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For information (department acronym name)

# Power BI On Prem Guide

<https://docs.microsoft.com/en-us/power-bi/>

<https://scaniaazureservices.sharepoint.com/sites/SelfServiceBI>



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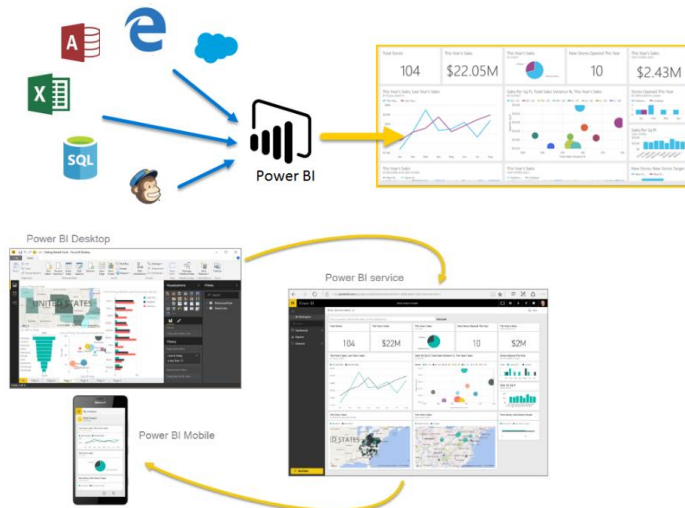
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# PowerBI

PowerBI is a business analytics service provided by Microsoft. It provides interactive visualizations with self-service business intelligence capabilities, where end users can create reports and dashboards by themselves, without having to depend on information technology staff or database administrators.

- We at Scania IT have chosen PowerBI as our strategic choice for creating BI-reports.
- It is well suited for self service and has been developed from Excel and Power Pivot.
- To use PowerBI you need the Desktop software, it's free. This is where you connect to data sources and create reports. You will get a choice when you get your data, import or live connect this important from a security perspective.
- When you have created your report and would like to share it there are two ways to go. You can use our on Prem Report servers or use the cloud service. This is also important whether you import data or live connect. If you import data and save the report in the cloud, all data will be in the "pbix" file which is stored in Azure. Depending on the classification of the data it might be a risk for Scania.
- Since there are two different ways to publish there is also two different versions available in Order IT.
- If you would like to use the cloud service you need a pro license to be able to share your report, read the license and access section.



# Introduction to Self Service

## General Info

Self-Service business intelligence(SSBI) is an approach to data analytics that enables business users to access and work with corporate data even though they do not have a background in statistical analysis, business intelligence (BI) or data mining.

Allowing end users to make decisions based on their own queries and analyses frees up the organization's business intelligence and information technology (IT) teams from creating the majority of reports and allows those teams to focus on other tasks that will help the organization reach its goals.

## Scania Info

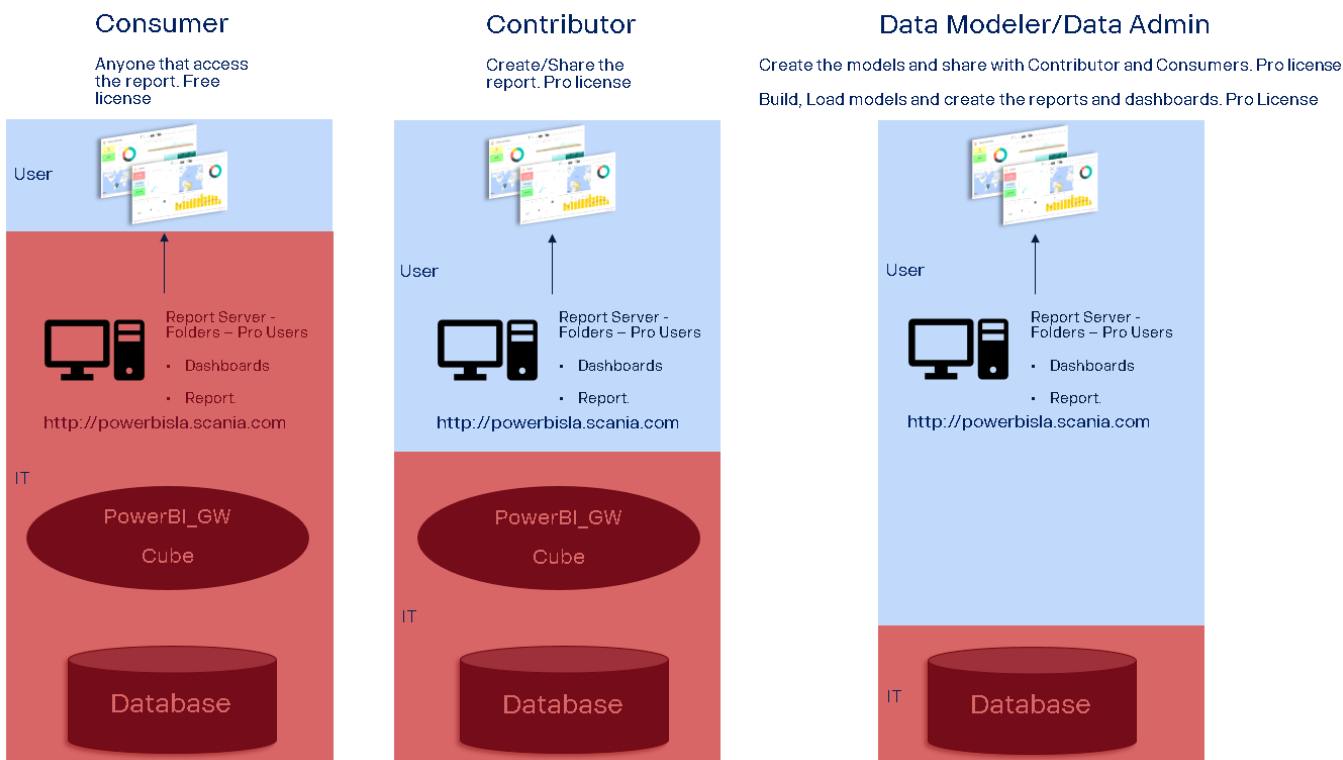
We at the BI-department (BIAN) at Scania have been working to enable a wider level of self service BI to the Scania employees. We see this to become more data driven and allow users to access updated data from our common data warehouse and to create their own BI-solution.

Self service BI does come with some challenges that we would like you to be aware of:

- Data awareness. Understand your data to avoid misguiding your users/managers. Before you start you need to make a risk evaluation IRAM.
- BI-Skills. You build it, you run it. We at BIAN cannot guarantee support for self service projects. If you want quality data, production stability and business critical reports you are welcome to initiate a project with us.

You are responsible for the data you are sharing in your reports. If you import your data in PowerBI reports consumers will be able to extract that data to excel.

# Self Service Levels



# License and Access

These versions are for publishing reports in the cloud. For on prem you will only need the free desktop version.

## Free version (O365 E3)

- Office 365 includes free version of Power BI.
- Allows you to consume reports shared with you.
- Create reports on My Workspace (unable to share).



Consume and create for self use

## PRO (est. 60 SEK/month)

- Allows you to create workspaces, reports and share with other Power BI PRO users.



Network with PRO-users and upload to workspaces

## Premium

- Central Scania capacity.
- Allows you to activate PRO users workspace to share with free users.



Create workspaces and activate workspaces

US\$6,60 per user

US\$4,200/Month for 1500 users – US\$2,80

300 users using this.

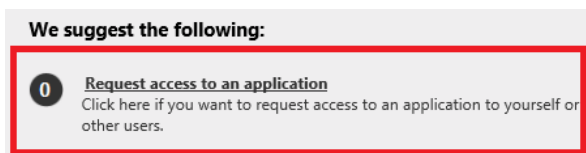
powerbi.support@scania.com

All PowerBI license will be payed by Sweden so there is no cost for Brazil.

# Access Control Flow

**The flow is not for application yet and it was done to have a control and the approval is manual.**

- 1) Open the ACI system on the SLA Applications and click in item 0:



- 2) Inform the user and click on the “I’m done selecting users”:

**Application**

REQUEST ACCESS TO AN APPLICATION  
 The access will be requested to which user(s) ?

**Add**

(Inform user name separated by commas)

**(Selected user(s):1)**

	User name	Full name
<a href="#">Remove</a>	SSBMYN	Yukio Nishida, Marcius

- 3) Informe the PowerBI application:

**Application**

REQUEST ACCESS TO AN APPLICATION  
 SELECT A MARKET:  
 BRASIL

SELECT AN ENVIRONMENT:  
 Production

Select an application

- PINK
- PMA
- PME
- POKA\_CAB
- POKA\_CHA
- POKA\_EIXO
- POKA\_MOT
- POP
- POWERBI
- PPM
- PRD
- PREC
- PRENSAMAP
- PREVIDA
- PRIDE
- PRINTERS BRAZIL - RESTRICTED
- PROCAL 2.0
- PROPELLER 2.0
- PROSSESS
- PUMA
- QUAS SLA
- QUALCOM
- RAMAS
- REEMBOLSO
- REFLEX
- REGAIN
- RENAVAM
- REPAY
- REVISIONS
- RGC

