

SDK APPLICATIONS IN AN HOUR

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AGENDA



1. Which SDK
2. Logging into Business Objects Enterprise
3. Is it a SystemObject or an InfoObject
4. Processing the Query
5. Presenting the Result
6. Conclusion
7. Q&A

WHICH SDK



The first step is to decide which of the 11 SDK's is right for you

WHICH SDK – THICK/RICH CLIENT (Crystal Reports)

- ▶ Java Reporting Component (JRC)
 - ▶ Used for Crystal Reports
- ▶ Report Designer Component (RDC)
 - ▶ Used for Crystal Reports (COM object)
- ▶ Crystal Reports for .NET
 - ▶ Used for Crystal Reports inside of .NET applications
- ▶ Recommended for Small Scale applications

WHICH SDK – FRAMEWORK (Business Objects Enterprise)

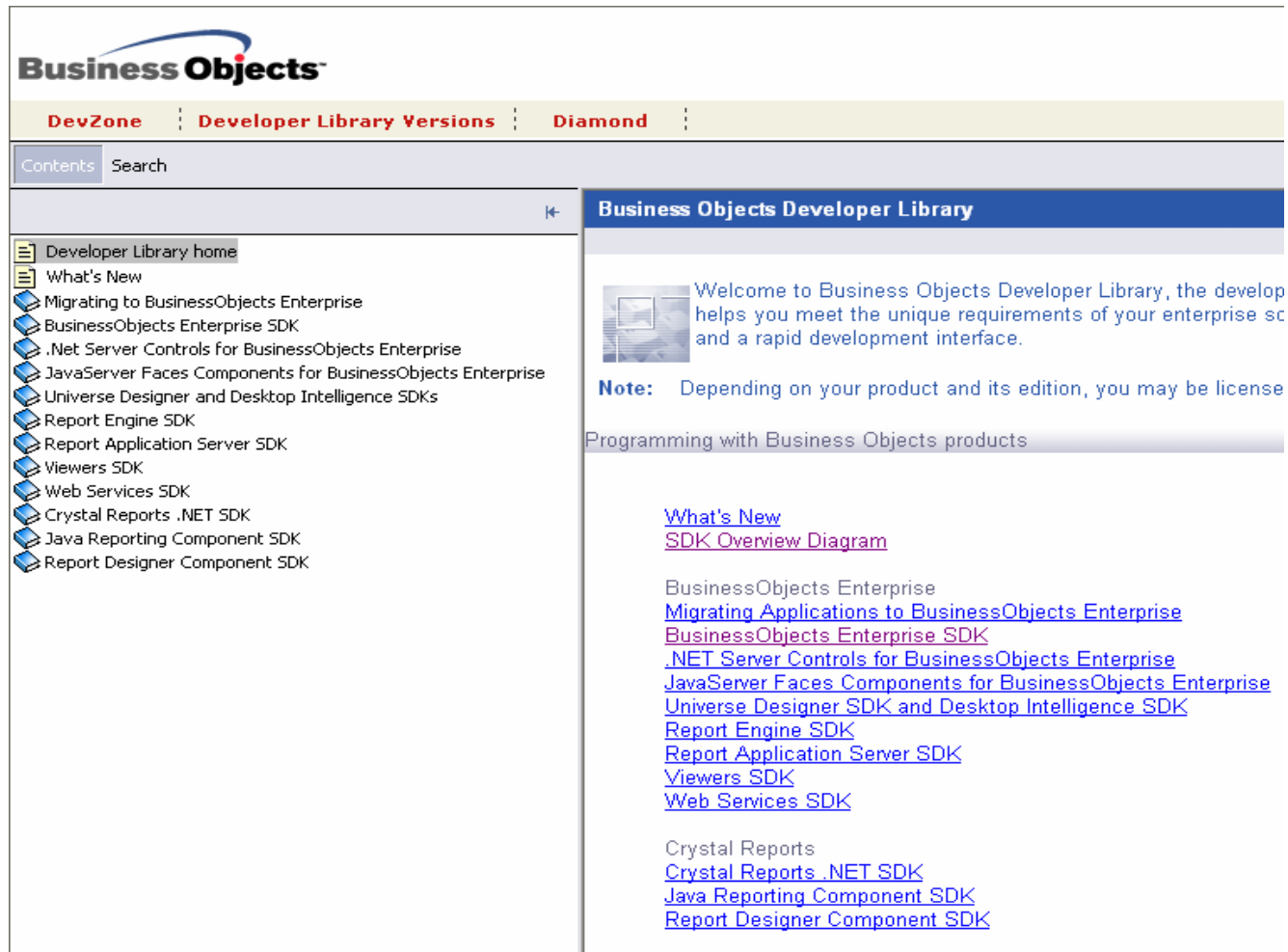
- ▶ BusinessObjects Enterprise SDK
 - ▶ used to access the services of the BusinessObjects framework. For example, the Job Server and Central Management Server (CMS).
- ▶ Report Application Server SDK
 - ▶ used to create and modify Crystal reports
- ▶ Universe Designer SDK
 - ▶ used to design and modify universes
- ▶ Desktop Intelligence SDK
 - ▶ use to interact with Desktop Intelligence
- ▶ Report Engine SDK
 - ▶ used to view Web Intelligence and Desktop Intelligence documents
 - ▶ Can also be used to create and modify Web Intelligence documents
- ▶ Viewers SDK
 - ▶ used to view Crystal reports on demand

WHICH SDK - WEB SERVICES

- ▶ Web Services SDK
 - ▶ used to access the majority of the Business Objects Enterprise features in a web services interface.
 - ▶ See the White Paper at:
<http://diamond.businessobjects.com/node/353>

WHICH SDK - DESCRIPTIONS

<http://devlibrary.businessobjects.com/BusinessObjectsXIR2/en/devsuite.htm>



Business Objects

DevZone | Developer Library Versions | Diamond

Contents Search

Business Objects Developer Library

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- Report Application Server SDK
- Viewers SDK
- Web Services SDK
- Crystal Reports .NET SDK
- Java Reporting Component SDK
- Report Designer Component SDK

Welcome to Business Objects Developer Library, the developer helps you meet the unique requirements of your enterprise software and a rapid development interface.

