

Power BI Adoption Plan

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# Section 1. Introduction

## Executive Summary

Senior Leaders at Contoso believe that data is a key asset for the organization in today’s competitive landscape and the organization has decided to enable a data driven culture through a combination of organizational reporting and self-service BI.

## Purpose of this Plan

Deploying Power BI in a large enterprise is a complex task, and one that requires a lot of thought and planning. The purpose of this document is to help you make your Power BI deployment a success: it covers all key decisions which will be necessary throughout the rollout of Power BI, as well as plans for support and deployment. Best practices and suggestions are offered when possible.

## Current BI State

Contoso have an experienced BI team, who are responsible for the production of all BI reports. Currently they use Technology A and Excel, with a small number of individuals also using Technology B. With the recent purchase of 50,000 Office 365 E5 licenses they have decided as a business to consolidate their BI estate and focus on the usage of Power BI where possible.

# Section 2. Roles and Responsibilities

The following individuals have been identified and have been involved in the decisions made within this document:

|  |  |
| --- | --- |
| Roles | Individual - Team / Roles |
| Corporate Sponsor | Nia – CTO |
| Power BI Champion | Gale – BI Development Manager, Matt – Finance, Yash – Sales, Alice - Marketing |
| Data / Information Security Manager | Tomas – Data Security Manager |
| Data Architect | Alex – Lead Data Architect |
| Data Steward | Gale – BI Development Manager |
| BI Developer | Gale – BI Development Manager |
| Power BI Administrator | Zo – Support Manager, Charlie – O365 Administrator |
| BAU Support Specialist | Zo – Support Manager |
| Business Support Specialist | Zo – Support Manager |

Responsibilities

Corporate Sponsor – Nia

Nia is sponsoring this program and has an interest in its success. His key motivation is to make data accessible to everyone in the organization in order to democratize data driven decision making. As a secondary goal, there is a potential money saving exercise of being able to migrate existing solutions off of a number of other technologies and versions. This will reduce complexity in the data estate and the licensing spend on BI tools, as well as remove the technical debt of maintaining a solution in Technology B.

Power BI Champions – Gale, Matt and Yash

As the BI Development Manager, Gale has a vested interested in making sure the Governance Plan will work within her team. Gale and her team will be responsible for the creation of Corporate BI solutions, so will need to create templates, deployment plans and more to ensure a consistent experience for the end users. The BI Development Team will also be running a number of online training sessions and sharing their learning when creating their first set of Power BI Reports.

Matt works in the Finance Team and Yash works in the Sales Team, both are involved in a lot of the requests that are currently sent to the BI Development Team. They would both benefit from being able to produce a number of reports themselves for their team and customers. They are involved to provide an input from the business to make sure that all users are able to get the most out of Power BI.

Data / Information Security Manager – Tomas

Tomas’s main focus is to ensure that all data is used in the right way and in the best interest of their business and customers. He has signed off on the use of Power BI from a security perspective and wants to make sure that along with Alex and Gale that the right users have access to the right data and only share it with those that should have access.

Data Architect – Alex

Alex is the lead data architect in Gale’s BI Development Team. His main interest is making sure that any corporate solutions created are modelled efficiently and that where possible these solutions are hosted in Azure Analysis Services to make sure that role based security can be enabled and the solution can scale to meet the demand of their customers.

Data Steward / BI Developer – Gale

As the BI Development Manager, Gale and team will be responsible for the creation of the Corporate BI solutions. As well as being the Power BI Champion and driving the usage of the product she also wants to make sure that all data sources used in BI are of the highest quality and where possible all sources and solutions are documented in a Catalog and definitions defined in a Data Dictionary.

Power BI Administrator / Support – Zo

As the Support Manager Zo and team will be responsible for maintaining Power BI, any required infrastructure and the solutions created in Power BI. Users will be able to raise requests in Technology Z if they need any changes to the configuration of the environment, e.g. added to a Gateway or allowing Public Sharing of solutions. These requests will need to be signed off by Tomas (Security Manager), Alex (Data Architect) or Gale (BI Development Manager) as required. Any issues can also be raised via Technology Z and will be triaged using the standard support process already in place.

As the Office 365 Global Administrator Charlie will also have access to configure the environment, acting as a backup for Zo and team. In addition, Charlie will be responsible for the creation of any Groups in Office 365 to support Power BI.

# Section 3. Data Sources

There are a number of [data sources](https://docs.microsoft.com/en-us/power-bi/desktop-data-sources) that can be used with Power BI. Below are the data sources that have been identified for use in Contoso. For each data source we have included details on how to check and perform quality assurance on these sources, as well as how to monitor and connect to these data sources with Power BI.

Below is a summary of the identified data sources:

|  |  |
| --- | --- |
| **Data Source** | **Source Type** |
| warehouse01 | SQL Server |
| Manual outputs | Excel Files |

SQL Server

When working with a SQL Server Database there are a few things to consider when it comes to deciding how to use it with Power BI. You need to consider the location of the data source (on-premises or cloud), if security exists on the data source and whether its purpose is as a transactional or a reporting database.

There are a number of options when it comes to [performance monitoring and tuning tools](https://docs.microsoft.com/en-us/sql/relational-databases/performance/performance-monitoring-and-tuning-tools?view=sql-server-2017) with SQL Server.

