

Reporting

STRATEGY ■ CONSULTING ■ SUPPORT



Module 6: Reporting

- Reporting Architecture
 - Data Flow
 - Authentication
- Reports and the Report Wizard
- Offline reports
- Publishing Reports for External Use
- Scheduling Reports
- Charting
- Dashboards
- Report Troubleshooting



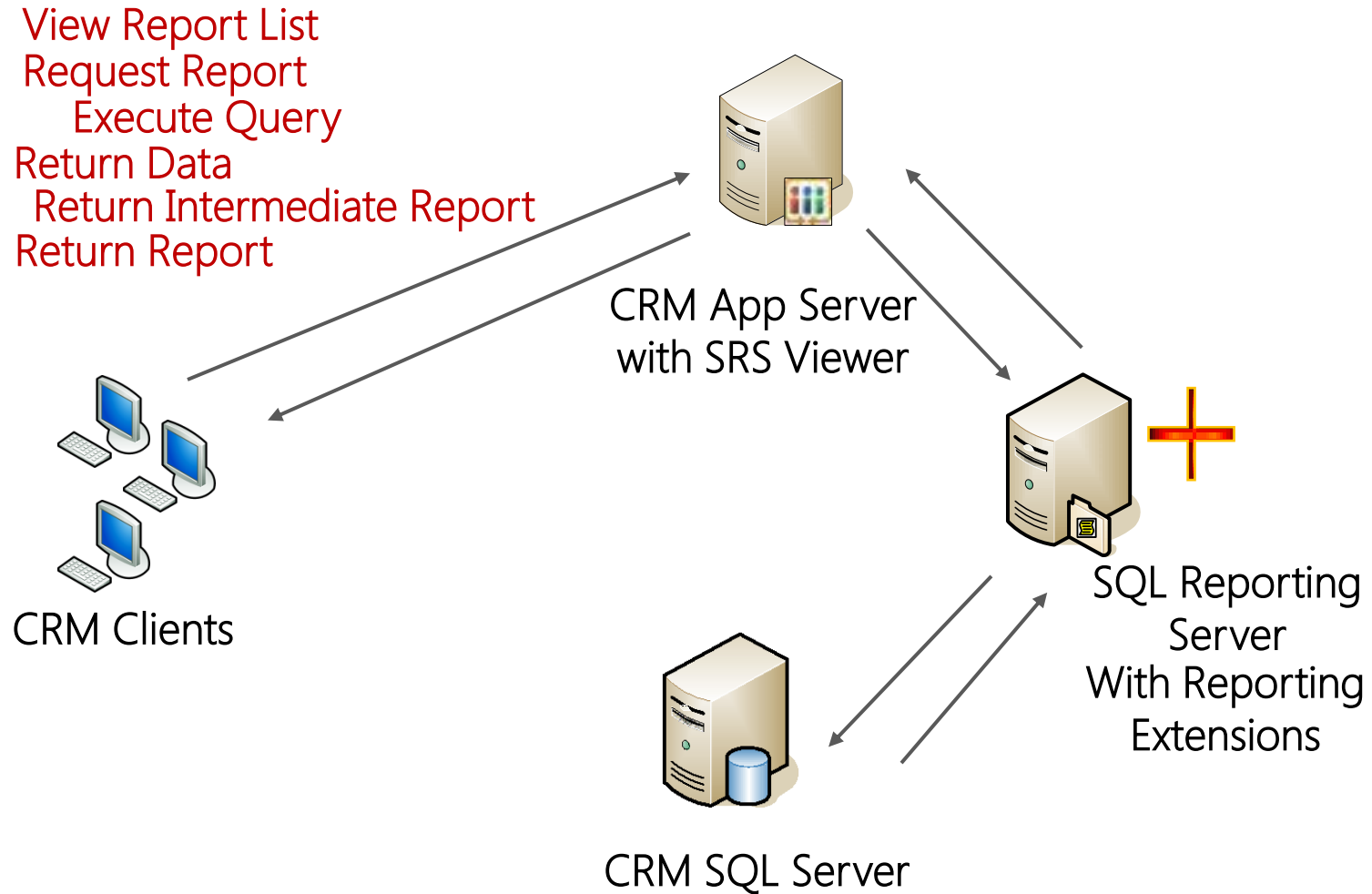
Microsoft CRM 2011 Reporting Architecture

- Report Viewer is installed on the CRM server
- Microsoft Dynamics CRM Reporting Extensions
 - Removes Trust for Delegation (TFD) requirement
 - Proxies requests to the Reports server
- Required for Publishing reports to the CRM server
- Report entity is a first class CRM entity
 - Workflows and Advanced Find enabled
- All report RDLs are managed from CRM
- Out of the Box reports are shared with other organizations
- 2 data process extensions, Fetch XML DPE and SQL DPE

Microsoft CRM 2011 Reporting Architecture (Cont.)