Note: Depending on your product and its edition, you may be licensed to use Business Objects products.

Programming with Business Objects products

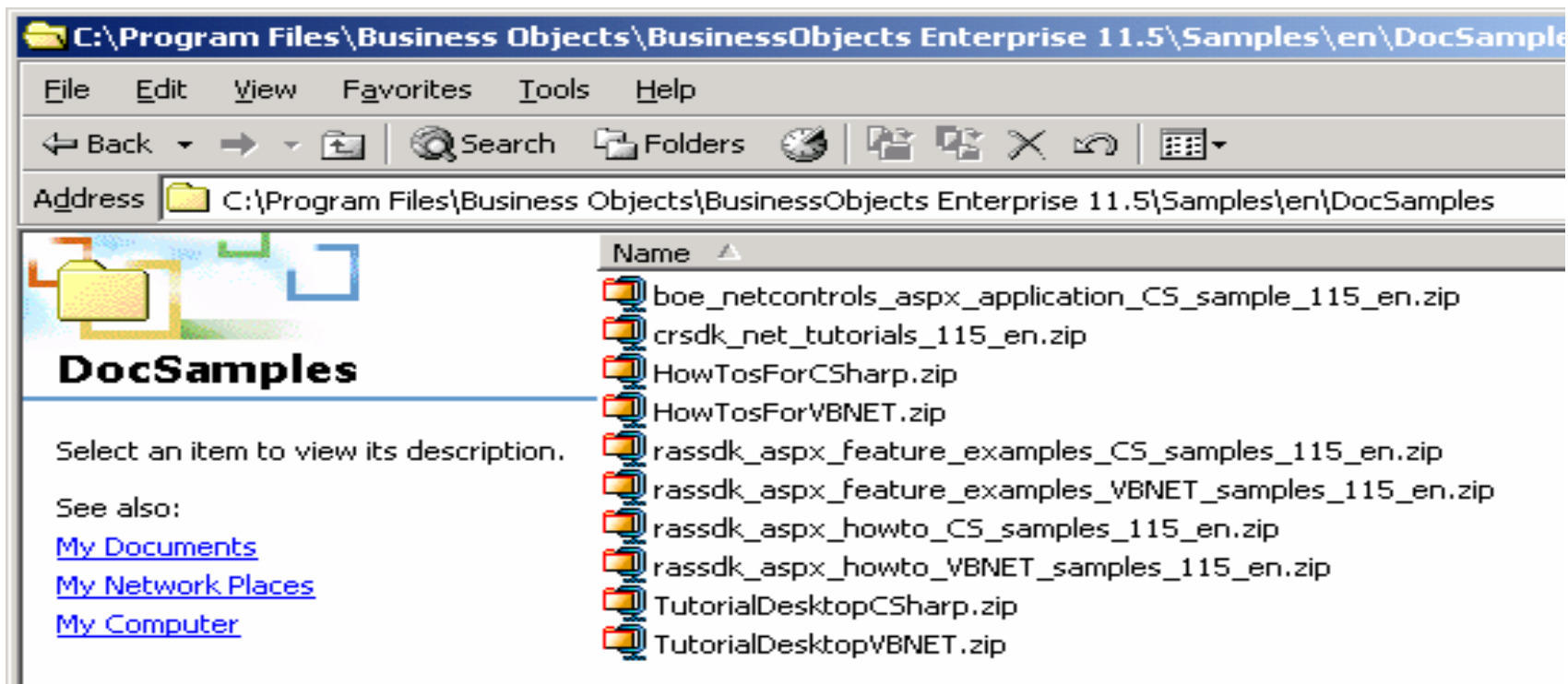
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BusinessObjects Enterprise
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Crystal Reports
[Crystal Reports .NET SDK](#)
[Java Reporting Component SDK](#)
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WHICH SDK – EXAMPLES

C:\Program Files\Business Objects\Businessobjects Enterprise 11.5\Samples\en\DocSamples