Data Warehouse – warehouse01

The BI Data Warehouse is a repository for most of the reporting solutions created by the BI Development Team. This SQL database exists on-premises in Data Centre Location 1, with a redundancy in Data Centre Location 2. Development and enhancements are done by the BI development teams, with deployments and operations done by the Support team. In line with their current operations the Support team already have sufficient monitoring in place for this database.

An On-premises gateway will be installed on a Virtual Machine on the same Network as the database server in Location 1, with a similar setup in Location 2. The Gateway in location 2 will be passive and only be used in case of redundancy, in line with the current database configuration. This server will be provisioned by Support and the gateways will be installed, maintained and monitored by the Support Team.

The database is currently on SQL Server 2016, with a plan to upgrade to 2017 in the first quarter of next FY. Row Level Security is not used on this database and all reports use an operations account, which is a SQL Server login. The login details for this database are held by the Support team and this will be added to the gateway by them as a data source. All members of the BI Development Team will be added as users to this data source, so they can publish Power BI Reports and use this Connection on the Gateway. None of the data is sensitive enough to require Row Level Security either in the database or in reports at this point in time, but as additional sources are introduced this will be evaluated.

Due to the size of the database, currently 30GB, it has been decided that a model will be created in Azure Analysis Services and this will be used by Power BI. The Azure Analysis Services server will be created by the Support team and [monitoring](https://docs.microsoft.com/en-us/azure/analysis-services/analysis-services-monitor) will also be put in place. Both the Support Team and BI Development teams have little experience working with Analysis Services, so we (Partner X) will assist with the initial model creation and provide hands on training to both teams. Azure Analysis Services will share the same Gateway as identified earlier in this section. For simpler/smaller reports, they can connect directly to the SQL Server database in import mode, so as to benefit from the performance of the model being held in memory by Power BI.

Excel Files

A number of business users currently get supplied Excel based reports from Technology A or generate the outputs themselves using Technology B. They also receive some files from their customers, which they integrate with the aforementioned Excel files. All of this work is currently being done in Excel and there is a strong desire to do this within Power BI instead, due to the interactive reports that can be created.

Whilst the Excel files can be accessed directly using Power BI Desktop this would require the use of a Gateway if these files were held locally on users machines. It is strongly recommended that all Excel files are uploaded into a SharePoint Online site for their department. Users will then be able to [connect](https://powerbi.microsoft.com/fr-fr/blog/combining-excel-files-hosted-on-a-sharepoint-folder/) the files via a SharePoint folder, this will enable a refresh to be scheduled without the use of a Gateway.

Master Data Management

Currently Contoso do not have a specific implementation of Master Data Management. The definition for Customer and Product are defined in each reporting solution / technology. Both of these entities exist in warehouse01 and as such these will be [created as entities](https://docs.microsoft.com/en-us/power-bi/service-dataflows-create-use) in Dataflows and made available to everyone in the organization. A [refresh](https://docs.microsoft.com/en-us/power-bi/refresh-scheduled-refresh) will be able to be scheduled, which will use the Gateway for this data source (defined above). Users will then be able to [connect](https://docs.microsoft.com/en-us/power-bi/desktop-connect-dataflows) to the dataflow and use Customer and Product in their solutions.

We (Partner X) will work with Contoso further to improve their Master Data Management using our [Program X](https://appsource.microsoft.com/en-gb/marketplace/consulting-services?search=master%20data%20management&page=1&product=power-bi).

Enterprise Data Catalog

Currently Contoso use an Excel spreadsheet to list of their Data Sources, as well as a SharePoint site listing the corporate solutions created by the BI Development Team. Currently only the BI Development Team have access to these assets. Contoso have started to evaluate a number of Data Catalog options, with [Azure Data Catalog](https://azure.microsoft.com/en-gb/services/data-catalog/) currently identified as the front runner.

We (Partner X) have strong experience in this area and will work with Contoso further to improve their Enterprise Data Catalog using our [Program Y](https://appsource.microsoft.com/en-gb/marketplace/consulting-services?search=data%20catalog&page=1&product=power-bi). As part of this we will help in making sure that the appropriate information is shared to users creating self-service solutions.

Enterprise Data Dictionary

Included in the SharePoint site, which lists all of the corporate solutions, there are definitions for the various fields, measures and attributes used in each solution.

We (Partner X) have strong experience in this area and will work with Contoso further to improve their Enterprise Data Dictionary using our [Program Z](https://appsource.microsoft.com/en-gb/marketplace/consulting-services?search=data%20dictionary&page=1&product=power-bi). As part of this, we want to make this information more generally available, so self-service users are aware of the definitions, as well as able to reference them within their own solutions.

