Postscript
Store and Retrieve
for
OnDemand/400
by
OAS Corp.

Version 2.0

Installation, Administration,
and User Reference

psadmn2.doc

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1. Solution Overview

OAS Corp.'s Postscript Store and Retrieve for OnDemand/400 solution (PS Solution) involves the storage and retrieval of Postscript formatted documents using IBM's OnDemand for AS/400 Report/Data Archive and Retrieval System (R/DARS).

The PS Solution involves the integration of multiple software components that enable both the archival and retrieval of Postscript formatted documents.

1.0 Software Components

The document archive portion of the PS Solution involves the integration of several software components:

- OAS Corp. Spool Parsing application
- Your AS/400 based Postscript generating software (Create!print for example)
- OAS Corp. Postscript Indexing application
- IBM OnDemand/400 AnyStore Integration Program
- IBM OnDemand/400 AnyStore Feature
- IBM OnDemand/400 Spool File Archive Feature
- OAS Corp. NetConnect for OnDemand/400
- Web browser
- LaserGo Inc., Postscript plug-in

1.1 Postscript Document Retrieval

Postscript documents are retrieved using a web browser. The browser connects via a TCP/IP connection with the AS/400 which is running NetConnect for OnDemand/400. NetConnect serves the HTML pages to the browser that allow for the search and retrieval of OnDemand stored files. When a Postscript file type is requested for display the LaserGo Postscript plug-in is automatically loaded into the browser. The plug-in enables the display and local print or fax of Postscript documents.

1.2 Postscript Store Process

Document archive is a multi-step process:

- Your application creates spool files in an AS/400 output queue (ex. PARSEQ)
- The Spool Parsing application monitors the AS/400 output queue (ex. PARSEQ). The application performs the following processing:
  - One copy of the program runs to monitor each output queue, if more than one.
  - The output queue (ex. PARSEQ) contains input files intended for the Postscript generating software. (These files typically are large files containing data representing many logical segments to be indexed separately)
  - Wakes up once per minute to check for any new files.
  - Parses all spool files into multiple smaller spool files based on predefined criteria.
  - Writes the individual spool files to an another output queue (ex. LASER01) for processing by the Postscript generating application. (Output queue name is specified at program startup.)
  - If configured, deletes the original spool file from the output queue.
  - If configured, copies original spool file to output queue OASSPOOL/OUTPUT.
- Your application creates Postscript formatted *SCS files in an AS/400 output queues (ex. LASERARCQ). Each file is an individually indexable object consisting of one to many pages.
- The Postscript Indexing application monitors the AS/400 output queue (ex.LASERARCQ). The application performs the following processing:
  - One copy of the program runs to monitor each output queue, if more than one.
  - The output queue contains only Postscript formatted spool files, ready to be indexed.
  - Wakes up once per minute to check for any new files.
  - Reads spool file name (or User data or Form Type, as specified when started).
  - Checks Indexing report definition file (USTOASLIB/USTRPTDEF) for matching report name and corresponding indexing variables.
  - Checks Indexing INI file (USTOASLIB/USTINI) for default processing information.
  - Extracts indexing information from each Postscript file.
  - Writes indexing records to AnyStore Integration library files (QRDARSK/DOCUMENTS, QRDARSK/QARLSSTOR).
  - Writes temporary copy of Postscript spool file to shared folder (USTOAS).
  - If configured, deletes spool file from output queue.
  - If configured, copies spool to output queue USTOASLIB/PROCESS.
- AnyStore Integration program monitors its files and stores the files to OnDemand AnyStore.
- OnDemand Report Management Cycle copies objects from DASD to Optical based on the OnDemand Report Definition.

2. Installation

The following steps are involved in installing the system:

- Install IBM OnDemand for AS/400 Spool file archive feature.
  - Follow the IBM instructions to install to the default libraries: QRDARS and QUSRRDARS.
  - OnDemand/400 manages the archival of objects.
- Install IBM OnDemand AnyStore option.
  - For OS/400 v.4.2 and higher, AnyStore is a separately orderable feature of OnDemand/400.
  - For OS/400 v.4.1 and earlier, AnyStore is an IBM software services offering supported by the OnDemand/400 lab that installs to the default library: QRDARSA.
  - AnyStore is an API that enhances OnDemand Spool file archive for the storage of any (non SCS or AFP) objects.
- Install IBM OnDemand for AS/400 PTFs.
  - There are non-cumulative PTFs that are required. These are listed in the OnDemand/400 release specific Informational APAR.
- Install the AS/400 portion of IBM OnDemand AnyStore Integration Script.
  - This is an IBM software services offering supported by IBM OnDemand lab.
  - Follow the instructions to install the AS/400 portion to default library: QRDARSK.
  - The PC software portion is not needed, (it is used for integration with document scanning.)
  - The Integration Script software provides a program and file interface to the AnyStore APIs
- Install the OAS Corp. Spool Parsing application.
  - Use the AS/400 RSTLIB command to restore to the default library: OASSPOOL.
  - The Spool Parser application parses larger spool files into individual spool files each with one unique set of indexing information.
- Install the OAS Corp. Postscript Indexing application.
  - Use the AS/400 RSTLIB command to restore to the default library: USTOASLIB.
  - The Postscript Indexing application extracts indexing information from Postscript files for processing by the AnyStore Integration script software.
- Create an AS/400 Shared Folder called USTOAS.
  - This folder holds the Postscript formatted PC files temporarily between being processed by the Postscript Indexing application and the AnyStore Integration script.
- Install OAS Corp. NetConnect for OnDemand/400.
  - Follow the OAS Corp. instructions to install to the default library: OASINET.
  - NetConnect for OnDemand/400 enables browser access to OnDemand Spool file archive and AnyStore.

- Verify the installation of Netscape Navigator or Microsoft Internet Explorer v.3 or higher web browser on PC.
- Install the LaserGo Postscript browser plugin on PC.
  - Follow the LaserGo instructions to install into the PLUGINS subdirectory of either browser.
  - Postscript plugin interprets Postscript codes and displays the object in the browser.
  - See additional notes regarding the LaserGo plugin in the Special Considerations section at the end of this document

3. Setup

Software setup is required to process your specific files.

3.0 Indexing Definition File - USTRPTDEF

The PS Indexing program monitors an AS/400 Output Queue for new spool files. The program processes each spool file. It compares the spool file name (or spool file form type or user data field) to the records in the configuration file. The configuration file describes where to find indexing information in the file using the Postscript variable names. A description of the USTOASLIB/USTRPTDEF file is listed below:

```
WORK WITH DATA IN A FILE                        Mode . . . . :   CHANGE
Format . . . . :   USTREPDEFR                   File . . . . :   USTRPTDEF

SPFNAME:    INVOICEPS                   RPTNAME:    INVOICE
VARNAME1:   $v.SOLD_TO                  VARLENGTH1: 10
VARREQ1:     Y                           VARNAME2:   $v.INVOICE
VARLENGTH2: 10                          VARREQ2:
VARNAME3:   $v.ORDER_NBR                VARLENGTH3: 12
VARREQ3:                                VARNAME4:   $v.SHIP_STATE
VARLENGTH4: 13                          VARREQ4:
VARNAME5:                               VARLENGTH5:
VARREQ5:                                VARDATE:    $v.DATE
VARDATELEN:  7                          VARDATEREQ:
```

Field Name	Description	Example
SPFNAME	Spool file name as listed in the OutQ. (This could be read from the Spool file name field, the Form type field or the User data field. The attribute to read is specified at program startup. Must be all caps.	INVOICEPS
RPTNAME	OnDemand/400 AnyStore report name, up to 10 characters. Must be all caps.	INVOICE
VARNAME1 – VARNAME5	Variable names in Postscript file to use for OnDemand Report key fields 1 to 5. Case sensitive.	$v.INVOICE
VARREQ1 – VARREQ5	Y or N specified whether the field is required for processing. If Y then the field must be populated in the Postscript file for successful processing. Default if blank is N.	Y, N or blank

VARLENGTH1 – VARLENGTH5	Length of the variable name. Number of characters in corresponding VARNAMEx field.	1 – 25
VARDATE	Variable name in Postscript file to use for OnDemand Report date. Case sensitive.	$v.DATE
VARDATELEN	Length of the date variable name. Number of characters in corresponding VARDATE field.	1 – 25
VARDATEREQ	Y or N specified whether the date field is required for processing. If Y then the field must be populated in the Postscript file for successful processing. Default if blank is N.	Y, N or blank

Once established, this file can be maintained by your system administrator using AS/400 DFU. This enables the changing of indexing parameters for existing records and the addition of new reports.

