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Delivery Manager

This guide describes how to configure StreamServe Connect for SAP - Delivery Manager with your SAP system. Delivery Manager is an add-on module to StreamServer.

This guide only contains information specific to the Delivery Manager Connect solution. For general information on StreamServer, see the standard StreamServe documentation.

Delivery Manager is one of four StreamServe Connect solutions available for use with SAP. For information on the other solutions, see the following documentation:

- StreamServe Connect for SAP - Output+
- StreamServe Connect for SAP - E-docs
- StreamServe Connect for SAP - Business Processes

Installation

For information on how to install the StreamServe Connect solutions, see the StreamServe Connect for SAP - Installation Guide.

Introduction

The Delivery Manager provides an efficient and well-integrated connection to the SAP spooling system through the SAP External Output Management (XOM) interface.

With the addition of the Delivery Manager Connect solution, users can not only see that a job has been sent, but also that it has been successfully printed. Using the Delivery Manager Connect solution, customers now have a reliable feedback channel that can return detailed job status information back to the SAP system.

Output Management System (OMS)

Output Management Systems (OMS) complement applications by enabling companies to simultaneously track print jobs on multiple printers in various formats, and guarantee that critical documents are actually printed.

The StreamServe output management system, Output Center, is a complement to StreamServer, and was designed and developed to effectively manage enterprise-wide distributed printing in Enterprise Resource Planning (ERP) environments.
The Output Center monitors the entire print environment, and can be structured according to the unique business needs of an organization. With its easy-to-use interface, the Output Center provides key spooling functions such as managing printer status, job status and notification of job completion. The Output Center supports PCL and PostScript/PDF printers from a variety of manufacturers, using industry standard PJL and IPP.

While job tracking is a key task provided by spool management systems, such as the Output Center, Dazel, Macro4 and IBM InfoPrint Manager, the Delivery Manager is the application which updates the SAP spooler system with the actual status tracked by the OMS system.

Note: The Delivery Manager can also be used independently from Output Center to send back job status notifications on any StreamServe job.

The Delivery Manager Connect interfaces

The Delivery Manager supports the SAP XOM interface, which integrates the SAP spool system with an OMS, for example StreamServe Output Center.

Command Line interface
You can use the Command Line interface to transfer output requests from SAP to the OMS, cancel jobs etc.

Remote Function Call (RFC) Client interface
You can use the DM Client interface to enable active reporting notifications back to the SAP system. This avoids polling for status information, which can be very resource demanding.

Remote Function Call (RFC) Server interface
You use the DM Server interface to transfer output requests from SAP to the OMS. The DM Server interface enables you to work in a distributed environment. While exchanging job data, you avoid accessing the local file systems which can be protected by firewalls or be running under different operating systems.

The DM Server interface uses the DM Sender to send the actual job data to the OMS.

Levels of integration

The SAP XOM interface allows for three levels of integration, with the Delivery Manager supporting all three levels. Using the Delivery Manager, you can choose your preferred level of integration

- Command Line interface
- Command Line interface together with the DM Client interface, so-called Mixed Mode.
- DM Server and DM Client interface.
Supported SAP releases

The Delivery Manager supports the following XOM integration levels in the SAP releases shown:

- **Command Line interface** — SAP system 3.1 and onwards.
- **DM Client interface** — SAP system 4.0 and onwards.
- **DM Server interface** — SAP system 4.6 c and onwards.
Sending SAP data to StreamServe

This diagram illustrates how output from a SAP system is transferred to StreamServer using the XOM interface and the Delivery Manager applications.

**Note:** The Delivery Manager applications can only return notifications to a SAP system from a device via a spool management system, such as the StreamServe Output Center, Dazel, Macro 4, or IBM Infoprint Manager.

---

**Figure 1**  Sending SAP data to StreamServe using the XOM interface

**Note:** In this scenario, the data output was configured for StreamServe Connect for SAP - Output+ and E-docs.
Submitting a job via the Delivery Manager

To print a document, such as an invoice or a report, from the SAP system using the Delivery Manager, you can use a regular device. This device must be configured for the XOM interface.

The job will be submitted by the XOM interface from the SAP spooler to the external OMS for further processing, using one of the following.

- Command Line interface (strsdmsubmit application)
- DM Client with the Command Line interface (strsdmsubmit application), also known as Mixed Mode. This is recommended for high-volume processing where SAP and StreamServe can share folders by using for example Samba.
- DM Server interface with the DM Sender (stradmsender service) in non-direct data mode. This is a one-threaded non-scalable solution (only one server instance) and should be used only for small volumes.

Receiving status messages via the Delivery Manager

A status message can be sent back to the SAP system via the XOM interface using one of the following:

- Command Line interface (strsdmpoll, strsdmqquery, and strsdmdquery applications), which enables the SAP system to query for job and device status information.
- DM Client interface (strsdmclient service), which actively returns job and device status information. A process is created for every file received from SAP, and the strsdmclient service sends status back to SAP for each of these processes.

Different status messages can be sent to the SAP system, depending on the job status at the device level. To follow the status of a submitted job, you can use the SAP Output Controller (transaction code /nsp02).

For example, if the job was successful a notification will be returned to the SAP system and the job status is changed from Proc. (processing) to Complete. If instead an error was reported at the device level, an error message will be returned and the job status would be changed from Proc. to Error.

Note: The Delivery Manager cannot retrieve job or device status by itself. The status information is provided through a spool management system, such as the StreamServe Output Center, Dazel, Macro4, or IBM Infoprint Manager.

The following diagram illustrates the order of requests and data flow when using the RFC Server interface and Output Center.
Cancelling jobs

A job can be cancelled via the XOM interface using the `strsdmjcancel` application. This application sends status information about the job to be cancelled to StreamServe, which sends information to StreamServe Output Center that the job is to be cancelled. The Output Center produces a notification message that the job has been cancelled, which is sent back to the SAP system.
Configuring the SAP system for XOM

Recommendations
We recommend you install the Delivery Manager and StreamServer before configuring the SAP system.

Levels of integration
You configure your SAP system to use SAP External Output Management (XOM) interface with an external Output Management System (OMS) for the following levels of integration.

• **DM Server and Client integration** — The DM Server and Client level of integration incorporates the DM Server and Client interface. See Configuring the DM Server and Client integration on page 14.

• **DM Command integration** — The DM Command level of integration incorporates the Command Line interface. See Configuring the DM Command integration on page 21.


Note: You only need to configure your SAP system for the level of integration you want to use, see Determining the Delivery Manager interface on page 14.
Configuring the DM Server and Client integration

The DM Server and Client level of integration incorporates the DM Server and Client interfaces.

**Note:** You only need to configure the DM Server and Client integration, if you are using the DM Server and Client interfaces.

**Required activities**

1. [Configuring a Real Output Management System (ROMS)] on page 14
2. [Configuring a Logical Output Management System (LOMS)] on page 16
3. [Configuring the DM Server destination] on page 19
4. [Configuring an output device for the Delivery Manager] on page 32

**Configuring a Real Output Management System (ROMS)**

A Real Output Management System (ROMS) is a definition that specifies the characteristics of an external Output Management System (OMS). A ROMS definition is needed to integrate the SAP spool system into the external OMS.

To create a Real Output Management System (ROMS)

1. Log on to your SAP system.
2. In the transaction box, enter `/nsapid`. The Spool Administration window opens.

3. Click **Extended admin** and **Output management systems**.

4. Click **Real output management systems**. The List of Real Output Management Systems window opens.

5. Click **Change**.

6. Click **Create**.

   The Create Real Output Management System window opens.

7. In the Real OMS box, enter a name, for example **MY_ROMS**.

8. In the Description box, enter a description.

9. Specify the ROMS settings for the RFC interface.

<table>
<thead>
<tr>
<th><strong>ROMS settings for the RFC interface</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tasking</strong></td>
</tr>
<tr>
<td><strong>Job status</strong></td>
</tr>
<tr>
<td><strong>Device status</strong></td>
</tr>
<tr>
<td><strong>Initialization Instance</strong></td>
</tr>
<tr>
<td><strong>Reconfiguration Request</strong></td>
</tr>
</tbody>
</table>

10. Click **Save** to save the configuration.
Configuring a Logical Output Management System (LOMS)

You must define at least one Logical Output Management System (LOMS) that refers to the Real Output Management System (ROMS). More than one LOMS, with different types of devices, can reference the same ROMS.

Prerequisites
You must define a ROMS before you can define a LOMS. See Configuring a Real Output Management System (ROMS) on page 14.

To create a Logical Output Management System (LOMS)

1. Log on to your SAP system.
2. In the transaction box, enter /nspad. The Spool Administration window opens.
3. Click Extended admin and Output management systems.
4. Click Logical output mgmt systems. The List of Logical Output Management Systems window opens.
5. Click Change.
6. Click Create.

The Create Logical Output Management System window opens.

7. In the Logical OMS box, enter a name, for example MYLOMS.
8. In the Description box, enter a description.
9. Specify the LOMS settings for the RFC interface.

<table>
<thead>
<tr>
<th>LOMS settings for the RFC interface</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Real OMS</strong></td>
<td>Select the ROMS that the LOMS will refer to. You created this ROMS in Configuring a Real Output Management System (ROMS) on page 14.</td>
</tr>
<tr>
<td><strong>Tasking target</strong></td>
<td>The name of the DM Server destination that you must create (&lt;logical_RFC_destination&gt;). Type the name for the RFC destination, for example STRSOMS. The RFC destination will be created later, see Configuring the DM Server destination on page 19.</td>
</tr>
</tbody>
</table>

Note: The name is case sensitive.
You must type the name of the DM Server destination in the Tasking target box, for example STRSOMS.

You can not select the DM Server destination using the browse button. If you use the browse button, the server Id will be selected, not the DM Server destination, and the LOMS connection will not function correctly.

<table>
<thead>
<tr>
<th>Target for callback</th>
<th>Click the browse button to select the server to be used for callback. This is the server Id (&lt;server_Id&gt;).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jobs</strong></td>
<td>Select <strong>Callback</strong>. (Only available if you selected <strong>Device status &gt; Callback</strong> in the ROMS settings.)</td>
</tr>
<tr>
<td><strong>Devices</strong></td>
<td>Select <strong>Callback</strong>. (Only available if you selected <strong>Device status &gt; Callback</strong> in the ROMS settings.)</td>
</tr>
<tr>
<td><strong>Tasking</strong></td>
<td>Select <strong>Data by file</strong> to use non-direct data mode with the strsdmsender service.</td>
</tr>
</tbody>
</table>

10 Click **Save** to save the configuration.
11 Click Extended Config.

12 Select the OMS Configuration tab, and specify the parameter values:

<table>
<thead>
<tr>
<th>Parameter values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Send Period</strong></td>
<td>The interval (in seconds) between notification updates by the DM Client. For example, 20.</td>
</tr>
<tr>
<td><strong>Number of events</strong></td>
<td>The maximum number of Events that should be send back by the DM Client each time. For example 100.</td>
</tr>
<tr>
<td><strong>Interval</strong></td>
<td>The interval (in seconds) if the DM Client failed to connect to the SAP system. For example 300.</td>
</tr>
</tbody>
</table>

13 Click Save to save the configuration.

14 You can now configure the output device for the Delivery Manager, see Configuring an output device for the Delivery Manager on page 32.
Configuring the DM Server destination

As communication between the SAP system and the Delivery Manager DM Server uses the RFC protocol, when using the DM Server interface, you need to define an DM Server destination in the SAP system which recognizes the Delivery Manager DM Server. The Delivery Manager DM Server runs as a registered DM Server.

To create an DM Server destination

1. Logon to your SAP system release 4.6c (and higher), as a user with administrative permissions.
2. In the transaction box, enter /nsm59. The Display and Maintain RFC Destinations window opens.
3. Select the TCP/IP Connections folder, then click Create. The RFC Destination window opens.
4. Specify the DM Server destination settings.

<table>
<thead>
<tr>
<th>DM Server destination settings</th>
<th>RFC Destination</th>
<th>Connection Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A name for the RFC destination, such as STRSOMS.</td>
<td>Select T. Enter a description for the connection type, such as TCP/IP Connection.</td>
<td>A description for the RFC destination. This destination establishes a connection to the StreamServe SAP Delivery Manager RFC Server.</td>
<td></td>
</tr>
</tbody>
</table>

5. Click Save. The RFC Destination screen shows the new RFC destination.
6. Click Registered Server Program.
7. In the Program ID box, enter the program Id for this RFC destination, such as strsoms. This program Id must be a unique Id for the SAP gateway you are using, and must match the Id configured in the saprfc.ini file located in the Delivery Manager working directory, STRSOMS.
8. Click Save.
Configuring the DM Server and Client integration

Configuring the SAP system for XOM
Configuring the DM Command integration

The DM Command level of integration incorporates the Command Line interface.

Note: You only need to configure the DM Command integration, if you are using the Command Line interface.

Required activities
1  Configuring a Real Output Management System (ROMS) on page 21
2  Configuring a Logical Output Management System (LOMS) on page 22
3  Configuring an output device for the Delivery Manager on page 32

Configuring a Real Output Management System (ROMS)

A Real Output Management System (ROMS) is a definition that specifies the characteristics of an external Output Management System (OMS). A ROMS definition is needed to integrate the SAP spool system into the external OMS.

To create a Real Output Management System (ROMS)
1  Log on to your SAP system.
2  In the transaction box, enter /nspad. The Spool Administration window opens.
3  Click Extended admin and Output management systems.
4  Click Real output management systems. The List of Real Output Management Systems window opens.
5  Click Change
6  Click Create.

