Codehost Job Submission Tool Installation & User Guide

June 4, 2007

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1 Product Overview

1.1 Codehost Job Submission Tool

Codehost Job Submission Tool (JST) is a comprehensive tool designed for testing the capabilities of both the output device and the underlying print system, and submitting a variety of jobs for batch printing in a non-test environment.

JST is a purely optional component to Codehost BrightQ. Please visit http://www.codehost.com/ `http://www.codehost.com/` for more information regarding Codehost and BrightQ.

1.2 BrightINSTALL

BrightINSTALL allows for an easy X Window System or Unix shell-based interface installation of any of Codehost's products, including BrightQ and JST.

2 System Requirements

In order to effectively print on Linux and Unix, JST fully utilises BrightQ and, as such, cannot be installed without BrightQ already installed on the target system. JST's other system requirements match the BrightQ system requirements. If you have BrightQ installed and working, then JST should be able to run.

Operating Systems

At the time of writing, JST is only officially supported on Solaris, FreeBSD and Linux. More platforms can be made available in future if there is demand on the part of the print vendor or JST licensee.

X Window Server

JST does not have a command line mode. Therefore, in order to run JST, you must have an X window system installed and running.

The minimum version of X supported varies by operating system. If you have Linux, then you must have at least XFree86 4.0, or any X.org release. On any other unix, JST requires at least X version 11 Release 5 (X11R5 or above), or any X.org release.

Hardware

JST requires 10M of free hard drive space to install and run.

JST does not include any test files; You are expected to have, or be able to acquire, your own set of test files for use with JST. These will consume additional hard drive space, depending on what files you have or use.

JST requires 32M of memory on your system to run.

3 Installing JST

Note: It is always recommended that you check Codehost's or your printer OEM's web site for recent JST and BrightQ updates, patches, FAQ/Technotes, and the most recent release notes.

The Installation of JST on any computer involves the following core steps:

1. Ensure that your system satisfies the system requirements set out above. If you have successfully installed BrightQ, then your system will satisfy the requirements.

2. Make the appropriate installer available on the computer you wish to install it on. This may include downloading to another computer and burning it to a CD.

3. Running the installation program and following the steps therein

To install BrightQ, please visit the website for Codehost or your Printer OEM, and follow download and installation instructions from there.

The installer for JST is packaged in a ".run" file for your operating system. Each installer contains versions of the software for every CPU architecture supported by that operating system; you do not need to choose your CPU architecture, BrightINSTALL will automatically do this for you. The filename for the JST installer will be of the form: *jst-{version}-{OS}.run*

The Version in the filename must match the version of your BrightQ install. For example, JST version 2.0 WILL NOT WORK with BrightQ version 1.6.5. To check the version of your BrightQ install, you can use the command *"codehost-config –version"* (without the quotes).

The installation process is otherwise very similar to BrightQ. To begin the installation process, use the command *"sh jst-{version}-{OS}.run"* (without the quotes). In

place of *"jst-{version}-{OS}.run"*, please put the full path and filename of the file that you downloaded.

We strongly recommend that you do the "Recommended" install, as it will use settings and expectations from the installation of BrightQ itself.

If you choose to do an "Expert" install, many of the options will be greyed out, as they are immutable and relate to BrightQ. You will be offered two remaining choices:

- **Where to link JST:** This is the full path to where JST will be linked. Normally it will default to /usr/local/bin
- **Whether to create startup menu entries:** This controls whether or not an entry for JST will be placed in your "start menu" or equivalent, alongside other applications in the BrightQ suite

4 JST Features

Presented here is a small selection of the additional features JST provides in order to enhance the normal cycle of printing individual jobs and checking the output.

Cover pages

For every job it prints, JST prepends a cover page describing exactly what that job is and what how it was meant to output. This is sent as a separate job from the main file in order to guarantee preservation of exactly what the user expected. The test page specifically includes the following fields: Queue Name, Job Filename, Print Command and Print Options (in human readable form). Any options that represent passwords are deliberately obfuscated by the application.

File types

JST supports an unprecedented variety of file types. It can print all the jobs you'd normally expect, with extra features such as printing the dynamic output of other programs and automatically printing folder contents as well as individual files.

