

# Duet for Microsoft Office and SAP; SAP Operations Guide

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## Table of Contents

Chapter 1: Getting Started.....	4
Chapter 2: Technical System Landscape.....	5
Chapter 3: Monitoring .....	6
Monitoring Duet Environments .....	6
Trace and Log Files in Duet Server and SAP Duet Add-On Environments .....	7
Trace and Log Files of Duet Business Applications in mySAP ERP.....	8
Trace and Log Files in the Client.....	9
Testing Connectivity Between SAP Duet Add-On and mySAP ERP System.....	9
Chapter 4: Managing the Duet Server and SAP Duet Add-On .....	11
Backup and Restore.....	12
User Management.....	13
User Management Configuration in the Duet Server Environment .....	14
User Management Configuration in the SAP Duet Add-On Environment.....	14
Clustering and Availability .....	15
Clustering the Duet Server .....	15
Clustering the Duet Add-On .....	16
Administration Tools of Duet.....	17

# Chapter 1: Getting Started

Using Duet™ for Microsoft® Office and SAP®, you empower and enable employees in your organization to easily access SAP business processes and enterprise information through Microsoft® Office environments.

This guide describes various tasks, and lists the tools that you can use to implement them.

In addition, the guide contains references to the documentation required for these tasks, so you will sometimes also need other guides such as the SAP Master Guide, the SAP Administration Guide, the SAP Installation Guide, and information available in the SAP Help Portal.

# Chapter 2: Technical System Landscape

The system landscape describes both the technical infrastructure, and the system infrastructure.

Find information about the technical system landscape in the *Duet for Microsoft and SAP; SAP Master Guide* in SAP Service Marketplace at:

*<http://service.sap.com/instguides> → SAP xApps → Duet → Duet 1.0.*

In addition, the installation package contains documentation for Duet components from SAP in the folder: ...\\SAP\\DOCS.

# Chapter 3: Monitoring

Within the management of SAP® technology, monitoring is an essential task. The monitoring mechanism for the Duet system landscape is delivered with SAP NetWeaver®, and can be easily extended to include additional SAP® and non-SAP components.

This section provides information about the tools for monitoring the hosts of the Duet components from SAP, in three separate environments.

Duet uses the tracing and logging mechanisms in the SAP Web AS Java system. These mechanisms provide information about the status of operations in Duet, and help system administrators to detect problems.

Find detailed information about monitoring in SAP Web AS Java system on SAP Help Portal at: [help.sap.com](http://help.sap.com) → *Documentation* → *SAP NetWeaver* → *SAP NetWeaver 2004* → *SAP Library* → *SAP NetWeaver* → *SAP NetWeaver Technical Operations Manual* → *Management of the SAP Web Application Server (Java)* → *Monitoring and Error Handling for SAP Web AS Java* → *Error Identification and Analysis*

## Monitoring Duet Environments

You can monitor the status of a critical Duet component, the Item Handler service, by configuring the use of Computing Center Management System (CCMS) in the Duet system landscape.

To monitor the availability of the Item Handler service, you must configure the Generic Request and Message Generator (GRMG) monitor, in the CCMS.

For more information, see the section “*Monitoring Duet Environment*” in the *Duet for Microsoft Office and SAP; SAP Administration Guide* on SAP Service Marketplace: [service.sap.com/instguides](http://service.sap.com/instguides) → *SAP xApps* → *Duet* → *Duet 1.0*

In addition, you can use the log files in the Log Viewer of the Visual Administrator in SAP Web Application Server Java system, to check the status of Duet components.

## SAPInst Trace and Log Files

SAPInst, the SAP installation tool creates its own log and trace files. These are located in `<SAPINST_INSTDIR>`, usually `c:\program files\sapinst_inst\dir`

The main files are:

- *Sapinst.log* - the log file
- *Sapinst\_dev.log* - the trace file

In addition, during its operation, SAPInst generates other files with extension \*.log, which are also traces. Their content usually also appear in the *SAPinst.log* and *SAPinst\_dev.log* files, but sometimes only partially.

You can view the content of the logs and trace using text editors such as, Notepad, and Textpad.