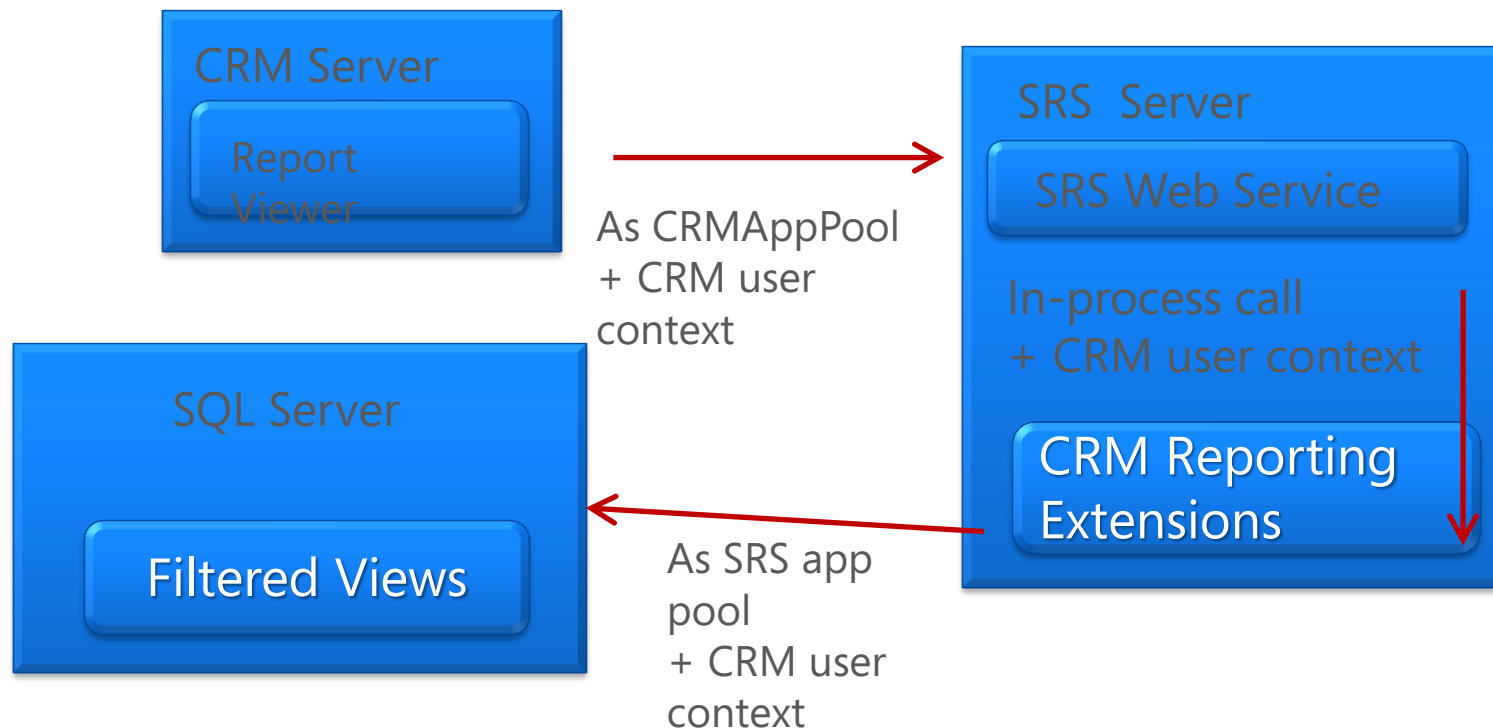


Microsoft CRM 2011 Reporting Data Flow



Authentication

- Authenticate from Report Viewer to Report Servers as CRMAppPool identity but pass the SystemUserId and OrganizationId of the current user
- Connector authenticates to Filtered Views as SRS app pool



Installing CRM Reporting Extensions



SetupResources.dll



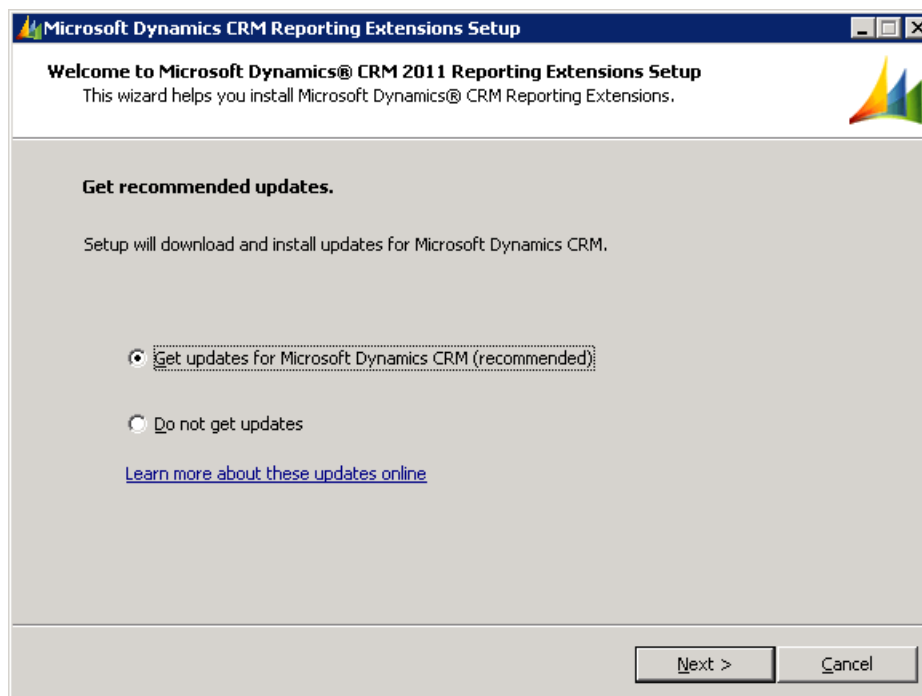
SetupSrsDataConnector.exe



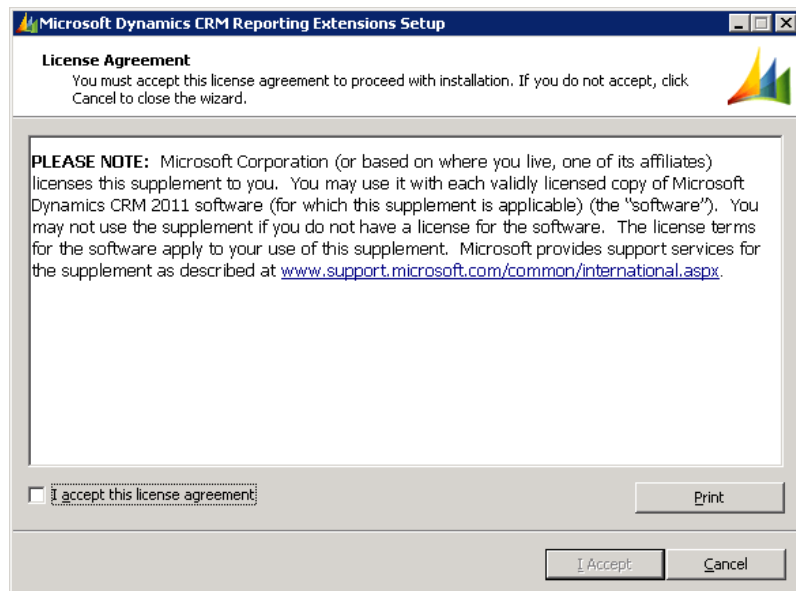
SrsDataConnector.msi

- In Server folder navigate to SrsDataConnector folder
- Run SetupSrsDataConnector.exe

- Check for updates

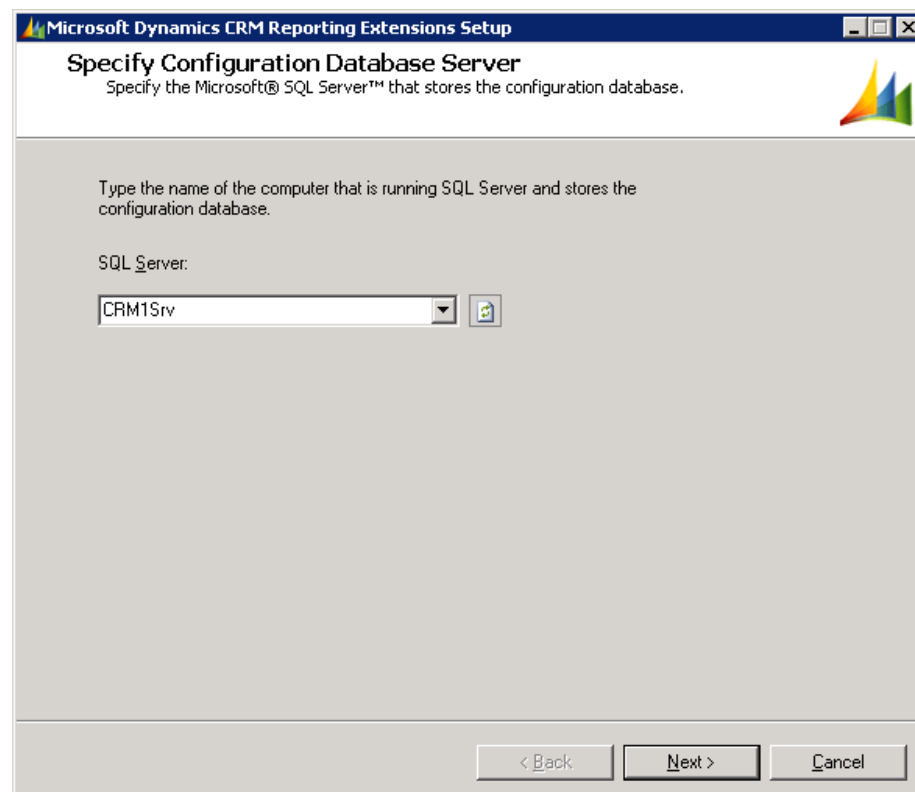


Installing CRM Reporting Extensions (Cont.)

