

Q-Tips

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Local Print Object

Limitless Terminal Printing Possibilities

Spring is in the air and a young script writer's thoughts turn to Local Print Objects? But of course!

When you have a need for more capability than you can get out of standard print handlers, Local Print Objects or LPOs are the way to go. You can create LPOs to interpret, integrate or extend normal host print data to special printing requirements or into other Windows applications.

What exactly is a Local Print Object?

A Local Print Object is a user-written terminal print handler used in place of normal terminal printing provided by the eXpress and QPlex terminal emulation series from KMSystems. LPOs are written as out-of-process OLE servers. LPOs can be written using any programming language that can be used to create an out-of-process OLE server such as Visual Basic, C++, Delphi, etc.

Why Use Local Print Objects?

The terminal emulators from KMSystems, like those from other vendors, perform printing exactly like the old hardware terminals they emulate with very few exceptions; however, many times additional printing requirements may be needed.

One example of a special printing requirement, and the one that LPO technology was originally developed to satisfy, is translation of city codes to Chinese for Chinese airline ticket

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"I keep on hitting 'escape'
but I'm still here."



Planning a 2200 Hardware Upgrade?

Important Information for I-QU PLUS-1, I-QU ReorgComposer Q-LINK and InfoQuest Users

As you make plans to move your 2200 processing to a new ClearPath platform, please take a few moments to determine if you are using any of the following proprietary software from KMSystems: I-QU PLUS-1, I-QU ReorgComposer, Q-LINK or InfoQuest. These four products are licensed by KMSystems to function on a specific system. When you transfer the software to a new Unisys ClearPath machine, you will need to contact KMSystems to obtain a product key so the software will operate properly on the new system. KMSystems charges a small transfer fee to move the software from one system to another. The transfer fee is five percent of the current price of the software configuration for which you require new keys.

For sites with disaster recovery requirements, KMSystems offers affordable options anywhere from "no charge" to ten percent of the current price. If you only need to test for a few days, there is no charge for a key. For more extensive testing, charges may be prorated depending on the amount of time required for testing.

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printing. In this case, the host application sends what looks like a standard airline ticket to the terminal emulator to be printed on a ticket form. When the emulator receives the print command (DC2 control sequence) it passes the information to a custom LPO instead of the printer. The LPO reads the data, does a lookup of the city codes and translates them into the Chinese city name using Chinese characters.

to enhance the final printed information. Furthermore, host print data does not necessarily have to be printed. The LPO can be used to place the information in other databases or to send directly to other applications. One LPO currently in use collects all print data into a continuous text file which is restarted each day. These files are used for audit and analysis.

How Do Local Print Objects Work?

As mentioned earlier, LPOs are written as out-of-process OLE servers. To work with eXpress or QFlex terminal emulators, the only requirement is that the LPO publish five standard methods (or functions) defined as follows:

LPO_Initialize

LPO_Initialize is called once by the emulator just before the first call to LPO_Open. This method is provided to allow the LPO to perform any user-defined one-time initialization. If no action is needed this function should just return a 1.

Format:

Function LPO_Initialize (*Options* as Integer) as Integer

Options is the contents of the User Options entry on the printer device setup configuration. The LPO developer defines the content and use of this parameter. The emulator does not use or modify it in any way.

The LPO_Initialize function must return the Window Handle of the LPO's main window if successful, or a zero if not successful. A Windows WM_Close message is posted to the LPO's main window using this handle when the UTS screen is closed. This action is done to close the LPO automatically when its client UTS screen is closed.

LPO_Open

LPO_Open is called whenever the emulator opens the printer.

Format:

Function LPO_Open (*ScreenRows* as Integer, *ScreenColumns* as Integer) as Integer

The emulator passes the screen size of the current screen in the *ScreenRows* and *ScreenColumns* parameters. The return value must be a 1 or 0 indicating success or failure, respectively.

LPO_PrintData

LPO_PrintData is called whenever the emulator receives a screen print command. The command can come from the host or the keyboard.

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The data is then formatted into a standard ticket form with the Chinese city names added and sent to the printer.

Other possibilities are bar code printing for inventory management systems or airline baggage tags. Another application might integrate the host print data with data from other sources (a network database, spreadsheet, etc.)

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Format:

Function LPO_PrintData (*ScreenData* as WideString, *ScreenAttributes* as WideString, *CursorRow* as Integer, *CursorColumn* as Integer, *Flags* as Integer) as Integer

ScreenData and *ScreenAttributes* are passed as WideStrings, but are used as arrays of word (unsigned, 16-bit integers).

The *ScreenData* array contains ALL characters in the screen. Double-byte characters are ORed with 100 hex for the lead byte and 200 hex for the trailing byte.

ScreenAttributes contains the attribute flags associated with the corresponding screen character. Attributes are defined as follows:

The *Flags* parameter indicates the type of terminal print function requested. For UTS emulators, *Flags* are defined as follows: 0 = Print; 1 = Print Form; 2 = Print Transparent; 4 = Print Screen All.

The return value must be a 1 or 0 indicating success or failure, respectively.

LPO_Close

LPO_Close is called whenever the emulator closes the current print operation. The printer is closed when one of the following occurs: the screen is closed; the user closes the printer from the screens file menu; or the printer timeout limit is reached.

Format:

Function LPO_Close as Integer

The return value must be a 1 or 0 indicating success or failure, respectively.

LPO_Show

The emulator does not currently call LPO_Show; however, it may be used in the future and must exist in the LPO.

Format:

Function LPO_Show (*Options* as Integer) as Integer

The *Options* parameter is not yet defined. The return value must be a 1 indicating success.

How is an LPO selected?

Once the LPO is created, you simply configure (select) it in any KMSystems emulator as you would any standard printer.

So, spring into action today and give LPOs a try. If you have any questions or think that LPOs might be a part of your application solution, please give KMSystems a call ... or send an email message. We are always willing to help and are easy to reach. Our telephone number is (770) 635-6350 and our email address is sales@kmsys.com.

Tool Tips

Get even more out of your products

Q Is there a way to increase the size of the printer buffer in I-QU. Right now it is only 132 characters and I would like to increase that value.

A The display output is limited to 132 characters before line wrap occurs; however, the internal I-QU PLUS-1 print buffer is the same size as the RDA. Using the plus (+) character on the DISPLAY, EDIT, TRIMDISP and TRIMEDIT commands allows you to stage into the \$PBUFF variable. You may then set this in the RDA and WRITE it to a SEQ file and @SYM the output. Here is a simple example:

```
@ASG,UP TEMP.
@IQU
DEF F TEMP SEQ 200,1
DISP '1234567890123456789012345678901234567890' +
DISP '1234567890123456789012345678901234567890' +
DISP '1234567890123456789012345678901234567890' +
RDA (1,200) = $PBUFF
OPEN TEMP OUTPUT SEQ
WRITE TEMP
WRITE TEMP
WRITE TEMP
CLOSE TEMP
CSF X '@SYM,U TEMP.,,PR'
```



Keeping Current

Current KMSystems product levels

Product	Current Version
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eQuate Web	2.1
InfoQuest	5R6
I-QU PLUS-1	11R6
I-QU ReorgComposer	3R1
Q-LINK	6R6
QPlex Client	3.1
QPlex Server	1.0
QPlexView	3.1
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