# Section 4. User Roles

Power BI can be used in a variety of ways, from content creation, to embedding in customer application or support. In this section we will identify the different types of users, what they will do and what license/tools they require

Application and Service Requirements

Below is a list of the agreed Power BI User roles, along with whether they require a Power BI Pro license and whether they need Power BI Desktop installed. The usage column contains a summary of how they would use Power BI.

|  |  |  |  |
| --- | --- | --- | --- |
| **Role** | **License** | **Desktop** | **Usage** |
| End User (with Premium) | Power BI **Free** | No | * Uses Power BI Service * Only consumes content created by others |
| End User | Power BI **Pro** | No | * Uses Power BI Service * Only consumes content created by others |
| Analyst | Power BI **Pro** | Yes | * Creates and shares content |
| Power User | Power BI **Pro** | Yes | * Creates and shares content |
| BI Developer | Power BI **Pro** | Yes | * Creates and shares content |
| Web / App Developer | Power BI **Free** | No | * Embeds content in apps created by others * Generally uses a single user for all embedded solutions |
| IT Operation User | Power BI **Free** | Yes | * Requires Power BI Administrator role in Office 365 |
| IT Support User | Power BI **Pro** | Yes | * Will look at existing solutions and likely debug in Desktop |

Training

Below is a list of the agreed Power BI User roles, along with what skills they will need with Power BI:

|  |  |
| --- | --- |
| **Role** | **Skills** |
| End User | * Power BI Service Navigation * Power BI Mobile |
| Analyst | * All End User Training * Modelling * DAX - Intermediate |
| Power User | * All Analyst Training * DAX – Advanced * PowerQuery – Basic * Sharing |
| BI Developer | * All Power User Training * Integration with other tools * Gateways * Scaling * Performance Tuning |
| Web / App Developer | * Power BI Embedded |
| IT Operation User | * Power BI Admin Training |
| IT Support User | * All Power User Training |

Below is a list of the agreed Power BI User roles, along with links to the online training available for the various roles:

|  |  |
| --- | --- |
| **Role** | **Training** |
| End User | * <https://docs.microsoft.com/en-us/learn/modules/get-started-with-power-bi/1-introduction> |
| Analyst | * All End User Training * <https://docs.microsoft.com/en-us/learn/modules/build-your-first-power-bi-report/1-introduction> |
| Power User | * All Analyst Training |
| BI Developer | * All Power User Training |
| Web / App Developer | * Power BI Development Training * <https://powerbi.microsoft.com/en-us/developers/> |
| IT Operation User | * Power BI Admin Training |
| IT Support User | * All Power User Training |

# Section 5. Process

There are a number of elements of Power BI that need to be controlled by a process to provide a consistent experience, which is clearly defined. Below are the agreed processes for how each of these will be done at Contoso.

License Assignment

When rolling out Power BI the main choice is between doing a phased or organization-wide rollout. Currently Contoso have around 200 licenses assigned, which were requested and/or purchased by a number of different departments. With the purchase of E5 licenses for all users they have the ability to assign everyone a license. They have decided to go for a phased rollout, with a number of projects / people identified for the first phase. These projects will allow for additional documentation, samples and training to be created for use by others. During this time Contoso will review requests for licenses, validate the request, and assign the licenses manually.

Further license assignment will happen in stages, in line with the rollout of Office 365. Currently this will be all 8,000 users currently migrated and around 10,000 licenses being assigned per month.

A [PowerShell script](https://docs.microsoft.com/en-us/office365/enterprise/powershell/assign-licenses-to-user-accounts-with-office-365-powershell) will be used to bulk enable a large number of users.

In addition to the Power BI Pro licenses there are 2 P1 Premium nodes. These have been purchased for use by the BI Team to enable larger capacity models, as well as guaranteed performance. Currently 1 node will be used for non-production reports and the other for production reports.

User, Group and Workspace Management

Security Group Creation

In order to configure Power BI [Tenant Settings](https://docs.microsoft.com/en-us/power-bi/service-admin-portal#tenant-settings) to be enabled for a subset of the organization 1 or more Security groups need to be created first. In Contoso only 1 Security Group, named Power Users Security Group, has been identified, which will grant users within this group access to additional functionality. Creation of this and additional groups will be done by Charlie, with the addition and removal of users done by Zo.

App Workspaces

It has been agreed to use the New Workspaces (v2) in Contoso and that anyone will be able to create workspaces. New workspaces not creating Office 365 groups was the main reason for this decision. The recommendation for when groups should be created is as follows:

|  |  |  |
| --- | --- | --- |
| **Option** | **How Many** | **Reasoning** |
| BI Team Development | 1 | * All Reports / Dashboards can be developed in 1 location * Collaborative development area |
| BI Team Test | 1 | * All Reports / Dashboards can be developed in 1 location * Collaborative development area |
| BI Team QA | 1 per report category | * Only 1 App can be created per Workspace * Need to test App experience |
| BI Team Production | 1 per report category | * Only 1 App can be created per Workspace * Need to share with different audiences |
| Business Self-Service Development | 1 per department | * Separate reports created by different departments * Collaborative development area within a department |
| Business Self-Service Production | 1 per report category | * Only 1 App can be created per Workspace * Need to share with different audiences |

Power BI Tenant Setting Changes

The initial configuration of the Tenant Settings has been agreed and these changes will be documented and made by the Support Team. Going forwards any changes to these settings will need a change request raised through Technology Z. This will then need approval from the Review Board, which will be made up of the individuals involved in the initial decision (or equivalent substitutes). The Support Team will need to keep an eye on Blog posts and the Tenant Settings to see new settings that are made available. The same group will be informed, and a decision will be made on the configuration to choose. All changes will need to go through the standard change request process.

# Section 6. Installation and Configuration

There are a number of elements of Power BI that need to be installed, e.g. Power BI Desktop and Gateways, as well as configured, such as Tenant Settings or Premium capacities. Below are the key decisions for how each of these will be done at Contoso.