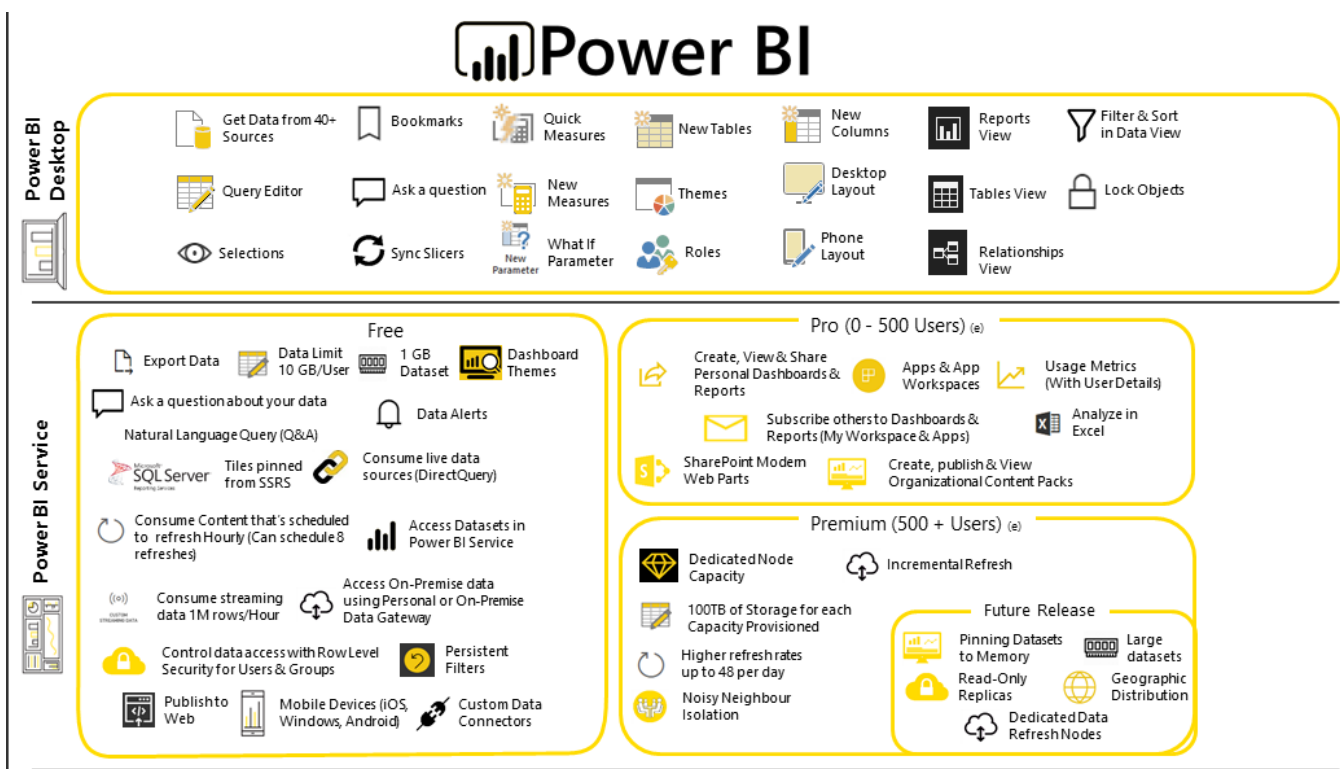
- 4) Choose the license Pro or Premium:

**POWERBI: PREMIUM LICENSE** [Add all](#)

**POWERBI: PRO LICENSE**

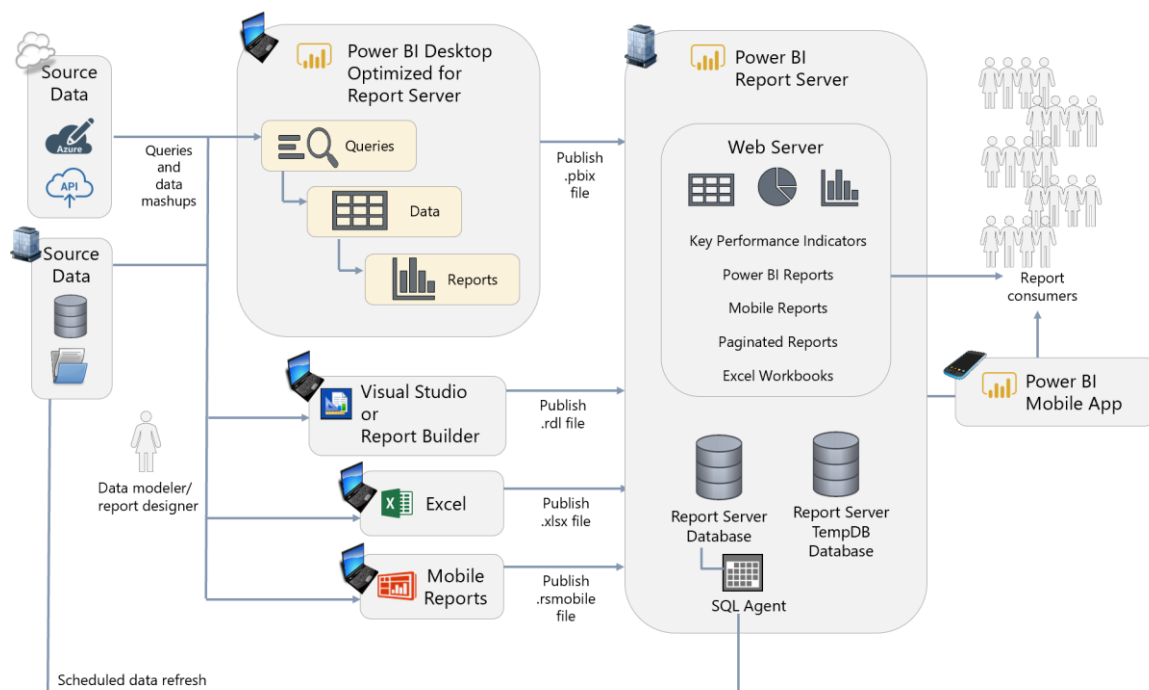
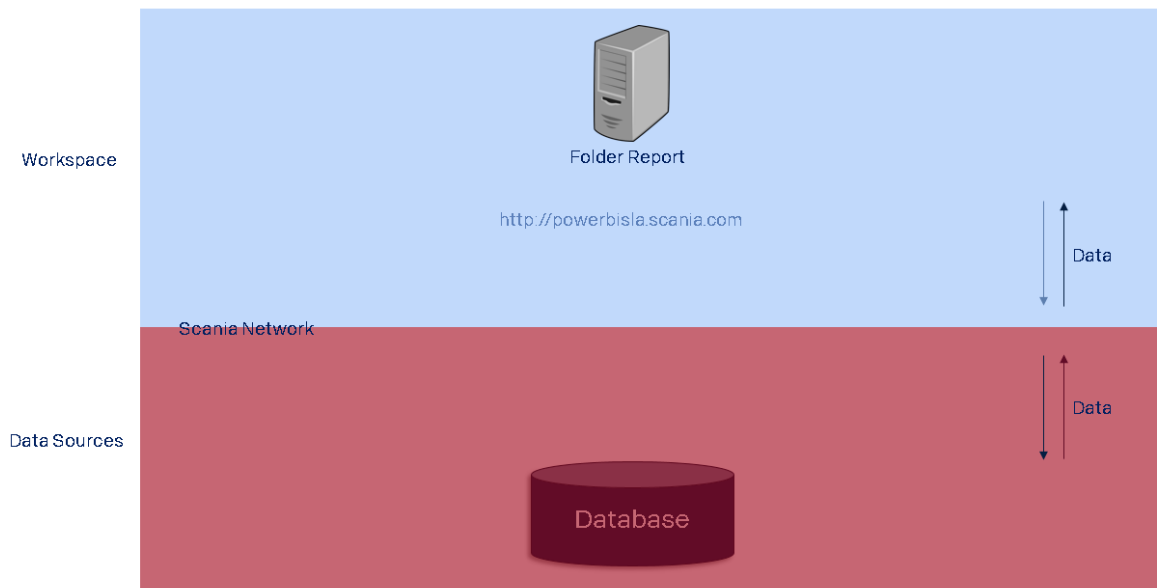
# Free vs Pro vs Premium

	Free	Pro	Premium
Must be on O365	Yes	Yes	Yes
Create Reports	Yes	Yes	Yes
Share Reports	No	Only with Pro	Free and Pro
DirectQuery or Live Connect	No	Yes	Yes
Workspace	No	Yes	Yes
Data Storage	1 Gb per user	10 Gb per user	100 Tb per user
Data Refreshes	8 per day	Up to 48 per day	unlimited
Larger Datasets	1Gb	1Gb	50Gb
Separate Resources	No	No	Yes





# Technical structure





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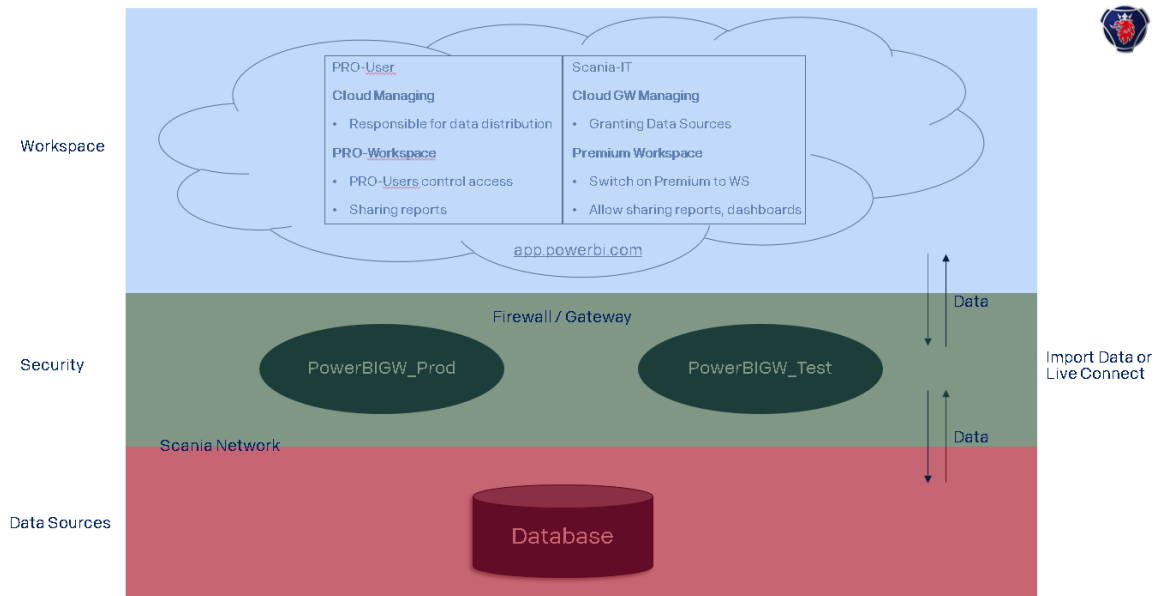
PowerBI On Prem (production): <http://powerbisla.br.scania.com/reports/browse/>

PowerBI On Prem (acceptance): <http://powerbislaacp.br.scania.com/reports/browse/>

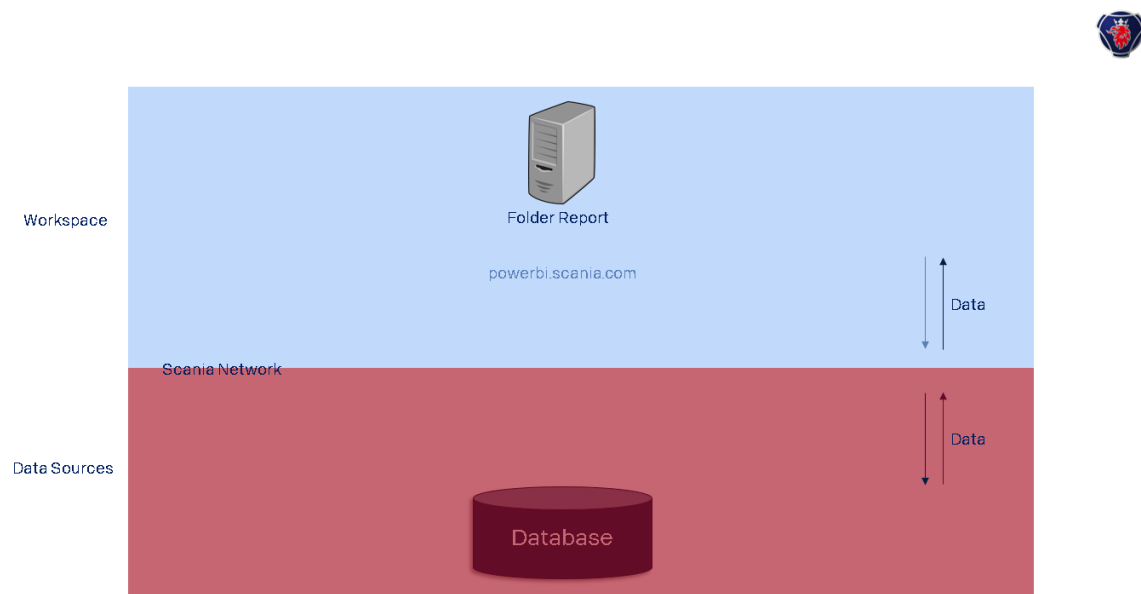
**If you want to access the PowerBI On Prem open please a Jira issue on the product  
POWER BI - Platform (POWERBI)**

