

# Distributing Content using App Workspaces



# Agenda

- App Workspaces
- Dedicated Capacities
- Publishing Apps
- Developing Template Apps

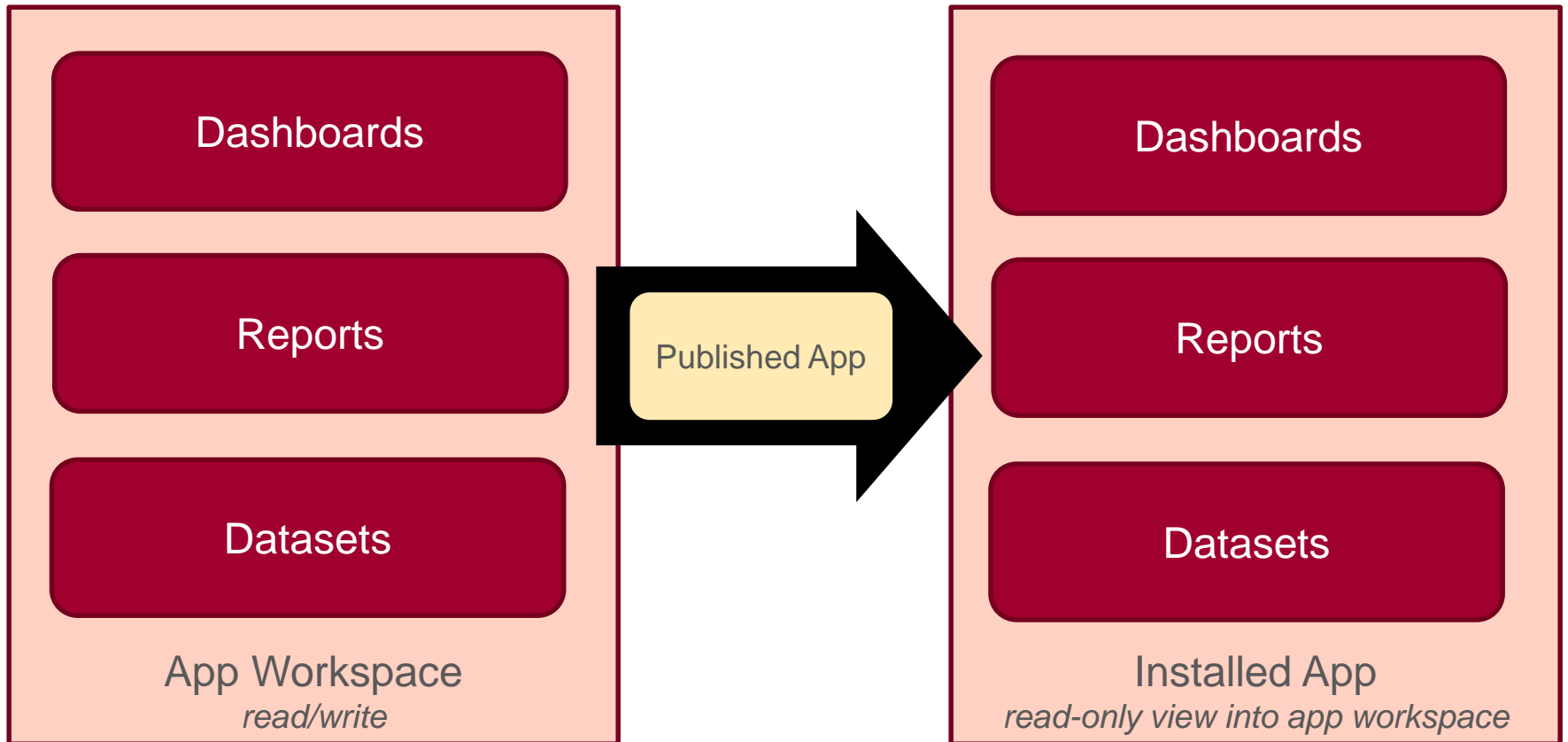


# Distributing a Custom Solution

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