Power BI Desktop

When rolling out Power BI Desktop there are a number of options to consider on how this can be done, most of the time this is due to the end users not being administrators and cannot install their own software. Below are the options available:

|  |  |  |
| --- | --- | --- |
| **Option** | **Pros** | **Cons** |
| **Windows 10 Store (Recommended)** | * **Updates automatically installed** * **Administrative privileges are not required.** * **Download sizes are smaller** * **Can be integrated with an organization’s roll-out policies and available via Microsoft Store for Business.** | * **Less controls than System Center Configuration Manager.** * **Requires Windows 10.** |
| Manually download and install | * Timing controlled by the owner of the PC. | * Requires administrative rights * User machines may be out of sync, leading to compatibility issues. * Every update requires action by the owner of the PC. |
| Organizational IT deployment tools such as Microsoft System Center Configuration Manager | * The process is managed and handled by the organizational IT dept. | * More complex. |
| Install Power BI on a Virtual Machine | * The process is managed and handled by the organizational IT dept. * Can easily update * Can install additional items, e.g. drivers, R / Python, if required * Offers the most control. | * Need to provision, monitor and manage a Virtual Machine |

Contoso are in the process of rolling out Windows 10 and with this due to complete by the end of the quarter the best option is for users to download Power BI Desktop via the Windows 10 Store for Business. They have already signed up for Windows 10 Store for Business and have started to use it for other products. The next steps are to add the Power BI App and add the individuals included in the first release of Power BI. Further requests can be made via Technology Z, with approvals being signed off by Tomas (Security Manager), Alex (Data Architect) or Gale (BI Development Manager) as required. The approvers will only be confirming the requirement of Power BI Desktop, highlighting to the end user that this is for content creators and is not required for others to share content with them.

No data sources requiring additional drivers have been identified at this time. However, there is currently a process in place for the installation of these drivers via a request to the support team using Technology Z. Information on how this process works will be shared with the relevant individuals as required.

Power BI Mobile

There is not currently a requirement to use the mobile application at Contoso.

Power BI Tenant Settings

The following Tenant Settings have been agreed:

|  |  |
| --- | --- |
| **Setting** | **Configuration** |
| Create workspaces (new) | Enabled |
| Share content with external users | Enabled for BI Team |
| Publish to web | Disabled |
| Export data | Enabled |
| Export reports as PowerPoint presentations | Enabled |
| Print dashboards and reports | Enabled |
| Publish content packs and apps to the entire organization | Enabled |
| Create template organizational content packs and apps | Disabled |
| Push apps to end users | Enabled for BI Team |
| Ask questions about data using Cortana | Enabled |
| Use Analyze in Excel with on-premises datasets | Enabled |
| Use ArcGIS Maps for Power BI | Enabled |
| Use global search for Power BI | Enabled |
| Custom visuals | Enabled |
| Interact with and share R visuals | Enabled |
| Create audit logs for internal activity auditing and compliance | Enabled |
| Usage metrics for content creators | Enabled |
| Per-user data in usage metrics for content creators | Enabled |
| Data classification for dashboards | Disabled |
| Embed content in apps | Enabled |
| Create and use dataflows | Enabled |

Below is the detail around why these settings have been selected and if there are plans to potentially change this setup in the future based on further requirements.

Power BI Environment Access

Access to non-Corporate Tenants

It has been agreed lock down which tenants are accessible from within the Contoso network. Chris’ team will make the required proxy changes to [block](https://docs.microsoft.com/en-us/azure/active-directory/manage-apps/tenant-restrictions) other tenants.

2-Factor Authentication

As part of the Office 365 rollout 2 factor authentication has been enabled for all users, to ensure an added layer of security when accessing any data or features via Office 365.

Self Sign-Up

In order to control the rollout of Power BI it has been decided to disable the ability for users to auto sign-up for Power BI. This will mean users will not be able to start a Pro Trial inadvertently. All users requiring accessing to Power BI will need to request this via the Support Team, using Technology Z (see [Section 5 – Process](#_Section_5._Process) for more information).

ExpressRoute

There is not currently a requirement to use ExpressRoute at Contoso.

Auditing

By default only 90 days of audit logs are retained. Therefore, a PowerShell script will be created by the BI Development Team and automated to copy the data into an Azure Blob Storage. Data Factory will then be used to ingest the data into an Azure SQL Database. The BI Team will liaise with the appropriate teams to create reports as required. The first set of reports that have been identified are as follows:

* Users with license not using Power BI – recover license cost
* Usage information spanning tenant – monitor all corporate reports and self-service usage (potential candidates to promote)
* Regulatory reporting for data leakage, monitoring, etc.

Gateways

A gateway will be required to connect to any data sources hosted on-premises. So far, a single SQL Database has been identified: warehouse01. Two Virtual Machines will be created in the same data center as the database, to ensure high availability. Both machines will be created by the Windows Support Team, who will also [install](https://docs.microsoft.com/en-us/power-bi/service-gateway-install) the On-Premises Gateway one. An On-Premises Gateway will be installed on the 2nd Virtual Machine, which will be added to the [cluster](https://docs.microsoft.com/en-us/power-bi/service-gateway-high-availability-clusters).

The Support Team will be given access to the Virtual Machine and login to the gateway, which will make them administrators of the Gateway. The Support Team will be responsible for adding Data Sources to the Gateway, which will be requested via Technology Z. Users can request added as users of this data source, which will need approval from the relevant Data Owners, identified by the BI Development Team.

