

# Solve Your Reporting Needs With SQL Reporting Services



**David Feenstra**  
Owner / Principal Consultant  
Data Forward Business Solutions

# Who Am I?

## David Feenstra

Owner – Data Forward Business Solutions

- GP Consultant / Developer / Solutions Architect for 20+ years
- Technical / Reporting / Integration Specialist
- Master of SQL Server, Reporting Services, Power BI
- Developer at Heart – “What else can we make GP do?”
- Conference presenter 10+ years
- Member of DynamicsCon Programming Committee



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# Session Objectives and Agenda

- **SSRS vs Power BI**
- **Configure SSRS and Deploy Built-In Reports**
- **Security Overview**
- **Development Tools / Modifying Reports**
  - Report Builder
  - SQL Server Data Tools / Visual Studio
- **Where's My Data?**
  - Dynamics GP Table Refresher
- **SSRS in GP – Where is it? Everywhere!**
  - Edit out-of-the-box reports
  - Creating new reports
  - Fun Stuff!

# Notes

- These are my best practices and tips from doing this for a long time!
- You may agree or disagree
- If you have any additional pointers or tips to share, PLEASE DO!
  - Discussions are always more fun than lectures!

# SSRS vs Power BI



- Server Based – Direct access to data
- Free to implement and use (if you're using SQL Server)
- Rapidly deploy reports to users in your organization
- User-friendly development interface
- Unlimited dataset size
- Great for paginated reports, has robust chart and graphing options
- Alerts would be scheduled through Subscriptions
- Can export reports to different formats (PDF, Excel, etc.)



- Cloud Based, data refreshed on a schedule
- Free to use, need Power BI Pro to deploy to other users
- Need Power BI Professional
- With infinite flexibility, comes user complexity
- 1GB limit in free version
- Paginated functionality has been added.
- Best tool available for data visualizations!
- Set up alerts on KPIs
- Power BI Report Builder similar to SSRS Report Builder
- Power BI Paginated Reports – Similar to SSRS reports

Both products have strengths and weaknesses. Use the tool that best fits your needs!

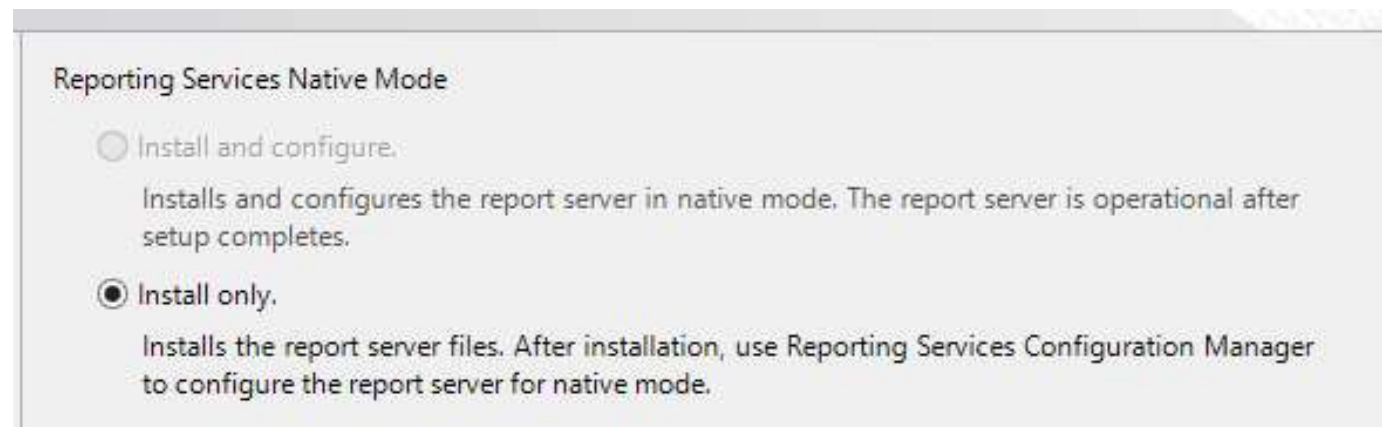




# **SSRS Configure and Deploy**

# Installing SSRS

- Separate download – Download link is included on SQL installation media
- Select Install Only (Opinion Alert!)