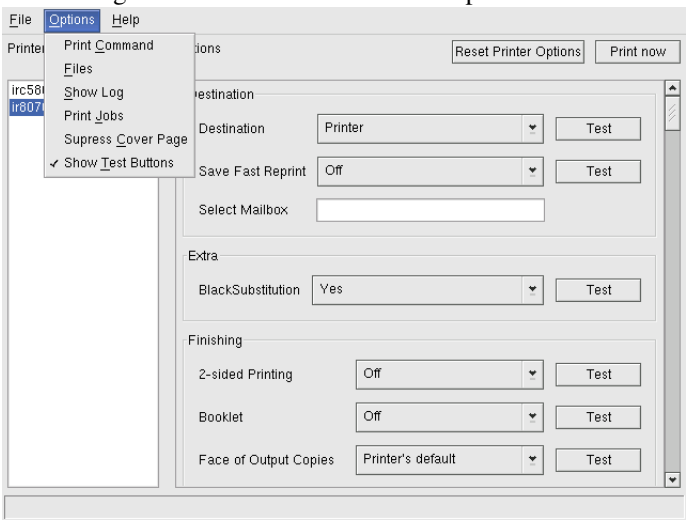
File groups

For your testing convenience, JST prints groups of files at a time. You may, for example, have a group that contains every image format supported by the print system. You can easily print the entire group at once with just one mouse click, verifying support of all known image formats.

Print system testing

JST understands all of the features commonly available in underlying print systems, and can print jobs examining those options in addition to device-specific ones.

Figure 1: JST Main window with options menu



Job Logging

In addition to printing cover pages for every job, JST maintains a log of all jobs that it prints in the current session, making them available for repeat testing with one click, and making it easy to copy the log into another application such as your testing matrix.

User Interface Branding

Using the same branding mechanism as it's parent product Codehost's BrightQ, JST supports user-interface branding that reflects the vendor for the device currently in use. Additional vendor information may be printed out on the cover page.

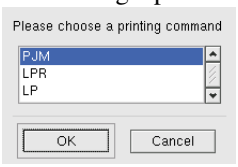
5 User Interface Overview

5.1 Selecting Print Queues and Changing Options

5.1.1 Selecting Print Queues

To test using JST, you must have set up queues you wish to test using Codehost BrightQ. When you start JST, it will usually select the default print queue on your system for testing. You may easily select any of the queues that you have set up using BrightQ, just by clicking on that queue. If you add queues to BrightQ while JST is running the changes will not be reflected until you restart JST.

Figure 2: Choosing a print command



5.1.2 Changing Queue Options

With a queue selected, options on the right will appear exactly as they normally would within BrightQ.

In addition to the normal printer/ppd options, there is a large group of options below these, within a border titled “CUPS Options”. These options reflect the options found elsewhere within BrightQ. They are options to the print system, rather than PPD options. Please see BrightQ documentation for further details on this.

The Test button enables you to select various values for PPD options and is described in detail below.

When you make changes to options on a specific print queue within JST, those options will be conserved for as long as JST is running; you may switch to another queue and examine it’s settings, then switch back and the recent changes you have made will still be there.

Every time you restart JST, the queue settings will revert to the defaults as set in BrightQ. JST will never change any of your queue settings outside of itself.

5.2 Choice of Print Command (Figure 2)

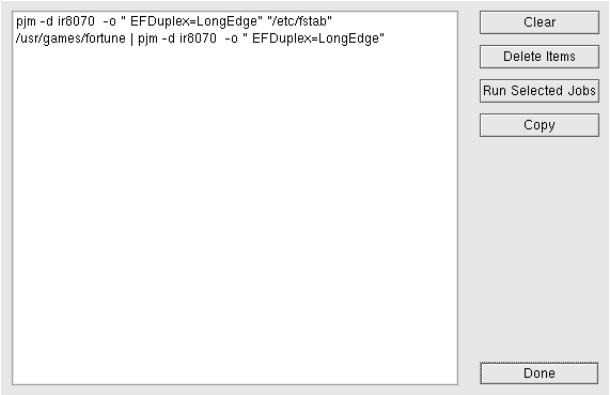
Varying unix systems will have different print commands. Some of them use “lp”, some “lpr”, and the official Codehost program to submit jobs to the print system is called “pjm”, or “Print Job Manager”. At the time of install of BrightQ, you can request that it does NOT re-link your system default printing command to pjm.

In the unusual case that you need to use an alternative command to print than pjm, there is an item called “Print Command” in the options menu. Selecting this will bring up a new dialog, allowing you to choose a different print command to use. Choices at time of writing are “PJM”, “LPR”, and “LP”. This setting will be saved between runs of JST.

5.3 Resetting Options to Default

When you have spent some time working with JST without closing the application, your print queue options may have changed significantly. The “Reset Printer Options” button will, when a queue is selected, revert all of your print queue options to the defaults as they are set in BrightQ.

