Installing the Open Print Option

This document describes how to install the Open Print Option (OPO) of Entire Output Management.

- Client Installation on Windows XP
- Configuration of Entire Output Management on Mainframes
- Data Transfer Interface
- Transferring Data
- Installation Verification

Client Installation on Windows XP

- Installation
- Update Installation
- Configuration

Installation

Proceed as follows:

1. Start the Setup program from the root directory of the CD or CD directory structure.
2. Follow the installation instructions and make the required specifications and selections.
3. On the Select Printer Port screen:
   - Select the option **Create New Port**.
   - Select the port type **OPO Port**.

After the installation has been completed, proceed as described under *Configuration* below.

Update Installation

For updating an existing Open Print Option (OPO) installation, the following procedure is recommended:

1. Delete all Windows printers that use an OPO port, or assign another port type to these printers.
2. Delete all OPO printer ports in Windows, using the Windows printer maintenance function.
3. Start the de-installation of OPO.
4. After completion of the de-installation, start the setup program of the OPO distribution.

Configuration

The directory of the Open Print Option you have installed contains the configuration file `nomrptConf.xml`. Adjust this file in accordance with your environment. It contains the following parameters:

Parameter	Explanation
EXX_Server	The name of the broker.
EXX_User	The user ID for the broker.
EXX_Password	The password of this user.
RPC_Server	The name of the Entire Output Management RPC server which logs on the broker as RPC server.
RPC_User	The user ID for the Natural logon to the RPC server. This user ID must also be specified in the *USER field under Natural Attributes in the definition of any report to be printed via OPO. Further Natural Attributes are not required. If Natural Security is installed, this user ID must be a valid Natural Security user ID. See *Report Identification for Natural* in the *User's Guide*.
RPC_Password	The password for this user.
Nat_Library	The Natural library to which the logon is performed (SYSSAT).
Trace_Level	0 = no trace; 1 = trace will be written.
Input_Format	blank or B = binary; T = pure ASCII text.
Container_DB	The database ID of the container file used.
Container_FNR	The file number of the container file used.

When invoking `nomrpt.exe`, you can use Parameter 2 to specify which parameter block within `nomrptConf.xml` is to be used. If Parameter 2 is empty, the block DEFAULT will be used.

If you invoke `nomrpt` as follows:

```
nomrpt.exe nomrpt.xml NOM32SRV
```

the file `nomrpt.xml` will be used as the meta data file, and `NOM32SRV` will be used as the block name to select the predefined parameters in the configuration file `nomrptConf.xml`.

Configuration of Entire Output Management on Mainframes

Installing the Open Print Option Configuration on Entire Output Management on Mainframes

The following Natural parameters have to be specified for XML processing:

```
XML=(ON,PARSE=ON),CP=ON,CFICU=ON
```

The server has to perform a logon to the library SYSNOM, and the Entire Output Management libraries have to be defined as steplibs in Natural Security. For the RPC communication, it may in some cases be necessary to open a TCP port in the Firewall, as described in the appropriate documentation.

Then your mainframe computer is ready to receive data from the Open Print Option.

Setting Up Entire Output Management for the Data Transfer

Invoke Entire Output Management > System Defaults (menu 8.1) > API and User Exits (menu item 10) to activate the trigger queue, by specifying the database ID and file number of the installed container file in the appropriate fields.

It is highly recommended to install a separate Entire Output Management data file to serve as a container file for documents transferred via the Open Print Option. *Do not* use the Entire Output Management system file (NOM*xxx*-SYSF) for transferring data.

Generate a Natural RPC server by starting Natural in batch mode with the following parameters:

```
RPC=(SERVER=ON,ACIVERS=4,SIZE=32,SRVNODE=BKR034,
     SRVNAME=NOM32SRV,RPCSIZE=64,TIMEOUT=30,TRACE=0,
     MAXBUFF=30,NTASKS=2,SRVUSER='*NSC')
```

The above example assumes the broker name to be `BKR034`, the RPC server name to be `NOM32SRV`, and that the server is started with 2 replicas. However, you can choose you own values for these three parameters.