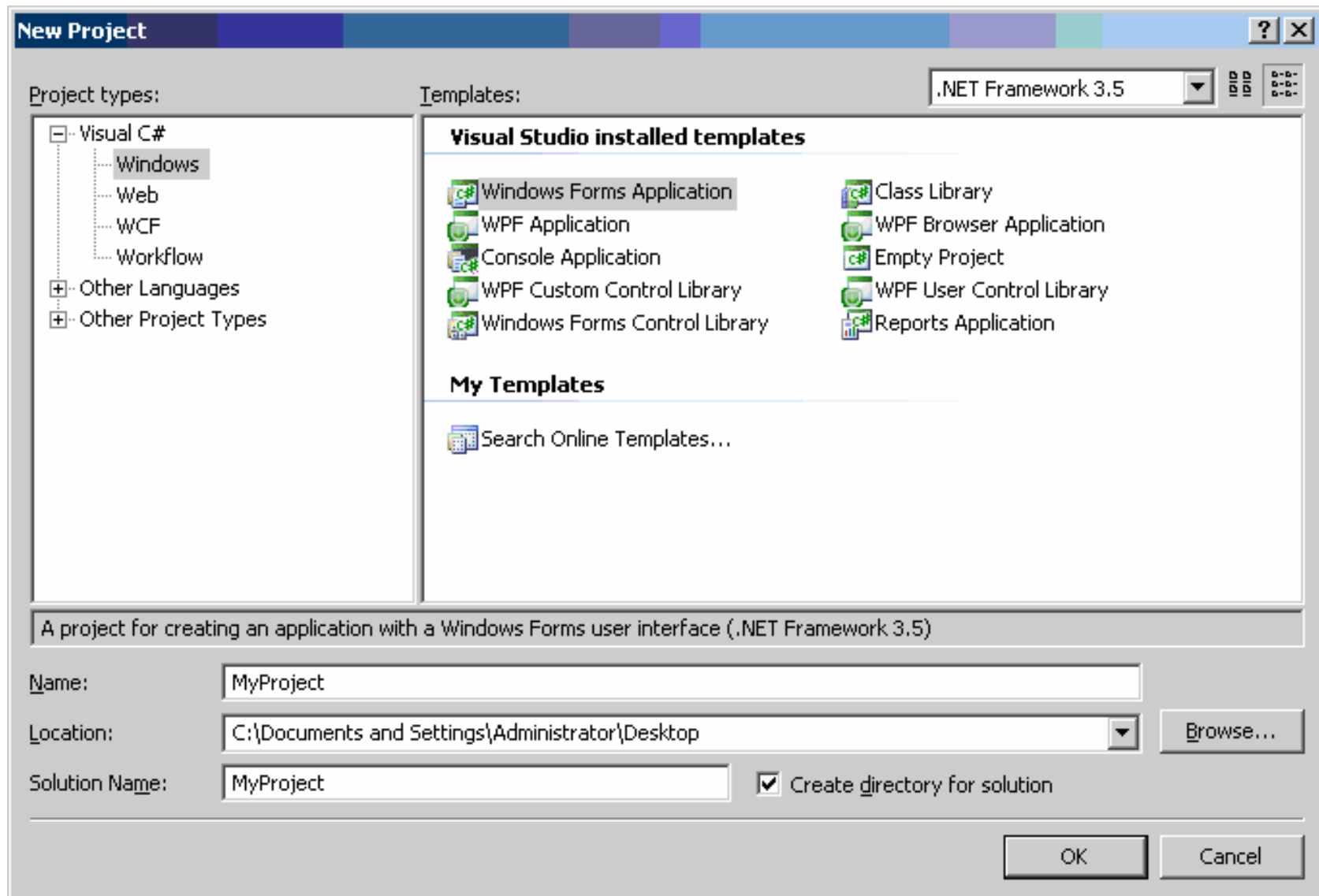


LOGGING IN



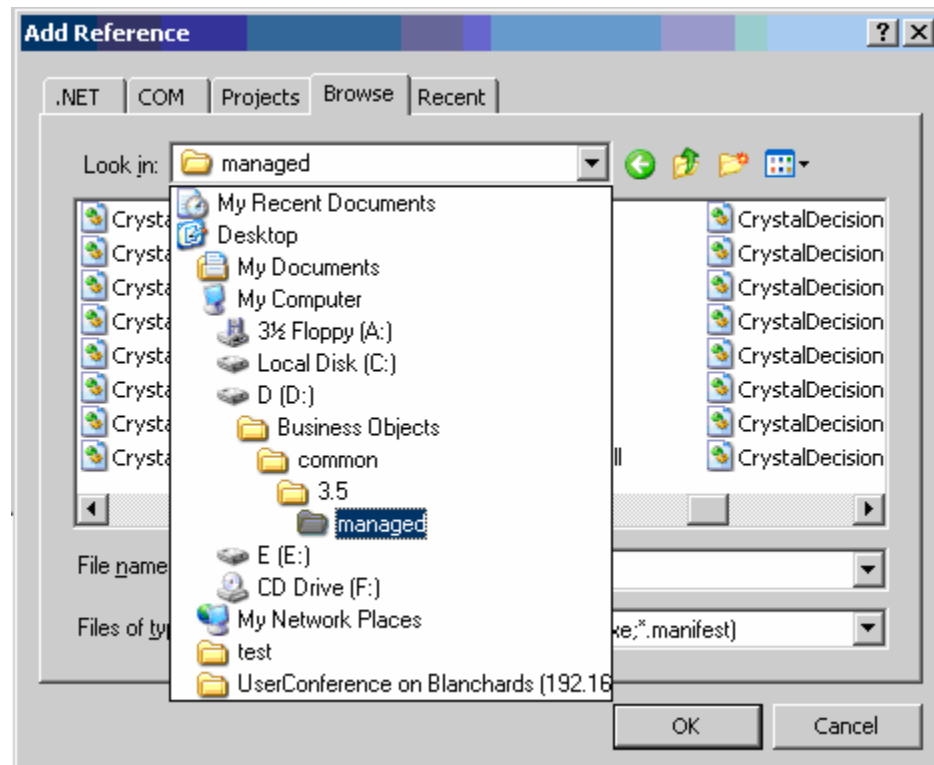
What you need to know about getting into the
Business Objects Enterprise System