Figure 3: Log Window



5.4 Immediate (quick) Test

Assuming that you have set up a file group, you can select a queue, select some options, and click the "Print now" option. This will not provide you with any additional choices, it will simply run it's normal tests, without offering extra choices (more details in the "Testing" section later).

5.5 Supressing Cover Page

If you do not wish to print a cover page, there is a choice in the options menu to suppress the cover page.

5.6 Not Printing Jobs

By default, JST is set to NOT print jobs. In the options menu, there is a checkbox called "Print Jobs", which is off by default. It is not uncommon for there to be a very large number of jobs likely to be printed out with any given set of files and option choices.

Rather than printing all of these jobs and opting to examine all of them for the necessary details, this option defaults to off.

All jobs are always sent to the print log, whether they are printed or not. Further details are in the subsection titled "Logging and Repeating Jobs".

5.7 Testing

The use of the "Test" buttons in the user interface is the core functionality of JST, that it was originally designed to facilitate. This has an entire section devoted to it after the discussion of file management.

5.8 Logging and Repeating Jobs (Figure 3)

JST maintains a log of all the jobs that it prints in any given session. The log window doubles as a job activator window, if you are using JST with the "Print jobs" option disabled.

When you print any jobs, the log window will open. You can close it with the "Done" button at the bottom right hand side of the window. This will not clear the window. Anytime that you wish to see the log window again, select the "Show Log" menu item in the "Options" menu.

5.8.1 Clearing

The "Clear" button in the log window will immediately clear the entire job log.

5.8.2 Deleting specific items

To select multiple items in the job window, simply click on each item you wish to select. Clicking a selected item a second time will de-select it. There is no need to use control or shift modifiers to select multiple items.

Once you have selected multiple items, the "Delete Items" button will remove all those items from the log.

5.8.3 Running specific items

After selecting one or more jobs, as described above, you may elect to run those jobs, using the "Run Selected Jobs" button.

Irrespective of the "Print Jobs" setting in the options menu, this button will always send all of the print jobs to the selected output device. These jobs will not be appended to the log.

5.8.4 Copy

After running specific jobs as in the subsection above, those jobs will remain selected. Commonly, you will need to keep a copy of all your testing in a separate format, for normal QA processes. Clicking the "Copy" button will copy all the currently selected jobs to the clipboard on your system. You may go into any other applications and click "Paste" in that application to paste the copied items into that application.

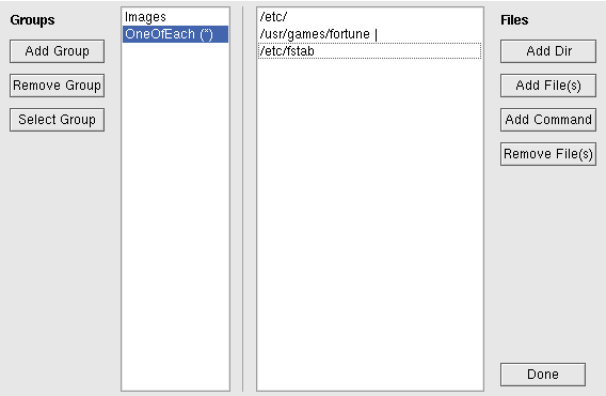
6 Managing Files

6.1 Overview

The files to be printed, also known as "test jobs" or just "files", are arranged into logical "Groups". In this section we discuss how to best utilise JST's abilities to manage files.

To reach the interface for job management, please choose the "Files" menu item in the "Options" menu. This interface is broken into two panes, split vertically. The left

Figure 4: File Management window



hand side of the dialog is for managing groups, and the right hand side is for managing files.

All groups and files will be saved between runs of JST, so you will not need to recreate groups or add the same files if you quit JST and restart it. This information is stored on a per-user basis, so if you set up groups as the root user, normal users on the system will have to create their own, separate, groups. This is for security reasons. Also, you can uninstall and reinstall any of BrightQ and JST, and all your settings will still be available.

The file that this information is stored in is ".codehostjst" in each user's home directory. If you remove this file, JST will be reset to it's defaults, including not having any file groups set up.

6.2 Groups

A logical "Group" is simply a collection of test files. JST will print out a "group" of files, rather than individual files, when you ask it to print, through either the "Print now" or the "Test" buttons, discussed in the Testing section.

6.2.1 Adding

When you add a group, you are asked for a symbolic name for the group. This is a useful descriptor for your own purposes; it does not need to contain any specific information, and will not be represented in the file output. For example, you might wish to call a group "Images", if it will contain nothing but images, or "Generic" if you have a standard collection of testfiles you use. The first time you add a group, it will be selected as the default. See the section "Selecting" for more information on this.