# Architecture Cloud vs On Prem

## Cloud



## On Prem





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# Cloud vs On Prem

Features	Power BI Report Server	Power BI Service	Notes
Deployment	On-premises or hosted cloud	Cloud	Power BI Report Server can be deployed in Azure VMs (hosted cloud) if licensed through Power BI Premium
Source data	Cloud and/or on-premises	Cloud and/or on-premises	
License	Power BI Premium or SQL Server EE with SA	Power BI Pro and/or Power BI Premium	
Lifecycle	Modern lifecycle policy	Fully managed service	
Release cycle	Once every 4 months	Once a month	Latest features and fixes come to Power BI Service first. Most core functionality comes to Power BI Report Server in the next few releases; some features only meant for the Power BI service.
Create Power BI reports in Power BI Desktop	Yes	Yes	
Create Power BI reports in the browser	No	Yes	
Gateway required	No	Yes for on-premises data sources	
Real-time streaming	No	Yes	<a href="#">Real-time streaming in Power BI</a>
Dashboards	No	Yes	<a href="#">Dashboards in the Power BI service</a>
Distribute group of reports using apps	No	Yes	<a href="#">Create and publish apps with dashboards and reports</a>
Content packs	No	Yes	<a href="#">Organizational content packs: Introduction</a>
Connect to services like Salesforce	No	Yes	<a href="#">Connect to the services you use with the Power BI service</a>
Q&A	No	Yes	<a href="#">Q&amp;A in the Power BI service and Power BI Desktop</a>
Quick insights	No	Yes	<a href="#">Automatically generate data insights with Power BI</a>
Analyze in Excel	No	Yes	<a href="#">Analyze in Excel</a>
Paginated reports	Yes	No	<a href="#">Paginated reports aren't available in the Power BI service, but you can pin paginated report items to Power BI dashboards</a>
ARC GIS maps	No	Yes	<a href="#">ArcGIS maps in Power BI service and Power BI Desktop by Esri</a>
Email subscriptions for Power BI reports	No	Yes	<a href="#">Subscribe to a report or dashboard in the Power BI service</a>
Email subscriptions for paginated reports	Yes	No	<a href="#">E-Mail delivery in Reporting Services</a>
Data alerts	No	Yes	<a href="#">Data alerts in the Power BI service</a>
Row-level security	Only through data source in DirectQuery mode	Available in both DirectQuery (data source) & Import mode	<a href="#">Row-level security (RLS) with Power BI</a>
Full screen mode	No	Yes	<a href="#">Full screen mode in the Power BI service</a>
Advanced Office 365 collaboration	No	Yes	<a href="#">Collaborate in an app workspace with Office 365</a>
R visuals	No	Yes	<a href="#">Create R visuals in the Power BI service</a>
Preview features	No	Yes	<a href="#">Opt in for Power BI service preview features</a>
Custom visuals	Yes	Yes	<a href="#">Custom visuals in Power BI</a>
Power BI Desktop	Version optimized for Report Server, available for download with Report Server	Version optimized for Power BI Service, available from the Windows Store	<a href="#">Power BI Desktop for the report server</a> <a href="#">Power BI Desktop for the Power BI service</a>

<https://docs.microsoft.com/en-us/power-bi/report-server/compare-report-server-service>



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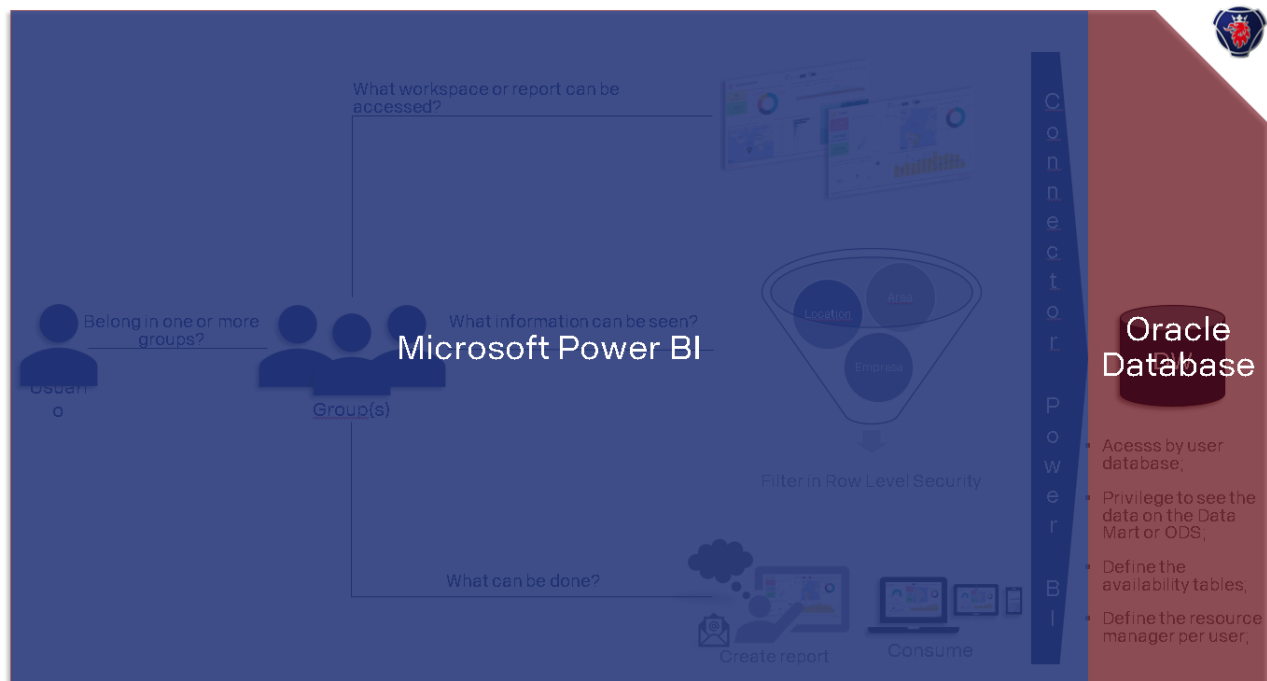
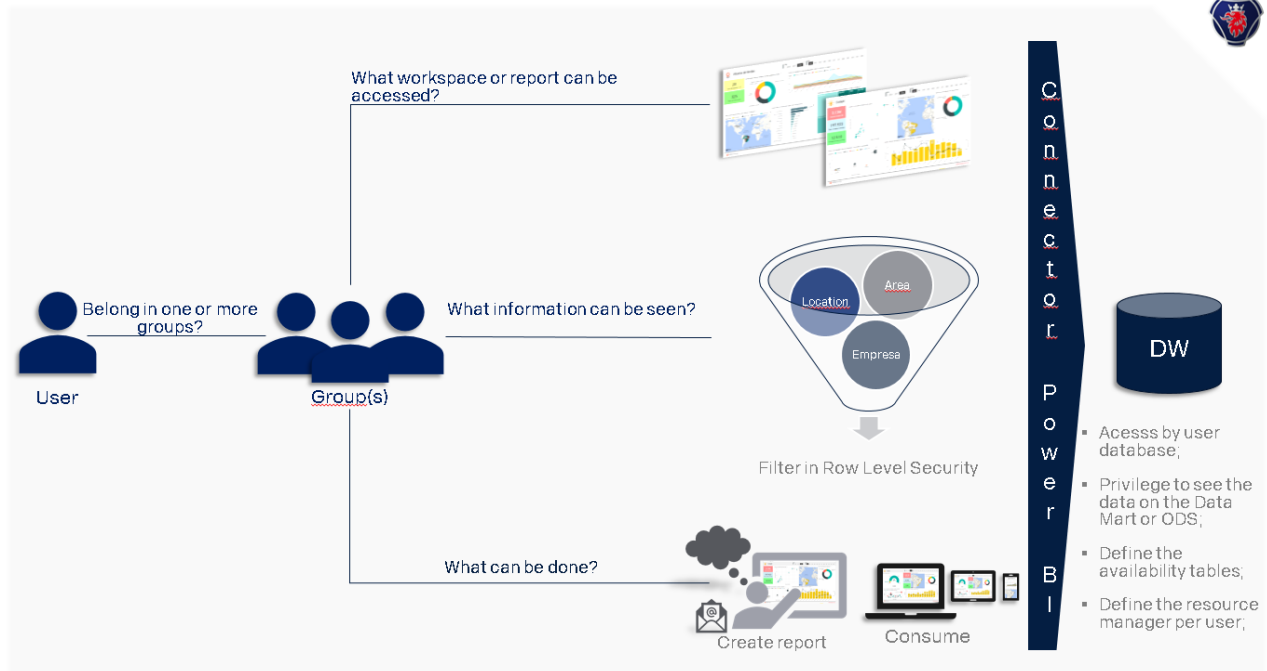
# Installation for PowerBi RS (January 2019)desktop (PBIDesktopRS\_x64)

The installation's instruction of PowerBi RS(PBIDesktopRS\_x64) on the desktop is available on the link <https://www.microsoft.com/en-us/download/details.aspx?id=55330>