# App Distribution Model

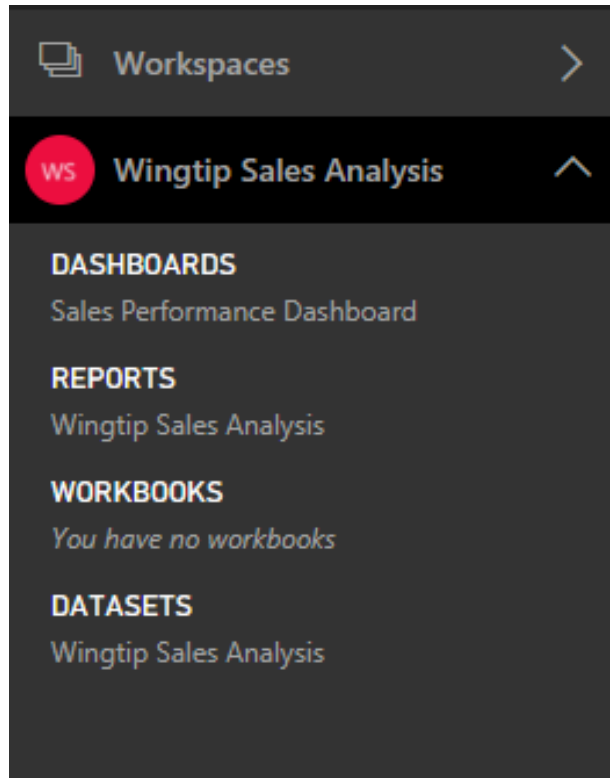


# What Exactly is an App Workspace?

- 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



# Central Power BI Concepts

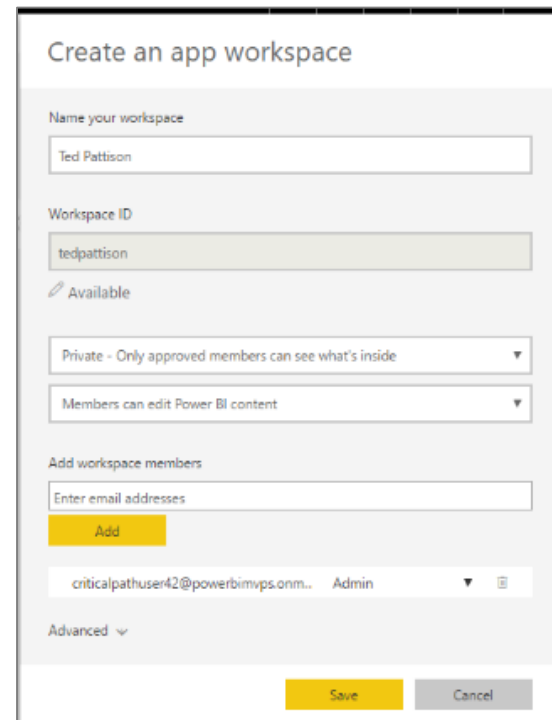
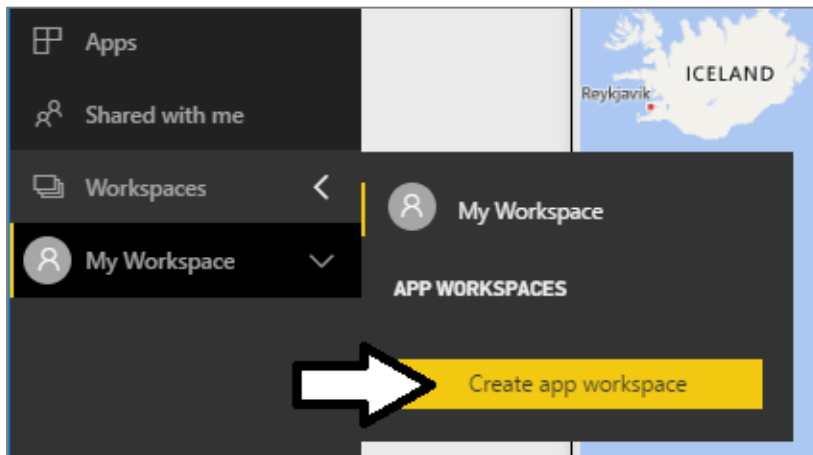