You view the log messages when you are using SAPInst, by selecting *View Log*. You can view the following types of error messages:

- View Error: shows only error messages (log)
- View Warning: shows error and warning messages (log)
- View Info: shows error, warning, and info messages (log)
- View Trace: shows all messages (trace)

## Trace and Log Files in Duet Server and SAP Duet Add-On Environments

You can configure the SAP Web AS Java system on which the Duet server, and the SAP Duet Add-On run, in order to view all the generated log messages.

Tracing and logging for Duet take place in the SAP Web AS Java system. You can filter the messages to be displayed based on the level of severity you define.

In the SAP Web AS Java system, all the trace and log information is located in the following files:

- *Application.log*  
The applications log files contain error messages.
- *DefaultTrace.trc*  
The trace files contain all the trace statements.

The maximum size of a log and a trace file is set to 10MB, and when this size is reached, new log and trace files are created, as needed.

These files have the same file name as the original, and are differentiated by the numeric value that is included in the name. The name with the least numeric value is the oldest file, such as *Applications.0.log*, is older than *Applications.1.log*, and *DefaultTrace.0.trc*, is older than *DefaultTrace.1.trc*.

In each SAP Web AS Java system, you can find the stored trace and log files in the folder: *C:\usr\sap\<SID>\<instance name>\j2ee\cluster\server0\log folder*.

You must configure the SAP Web AS Java system on which the Duet server, and the SAP Duet Add-On run, in order to view all the generated log messages.

### To configure logging for all messages:

1. Double click the file, *go.bat*, located in the path:  
*<SAPJ2EEEngine\_installation>\j2ee\admin\>*
2. Select *Server <instance number> → Services → Log Configurator → Runtime → Locations → com → sap → xapps*

3. Select *osp*, and change the *Severity* to *All*.
4. Select *Save* → *Apply to all server nodes*.
5. Configure the log viewer from the Visual Admin Console.

**To view the messages in the log:**

1. Select *Log Viewer* → *Runtime* → *Cluster (host name)* → *Server <instance>* → *C:\usr\sap* → *<SID instance>* \<instance> → *j2ee\cluster\server0* → *log* → *defaultTrace.trc*
2. Select the *Severity* tab, and move the slider to *Debug* and worse. Locate the slider between *Debug* and *Path*.
3. Click *Refresh*.
4. Close and open *defaultTrace.trc*.

All the log messages display in the Log Viewer, including PATH and DEBUG trace messages.

There are several filters for setting the level of severity. However, we recommend that you analyze the messages generated due to errors, first.

In addition, find detailed information about event logging, in the section “*Enable Duet Event Logging on the Server*” in the guide, *Duet for Microsoft Office and SAP; Microsoft Installation and Deployment Guide* in the installation package:

... \Microsoft\Documentation or <https://connect.microsoft.com/default.aspx>.

## Trace and Log Files of Duet Business Applications in mySAP ERP

In mySAP ERP system, you use the Application Log tool to collect messages, save, view, and delete the logs in the database.

The following are transactions for managing logs in mySAP ERP system:

Transaction	Description
SLG0	Use this transaction to maintain the object.
SLG1	Use this transaction to display log information.
SLG2	Use this transaction to delete expired log information.

- **Leave Management**

To enable analysis of the flow, and perform error analysis for leave management, you must schedule a report program (background job) to send notifications, using application logging.

- **Budget Monitoring**

You can obtain the errors that occur when you activate the schedule for budget monitoring.



The following Objects/Subjects determine the category of the error messages:

Business Application	Object or Sub-Object
Leave Management Scheduler	/OSP/ /OSP/LEMA
MDR	/OSP/ /OSP/MDR_SCH

**To view the log messages:**

1. In mySAP ERP system, enter the transaction *SLG1*.
2. Enter the above object and sub-object for the business application.

## Trace and Log Files in the Client

In the clients, you can use a logging utility, to log events about Duet business applications and display them in the Event Viewer utility in Microsoft Windows operating system.

Find detailed information about event logging in the client, in the section “*Enable Client Runtime Event Logging*” in the guide, *Duet for Microsoft Office and SAP; Microsoft Installation and Deployment Guide* in the installation package:  
... \Microsoft\Documentation, or <https://connect.microsoft.com/default.aspx>.

The tool stores log files for Duet in the folder: *C:\WINDOWS\System32\config\*. The following are the log files:

- *Duet.evt*: All the metadata service related log event are store in this file.
- *AppEvent.evt*: All the Duet client and business applications related log events are stored in this file.