The Create Real Output Management System window opens.
7  In the Real OMS box, enter a name, for example RSTRS.
8  In the Description box, enter a description.
9  Specify the ROMS settings for the Command Line interface.

<table>
<thead>
<tr>
<th>ROMS settings for the Command Line interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasking</td>
</tr>
</tbody>
</table>
Configuring the DM Command integration

Configuring the SAP system for XOM

### Configuring a Logical Output Management System (LOMS)

You must define at least one Logical Output Management System (LOMS) that refers to the Real Output Management System (ROMS). Because each LOMS can have a different set of commands, you can create several LOMSs to use with different printer types.

#### Prerequisites

You must define a ROMS before you can define a LOMS. See *Configuring a Real Output Management System (ROMS)* on page 21.

#### To create a Logical Output Management System (LOMS)

1. Log on to your SAP system.
2. In the transaction box, enter `/nspad`. The Spool Administration window opens.
3. Click *Extended admin* and *Output management systems*.
5. Click *Change*.
6. Click *Create*.

The Create Logical Output Management System window opens.

### ROMS settings for the Command Line interface

<table>
<thead>
<tr>
<th>Job status</th>
<th>Select Query – to enable the <code>strsdmjquery</code> application.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deletable – to enable the <code>strsdmjcancel</code> application.</td>
</tr>
<tr>
<td></td>
<td>Polling – to enable the <code>strsdmpoll</code> application.</td>
</tr>
</tbody>
</table>

| Device status    | Select Queue query to enable the `strsdmdquery` application. |

10 Click *Save* to save the configuration.

**Note:** To use the `strsdmjquery`, `strsdmdquery`, and `strsdmjcancel` applications, you must enable them in the LOMS configuration.

---

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Configuring the DM Command integration
Configuring the SAP system for XOM

7 In the Logical OMS box, enter a name, for example LSTRS.
8 In the Description box, enter a description.
9 Select the ROMS that the LOMS will refer to. You created this ROMS in Configuring a Real Output Management System (ROMS) on page 21.
10 When defining a LOMS to be used with the Command Line interface, you must create a command set. See Defining command sets for a LOMS for the Command Line interface on page 23.
11 Click Save to save the configuration.

Defining command sets for a LOMS for the Command Line interface

If you are defining a LOMS to be used with the Command Line interface, you must create a command set for each operating system that the LOMS is running on.

When an output request is sent to a LOMS, the commands defined in the command set are used to, for example, submit a job to the Delivery Manager or query the status of the job.

Note: All commands are case sensitive. It is important to enter them exactly as specified above.

---

Escaping for special characters is handled differently in Windows and UNIX:

Windows — The character is escaped with the \ character. All \ characters are escaped if they occur before a ‘‘ character. The % character is translated into a # character. Arguments with special characters or blanks must be enclosed in double quotes.

UNIX — The /, ‘’, ‘‘ and $ characters are escaped with the / character. Parameters containing special characters or blanks must be enclosed in double quotes.

---

To define a command set for a LOMS

1 In your SAP system, select the LOMS for which you want to define a command set.
2 Click Change
3 Click Commands.
Double-click the operating system for which you want to define the OMS. If your operating system is not listed, click **Create** and enter the operating system name.

In the Command path, enter the path of the Delivery Manager command binaries, for example:

**Windows:** `C:\dm_binaries\`

**Note:** Trailing backslash.

**UNIX:** `dm_binaries/`

**Note:** Trailing frontslash.

On the Submit row, enter the command for the Command Line interface for your operating system.

**Submit command for the Command Line interface**

<table>
<thead>
<tr>
<th></th>
<th>Windows</th>
<th>UNIX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows</strong></td>
<td><code>strsdmsubmit \sapservnt02\strsoms\ &amp;EI &amp;EG &amp;P &amp;f &amp;Es &amp;S</code></td>
<td><code>start strsdmsubmit sapservnt02/strsoms/ &amp;EI &amp;EG &amp;P &amp;f &amp;Es &amp;S</code></td>
</tr>
<tr>
<td><strong>UNIX</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the Polling row, enter the command for your operating system.

**Polling command**

<table>
<thead>
<tr>
<th></th>
<th>Windows</th>
<th>UNIX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows</strong></td>
<td><code>strsdmdpoll \sapservnt02\strsoms\ &amp;P &amp;EG &amp;EL</code></td>
<td><code>start strsdmdpoll sapservnt02/strsoms/ &amp;P &amp;EG &amp;EL</code></td>
</tr>
<tr>
<td><strong>UNIX</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you use the device query application, enter the command for your operating system on the Queue query row:

**Queue query command**

<table>
<thead>
<tr>
<th></th>
<th>Windows</th>
<th>UNIX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows</strong></td>
<td><code>strsdmdquery \sapservnt02\strsoms\ &amp;P</code></td>
<td><code>start strsdmdquery sapservnt02/strsoms/ &amp;P</code></td>
</tr>
<tr>
<td><strong>UNIX</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If you use the job cancel application, enter the command for your operating system on the Job cancel row:

**Job cancel command**

<table>
<thead>
<tr>
<th></th>
<th>Windows</th>
<th>UNIX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows</strong></td>
<td><code>strsdmjcancel \sapservnt02\strsoms\ &amp;EL</code></td>
<td><code>start strsdmjcancel sapservnt02/strsoms/ &amp;EL</code></td>
</tr>
<tr>
<td><strong>UNIX</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10 On the Job query row, enter the command for your operating system:

<table>
<thead>
<tr>
<th>Job query command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows</strong> strsdmjquery \sapservnt02\strsoms\ &amp;EL</td>
<td>Internal spool Id. Required when you use RFC callback. The return parameter for identifying an SAP output request.</td>
</tr>
<tr>
<td><strong>UNIX</strong> start strsdmjquery sapservnt02/strsoms/ &amp;EL</td>
<td></td>
</tr>
</tbody>
</table>

11 Click **Save** to save the configuration.

12 You can now configure the output device for the Delivery Manager, see *Configuring an output device for the Delivery Manager* on page 32.

**Delivery Manager command options**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;EI</td>
<td>SAP spool Id</td>
<td>Internal spool Id. Required when you use RFC callback. The return parameter for identifying an SAP output request.</td>
</tr>
<tr>
<td>&amp;EG</td>
<td>Reply message group</td>
<td>Reply message group Id. Required to group the returned information.</td>
</tr>
<tr>
<td>&amp;Es</td>
<td>System Id</td>
<td>Id of the calling SAP system.</td>
</tr>
<tr>
<td>&amp;P</td>
<td>Destination</td>
<td>Name of the output device including the path.</td>
</tr>
<tr>
<td>&amp;f</td>
<td>Document</td>
<td>Name of the file containing the print data.</td>
</tr>
<tr>
<td>&amp;S</td>
<td>Device name</td>
<td>The device name defined in the SAP system.</td>
</tr>
</tbody>
</table>
Configuring the DM Command and Client integration

The DM Command and Client level of integration incorporates the Command Line interface and DM Client interface.

Note: You only need to configure the DM Command and Client integration, if you are using mixed interfaces — the Command Line interface and DM Client interface.

Required activities

• Configuring a Real Output Management System (ROMS) on page 26
• Configuring a Logical Output Management System (LOMS) on page 28
• Configuring an output device for the Delivery Manager on page 32

Configuring a Real Output Management System (ROMS)

A Real Output Management System (ROMS) is a definition that specifies the characteristics of an external Output Management System (OMS). A ROMS definition is needed to integrate the SAP spool system into the external OMS.

To create a Real Output Management System (ROMS)

1 Log on to your SAP system.
2 In the transaction box, enter /nspad. The Spool Administration window opens.
3 Click Extended admin and Output management systems.
4 Click Real output management systems. The List of Real Output Management Systems window opens.
5 Click Change
6 Click Create.

The Create Real Output Management System window opens.
7 In the Real OMS box, enter a name, for example RSTRS.
8 In the Description box, enter a description.

9 Specify the ROMS settings for the Command Line interface.

<table>
<thead>
<tr>
<th>ROMS settings for the Command Line interface</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tasking</strong></td>
<td><strong>Select Command Line.</strong></td>
</tr>
<tr>
<td><strong>Job status</strong></td>
<td>The status set for the DM Client. Select <strong>Callback</strong>.</td>
</tr>
<tr>
<td><strong>Device status</strong></td>
<td>The status set for the DM Client. Select <strong>Callback</strong>. (If you are using the <code>strsdmdquery</code> application).</td>
</tr>
<tr>
<td><strong>Initialization Instance</strong></td>
<td>If you use more than one SAP Server instance, browse to instance that starts the DM Client. Leave blank if you do not want SAP to start the DM Client, for example if you have a scheduled job that checks if the DM Client is running and starts it if it is not running.</td>
</tr>
<tr>
<td><strong>Initialization Command</strong></td>
<td>The path to the DM start command.</td>
</tr>
<tr>
<td><strong>Reconfiguration request</strong></td>
<td>The interval (in seconds) in which the DM Client checks if any changes have been made on the ROMS. For example 120.</td>
</tr>
</tbody>
</table>

10 Click **Save** to save the configuration.
Configuring a Logical Output Management System (LOMS)

You must define at least one Logical Output Management System (LOMS) that refers to the Real Output Management System (ROMS). Because each LOMS can have a different set of commands, you can create several LOMSs to use with different printer types.

Prerequisites
You must define a ROMS before you can define a LOMS. See Configuring a Real Output Management System (ROMS) on page 26.

To create a Logical Output Management System (LOMS)
1 Log on to your SAP system.
2 In the transaction box, enter /nspad. The Spool Administration window opens.
3 Click Extended admin and Output management systems.
4 Click Logical output mgmt systems. The List of Logical Output Management Systems window opens.
5 Click Change.
6 Click Create.

The Create Logical Output Management System window opens.
7 In the Logical OMS box, enter a name, for example LSTRS.
8 In the Description box, enter a description.
9 Select the ROMS that the LOMS will refer to. You created this ROMS in Configuring a Real Output Management System (ROMS) on page 26.
10 Specify the LOMS settings for the DM Client interface.

<table>
<thead>
<tr>
<th>LOMS settings for the DM Client interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs</td>
</tr>
</tbody>
</table>
When defining a LOMS to be used with the Command Line interface, you must create a command set. See Defining command set for a LOMS for the Command Line and Client on page 29.

Click **Save** to save the configuration.

**Defining command set for a LOMS for the Command Line and Client**

If you are defining a LOMS to be used with the Command Line interface, you must create a command set for each operating system the LOMS is running on.

When an output request is sent to a LOMS, the commands defined in the command set are used to, for example, submit a job to the Delivery Manager or query the status of the job.

**Note:** All commands are case sensitive and it is important to enter them exactly as specified above.

**Escaping for special characters** is handled differently in Windows and UNIX:

**Windows** — The ‘‘ character is escaped with the \ character. All \ characters are escaped if they occur before a ‘‘ character. The % character is translated into a # character. Arguments with special characters or blanks must be enclosed in double quotes.

**UNIX** — The /, ‘, ‘‘ and $ characters are escaped with the / character. Parameters containing special characters or blanks must be enclosed in double quotes.

---

**To define a command set for a LOMS**

1 In your SAP system, select the LOMS for which you want to define a command set.

2 Click **Change**

3 Click **Commands**.
4 Double-click the operating system for which you want to define the OMS. If your operating system is not listed, click Create and enter the operating system name.

5 In the Command path, enter the path of the Delivery Manager command binaries, for example:
   - Windows: C:\dm_binaries
   - UNIX: dm_binaries/

6 On the Submit row, enter submit command with parameters as below. Not all parameters are required if you do not want the submit the command to start the DM Client.

<table>
<thead>
<tr>
<th>Submit command for the DM Client interface</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows</strong></td>
</tr>
<tr>
<td>strdsmsubmit \sapservnt02\strsoms\ &amp;EI &amp;EG &amp;S &amp;p &amp;f &amp;Es &amp;S &amp;P &amp;Er &amp;ET &amp;EA</td>
</tr>
<tr>
<td><strong>UNIX</strong></td>
</tr>
<tr>
<td>start strdsmsubmit sapservnt02/strsoms/ &amp;EI &amp;EG &amp;f &amp;Es &amp;S &amp;P &amp;Er &amp;ET &amp;EA</td>
</tr>
</tbody>
</table>

7 Click Save to save the configuration.

8 You can now configure the output device for the Delivery Manager, see Configuring an output device for the Delivery Manager on page 32.

### Delivery Manager command options

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;EI</td>
<td>SAP spool Id</td>
<td>Internal spool Id. Required when you use RFC callback. The return parameter for identifying an SAP output request.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Attribute</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>&amp;EG</td>
<td>Reply message group</td>
<td>Reply message group Id. Required to group the returned information.</td>
</tr>
<tr>
<td>&amp;f</td>
<td>Document</td>
<td>File name containing the print data.</td>
</tr>
<tr>
<td>&amp;Es</td>
<td>System Id</td>
<td>Id of the calling SAP system.</td>
</tr>
<tr>
<td>&amp;S</td>
<td>Device name</td>
<td>The device name defined in the SAP system.</td>
</tr>
<tr>
<td>&amp;ES</td>
<td>SAP instance</td>
<td>SAP instance name &lt;host_name&gt;<em>&lt;system_Id&gt;</em>&lt;system_number&gt;</td>
</tr>
<tr>
<td>&amp;Er</td>
<td>ROMS</td>
<td>Name of the Real OMS</td>
</tr>
<tr>
<td>&amp;P</td>
<td>Destination</td>
<td>Name of the device including the path.</td>
</tr>
<tr>
<td>&amp;ET</td>
<td>Interval</td>
<td>Maximum interval for collecting events before callback is initiated by the DM Client. Should fewer events occur than the number specified in &amp;EA, the DM Client reports events at this interval.</td>
</tr>
<tr>
<td>&amp;EA</td>
<td>Number</td>
<td>Number of events to collect before callback is initiated by the DM Client.</td>
</tr>
</tbody>
</table>
Configuring an output device for the Delivery Manager

You can create a new output device, or modify an existing output device for use with the Delivery Manager.