- **Workspace**
  - Provides user context and asset container
  - Every user has personal workspace
  - Team development requires app workspaces
- **Dashboard**
  - Consolidated view into reports and datasets
  - Custom solution entry point for mobile users
- **Report**
  - Collection of pages with tables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



# 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.



# App Workspace v1 with 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 profile picture icon (MF) and tabs for 'Conversations', 'Files', 'Calendar', and 'Notebook'. Below the header, there are buttons for 'New', 'Reply all', and 'Forward'. The 'Conversations' tab is active, showing a message titled 'The new My First App Workspace group is ready' with a timestamp of '4:32p'. The message body includes a welcome message and a link to 'Start a conversation'. At the bottom, there are two buttons: 'Start a conversation' and 'Add to the team site', each with a brief description of their function.



# Power BI App Workspaces - V2

- Power BI transitioning between workspace models
  - V2 app workspaces are currently in preview
  - Microsoft will soon force the migration from V1 to V2
- V1 workspaces built on top of Office 365 groups
  - Largely managed in Office 365 admin not Power BI
- V2 workspaces independent of Office 365 groups
  - Fully managed within Power BI admin portal
  - Provides more flexibility in assigning members



# Agenda

- ✓ App Workspaces
- Dedicated Capacities
  - Publishing Apps
  - Developing Template Apps