6.2.2 Removing

To remove a group, you can simply select it, and click “Remove Group”. There is no need to remove files (covered below) from a group before removing that group.

6.2.3 Selecting

When you actually wish to print test jobs, you must have a group selected. You can enter the JST file management dialog, and click on a group, then click “Select Group” for that group to become the default. The selected group will be indicated with “(*)”.

6.3 Files

Because JST runs on Linux and Unix systems, it makes sense for there to be more printing abilities than just normal files, or individual test jobs. The three types of files that it can print out are: Directories, Files and Commands. These are covered separately below.

You can have multiple files, groups, and directories all collected under the same group. You do not need to use the “Select Group” feature to add jobs to a group; so long as you have clicked on a group in the groups selection menu, when you add test jobs, the jobs will be appended to that group.

6.3.1 Files (Figure 5)

Files are the basic type of test job that you will use, and form the simplest possible tests, as well as being the ones most commonly used.

Click the “Add File(s)” button. This will bring up a standard file selection dialog, reminiscent of the windows file dialog you will be more familiar with. In this dialog, you can browse to a directory containing files you wish to select, and select one more files. If you wish to select multiple files, use either the control or the shift key while clicking on multiple files. The behaviour of this should exactly match the windows file selection dialog.

You can use repeat this process to add more files to a group.

In the file selection dialog (the right hand side of the file management window), a file will appear as you would expect; it has a full path, and ends with the full name of the file.

6.3.2 Directories (Figure 6)

Printing directories is a quick and easy way to print a large number of files.

When you print a directory that contains three files, those three files will be printed as individual jobs; the final device output will not give an indication of the directory itself.

Printing a directory does NOT enter subdirectories. This means that if you have one directory containing three files and two subdirectories containing eight files each, only the three files in the top-level directory will be printed out. If you wish to additionally print the files in the two subdirectories, you can add those two directories separately.

Figure 5: Add Files dialog

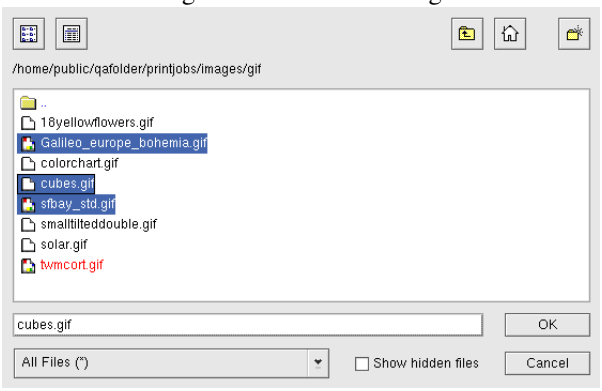
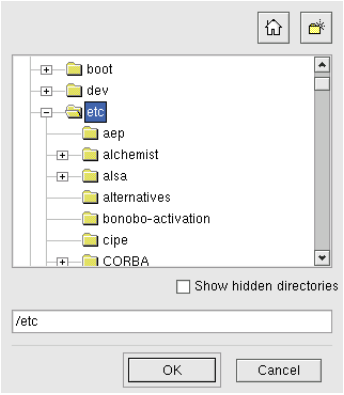


Figure 6: Add Directory dialog

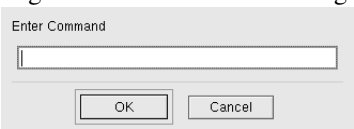


This is also useful for if you do not know the names of files, or they do not yet exist when you create the group. For example, you might be trying to print a log file that's created hourly in a specific directory, with a filename that changes based on date. Rather than adding the new file every time you wish to print it, you can add the directory that it will be placed in, and JST will automatically print that log file every time you print the group containing that directory.

To add a directory, click the "Add Dir" button in the user interface. You will be presented with a directory dialog, again very similar to the windows equivalent. You can only select a single directory at a time.

In the file selection dialog (the right hand side of the file management window), a directory will appear as the full path to that directory, with a '/' suffix, indicating that it is a directory.

Figure 7: Add Command dialog



6.3.3 Commands (Figure 7)

Commands are both the most complex, and most powerful, type of test file that JST supports. This type of testfile is unique to Linux/Unix; no such equivalent exists on windows, and as such bears a little further explanation.