**To configure an output device for the Delivery Manager**

1. Log on to your SAP system.
2. In the transaction box, enter `/nspad`. The Spool Administration view opens.
3. Click **Output devices**. The List of Output Devices window opens.
4. Click **Change**.
5. Click **Create**. The Create Output Device window opens.

You can click **Create using template** to create an output device based on an existing output device configuration.

6. Specify the output device settings.

<table>
<thead>
<tr>
<th>Output device settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output device</strong></td>
</tr>
<tr>
<td><strong>Short name</strong></td>
</tr>
</tbody>
</table>
7 Select the **DeviceAttributes** tab, and specify the device settings.

<table>
<thead>
<tr>
<th>Device settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Device Type</strong></td>
</tr>
<tr>
<td><strong>Device Class</strong></td>
</tr>
</tbody>
</table>

8 Select the **Access Method** tab, and specify the host spool settings.

<table>
<thead>
<tr>
<th>Host spool settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Host Spool Access Method</strong></td>
</tr>
</tbody>
</table>
Click Save to save the device definition. The device is now ready to be used with StreamServe and the Delivery Manager.

**Note:** Make sure that the printer has been configured with a device type that suits your StreamServe runtime configuration.

### Exporting an OMS definition

If you want to use a modified version of the Delivery Manager configuration in another SAP system, you will need to export the OMS definition from the SAP system.

The exported configuration can be imported into a production system. The configuration is a Transport object and can therefore be transported using the standard SAP transport distribution.
To export an OMS definition

1. Log on to the SAP system from which the OMS definition is to be exported.
2. In the transaction box, enter /nse38. The ABAP Editor window opens.
3. In the Program box, enter RSPOXOMS.
4. Click Execute. The Saving and Loading of Definitions window opens.
5. In the Export/import file name box, enter the path to the configuration file that you want to export.
6. Select Server or Frontend computer depending on where you want to export the configuration file.
7. Select Export, Execute export, and Generate log.
8. Enter the LOMS and/or ROMS that you want to export.
9. Click Execute.

Note: The log file is displayed, but there is no indication the OMS definition was successfully exported. Check that the OMS definition exists in the path you specified.
Configuring an output device for the Delivery Manager
Configuring the SAP system for XOM
Configuring StreamServe for the XOM interface

The SAP XOM interface allows for three levels of integration, and the Delivery Manager supports all three levels. Using the Delivery Manager, you can choose your preferred level of integration — DM Server and DM Client, Command Line and, or Command Line together with the DM Client (mixed mode).

**Required activities**

For a pure RFC integration (DM Server and DM Client):
- [Configuring the DM Server](#) on page 38
- [Configuring the DM Client](#) on page 49

For a mixed Command Line and RFC integration:
- [Configuring the DM Client](#) on page 49
- [Configuring the DM Command - Submit](#) on page 57

For a Command Line integration:
- [Configuring the DM Command - Submit](#) on page 57
- [Configuring the DM Command - Poll](#) on page 62
Configuring the DM Server

You use the Remote Function Call (RFC) Server interface to transfer output requests from SAP to the Output Management System (OMS).

In addition to the DM Client functionality, the DM Server interface enables you to work in a distributed environment. While exchanging job data, you avoid accessing local file systems which can be protected by firewalls or be running under different operating systems.

The DM Server interface uses the DM Sender to send the job data to the DM Server.

Limitations
The DM Server is only available for SAP release 4.6c and onwards.

Required activities
- Configuring the DM Server as a Control Center service on page 39
- Editing the strsdmstart configuration file on page 40
- Editing the saprfc.ini file on page 43
- Starting the DM Server on page 44
- Starting the DM Sender on page 46

Transferring an output request from SAP to an OMS

When the SAP spooler submits a job using the DM Server, the same tasks are performed by the server as the strsdmsubmit application used in the Command Line interface. The difference is that the SAP system uses RFC technology to pass the job data to the external OMS. This allows the OMS handling to be distributed to a separate server which does not need a common file system.

This section describes what happens when you print, for example a Purchase Order, using a device configured for the XOM RFC interface.

You use non-direct data to transfer an output file using the DM Server. An output request is sent from SAP to the DM Server with information about the file name and where to find it in the SAP system.

Transferring an output request from SAP to an OMS in non-direct data mode

1. The output request is sent from the SAP spool system via an RFC connection to the external application.
2. The DM Server receives the job handling request, which contains configuration information.
3. The DM Server calls the DM Sender via a port connection.
4. The DM Sender reads the spool data file.
The DM Sender sends the data file to the DM Server.

The DM Server writes information about the job into the `strsdmjobdb` database.

The DM Server sends the job data into the destination directory specified in the configuration file. The output is ready for further processing, and distribution by the OMS to its final destination, such as printer, fax or email.

Configuring the DM Server as a Control Center service

You can configure the DM Server as a Control Center service.

**Note:** You must activate 4.x Services in Control Center. See the *Control Center* documentation.

**To configure the DM Server as a Control Center service**

1. Start the Control Center.
2. Right-click the local object or the remote host, and select **New configuration**. The Choose Object dialog box opens showing the installed StreamServe configurations.
3. Select **StreamServe SAP Delivery Manager Configuration** and click **OK**. The Service Configuration wizard opens.
4. Specify the DM Server Service Configuration settings.

<table>
<thead>
<tr>
<th>DM Server Service Configuration settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Logical name</strong></td>
</tr>
<tr>
<td><strong>Working Directory</strong></td>
</tr>
<tr>
<td><strong>Mode</strong></td>
</tr>
<tr>
<td><strong>Executable directory</strong></td>
</tr>
</tbody>
</table>

5. Click **Next**. The Delivery Manager Service Startup Configuration dialog box opens.
6. Specify the Service Startup Configuration settings.

<table>
<thead>
<tr>
<th>Service Startup Configuration settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Startup type</strong></td>
</tr>
</tbody>
</table>
Configuring the DM Server

Configuring StreamServe for the XOM interface

Service Startup Configuration settings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>System account</td>
<td>Runs the service under the local system account. (Default)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select Allow the service to interact with desktop to enable the service to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>send messages to your desktop.</td>
<td></td>
</tr>
<tr>
<td>This account</td>
<td>Assigns a logon user account to this StreamServe service. For example:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>domain_name\user_Id</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>computer\user_Id</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enter the user ID and password for the user account.</td>
<td></td>
</tr>
</tbody>
</table>

7. Click Finish. This completes the configuration for the DM Server as a service in the Control Center.

Editing the strsdmstart configuration file

To edit the strsdmstart configuration file

1. In the Control Center, select the root object for the DM Server and Client.
2. Right-click the Delivery Manager configuration file (strsdmstart.cfg), and select Edit.
3. Edit the common and server sections of the configuration file to suit your installation, see below.

<table>
<thead>
<tr>
<th>Common parameters section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>joblistfile</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>devicelistfile</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
### Common parameters section

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>readjobstatus</td>
<td>Path to the notification directory where job status messages are sent. This path is relative to the Delivery Manager working directory (<code>\stroms</code>).</td>
<td>notify</td>
</tr>
<tr>
<td>readdevicestatus</td>
<td>Path to the device folder where device status messages are sent. This path is relative to the Delivery Manager working directory (<code>\stroms</code>).</td>
<td>device</td>
</tr>
<tr>
<td>target.&lt;system_Id&gt;</td>
<td>Path to the destination directory where the file will be copied to. To find the system Id, see <em>Determinating the system Id</em> on page 43.</td>
<td>spool</td>
</tr>
<tr>
<td>maxjobstatuswait</td>
<td>Number of minutes to wait for job status until the job is considered lost.</td>
<td>1000</td>
</tr>
<tr>
<td>loglevel</td>
<td>A value from 0 to 4 where 4 gives the most detailed information. For production, use log level 0.</td>
<td>1</td>
</tr>
<tr>
<td>logmessagefile</td>
<td>Path to the message file.</td>
<td><code>strsdm_logmessage.txt</code></td>
</tr>
<tr>
<td>loglanguage</td>
<td>Log text language. Only value 1 is available (English).</td>
<td>1</td>
</tr>
</tbody>
</table>

### Server parameters section

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>count</td>
<td>Number of SAP instances that will use the DM Server.</td>
<td>1</td>
</tr>
<tr>
<td>[serverparameterN]</td>
<td>Number identifying each DM Server. You should define one for each SAP instance.</td>
<td>1</td>
</tr>
<tr>
<td>destination</td>
<td>Destination name. The name should match the <em>Dest</em> value specified in the <code>saprfc.ini</code> file. See <em>Editing the saprfc.ini file</em> on page 43.</td>
<td><code>R30SERVER</code></td>
</tr>
</tbody>
</table>
**Server parameters section**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>startclient</td>
<td>Specifies if the DM Client should be started by the DM Server. By default, the client is started by the DM server.</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> the <code>startclient=no</code> option can only be used on Windows.</td>
<td></td>
</tr>
<tr>
<td>roms</td>
<td>The ROMS configured to use the DM Server.</td>
<td>RSTRS</td>
</tr>
<tr>
<td>restartafterfailure</td>
<td>The interval (in minutes) which the DM Server will wait before attempting to restart after losing connection to the SAP system. The number of times the DM Server will attempt to restart is specified by the <code>connectretry</code> value.</td>
<td>1</td>
</tr>
<tr>
<td>connectretry</td>
<td>The number of times the DM Server will attempt to restart after losing connection to the SAP system. The interval which the DM Server will wait before attempting to restart is specified by the <code>restartafterfailure</code> value.</td>
<td>30</td>
</tr>
<tr>
<td>ignoregatewaycancel</td>
<td>If set to <code>yes</code>, the DM Server will ignore the cancel signal from the SAP system, and continue to attempt to establish a connection according to the <code>connectretry</code> and <code>restartafterfailure</code> values.</td>
<td>no</td>
</tr>
<tr>
<td>sender-port</td>
<td>The port through which the DM Server sends the request to the DM Sender in non-data direct mode, and the port the DM Sender listens to for requests from the DM Server.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Do not use a port number lower than 1024.</td>
<td></td>
</tr>
</tbody>
</table>
Determining the system Id

In the strsdmstart.cfg configuration file, you must specify the SAP system name to identify the source and target SAP systems. You can determine the SAP system name from within your SAP system.

**To determine the SAP system name**
- In your SAP system, select System > Status. The SAP system name is displayed in the Database data area.
  
  You enter this value in the source.<system_id> and the target.<system_id> parameters in the strsdmstart.cfg file.

  See Editing the strsdmstart configuration file on page 40.

Editing the saprfc.ini file

The RFC library used by the DM Server and Client reads the saprfc.ini file to determine the connection type and all RFC-specific parameters needed to connect to an SAP system. The RFC library also reads the file to register an DM Server program at an SAP gateway, and to receive RFC calls from any SAP system.

The saprfc.ini file must be located in the Delivery Manager working directory.

**To edit the saprfc.ini file**

1. In the Control Center, select the root object for the DM Server and Client.
2. Right-click the SAP RFC configuration file (saprfc.ini), and select Edit.

<table>
<thead>
<tr>
<th>Server parameters section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
</tr>
<tr>
<td>sender-address</td>
</tr>
<tr>
<td>sender-timeout</td>
</tr>
<tr>
<td>sender-retry</td>
</tr>
</tbody>
</table>
3  Edit the configuration file to suit your installation, see below.

<table>
<thead>
<tr>
<th>saprfc.ini file parameters</th>
<th>Parameter</th>
<th>Description</th>
<th>Example OMS value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEST</td>
<td>SAP connection identifier. The name should match the destination value specified in the Server section of the strsdmstart configuration file. See Editing the strsdmstart configuration file on page 40.</td>
<td>R30SERVER</td>
</tr>
<tr>
<td></td>
<td>TYPE</td>
<td>Destination type. R is for DM Server programs, or for a client program working with another external program, such as an DM Server program which is already registered at an SAP gateway.</td>
<td>R</td>
</tr>
<tr>
<td></td>
<td>PROGID</td>
<td>Program Id which must be unique for the SAP gateway, and must match the Id configured for the RFC destination using the transaction code /nsm59.</td>
<td>STRSOMS</td>
</tr>
<tr>
<td></td>
<td>GWHOST</td>
<td>Host name where the SAP gateway is running. Typically a gateway runs on every application server.</td>
<td>sapservnt10</td>
</tr>
<tr>
<td></td>
<td>GWSERV</td>
<td>SAP gateway name. The name consists of the gateway name and the system number.</td>
<td>sapgw00</td>
</tr>
<tr>
<td></td>
<td>RFC_TRACE</td>
<td>Switches the trace function on (1) or off (0). The trace function is used when there are problems establishing a connection, or if the connection terminates unexpectedly. The trace file is usually created in the Delivery Manager working directory.</td>
<td>0</td>
</tr>
</tbody>
</table>

**Starting the DM Server**

When you have completed the configuration of the DM Server, you can start the DM Server.