# 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
...	...	...	...



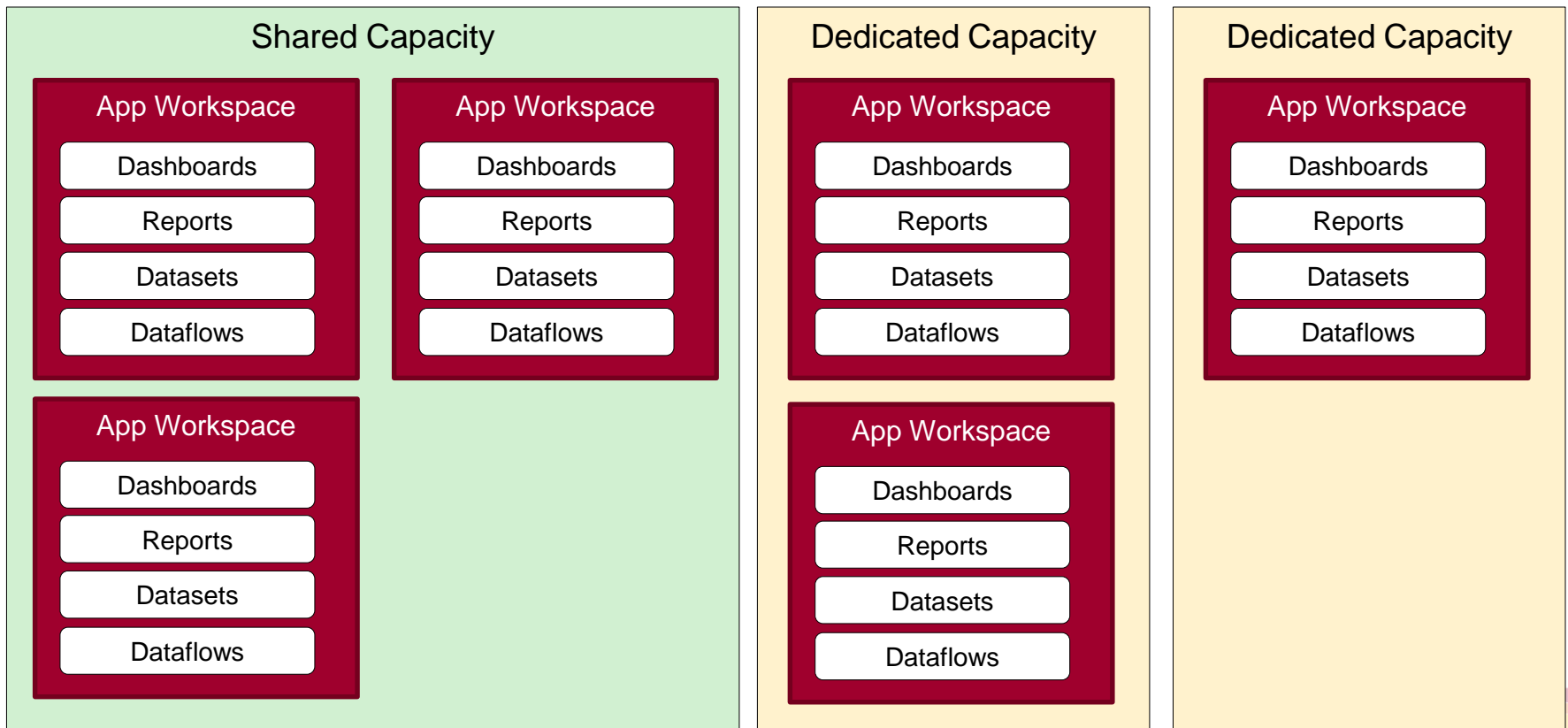
# Dedicated Capacities

- Power BI workspaces run in two possible environments
  - Shared Capacities
  - Dedicated Capacities (*also known as premium capacities*)
- Dedicated capacity usually 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
  - *Dedicated capacity required to share with users w/o pro license*



# Capacities and Workspace Associations

- Every Power BI workspace runs in the context of a capacity
  - By default, app workspaces and personal workspace run in **shared capacity**
  - Organizations have the option of purchasing **dedicated capacities**



# Managing Premium Capacities

- Dedicated capacities managed in Power BI Admin portal

The screenshot shows the Power BI Admin portal interface. On the left is a navigation sidebar with options: Favorites, Recent, Apps, Shared with me, Workspaces, and My Workspace. The main content area is titled 'Admin portal' and contains a list of settings: Usage metrics, Users, Audit logs, Tenant settings, Capacity settings (selected), Embed Codes, and Organization visuals. The 'Capacity settings' section is active, showing tabs for 'Power BI Premium' and 'Power BI Embedded'. Under 'Power BI Premium', it displays 'V-CORES' as '8 of 8 used' with a yellow progress bar and '0 available'. A 'Set up new capacity' button is present. Below this is a table of 'PREMIUM CAPACITIES'.

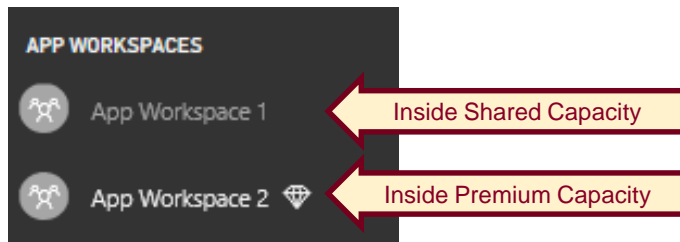
CAPACITY NAME	CAPACITY ADMINS	ACTIONS	SKU	V-CORES	REGION	STATUS
P1	Charles Sterling, duryan		P1	8	East US 2	Active

This screenshot shows the detailed configuration page for a 'Power BI Premium > P1' capacity. At the top right is a 'Settings' link. Below the title, a section 'USAGE IN THE LAST 7 DAYS' contains four cards: 'CPU' (Exceeded 80% utilization 0 times), 'Memory Thrashing' (Exceeded 80% utilization 0 times), 'Memory Usage' (Average: 2GB), and 'Direct Query' (Exceeded 80% utilization 0 times). The 'CAPACITY SIZE' section states 'This capacity is a P1, which is 8 v-cores.' and includes a 'Change capacity size' button. The 'REGION' is 'East US 2'. Under 'USER PERMISSIONS', 'Capacity admins' are listed. The 'WORKSPACES (53)' section includes a table of assigned workspaces.