3.1 Indexing INI File - USTINI

There is a single record in the INI file. It specifies whether to delete the spool files and the names and library locations of the output queues for processed files. If this record is blank then the program uses the default values and names listed in the table below.

```
WORK WITH DATA IN A FILE                          Mode . . . . :   ENTRY
 Format . . . . :   USTINIREC                      File . . . . :   USTINI


 DLTSPOOL: N
 ERROUTQN: ERROR
 ERROUTQL: USTOASLIB
 PROOUTQN: PROCESS
 PROOUTQL: USTOASLIB
 NONOUTQN: NOTMATCH
 NONOUTQL: USTOASLIB
```

Field Name	Description	Default
DLTSPOOL	Y or N. Specify Y to delete successfully processed spool files. Specify N to move successfully processed spool files to the output queue specified in the PROOUTQN field.	N
ERROUTQN/ ERROUTQL	Name and library of the error output queue. Postscript files are written to the output queue if there is an error processing the file.	ERROR USTOASLIB
PROOUTQN/ PROOUTQL	Name and library of the processed output queue. Postscript files are written to the output queue if they are successfully processed.	PROCESS USTOASLIB
NONOUTQN/ NONOUTQL	Name and library of the error output queue. Postscript files are written to the output queue if there is an error processing the file.	NOTMATCH USTOASLIB

4. Operations

There are several jobs that should be run routinely; normally on a daily basis.

4.0 Spool Parsing

4.0.1 Start Monitor

The Spool Parsing application should be scheduled to run continuously (during the time that the Postscript files are being created) in batch with the following command:

The library OASSPOOL must exist in the AS/400 library list.

```
ADDLIBLE OASSPOOL
OASSPOOL/USTSTRSPL INPUTQ(YOURLIB/PARSEQ) OUTPUTQ(YOURLIB/LASERARC)
    DELETEVAL(*YES)
```

The program has three passed parameters:

- InputQ is the AS/400 Output queue library/name to monitor
- OutputQ is the AS/400 Output queue library/name to write the resulting individual spool files.
- Set DeleteVal to *YES to delete the source spool file if successfully processed. Set DeleteVal to *NO to have the source spool file automatically moved to output queue OASSPOOL/OUTPUT.

Recommend using SBMJOB to run this command or add this command top the AS/400 Job Scheduler. This allows for the selection of a specific Job queue.

More than one monitor program can be run simultaneously, each monitoring a different output queue. However, only one monitor program can be run per InputQ.

4.0.2 End Monitor

The Spool Parsing application can be ended with the following command:

```
USTENDSPL INPUTQ(YOURLIB/ANYSTORE)
```

The program has one passed parameters:

- InputQ is the name of the AS/400 Output queue library/name to end monitoring.

4.1 Postscript Indexing

4.1.1 Start Monitor

The Postscript Indexing application should be scheduled to run continuously (during the time that the Postscript files are being created) in batch with the following command:

The libraries USTOASMON and QRDARSK must exist in the AS/400 library list.

```
ADDLIBLE USTOASMON
ADDLIBLE QRDARSK
USTSTRMON OUTPUTQ(YOURLIB/LASERARCQ) VALCHK(*USERDATA)
```

The program has two passed parameters:

- AS/400 Output queue library/name to monitor
- Source of name to match to configuration file (either *SPLFNAME, *FORMTYPE, or *USERDATA)

Recommend using SBMJOB to run this command or add this command top the AS/400 Job Scheduler. This allows for the selection of a specific Job queue.

More than one monitor program can be run simultaneously, each monitoring a different output queue. However, only one monitor program can be run per output queue.

4.1.2 End Monitor

The Postscript Indexing application can be ended with the following command:

```
USTENDMON OUTPUTQ(YOURLIB/LASERARCQ)
```

The program has one passed parameters:

- AS/400 Output queue library/name to end monitoring.

Recommend using SBMJOB to run this command or add this command top the AS/400 Job Scheduler. This allows for the selection of a specific Job queue.

4.2 OnDemand AnyStore Integration Script

4.2.1 Start Program

The AnyStore Integration Script should be scheduled to run continuously (during the time that the Postscript files are being created) in batch with the following command:

The library QRDARSK must exist in the AS/400 library list.

```
ADDLIBLE QRDARSK
CALL QRLSSTART
```

There are no parameters.

Recommend using SBMJOB to run this command or add this command top the AS/400 Job Scheduler. This command must be submitted using OnDemand/400 default Job description of QRDARS/QRDARS400.

4.2.2 End Program

The AnyStore Integration Script MUST be ended with the following command:

```
CALL QRLSEND
```

There are no parameters.

Unpredictable results may occur when retrieving stored documents if the QRLSSTART program is not ended using the QRLSEND program.

4.3 OnDemand Optical Report Management Cycle

This applies only if you have optical configured with OnDemand for AS/400.