CREATING THE VISUAL STUDIO (VB.NET) PROJECT



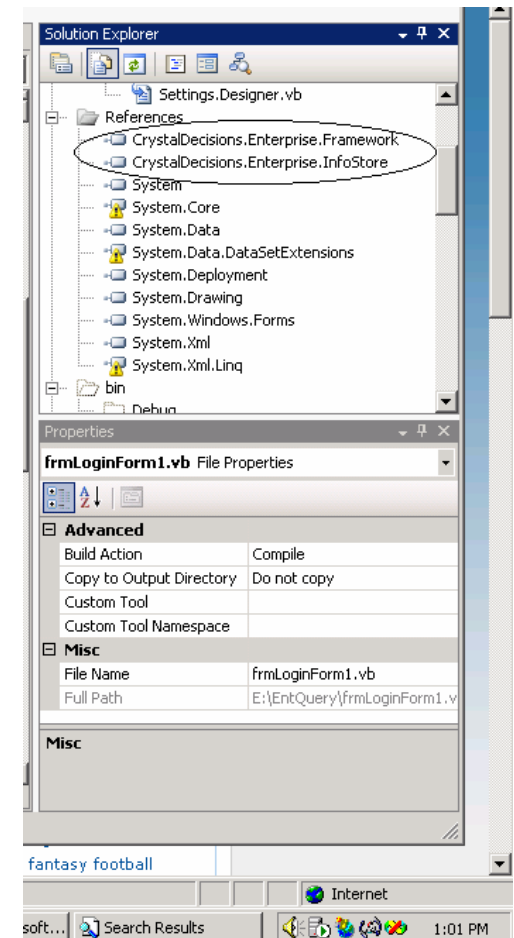
ADDING THE CRYSTAL DECISIONS REFERENCES

- ▶ Gives Access to the SDK
 - ▶ Libraries
 - ▶ Classes
 - ▶ Properties
 - ▶ Methods
- ▶ Select
 - ▶ Project
 - ▶ Add Reference

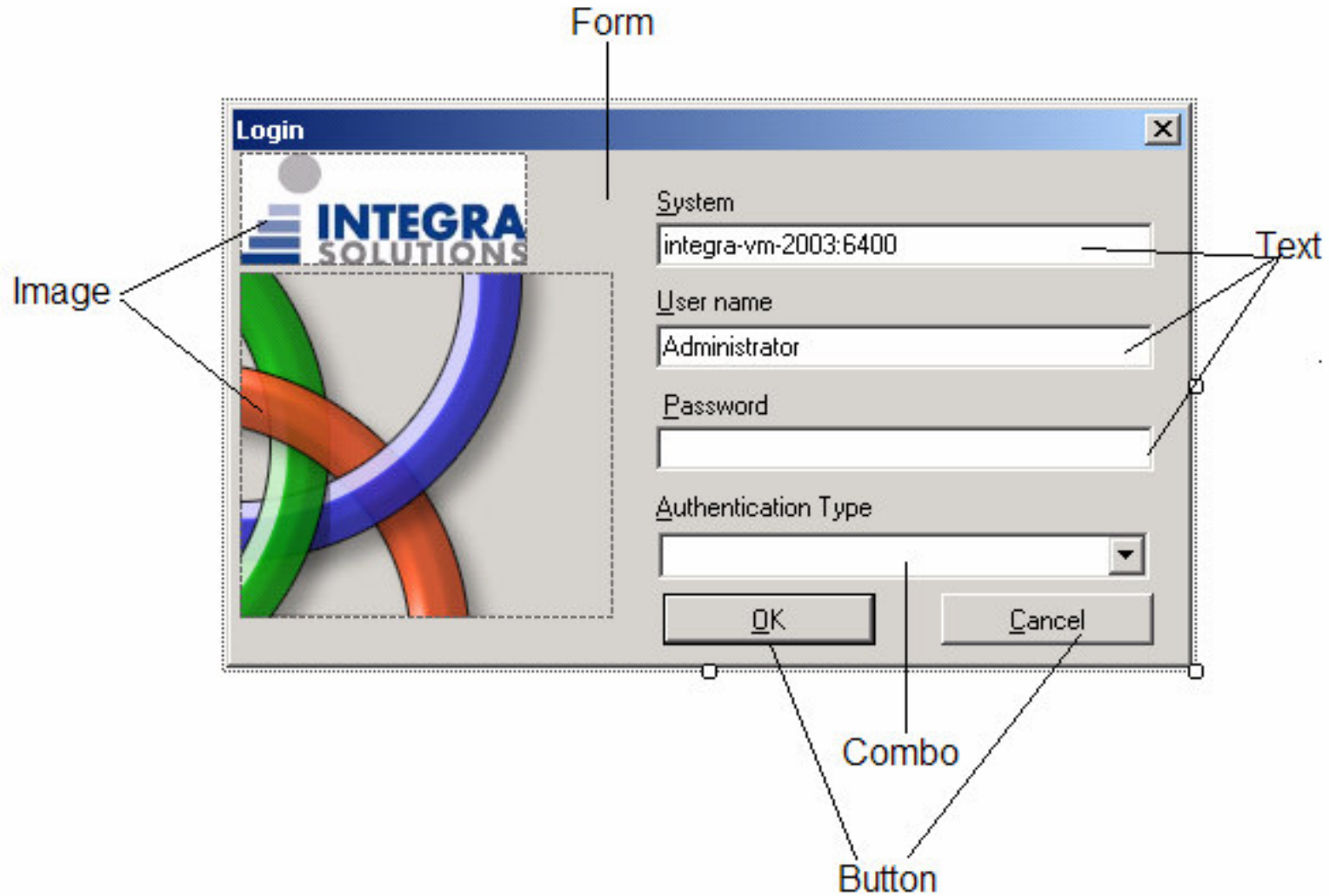


ADDING THE CRYSTAL DECISIONS REFERENCES

- ▶ CrystalDecisions.Enterprise.Framework.DLL
- ▶ CrystalDecisions.Enterprise.InfoStore.DLL
- ▶ Located At:
 - ▶ \\Program Files\Business Objects\Common\3.5\Managed