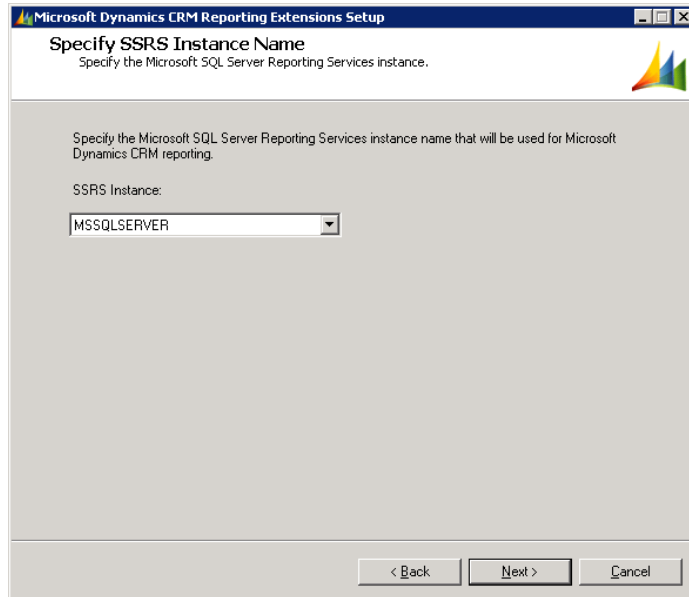


- Accept license agreement

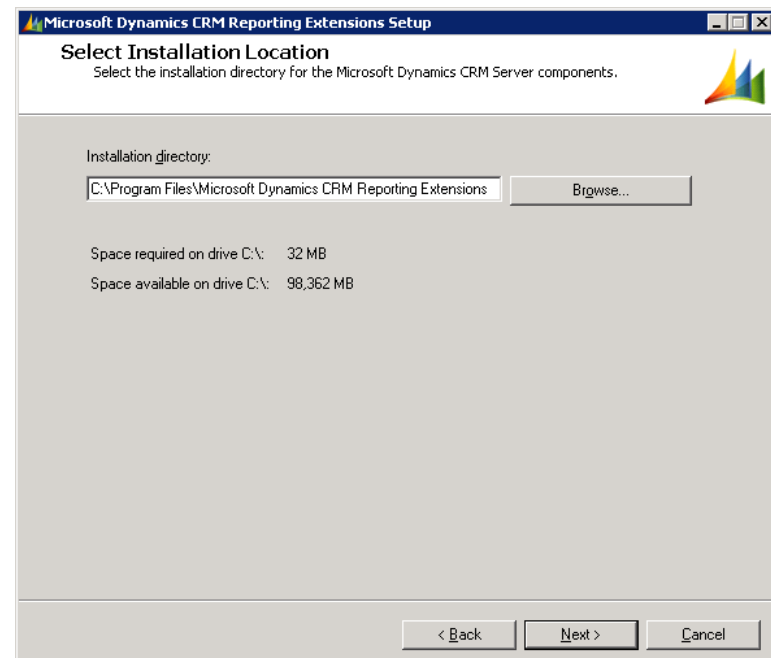
- Select the SQL Server



Installing CRM Reporting Extensions (Cont.)

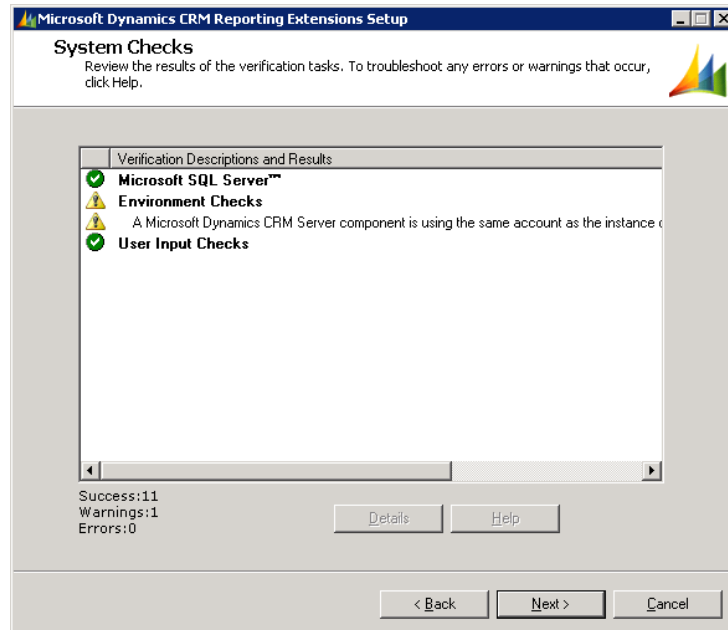


- Select the SSRS Instance name



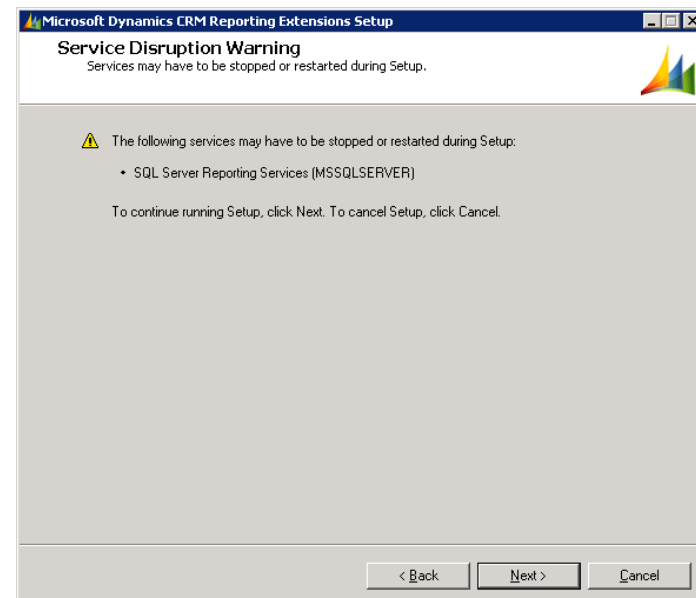
- Select the installation location

Installing CRM Reporting Extensions (Cont.)

