

OS/390 and z/OS Freeware Collection

By Lionel B. Dyck

Every systems programmer has a collection of software tools that they rely on. Lionel Dyck shares several of the free software tools for OS/390 and z/OS, written in the REXX programming language, that he has developed over the years.

This article describes a number of free software tools for OS/390 and z/OS developed by the author over the years. Each of these tools is available on the author's Web site at <http://www.lbdsoftware.com> and is available without guarantee or warranty.

Every systems programmer collects and develops a set of software tools to make his job easier. In some cases these tools are private tools and in other cases the tools are more generalized and intended to simplify the task of their users. The tools presented here are in the latter category and the author of this article wrote them. Some have been discussed in previous articles in this publication and are mentioned here for those new to this publication (or who skipped the previous articles because of the pressure of work).

I've been asked why I give these away for free. The answer is that I have been in systems programming since 1972 and have used tools from the SHARE MVT Mods Tape, the Los Angeles MVS Users Group Tape, the GUIDE ISPF Tools Tape, and the CBT Tape both as tools and as a vehicle for learning how to code. This is my way of contributing something back to the community.

All of these tools are written in the REXX programming language and many have an ISPF interface to simplify their usage. The tools will be discussed in two general categories: general tools and TCP/IP tools.

GENERAL TOOLS

ALLOCGDG provides a facility for both CLIST and REXX applications to allocate the current or previous data set in a generation data group (GDG). This tool was developed out of a need to allocate the current generation of a data set without requiring the user to specify the absolute generation number.

The syntax is **allocgdg ddname dsname(gdg)** where **ddname** is the ddname to which the data set is to be allocated. If the **ddname** is an ***** then the fully qualified data set name is returned to the caller of the command. The **gdg** qualifier may be 0, for the current generation, or **-n** for any prior generation of the data set.

To use **allocgdg** to retrieve the fully qualified data set name the syntax in REXX is:

```
gdg_dsn = allocgdg("* 'hlq.dsname(n)'")
```

CMT is an ISPF Edit command that is useful for creating comments in source code. **CMT** was developed with Bill George and supports comments for Assembler, CLIST, COBOL, JCL, REXX and other language types. This tool is something that I would encourage all ISPF Edit users to use who write JCL or programs as comments are important, perhaps not for you, but for anyone who has to maintain or update the code.

CAVXTRT is an ISPF dialog that improves upon the ISPF interface provided by Computer Associates for their CA-View product. This tool was developed because of the number of calls asking how to copy the selected report to the user's workstation for further processing and the

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REPORT

amount of time spent explaining the steps to do so. The selection criteria are easier to enter while providing a view similar to the CA-View interface. Once a list of reports is displayed, the user has several more options available including:

- ▼ Browse the selected report using ISPF Browse
- ▼ Copy the selected report to a data set
- ▼ Load the selected report to disk
- ▼ Mail the selected report using XMITIP (see later for information on XMITIP)
- ▼ Print the selected report
- ▼ Transfer the selected report using IND\$FILE or FTP to the user's workstation
- ▼ View the selected report using ISPF View

GENSUB is a simple ISPF dialog providing a generalized JOB submission process for other dialogs. Many ISPF dialogs that submit JCL for batch processing can benefit from this dialog that is called by passing the data set name of the data set containing the generated JCL to submit. The dialog then prompts the user with the options to Browse, Submit, or Cancel the JCL submission.

NEWS is an ISPF dialog that provides a news or announcement application for your ISPF users. If implemented using the suggested modifications to the ISPF Primary panel (ISR@PRIM), then your users will be presented with a table listing the new and unread news items once per day. The display of news and announcements allows the users to read or print the items of interest. Additionally, the user can mark an item as ignored so that the item will no longer be displayed when they start ISPF each day. See "RNEWS: An ISPF News and Announcement Tool," *Technical Support* magazine, January 2002, for an article about this tool.

PLPISPF is an ISPF table driven dialog that can replace many local ISPF menus at your site. This is a fully dynamic ISPF menu tool that supports the dynamic allocation, using ALTLIB, LIBDEF, and optionally a dynamic STEPLIB command. See "Product Launch Point: An ISPF Tool to Simplify Local ISPF Menus," *Technical Support* magazine, July 2002, for an article about this tool.

PRMCK is an ISPF Edit command that is a simple-to-use syntax checker for several member types of SYS1.PARMLIB. Among the member types supported are PROGxx, LNKSTxx, and LPALSTxx. Any data set

specified is verified that it exists on the volume specified or in the catalog. For Linklist data sets, the number of extents and secondary allocations are checked and used for reporting. This is not 100%, but it does a reasonable job and catches many of the coding mistakes that are encountered.

SDSFEXT simplifies extracting reports from batch jobs, both active and completed, with an automated process without having to learn the details of using SDSF to do so. A job name with optional job number is specified along with an optional stepname, procname, and ddname. The report(s) that match the selection criteria are extracted to a data set which can then be processed by another program.

SDSFPAGE and **EDITPAGE** are useful with SDSF or when editing a report in a data set to select a specific page or range of pages. Once the page or pages are selected, the user will be presented with various options including Browsing using ISPF Browse, Copying to a data set, Editing, Printing, Mailing (using XMITIP), or downloading using IND\$File or FTP (see FIGURE 1). This tool was developed after numerous requests from users to be able to select a page or pages from within a report while in SDSF. See "SDSF Add-Ons to Enhance the User Experience," *Technical Support* magazine, April 2001, for an article about this tool.

TSOTRAP is a useful REXX command that should be in every installation's ISPF Command table. TSOTRAP is called passing any TSO command, which is then executed and the output is captured and displayed using ISPF Browse. This only works for those TSO commands that use PUTLINE to report their information to the user (TPUT output unfortunately can not be captured).