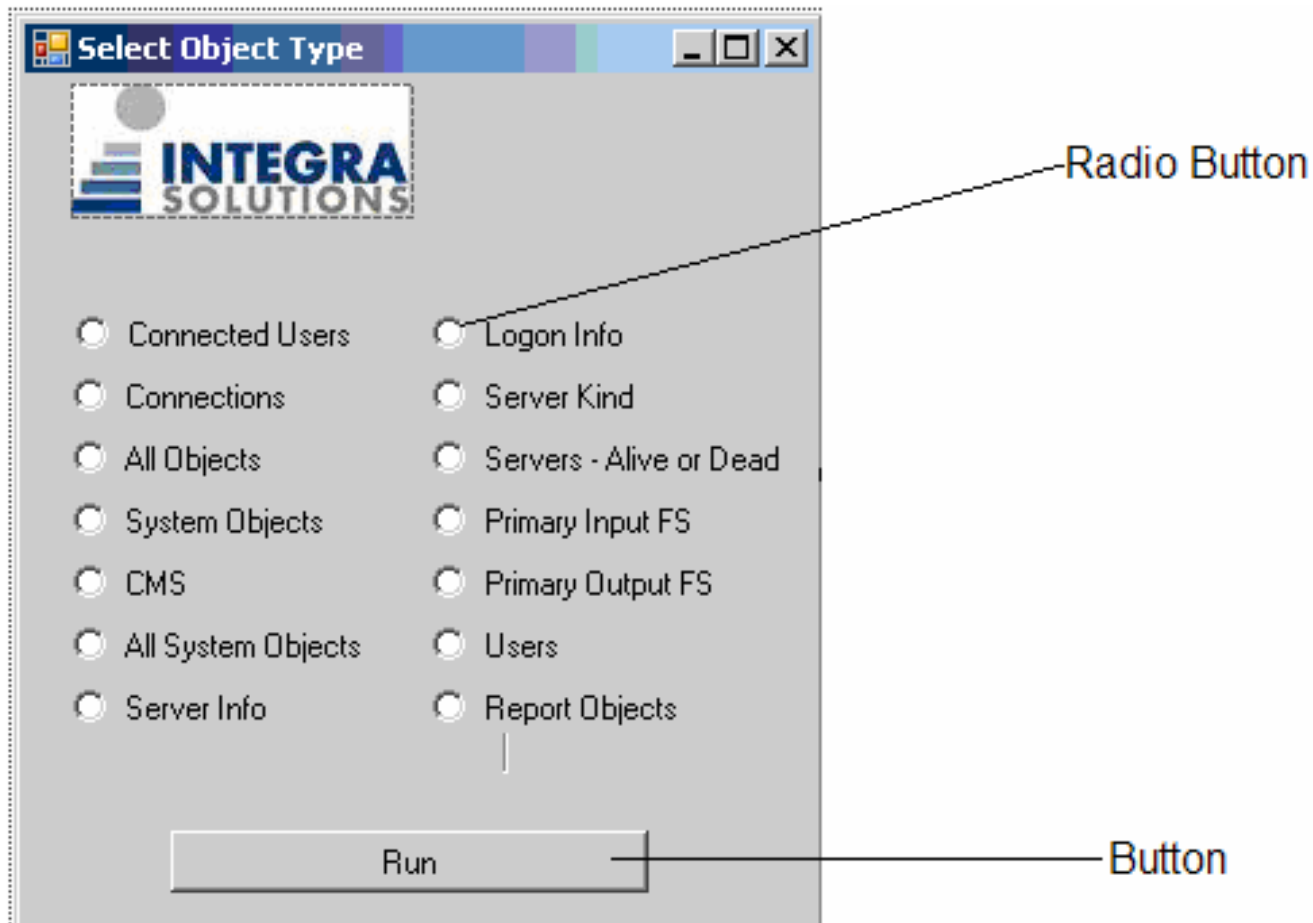


ADDING THE LOGON FORM



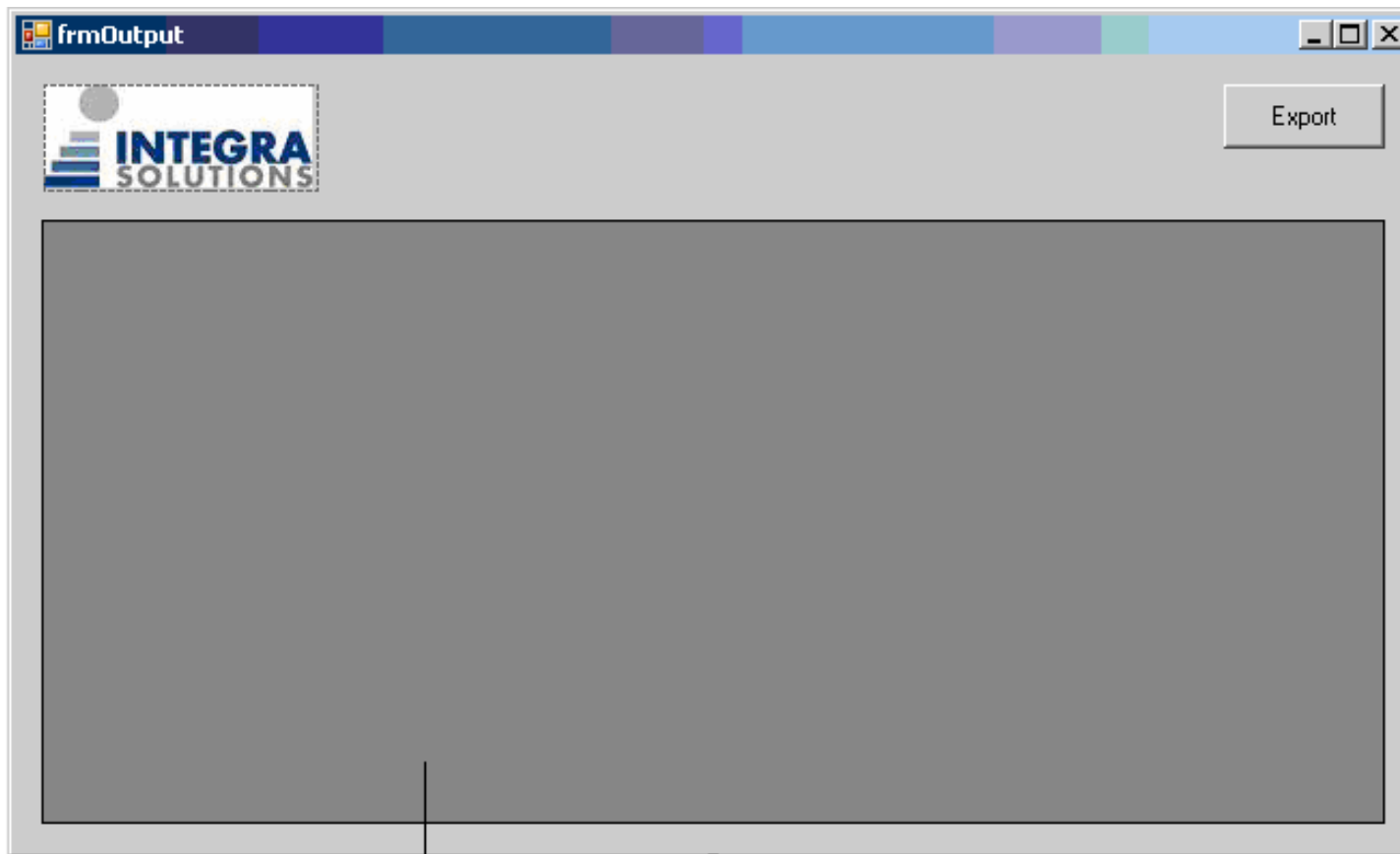
ADDING THE SELECT TYPE FORM

- ▶ Used to Select the type of Information returned



ADDING THE OUTPUT FORM

- ▶ Allows the query result to be shown



DataGrid

ADDING THE LOGIN TYPE TO THE FORM LOAD

```
Private Sub frmLoginForm1_Load(ByVal sender As
    System.Object, ByVal e As System.EventArgs) Handles
    MyBase.Load
    ' Initialize authentication combobox
    Me.cboAuthenticationType.Items.Add("Enterprise")
    Me.cboAuthenticationType.Items.Add("LDAP")
    Me.cboAuthenticationType.Items.Add("Windows AD")
    Me.cboAuthenticationType.Items.Add("Windows NT")
    ' Initialize authentication default selection
    Me.cboAuthenticationType.SelectedIndex = 0
End Sub
```


ADDING THE CODE TO THE LOGON FORM

```
Private Sub OK_Click(ByVal sender As System.Object,
    ByVal e As System.EventArgs) Handles OK.Click
    Dim strAuthentication As String
    Select Case Me.cboAuthenticationType.Text
        Case "Enterprise"
            strAuthentication = "secEnterprise"
        Case "LDAP"
            strAuthentication = "secLDAP"
        Case "Windows AD"
            strAuthentication = "secWindowsAD"
        Case "Windows NT"
            strAuthentication = "secWindowsNT"
    End Select
```

ADDING THE CODE TO THE LOGON FORM – CONTINUED

```
' Create new Session Manager
    oSessionMgr = New
CrystalDecisions.Enterprise.SessionMgr
    ' Logon to BOE
    oEnterpriseSession =
oSessionMgr.Logon(Me.txtUsername.Text,
Me.txtPassword.Text, Me.txtSystem.Text,