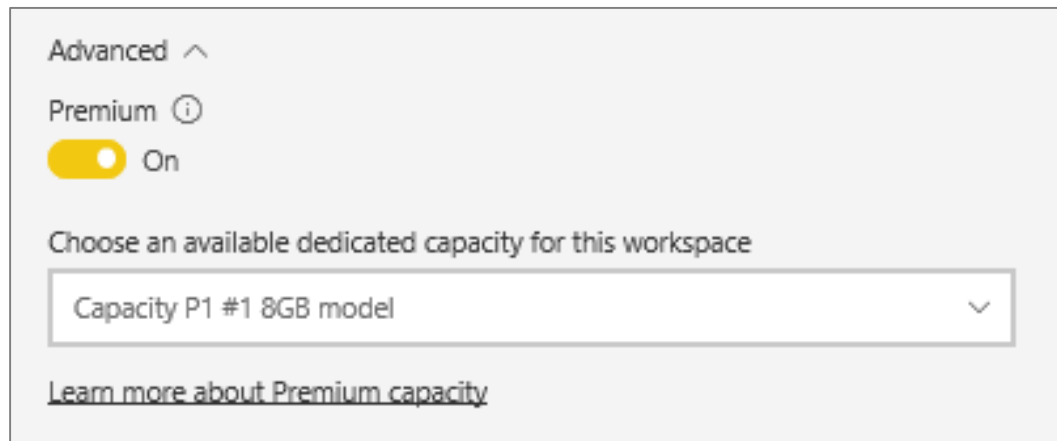
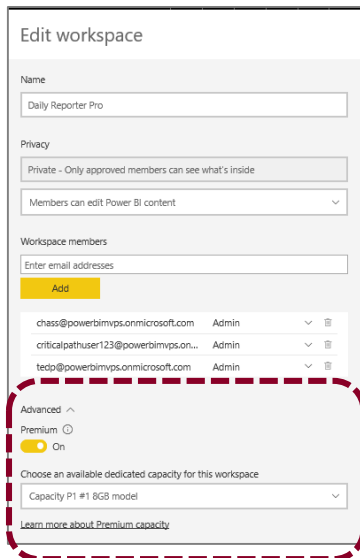
WORKSPACE NAME	WORKSPACE ADMINS	ACTIONS	STATUS
Adventure Works	<a href="#">View admins</a>		Assigned
ChucksAADGroup	<a href="#">View admins</a>		Assigned

# Associating App Workspaces with a Capacity

- App Workspace in Premium Capacity has diamond icon



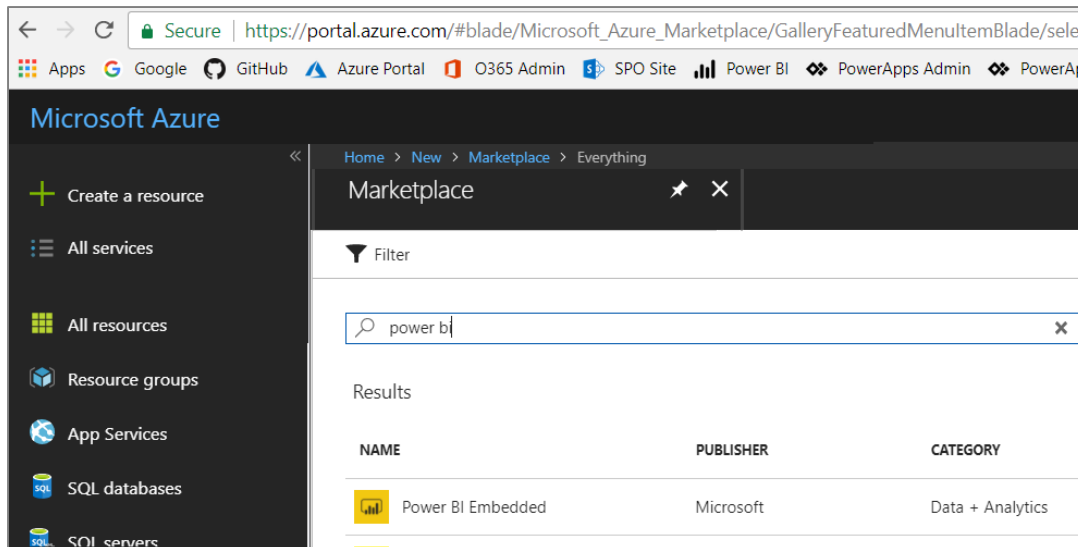
- App workspace moved into Premium capacity in Advanced settings





