 'Admin portal' and contains a list of settings: Usage metrics, Users, Audit logs, Tenant settings, Capacity settings (highlighted with a yellow bar and a black arrow), Embed Codes, and Organization visuals. To the right of the 'Capacity settings' link, there are tabs for 'Power BI Premium' (selected) and 'Power BI Embedded'. Below the tabs, a section titled 'V-CORES' shows a progress bar for '8 of 8 used' out of '8 v-cores' available, with '0 available' remaining. A link 'Learn more about capacity sizes' and a button 'Set up new capacity' are also present. At the bottom, a table titled 'PREMIUM CAPACITIES' lists existing capacities.

CAPACITY NAME	CAPACITY ADMINS	ACTIONS	SKU	V-CORES
Capacity P1 #1 8GB budget, da... + 3 more			P1	8



# Associating Workspaces with Capacities

## Edit workspace

Name

Privacy

Private - Only approved members can see what's inside

Members can edit Power BI content ▾

Workspace members

Enter email addresses

Add

chass@powerbimvps.onmicrosoft.com	Admin	▾	🗑️
criticalpathuser123@powerbimvps.on...	Admin	▾	🗑️
tedp@powerbimvps.onmicrosoft.com	Admin	▾	🗑️

Advanced ^

Dedicated capacity ⓘ

☒ On

Choose an available dedicated capacity for this workspace

Capacity P1 #1 8GB model ▾



# EM SKUs (EM is for Embedded)

- SKUs for embedding into SaaS Applications
  - SaaS applications include SharePoint and Teams
  - Supports 1<sup>st</sup> party and 3<sup>rd</sup> party embedding
  - Does not provide user with access to PowerBI.com

Name	Virtual cores	Memory (GB)	Peak renders/hr	Cost
EM1	1	3	1-300	\$625/mo
EM2	2	5	301-600	\$1,245/mo
EM3	4	10	601-1,200	\$2,495/mo



# A SKUs (A is for Azure)

- A SKU is a Platform-as-a-Service
  - Used by ISVs as the data visualization layer
  - Allows for PBI Embedding into Custom Applications
  - Only supports 3<sup>rd</sup> party embedding (i.e. App-Owns-Data model)

Name	Virtual cores	Memory (GB)	Peak renders/hour	Cost/hour
A1	1	3	300	~\$1
A2	2	5	600	~\$2
A3	4	10	1,200	~\$4
A4	8	25	2,400	~\$8
A5	16	50	4,800	~\$16
A6	32	100	9,600	~\$32





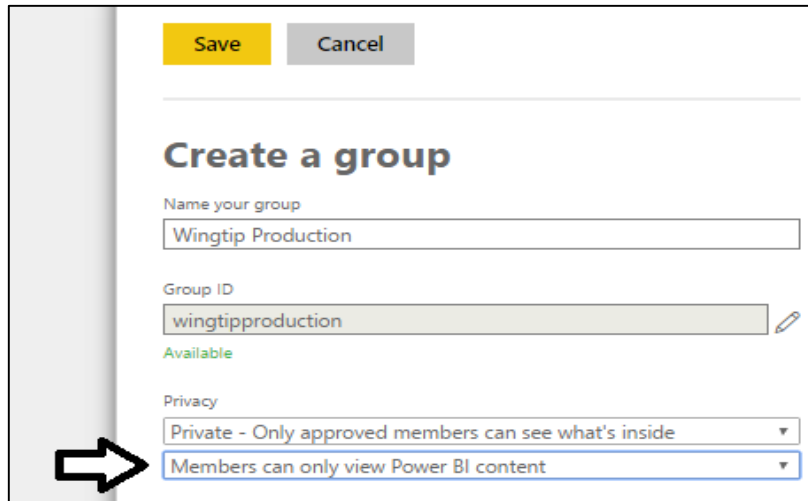
# Summary

- ✓ Content Distribution in Power BI
- ✓ App Workspaces
- ✓ Organizational Content Packs
- ✓ Publishing Apps
- ✓ Power BI Premium

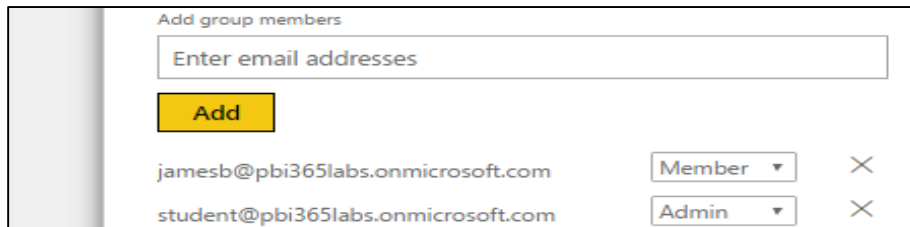


# Creating Group Workspaces for Production

- Create Editable Workspace for Development
  - Configure as **Members can only view Power BI content**



- Add users as standard members or as admin



# Agenda

- ✓ Designing Dashboards for Power BI
- ✓ Executing Queries with Natural Language Q&A
- ✓ Sharing Dashboards with Other Office 365 Users
- ✓ Staging & Deployment using Group Workspaces
- Working with Organizational Content Packs



# Summary

- ✓ Designing Dashboards for Power BI
- ✓ Executing Queries with Natural Language Q&A
- ✓ Sharing Dashboards with Other Office 365 Users
- ✓ Staging & Deployment using Group Workspaces
- ✓ Working with Organizational Content Packs