strAuthentication)
    ' Get Infostore Service
    oEnterpriseService =
oEnterpriseSession.GetService("InfoStore")
    ' Show Select Form
    frmSelectType.Show()
End Sub
```

CREATING THE LOGON TOKEN

- ▶ Purpose of a Logon Token
 - ▶ Allows you to only login once
 - ▶ Reinstate an Enterprise Session
- ▶ Sample Code

`'Declare the Session`

```
oSessionMgr = New  
CrystalDecisions.Enterprise.SessionMgr
```

`' Logon to BOE`

```
oEnterpriseSession =  
    oSessionMgr.Logon (Me.txtUsername.Text,  
        Me.txtPassword.Text, Me.txtSystem.Text,  
strAuthentication)
```

CHOOSING BETWEEN SYSTEM AND INFOOBJECTS



Whether you choose SystemObjects or InfoObjects will determine what information is returned

CHOOSING BETWEEN SYSTEM AND INFOOBJECTS

- ▶ **InfoObjects** - Contains all properties used to describe a BusinessObjects Enterprise object that is stored on the CMS,
 - ▶ These objects include items such as a report, instance, server, or user.
 - ▶ CI_INFOOBJECTS is mostly for general use
- ▶ **SystemObjects** - Contains all objects that define the BusinessObjects Enterprise system.
 - ▶ These objects include users, groups, servers, events, and so on.
 - ▶ CI_SYSTEMOBJECTS is mostly for administrative use.
- ▶ **AppObjects** - This category contains all objects that are defined as BusinessObjects Enterprise application objects.
 - ▶ These objects include, but is not limited to applications such as InfoView, and Web Intelligence.
- ▶ While some properties apply to all InfoObjects, others are specific to a particular type of object.