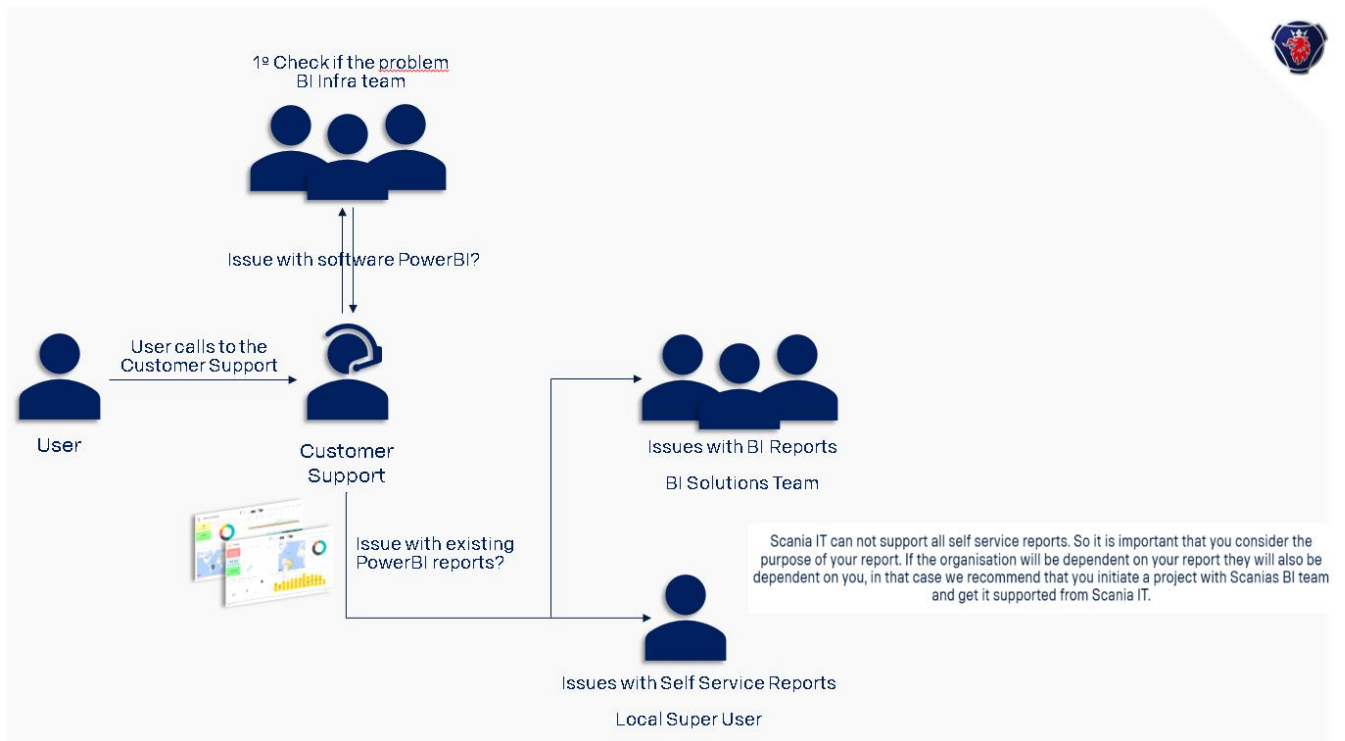
The installation's instruction of Oracle Client is available on the link <https://docs.microsoft.com/en-us/power-bi/desktop-connect-oracle-database>

The files are available also in [\\tools\data\\$\Programs\ N-Z\PowerBI](#) or by Software Center

# Level Security

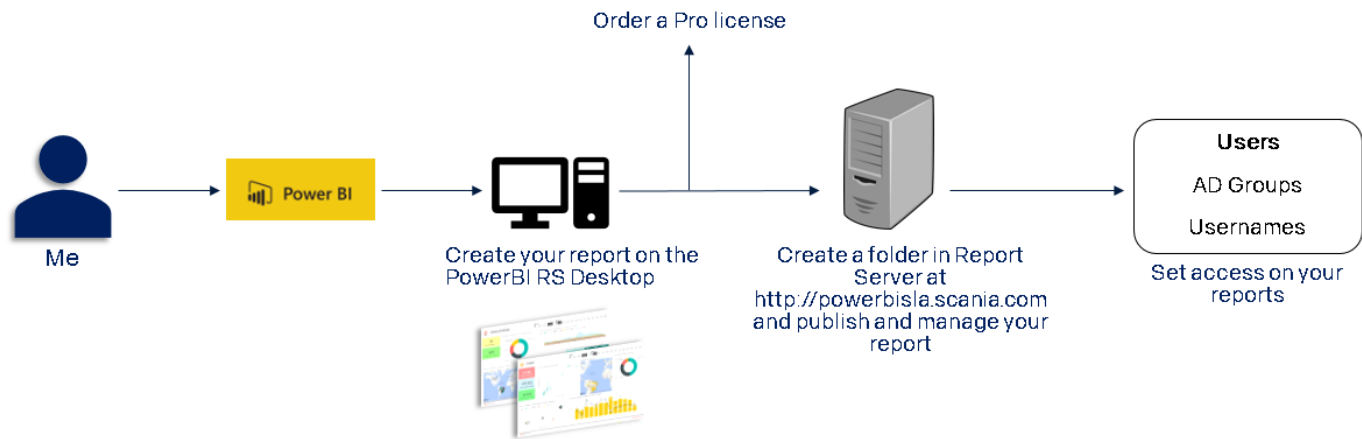


# Support



- When the issue is with PowerBI the BI infra team can check it first and if the problem is related to the infra;
- The incident about infra can be redirected to the **AMS PowerBI Advanced Support Scania Latin America** group;
- The incident about reports developed by IT can be redirected to the their groups according to application;
- If the PowerBI report has been developed by Sweden redirect please the incident to the [powerbi.support@scania.com](mailto:powerbi.support@scania.com)

# Flow



- 1) User needs to know if the report will be shared or not:
  - a. if yes:
    - i. The data source(database) must be configured on the Report Server and it is handled by BI infra team;
    - ii. User needs to have the PRO license.
  - b. If no:
    - i. No activity to do because the user will work in stand-alone mode.
- 2) User open the PowerBI RS desktop using the O365 credential and create the report;
- 3) User open the PowerBI Report Server by [http://powerbisla\\_dev.scania.com/Reports](http://powerbisla_dev.scania.com/Reports) or <http://powerbisla.scania.com/Reports> and create a folder with a name;
- 4) In PowerBI RS desktop the user publishes the report choosing the folder created on the Report Server;
- 5) In PowerBI Report Server the user can set the permissions and who(username or AD group) can access the report.

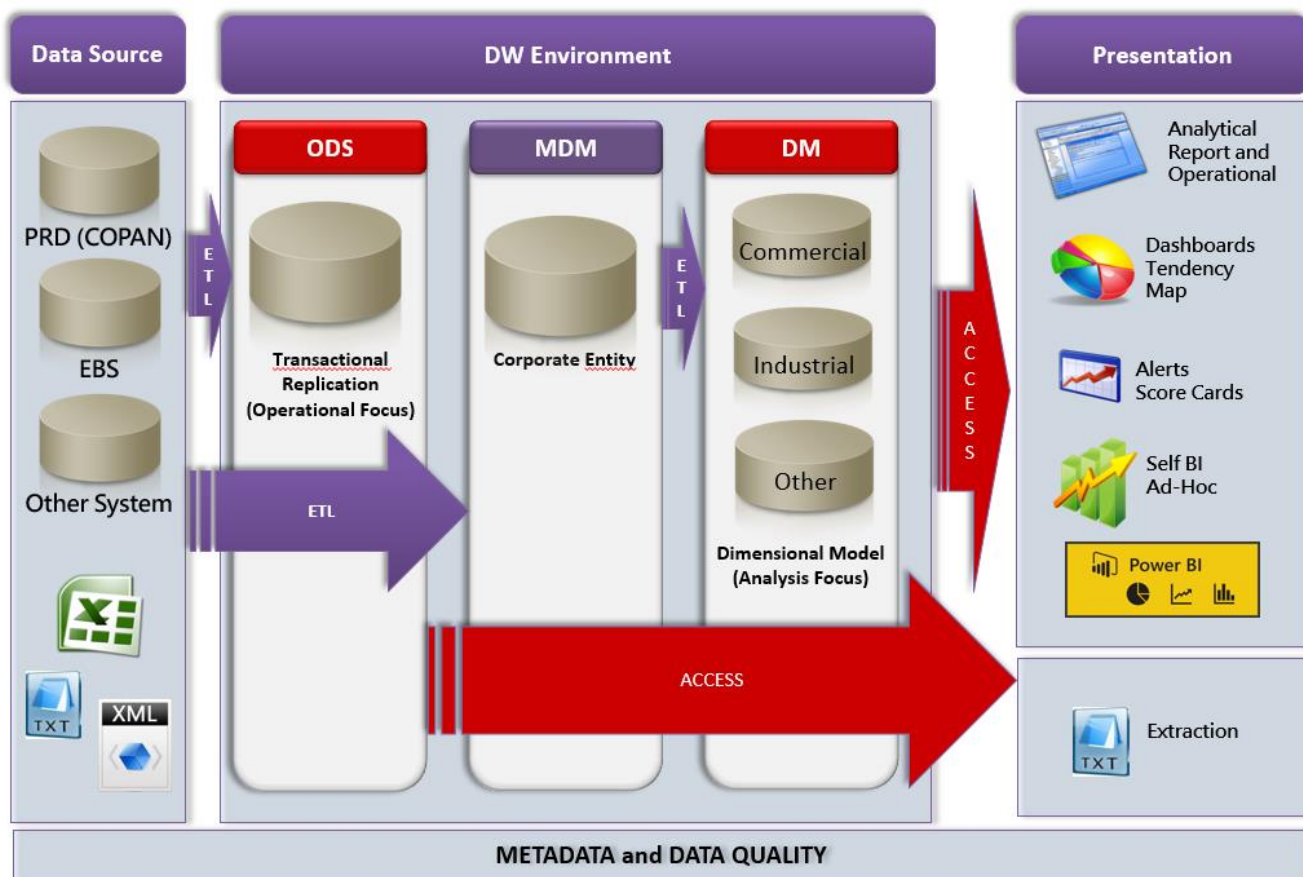


# Education

Tips and demos to improve your BI-Skills:

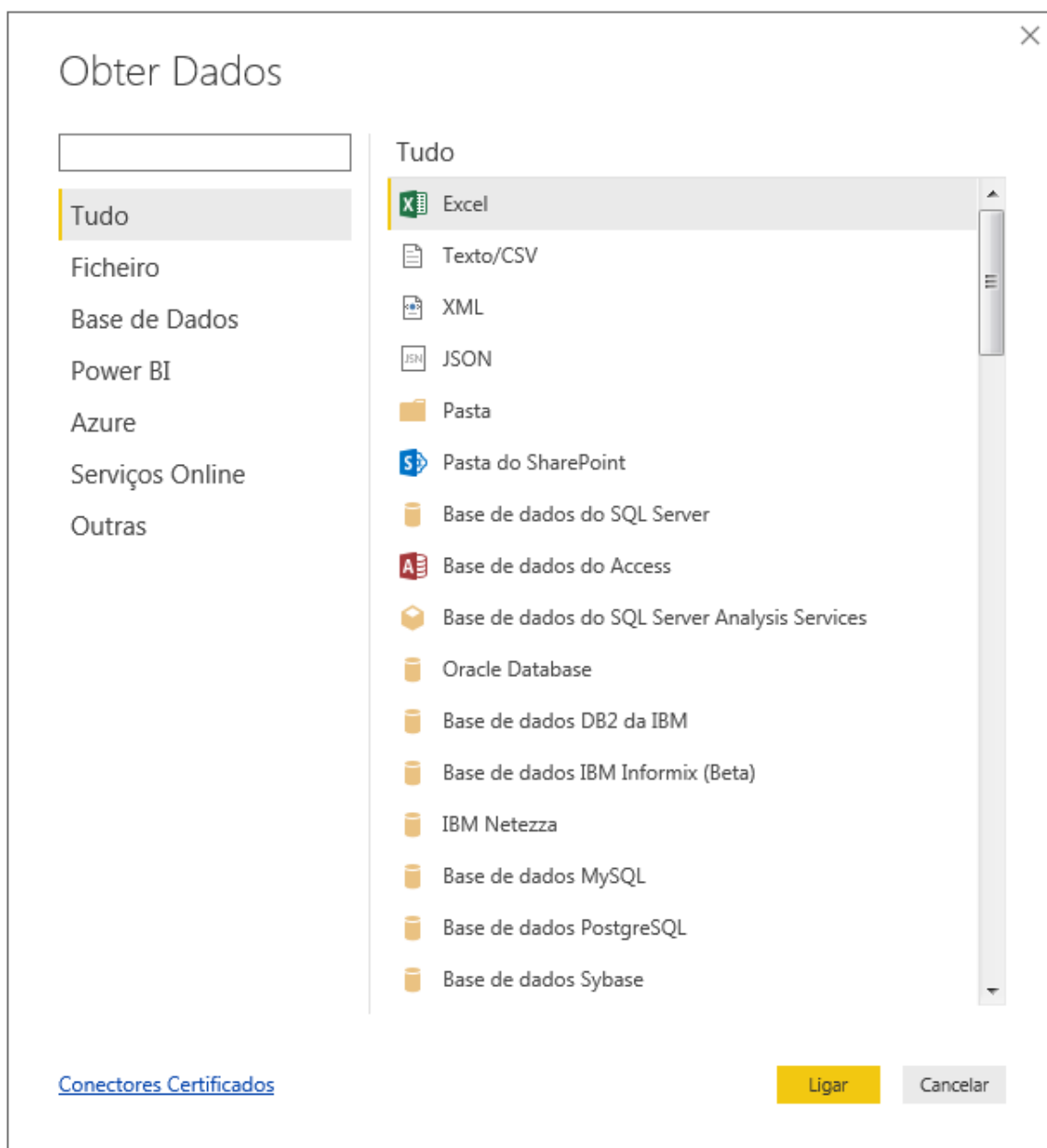
- Get started with PowerBI guide: <https://docs.microsoft.com/en-us/power-bi/service-get-started>
- PowerBI Youtube channel with guides: <https://www.youtube.com/user/mspowerbi>
- PowerBI tutorial: <https://www.youtube.com/watch?v=gqO0EiCn4cY>
- Tutorial
  - <https://docs.microsoft.com/pt-br/power-bi/service-connect-to-services>
  - <https://docs.microsoft.com/pt-br/power-bi/sample-tutorial-connect-to-the-samples>
  - <https://docs.microsoft.com/pt-br/power-bi/desktop-getting-started>
- Self Learning
  - <https://docs.microsoft.com/pt-br/power-bi/guided-learning/>
  - <https://docs.microsoft.com/pt-br/power-bi/guided-learning/gettingstarted>
  - <https://powerbi.microsoft.com/pt-br/learning/>
- Demo
  - <\\global.scd.scania.com\proj\ Public\PowerBI\Demo 20171024>
  - <https://app.powerbi.com/groups/me/reports/3b7cd9fd-f06f-4cb6-9e4d-f0ea7b68af0d?ctid=3bc062e4-ac9d-4c17-b4dd-3aad637ff1ac>
- Dashboards in Zwolle
  - <https://pages.github.scania.com/ScaniaNL/PowerBI-dashboards/>
  - <https://pages.github.scania.com/ScaniaNL/PowerBI-KB/>
- PowerBI On Prem in development environment
  - [http://powerbi\\_dev.scania.com/reports](http://powerbi_dev.scania.com/reports)
- Internal Education at Scania – call to SSBKLO or SSBKLD.

# Reference Architecture

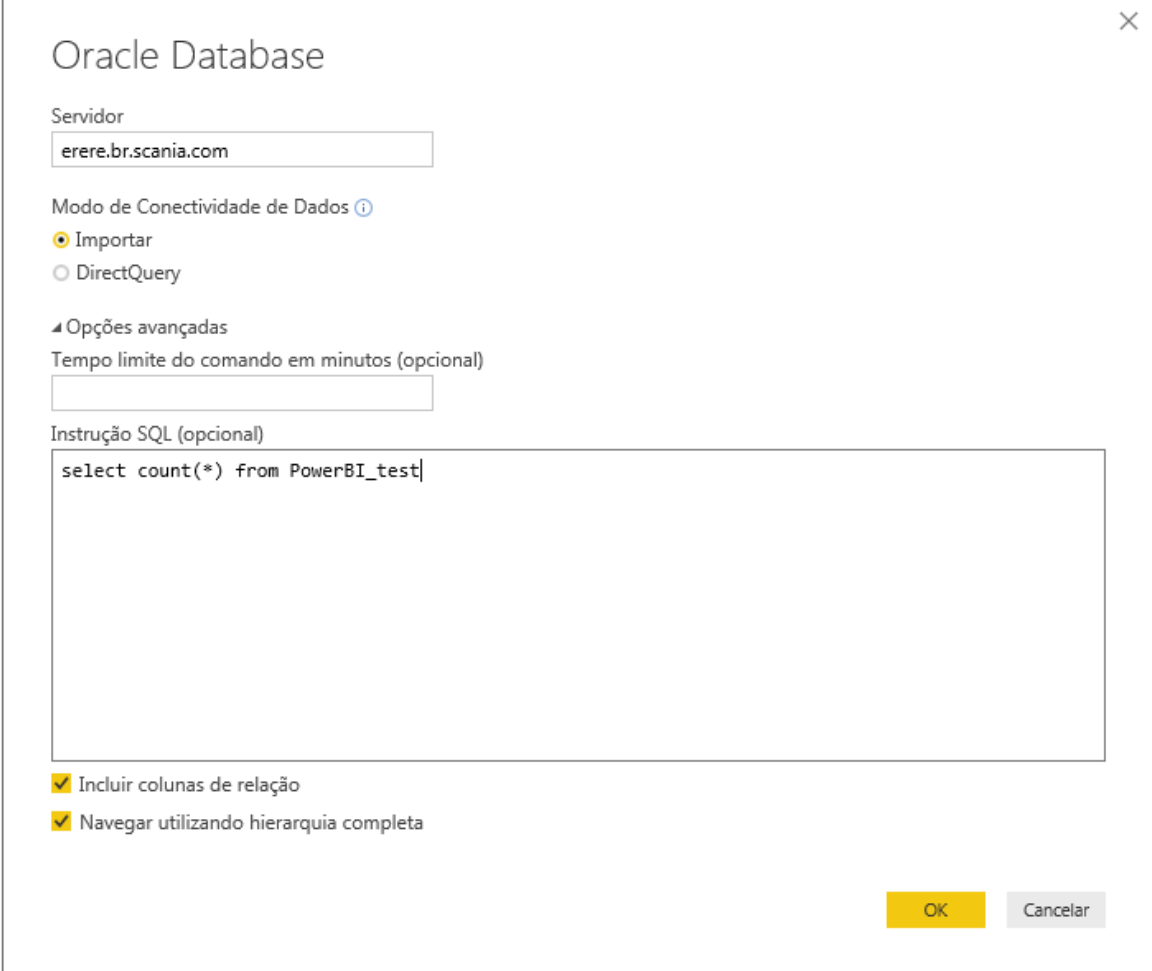


# Step by Step

- 1) Open the PowerBi and click on the Get Data;



- 2) Inform the database name, the connectivity mode if is import data or live connect and the query string;



Oracle Database

Servidor  
erere.br.scania.com

Modo de Conectividade de Dados ⓘ  
☒ Importar  
☐ DirectQuery

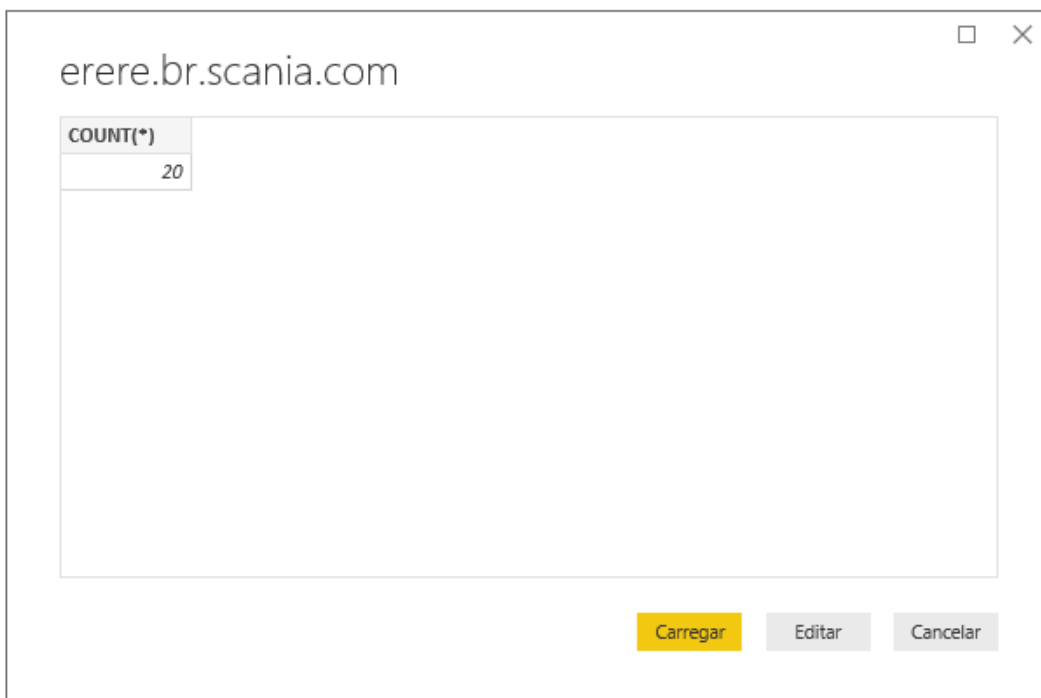
▲ Opções avançadas  
Tempo limite do comando em minutos (opcional)