Automatically configuring can sometimes cause issues



# Reporting Services Configuration Manager

## Web Service URL



Configure a URL used to access the Report Server. Click Advanced to define multiple URLs for a single Report Server instance, or to specify additional parameters on the URL.

### Report Server Web Service Virtual Directory

Virtual Directory:

### Report Server Web Service Site identification

IP Address:

TCP Port:

HTTPS Certificate:

HTTPS Port:

Advanced...

### Report Server Web Service URLs

URLs: <http://DEMOS-SQL:80/ReportServer>

Use defaults for each section in Configuration Manager

Be sure to verify that you have access to both URLs

\*May need to run browser as Administrator the first time

## Web Portal URL



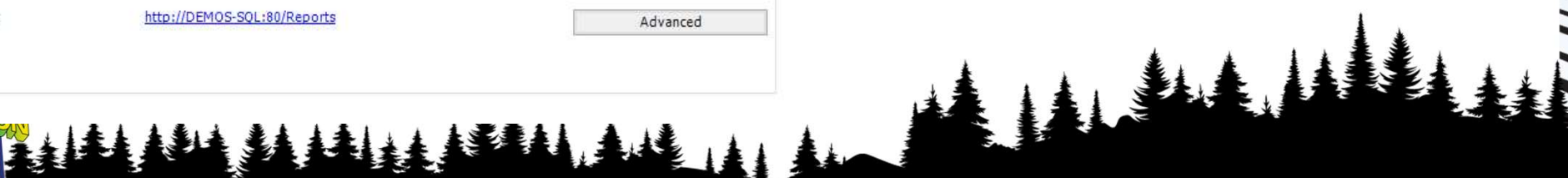
Configure a URL to access Web Portal. Click Advanced to define multiple URLs, or to specify additional parameters on the URL.

### Web Portal Site Identification

Virtual Directory:

URLs: <http://DEMOS-SQL:80/Reports>

Advanced





# Deploy Out of the Box Reports from GP

- Administration > Setup > Reporting Tools Setup

Reporting Tools Setup - TWO (sa)

OK Cancel File Print Tools Help

Actions File Help

Setup

Reporting Services Excel Reports Management Reporter Power BI OData

Report Server Mode Native

Report Server URL http://teen-laptop/reportserver

Report Manager URL http://teen-laptop/reports

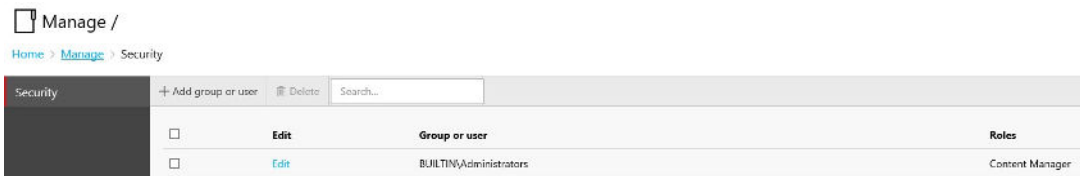
Enter the subfolder or leave blank to deploy reports to the root folder.

CRM Connection Information:

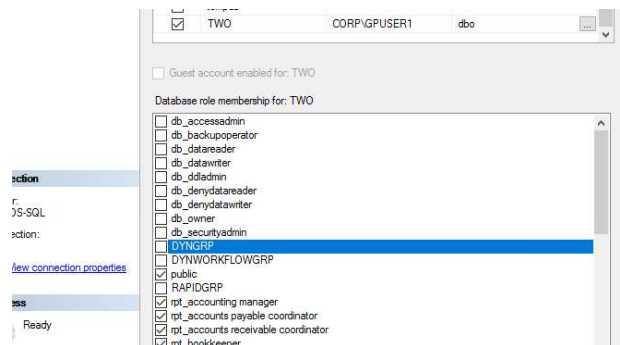
GP Company	CRM Service URL	Organization Name	Credentials
Fabrikam, Inc.			Use Windows Authentic

# SQL Reporting Security

- Security is set up in two places
- Web Browser – Gives access to the site



- SQL Server – Gives access to the data



When setting up new objects for reports, don't forget to grant proper rights!