The OnDemand Report Management Cycle manages the movement of objects from DASD to Optical, and the deletion of objects from DASD. This program should be run during off-shift so that it does not inhibit retrieval.

```
STRRMCRDAR
```

5. Maintenance

5.0 Adding Postscript Forms

To add new Postscript forms:

- Decide on OnDemand indexing variables.
  - Decide on Group name, Report name, up to 5 index fields and one date field.
- Determine Postscript variable names of each of 5 index field and date field.
  - Edit a sample spool file in an AS/400 output queue.
- Create a new OnDemand Group (optional). May use existing Group with same index keys.
- Create a new OnDemand Report Definition. You must use the OnDemand Graphical Report Definition Tool to create the report definition.
  - Report type = ANYS
  - Data type = *IFS
  - Object class = PS
  - Compression = checked
- Define security within OnDemand using OnDemand option 11.
- Add a record to the USTOASLIB/USTRPTDEF file.
- Test:
  - Copy the sample Postscript spool file to a Test output queue.
  - Start the Spool Parsing application.
  - Confirm that parsed spool files correctly written to the destination output queue.
  - End the Spool Parsing application.
  - Confirm that the Postscript writer is processing the spool files and sending them to the correct destination output queue as Postscript formatted *SCS spool files.
  - Start the Postscript indexing application set to monitor output queue containing the Postscript formatted *SCS spool files.
  - Check results by displaying the indexing information written to the QRDARSK/QARLSSTOR file. Confirm that the indexing information is correct.
  - End the Postscript indexing application.
  - Start AnyStore Integration Script.
  - End AnyStore Integration Script.
  - Check if there are any records in the QRDARSK/QARLSLOG file.
  - Retrieve from browser with Postscript plug-in.

6. Error Processing

6.0 Postscript Indexing

6.0.1 Spool Names Not Matching Report Definition File

If the USTSTRMON program encounters a spool file with a name that does not match a record in the USTOASLIB/USTRPTDEF file, then the spool file is moved to the USTOASLIB/NOTMATCH output queue.

To correct this problem, validate that the either the Spool file name, the Form type, or the User data field (as specified when starting the USTSTRMON program) matches a record in the USTOASLIB/USTRPTDEF file.

6.0.2 Indexing Error

If the USTSTRMON program encounters an error while processing a spool file, then the spool file is moved to the USTOASLIB/ERROR output queue and a record is written to the file USTOASLIB/USTERRLOG. The most common problem is that an indexing field that is marked at required in the USTRPTDEF file is not found in the spool file.

Message information can be found by displaying the file USTOASLIB/USTOASMSG.

The error file contains the following information:

```
WORK WITH DATA IN A FILE                          Mode . . . . :   CHANGE
 Format . . . . :   USTERRERRR                     File . . . . :   USTERRLOG

 *RECNBR:         1                       ERRDATE:   19990420
 ERRTIME:  13235621                       SPOOLNAME: USTPRINT
 REPORT:   USTPRINT                       JOBNAME:   QPADEV0004
 USERID:   NGUYENS                        JOBNUMBER: 037698
 SPLNUM:        1                         OUTQNAME:  TEST
 OUTQLIB:  USTOASLIB                      VARNAME1:
 VARNAME2:                                VARNAME3:  v.BRANCH
 VARNAME4:                                VARNAME5:
 VARDATE:  v.DATE                         VARVAL1:
 VARVAL2:                                 VARVAL3:
 VARVAL4:                                 VARVAL5:
 DATEVAL:                                 MESSID:    UST0100
 MESSDATA: 3




 F3=Exit                F5=Refresh              F6=Select format
 F9=Insert              F10=Entry               F11=
```

7. Special Considerations

7.0 Create!print

7.0.1 SCS vs. ASCII Output

If using Create!print as the application on the AS/400 to create the Postscript formatted spool file, the flag Generate ASCII in the laser writer definition must be set to no for the spool file that is to be processed for autoindexing and archival into OnDemand.

If both an *USERASCII and *SCS copy of the spool file are required then this may be accomplished using Next Form Copy capability within Create!print.

7.0.2 Spool File Naming

Create!print moves the value in FormType to the UserData field when it converts the spool file to the Postscript output queue.

7.1 Testing Tips

An ASCII formatted copy of the Postscript file can be sent directly to the printer for test purposes using the following DOS command:

```
C:\>COPY FILENAME.PS LPT1: /B
```

7.2 LaserGo Plugin

7.2.1 Setup Recommendations

Add about install of plugin in subdirectory called C:\PROGRAM FILES\INTERNET EXPLORER\PLUGINS

After running the setup command, copy the GOSCRIPT.INI file that has been setup on an initial test machine to contain the customer specific parameters. The file must be copied into the subdirectory C:\PROGRAM FILES\INTERNET EXPLORER\PLUGINS.