Instrução SQL (opcional)  
select count(\*) from PowerBI\_test

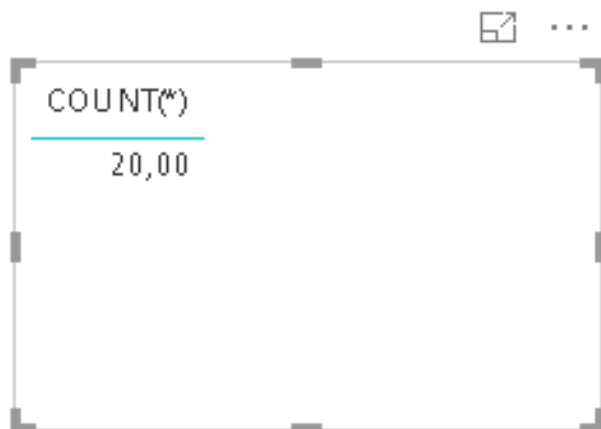
☒ Incluir colunas de relação  
☒ Navegar utilizando hierarquia completa

OK Cancelar

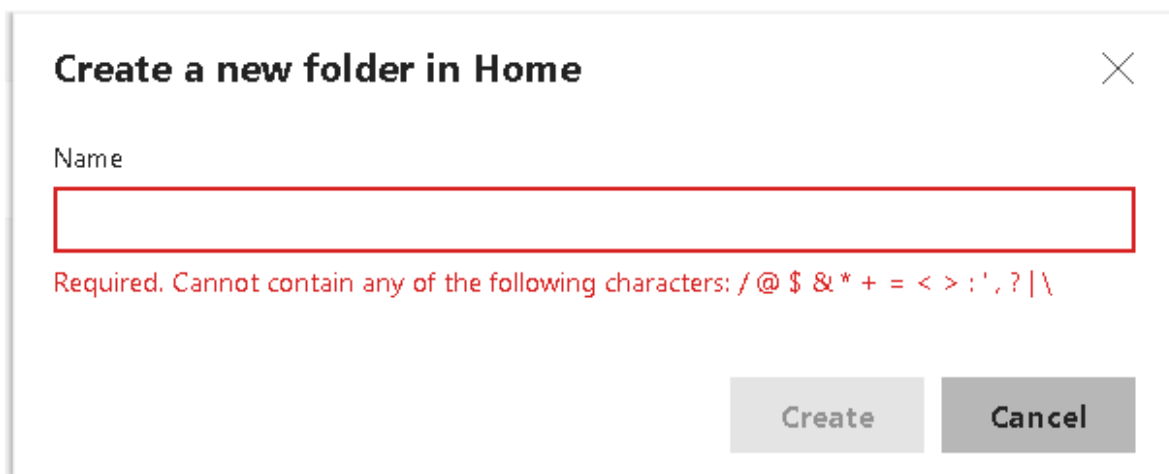
3) The information is showed:



4) Develop a report to show the data saving on the Pbix file:



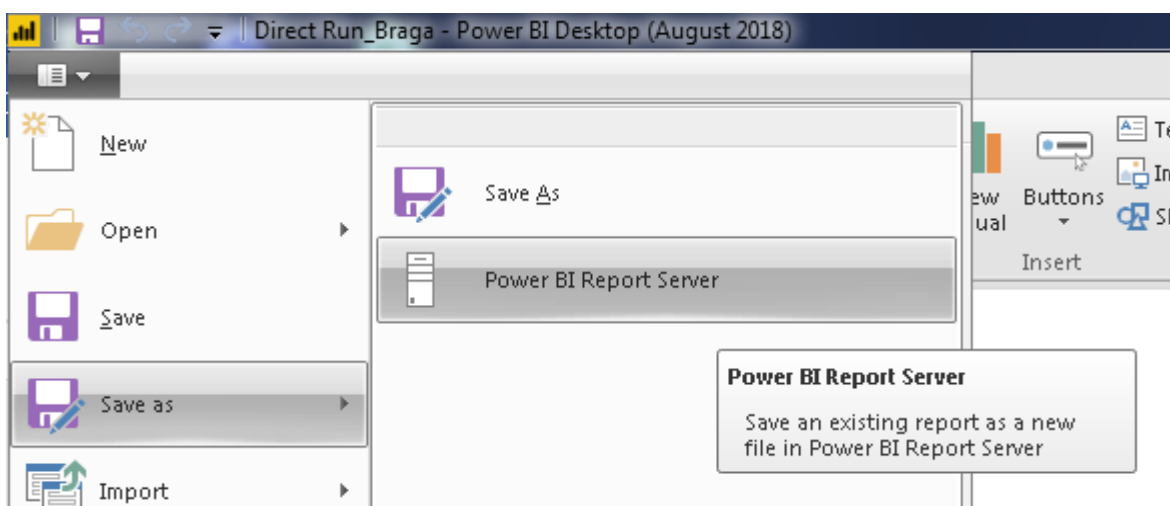
- 5) Open the PowerBi On Prem and create a folder:



- 6) Publish your report on the report server choosing that folder clicking on Save As, choose the Power BI ReportServer, inform the server name and the folder

PowerBI Development: [http://powerbisla\\_dev.scania.com/Reports](http://powerbisla_dev.scania.com/Reports)

PowerBI Production: <http://powerbisla.scania.com/Reports>



×

## Power BI Report Server Selection

Choose the report server you would like to save your report to. You can select from the recent report server list or enter a new report server address.

Recent report servers

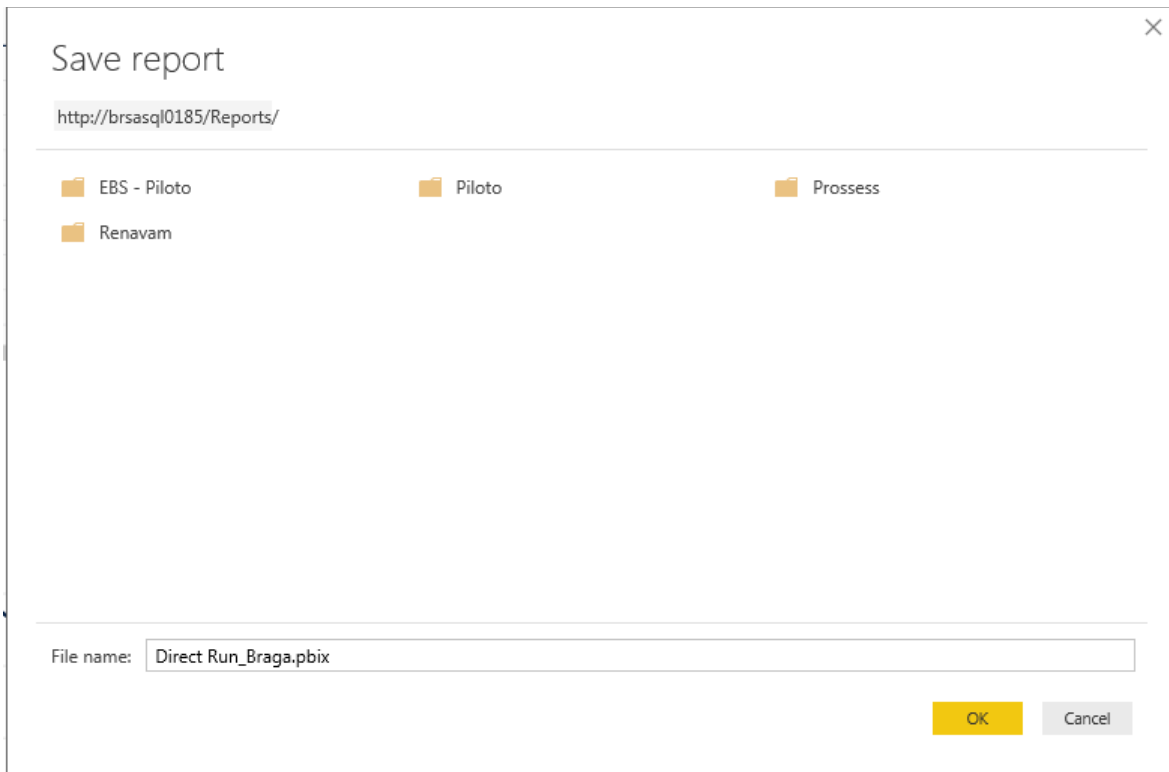
brsasql0185/Reports

New report server address (Example: <http://reportserver/reports> or <https://reportserver/reports>)

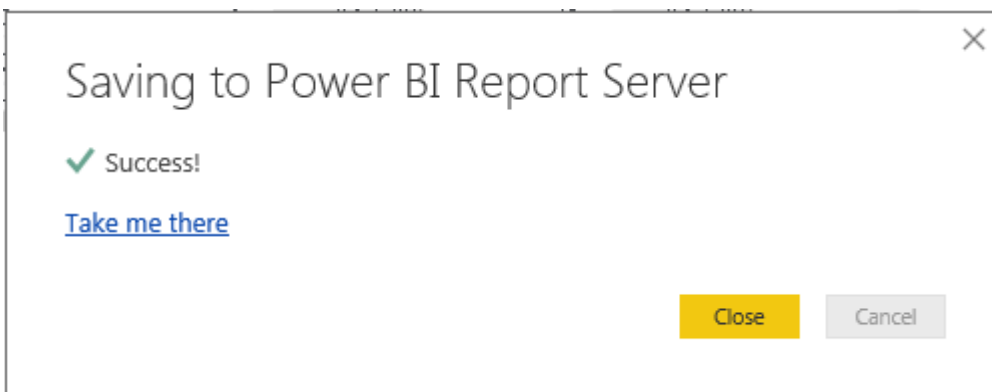
<http://brsasql0185/Reports>

OK

Cancel



7) Report published:



8) Report opened on the report server:





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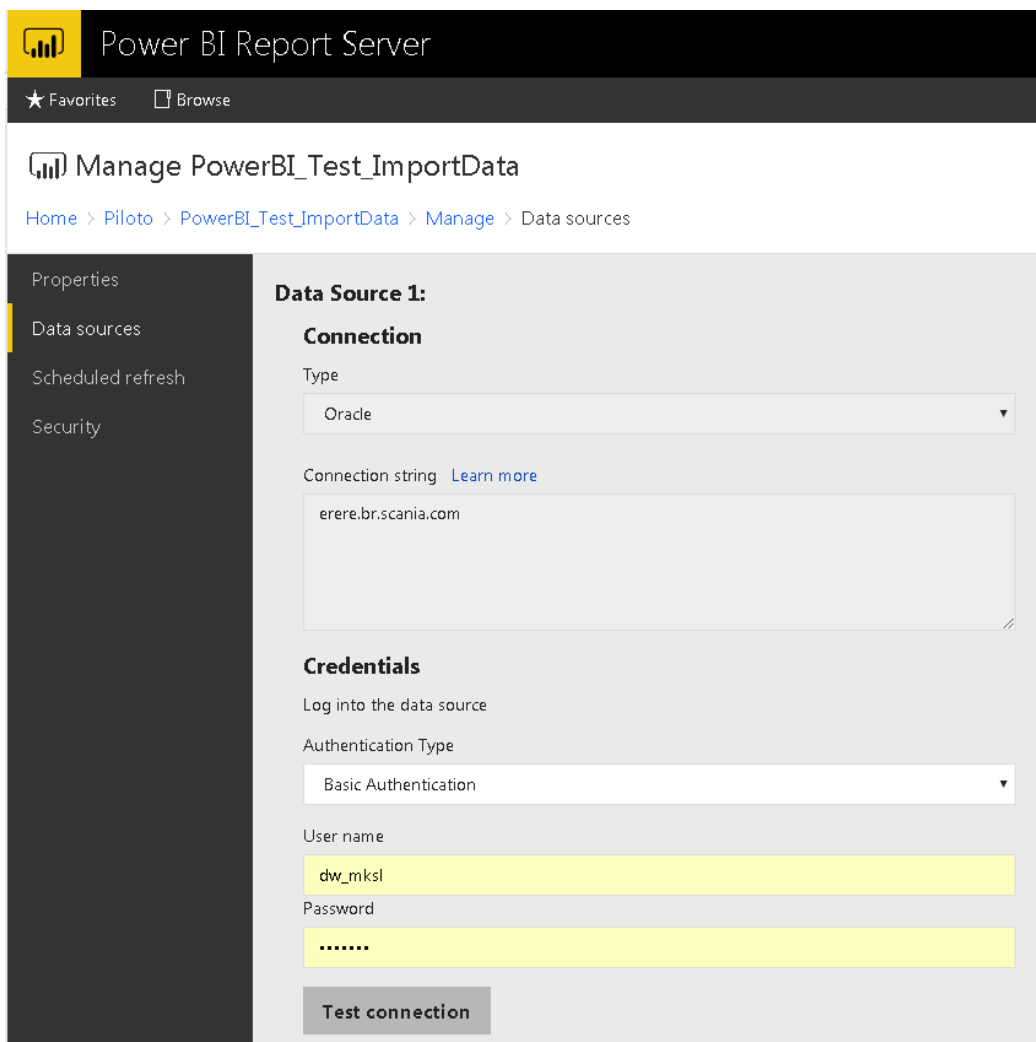
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COUNT(*)
380.00

## 9) Know the data sources configuration:



The screenshot shows the 'Manage PowerBI\_Test\_ImportData' page in the Power BI Report Server. The left sidebar contains links for Properties, Data sources, Scheduled refresh, and Security. The main content area is titled 'Data Source 1:' and includes sections for 'Connection' and 'Credentials'.

**Connection**

Type: Oracle

Connection string: [Learn more](#)  
 erere.br.scania.com

**Credentials**

Log into the data source

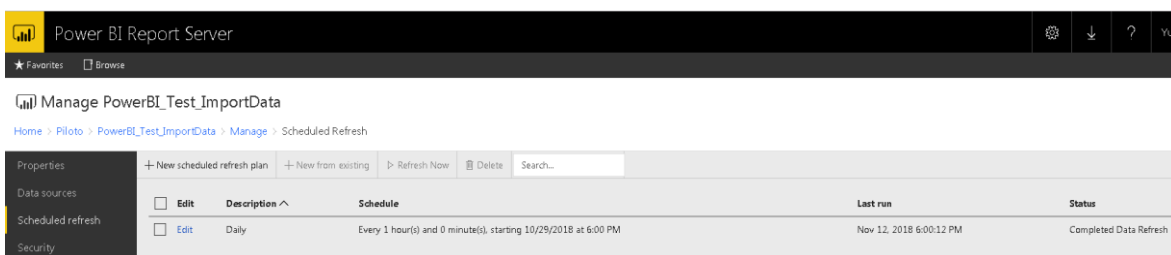
Authentication Type: Basic Authentication

User name: dw\_mksl

Password: .....

Test connection

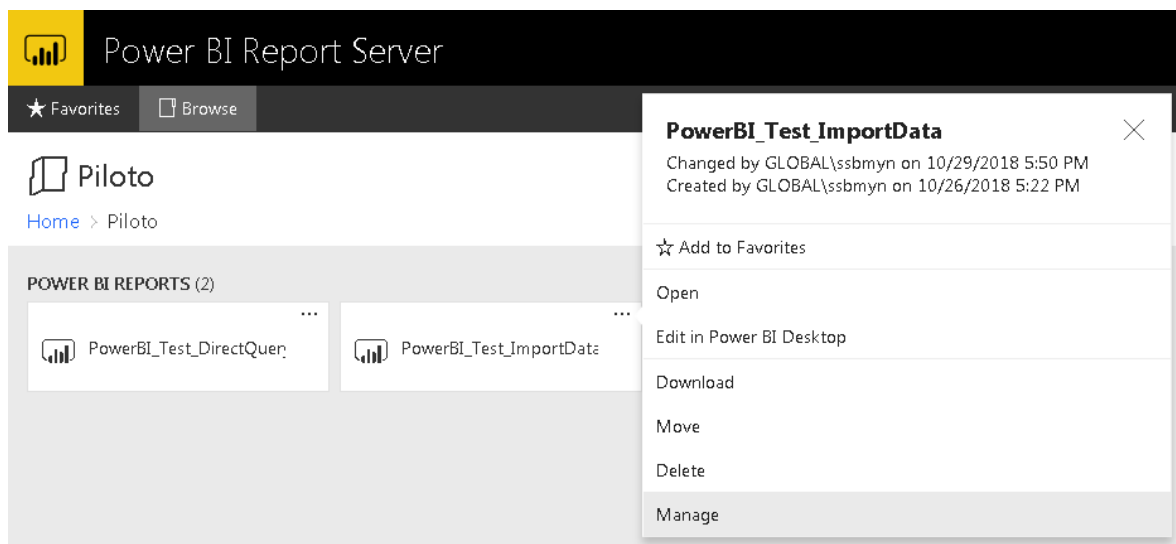
## 10) Configure the refresh:



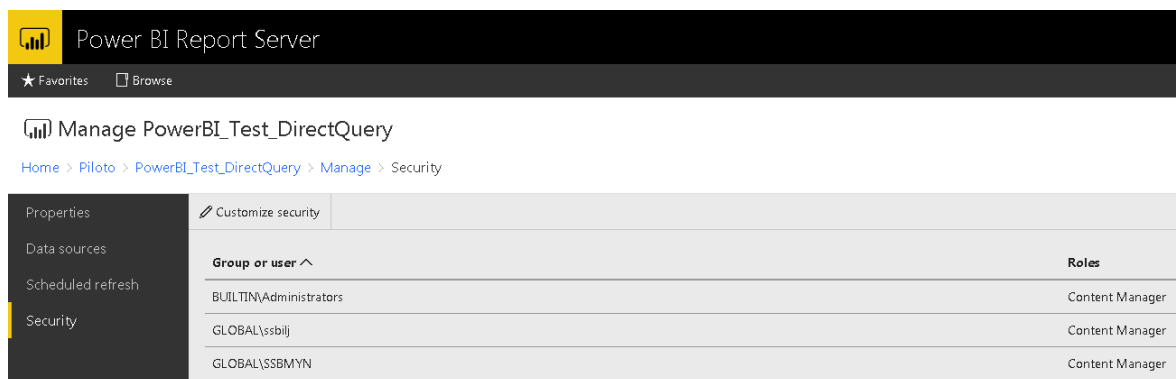
The screenshot shows the 'Manage PowerBI\_Test\_ImportData' page in the Power BI Report Server, specifically the 'Scheduled Refresh' section. The left sidebar contains links for Properties, Data sources, Scheduled refresh, and Security. The main content area shows a table of scheduled refresh plans.

	Description ^	Schedule	Last run	Status
<input type="checkbox"/> Edit	Daily	Every 1 hour(s) and 0 minute(s), starting 10/29/2018 at 6:00 PM	Nov 12, 2018 6:00:12 PM	Completed Data Refresh

## 11) Sharing the report to the AD group and handling the permission:



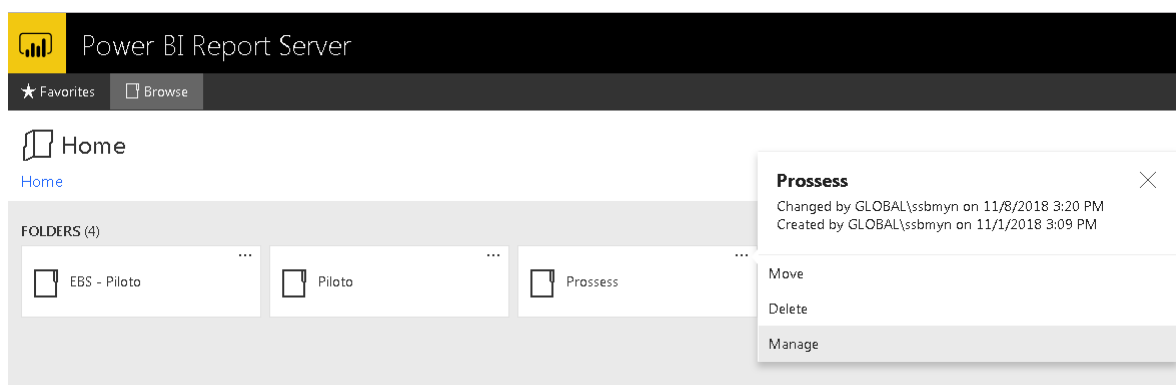
The screenshot shows the Power BI Report Server interface. The top navigation bar includes 'Favorites' and 'Browse'. The main content area displays 'Piloto' and a list of 'POWER BI REPORTS (2)'. The report 'PowerBI\_Test\_ImportData' is selected, and a context menu is open, showing options: 'Add to Favorites', 'Open', 'Edit in Power BI Desktop', 'Download', 'Move', 'Delete', and 'Manage'. A tooltip for 'PowerBI\_Test\_ImportData' is also visible, showing it was changed by GLOBAL\ssbmyn on 10/29/2018 5:50 PM and created by GLOBAL\ssbmyn on 10/26/2018 5:22 PM.



The screenshot shows the 'Manage PowerBI\_Test\_DirectQuery' security settings page. The left sidebar includes 'Properties', 'Data sources', 'Scheduled refresh', and 'Security'. The main content area shows a table with columns 'Group or user' and 'Roles'.