- Tables
- Views
- Stored Procs
- Functions
  - Tip: Run grant.sql to grant permissions to all objects



# SQL Reporting Security Tips

- Do not give too much access!
  - Rights granted in SQL can be used with other applications (Excel, Access, etc.)
  - “Security by obscurity” is not a good method!
- Set up security groups in Active Directory
  - Easier to add users to groups in AD then to add individually in SQL
- Use Folders to control access in Report Manager
  - Security can be set at the report level, but can be tedious to maintain



# Features in SSRS

- Clean, brandable interface
- Rapid deployment of reports within your organization, no additional cost!
- Improved Visuals
- Add comments to reports in the web portal
- Subscriptions automate delivery of reports via email or file share
- Easy to use development tools



# Development Tools

The image features a stylized landscape illustration. The background is a gradient of blue, transitioning from a lighter blue at the top to a darker blue at the bottom. The sky is filled with a radial pattern of thin, light blue lines that converge towards the center. Below the sky, there are several layers of mountains and hills, rendered in various shades of blue. The foreground shows a line of dark blue evergreen trees. The overall style is clean and modern, with a focus on geometric shapes and a monochromatic color palette.

# What Tool Should I Use?



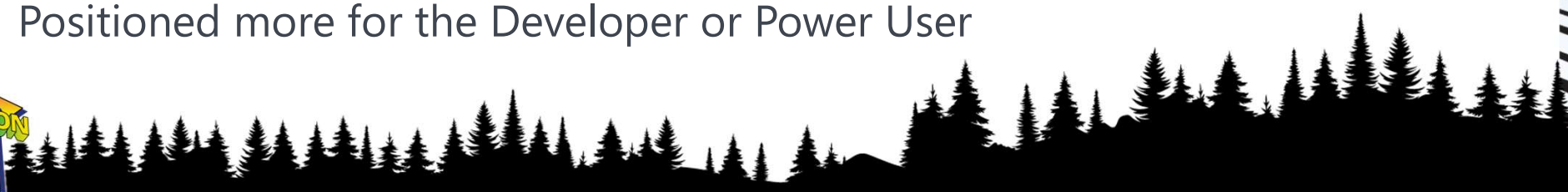
## Microsoft Report Builder

- Good tool for end-users to start with or make modifications to existing reports
- Can be run from browser (Report Manager) or from within GP
- Intuitive design, much like MS Access
- Has been built out in recent versions
- Layout designer is the same as in other tools
- Has some limitations
  - Query editor is lightweight (\*TIP: Build your queries as views in SQL Server first)
  - Can't create sub-reports
  - Can only have one report open at a time
  - Etc.



# What Tool Should I Use?

- Visual Studio / SQL Server Data Tools (SSDT)
- Updated version of Business Intelligence Development Studio (BIDS)
  - Allows for building Solutions and Projects with report source data
  - Can use all functionality of SSRS
  - Uses full graphical Query Builder for developing source queries
  - Can use custom Report Templates to ensure uniform design
  - Free download
    - <https://docs.microsoft.com/en-us/sql/ssdt/download-sql-server-data-tools-ssdt>
    - Visual Studio 2019 and 2022 – Add-in for Visual Studio
    - SSDT for VS2017 was the last stand-alone installer
  - Can be intimidating to end users
  - Positioned more for the Developer or Power User





**Where's My Data?**



# Dynamics GP Table Refresher

- Tools – Resource Descriptions - Tables

Table Names

Product: Microsoft Dynamics GP    C:\Program Files (x86)\Microsoft Dynamic...    Find

Series: Financial    View By: by Table Physical Name    Print...

Display Name	Physical Name	Table Group
Technical Name		Table Group Technical Name
Account Master	GL00100	Account Master
Account Master Copy A	GL00100	
Distribution Account Master	GL00100	
Breakdown Account Master	GL00100	
Account Master Filter1	GL00100F1	
Account Master Filter2	GL00100F2	
Account Master Filter3	GL00100F3	
Account Master Filter4	GL00100F4	
Account Category Master	GL00102	Account Master
Fixed Allocation Master	GL00103	Account Master
Variable Allocation Master	GL00104	Account Master
Account Index Master	GL00105	Account Master