On Unix and Linux, it is common for programs to output text to the console. You will be familiar with a few of these, but without realising it. For example, to look at a list of the files in the /etc directory, you can use the command "ls /etc". Commonly, large databases with Unix or Linux clients (eg, Oracle or Sybase) will output information to the console.

JST has the ability to capture this output, and send it as the test job itself. Because of the versatility of unix commands, there is no simple point-and-click equivalent to Files and Directories (described above), for command-line output like this. In order to use this, therefore, you must know the full command before you will be able to print its output using JST.

Assuming that you know the full command to achieve the desired output, you can add this to the "Group" you are currently looking at by clicking "Add Command", and typing the full command into the text box that appears.

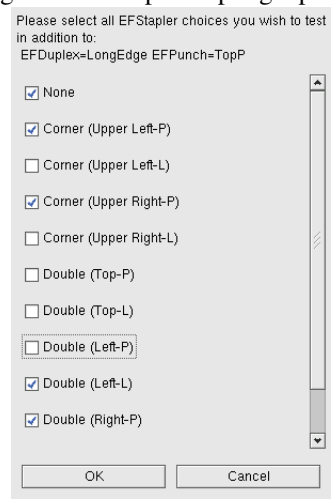
In the file selection dialog (the right hand side of the file management window), a command will appear as the command itself, exactly as you typed it, with a pipe ("|") symbol appended. Again, this bears a little explanation; on unix and Linux, you can use that pipe symbol to send the console output of a command to another command. On the final coverpage output, the "Command" will have the command, with the pipe, BEFORE the rest of the print command. This is to more accurately represent how the file was created.

6.3.4 Removing

To remove files, directories, or commands from a group, you can select one or more of the entries in the file list (no need to use control or alt modifiers; you can just click each one you wish to remove), and click "Remove File(s)". These will be permanatly removed from that group, but are not in any way changed on disk; they can be re-added exactly as you did before, described above.

As described in the groups section above, you do not need to remove files from a group to remove a group from JST; you can just remove the group itself and the files will no longer be printed.

Figure 8: Example Stapling Options



7 Testing

Testing print options is the main goal of JST, and, as such, this is an extremely simple process.

In order to actually test print options using JST, you must have followed the instructions above in order to set up files and file groups, and have at least one queue set up on your system using BrightQ.

Actually testing involves the following steps:

1. Select a print queue to test
2. Set options on that print queue that you wish to be common across all jobs
3. Click test, and choose all of the options that will be tested

Optionally if you have elected to NOT print jobs by default, you may take the following additional steps (This is the recommended process):

1. Open the log window if it's not already open
2. Select jobs to print
3. Run the selected jobs
4. Copy the selected jobs, and paste into your own QA/testing log

7.1 Testing Specifics

With the exception of the the second and third steps above, everything else has been detailed previously in this guide.

7.1.1 Selecting options common to all jobs

Once you have selected a print queue, you will see all of the ppd and print system options availble for that queue in the window pane on the right.

Any options that you choose at this point, disregarding the actual “Test” button, will be common to all of the jobs that will be printed in the test. For example, if you wish every job to be printed long-edge duplex, then set it at this stage in the process.

7.1.2 Choosing options to test (Figure 8)

These are the options that will vary on the test.

When you click the “Test” button next to an option, you will be presented with a dialog detailing all of the available options for that specific option. For example, clicking test by the stapling option provide you with a dialog showing all of the stapling options available in the PPD.

Additionally, the dialog that appears will show you all of the other device and print system options that you have selected for this test.

Check the checkbox next to each option that you would like tested, and finally click the OK option.

8 Short Example Case Studies

8.1 Print all known image formats

1. Open JST
2. Go to Options->Files
3. Click on "Add Group", insert the text "Images", and click "OK"
4. Click on "Add File(s)", select all your test images, and click "OK"
5. Click "Done"
6. Select a print queue, and click “Print Now”

8.2 Testing stapling

1. Open JST
2. Set up a group as above, if you wish. File groups are stored between runs, so you’ll not normally need to set anything up here if you’ve done it before.
3. Select the printer for which you wish to test the stapling features
4. Scroll down in the options window to the stapling option, and click the "Test" button next to it.
5. Select all of the staple positions you’d like to test, and hit "OK".

8.3 Repeating jobs

Starting with one of the above examples, with JST already running, after printing a sample selection of jobs

1. If the Log Window isn't already open after printing some jobs, go to Options->Show Log
2. Click on each of the jobs that you'd like to repeat, and click "Run Selected Jobs"
3. JST will now repeat each of those jobs exactly as it was before
4. For your testing reference, you can click "Copy" and paste the exact information into your testing matrix