You can view the content of these files in the Event Viewer in the operating system.

**To open and view the contents of a log file in the Event Viewer:**

1. From the Start menu, select *Settings* → *Control Panel* → *Administrative Tools* → *Computer Management*.
2. Expand *System Tools*, and choose *Event Viewer*.
3. From the menu, select *Action*, and select *Open Log File*.

## Testing Connectivity Between SAP Duet Add-On and mySAP ERP System

You can test the connections between the SAP Duet Add-On components mySAP ERP system.

Typically, you can perform these basic connectivity tests, after deploying the SAP Duet Add-On components.

Find detailed information, in the *Duet for Microsoft Office and SAP; SAP Installation Guide* in the installation package: ... \SAP\DOCS, or on SAP Service Marketplace: [service.sap.com/instguides](http://service.sap.com/instguides) → *SAP xApps* → *Duet* → *Duet 1.0*

# Chapter 4: Managing the Duet Server and SAP Duet Add-On

As Duet runs on top of the SAP Web AS Java system, most of the tasks you need to carry out in Duet environments require tools in SAP Web AS Java system.

You use the administration tools available in SAP Web AS Java system to manage and maintain Duet components running on top of the application server.

The following are the SAP Web AS Java system administration tools that are also used for Duet components:

- Visual Administrator

You use the Visual Administrator to carry out administration tasks at runtime. You need a user (preferably with administrator permissions) and password.

- Config Tool

You can use the Config Tool to configure the cluster elements of the SAP Web AS Java system from a remote system. With this tool, you can also configure the SAP Web AS Java system while it is offline.

- SAP Management Console

On Windows, you can display all the installed SAP Web AS Java system components in a hierarchy, using the SAP Management Console. When you open the hierarchy, an icon for a server instance appears; this icon may be green, yellow, or gray. The system database is a blue icon.

Find detailed information about SAP Web AS Java system administration tools on SAP Help Portal at: *help.sap.com* → *Documentation* → *SAP NetWeaver* → *SAP NetWeaver 2004* → *SAP Library* → *SAP NetWeaver* → *SAP NetWeaver Technical Operations Manual* → *Management of the SAP Web Application Server (Java)* → *Administration Tools for the SAP J2EE Engine*

The following table shows the various tasks you can carry out in each of the Duet environment that runs on top of SAP Web AS Java system:

Task	For more information
Starting and Stopping	See SAP Help Portal at: <i>help.sap.com</i> → <i>Documentation</i> → <i>SAP NetWeaver</i> → <i>SAP NetWeaver 2004</i> → <i>SAP Library</i> → <i>SAP NetWeaver Library</i> → <i>SAP NetWeaver Technical Operations Manual</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>Starting and Stopping the SAP System</i>

Backup and Restore	See SAP Help Portal at: <i>help.sap.com</i> → <i>Documentation</i> → <i>SAP NetWeaver</i> → <i>SAP NetWeaver 2004</i> → <i>SAP Library</i> → <i>SAP NetWeaver Library</i> -> <i>SAP NetWeaver Technical Operations Manual</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>Backup and Recovery of the SAP Web Application Server (Java)</i>
Logging On and Load Balancing	See SAP Help Portal at: <i>help.sap.com</i> → <i>Documentation</i> → <i>SAP NetWeaver</i> → <i>SAP NetWeaver 2004</i> → <i>SAP Library</i> → <i>SAP NetWeaver Library</i> -> <i>SAP NetWeaver Technical Operations Manual</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>Load Balancing of the SAP Web AS for Java Applications</i>
User Management	See SAP Help Portal at: <i>help.sap.com</i> → <i>Documentation</i> → <i>SAP NetWeaver</i> → <i>SAP NetWeaver 2004</i> → <i>SAP Library</i> → <i>SAP NetWeaver Library</i> -> <i>SAP NetWeaver Technical Operations Manual</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>User Management</i>
High Availability	See SAP Help Portal at: <i>help.sap.com</i> → <i>Documentation</i> → <i>SAP NetWeaver</i> → <i>SAP NetWeaver 2004</i> → <i>SAP Library</i> → <i>SAP NetWeaver Library</i> -> <i>SAP NetWeaver Technical Operations Manual</i> → <i>Management of the SAP Web Application Server (Java)</i> → <i>High Availability</i>

## Backup and Restore

You need to backup the Duet system landscape to prevent data loss and unexpected downtime due to unforeseen circumstances.