OK    Cancel



# Dynamics GP Table Refresher

## Table Prefixes

Table Name	Module
AF	Advanced Financial (Dinosaur module)
BM	Bill of Materials
CM	Bank reconciliation (formerly Cash Management)
GL	General Ledger
IV	Inventory
IVC	Invoicing
MC	Multicurrency
PM	Payables Management – better known as Accounts Payable
POP	Purchase Order Processing
RM	Receivables Management - better known as Accounts Receivable
SOP	Sales Order Processing
SY	System Manager
TX	Taxes
UPR	United States Payroll (as opposed to Canadian Payroll)
Others	3 <sup>rd</sup> Party programs have their own file names

## Table Suffixes

Number	Type of Table
00's	Master (card) files
10000's	Work (unposted) files
20000's	Open files
30000's	History files
40000's	Setup files
Other	Don't worry about them

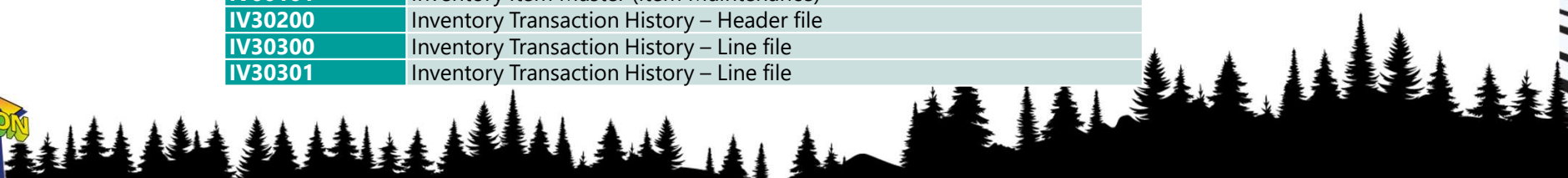
Tip: Victoria Yudin's site contains many useful queries and a great GP table reference  
<https://victoriayudin.com>



# Dynamics GP Table Refresher

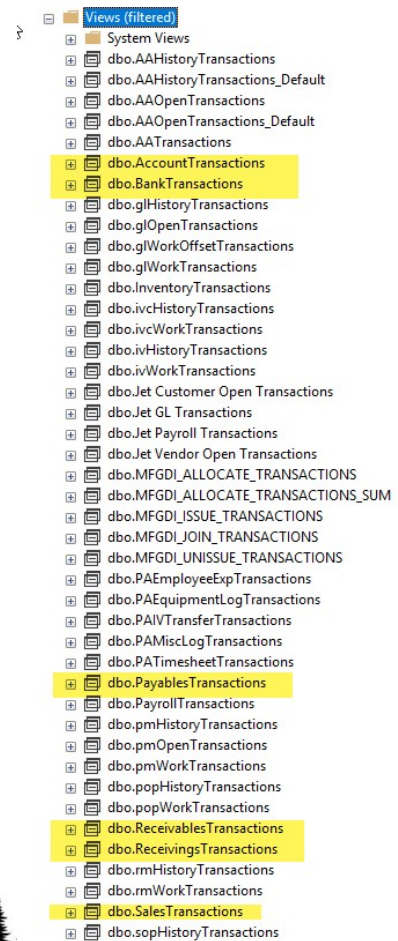
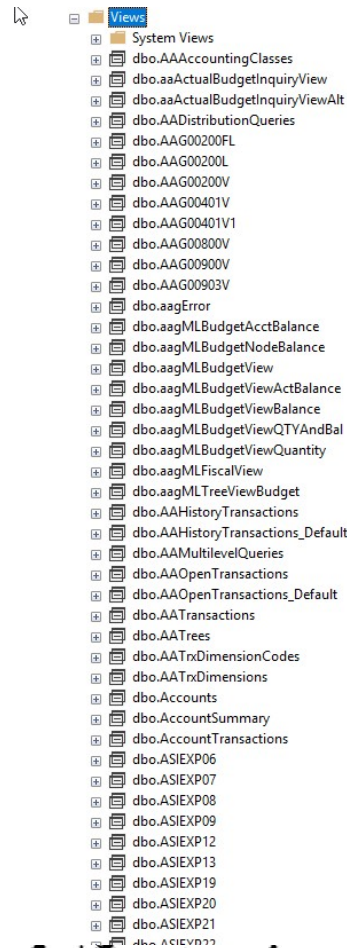
Commonly  
Used  
Tables

