kernel_picker

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An OSCAR Helper Tool

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Abstract

kernel_picker is a Perl script which allows the user to install a given kernel into an OSCAR image different from the one which is installed by default.

1 Synopsis

kernel_picker [–**oscarimage** [*image_name*]] [–**bootkernel** *boot_kernel*] [–**bootlabel** *boot_label*] [–**bootramdisk** [*Y/n*]] [–**networkboot** [*Y/n*]] [–**kernelversion** *version_number*] [–**modulespath** *modules_path*] [–**systemmap** *system_map*] [–**version**] [–**help**]

2 Description

kernel_picker allows you to substitute a given kernel into your OSCAR (SIS) image prior to building your nodes. If executed with no command line options, you will be prompted for all required information. You can also specify command line options as shown below. Any necessary information that you do not give via an option will cause the program to prompt you for that information.

The program assumes that the optional OSCAR image files you wish to use reside in a subdirectory in the `/var/lib/systemimager/images` directory. By default, the original OSCAR image is in a subdirectory named `oscarimage`.

3 Options

[–**oscarimage** [***image_name***]] The name of the OSCAR image directory. If you use this option but do not specify *image_name*, the default directory '`oscarimage`' will be used.

[–**autoselectimage**] In the event that there are two or more OSCAR image directories but you do not want to have to specify one via the '–oscarimage' option (e.g. when you want to call *kernel_picker* from another program), use this option. (The first OSCAR image directory, alphabetcially ignoring case, will be used.) Otherwise, you will be presented with a list of OSCAR image directories and be asked to choose one to use.

[–**bootkernel** ***boot_kernel***] The full path specifier of the kernel to use at boot time. This kernel file will be copied to the system's boot directory. Also, `systemconfig.conf`'s PATH option will be set approriately.

[–**bootlabel** ***boot_label***] The label for the kernel to use at boot time. This value is set as the LABEL option in the `systemconfig.conf` file. If you provide the *boot_kernel* but do not provide the *kernel_label*, the *kernel_label* defaults to the file name specified by the *boot_kernel* (without any leading path information).

[–**bootramdisk** [***Y/n***]] Whether or not to configure a ram disk for booting. This value is set as the CONFIGRD option in the `systemconfig.conf` file. If you do not specify Y or N, it defaults to YES.

[–**networkboot** [***Y/n***]] Whether or not to use the specified *boot_kernel* for network booting the nodes during the build process. If so, the kernel gets copied to '`/tftpboot`'. If you do not specify Y or N, it defaults to YES.

[–**kernelversion** ***version_number***] If your boot kernel uses loadable modules, you must provide the full version number/name of the kernel. This is the value output by the Unix command '*uname -r*'.

[–**modulespath** ***modules_path***] If your boot kernel uses loadable modules, you must profide the source directory containing the `/lib/modules/version_number` directory tree. There is no need to prepend `/lib/modules/version_number` to this option (but it doesn't hurt if you do).

[–**systemmap** ***system_map***] If your boot kernel uses loadable modules, you may optionally provide the full path specifier of the `System.map` file to use by depmod. Enter the full path/file name of the source file. This file will be copied to the boot directory.

[–**version**] Prints out the version string of the program and then quits.

[–**help**] Prints out a help message and then quits.

4 General Remarks

1. *kernel_picker* does not modify any configuration on the host machine.
2. When you run the program without any command line options, you will be prompted for all required information. If you use any command line options, the program will assume that you know what you are doing and prompt you ONLY for information which is required for correct execution. For example, if you specify the –**bootlabel** but not any of the options

required for loadable modules (–**kernelversion**, –**modulespath**, and –**systemmap**), the program will assume that your kernel does not require loadable modules and will not prompt you for any of those options.

3. All of the required information is gathered prior to acutally running any commands. So you can abort execution before the end and no files will be modified/copied.
4. Many of the questions have a default value indicated by bracketed text at the end of the question. If this value is okay, simply hit <ENTER> to accept it. For most of the questions, the default value is probably what you want.
5. If there is only one subdirectory in the `/var/lib/systemimager/images` directory, it will be used as the –**oscarimage**.
6. When you enter the *boot_kernel*, it will be scanned for a version number string. If found, this will be used as the default values for the *kernel_label* and *version_number*. You can override this by entering your own label and version.
7. If you want to run the program from the command line and not be prompted for any information, you should invoke the program as follows:

   kernel_picker –**bootkernel** *boot_kernel* –**bootramdisk** N –**networkboot** N

5 Requirements

Perl The *kernel_picker* script requires Perl version >= 5.5.

Initrd::Generic.pm In order to extract the kernel version number string from the *boot_kernel*, *kernel_picker* requires the `Initrd` package. This is usually found in the `/usr/lib/systemconfig` directory and is part of the `systemconfigurator` RPM package.

6 Version

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