You use the SAP Web AS backup strategies and tools to back up Duet components in the Duet system landscape, as Duet runs on top of the SAP Web AS system.

Regardless of the strategy and tools you use, you should backup the following Duet resources:

- Back up the content of the folders, *DuetMetadata* and the *DuetCode* in the file system of the host of the Duet metadata service.
- Backup the SAP system (mySAP ERP system) you have configured for use with Duet.

These should be restored as well when needed.

Find detailed information about backup and restore for components from Microsoft, in *Duet for Microsoft Office and SAP; Microsoft Administration Guide* in the installation package: ... \Microsoft\Documentation, or <https://connect.microsoft.com/default.aspx>.

# User Management

You use tools from both SAP and Microsoft for user administration and management.

You manage users and user mapping data in Duet using the User Management Engine (UME) of the SAP Web AS Java system.

You must configure the user management engine to connect to your user store in the two systems: Windows and SAP system.

The following is the sequence for configuring user management in Duet:

1. Configure the user management engine in the host of the Duet server to connect to Active Directory service.

For more information, see the section “*Setting Up the SAP User Management Engine to Connect to the Active Directory*” in the *Duet for Microsoft Office and SAP; SAP Installation Guide* on SAP Service Marketplace: [service.sap.com/instguides](http://service.sap.com/instguides) → *SAP xApps* → *Duet* → *Duet 1.0*

2. Configure the user mapping data in the host of the Duet server, if the users’ account in Windows differs from that in the SAP system.

For more information, see the section “*Configuring User Mapping Data in the User Management Engine*” in the *Duet for Microsoft Office and SAP; SAP Administration Guide* on SAP Service Marketplace: [service.sap.com/instguides](http://service.sap.com/instguides) → *SAP xApps* → *Duet* → *Duet 1.0*

3. Configure the user management engine in the host of the SAP Duet Add-On to connect to the SAP Web AS ABAP user management.

However, if the users’ account in Windows is the same as the users’ account in mySAP ERP system, we recommend that you connect to the Active Directory service.

For more information, see the section “*Setting Up User Management Engine to Connect to mySAP ERP User Store*” in the *Duet for Microsoft Office and SAP; SAP Installation Guide* on SAP Service Marketplace: [service.sap.com/instguides](http://service.sap.com/instguides) → *SAP xApps* → *Duet* → *Duet 1.0*

## User Management Configuration in the Duet Server Environment

From the Duet server environment, you configure the UME to connect to the Microsoft Active Directory® directory service.

Where the user account (user ID) in Windows of a specific user differs from the user ID in the SAP system, you must map the user data in the UME.

For more information, see the section “*Configuring User Mapping Data in the User Management Engine*” in the *Duet for Microsoft Office and SAP; SAP Administration Guide* on SAP Service Marketplace: [service.sap.com/instguides](http://service.sap.com/instguides) → SAP xApps → Duet → Duet 1.0

## User Management Configuration in the SAP Duet Add-On Environment

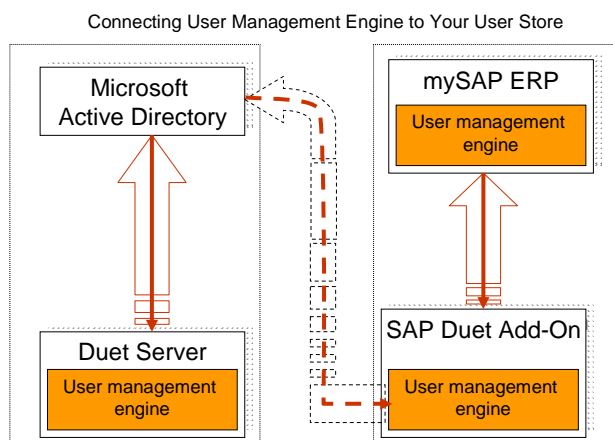
From the SAP Duet Add-On environment, you can configure the UME to connect to one of the following user stores:

- Microsoft Active Directory service
- SAP Web AS ABAP user management

Where users have the same user ID in all systems. That is, the user uses the same user ID to log onto Windows, and to mySAP ERP systems, we recommend to connect the UME to the Active Directory service. Passwords do not have to be the same in all systems, and you do not configure user mapping for the systems.