Physical Name	Display Name
GL00100	Account Master (Chart of Accounts)
GL00105	Account Index
GL20000	GL Year-to-Date Transactions
GL30000	GL Account Transaction History (prior years' transactions)
PM00200	Vendor Master (Vendor Maintenance)
PM20000	A/P Open Transactions (open invoices)
PM30200	A/P Paid Transactions (paid invoices and checks)
RM00101	Customer Master (Customer Maintenance)
RM20101	A/R Open Transactions (open invoices)
RM30101	A/R Paid Transactions (paid invoices and checks)
SOP30200	Sales Order Processing Transactions – Header file
SOP30300	Sales Order Processing Transactions – Line file (Inventory items)
UPR00100	Employee Master (Employee Maintenance)
UPR00400	Pay Code Master (What everyone gets paid)
UPR00500	Deduction Master
UPR00600	Benefit Master
UPR30100	Check History
UPR30300	Transaction History
IV00101	Inventory Item Master (Item Maintenance)
IV30200	Inventory Transaction History – Header file
IV30300	Inventory Transaction History – Line file
IV30301	Inventory Transaction History – Line file



# Dynamics GP Table Refresher

Can also use  
predefined GP SQL  
Views



# **SSRS In GP**

# SSRS in GP

- Homepage
  - Business Analyzer - Scrolls through selected deployed SSRS reports

**Customize your home page**  
Modify the content and layout of your home page.

Home Page Type

Dynamics 365 Business Central Insights

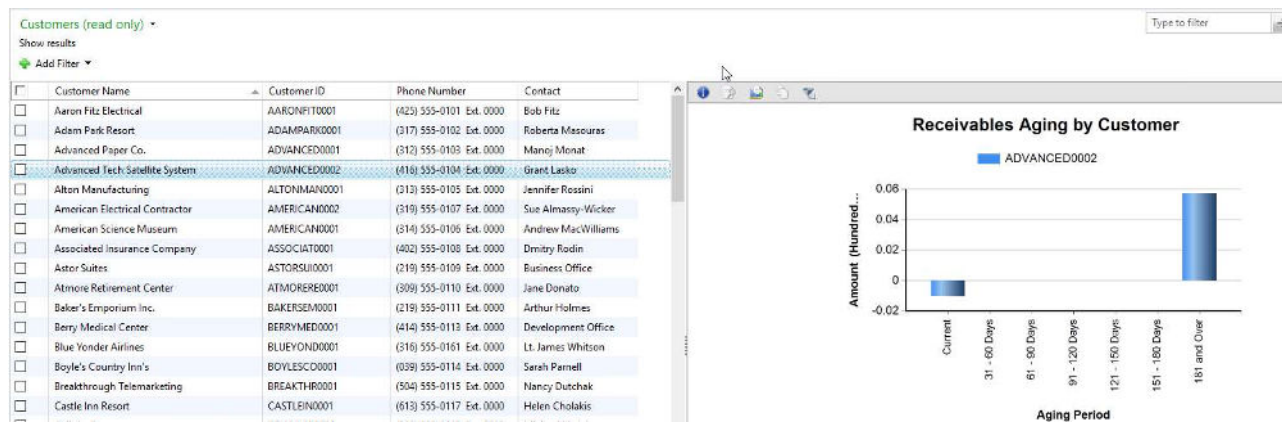
Default

<input checked="" type="checkbox"/> To Do	↔	<input checked="" type="checkbox"/> Business Analyzer	→
<input checked="" type="checkbox"/> Quick Links	↔	<input type="checkbox"/> Show All	
<input type="checkbox"/> Connect		<input checked="" type="checkbox"/> My Reports	→
<input type="checkbox"/> Time Management		<input type="checkbox"/> Procurement	
<input type="checkbox"/> Project Time & Expense		<input type="checkbox"/> Power BI	→
		<input type="checkbox"/> Show All	



# SSRS in GP

- Navigation Panes
  - Displays dashboard reports



# SSRS in GP

- Can be linked to most GP screens

The screenshot shows the 'Customer Maintenance - TWO (sa)' window in Microsoft Dynamics GP. The 'Available Reports' menu is open, showing options like 'Credit Check (default)', 'GP Tech Statement', and 'Assign Reports...'. The 'Assign Reports...' dialog is also visible, showing 'Class ID' as 'USA:ICMO-T1' and 'Priority' as 'None'. The main window displays customer details for 'AARONFIT001', including name, address, and contact information. A 'Report Assignments' pane on the right lists various reports available for assignment, such as 'Standard Report \*', '1096 Form', 'Accounts Due', and 'Accounts Payable Days Outstanding Detail'. The bottom of the window shows navigation buttons for 'Accounts', 'Address', 'Options', and 'E-mail'.