Power BI Premium

Contoso have purchased 2 P1 Premium nodes. These will be monitored by the Support Team using the Premium Capacity Metrics App. Capacity management and configuration will be controlled by the BI Team, as they will need to assign to appropriate workspaces. Any changes will require a discussion between the BI Development Team and the Support Team.

# Section 7. Rollout

When rolling out Power BI there are a few areas to consider, including who will get access when, how this will be communicated and document what will be supported.

Communications

See next Steps for communication.

Project Prioritization

Several projects have been identified and these will be prioritized as soon as possible. The BI Development Team will take an existing solution from Technology B and replicate this in Power BI. There are already several solutions created in the Finance team, these will be reviewed and migrated to use corporate data sources, rather than Excel in the current solution.

# Section 8. Centre of Excellence

The key responsibility of the Centre of Excellence at Contoso is to ensure that the processes and procedures agreed at the time of the initial implementation of Power BI are implemented and constantly updated with ongoing changes in the organization and the technology. The Corporate Sponsor, Nia will lead the Centre of Excellence and the team involved in the defining the strategy i.e. Tomas - Data Security Manager, Alex – Lead Data Architect and Power BI Champions across the business will all have roles within the Centre of Excellence. The team will meet once a month to discuss updates / changes to the ways of working and discuss any potential issues that may arise during the month.

There are several implementations that will be setup to drive the adoption and usage of Power BI. Below is a list of the activities that are planned:

* Teams channel for collaboration, documentation and Realtime support
* Lunch and learns will initially be run by the BI Development team, following which business teams will be encouraged to participate and run these sessions in future
* Governance videos / documentation will be created / updated on an ongoing basis
* Solution examples / videos will be created for the initial projects that have been identified
* FAQs will be created for the support team and end users
* Useful links to external support or training material will be published on a SharePoint site and regularly updated

Ways of Working

There are many ways to use the various features, options and tools within Power BI. To help Contoso get the most out of Power BI there are several areas where recommendations can be given to the end users to help them make the best decision. All the below recommendations will be included on the Power BI SharePoint site and be available to all users

When to use Premium

Currently there are 2 P1 Power BI Premium nodes at Contoso, both of which are being used by the BI Team, 1 for non-production and 1 for production reporting.

The following table is a guide on when Power BI Premium will be used when this is expanded to a 3rd node or if there is a requirement for reports created in other areas of the business to be hosted on a Premium capacity.

|  |  |  |  |
| --- | --- | --- | --- |
| **Option** | **No. Workspaces** | **Add to Premium** | **Which Capacity** |
| BI Team Development | 1 | No | * All users will have Pro license |
| BI Team Test | 1 | No | * All users will have Pro license * If testing is done via an app and Testers do not have a Pro license then Add to Premium |
| BI Team QA | 1 per report category | Yes | * Share a single QA Capacity * Small reports share 1 capacity |
| BI Team Production | 1 per report category / solution | Yes | * Share capacity for small reports * Important or heavy reports in separate capacity |
| Business Self-Service Development | 1 per department | No | * All users will have Pro license |
| Business Self-Service Production | 1 per report category / solution | Yes | * Share 1 capacity * Important or heavy reports should be considered for migration to a BI Team Production workspace |

Sharing

There are several ways to share content within Power BI. Below is a recommendation of when the different sharing options should be used:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Share Individual Dashboards / Reports** | **App Workspaces** | **Apps** |
| **Audience Size** | Small | Small | Large |
| **Common**  **Scenario** | One off sharing | Development, i.e. collaboration with edit permissions | Content Distribution; View access |
| **Type of Users** | * Individuals * Distribution Groups * AD security groups * Does NOT work with Dynamic Distribution Groups | * Individuals * Security Groups (new Workspaces – in preview) * Distribution Lists (new Workspaces – in preview) * Office 365 Groups (new Workspaces – in preview) | * Everyone * Individuals * AD Security Groups |
| **O365**  **Dependency** | No | Current workspaces create an 0365 group, but Workspaces currently in Preview do not. | No |
| **License Requirements** | Pro License or PBI Premium | Pro License | Pro License or PBI Premium |
| **References** | [Share your Power BI dashboards and reports with coworkers and others](https://docs.microsoft.com/en-us/power-bi/service-share-dashboards) | [Create workspaces with your colleagues in Power BI](https://docs.microsoft.com/en-us/power-bi/service-create-workspaces)  [Create the new workspaces (preview) in Power BI](https://docs.microsoft.com/en-us/power-bi/service-create-the-new-workspaces) | [Publish apps with dashboards and reports in Power BI](https://docs.microsoft.com/en-us/power-bi/service-create-distribute-apps) |

Migrating Solutions to or from Self-Service to Corporate

Need to decide on when solutions should be migrated from Self-Service to Corporate or the other way around. The main reasons to migrate to a corporate solution are:

* Data Refreshing Frequency
* Size Limitations
* Security
* Support

# Section 9. Support

There are a number of elements of Power BI that need to be supports, e.g. Power BI Desktop and Gateways, as well as configured, such as Tenant Settings or Premium capacities. Below is a list of the support tasks and the individual who has been identified to support this task.