# Creating the Power BI Embedded Service

- Power BI Embedded in an Azure on-demand service
  - Must be created in same location as Power BI Service for tenant
  - Can be created manually through the Azure portal
  - Can be created in automated fashion using PowerShell
  - Requires an Azure subscription *in same tenant*



The screenshot shows the 'Power BI Embedded' creation form. The fields are filled as follows:

- Resource name: myfirstcapacity
- Subscription: Pay-As-You-Go
- Resource group: Create new (selected), biz-app-summit-demos
- Power BI capacity administrator (Select): TedP@BizAppSummit.onmicrosoft.com
- Location: West US 2
- Pricing tier (View full pricing details): A1 (1 V-Cores)

Buttons at the bottom: Create, Automation options

# Embedded Capacity Pricing Tiers

Home > myfirstcapacity

myfirstcapacity  
Power BI Embedded

Search (Ctrl+/)

Overview  
Activity log  
Access control (IAM)  
Tags  
Diagnose and solve problems

SCALE

Pricing tier

SETTINGS

Quick Start  
Power BI capacity administrators  
Properties  
Locks  
Automation script

MONITORING

Diagnostics logs  
Metrics  
Alerts

Pause Move Delete

Essentials

Resource group (change)  
biz-app-summit-demos  
Status  
Active  
Location  
West US 2  
Subscription name (change)  
Pay-As-You-Go  
Subscription ID  
63bf3c07-a58b-4940-ab25-a6a66dda26dc

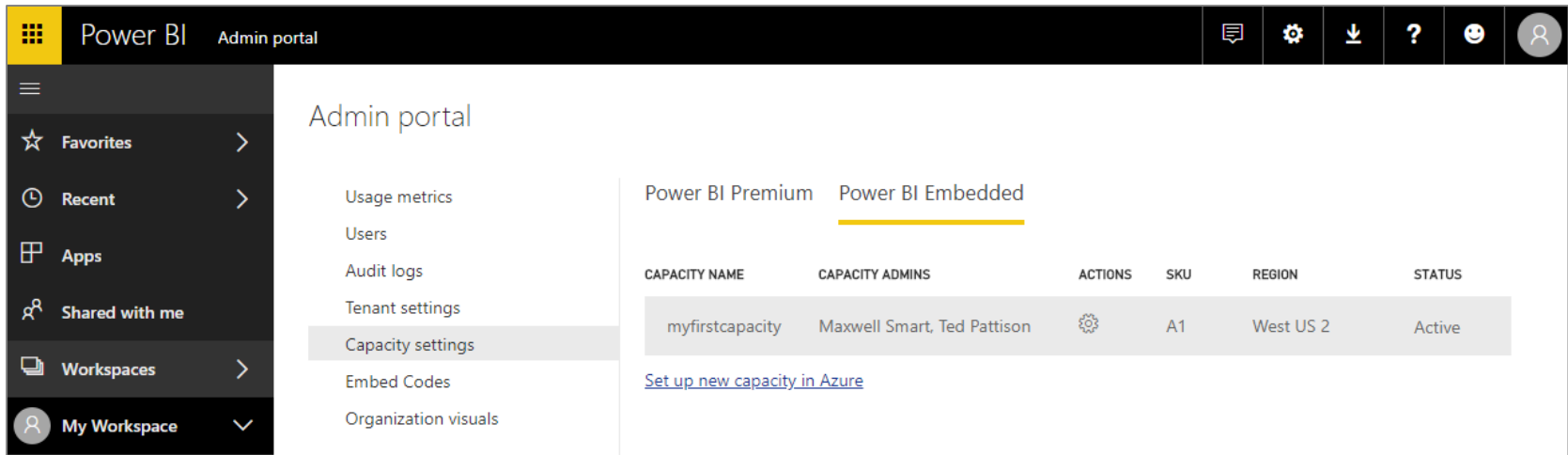
Resource name  
myfirstcapacity  
Pricing tier  
A1