# SSRS in GP

- Report List

The screenshot shows the SSRS Report List interface. At the top, there is a navigation bar with the following menu items: SmartList, My Reports, and a search icon. Below the navigation bar is a ribbon with several groups of actions:

- Actions:** View, Print, Send in E-mail, Import/Export, Publish Report, SQL Report Manager.
- Modify:** Edit Report Option, Edit Report.
- My Reports:** Add to, Rename, Remove from.
- New:** GP Report, Excel Report, SRS Report, MR Report, SQL Report.
- Print this List Reports:** Print this List Reports, Export.

Below the ribbon, there is a section for "Financial Reports (read only)" with a "Show results" button and an "Add Filter" button. Below this is a table with the following columns: Name, Option, Series, and Category.

Name	Option	Series	Category
<input type="checkbox"/> TWO GPUG Demo	C:\ExcelReports\Data Conn...	Financial	TWO
<input type="checkbox"/> TWO GPUG	C:\ExcelReports\Data Conn...	Financial	TWO





**Demo**

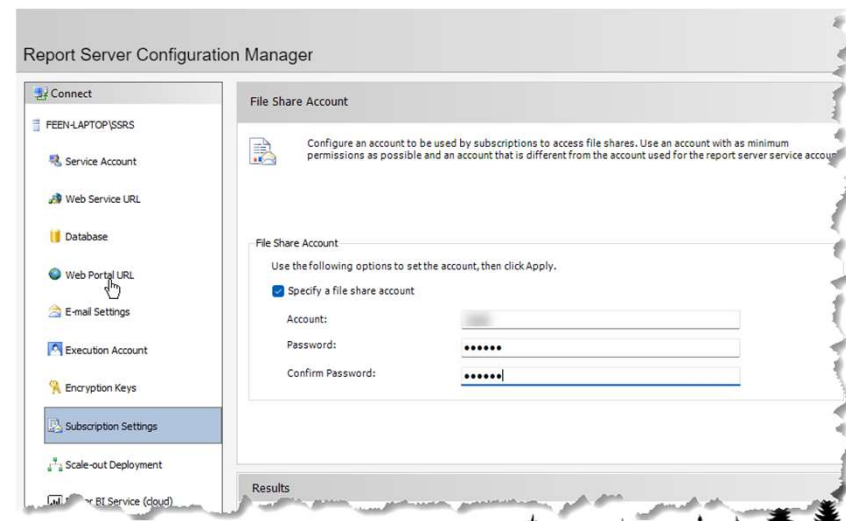
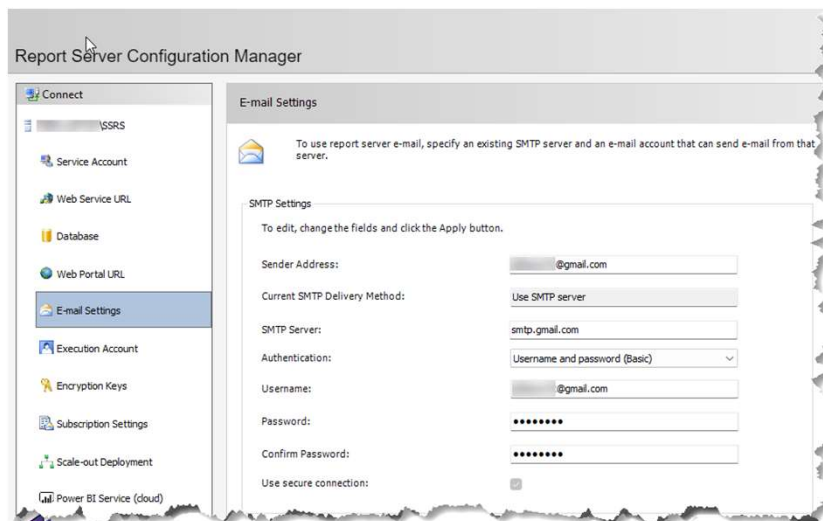