|  |  |  |
| --- | --- | --- |
| **Area** | **Responsibility** | **Individual – Team / Role** |
| Desktop | Grant access via Windows 10 Store | Zo – Support Manager |
| Licensing | Grant Power BI Pro license (until complete rollout) | Zo – Support Manager |
| Premium | Add workspace to capacity | Gale – BI Development Manager |
| Premium | Administer and Monitor | Zo – Support Manager |
| Security Groups | Creating new groups | Charlie – O365 Administrator |
| Security Groups | Adding / Removing users | Zo – Support Manager |
| Security / Access | [Block](https://docs.microsoft.com/en-us/azure/active-directory/manage-apps/tenant-restrictions) access to non-Contoso Office 365 tenant | Charlie – O365 Administrator |
| Auditing | Maintaining log export to Azure Blob Storage | Zo – Support Manager |
| Auditing | Maintaining audit reports created by BI Development Team | Zo – Support Manager |
| Gateways | Creating Virtual Machines for on-premises gateways | Chung – Windows Support Team |
| Gateways | Configuring Gateways, adding Data Sources, users and admins | Zo – Support Manager |

# Section 10. Next Steps

There are a number of steps required to complete the rollout of Power BI and a number of different parties involved. Below is a summary of what needs to be done and who needs to do it, as well as who will be responsible for supporting the different elements of Power BI.

These are the actions required before Power BI can be rolled out further.

|  |  |  |
| --- | --- | --- |
| **Area** | **Action** | **Individual – Team / Role** |
| Power BI Desktop | Add Power BI Desktop to Windows 10 Store | Zo – Support Manager |
| Power BI Desktop | Add Template to Technology Z for requesting Power BI Desktop via Windows 10 Store and approval requirements from Tomas (Security Manager), Alex (Data Architect) or Gale (BI Development Manager) as required. | Zo – Support Manager |
| Licensing | Create PowerShell script for Power BI Pro license assignment | Zo – Support Manager |
| Licensing | Add Template to Technology Z for requesting Power BI Pro and approval requirements from Tomas (Security Manager), Alex (Data Architect) or Gale (BI Development Manager) as required. | Zo – Support Manager |
| Security Groups | Create Power Users Security Group | Charlie – O365 Administrator |
| Documentation | Add link on how to request Drivers installation. | Zo – Support Manager |
| Documentation | Add timeline for Power BI Pro rollout and links to license request process | Gale – BI Development Manager, Matt – Finance, Yash - Sales |
| Communication | Instructions on how to install Power BI Desktop via Windows 10 Store | Gale – BI Development Manager, Matt – Finance, Yash - Sales |
| Communication | Instructions on how to request Power BI Pro | Gale – BI Development Manager, Matt – Finance, Yash - Sales |
| Communication | Instructions on when App Workspaces should be created and links on how to | Gale – BI Development Manager, Matt – Finance, Yash - Sales |
| Auditing | Create Azure Blob Storage, Azure Data Factory and Azure SQL Database. Create PowerShell script to export. Automate script. Create PowerShell pipeline to ingest data into Azure SQL Database. | Gale – BI Development |
| Auditing | Create identified reports on exported audit log. | Gale – BI Development |
| Gateways | Create 2 Virtual Machines and install on-premises gateway | Chung – Windows Support Team |
| Gateways | Configure Gateways, add data sources and BI Development Team as Users | Zo – Support Manager |

# Section 11. Getting Support from Microsoft and the Community

It is inevitable that, at some point, you will encounter a problem that you do not know how to solve. The first thing you must do is determine the kind of problem you have, and once you have done that you can determine the appropriate course of action and who you can ask for help.

## Support and Help

Power BI Support, Service Outages, and Degradations

Although the Power BI Service is extremely reliable, there may be times when the Service is unavailable or certain features do not work as expected. The support page will tell you about any outages or degradations that Microsoft is currently aware of and the timelines for getting them resolved. You can also open a support ticket from this page, which is available to users with paid Power BI Pro licenses.

Power BI Service: <https://powerbi.microsoft.com/en-us/support/>

Power BI Embedded: <https://azure.microsoft.com/en-us/status/>

Reporting Issues

If you suspect that something is wrong with the Power BI Service and that Microsoft is unaware of the problem, or if you find a bug in Power BI Desktop, the place to report the problem is the Power BI Issues forum. Before you post, please search the forum to check whether someone else has already posted the same issue. If you have a new issue, when you post, make sure that you include full details of the steps needed to reproduce the problem and screenshots of any error messages that you receive.

Issues: <https://community.powerbi.com/t5/Issues/idb-p/Issues/tab/most-recent>

Getting Help with Power BI Development

If you are having trouble with any aspect of Power BI development or configuration, then the Power BI community forums are a great place to get free help and support from Microsoft and from other members of the Power BI community. Search the forums to see whether anyone else has asked the same question before you post. You will increase the chances of getting your problem solved if you post in the right forum for your issue, you supply all the necessary technical details and examples of your data, and you are polite and courteous.

Forums: <https://community.powerbi.com/t5/Forums/ct-p/Forums>

Issues, Feedback, and Suggestions for Improving Power BI

On the Power BI Ideas site (also known as User Voice) you can suggest improvements, add new ideas, vote for and/or comment on existing ideas, and view status of ideas that have been picked up by the product team (such as started, or under review). As always, please check to see whether a similar idea has already been suggested before you post. You can also vote for issues that other people have posted. Microsoft takes the feedback on this forum very seriously - the more votes an issue receives the more likely that it will be implemented.