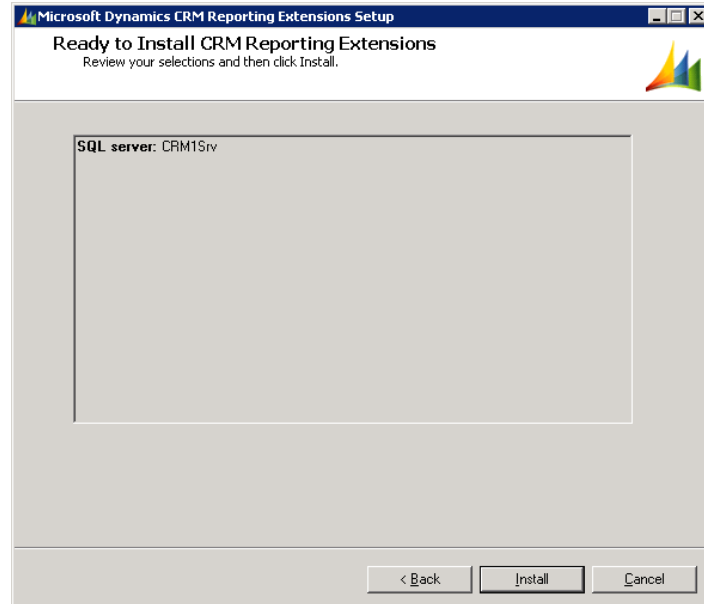


- Environmental Diagnostic Wizard

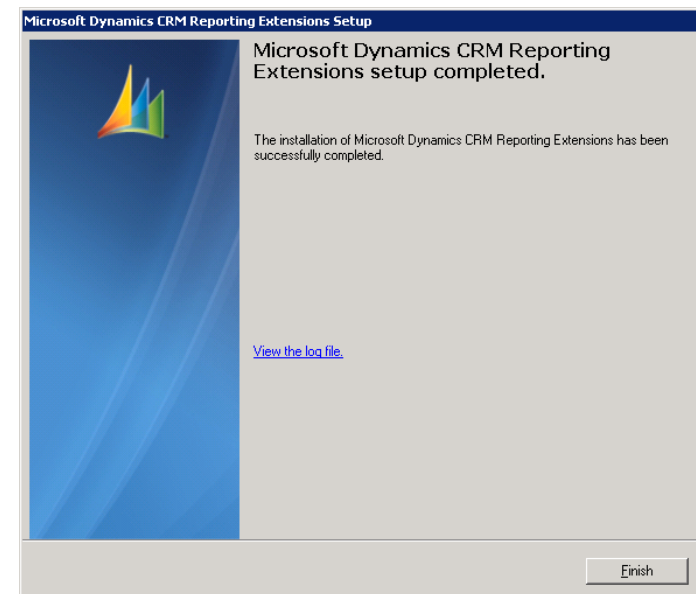
- Service Disruption Warning



Installing CRM Reporting Extensions (Cont.)



- Installation summary



- Click to view log file if any errors occur

What the Connector Installs

Updates C:\Program Files\Microsoft SQL Server\MSRS10_50.MSSQLSERVER\Reporting Services\ReportServer\rsreportserver.config:

```
<Data>
  <Extension Name="SQL" Type="Microsoft.ReportingServices.DataExtensions.SqlConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="SQLAZURE" Type="Microsoft.ReportingServices.DataExtensions.SqlAzureConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="SQLPDW" Type="Microsoft.ReportingServices.DataExtensions.SqlDwConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="OLEDB" Type="Microsoft.ReportingServices.DataExtensions.OleDbConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="OLEDB-MD" Type="Microsoft.ReportingServices.DataExtensions.AdoMdConnection,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="ORACLE" Type="Microsoft.ReportingServices.DataExtensions.OracleClientConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="ODBC" Type="Microsoft.ReportingServices.DataExtensions.OdbcConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="XML" Type="Microsoft.ReportingServices.DataExtensions.XmlDPCConnection,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="SHAREPOINTLIST"
Type="Microsoft.ReportingServices.DataExtensions.SharePointList.SPListConnection,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="SAPBW" Type="Microsoft.ReportingServices.DataExtensions.SapBw.SapBwConnection,Microsoft.ReportingServices.DataExtensions.SapBw" />
  <Extension Name="ESSBASE"
Type="Microsoft.ReportingServices.DataExtensions.Essbase.EssbaseConnection,Microsoft.ReportingServices.DataExtensions.Essbase" />
  <Extension Name="TERADATA" Type="Microsoft.ReportingServices.DataExtensions.TeradataConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />
  <Extension Name="MSCRMFETCH"
Type="Microsoft.Crm.Reporting.DataExtensionShim.Server.Fetch.FetchExtConnection,Microsoft.Crm.Reporting.DataExtensionShim.Server.Fetch" />
  <Extension Name="MSCRM"
Type="Microsoft.Crm.Reporting.DataExtensionShim.Server.Sql.SqlExtConnection,Microsoft.Crm.Reporting.DataExtensionShim.Server.Sql" />
</Data>
```

What the Connector Installs (Cont.)

- Updates C:\Program Files\Microsoft SQL Server\MSRS10_50.MSSQLSERVER\Reporting Services\ReportServer\RSSrvPolicy.config:

```
<CodeGroup class="UnionCodeGroup" version="1"
PermissionSetName="FullTrust" Name="Microsoft_CRM_SRS_Data_Connector">
  <IMembershipCondition class="StrongNameMembershipCondition"
version="1"
PublicKeyBlob="00240000048000000940000000602000000240000525341310004
000001000100B5FC90E7027F67871E773A8FDE8938C81DD402BA65B9201D605
93E96C492651E889CC13F1415EBB53FAC1131AE0BD333C5EE6021672D9718EA
31A8AEBD0DA0072F25D87DBA6FC90FFD598ED4DA35E44C398C454307E8E33B
8426143DAEC9F596836F97C8F74750E5975C64E2189F45DEF46B2A2B1247ADC
3652BF5C308055DA9" />
</CodeGroup>
```

What the Connector Installs (Cont.)

- Out of the box reports are published
- An organization <organization_name_MSCRM> folder and a Shared Reports folder created
- 2 Data Sources are created, MSCRM_DataSource and MSCRM_FetchDataSource
 - Uses “Credentials supplied by the user running the report” option which expects SystemUserId as the Log In Name and OrganizationId as the Password:

The screenshot shows a configuration window for a data source. The 'Name' field is set to 'MSCRM_DataSource'. The 'Description' field is empty. There are two checked checkboxes: 'Hide in tile view' and 'Enable this data source'. The 'Data source type' is set to 'Microsoft Dynamics CRM SQL'. The 'Connection string' is set to 'MSCRM Data Connector Connection String'. Under the 'Connect using' section, the radio button for 'Credentials supplied by the user running the report' is selected.