**Fun Stuff**

**Finally!**

# Subscriptions

- Automate the delivery of SSRS Reports
  - Can be delivered via either Email or Network File Share
  - Can be scheduled to run as often as you like (down to the minute!)
  - Additional setup in the SSRS Configuration Manager



# Attach Custom SSRS Reports to GP Screens

Customer Maintenance - TWO (sa)

Customer ID: AARONFIT0001  
 Name: Aaron Fitz Electrical  
 Short Name: Aaron Fitz Elec  
 Statement Name: Aaron Fitz Electrical

Address ID: PRIMARY  
 Contact: Bob Fitz  
 Address: One Microsoft Way  
 City: Redmond  
 State: WA  
 ZIP Code: 98052-6399  
 Country Code: Report Assignments  
 Country: Select reports to display for this window.

Ship To

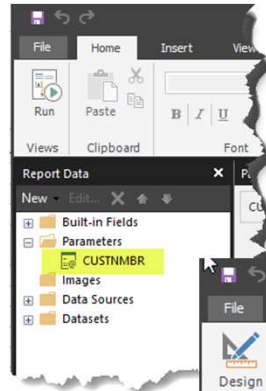
Available Reports:

- Expected Shipments
- Expense vs Retainer - Open Projects
- Fixed Assets Depreciation Detail
- Fixed Assets Depreciation Ledger
- Fixed Assets to General Ledger Reconciliation Report
- GL Category Details
- GP Tech Statement
- GP Trial Balance Example
- GP Tech Trial Balance
- GPUG Summit SQL Report With View
- Gross Profit Detail
- Gross Profit Margin KPI
- Gross Profit Margin KPI Detail
- Gross Profits
- Gross Profits YTD
- Historical Aged Trial Balance
- Historical Inventory Trial Balance Detail
- Historical Inventory Trial Balance Summary by Accto
- Historical Inventory Trial Balance Summary by Item
- Historical Received Not Invoiced

Selected Reports:

- Credit Check
- Receivables Aging

OK Cancel



Run

Navigation

CUSTNMBR: AARONFIT0001

Customer: AARONFIT0001  
 Date Created: 1/1/1980  
 Aaron Fitz Electrical

Redmond, WA 98052-6399

Payment Terms: Net 30  
 Credit Limit: \$35,000

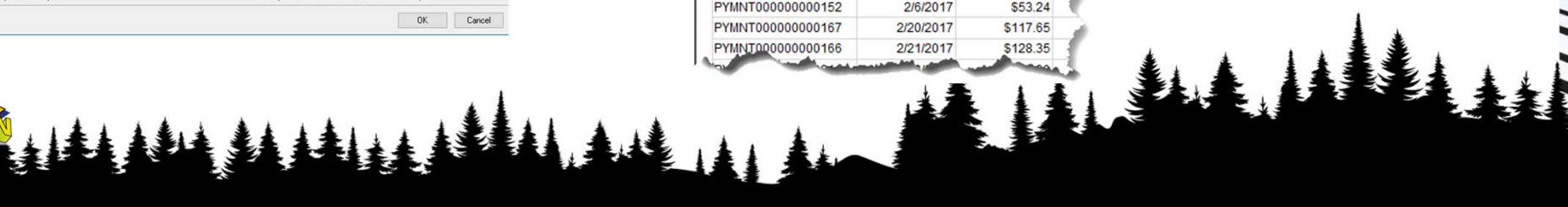
Current Balan  
 Current  
 31-60 Days  
 61-90 Days  
 91 and Over  
 High Balance

Recent Payments			
Pmt Number	Date	Amount	Ave D
PYMNT000000000151	2/6/2017	\$406.50	
PYMNT000000000152	2/6/2017	\$53.24	
PYMNT000000000167	2/20/2017	\$117.65	
PYMNT000000000166	2/21/2017	\$128.35	

Report parameter name MUST match the name of the form's key field

Examples:  
 Customer Master - CUSTNMBR  
 Vendor Master - VENDORID  
 GL Acct Master - ACTINDX