Data Transfer Interface

- Invoking nomrpt.exe
- XML Meta Data File
- XML Tags

Invoking nomrpt.exe

The Open Print Option redirects data from a print driver to Entire Output Management. The data are redirected to `nomrtp.exe`, which receives binary data from `stdin`, are then converted to BASE64 and via the RPC server written to an Entire Output Management container file.

The type of data is irrelevant for `nomrpt.exe`. In fact, the data need not necessarily be print data from a Windows printer driver. If you specify in `nomrptConf.xml` that the data are text data (with the parameter `Input_Format=T`), it is even possible to send print data to a predefined report (as identified by Report Name and Natural Attributes *USER in Report Definition > Natural Identification) within Entire Output Management with a simple Windows `echo` command:

```
echo "Hello, world."|nomrpt.exe
```

`nomrpt.exe` accepts one or two parameters:

- The first parameter specifies the XML file which is to be passed to Entire Output Management via the XML tags as described below. This file is primarily intended to supply meta data. However, it can also be used to supply print data.
- The second parameter specifies the section (block name) of the configuration file `nomrptConf.xml` which is to be used to build up the connection to Entire Output Management via a defined RPC server.

The `echo` command could then look as follows:

```
echo "Hello, world."|nomrpt.exe c:\test\nomrpt.xml MYSECTION
```

XML Meta Data File

`nomrpt.exe` converts the print and meta data passed to the program via the first parameter of the `nomrpt.exe` call into an XML data stream and sends them to the Entire Output Management RPC server as defined in the configuration file (`RPC_Server`). The print data stream (`stdin`) itself cannot contain any XML data. This XML file is always evaluated before the print data stream is read, as meta data for the print data stream are expected to be supplied from there.

If the configuration parameter (see `nomrptConf.xml`) `Input_Format` is set to "B" or not at all, the print data are converted into the format BASE64. If `Input_Format` is set to "T", the text - which then must not contain any non-printable characters - will be passed in text lines, as shown in the above "Hello, world" example.

They are read from the file via Parameter 1 of the `nomrpt.exe` call. This XML file is always evaluated before the print data stream is read, as meta data for the print data stream are expected to be supplied from there.

XML Tags

The XML tags are evaluated as explained in the table below.

Any unknowns tags will not be interpreted as print data, but as "extended spool attributes" (meta data). They supply information which can be evaluated via an Entire Output Management user exit, if activated. The user exit will receive the data in the following format:

`key(1)=value(1);key(2)=value(2);…;key(`*n*`)=value(`*n*`)`

These meta data can be displayed in Entire Output Management via PF2 (Meta) on the Display Active Reports > Spool Attributes screen (PF10). When using the Entire Output Management GUI Client from a Windows front-end, select Control Functions > Folders > Active Reports and then select “Spool” from the pull-down menu of the appropriate active report. The meta data will be displayed in the “Spool” tab.

For extended spool attributes, 750 characters per document are available. However, the user-supplied XML file with meta data must fit into a space of 250 characters. Some meta data are additionally supplied by OPO if available in Windows; for example:

Tag	Explanation	Example
source	The name of the source machine.	CLIENTPC
sender	The ID of the user who initiated the print operation in OPO.	User
title	The title of the document being printed (for example, if the printing was initiated by Microsoft Word).	Document

Some special tags are interpreted and used to control further processing. The following table lists the tags which are evaluated:

Tag	Explanation	Example
db	The database number of the Entire Output Management container file, as defined in System Defaults > API and User Exits (menu 8.1 > menu item 10).	`<db>9</db>`
fnr	The file number of the Entire Output Management container file, as defined in System Defaults > API and User Exits (menu 8.1 > menu item 10).	`<fnr>246</fnr>`
filename	The file name to be associated with the print data stream.	`<filename>document</filename>`
filetype	The file type to be associated with the print data stream.	`<filetype>pdf</filetype>`
path	The path of the file to be associated with the print data stream.	`<path>test/output<path>`

The database and file number values in the XML file overwrite the corresponding values in the configuration file `nomrptConf.xml`.