Name: MSCRM_DataSource

Description:

☒ Hide in tile view

☒ Enable this data source

Data source type: Microsoft Dynamics CRM SQL





















Connection string: MSCRM Data Connector Connection String

Connect using:

☒ Credentials supplied by the user running the report

What the Connector Installs (Cont.)

- 20 files are installed in C:\Program Files\Microsoft SQL Server\MSRS10_50.MSSQLSERVER\Reporting Services\ReportServer\bin

 Microsoft.Crm.Admin.AdminService.dll
 Microsoft.Crm.ADUtility.dll
 Microsoft.Crm.dll
 Microsoft.Crm.Platform.Sdk.dll
 Microsoft.Crm.Platform.Server.dll
 Microsoft.Crm.Reporting.DataExtension.Common.dll
 Microsoft.Crm.Reporting.DataExtension.Common.Fetch.dll
 Microsoft.Crm.Reporting.DataExtension.Server.Fetch.dll
 Microsoft.Crm.Reporting.DataExtension.Server.Sql.dll
 Microsoft.Crm.Reporting.DataExtensionShim.Common.dll
 Microsoft.Crm.Reporting.DataExtensionShim.CrmReportingInterfaces.dll
 Microsoft.Crm.Reporting.DataExtensionShim.Server.Fetch.dll
 Microsoft.Crm.Reporting.DataExtensionShim.Server.Sql.dll
 Microsoft.Crm.Reporting.RdlHelper.dll
 Microsoft.Crm.Sandbox.dll
 Microsoft.Crm.Sdk.dll
 Microsoft.Crm.Sdk.Proxy.dll
 Microsoft.Crm.Sdk.Reserved.dll
 Microsoft.Crm.Tools.ActiveDsWrapper.dll
 Microsoft.Crm.WebStore.dll

Security of Reporting

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Security

- Privileges
 - Publish Reports – allows users to make a report available to the Organization
 - Add Reporting Services Reports – allows users to upload .rdl files
 - Create privilege allows users to create reports using the Report Wizard
- Shareable
- Assignable

Relationship Role	○	○	○	○	○	○	○	○	○
Report	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	●
Saved View	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇

Security Role: Salesperson Working on solution: Default Solution

Details	Core Records	Marketing	Sales	Service	Business Management	Service Management	Customization	Custom Entities
Customer Relationship	○	○	○	○	○	○	○	○
Data Import	⬇	⬇	⬇	⬇	⬇	⬇	⬇	●
Data Map	⬇	●	⬇	⬇	⬇	⬇	⬇	●
Document Location	●	●	●	○	●	●	●	●
Duplicate Detection Rule	○	●	○	○	○	○	○	○
E-mail Template	⬇	●	⬇	⬇	⬇	⬇	○	⬇
Import Source File	⬇	⬇	⬇	⬇	⬇	⬇	⬇	●
Lead	⬇	●	●	●	⬇	●	●	●
Mail Merge Template	⬇	⬇	⬇	⬇	⬇	⬇	⬇	●
Note	⬇	●	●	●	⬇	⬇	⬇	●
Opportunity	⬇	●	●	●	⬇	●	●	●
Opportunity Relationship	○	○	○	○	○	○	○	○
Queue	○	⬇	○	○	○	○	⬇	○
Relationship Role	○	○	○	○	○	○	○	○
Report	⬇	⬇	⬇	⬇	⬇	⬇	⬇	●
Saved View	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
SharePoint Site	○	●	○	○	○	○	●	●
Subject	○	●	○	○	○	○	●	●

Key

○ None Selected ⬇ User ⬇ Business Unit ● Parent: Child Business Units ● Organization

New Reports and the Report Wizard

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New Report

http://crm1srv:5555/ - Report: New - Windows Internet Explorer

File Save and Close Help

Report: New Working on solution: Default Solution

General Administration

Source

Report Type * Report Wizard Report

Click Report Wizard to create or modify the report.

Report Wizard

Details

Name *

Description

Parent Report

Parent Report

Categorization

Categories

Related Record Types

Display In Reports area

Status: New

Done Trusted sites | Protected Mode: Off 100%

- Report Type
- Details
- Parent Report
- Categorization
 - Categories (added in system customization)
 - Related Record Types
 - Display In
 - Reports Area
 - Forms for Related Records
 - List Views for Related Records
- Languages

Report Wizard

- End user created RDL based reports
- Tabular and chart based reports
- Allows users to create reports in CRM since they may not be able to upload .rdl files
- Can use other reports created by the Report Wizard as a template
- Once a report has been modified outside the Report Wizard, the Report Wizard can no longer be used to modify the report
- Wizard generated reports use fetch XML to gather data

Report Wizard Benefits

- Do not need to use Visual Studio
- Do not need to understand how the tables are linked or understand Filtered Views
- End users can create useful reports with little or no IT assistance
- No need for end users to wait for a business analyst to create a report they need
- No need for business analysts to create every report needed by end users

Report Wizard Walkthrough

Get Started

Select how to start your report.

Select the starting point for your report

☒ Start a new report

☐ Start from an existing report

☐ Overwrite existing report

- Start a new report or choose to start from a report that exists in CRM already

- A proper description is very helpful when looking through a long list of reports
- Be sure to set the record types properly

Report Properties

Enter the name and description of the report, and specify which record types the report will use.

Specify the name and description of the report

Report name: *

Report description:

Specify the record types to include in this report

Your choice for primary record type will determine which related record types can be included.

Primary record type: *

Related record type:

Report Wizard Walkthrough (cont.)

- Set your filtering criteria to limit the amount of data returned

Report Filtering Criteria

Accounts

Use Saved View: [new]

Clear | [] Group AND [] Group OR

▼ Modified On Last X Days 30

Select

Lay Out Fields

- Here you are able to add columns, groupings and filters.
- You can also set column widths, sorting options, and summary options.

Select the columns, groupings, and totals to display in the report.

Click here to add a grouping

Click here to add a column

Common Tasks

Configure Sorting

Add Column or Grouping ...

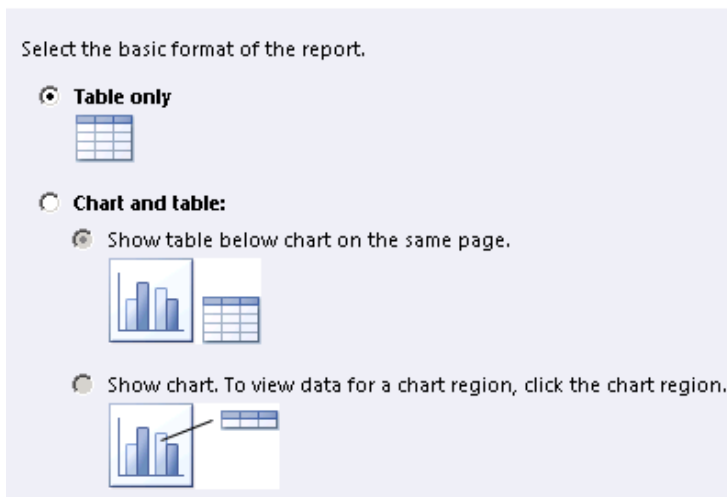
Change Properties ...
Remove Column or Grouping

Set Top or Bottom Number ...