**To start the DM Server from the Control Center**

1  Start the Control Center.

2  Right-click the DM Server object you want to start, and select **Start**.
When the DM Server starts, the server icon is green. If the server icon is red, the DM Server did not start, indicating that the DM Server is not correctly configured. View the log file for more information.

**To start the DM Server in UNIX**

1. From the Delivery Manager working directory (`/strsoms`), enter the following command:

   ```bash
   ./start strsdmservice 1
   ```

   Where 1 is the server parameter that identifies the service. See *Server parameters section* on page 41.

2. Verify that the DM Server has started, see *The DM Server log file* on page 45.

3. Test the DM Server connection, see *Testing the DM Server connection* on page 46.

**The DM Server log file**

After starting the DM Server, the DM server log file (`strsdmserver.log`) is scanned, and the result is shown in the Log tab in the Output window. If log scanning is enabled, all on-going activities for the DM Server service are shown in the Output window.

Before testing the DM Server connection, you need to verify that the DM Server started note is shown in the log window, and that the DM Server icon is green. If the icon is red after starting the DM Server, the Server has not been correctly configured. View the log file and correct the problem, before attempting to restart the DM Server.

The details shown in the log window vary according to the log level specified for the DM Server. For example:

- 4 is the highest level giving the most detailed log information and is generally used during testing.
- 0 is the lowest level and is suitable for production.

**To clear the log window**

- In the Control Center browser, right-click the DM Server and select Log > Clear window, or Clear output window. The current log file in the Log tab is cleared. New logging information will be continuously shown.

**To delete the DM Server log file**

1. In the Control Center, stop the `strsdmservice`.

2. In the Control Center browser, right-click the service and select Log > Delete Log File. The DM Server log file is deleted.
Testing the DM Server connection

Before sending any data from the SAP system to the DM Server, you should test the DM Server connection with the SAP system.

To test the DM Server connection to the SAP system

1. In the Control Center, start the DM Server. See Starting the DM Server on page 44.
2. In the SAP system, use transaction code /nsm59 to locate the RFC destination you have created.
3. Click Test Connection to verify the connection. If no error messages occur, the configuration is correctly defined.

Error handling

The following error handling is performed during the submit phase:

1. The DM Server checks whether the correct parameters are passed correctly from the SAP system or not. If not, an error is returned to the SAP system.
2. Before the job data is written to the destination, the DM Server checks if the destination exists. If not, an error is returned to the SAP system.
3. If an error occurs while the DM Server writes the job data into the destination directory at the OMS, an error is returned to the SAP system.

Starting the DM Sender

The DM Sender service runs local to the SAP spool processor. When it receives a request from the DM Server, the DM Sender checks the source.<system_id> parameter in strsdmstart.cfg to know where to find the SAP spool job file and sends it to the DM Server.

Since the DM Sender resides on another physical server than the DM Server, you must register and start the DM Sender manually.

Starting the DM Sender in Windows

You must create a DM Sender service which can be scheduled to be started and stopped from the Windows Services manager.

Prerequisites

Microsoft .NET Framework 2.0 must be installed on the SAP machine where you register and run the DM Sender.

To register the DM Sender

1. Open a command prompt and browse to <StreamServe installation>\.
2. Enter the following command:
Configuring StreamServe for the XOM interface

**strsdmsenderregtool** -reg <senderid> <serverid> <wd> <path_to_exe>

where:

<senderid> The DM Sender ID. You can use any integer.
<serverid> The Server ID of the DM Server that the DM Sender will connect to.
<wd> The Delivery Manager working directory where the strsdmstart.cfg file is located on the physical server hosting the DM Sender.
<path_to_exe> The absolute path to strsdmsender.exe

The default display name of the service is:
StreamServe DM Sender <senderid>

For example:
StreamServe DM Sender 1

You can check that the DM Sender is registered in Control Panel > Administrative Tools > Services

**To start the DM Sender**
Open a command prompt and enter the following:
strsdmsenderregtool -start <senderid>

**To stop the DM Sender**
Open a command prompt and enter the following:
strsdmsenderregtool -stop <senderid>

**To unregister the DM Sender**
Open a command prompt and enter the following:
strsdmsenderregtool -unreg <senderid>

**Starting the DM Sender in UNIX**
Open a command prompt and enter the following:
> ./start strsdmsender -wd <wd> -serverid <server_id>

where:

<wd> The Delivery Manager working directory where the strsdmstart.cfg file is located on the physical server hosting the DM Sender.
<server_id> The Server ID of the DM Server that the DM Sender will connect to.
Configuring StreamServe for the XOM interface

**Note:** The `strsdm_logmessages.txt` file must be located in the same folder as the `strsdmsender` application.
Configuring the DM Client

You use the Remote Function Call (RFC) Client interface to enable active reporting of events back to the SAP system. This avoids polling for recurrent status information, which can be very resource demanding.

The DM Client interface provides the same functionality as the `strsdmdpoll` application, that is, it can send job and device status information back to the SAP system. You can display information about jobs in your SAP system using the SAP Output Controller, transaction code `/nsp02`.

Using the DM Client, you can avoid using SAP to poll for status information in the OMS, which can be very resource demanding and recurrent. Instead, the DM Client actively reports status to the SAP system over the RFC interface. The DM Client collects several events and sends them to the SAP system at a single callback in order to reduce the load on the system.

DM Client actions

The DM Client performs five actions to report status back to the SAP system:

1. Establishes a connection to the SAP system.
2. Reads the job notification file from the job notification directory.
3. Updates the status in the SAP system.
4. Removes the job notification file from the job notification folder and the job from the job database.
5. Reads the device notification file from the device notification directory.
6. Updates the status in the SAP system.
7. Removes the device notification file from the device notification folder.
8. Updates the device database file with the reported state.
9. The DM Client repeats steps 1 to 8, until a stop signal is received.
10. Closes the connection.

Required activities

- Transfer of status information from an OMS to a SAP system on page 49
- Editing the `strsdmstart` configuration file on page 50
- Editing the `saprfc.ini` file on page 53

Transfer of status information from an OMS to a SAP system

The DM Client actively sends status information to the SAP system.

This section describes what happens when the DM Client service sends status information to the SAP system.
Configuring the DM Client
Configuring StreamServe for the XOM interface

An external OMS transfers status information to a SAP system

1. The DM Client reads the `strsdmstart.cfg` file to determine where information about the job and the device could be found, see *Transfer of status information from an OMS to a SAP system* on page 49.

2. The DM Client connects to the SAP system using connection parameters specified in the `saprfc.ini` file. This file must be located in the Delivery Manager working directory. See *Editing the saprfc.ini file* on page 53.

3. The RFC Client checks the notification folder for the job and if the job exists in the `strsdmjobdb` database. See *The strsdmjobdb database file* on page 73.

   **Note:** The SAP spool Id is the key that links the outgoing job with the correct status information.

   **Note:** The Delivery Manager cannot retrieve job or device status by itself. The status information is provided through a spool management system, such as the StreamServe Output Center.

4. The notification file is removed from the notification folder.

5. The DM Client passes back the status to the SAP system. When you use SAP Output Controller (transaction code `/nsp02`), the status information shown has been sent from the external OMS to the SAP system.

6. The job notification file is removed from the notification folder.

7. The DM Client checks the notification folder for the device and if the device exists in the `strsdmdevicedb` database. See *The strsdmdevicedb database file* on page 75.

   **Note:** The SAP spool Id is the key that links the outgoing job with the correct status information.

   **Note:** The Delivery Manager cannot retrieve job or device status by itself. The status information is provided through a spool management system, such as the StreamServe Output Center.

8. The device status is reported back to the SAP system.

9. The device notification file is deleted and the latest state is saved in the device status database.

Editing the `strsdmstart` configuration file

**To edit the `strsdmstart` configuration file**

1. In the Control Center, select the root object for the DM Server and Client.

2. Right-click the Delivery Manager configuration file (`strsdmstart.cfg`), and select **Edit**.
3 Edit the **common** and **client** sections of the configuration file to suit your installation, see below.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>joblistfile</td>
<td>Path to the database file that stores the list of jobs. This path is relative to the Delivery Manager working directory (\stroms). See <em>The strsdmjobdb database file</em> on page 73.</td>
<td>strsdmjobdb</td>
</tr>
<tr>
<td>readjobstatus</td>
<td>Path to the notification directory where job status messages are sent. This path is relative to the Delivery Manager working directory (\stroms).</td>
<td>notify</td>
</tr>
<tr>
<td>readdevicestatus</td>
<td>Path to the device folder where device status messages are sent. This path is relative to the Delivery Manager working directory (\stroms).</td>
<td>device</td>
</tr>
<tr>
<td>target.&lt;system_Id&gt;</td>
<td>Path to the destination directory where the file will be copied to. To find the system name, see <em>Determining the system Id</em> on page 53.</td>
<td>\sapservnt02\s pool</td>
</tr>
<tr>
<td>maxjobstatuswait</td>
<td>Number of minutes to wait for job status until the job is considered lost.</td>
<td>1000</td>
</tr>
<tr>
<td>maxdevicestatuswait</td>
<td>For use with the strsdmdpoll application: The number of minutes to wait for the device status until the job is considered lost. If no notification for the device status has been returned within this time frame (minutes), the device is considered down. <strong>Note:</strong> Not implemented in this release.</td>
<td>60</td>
</tr>
</tbody>
</table>
Configuring the DM Client

Configuring StreamServe for the XOM interface

### Common parameters section

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>loglevel</td>
<td>A value from 0 to 4 where 4 gives the most detailed information. For production, use log level 0.</td>
<td>1</td>
</tr>
<tr>
<td>logmessagefile</td>
<td>Path to the message file.</td>
<td>strsdm_logmessage.txt</td>
</tr>
<tr>
<td>loglanguage</td>
<td>Log text language. Only value 1 is available (English).</td>
<td>1</td>
</tr>
</tbody>
</table>

### Client parameters section

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>[&lt;host_name&gt;<em>&lt;system_Id&gt;</em>&lt;system_number&gt;]</td>
<td>Host name, system Id and system number.</td>
<td>[sapservnt02_R31_01]</td>
</tr>
<tr>
<td>destination</td>
<td>SAP system Id.</td>
<td>R30CLIENT</td>
</tr>
<tr>
<td>client</td>
<td>SAP client</td>
<td>100</td>
</tr>
<tr>
<td>user</td>
<td>User name</td>
<td>dos01</td>
</tr>
<tr>
<td>password</td>
<td>Must be uppercase and eight characters or less</td>
<td>BIRDIE</td>
</tr>
<tr>
<td>language</td>
<td>Language used when communicating with SAP.</td>
<td>EN</td>
</tr>
<tr>
<td>timeout</td>
<td>Number of minutes the DM Server waits for a response from the DM Client.</td>
<td>10</td>
</tr>
<tr>
<td>connectretry</td>
<td>Number of times the DM Server or DM Command will try to restart the client if no response has been signaled.</td>
<td>30</td>
</tr>
<tr>
<td>backupdestination</td>
<td>A backup destination. If the DM Client fails to connect, the backup destination can be used. The backup destination must be defined in the saprfc.ini file.</td>
<td>R31BACKUP</td>
</tr>
</tbody>
</table>
Configuring the DM Client

Configuring StreamServe for the XOM interface

Determining the system Id

In the \texttt{strsdmstart.cfg} configuration file, you must specify the SAP system name to identify the source and target SAP systems. You can determine the SAP system name from within your SAP system.

\textbf{To determine the SAP system name}

In your SAP system, select \texttt{System > Status}. The SAP system name is displayed in the Database data area.

You enter this value in the \texttt{source.<system Id>} and the \texttt{target.<system Id>} parameters in the \texttt{strsdmstart.cfg} file.

See \textit{Editing the strsdmstart configuration file} on page 50.

Editing the saprfc.ini file

The RFC library used by the DM Server and Client reads the \texttt{saprfc.ini} file to determine the connection type and all RFC-specific parameters needed to connect to an SAP system. The RFC library also reads the file to register an DM Server program at an SAP gateway, and to receive RFC calls from any SAP system.

The \texttt{saprfc.ini} file must be located in the Delivery Manager working directory.

\textbf{To edit the saprfc.ini file}

1. In the Control Center, select the root object for the DM Server and Client.
2. Right-click the SAP RFC configuration file (\texttt{saprfc.ini}), and select \texttt{Edit}.
3. Edit the configuration file to suit your installation, see below.

\begin{center}
\begin{tabular}{|l|l|l|}
\hline
\textbf{Parameter} & \textbf{Description} & \textbf{Example OMS values} \\
\hline
\texttt{waitinterval} & The interval in seconds between scans of the readjobstatus notification directory. \textbf{Note:} This value must not be higher than the Send Period parameter of the LOMS. & 10 \\
\hline
\end{tabular}
\end{center}

\begin{center}
\begin{tabular}{|l|l|}
\hline
\textbf{Client parameters section} & \\
\hline
\textbf{Parameter} & \textbf{Description} \\
\hline
\texttt{waitinterval} & The interval in seconds between scans of the readjobstatus notification directory. \textbf{Note:} This value must not be higher than the Send Period parameter of the LOMS. \\
\hline
\end{tabular}
\end{center}
Starting the DM Client

In most cases, the DM Server starts the DM Client. However, in some cases, for example if you don’t want the client to be started on the same machine as the SAP system, you must start it manually.

To start the DM Client from the Control Center

1. Start the Control Center.
2. Right-click the DM Client service you want to start, and select Start.

   When the DM Client starts, the server icon is green. If the server icon is red, the DM Server did not start, indicating that the DM Server is not correctly configured. View the log file for more information.