A1	A2	A3
1 V-Cores	2 V-Cores	4 V-Cores
Up to 3 GB Cache	Up to 5 GB Cache	Up to 10 GB Cache
Shared infrastructure	Shared infrastructure	Dedicated service
750.03 USD/MONTH (ESTIMATED)	1,494.03 USD/MONTH (ESTIMATED)	2,994.00 USD/MONTH (ESTIMATED)

A4	A5	A6
8 V-Cores	16 V-Cores	32 V-Cores
Up to 25 GB Cache	Up to 50 GB Cache	Up to 100 GB Cache
Dedicated service	Dedicated service	Dedicated service
5,994.04 USD/MONTH (ESTIMATED)	11,994.02 USD/MONTH (ESTIMATED)	23,994.45 USD/MONTH (ESTIMATED)

# Managing Power BI Embedded Capacities

- Managing Power BI Embedded capacity done Azure portal
  - Use Azure portal to assign administrators & change pricing tier to scale
- Managing Power BI Embedded capacity in Power BI Admin portal
  - Power BI Admin portal to assign workspaces to capacities



The screenshot displays the Power BI Admin portal interface. The top navigation bar includes the Power BI logo, the text "Power BI Admin portal", and several utility icons (chat, settings, download, help, feedback, and user profile). A left-hand sidebar contains navigation links: Favorites, Recent, Apps, Shared with me, Workspaces, and My Workspace. The main content area is titled "Admin portal" and features a list of management options on the left: Usage metrics, Users, Audit logs, Tenant settings, Capacity settings (highlighted), Embed Codes, and Organization visuals. On the right, there are tabs for "Power BI Premium" and "Power BI Embedded" (the active tab). Below these tabs is a table listing existing capacities.

CAPACITY NAME	CAPACITY ADMINS	ACTIONS	SKU	REGION	STATUS
myfirstcapacity	Maxwell Smart, Ted Pattison		A1	West US 2	Active

Below the table, there is a link: [Set up new capacity in Azure](#).



# 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



# 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



# PBI Capacity SKU Decoder Ring

	P SKU	EM SKU	A SKU
Purchased through...	Office 365	Office 365	Azure
Supports Power BI embedding in custom applications	Yes	Yes	Yes
Supports 3 <sup>rd</sup> Party Embedding in custom applications	Yes	Yes	Yes
Supports 1 <sup>st</sup> Party Embedding in custom applications	Yes	Yes	Yes
Supports free users accessing content in Power BI portal	Yes	No	No
Supports free users accessing content in Power BI Mobile	Yes	No	No
Billing cycle	Monthly	Monthly	Hourly
Commitment	Monthly	Monthly/Yearly	None
Turn it off when your not using it	No	No	Yes





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  - Developing Template Apps





**DEMO**

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

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# Summary

- ✓ App Workspaces
- ✓ Dedicated Capacities
- ✓ Publishing Apps
- ✓ Developing Template Apps