Where the users’ account (user ID) in Windows differs from the users’ account in the SAP system, we recommend that you configure the UME to connect to user store in mySAP ERP, and then map the user data in the UME.

The following illustrates the connection to your user store from the UME in SAP Web AS Java system:



The dotted arrows from the SAP Duet Add-on environment shows the connection to the Active Directory Service, which is an alternative to connecting to the user store in the SAP system, if the user ID for each user is the same in both Windows and mySAP ERP.

## Clustering and Availability

Clustering in the Duet landscape is based on the clustering of SAP Web AS Java, since the Duet components from SAP run on top of the application server.

Duet supports clustering in two separate environments: clustering the Duet server, and clustering the Duet Add-on.

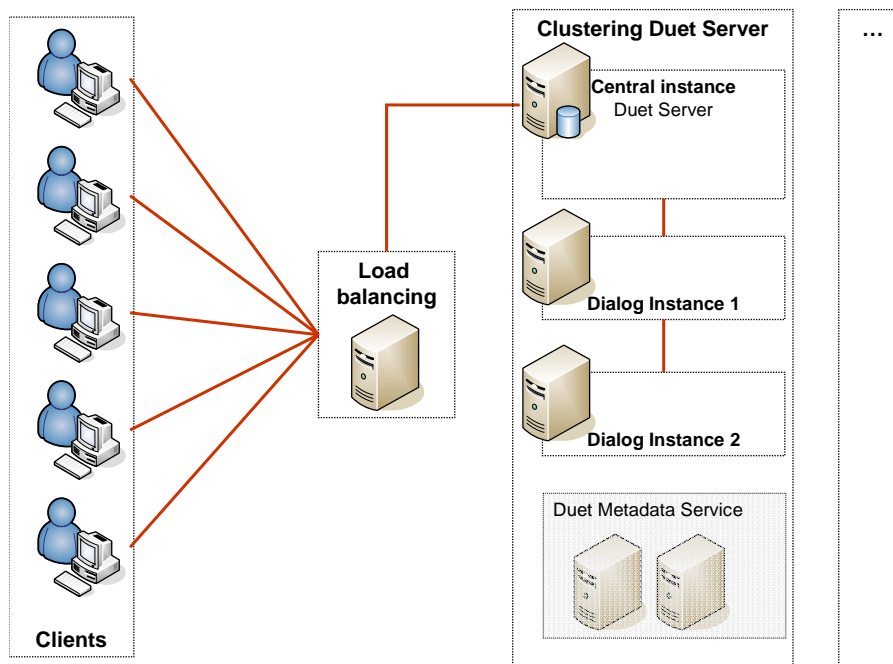
### Clustering the Duet Server

The Duet server can be configured to run across a cluster of computers thus enhancing performance and reliability.

Clustering is accomplished through the clustering capabilities of SAP Web AS Java system. You can cluster the SAP Web AS Java system for the Duet server in the following way:

- Set up the central instance of the SAP Web AS Java system in one machine, and set up one dialog instance in different machines.
- Set up a central instance and several dialog instances in a single machine.

The following illustrates the clustering configuration for running Duet server across several computers:



You set up several dialog instances, such that each dialog instance runs in its own computer. Then you set up a load balancing mechanism over the computer running the central instance of SAP Web AS Java system.

Each client can access the cluster through the load balancing device. The central instance queries the dialog instances, and then forwards the clients' requests to the least occupied dialog instance.

## Clustering the Duet Add-On

You can deploy the Duet Add-On in a cluster of computers in order to enhance its performance and reliability.