To start the DM Client from a command prompt

1. Enter the following command:
   
   \[\text{strsdmclient } <\text{wd> <ROMS> <callback_interval> <callback_max_event_number> <callback_target> <callback_system_id}>\]

   For example:
   
   \[\text{strsdmclient } . \text{RSTRS 30 200 myserver R30}\]

2. Verify that the DM Client has started, see The DM Client log file on page 55.

### sapfc.ini file parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example OMS values</th>
</tr>
</thead>
</table>
| TYPE      | Destination type. Specify:  
\[A — R/3 system (specific application server)\] | \[A\] |
| ASHOST    | Host name | \[sapservnt02\] |
| SYSNR     | System number | \[01\] |
| RFC_TRACE | Switches the trace function on (1) or off (0). The trace function is used when there are problems establishing a connection, or if the connection terminates unexpectedly. The trace file is usually created in the Delivery Manager working directory. | \[0\] |
To start the DM Client in UNIX

1. From the Delivery Manager working directory (/strsoms), enter the following command:
   
   ```bash
   ./start strsdmclient <wd> ROMS <callback_interval> <callback_max_event_number> <callback_target>
   
   For example:
   
   ./start strsdmclient . RSTRS 30 200 R30_myserver
   
   2. Verify that the DM Client has started, see The DM Client log file on page 55.

The DM Client log file

After the DM Client has started, the DM Client log file (strsdmclient.log) is scanned, and the result is shown in the Log tab in the Output window. If log scanning is enabled, all on-going activities for the DM Client application are shown in the Output window. The DM Server controls when the service has started.

The DM Client icon turns green when the DM Server starts the Client — that is when the DM Server receives the first job.

If the DM Client is for some reason shut down, the DM Server will try to restart the Client using the timeout interval value specified in the strsdmstart configuration file.

Log level

The details shown in the log window vary according to the log level specified for the service. For example:

- 4 is the highest level giving the most detailed log information and is generally used during testing.
- 0 is the lowest level and is suitable for production.

To clear the log window

- In the Control Center browser, right-click the DM Server and select Log > Clear window, or Clear output window. The current log file in the Log tab is cleared. New logging information will be continuously shown.

To delete the log file

1. In the Control Center, stop the DM Client.

2. In the Control Center browser, right-click the service and select Log > Delete Log File. The DM Server log file is deleted.
The DM Client lock file

The DM Client lock file (strsdmclient.strsdm.lock) is used to verify whether or not the client is running. A time stamp is written to this file to indicate the time of the last client response. If the DM Client has not responded before the time-out value has been exceeded, and if the startclient parameter in the configuration file is set to yes, the DM Server and DM Command - Submit will restart the DM Client.

Note: The lock file is removed automatically when you stop the client normally. You must stop the DM Server before stopping the DM Client, otherwise the client will be restarted by the server again.

To delete lock files

1. In the Control Center, stop the DM Client.
2. In the Control Center browser, either:
   - right-click the DM Client and select Delete Lock file. The DM Client Lock file is deleted.
   - right-click the DM group, and select Remove All Client Lock Files. The DM Client Lock files are deleted.
Configuring the DM Command - Submit

You use the Command Line interface to transfer output requests from SAP to the OMS, and to cancel jobs sent to the OMS. You can only use the Command Line interface together with the DM Client.

Required activities

- Configuring the DM Command as a Control Center service on page 57
- Editing the strsdmstart configuration file on page 58

Transfer of an output request from SAP to an OMS

You use the Command Line interface to transfer output requests from the SAP spool system to the OMS via the XOM interface. The `strsdmsubmit` application is used.

This section describes what happens when you print, for example, a Purchase order, using a device configured for the XOM command line interface.

Transfer of an output request from a SAP system to an OMS

1. The output request is passed from the SAP spool system via a print command.
2. The print command launches the `strsdmsubmit` application.
3. The `strsdmsubmit` application reads the `strsdmstart.cfg` file. This file tells the application the values of the source and target parameters for the file, see Editing the strsdmstart configuration file on page 58.
4. The `strsdmsubmit` application writes information about the job into a database, `strsdmjobdb`.
5. The Delivery Manager copies the file from the source directory on the SAP system to the destination directory on the OMS.
6. The output is now available on the destination and is ready for further processing and distribution by the OMS to its final destination (for example printer, fax or email).

Configuring the DM Command as a Control Center service

In the StreamServe Control Center, you can configure the DM Command application, and manage log files produced by the DM Command.

Note: The DM Command is started by the SAP system, a user cannot start the DM Command. The SAP system starts the DM Command when a job is submitted using the Command Line interface, or when a request for status information is initiated by the SAP system.
To configure the DM Command as a Control Center service

1. Start the Control Center.
2. Right-click the local object or the remote host, and select **New configuration**. The Choose Object dialog box opens showing the installed StreamServe configurations.
3. Select **StreamServe SAP Delivery Manager Configuration** and click **OK**. The Delivery Manager Configuration wizard opens.
4. Specify the Delivery Manager Configuration settings.

<table>
<thead>
<tr>
<th>DM Command Service Configuration settings</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Logical name</strong></td>
<td>The name of the DM Command and Client service. You can accept the default or enter a new name.</td>
</tr>
<tr>
<td><strong>Working Directory</strong></td>
<td>The directory to be used as the working directory for the Delivery Manager. Click the browse button and select the path to the directory.</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>Select <strong>DM Command and Client (CMD and RFC)</strong>.</td>
</tr>
<tr>
<td><strong>Executable directory</strong></td>
<td>The directory to be used as the executable directory for the Delivery Manager. Click the browse button and select the path to the directory.</td>
</tr>
</tbody>
</table>

5. Click **Finish**. This completes the configuration for the DM Command and Client in the Control Center.

Editing the strsdmstart configuration file

To edit the strsdmstart configuration file

1. In the Control Center, select the root object for the DM Command.
2. Right-click the Delivery Manager configuration file (**strsdmstart.cfg**), and select **Edit**.
3. Edit the **common** and **commandline** sections of the configuration file to suit your installation, see below.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td>joblistfile</td>
<td>Path to the database file that stores the list of jobs. This path is relative to the Delivery Manager working directory (\stroms)</td>
<td>strsdmjobdb</td>
</tr>
<tr>
<td>readjobstatus</td>
<td>Path to the notification directory where job status messages are sent. This path is relative to the Delivery Manager working directory (\stroms).</td>
<td>notify</td>
</tr>
<tr>
<td>readdevicestatus</td>
<td>Path to the device folder where device status messages are sent. This path is relative to the Delivery Manager working directory (\stroms).</td>
<td>device</td>
</tr>
<tr>
<td>target.&lt;system_Id&gt;</td>
<td>Path to the destination directory where the file will be copied to. To find the system name, see Determining the system Id on page 60.</td>
<td>\sapservnt02\strsspool\</td>
</tr>
<tr>
<td>maxjobstatuswait</td>
<td>Number of minutes to wait for job status until the job is considered lost.</td>
<td>1000</td>
</tr>
<tr>
<td>loglevel</td>
<td>A value from 0 to 4 where 4 gives the most detailed information. For production, use log level 0.</td>
<td>1</td>
</tr>
<tr>
<td>logmessagefile</td>
<td>Path to the message file.</td>
<td>strsdm_logmessa ge.txt</td>
</tr>
<tr>
<td>loglanguage</td>
<td>Log text language. Only value 1 is available (English).</td>
<td>1</td>
</tr>
</tbody>
</table>
Determining the source path

In the strsdmstart.cfg configuration file, you must specify the path where SAP drops the file to be processed by the Delivery Manager. You can determine what the source path is from within your SAP system.

To determine the source path within SAP

1. In the transaction box, enter /nspad
2. Select Utilities > Display SAPPARAM. The Important Profile Parameters window opens.
   
   The path on the rspo/to_host/datafile line shows the source path for the Delivery Manager. You enter this value for the source.<system_Id> parameter in the strsdmstart.cfg file.

   See Editing the strsdmstart configuration file on page 58.

Determining the system Id

In the strsdmstart.cfg configuration file, you must specify the SAP system name to identify the source and target SAP systems. You can determine the SAP system name from within your SAP system.

To determine the SAP system name

- In your SAP system, select System > Status. The SAP system name is displayed in the Database data area.
You enter this value in the source. <system_Id> and the target. <system_Id> parameters in the strsdmstart.cfg file.

See Editing the strsdmstart configuration file on page 58.

The DM Submit log file

When the SAP system initiates the Submit command, the DM Submit log (strsdmsubmit.log) file is scanned, and the result is shown in the Log tab in the Output window. If log scanning is enabled, all on-going activities for the DM Submit application are shown in the Output window.

Log level
The details shown in the log window vary according to the log level specified for the service. For example:

- 4 is the highest level giving the most detailed log information and is generally used during testing.
- 0 is the lowest level and is suitable for production.

To clear the log window
In the Control Center browser, right-click the DM Submit and select Log > Clear window, or Clear output window. The current log file in the Log tab is cleared. New logging information will be continuously shown.

To delete the log file
In the Control Center browser, right-click the application and select Log > Delete Log File. The DM Submit log file is deleted.

Error handling
The following error handling is performed during the submit phase:

1. The strsdmsubmit application checks if the correct parameters are passed correctly from SAP, if not an error will be returned to the SAP system.

2. Before the job is passed on to the destination, the strsdmsubmit application checks if the destination exists and if copying the file was successful. If not, an error will be returned to the SAP system.
Configuring the DM Command - Poll

You use the DM Command to poll for status information about output requests sent to the OMS.

Required activities
- Polling for status information on page 62
- Editing the strsdmstart configuration file on page 63

Polling for status information

You use the DM Command to send job status information to the SAP system when an XOM polling command is received. When the output has been processed by the device, the status is returned to the Delivery Manager via a spool management system, which passes the update to the SAP system. These return messages are formalized to give accurate and reliable information about the status in the OMS. The strsmdmpoll application is used.

When using the DM Command, SAP handles the polling. The SAP parameter determines when to ask the external OMS for status about the output. For example, if the parameter interval is set to two minutes, SAP will ask the strsmdmpoll application to retrieve the status for the job and device every second minute. To determine the polling interval value, see Determining the polling interval on page 64.

This section describes what happens when you query for status information on a submitted job using the SAP Output Controller (/nsp02).

Querying for status of output requests

The status information that can be sent to the SAP system varies according to the features of the OMS using the XOM interface. The OMS must be able to generate a line oriented text file with status codes representing the status of the output.

Launch of the strsmdmpoll application

When the SAP system requests the status of a job and/or device, the Delivery Manager launches the strsmdmpoll application, which does the following:

1. The strsmdmpoll application reads the strsdmstart.cfg file to determine where information about the job and device status can be found, see Editing the strsdmstart configuration file on page 63.
2. The strsmdmpoll application checks the notification folder for the job requested by SAP and whether the job exists in the strsdmjobdb database or not. See The strsdmjobdb database file on page 73.
3. The strsmdmpoll application checks the notification folder for the device requested by SAP and whether the device exists in the strsdmdevicedb database or not. See The strsdmdevicedb database file on page 75.
4 The `strsdmpoll` application passes back the status to the SAP system. What you will see when you use SAP Output Controller (transaction code /nsp02) is the status information that has been sent from the external OMS to the SAP system.

5 The `strsdmpoll` application checks the job status code. If it is 04, 05 or 06, the job will be removed from `strsdmjobdb` database and from the notification folder. For a description of the notification file and status codes that can be passed back to the SAP system, see Returning notification to the SAP system on page 76.

## Editing the strsdmstart configuration file

To edit the `strsdmstart` configuration file

1 In the Control Center, select the root object for the DM Command.

2 Right-click the Delivery Manager configuration file (`strsdmstart.cfg`), and select **Edit**.

3 Edit the **common** sections of the configuration file to suit your installation, see below.

### Common parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>joblistfile</code></td>
<td>Path to the database file that stores the list of jobs. This path is relative to the Delivery Manager working directory (<code>\stroms</code>). See The <code>strsdmjobdb</code> database file on page 73.</td>
<td><code>strsdmjobdb</code></td>
</tr>
<tr>
<td><code>readjobstatus</code></td>
<td>Path to the notification directory where job status messages are sent. This path is relative to the Delivery Manager working directory (<code>\stroms</code>).</td>
<td><code>notify</code></td>
</tr>
<tr>
<td><code>readdevicestatus</code></td>
<td>Path to the device folder where device status messages are sent. This path is relative to the Delivery Manager working directory (<code>\stroms</code>).</td>
<td><code>device</code></td>
</tr>
<tr>
<td><code>maxjobstatuswait</code></td>
<td>Number of minutes to wait for job status until the job is considered lost.</td>
<td>1000</td>
</tr>
</tbody>
</table>
Determining the system Id

In the strsdmstart.cfg configuration file, you must specify the SAP system name to identify the source and target SAP systems. You can determine the SAP system name from within your SAP system.

**To determine the SAP system name**

- In your SAP system, select System > Status. The SAP system name is displayed in the Database data area.

  You enter this value in the source.<system_Id> and the target.<system_Id> parameters in the strsdmstart.cfg file.

  See Editing the strsdmstart configuration file on page 63.

Determining the polling interval

You can determine what the polling interval value is set to in the spool administration.

---

### Common parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Example value</th>
</tr>
</thead>
</table>
| maxdevicestatuswait              | Number of minutes to wait for the device status until the job is considered lost.  
If no notification for the device status has been returned within this time frame (minutes), the device is considered down.  