The print data stream is not automatically associated with a file name. If the print data are to be written to a file when they are printed from Entire Output Management, the file name and file type can be supplied via tags. The examples in the table above create a PDF file "test/output/document.pdf" if the binary data stream is written to a target directory, or when the binary data are loaded into the Entire Output Management GUI Client for browsing. In the latter case, because of the file type, the Adobe Reader which interprets PDF files will be invoked as external viewer.

Transferring Data

- Binary Data
- Sending Print-Formatted Binary Data to Entire Output Management
- Sending Other Binary Data to Entire Output Management

Binary Data

Binary conversion is active if the configuration parameter `Input_Format` is set to “B” (this is the default).

Sending Print-Formatted Binary Data to Entire Output Management

During the installation, a logical printer definition is generated for the Open Print Option. This logical printer, generally with the name “OPO”, can be selected as a printer choice from any document system (Adobe, Wordpad, etc.). It is necessary to configure the logical printer OPO with the printer driver that is to be used when the documents are physically printed. It may therefore be necessary to define several logical OPO printers to cover all print requirements.

When transferring data via the print function, the file type is automatically set to the print file type “prn”. Therefore, there is no immediate need to adjust the meta data file.

Sending Other Binary Data to Entire Output Management

Defining the file type: The transfer of documents in other formats than print formats can be achieved by using the command `type`.

For example:

```
type TestOPO.doc |nomrpt.exe TestOPO-doc.xml NOM32SR
```

The type of binary conversion will depend on the file type (tag `<filetype>`) which can be defined in the meta data file. An example file of the meta data file (`nomprt.xml`) is delivered with the product. If the file or tag are not available, an error message will be displayed.

Installation Verification

After establishing a Natural RPC service, define `nomrptConf.xml` as described above. In this example, it is assumed that the `BlockName` in the `nomrptConf.xml` file is the same as the `RPC_Server` name: `NOM32SRV`. A Natural user with access rights to the `Nat_Library` logon library is to be defined as the `RPC_User`.

Define a report in Entire Output Management (in this example named “OPO-Report”), ensuring that the defined `RPC_User` is defined in the Report Definitions >Identification (PF7) under Natural Attributes (PF9) as *USER.

Test for viewing files from an Entire Output Management GUI Client:

Select a small Windows doc file, giving it the name "TestOPO.doc".

Use Notepad or another editor to create the following files:

1. Create the meta data file `TestOPO-doc.xml`:

```
<?xml version="1.0"  ?>
<document>
  <filetype>doc</filetype>
</document>
```

This example, which shows the minimum requirements for transferring data, assumes that the values for the tags <db> and <fnr> are defined in the configuration file nomprtConf.xml (Container_DB and Container_FNR) and that the default value “B” is used for the configuration parameter Input_Format.

2. Create a command file TestOPO.cmd (*n.n.n* being the version number):

```
echo off
echo start testing OPO
echo TEST file type DOC
echo Date: %DATE% Time: %TIME%
REM the date and time values aids the tracing of
REM this specific data transfer
echo ****************************************
REM change to the Open Print Option directory
REM ****************************************
cd "C:\Program Files\Software AG\Open Print Option n.n.n"
echo on

type TestOPO.doc |nomrpt.exe TestOPO-doc.xml NOM32SRV

echo after nomrpt.exe EOJ!
pause
```

By using a command file, it is possible to control the output in case of any (typing) errors. By using the date and time values, the data transfer can be verified.

Start the command file TestOPO.cmd. Your file "TestOPO.doc" can be viewed from an Entire Output Management GUI Client by selecting first the active report “OPO-Report” and then the Browse function.

If the required file (here "TestOPO.doc") is not delivered to the predefined report, verify that the user ID used to define the OPO configuration parameter RPC_USER in the configuration file nomrptConf.xml is also defined in the Entire Output Management predefined report. If necessary, the Trace_Level option in nomrptConf.xml can be set to "1". This will enable the tracing of the transferred data within the sysout of the RPC job of your RPC server.