Report Wizard Walkthru (cont.)

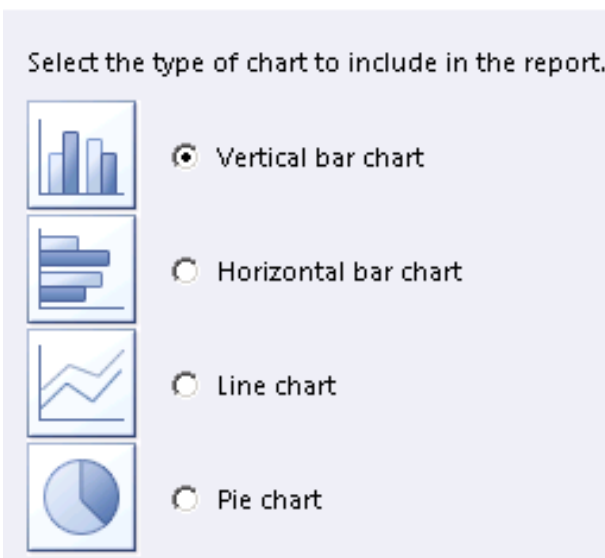
- Choose if you want a simple table, chart and table, or chart only (data viewable by clicking the chart)

Format Report



- Choose the chart that makes sense for your report
- Depending on your chart you will have to set chart options (X/Y Axis, etc.)

Select Chart Type



Report Wizard Walkthru (cont.)

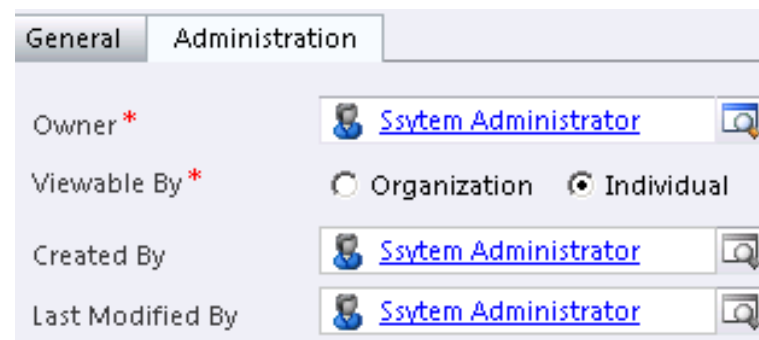
- Review the report summary
- Click Back to make any changes
- Click Next to create the report

Report Summary

Review the summary of the report. To save the report, click Next.

Report name:	Account Info
Report description:	This is a report that contains account information
Primary record type:	Accounts

- Make any adjustments to the General Tab (Name, Categories, etc)
- The Administration tab allows you to set 'Viewable By' and assign the report if needed.



The screenshot shows the 'Administration' tab of the Report Wizard. It contains the following fields and options:

- Owner ***: A dropdown menu showing 'System Administrator' with a search icon.
- Viewable By ***: Radio buttons for 'Organization' and 'Individual'. The 'Individual' option is selected.
- Created By**: A dropdown menu showing 'System Administrator' with a search icon.
- Last Modified By**: A dropdown menu showing 'System Administrator' with a search icon.

Publishing Reports

- After being saved reports are viewable on the Report Server
- A Custom Reports folder is created within the <Organization Name>_MSCRM folder which stores the custom reports used inside CRM
- Click the Show Details button to see the contents of the organization folder and the shared folder

SQL Server Reporting Services
Home

Search

New Folder | New Data Source | Report Builder | Folder Settings | Upload File | Details View

AdventureWorksCycle_MSCRM SharedReports

SQL Server Reporting Services
AdventureWorksCycle_MSCRM

Search

Delete | Move | New Folder | New Data Source | Report Builder | Folder Settings | Upload File | Tile View

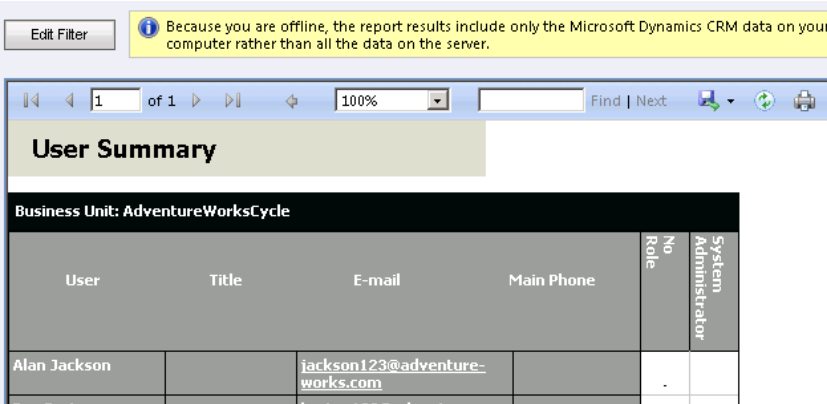
Type	Name	Description	Last Run	Modified Date	Modified By
Folder	CustomReports			12/20/2010 4:19 PM	NT AUTHORITY\NETWORK SERVICE
Data Source	MSCRM_DataSource			12/20/2010 3:02 PM	CONTOSO\Administrator
Data Source	MSCRM_FetchDataSource			12/20/2010 3:02 PM	CONTOSO\Administrator

Offline Reports

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Offline Reports

- Great for record summary reports
- Reports run on data in SQL Express
- Reports are republished in offline mode
- Reports sync based on offline data filters



Because you are offline, the report results include only the Microsoft Dynamics CRM data on your computer rather than all the data on the server.

User Summary

Business Unit: AdventureWorksCycle

User	Title	E-mail	Main Phone	No Role	System Administrator
Alan Jackson		jackson123@adventure-works.com		*	
Ben Burton		burtan123@adventure-works.com			

- Offline report viewer does not expose Print button
 - Workaround: Export to PDF file and then print