**Note:** Only used with the strsmdmpoll application. | 60            |
| loglevel                         | A value from 0 to 4 where 4 gives the most detailed information. For production, use log level 0. | 1             |
| logmessagefile                   | Path to the message file.                                                   | strsdm_logmessage.txt |
| loglanguage                      | Log text language. Only value 1 is available (English).                     | 1             |
| target.<system_Id>              | Path to the destination directory where the file will be copied to.  
To find the system name, see Determining the system Id on page 64. | \sapserver02\strsspool\ |
To determine the polling interval
1  In the transaction box, enter /nspad.
2  Select Utilities > Display SAPPARAM. The Important Profile Parameters window opens. The value is on the rspo/global_shm/printer_list line.

The DM Dpoll log file

When the SAP system initiates the Poll command, the DM Dpoll log (strsdmdpoll.log) file is scanned, and the result is shown in the Log tab in the Output window. If log scanning is enabled, all on-going activities for the DM Poll application are shown in the Output window.

Note: The SAP system initiates the Poll command for status information.

The details shown in the log window vary according to the log level specified for the service. For example:

- 4 is the highest level giving the most detailed log information and is generally used during testing.
- 0 is the lowest level and is suitable for production.

Error handling

The following error handling is performed during the polling phase:
1  The strsdmdpoll application checks if the correct parameters are passed correctly from SAP, if not an error will be returned to the SAP system.
2  The Notification and Device folder is checked for any job or device notification files. The Job database is updated. Any errors are reported accordingly.
Configuring the DM Command - Job query

Note: The job query command is optional.

You use the DM Command to query for status information about output requests sent to the OMS.

Required activities

• Querying for job status information on page 66
• Editing the strsdmstart configuration file on page 63

Querying for job status information

You use the DM Job query command to send job status information to the SAP system when an XOM job query command is received. When the output has been processed by the OMS, the status is returned to the Delivery Manager via a spool management system, which passes the update to the SAP system. These return messages are formalized to give accurate and reliable information about the status in the OMS. The strsdmjquery application is used when you have selected a list of jobs in the SAP Output Controller and you request an update of the job statuses in the list.

When using the DM Command, SAP handles the querying. The SAP parameter determines when to ask the external OMS for status about the output.

This section describes what happens when you select a list of jobs in the SAP Output Controller (/nsp01) and updates the list.

Querying for status of output requests

Note: The status information that can be sent to the SAP system varies according to the features of the OMS using the XOM interface. The OMS must be able to generate a line oriented text file with status codes representing the status of the output.

Launch of the strsdmjquery application

When the SAP system requests the status of a job, the Delivery Manager launches the strsdmjquery application, which does the following:

1. The strsdmjquery application reads the strsdmstart.cfg file to determine where information about the job status can be found, see Editing the strsdmstart configuration file on page 63.

2. The strsdmjquery application checks the notification folder for the job requested by SAP and whether the job exists in the strsdmjobdb database or not. See The strsdmjobdb database file on page 73.

3. The strsdmjquery application passes back the status to the SAP system. What you will see when you use SAP Output Controller (transaction code /nsp02) is the status information that has been sent from the external OMS to the SAP system.
4 The `strsdmdjquery` application checks the job status code. If it is 04, 05 or 06, the job will be removed from `strsdmjobdb` database. The job is always removed from the notification folder. For a description of the notification file and status codes that can be passed back to the SAP system, see *Returning notification to the SAP system* on page 76.

### The DM job query log file

When the SAP system initiates the query command, the DM job query log (`strsdmjquery.log`) file is scanned, and the result is shown in the Log tab in the Output window. If log scanning is enabled, all on-going activities for the DM Job Query application are shown in the Output window.

**Note:** The SAP system initiates the query command for status information.

The details shown in the log window vary according to the log level specified for the service. For example:

- 4 is the highest level giving the most detailed log information and is generally used during testing.
- 0 is the lowest level and is suitable for production.
Configuring the DM Command - Device query

Note: The device query command is optional.

You use the DM Command to query for device status information from the OMS.

Required activities

- Querying for job status information on page 66
- Editing the strsdmstart configuration file on page 63

Querying for device status information

You use the DM Device query command to send device status information to the SAP system when an XOM query command is received. When the output has been processed by the device, the status is returned to the Delivery Manager via a spool management system, which passes the update to the SAP system. These return messages are formalized to give accurate and reliable information about the status in the OMS. The strsdmqry application is used when you have selected a device in the SAP Output Controller and updates the event list.

When using the DM Command, SAP handles the querying. The SAP parameter determines when to ask the external OMS for status about the output.

This section describes what happens when you select a device and the events and updates the event list, using the SAP Output Controller (/nsp01).

Querying for status of output requests

The status information that can be sent to the SAP system varies according to the features of the OMS using the XOM interface. The OMS must be able to generate a line oriented text file with status codes representing the status of the output.

Launch of the strsdmdquery application

When the SAP system requests the status of a device, the Delivery Manager launches the strsdmdquery application, which does the following:

1. The strsdmdquery application reads the strsdmstart.cfg file to determine where information about the device status can be found, see Editing the strsdmstart configuration file on page 63.

2. The strsdmdquery application checks the notification folder for the jobs related to the device and whether the job exists in the strsdmjobdb database or not. See The strsdmjobdb database file on page 73.

3. The strsdmdquery application passes back the status to the SAP system. What you will see when you use SAP Output Controller (transaction code /nsp02) is the status information that has been sent from the external OMS to the SAP system.
The \texttt{strsdmdquery} application checks the device status code, and uses the \texttt{strsdmdevicedb} database for reporting the status.

### The DM device query log file

When the SAP system initiates the Poll command, the DM Job Query log (\texttt{strsdmdquery.log}) file is scanned, and the result is shown in the Log tab in the Output window. If log scanning is enabled, all on-going activities for the DM Job Query application are shown in the Output window.

**Note:** The SAP system initiates the query command for status information.

The details shown in the log window vary according to the log level specified for the service. For example:

- 4 is the highest level giving the most detailed log information and is generally used during testing.
- 0 is the lowest level and is suitable for production.
Configuring the DM Command - Job cancel

You use the Command Line interface to cancel jobs sent to the OMS.

Required activities

- Cancelling jobs on page 70
- Editing the strsdmstart configuration file on page 63

Cancelling jobs

You use the Command Line interface to cancel a job when SAP has sent a cancel request. The `strsdmjcancel` application sends a cancel job status notification to the SAP system and creates a Strs XML file containing information about the job status. StreamServer reads the Strs XML file using an XMLIN Message and sends an instruction to the OMS to cancel the job. The OMS sends a notification message back to StreamServe stating that the job has been cancelled.

**Note:** You can only cancel a job if the OMS supports cancelling of jobs.

The DM Job Cancel log file

When the SAP system initiates the Poll command, the DM cancel job log file is scanned, and the result is shown in the Log tab in the Output window. If log scanning is enabled, all on-going activities for the DM Job Cancel application are shown in the Output window.

**Note:** The SAP system initiates the query command for status information.

The details shown in the log window vary according to the log level specified for the service. For example:

- 4 is the highest level giving the most detailed log information and is generally used during testing.
- 0 is the lowest level and is suitable for production.
Common Delivery Manager files

This chapter describes the files which the Delivery Manager needs to run for all integration levels.

Common Delivery Manager files

- The `strsdmstart configuration file` on page 72
- The `strsdmjobdb database file` on page 73
- The `strsdmdevicedb database file` on page 75
- The `saprfc.ini file` on page 75

Included activities

- Returning notification to the SAP system on page 76
The strsdmstart configuration file

The `strsdmstart.cfg` file contains arguments needed to start the different Delivery Manager applications.

You have to edit the `strsdmstart.cfg` file to suit the installation that you are implementing. What parameters you will need to edit varies according to the level of integration you are implementing.

**Included configurations**

- Configuring the DM Server on page 38
- Configuring the DM Client on page 49
- Configuring the DM Command - Submit on page 57
- Configuring the DM Command - Poll on page 62

⚠️ Because the `strsdmstart.cfg` file contains logon information to the SAP system, you must make sure that the correct permissions are set for this file so that only authenticated users can access it.
The strsdmjobdb database file

The strsdmjobdb database file is used by all Delivery Manager components to monitor the status of open jobs. This file is created when the first job is sent from the SAP system, either via DM submit or through the DM server.

When a job is submitted using either the strsdmsubmit application or the DM Server, information about the job is written to the strsdmjobdb database file. This file registers the following parameters:

- A flag indicating if the status has been reported.
- The device the job is sent to.
- The report level of the status.

Note: Job status is only stored in the database if the report level is smaller than the report level specified in the SAP system.

The strsdmdpoll, strsdmjqnry applications and the DM Client update the job status as they receive it in the notification directory. These applications also use the database to report the actual status of the job back to the SAP system.

Job status information is kept until the final status is sent back to the SAP system. When the final status is reported back to the SAP system, the job information is removed from the job status database. A final job status can be either Success (04, 05 or 06), or Error or expired maximum time (08).

In the stradmstart.cfg file, you can set the number of minutes to wait for job status until the job is considered lost. If this limit is exceeded, an error message is reported back to the SAP system and the job is removed from the database file.

Note: If jobs are listed in the file, you must not delete or modify the strsdmjobdb database file. The time stamp indicates when the job was submitted and how long the job has been stored in this file.

Any user modifications to the strsdmjobdb database file can result in a corrupt data in the database, which could result in loss of job status information.

The strsdmjobdb data file during testing

During testing, you can remove the strsdmjobdb database file, however, the SAP system will eventually flag the jobs, which have not been reported back as complete.
The .lock files

The *.lock file is used to manage exclusive write access for each Delivery Manager component.

Before you restart the DM components (at least the DM Client and DM Server), you should remove all lock files. If you do not remove all lock files, the DM components will run in a waiting state, similar to the client lock file until the lock file is removed.

The strsdmjobdb.bck file

The strsdmjobdb.bck file contains a backup of the strsdmjobdb database file.

If the strsdmjobdb database file is corrupted, such as after an unforeseen shutdown, this backup file automatically recovers the database file without losing any notifications or job status information. The applications will use the backup database, if the primary strsdmjobdb database file has been flagged as corrupted.

The strsdmdevicedb.bck file

The strsdmdevicedb.bck file contains a backup of the strsdmdevicedb database file.

If the strsdmdevicedb database file is corrupted, such as after an unforeseen shutdown, this backup file automatically recovers the database file without losing any notifications or device status information. The applications will use the backup database, if the primary strsdmdevicedb database file has been flagged as corrupted.
The strsdmdevicedb database file

The strsdmdevicedb database registers the device status information not yet sent to the SAP system. The database is created by the DM Client and the strsdmdpoll and strsdmdquery applications, and registers the device status information for each device that is reported by the OMS.

This device database file registers the following device status information:

- A flag indicating if the status has been reported.
- The current device status.
- The time when the status was reported.

The saprfc.ini file

The RFC library used by the DM Server and Client reads the saprfc.ini file to determine the connection type and all RFC-specific parameters needed to connect to an SAP system. The RFC library also reads the file to register an DM Server program at an SAP gateway, and to receive RFC calls from any SAP system.

The saprfc.ini file must be located in the Delivery Manager working directory.
Returning notification to the SAP system

The DM Client and DM Dpoll deliver status information as events concerning output jobs or devices from the external system to the SAP system. The DM Client and DM Dpoll retrieve status information from the job notification file and device notification file. The DM job query and DM device query can also be used to query for changes in the job and device status.

Creating job and device notification files

Any application that can generate a tab-separated text file can be used to create the required job and device notification files. However, we recommend you use StreamServe to generate these files, as StreamServer has been developed to generate these types of files.

Job notification file

The format of the job notification file is defined by the XOM interface description and therefore no other types of data streams are allowed. The file contains fields with values that represent the current status.

**Note:** If you had a 4.0 Project before upgrading, please make sure that you create the new format for the job notifications, by either using the new function or patching the output.

**Requirements**

- A tab must separate each data field.
- Return values from the OMS that cannot be made available by the OMS must be represented by a dash.

**Content**

The content of the job notification file should contain the following fields, in this specific order.