TCP/IP TOOLS

These tools provide a more usable interface to some of the TCP/IP services.

FTPBatch is a very useful ISPF dialog that simplifies sending data sets from an OS/390 or z/OS system to another OS/390, z/OS, or other system (see FIGURE 2). The dialog supports generating both foreground as well as background (batch) file transfers while supporting the FTP of the following types of data sets:

- ▼ Sequential data sets
- ▼ Partitioned data sets (including load libraries), individual, selected, or all members.
- ▼ HFS data sets

- ▼ HFS files
- ▼ Any other data set
- ▼ Multiple data sets

Sequential data sets as well as partitioned data sets can be processed in the foreground while any data set is supported in a batch process. Data sets other than sequential or partitioned are processed using a multiple step batch job. First, the batch job uses DF/DSS to unload the requested data set(s). Second, the batch job transfers the unloaded data sets to the target host, then submits a batch job on the target host using an FTP job submission process where the unloaded data sets are reloaded. This provides support for any data set that DF/DSS supports including VSAM. See "Transporting Files Between MVS and MVS, or Between MVS and a Workstation," *Technical Support* magazine, December, 1997, for an article about this tool (which has been enhanced beyond the state it was in when that article was published).

LDAPMAIL is an ISPF application that demonstrates how to look up an e-mail address based on a user name using the LDAP interface. This tool was developed as a learning exercise when learning how to use the capability that was then added to the XMITIP application which is discussed later.

LPRPRINT is an ISPF interface to the TCP/IP Line Print LPR daemon used by a user to request that a file be printed to a TCP/IP connected printer. This dialog allows the user to specify a data set name, a host name, and a printer name, along with other LPR options. This tool is included in the PRINT package available on my Web site.

PSPRINT is a tool that converts a sequential data set into a post-script format for printing on a post-script enabled printer. The user can configure the print file for 1-up, 2-up, or 4-up printing. This tool is included in the PRINT package available on my Web site.

TXT2HTML will convert any sequential data set or member of a partitioned data set to HTML format. The user can define a page title, background and text color, along with the output data set name. This data set can then be transferred to a location where a Web server can serve it. There is both an ISPF and a command line interface to this tool. This tool is also incorporated with the XMITIP package.

TXT2PDF will convert any sequential data set or member of a partitioned data set into Adobe Acrobat Portable Document Format (PDF). Leland Lucius developed the main conversion tool, and I developed the ISPF

interface. This tool provides a lot of formatting options including background and text colors, font name and size, indexing, watermark, and more. This tool is called by XMITIP but not included in the XMITIP package.

XMITIP provides the ability to generate an electronic mail from OS/390 or z/OS for delivery to any Intranet or Internet e-mail address (see FIGURE 3). The e-mail may include data sets as file attachments with the data sets attached in plain text or converted to HTML, PDF or RTF (Rich Text Format usable in Microsoft Word). Data sets may also be attached as binary attachments, which is appropriate for data sets in ZIP or TSO Transmit formats. See "Distributing Reports from Batch Jobs via E-mail—Enhanced," *Technical Support* magazine, December, 1999, for an article about this tool (which has been enhanced beyond the state it was in when that article was published). XMITIP is perhaps the most popular of my tools with over 200 e-mail addresses in the beta and notification distribution lists.

CONCLUSION

Many of these tools are packaged with documentation for end users as well as installation instructions, while some are provided as is. Other tools are available on my Web site that are not discussed in this article. For more tools check out the CBT Web site at <http://www.cbt-tape.org>.



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FIGURE 1: SDSFPAGE AND EDITPAGE POST-PROCESSING SELECTION

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----- SDSF Page Menu 1.26 -----
Command Input ==>

Select Page Print Option:

  1 (B) - Browse the Data Set
  2 (P) - Print to Sysout
  3 (C) - Copy to Data Set
  4 (M) - Mail Data Set (via XMITIP) Format: txt (html,pdf,rtf,txt)
  5 (E) - Edit Data Set
  6 (T) - Transfer to a PC
  
```

FIGURE 2: FTPBATCH PANEL EXAMPLE

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----- TCP/IP FTP Dialog ----- 1.207
Command ==>

Source Data Set ==> data.set
                        member of '*' for all members if PDS or pattern x*

Target Information:
  Hostname      ==> hostname
  Host Data Set ==>
                        New dsname or file name
                        or ?

User Information:
  Userid      ==> userid
  Password    ==>
  Verify Password ==> blank for anonymous

Optional Information:
  MVS Target ==> Yes      Is the target system running MVS? Yes or No
  Binary     ==> No       Yes or No (use No for MVS to MVS)
  Firewall   ==> No       Address if Yes ==> internet.kaiperm.org
  Initial    ==>
  cmds       ==>

Move cursor to field and press HELP (PF1) or
See the IBM TCP/IP User's Guide for more information on FTP
  
```

FIGURE 3: XMITIP PROCESSING PANEL

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----- E-Mail Dialog 4.76 -----
Command ==>

Recipient Address ==>
Message DSN or * ==>
Edit Message DSN ==> Yes or No

Execution Mode ==> I ISPF B Batch C Config P Prompt D
Debug
Subject ==>
Configuration File ==>
Default Settings ==> Yes or No

CC Address ==>
BCC Address ==>
AddressFile ==>
Delivery Settings ==> Yes or No (for Import, Prior, Sens)

Attachment DSN or ? ==>
Attachment Name ==>
Format (?=prompt) ==>
Settings ==> Yes or No

Field level help available via PF1
  
```