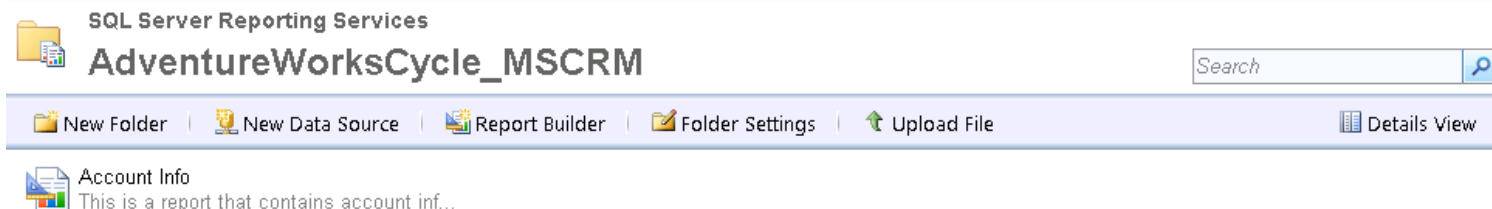
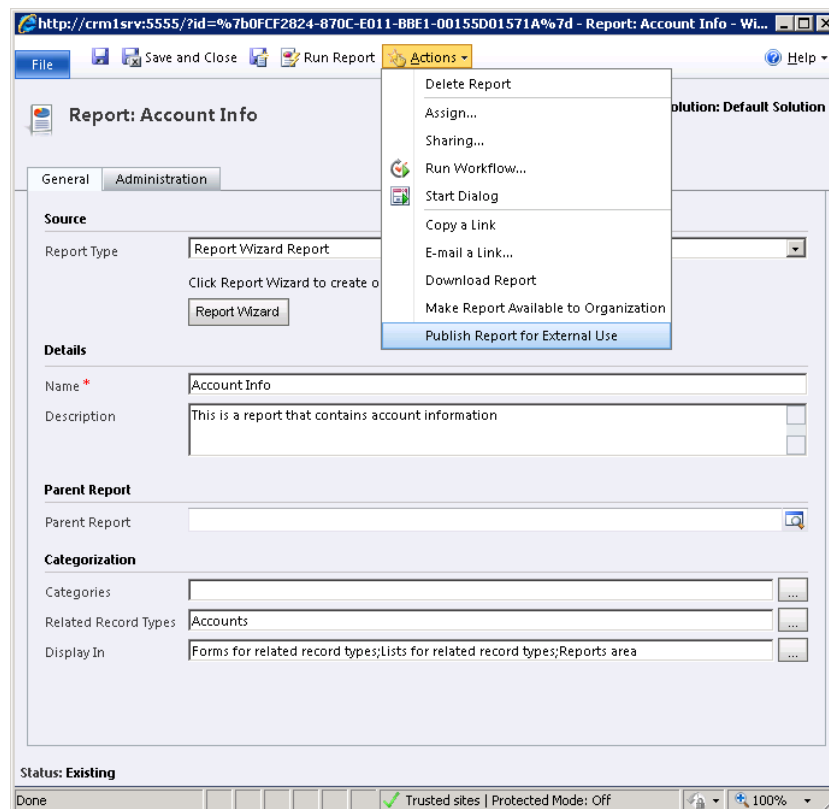
The background of the slide is a detailed architectural drawing, likely a site plan or floor plan, showing various building footprints, roads, and utility lines. The drawing is rendered in a light blue and white color scheme, with a semi-transparent blue band across the middle containing the title text.

Publishing Reports for External Use

Publish for External Use

- To use a report in another application such as a custom ASPX page or the Report Viewer Web Part for SharePoint, you must use the Publish Report for External Use option under the Actions menu within a report
 - Creates a copy of the report in the <Organization Name>_MSCRM folder in SRS using Windows integrated security

Publish for External Use (Cont.)

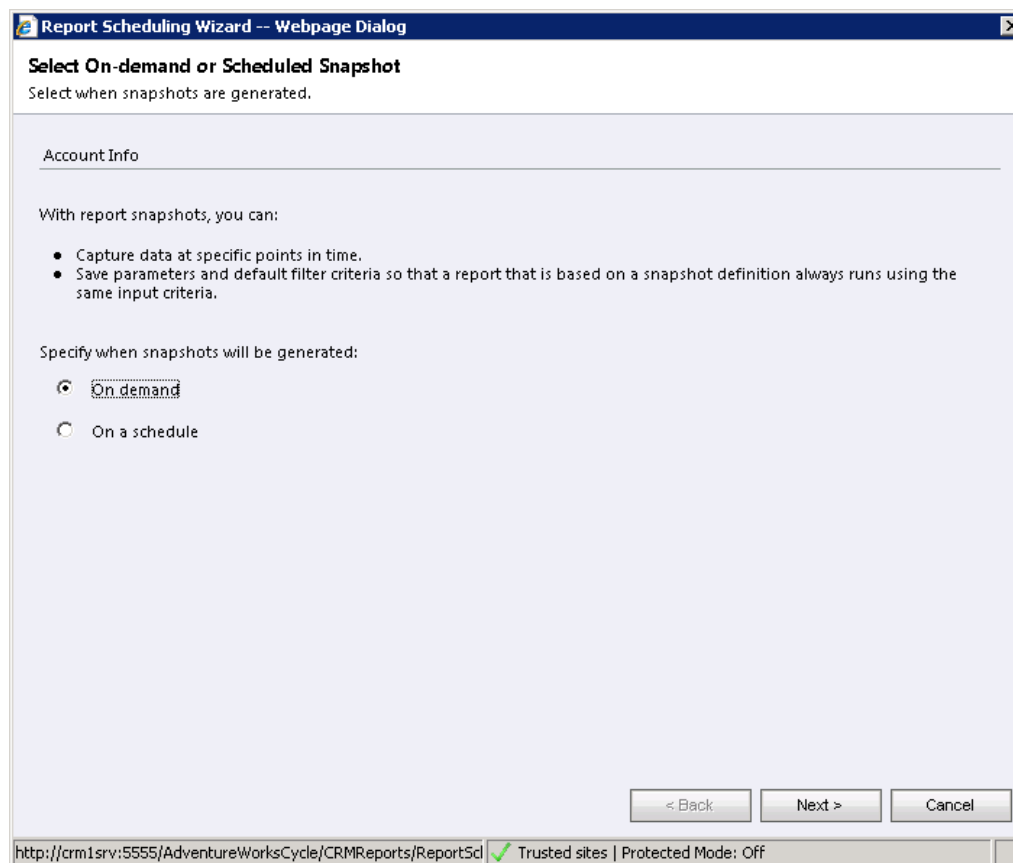




Scheduling Reports

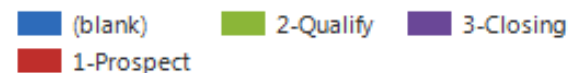
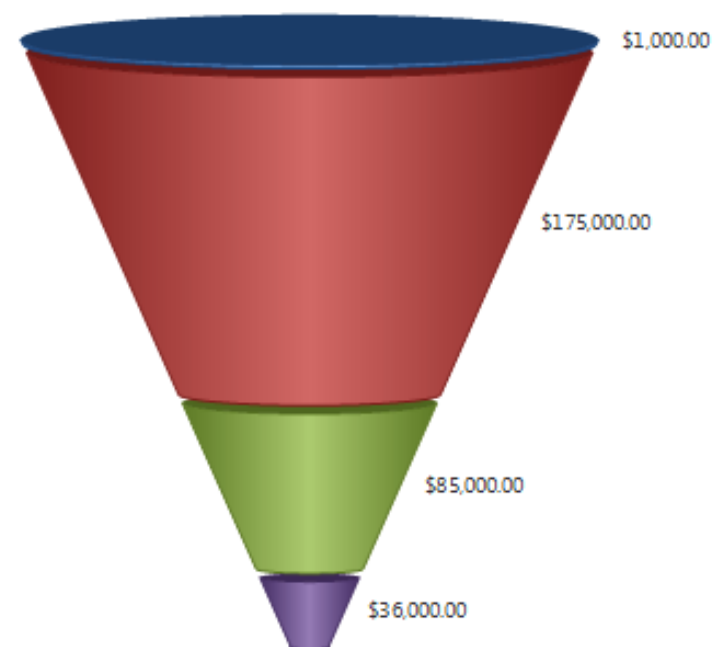
Report Scheduling