```
<job_IdEx> <job_id><device><report_level> <class> <job_status> <area> <result> <UNC_time> <language> <message>
```

The `<job_IdEx>` field should be a combination of the `job_id` and the code sent from the OMS, to ensure that each job status is only reported once.

**Note:** There must be a tab between each field in the file.
Example 1  

A job status message in a job notification file

PR31_01sapserv.000003082500001.4 PR31_01sapserv.000003082500001 DMPRINT 01 04 04 03 01
20020903130712 EN MessageText

<table>
<thead>
<tr>
<th>Field</th>
<th>Example OMS value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>job_IdEx</td>
<td>PR31_01sapserv. 000003092600001.4</td>
<td>The file name is made up by the job ID and the OMS code.</td>
</tr>
<tr>
<td>job_Id</td>
<td>PR31_01sapserv. 000003092600001</td>
<td>The job ID is made up by the RMG and the spool ID.</td>
</tr>
<tr>
<td>device</td>
<td>DMPRINT</td>
<td>The device configured in the SAP system, that is, the host name.</td>
</tr>
<tr>
<td>report_level</td>
<td>01</td>
<td>Completion</td>
</tr>
<tr>
<td>class</td>
<td>04</td>
<td>Information</td>
</tr>
<tr>
<td></td>
<td>01</td>
<td>Error</td>
</tr>
<tr>
<td>job_status</td>
<td>04</td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>08</td>
<td>Unknown</td>
</tr>
<tr>
<td>area</td>
<td>03</td>
<td>Formatting</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>Printing</td>
</tr>
<tr>
<td>result</td>
<td>01</td>
<td>Printed</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>Not printed</td>
</tr>
<tr>
<td>UNC_time</td>
<td>20020904171420</td>
<td>YYYYMMDDHHMMSS</td>
</tr>
<tr>
<td>language</td>
<td>EN</td>
<td>-</td>
</tr>
<tr>
<td>message</td>
<td>Test message</td>
<td>-</td>
</tr>
</tbody>
</table>

For other combinations of return codes, see Return codes on page 81.

For examples of how StreamServe can generate a job notification file, see Configuring the StreamServe Project on page 85.

File name

The name of the job notification file must contain the Reply Message Group (RMG), the SAP spool Id, and the OMS code, for example

PR31_01sapserv.000003082500001.00123221

Note: No extension should be used in the file name.
Destination

The DM Client and DM DPoll will look for the job notification file in the destination folder specified in the readjobstatus parameter in the strdmstart configuration file (strdmstart.cfg).
Device notification file

The DM Command - DPoll application uses the device notification file to return the status of a device.

Requirements

- A tab must separate each data field.
- Return values from the OMS that cannot be made available by the OMS must be represented by a dash.
- The device notification file must be a text file.

Content

The content of the device notification file should contain the following fields, in this specific order.

<deviceEx> <device> <report_level> <class> <UNC_time> <queue_enabled> <printing_enabled_alarm> <busy> <number_of_jobs> <incomplete_job_data>

Note: There must be a tab between each field in the file.

Example 2  A device status message in a device notification file

STRSOMS.3 STRSOMS 04 04 20021010123000 Yes Yes Yes Yes . Yes

The following is an example of the contents of a device notification file.

<table>
<thead>
<tr>
<th>Field</th>
<th>Example OMS value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>deviceEx</td>
<td>STRSOMS.3</td>
<td>The file name is made up by the device name and the OMS code.</td>
</tr>
<tr>
<td>device</td>
<td>STRSOMS</td>
<td>The device name</td>
</tr>
<tr>
<td>report_level</td>
<td>04</td>
<td>Status change</td>
</tr>
<tr>
<td>class</td>
<td>04</td>
<td>Information</td>
</tr>
<tr>
<td>UNC_time</td>
<td>20021106134230</td>
<td>YYYYMMDDHHMMSS</td>
</tr>
<tr>
<td>queue_enabled</td>
<td>X</td>
<td>Yes</td>
</tr>
<tr>
<td>printing_enabled_alarm</td>
<td>-</td>
<td>No</td>
</tr>
<tr>
<td>busy</td>
<td>X</td>
<td>Yes</td>
</tr>
<tr>
<td>number_of_jobs</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>incomplete_job_data</td>
<td>-</td>
<td>No</td>
</tr>
</tbody>
</table>
For other combinations of return codes, see *Return codes* on page 81.

For examples of how StreamServe can generate a device notification file, see *Configuring the StreamServe Project* on page 85.

**File name**

The name of the device notification file must be the same as the host name parameter defined for the device in the SAP system, combined with the OMS code, for example *STRSOMS.12323*

**Note:** No extension should be used in the file name.

**Destination**

The DM DPoll and DM DQuery will look for the device notification file in the device folder specified in the *readdevicestatus* parameter in the strsdmstart configuration file (*strsdmstart.cfg*).
Return codes

This chapter lists return codes that are used when creating job and device notification files, see *Returning notification to the SAP system* on page 76.

Although, you can use different codes to mix and match and create code combinations, you should make sure that the code combination you send back to the SAP system make sense.
Job status codes

Although the OMS system can have its own sets of error and status codes, the return codes sent to the SAP system must always map to the ones listed below. The job notification file will be mapped to different code combinations depending on the status of the job. You must ensure that the return codes sent back make sense.

The following table shows the job status codes that can be used as content for the job notification file, see *Job notification file* on page 76.

**Note:** The codes are translated into meanings by SAP and can vary from the meanings in the table.

<table>
<thead>
<tr>
<th>Code</th>
<th>OMS value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>class</td>
<td>01</td>
<td>Error</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>Problem requiring intervention.</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>Problem not requiring intervention.</td>
</tr>
<tr>
<td></td>
<td>04</td>
<td>Information (no error)</td>
</tr>
<tr>
<td>job_status</td>
<td>01</td>
<td>Pre-processing (formatting)</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>Pending (waiting in queue)</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>Processing (printing)</td>
</tr>
<tr>
<td></td>
<td>04</td>
<td>Complete (cannot be resubmitted)</td>
</tr>
<tr>
<td></td>
<td>05</td>
<td>Retained (complete but still stored within the OMS)</td>
</tr>
<tr>
<td></td>
<td>06</td>
<td>Cancelled</td>
</tr>
<tr>
<td></td>
<td>07</td>
<td>Gone (no job information)</td>
</tr>
<tr>
<td></td>
<td>08</td>
<td>Unknown (probably bad job Id)</td>
</tr>
<tr>
<td>area</td>
<td>01</td>
<td>Spooler</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>Printing</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>Formatting</td>
</tr>
<tr>
<td></td>
<td>04</td>
<td>Connection (network)</td>
</tr>
<tr>
<td></td>
<td>05</td>
<td>Other</td>
</tr>
</tbody>
</table>
### Job status codes

<table>
<thead>
<tr>
<th>Code</th>
<th>OMS value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>result</td>
<td>01</td>
<td>Printed</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>Not printed</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>Partly printed</td>
</tr>
<tr>
<td></td>
<td>04</td>
<td>Possibly printed</td>
</tr>
<tr>
<td></td>
<td>05</td>
<td>Output changed</td>
</tr>
</tbody>
</table>

#### Example 3

**Code combination for a job completed successfully**

PR31_01sapserv.000003082500001 DMPRINT 04 03 01 20020903130712 EN MessageText

#### Example 4

**Code combination for a failed job**

PR31_01sapserv.000003082500001 DMPRINT 01 06 03 02 20020903130712 EN MessageText
Device status codes

Although an OMS system can have its own sets of error and status codes, the return codes sent to the SAP system must always map to the ones listed below. The device status file is mapped to different code combinations depending on the status of the device. You must ensure that the return codes sent back make sense.

The following table shows the device status codes that can be used as content for the device notification file, see Device notification file on page 79.

<table>
<thead>
<tr>
<th>Code</th>
<th>OMS value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>class</td>
<td>01</td>
<td>Error</td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>Problem requiring intervention.</td>
</tr>
<tr>
<td></td>
<td>03</td>
<td>Problem not requiring intervention.</td>
</tr>
<tr>
<td></td>
<td>04</td>
<td>Information (no error)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNC_time</th>
<th>YYYYMMDDHHMMSS</th>
<th>Date and time</th>
</tr>
</thead>
<tbody>
<tr>
<td>queue_enabled</td>
<td>Yes / No</td>
<td>-</td>
</tr>
<tr>
<td>print_enabled</td>
<td>Yes / No</td>
<td>-</td>
</tr>
<tr>
<td>printing_enabled_alarm</td>
<td>Yes / No</td>
<td>-</td>
</tr>
<tr>
<td>busy</td>
<td>Yes / No</td>
<td>-</td>
</tr>
<tr>
<td>number_of_jobs</td>
<td>N</td>
<td>Where N indicates the number of jobs.</td>
</tr>
<tr>
<td>incomplete_job_data</td>
<td>Yes / No</td>
<td>-</td>
</tr>
</tbody>
</table>

Example 5  Code combination for an error free device

04  20021010123000  Yes Yes Yes Yes .  Yes

Example 6  Code combination for a device in error state

01  20021010123000  Yes Yes Yes Yes .  Yes
Configuring the StreamServe Project

There are several ways you can configure a StreamServe Project to produce the content for the job and device (DM Command only) notification files, which are required in order for the Delivery Manager to update the SAP system with status information. This chapter describes one example of how to configure a StreamServe Project.

Note: This guide only contains instructions specific to configuring StreamServe for the Delivery Manager Connect solution. For general information on configuring StreamServe, see the standard StreamServe documentation.

For the Deliver Manager, there are no specific settings required for the Platform.

Included activities

- Using the strsdm.fcn function file on page 86
- Configuring a StreamServe Project on page 86
- Adding the strsdm.fcn function file to a Resource set on page 86
- Configuring a Message and an Event on page 87
- Configuring the Runtime on page 88
Using the strsdm.fcn function file

The Delivery Manager installation includes a function file, `strsdm.fcn`. This file contains script functions that can be called from a StreamServe Project to produce the job notification file and the device notification file.

Scripts are run at specific times and phases during the execution of a StreamServe Project. You can execute scripts before and after Messages and Processes. After an Event has been retrieved (including its fields and variables), you can execute Event Retrieved scripts.

The time you choose to run a script depends on the action you want and the preferred result. In this example the script has been placed as an After script on the Job. See Configuring the Runtime on page 88.

The `strsdm.fcn` function file also includes mappings from StreamServe Output Center status codes to SAP job and device notification codes. For more information, read the notes included in the function file.

Configuring a StreamServe Project

You can create a new Project, or apply this configuration to an existing Project. For information on Projects, see the standard StreamServe documentation.

Adding the strsdm.fcn function file to a Resource set

In order for StreamServer to access the `strsdm.fcn` function file, you must add the function file to the Resource Set in your StreamServe Project. You import the `strsdm.fcn` function file into the Resource Set in the Design Center.

To import the strsdm.fcn function file into a Resource Set

1. In your StreamServe Project, create or open the Resource Set, to which you want to import the `strsdm.fcn` function file.
2. In the Resource Set, right-click the function files folder and select Import.
3. Browse to, and select the `strsdm.fcn` function file from the Delivery Manager working directory. For example:
   \StreamServe\Applications\SAPConnect\strsoms
4. Click Open. The Select Custom folder opens.
5. Select the appropriate folder.
6. Click OK. The function file is added as a new resource to the folder.
Configuring a Message and an Event

For testing the Delivery Manager, you use a Message containing a PageIN Event. The PageIN Event contains a Pattern that matches any type of input data. For testing, you can create and configure a new PageIN Event, or configure an existing PageIN Event.

To configure a Pattern that matches any type of data
Use a question mark (?) as a wildcard for the match value of the Pattern. For more information, see the PageIN documentation.

You should only use an Event containing a Pattern that matches any type of input data, when testing the Delivery Manager. In production, you should configure an Event suitable for the incoming data. For example, for RDI data use StreamIN, for XSF data use XMLIN, and for SAPGOF data, use PreformatIN to define the Event.

For more information, see the StreamServe Connect for SAP - E-docs and Output+ documentation.

Configuring a Process

As the SAPDMJobNotificationOutEx function produces the job notification file, and the SAPDMDeviceNotificationOutEx function produces the device notification file, specific Processes are not required to create the notification files.
Configuring the Runtime

For the Delivery Manager, the Runtime is configured to run a script which calls the `strsdm.fcn` function call. In this example, the script is placed as an After script on the Job. You can place the script as appropriate for your Project.

There are no additional settings required for the Delivery Manager Project in the Runtime configuration.

To add a function call to a Job in the Runtime

1. In the Runtime configuration, add a script to the Job.
2. Add the following variables to the After script:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$sapspoolid</td>
<td>The SAP spool Id is a unique Id that follows the spool job during the complete process. The incoming file name has the format <code>rmg.sapspoolid_device</code>. The <code>SAPDMGetSpoolIdFromFileName</code> function is used to extract the $sapspoolid from the file name.</td>
</tr>
<tr>
<td>$devname</td>
<td>The incoming file name has the format <code>rmg.sapspoolid_device</code>. The <code>SAPDMGetDeviceIdFromFileName</code> function is used to extract the $devname from the file name. For more information, see the StreamServe Connect for SAP - Output+ and StreamServe Connect for SAP - E-docs documentation.</td>
</tr>
<tr>
<td>$time</td>
<td>The <code>SAPDMUNCTime</code> function creates the time format required by the SAP system. For example. $time= SAPDMUNCTime ();</td>
</tr>
</tbody>
</table>

3. Add the `SAPDMJobNotificationOutEx` function call.

Included topics

- [SAPDMJobNotificationOutEx function call](#) on page 89
- [Configuring the Platform](#) on page 92
SAPDMJobNotificationOutEx function call

The SAPDMJobNotificationOutEx function sets values to the job notification file. The function accepts the following arguments:

- #path
- #spoolid
- #device
- #ocjcode

**Example 7**  
SAPDMJobNotificationOutEx("D:\strs\notify\", $sapspoolid, $sapdevice, "3");  
This would result in a Completed status in the SAP system.

SAPDMDeviceNotificationOutEx function call

The SAPDMDeviceNotificationOutEx function sets values to the device notification file. The function accepts the following arguments:

- #path
- #devname
- #ocdcode

**Example 8**  
SAPDMJobNotificationOut("D:\strs\device\", $devname, "1");  
This would result in a Ready status of the printer.

The job and device status mappings used with the Output Center

The following tables describe the job and device status mappings included in the strsdm.fcn file. These mappings are done by the SAPDMJobNotificationOut and SAPDMDeviceNotificationOut function calls, and are used with the Output Center. You can use this example as a template if you want to implement an OMS other than the Output Center.