Sales Transaction Entry  
 SOPTYPE  
 SOPNUMBE  
 CUSTNMBR



# Custom Formatting

- Use Windows Credentials to Filter data
  - Current user credentials can be used as a parameter
  - Allows a single report to be used for everybody
- Graybar Format
  - Alternate colors on every other row. Add to Background Color property  
`=iif(LineNumber(Nothing) Mod 2,"LightGrey","White")`

1/3/2017	STDINV2120	\$1,219.49	\$0.00
1/5/2017	STDINV2124	\$427.74	\$0.00
1/5/2017	STDINV2123	\$1,027.15	\$0.00
1/7/2017	STDINV2129	\$406.50	\$0.00
1/8/2017	STDINV2130	\$53.24	\$0.00



# Custom Formatting

- Sparklines
  - Small charts or graphs that can show trends at a glance

Customer Class	Class Name	Trx Amount	Current Amount	
USA-ILMO-T1	IL and MO customers	\$24,769.88	\$9,486.25	
USA-INMI-T2	IN and MI customers	\$132,348.84	\$87,057.07	
CAN-PQMT-T5	PQ,NF,NB,NS,PEI customers	\$24,416.82	\$0.00	

- Subreports
  - Embed a separate report into the row of an existing report
- Drill Into Another Report
  - Hyperlinks can open separate reports, open a web page, or go to a bookmark



# Custom Formatting

- Auto Hide / Expand Related Rows
  - Toggle visibility based on another row

Customer Class	Class Name	Trx Amount	Current Amount
<input type="checkbox"/> USA-ILMO-T1	IL and MO customers	\$24,769.88	\$9,486.25
<input type="checkbox"/> AARONFIT0001	Aaron Fitz Electrical	\$11,294.10	\$6,002.09
<input type="checkbox"/> ADVANCED0001	Advanced Paper Co.	\$256.59	\$0.00

- Use Report Templates
  - Create a consistent layout for new report creation
  - Store report template in default projects folder

C:\Program Files (x86)\Microsoft Visual Studio 14.0\Common7\IDE\PrivateAssemblies\ProjectItems\ReportProject





# Custom Formatting

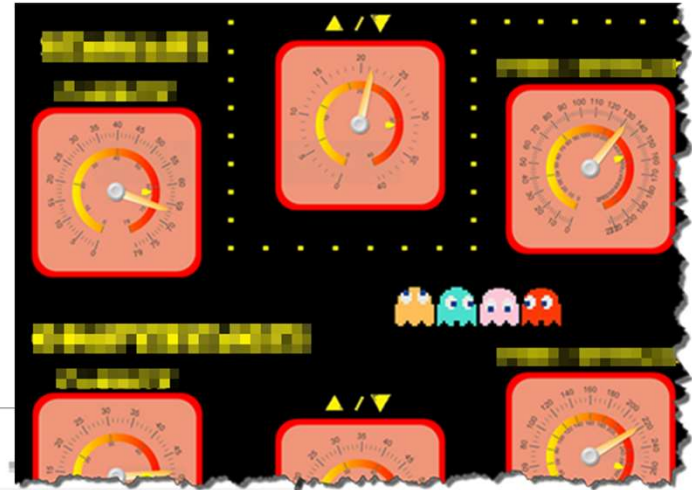
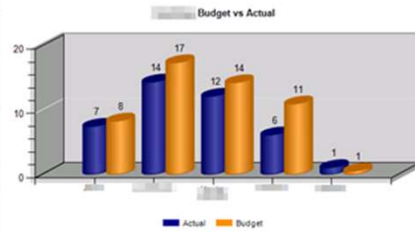
## Charts and Graphs Make Excellent Dashboards


- Power BI has become Microsoft's go-to dashboard tool
- More Power BI features have been added to SSRS
- SSRS can accept user entered parameters

**Be Creative!**



# Dashboards





**Demo / Questions?**

# Thank you!

Contact Info:

David Feenstra

[dave.feenstra@dataforwardsolutions.com](mailto:dave.feenstra@dataforwardsolutions.com)

[dave.feenstra@outlook.com](mailto:dave.feenstra@outlook.com)

(517) 230-7366

Linked In: Dave Feenstra

Twitter: @DaveFeen