UserVoice: <https://ideas.powerbi.com/forums/265200-power-bi-ideas/filters/top>

Finding a Consultant or Partner to Accelerate Your Power BI Roll-Out

Sometimes, building or extending an analytics solution requires bringing onboard a professional with deep knowledge in Power BI to architect the solution, setup the infrastructure, implement the first set of reports and dashboards and do a knowledge transfer to your team. Microsoft has a rich ecosystem of [partners](https://powerbi.microsoft.com/en-us/find-a-partner/) to build [packaged industry solutions](https://powerbi.microsoft.com/en-us/partner-showcase/) that can be customized and will result in reducing the time/cost required to build analytics solution by up to 50%-70%. High quality [consulting service offerings](https://appsource.microsoft.com/marketplace/consulting-services?product=power-bi) that have clear deliverables and predictable prices make it easier to start quickly.

Power BI Partner page: <https://powerbi.microsoft.com/en-us/partners/>

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## Learning More About Power BI

Power BI Team Blog and Videos

Power BI is a very powerful product that continually evolves and improves, so there is always more to learn about it. The Power BI blog has regular roundups of new updates and features, technical tips, and announcements. To keep your knowledge up-to-date, you should follow all posts on the official Power BI blog. The .pbix files used in the monthly release videos are now posted on GitHub.

Team blog: <https://powerbi.microsoft.com/en-us/blog/>

GitHub: <https://github.com/Microsoft/powerbi-desktop-samples>

Guy In a Cube YouTube Channel

The Guy In a Cube YouTube channel is another excellent resource available for you to learn about Power BI:

Guy In a Cube: <https://www.youtube.com/channel/UCFp1vaKzpfvoGai0vE5VJ0w>

Power BI Documentation

The official Power BI documentation site is very detailed and updated on a regular basis, and should be your primary reference when you need to learn about a feature of Power BI.

System Documentation: <https://powerbi.microsoft.com/en-us/documentation/>

What’s New in the Power BI Service: <https://docs.microsoft.com/en-us/power-bi/service-whats-new>

Power BI Community Site

The Power BI Community Site includes many contributions including a community knowledgebase, forums for Q&A, announcements, and several galleries such as the Themes Gallery, Data Stories Gallery, R Scripts Gallery, Quick Measures Gallery, among others.

Power BI Community: <http://community.powerbi.com/>

Power BI User Groups

Power BI user groups have been established in many places around the world. User groups are a great place to hear presentations by Power BI experts, talk to other Power BI users, and potentially even recruit new staff. Conference dates and locations, such as the Power BI World Tour, are also announced through this site.

User Groups: <https://www.pbiusergroup.com>

Guided Learning

For introductory training on Power BI, the videos in the Guided Learning area of the Power BI site are useful place to start. Videos and written instructions are available in an easy-to-learn format.

Guided Learning: <https://powerbi.microsoft.com/en-us/guided-learning/>

Power BI Community Bloggers

The Power BI blog roll occasionally aggregates posts from many bloggers in the Power BI community. There’s a wealth of knowledge available an enthusiastic community of bloggers. As with all online resources, pay attention to the date published as information could be out of date due to the pace of change with Power BI.

Blog Roll: <https://community.powerbi.com/t5/custom/page/page-id/BlogRollExtracts>

Power BI Roadmap

Details of the Power BI roadmap and planned features can be found in the Power BI section of the Business Applications Group’s release notes site.  
Roadmap: <https://docs.microsoft.com/en-us/business-applications-release-notes/april18/power-bi/overview>

## Community Tools

Following are some of the tools contributed by the vibrant Power BI user community. These are independent tools not supported by Microsoft, some of which are free and others are paid products.

DAX Studio

DAX Studio is a client tool for executing and troubleshooting DAX queries.

Contributed and supported by: [SQLBI](https://www.sqlbi.com/)

<http://daxstudio.org/>

DAX Formatter

The DAX Formatter tool improves the readability of DAX.

Contributed and supported by: [SQLBI](https://www.sqlbi.com/)

<http://www.daxformatter.com/>

Lingo

Lingo is a web-based code editor for editing the linguistic schema in Power BI, for the purpose of improving how the natural language Q&A functionality.

Contributed and supported by: [Power BI Tips](https://powerbi.tips/)

<https://powerbi.tips/2018/04/introducing-lingo/>

Report Theme Generator

The Report Theme Generator is a web-based tool which allows a user to specify properties and download into a JSON file to be used in a Power BI theme.

Contributed and supported by: [Power BI Tips](https://powerbi.tips/)

<https://powerbi.tips/tools/report-theme-generator-v3/>

Power BI Helper

The Power BI Helper aids in removing unused data elements from a model, finding dependencies, and in documenting a model.

Contributed and supported by: [RADACAD](http://radacad.com/)

<http://radacad.com/power-bi-helper>

Power BI Documenter

Power BI Documenter is a tool which auto-generates documentation from Power BI Desktop, for the purpose of identifying and documenting data usage, visuals, and development practices.

Contributed and supported by: [Data Vizioner](http://www.datavizioner.com/)

<http://www.datavizioner.com/power-bi-documenter/how-to-use-power-bi-documenter/>

Power Update

Power Update is a tool which moves scheduled refresh operations for datasets in Power BI Desktop or Excel to a local machine.