### Job status code mappings

<table>
<thead>
<tr>
<th>OC code</th>
<th>Class</th>
<th>Job status</th>
<th>Area</th>
<th>Result</th>
<th>Report level</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>01</td>
<td>Unknown</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>04</td>
<td>Queued</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>04</td>
<td>Printing</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>01</td>
<td>Printed</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>01</td>
<td>Error</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>02</td>
<td>Partially printed</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>03</td>
<td>Preprint command error</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>03</td>
<td>Data stream not supported</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>04</td>
<td>Cancel</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>01</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>01</td>
<td>Submission error</td>
</tr>
<tr>
<td>11</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>04</td>
<td>Sent to printer</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>02</td>
<td>Server terminated while printing</td>
</tr>
</tbody>
</table>

### Device status code mappings

<table>
<thead>
<tr>
<th>OC code</th>
<th>Class</th>
<th>Queue</th>
<th>Printer</th>
<th>Alarm</th>
<th>Busy</th>
<th>Incomplete</th>
<th>Report level</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>01</td>
<td>Unknown</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Ready</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Printing</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Out of paper</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Out of toner</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Jammed</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>03</td>
<td>Maintenance</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>01</td>
<td>Other</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>01</td>
<td>Unreachable</td>
</tr>
</tbody>
</table>
## Device status code mappings

<table>
<thead>
<tr>
<th>OC code</th>
<th>Class</th>
<th>Queue</th>
<th>Printer</th>
<th>Alarm</th>
<th>Busy</th>
<th>Incomplete</th>
<th>Report level</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>01</td>
<td>Protocol not supported</td>
</tr>
<tr>
<td>20</td>
<td>4</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Online</td>
</tr>
<tr>
<td>25</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Offline</td>
</tr>
<tr>
<td>30</td>
<td>4</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Warming up</td>
</tr>
<tr>
<td>35</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>03</td>
<td>Toner low</td>
</tr>
<tr>
<td>40</td>
<td>4</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Cancelling job</td>
</tr>
<tr>
<td>45</td>
<td>4</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>04</td>
<td>Processing job</td>
</tr>
<tr>
<td>50</td>
<td>4</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>04</td>
<td>Receiving job</td>
</tr>
<tr>
<td>51</td>
<td>4</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Received job</td>
</tr>
<tr>
<td>55</td>
<td>3</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Operator intervention</td>
</tr>
<tr>
<td>60</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Cover open</td>
</tr>
<tr>
<td>65</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Paper jam</td>
</tr>
<tr>
<td>70</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Toner low - press go</td>
</tr>
<tr>
<td>75</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>04</td>
<td>Offline</td>
</tr>
<tr>
<td>80</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>Load paper</td>
</tr>
<tr>
<td>85</td>
<td>2</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>02</td>
<td>MP tray load letter</td>
</tr>
</tbody>
</table>
Configuring the Platform

Input connector
For the Delivery Manager, you need to configure the input connector to scan the directory to where the Delivery Manager copies the SAP output.

Output connector
As the Delivery Manager uses a function to create an output file, an output connector is not really needed in the Platform. You can either use an existing output connector defined for your Message, or you can create a new Null output connector and specify the connector as a dummy connector.
Testing the Delivery Manager configuration

Before you use the Delivery Manager, you should test the configuration.

**Prerequisites**
Before testing the Delivery Manager configuration, you must have installed and configured the SAP Configuration, the Delivery Manager configuration and the StreamServe Project.

**Included activities**
- *Testing the DM Server and Client* on page 94
- *Testing the DM Command* on page 95
Testing the DM Server and Client

To test the DM Server and Client

1. Start the Control Center.
2. In the Control Center, start the DM Server, see Starting the DM Server on page 44.
3. Logon to your SAP system
4. Test the DM Server connection to the SAP system:
   a. In the transaction box, enter /nsm59 to locate the RFC destination you have created.
   b. Click Test Connection to verify the connection. If no error messages occur, the configuration is correctly defined.
5. Output the device list:
   a. In the transaction box, enter /nspad.
   b. Select Output devices > Print this list.
   c. Select the device configured for the Delivery Manager, and verify the device settings.
   d. Click Continue.
6. Verify that the SAP spool file was copied by the DM Server to the target destination. The target destination is specified in the stradmstart.cfg configuration file.
7. Verify that the DM Client has started — the icon in the Control Center is green.
8. Verify that StreamServer produced the job notification file, and that the file was sent to the Notification folder. The Notification folder is specified in the stradmstart.cfg configuration file.
9. In the SAP system, enter /nsp02 in the transaction box to verify the job status in the SAP system.

If the Delivery Manager successfully reported the job notification, the job will have a Complete status.

<table>
<thead>
<tr>
<th>DM Server and Client device settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Immediately</td>
</tr>
<tr>
<td>New Spool request</td>
</tr>
<tr>
<td>Delete after output</td>
</tr>
</tbody>
</table>

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Testing the DM Command

To test the DM Command

1. Logon to your SAP system
2. Output the device list:
   a. In the transaction box, enter `/nspad`.
   b. Select Output devices > Print this list.
   c. Select the device configured for the Delivery Manager, and verify the device settings.

<table>
<thead>
<tr>
<th>DM Command - Submit and DPoll device settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Immediately</td>
</tr>
<tr>
<td>New Spool request</td>
</tr>
<tr>
<td>Delete after output</td>
</tr>
</tbody>
</table>

d. Click Continue.

3. In the Control Center, view the log file displayed in the Log window to verify that DM Submit received the job.
4. Verify that the SAP spool file was copied by the DM Server to the target destination. The target destination is specified in the `strsdmstart.cfg` configuration file.
5. Verify that StreamServer produced the job notification file, and that the file was sent to the Notification folder. The Notification folder is specified in the `strsdmstart.cfg` configuration file.
6. Verify that StreamServer produced the device notification file, and that the file was sent to the Device folder. The Device folder is specified in the `strsdmstart.cfg` configuration file.

7. In the Control Center, view the log file displayed in the Log window to verify that DM Dpoll polled the Notification folder for the job notification file.
8. To test the job query application, select a non-complete job and click the Refresh button.
9. To test the device query application, select a device, click the Events button, and click the Refresh button.

Note: This only works when events exist and are enabled.

10. In the SAP system, enter `/nsp02` in the transaction box to verify the job status in the SAP system.

If the Delivery Manager successfully reported the job notification, the job will have a Complete status.
Testing the Delivery Manager configuration
Troubleshooting

This section provides information on how to solve problems which can occur when using the DM Server and Client, or DM Command.

DM Server and Client
- Errors when submitting a job on page 98

DM Command
- ROMS not available during SAP configuration on page 99
- Errors when submitting a job on page 99

UNIX
- Errors when running Delivery Manager applications in UNIX on page 100.
Troubleshooting DM Server and Client

Included scenarios

- Errors when submitting a job on page 98

Errors when submitting a job

When you have submitted a job using the DM Server, and an error message stating “Failed to connect to host spooler” appears in the Output Controller (transaction code /nsp02), you can do the following:

1. Verify that the DM Server has started and resend the job, see Starting the DM Server on page 44.
2. Verify that the correct RFC destination has been specified as the Tasking Target value for the LOMS. See Configuring a Logical Output Management System (LOMS) on page 16.
3. Verify that the Prog Id name specified in the saprfc.ini file is the same as the Prog Id defined for the RFC destination. (The Prog Id name is case sensitive.)
   - In your SAP system, enter /nsm59 in the transaction box.
   - Search for the RFC destination you created.
   - Verify that the Prog Id name is the same name specified in the saprfc.ini file.

Errors connecting DM Client to SAP system

1. Verify that the password specified in the strsdmstart.cfg file, client parameters section, is all uppercase and maximum eight characters.
2. Verify that destination names specified in saprfc.ini and strsdmstart.cfg are identical.

DM Client cannot process notifications and stops

1. Verify that the notification file format is valid.
2. If the problem persists with valid notification files, manually remove the data in strsdmjobdb and strsdmdevice db database files or delete them completely.
Troubleshooting DM Command

Included scenarios
• ROMS not available during SAP configuration on page 99
• Errors when submitting a job on page 99

ROMS not available during SAP configuration
When you are creating a LOMS, and you want to select the ROMS but it is not available in the list, you can refresh the SAP configuration.

To refresh a SAP configuration to access a ROMS
1. In the transaction box, enter /nspad.
2. Go back to the Create LOMS view. This will refresh the configuration and the ROMS will now be available.

Errors when submitting a job
When you have submitted a job using the Command Line interface, and an error message displays stating “Source Path definition not found”, you can check the following:

1. Verify that the strsdmsubmit.log file was created. If not, check the paths to the Delivery Manager working directory (\strsoms), and the paths to the strsdmsubmit and strsdmpoll applications.
2. Open the strsdmsubmit.log file. If the source error is shown in the SAP system, the last line in the strsdmsubmit.log file will show:
   strsdmsubmit:2.00 1 5 - Source\ path\ definition\ not\ found
3. In the transaction box, enter /nspad.
4. Select Utilities > Display SAPPARAM. The Important Profile Parameters window opens. The path on the rspo/to_host/datafile line is the value to enter for the source.31 parameter in the strsdmstart.cfg file.
5. Check that the correct system name is specified in the strsdmstart.cfg file.
6. Submit the job again and verify that the same error message does not display.
Errors when running Delivery Manager applications in UNIX

In UNIX, if the Delivery Manager applications do not start and log files are not generated, you can check that:

- The path to the `librfcm.so` or `librfcm.a` file is included in the `LIBPATH` environment variable. This should be done automatically when StreamServe is installed.
- The `strsdmclient`, `strsdmsubmit` and `strsdmdpoll` executables have full user executable rights.
- The SAP user has full access to the folders and files used when running the Delivery Manager. We recommended you prohibit access on world level.
# Useful SAP transaction codes

This section lists SAP transaction codes which are commonly used in the SAP system to activate transactions.

**Note:** To enter a transaction code from any screen within the SAP system other than the initial screen, prefix the code with `/n`. For example, the `/nVF03` transaction code would display the Display Billing Document screen from any screen in the SAP system.

## Configuration

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM59</td>
<td>Display and maintain RFC destinations</td>
</tr>
<tr>
<td>SPRO</td>
<td>Customizing</td>
</tr>
<tr>
<td>OMFE</td>
<td>Processing Program/Layout Set for Purchase Order (MM)</td>
</tr>
<tr>
<td>V/30</td>
<td>Processing Program/Layout Set for Order Confirmation (SD)</td>
</tr>
<tr>
<td>V/34</td>
<td>Processing Program/Layout Set for Delivery Note (SD)</td>
</tr>
<tr>
<td>V/40</td>
<td>Processing Program/Layout Set for Invoice (SD)</td>
</tr>
</tbody>
</table>

## Spool functions

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAD</td>
<td>Spool Administration</td>
</tr>
<tr>
<td>SP01</td>
<td>Spool Requests</td>
</tr>
</tbody>
</table>

## Form processing

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE71</td>
<td>SAPscript</td>
</tr>
<tr>
<td>SE73</td>
<td>Font Maintenance</td>
</tr>
<tr>
<td>SE78</td>
<td>Graphics Management</td>
</tr>
<tr>
<td>SMARTFORMS</td>
<td>Smart Forms</td>
</tr>
<tr>
<td>SO10</td>
<td>Standard Texts</td>
</tr>
</tbody>
</table>
Useful SAP transaction codes

**Programs and reports**

<table>
<thead>
<tr>
<th>Transaction Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE38</td>
<td>ABAP Editor</td>
</tr>
<tr>
<td>RSTXSCR</td>
<td>Import/Export SAPscript objects and XOM configuration</td>
</tr>
<tr>
<td>RSTXSYM</td>
<td>List SAP symbols</td>
</tr>
<tr>
<td>RSTXICON</td>
<td>List SAP icons</td>
</tr>
<tr>
<td>RSP00049</td>
<td>Activate Access Method Z (Spool Exit)</td>
</tr>
</tbody>
</table>

**Generating application output**

<table>
<thead>
<tr>
<th>Transaction Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME90</td>
<td>Print Purchase Order (MM)</td>
</tr>
<tr>
<td>VA02</td>
<td>Change Sales Order (Order Confirmation, SD)</td>
</tr>
<tr>
<td>VA03</td>
<td>Display Sales Order (Order Confirmation, SD)</td>
</tr>
<tr>
<td>VF02</td>
<td>Change Billing Document (Invoice, SD)</td>
</tr>
<tr>
<td>VF03</td>
<td>Display Billing Document (Invoice, SD)</td>
</tr>
<tr>
<td>VL02</td>
<td>Change Outbound Delivery (Delivery Note, SD)</td>
</tr>
<tr>
<td>VL03</td>
<td>Display Outbound Delivery (Delivery Note, SD)</td>
</tr>
<tr>
<td>SM69</td>
<td>List of external commands (for box drawing characters)</td>
</tr>
<tr>
<td>SM04</td>
<td>List of users currently logged on (short list)</td>
</tr>
</tbody>
</table>

**Data and metadata**

<table>
<thead>
<tr>
<th>Transaction Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE11</td>
<td>Data Dictionary</td>
</tr>
<tr>
<td>SE16</td>
<td>Data Browser</td>
</tr>
<tr>
<td>WE63</td>
<td>IDoc Types</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>BC</td>
<td>Basis Component</td>
</tr>
<tr>
<td>DM</td>
<td>Delivery Manager</td>
</tr>
<tr>
<td>LOMS</td>
<td>Logical Output Management System</td>
</tr>
<tr>
<td>OMS</td>
<td>Output Management System</td>
</tr>
<tr>
<td>RFC</td>
<td>Remote Function Call</td>
</tr>
<tr>
<td>ROMS</td>
<td>Real Output Management System</td>
</tr>
<tr>
<td>XOM</td>
<td>X/Open OSI-Abstract-Data Manipulation interface</td>
</tr>
</tbody>
</table>