- Enables scheduled runs of reports
- Allows for recurrent runs of reports
- Provides report snap shots



Charting

- Utilizes ASP .Net Charts
- Integrated with the Entity Grid
- Chart Drilldown
- Localized Visitation
- Create User Charts or System Chart
- Export and Import Charts
- Modify Chart XML
- Multi-Series Charts



Dashboards

- Collection of Components
 - Grids
 - Visualizations (Charts)
 - Reports
 - Iframes
- Accessing Dashboards
 - User Dashboards
 - System Dashboards



Report Troubleshooting



Troubleshooting

- Test to see if you can run the report in SRS directly
 - Use the SystemUserId as the username and OrganizationId as the password
- ReportServerException: Cannot create a connection to data source 'CRM'. (rsErrorOpeningConnection)
 - Identity of the application pool used by SRS might not have access to the MSCRM_CONFIG and <Organization_Name_MSCRM> databases
 - Running the report manually in SRS should tell you which account does not have permissions

Troubleshooting (Cont.)

- PrivReportingGroup in AD should have the SRS application pool identity as a member
 - PrivReportingGroup and SRS application pool identity should have the CRMReaderRole role for the <Organization_Name_MSCRM> and MSCRM_Config databases
- Permissions to <OrganizationName_MSCRM> folder in SRS
 - SQLAccessGroup needs the Publisher for Microsoft CRM role

Troubleshooting (Cont.)

Check if CRM processing extension is not available:

Name: MSCRM_DataSource

Description:

☒ Hide in list view

☒ Enable this data source

Connection type: MSCRM ⚠ The data processing extension used for this report is not available. It has either b...

Connection string: MSCRM Data Connector Connection String

Connect using:

☒ Credentials supplied by the user running the report

Display the following text to prompt user for a user name and password:

Enter a user name and password to access the data source:

☐ Use as Windows credentials when connecting to the data source

- Repairing or reinstalling the CRM Data Connector will fix this issue
- Problem could be that it was uninstalled or the registration was removed from the SRS files

Additional Information

- Connection string to database stored in the Organization table within the MSCRM_Config database
- SRS URL is stored in the Organization table within the MSCRM_Config database
- How to change SRS Servers?
 - Deployment Manager | Disable Org | Edit

[illegible]

Upgrading from Dynamics CRM 4.0

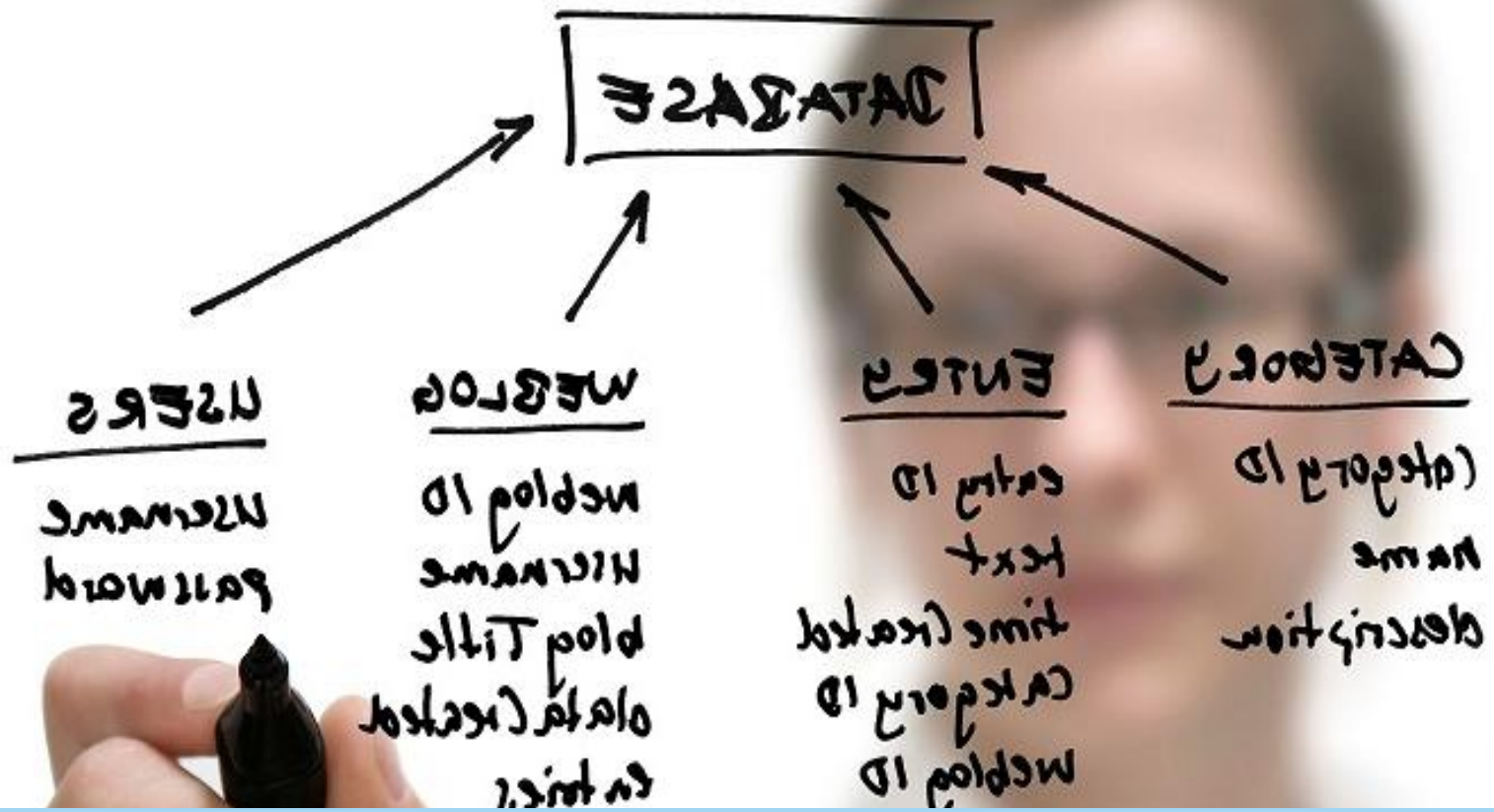
- No supported in place upgrade for Microsoft Dynamics CRM 4.0 Connector for SQL Server Reporting Services
- Custom reports will be moved to the custom report folder
- Out of Box reports are moved to Share Reports folder
- What happens to Upgraded Reports?
 - Reports created using the reports wizard in v4: Upgraded to fetch
 - OOB reports V4: Stay sql based (no upgrade to fetch)
 - Custom SQL Reports in V4: Stay sql based (no upgrade to fetch)

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Reports Lab



Questions?