Contributed and supported by: [Power On BI](http://poweronbi.com/)

<http://poweronbi.com/power-update/>

Power BI Visual Planning

The Visual Planning tool allows for users to edit data directly in a report or dashboard.

Contributed and supported by: [Power On BI](http://poweronbi.com/)

<http://poweronbi.com/powerbi-visual-planning/>

Power Pivot Utilities

Power Pivot Utilities is an add-in for Excel. It aids with documenting models, relationships, calculated columns, unused columns, and memory usage via a set of VBA macros.

Contributed and supported by: Bertrand d’Arbonneau

<https://www.sqlbi.com/tools/power-pivot-utilities/>

Turbo.net Power BI Desktop Application

The Turbo.net tools allow applications to run on any desktop. Their version allows Power BI Desktop to run on an Apple Mac.

Contributed and supported by: [Turbo.net](https://turbo.net/)

<https://turbo.net/run/powerbi/powerbi>

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## Additional Resources and Links

|  |  |
| --- | --- |
| Power BI Premium | Microsoft Power BI Premium Whitepaper  This whitepaper, which was published October 2017, describes Power BI Premium.  <https://aka.ms/pbipremiumwhitepaper> |
|  | Power BI Premium Planning and Deployment Whitepaper  This whitepaper provides guidance and best practices for planning and deploying Premium capacity for well-defined workloads.  <https://aka.ms/Premium-Capacity-Planning-Deployment> |
|  | Power BI Premium Calculator  The online calculator is helpful for estimating pricing for dedicated Premium capacity in Power BI.  <https://powerbi.microsoft.com/en-us/calculator/> |
| Power BI Embedded | Plan Capacity for Embedded Analytics Whitepaper  This whitepaper provides guidance for application developers and ISVs (independent software vendors) for how to determine capacity for Power BI Embedded.  <https://aka.ms/pbiewhitepaper> |
| Power BI Report Server | Support Timeline and Version History  This page describes the timeline for support for each release of Power BI Report Server, as well as the history of releases.  <https://powerbi.microsoft.com/en-us/documentation/reportserver-support-timeline/> |
|  | Capacity Planning Guidance  This whitepaper offers guidance on capacity planning for Power BI Report Server by sharing results of numerous load test executions of various workloads.  <https://docs.microsoft.com/en-us/power-bi/report-server/capacity-planning> |
| Security and Privacy | Power BI Security Whitepaper  The Power BI Security Whitepaper was updated December 2017.  <https://powerbi.microsoft.com/en-us/documentation/powerbi-admin-power-bi-security/> |
|  | Power BI and GDPR  This whitepaper discusses GDPR (General Data Protection Regulation) compliance, data protection, privacy, and how it relates to Power BI.  <https://aka.ms/power-bi-gdpr-whitepaper> |
|  | Microsoft Trust Center  The Trust Center publishes the status for compliance, certifications, and attestations. Security-related information is available as well.  <https://www.microsoft.com/en-us/trustcenter/cloudservices/powerbi> |
|  | Microsoft Enterprise Privacy Statement  Includes the privacy terms for Microsoft Online Services, including Power BI. Data collection, and how personal data is used, is described here.  <https://www.microsoft.com/EN-US/privacystatement/OnlineServices/Default.aspx> |
| Business-to-Business Distribution | Distribute Power BI Content to External Guest Users Whitepaper  This whitepaper outlines how to distribute content to users outside the organization using Azure Active Directory Business-to-business (AAD B2B) capabilities.  <https://aka.ms/powerbi-b2b-whitepaper> |
| Governance and Best Practices | Power BI Governance and Deployment Approaches Whitepaper  This whitepaper discusses governance and ways to deploy Power BI. It was published March 2016, but the ideas and processes discussed are still relevant.  <https://powerbi.microsoft.com/en-us/documentation/powerbi-admin-governance/> |
|  | Best Design Practices for Reports and Visuals  This page provides a wealth of information about design principles for effective Power BI data visualizations.  <https://docs.microsoft.com/en-us/power-bi/power-bi-visualization-best-practices> |
|  | Bidirectional Filtering in Power BI  This whitepaper discusses the impact of using bidirectional cross-filtering in Power BI Desktop (and Analysis Services), including behaviors a data modeler/author needs to be aware of in order to use the capability without unintended side effects.  <https://docs.microsoft.com/en-us/power-bi/desktop-bidirectional-filtering> |
| Other | Advanced Analytics with Power BI  This whitepaper discusses advanced analytics capabilities of Power BI, including predictive analytics, data visualizations, R integration, and DAX (Data Analysis eXpressions).  <https://info.microsoft.com/advanced-analytics-with-power-bi.html> |
|  | Power BI and SAP BW  This document describes how SAP customers can benefit from connecting Power BI to existing SAP Business Warehouse (BW) systems.  <https://aka.ms/powerbiandsapbw> |
|  | Microsoft Online Services Terms  This page documents the terms which govern Microsoft Online Services, including Power BI.  <http://www.microsoftvolumelicensing.com/DocumentSearch.aspx?Mode=3&DocumentTypeId=31> |
|  | Sovereign Clouds  This page lists Power BI Service availability for sovereign clouds which comply with local regulations.  <https://powerbi.microsoft.com/en-us/clouds/> |