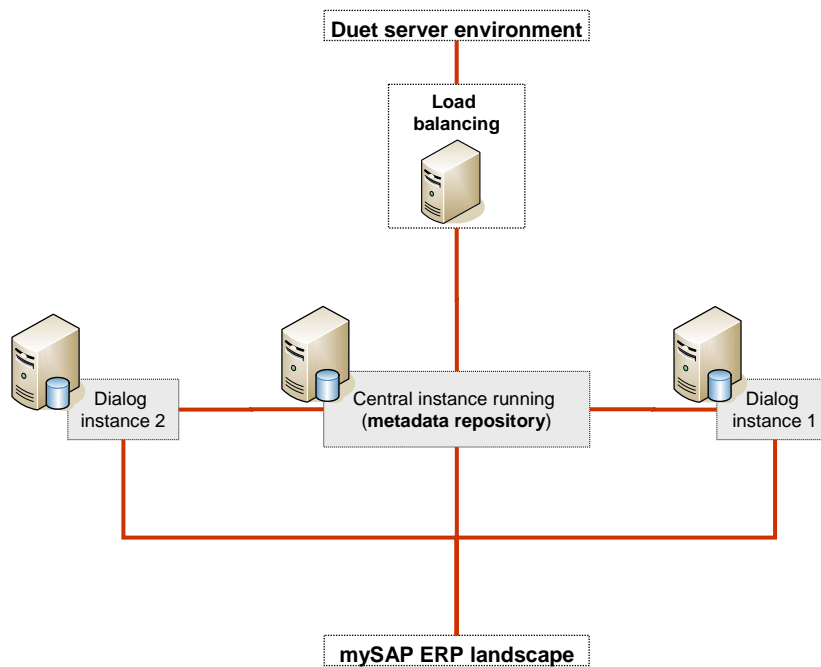
You accomplish clustering by deploying a single Master Duet Add-On to interface with several instances of Duet Add-On, each running in a separate computer.

You can cluster the SAP Duet Add-on environment as follows:

1. Set up the central instance of the SAP Web AS Java system in one machine, to run the SAP Duet Master Add-On. This must be the computer on which you deploy the metadata repository.
2. Set up each Duet Add-On in its own computer, to interface with the Master Duet Add-On.



The following graphic illustrates the clustering configuration of Duet Add-On:



You set up several instances of SAP Web AS Java, each running in its own computer to interface with a single SAP Duet Master Add-on, in which the metadata repository resides. Over the cluster, you set up a load balancing mechanism, through which the Duet server environment can access the cluster.

## Administration Tools of Duet

Duet provides a browser-based graphical interface, Duet Administration Control Panel (DACP), through which you access Duet tools and editors.

Using the Duet tools and editors, you manage, maintain and configure Duet components. When you select a tool or an editor in the DACP for the first time, you must provide the administrator credentials of the SAP Web AS Java system on which the Duet server runs, to open the selected tool or editor in another window.

### To start the Duet Administration Control Panel:

- You open the DACP using the following URL in your browser:  
`http:<J2EE_Duet_Server_Host>:<J2EE_Port>  
/webdynpro/dispatcher/sap.com/xapps~osp~fw~admin~launchpad~webdynpro  
/AdminLaunchpadApp`

**Note:** You must enter the administrator credentials of the SAP Web AS Java system on which the Duet server runs.

From the DACP, you can open the following:

- **Duet System Management (DSM)**  
Configures and edits categories of Java components in the Duet landscape.
- **Define SAP System**  
A wizard that lets you specify connection information to an SAP system, define roles that exist in that system, and map the roles to default business application roles.  
In addition, you select the business applications configured for use with the specific SAP system.
- **Define Add-On**  
A tool that lets you define the connection settings to an SAP system, and configures connection between the Duet Add-On host and several SAP systems.
- **Map Role**  
A tool that lets you define the roles in an SAP system, and map them to the roles of the business application.  
Use this tool after configuring the connection to an SAP system.
- **Connect Duet server to Duet Metadata Service Host**  
A tool that lets you define the login details for accessing the Authorization Manager service in the Duet Metadata Service host.
- **Download or Upload Configuration Files**  
In addition to the visual representation of the categories for configuring various components in the Duet landscape, Duet provides an XML-based configuration file for configuring and modifying the Duet components, which use various metadata and data stored in database tables.  
You can import and deploy XML-based configuration files using this tool.
- **Add or Remove Business Applications**  
You can add and remove metadata resources for Duet business application using this tool.  
Using the Add or Remove Business Applications tool, you can deploy metadata and the assemblies for Duet business applications to the metadata repository in the SAP Duet Add-On environment, and view the content of the metadata repository.
- **Business Applications Property Editor**  
The Business Applications Property Editor allows you to edit graphical user interface elements at runtime.

For more information about the *Duet Administration Control Panel*, see the *Duet for Microsoft Office and SAP; SAP Administration Guide* available on SAP Service Marketplace at: [service.sap.com/instguides](http://service.sap.com/instguides) → *SAP xApps* → *Duet* → *Duet 1.0*