WRITING AND PROCESSING THE QUERY

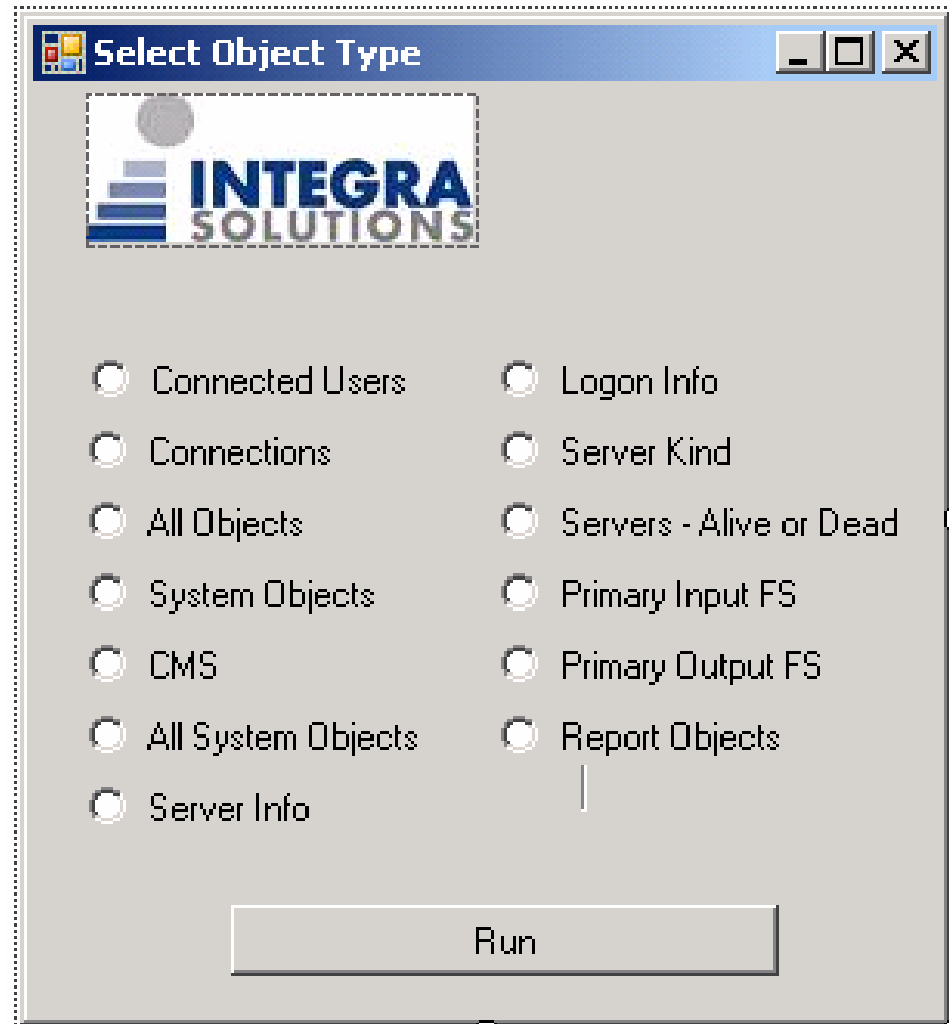
- ▶ Writing the Query and viewing the results

PROCESSING THE QUERY

- ▶ Based on simple SQL Select Statements
- ▶ Can be tested using the Query Builder tool in the Administrator's Console
- ▶ You must be logged into Business Objects Enterprise to query the database

PROCESSING THE QUERY – SELECT THE OPTION

- ▶ Each selection has a different query
- ▶ The “Report Objects” selection has a popup window with further selection criteria
- ▶ Click the “Run” button to process the query



THE QUERY EXAMPLE – PART 1 THE SELECTION

```
Private Sub btnRun_Click(ByVal sender As System.Object,  
ByVal e As System.EventArgs) Handles btnRun.Click  
    ' create a new Infostore  
    oInfostore = New  
CrystalDecisions.Enterprise.InfoStore(oEnterpriseService)  
  
    If rbtnServerInfo.Checked = True Then  
        ' query string for Server Info  
        oQueryString = "Select * from CI_SYSTEMOBJECTS  
where si_progid = "'crystalenterprise.server'"  
    End If  
  
    If rbtnLogonInfo.Checked = True Then
```