Group or user	Roles
BUILTIN\Administrators	Content Manager
GLOBAL\ssbij	Content Manager
GLOBAL\SSBMYN	Content Manager

## 12) Changing the permission on the folder:



The screenshot shows the Power BI Report Server interface. The top navigation bar includes 'Favorites' and 'Browse'. The main content area displays 'Home' and a list of 'FOLDERS (4)'. The folder 'Prossess' is selected, and a context menu is open, showing options: 'Move', 'Delete', and 'Manage'. A tooltip for 'Prossess' is also visible, showing it was changed by GLOBAL\ssbmyn on 11/8/2018 3:20 PM and created by GLOBAL\ssbmyn on 11/1/2018 3:09 PM.



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Power BI Report Server

★ Favorites □ Browse

Manage Prossess

Home > Prossess > Manage > Security

Properties

Security

+ Add group or user

🗑 Delete

🔗 Use same security as parent folder

Search...

<input type="checkbox"/> Edit	Group or user ^	Roles
<input type="checkbox"/> Edit	BUILTIN\Administrators	Content Manager
<input type="checkbox"/> Edit	GLOBAL\ssbilj	Content Manager
<input type="checkbox"/> Edit	GLOBAL\SSBMYN	Content Manager

# Responsibilities

	Consumer	Contributor	DataModeler/Admin	PowerBI Developer	Infra
<b>PowerBI Platform</b>	No	No	No	No	Yes
<b>License</b>	No	No	No	No	Yes
<b>Configure the databases on the Gateway</b>	No	No	No	No	Yes
<b>Data Modeling in PowerBI</b>	No	No	Yes	Yes	No
<b>Create Report</b>	No	Yes	Yes	Yes	No
<b>Create Workspace</b>	No	Yes	Yes	Yes	No
<b>Create AD group</b>	No	No	Yes	Yes	Yes
<b>Define the permission on the Workspace</b>	No	Yes	Yes	Yes	No
<b>Publish Report to Workspace</b>	No	Yes	Yes	Yes	No
<b>Set permission on the report</b>	No	Yes	Yes	Yes	No
<b>Configure the refresh on the dataset</b>	No	Yes	Yes	Yes	No
<b>Access Report</b>	Yes	Yes	Yes	Yes	Yes

The activities and responsibilities must be discussed on the Bian group.

# Security

To manage the security in PowerBI On Prem you can choose the role below for each user or for AD group.

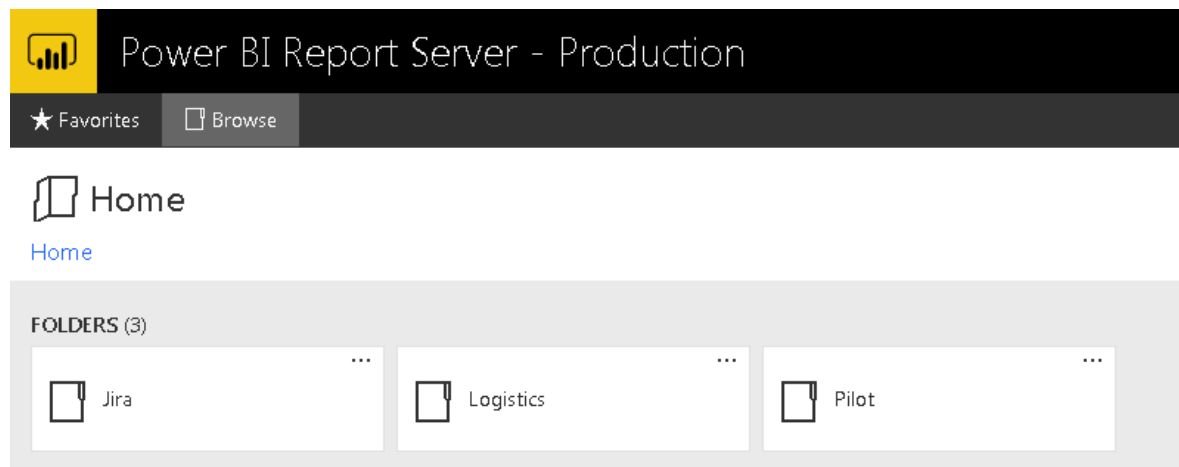
Use this page to assign role-based security for **Home**.

**Group or user:**

Select one or more roles to assign to the group or user.

<input type="checkbox"/> Role ^	Description
<input type="checkbox"/> Browser	May view folders, reports and subscribe to reports.
<input type="checkbox"/> Content Manager	May manage content in the Report Server. This includes folders, reports and resources.
<input type="checkbox"/> My Reports	May publish reports and linked reports; manage folders, reports and resources in a users My Reports folder.
<input type="checkbox"/> Publisher	May publish reports and linked reports to the Report Server.
<input type="checkbox"/> Report Builder	May view report definitions.

If you need to create a new folder to publish your reports please open a Jira issue to the POWER BI - Platform (POWERBI) product so IT area can define the responsible and also the access control.



The responsible for that folder can handle the permission for each report like who can open the report, who can publish a new report and who can create a new sub-folder.



Approved by (department acronym, name)

LITA

Issued by (department acronym name phone)

LITA – Marcius Nishida - 3693

To (department acronym name)

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Page

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Or each responsibility could be also handled by AD group where the access is done by Access Control system.

Power BI Report Server - Production

★ Favorites □ Browse

⚙ Site settings

General  
Branding  
Schedules  
Security

+ Add group or user □ Delete Search...

<input type="checkbox"/> Edit	Group or user ^	Roles
<input type="checkbox"/> Edit	BUILTIN\Administrators	System Administrator
<input type="checkbox"/> Edit	GLOBAL\BRSA_PowerBI_SysAdmin	System Administrator
<input type="checkbox"/> Edit	GLOBAL\BRSA_PowerBI_SystemUser	System User

Power BI Report Server - Production

★ Favorites □ Browse

⚙ Site settings

Use this page to change the roles that are assigned to **GLOBAL\BRSA\_PowerBI\_SysAdmin**. This page contains system role definitions that apply to the report server as a whole.

<input type="checkbox"/> Role ^	Description
<input checked="" type="checkbox"/> System Administrator	View and modify system role assignments, system role definitions, system properties, and shared schedules.
<input type="checkbox"/> System User	View system properties, shared schedules, and allow use of Report Builder or other clients that execute report definitions.

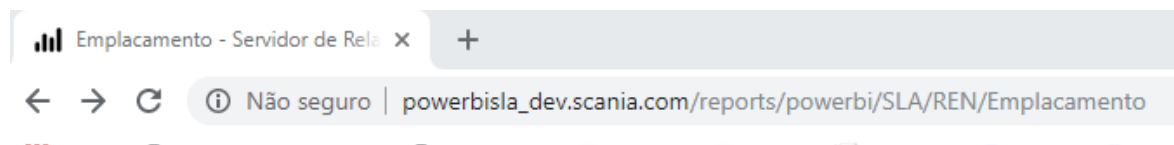
Apply Cancel Delete role assignment

# Auto-Refresh on report

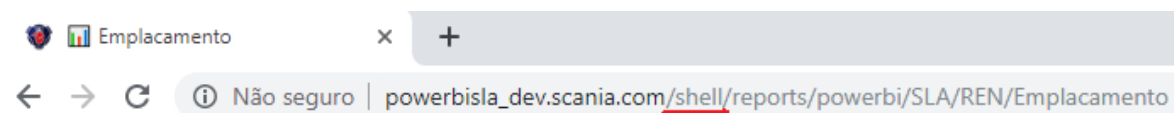
That functionality is available in PowerBI On Premises where you can open your report on TV for example in full-screen mode and the refresh will be for every 3 minutes automatically and do not need to press the refresh button manually.

To configure Auto-Refresh on PowerBI report you need to include the word “/shell” before of the “/reports” on the url report.

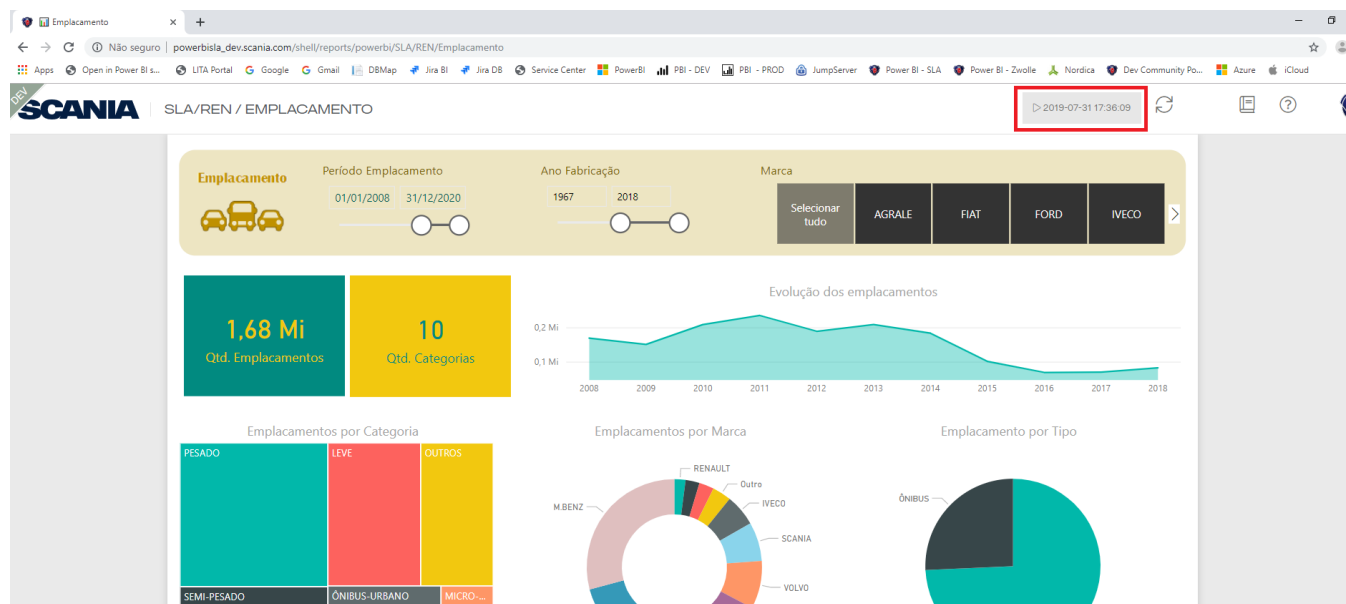
An example below showing the original URL:



So you include the **/shell** on the URL:



Your report will be opened with Scania header showing the last time of the refresh.





# Automatic Refresh taking data from Data Lake in Sweden

The interface between PowerBI On-Premises Report Server and Data Lake in Sweden has been configured so if you have a PowerBI report that is using data from Data Lake in Sweden you can configure now the refresh data.

That interface is working only in PowerBI On-Premises and it is not available in the Cloud according to Isec issues.

For more details to use the Data Lake By PowerBI please read the document UsingDataLakeByPowerBI \_V02.pdf.

If you are already using this you need only configure the data source following in this way as example.