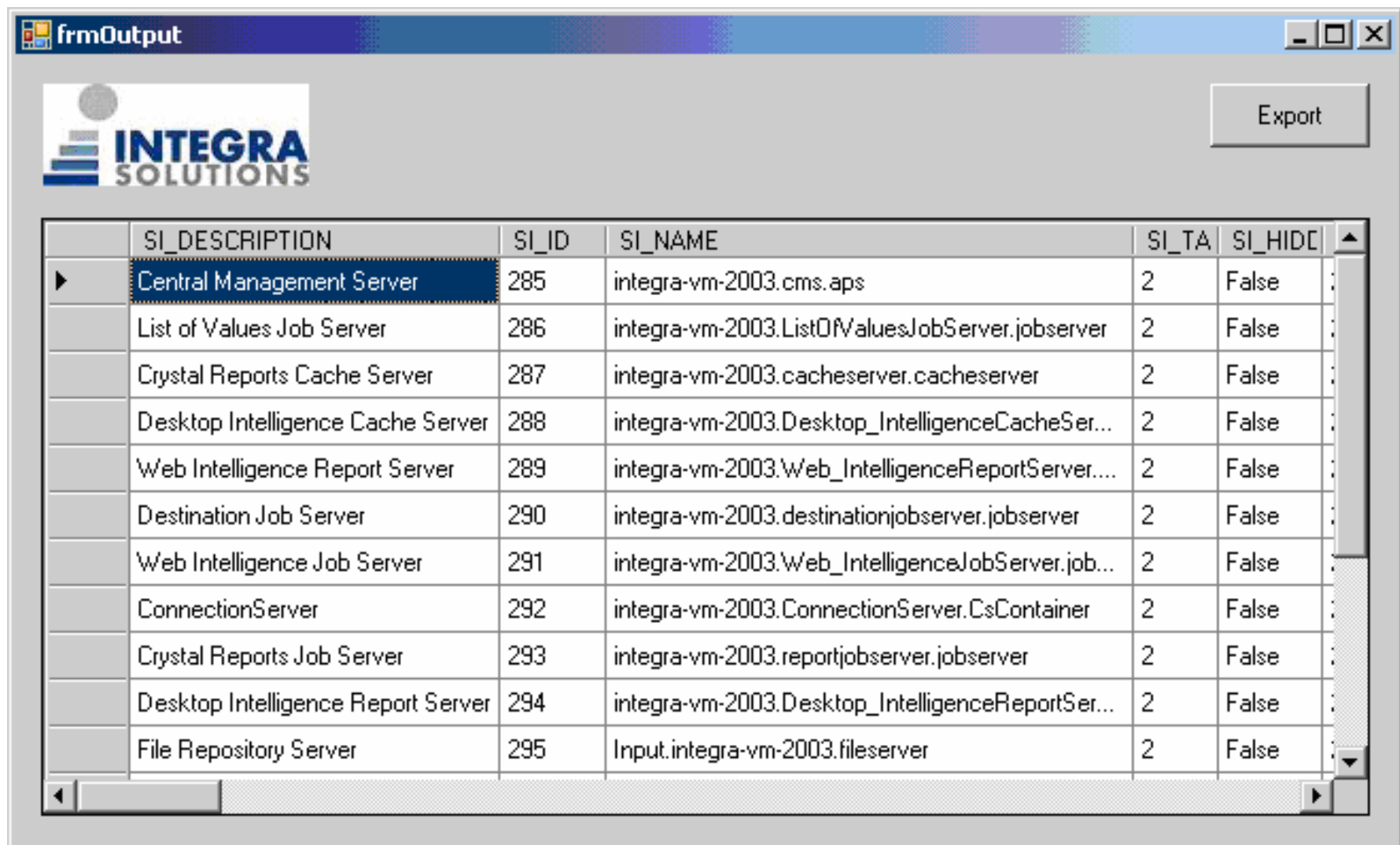
THE QUERY EXAMPLE – PART 1 THE SELECTION - Continued

```
' execute query
oInstances = oInfostore.Query(oQueryString)
Dim i As Integer
' loop through all rows
For i = 1 To oInstances.Count
    oInstance = oInstances.Item(i)
    Dim j As Integer
    If i = 1 Then
        ' build the column headers if first row
        For j = 1 To
            oInstance.Properties.Count
            frmOutput.dgOutput.Columns.Add_
                (oInstance.Properties.Item(j).Name,
                oInstance.Properties.Item(j).Name)
        Next
    End If
```

THE QUERY EXAMPLE – PART 2 THE OUTPUT

```
        'add row to data grid
        frmOutput.dgOutput.Rows.Add()
        For j = 1 To oInstance.Properties.Count
            'add data to each column
            frmOutput.dgOutput.Item(j - 1, i -
1) .Value =
                oInstance.Properties.Item(j)
                Next j
            Next i
            ' display datagrid form
            frmOutput.Show()
        End Sub
```

THE QUERY EXAMPLE – PART 3 THE RESULT



The screenshot shows a window titled "frmOutput" with the Integra Solutions logo in the top left and an "Export" button in the top right. Below the logo is a table with the following data:

SI_DESCRIPTION	SI_ID	SI_NAME	SI_TA	SI_HIDE
Central Management Server	285	integra-vm-2003.cms.aps	2	False
List of Values Job Server	286	integra-vm-2003.ListOfValuesJobServer.jobserver	2	False
Crystal Reports Cache Server	287	integra-vm-2003.cacheserver.cacheserver	2	False
Desktop Intelligence Cache Server	288	integra-vm-2003.Desktop_IntelligenceCacheSer...	2	False
Web Intelligence Report Server	289	integra-vm-2003.Web_IntelligenceReportServer....	2	False
Destination Job Server	290	integra-vm-2003.destinationjobserver.jobserver	2	False
Web Intelligence Job Server	291	integra-vm-2003.Web_IntelligenceJobServer.job...	2	False
ConnectionServer	292	integra-vm-2003.ConnectionServer.CsContainer	2	False
Crystal Reports Job Server	293	integra-vm-2003.reportjobserver.jobserver	2	False
Desktop Intelligence Report Server	294	integra-vm-2003.Desktop_IntelligenceReportSer...	2	False
File Repository Server	295	Input.integra-vm-2003.fileserver	2	False

PRINTING THE RESULT

- ▶ Your output is based on your needs
 - ▶ Grid
 - ▶ Text
 - ▶ CSV
 - ▶ Etc.
- ▶ Based on your query you must allow for the possibility of nested columns in the output

CONCLUSION

A review of the steps necessary to produce an SDK related application/interface

- ▶ Decide which SDK(s) you might need
- ▶ Use Early Binding in .net when possible
- ▶ Write and test your code
- ▶ Insure a logoff from Business Objects Enterprise