

SDT-DUD(1) SUSE Driver Tools

Scott Bahling

{{DATE}}

NAME

sdt dud - tool for working with driver update media

SYNOPSIS

sdt dud create [options] (-updatedir=UPDATEDIR | UPDATEDIR) PATH

DESCRIPTION

Update Medium

The SUSE Linux distributions support a concept called **Update Medium** otherwise known as **Driver Update Disk** or **DUD**. The Update Medium is basically a directory structure containing kernel modules, YaST2 modules, and rpm packages. The kernel and YaST modules are used during the installation and can provide updates required for the installation. The rpm packages are installed to the target system at the end of the distro installation just before first boot.

In addition to kernel modules, YaST modules and rpm packages, the update media can deliver a tar-ball that is extracted to the root file-system of the target installation.

Lastly, the update media can provide a set of files to be written to the install environment that can be additions to or replacements of the standard installation system files.

The directory structure of the update media is documented at <ftp://ftp.suse.com/pub/people/hvogel/Update-Media-HOWTO/Update-Media-HOWTO.html>

CREATE OPTIONS

- a *ARCH*, --arch *ARCH*** Specifies the architecture-version path of the Update Media e.g. "x86_64-sles11"
- archive *FORMAT*** Pack the resulting DUD into an archive specified by the *FORMAT* string. Current supported formats are:
 - cpio - cpio archive cpio.gz - gzip compressed cpio archive cpio.xz - xz compressed cpio archive tar - tar archive tar.gz - gzip compressed tar archive tar.xz - xz compressed ctar archive
- b *BASE_MEDIA*, --base *BASE_MEDIA*** Points to the contents of the initial installation media of the SUSE Linux Enterprise Product that the driver kit is designed to work with. Option can point to either a directory containing the contents of the installation media, or the media ISO image itself.

The base media is accessed to determine the proper DUD file structure whose specification is located in the linuxrc.config file on the initrd of the bootable media.

This option is not required if using the **--distro** and **--arch-version** options.
- classic** Build DUD in "Classic Mode" By default the DUD will create register the directory containing packages as a add-on product repository during installation. Using the **--classic** option will cause the DUD to use the old style bash script for installing the packages.
- freshen-only** With classic DUD type, packages are installed/updated unconditionally (rpm -U). With **--freshen-only** the packages will be updated only if previously installed (rpm -F). Only useful together with **--classic** option.
- d, *TARGET_DISTRO* --distro *TARGET_DISTRO*** Specifies the base distro that the Update Media is for e.g. "suse"
- I *ID*, --id *ID*** DUD id. Used as UpdateID in the dud.config file.
- instsys** Unpack update RPMs into DUD inst-sys location. Only user-space (non-KMP and non-kernel) packages are unpacked.
- uni-dud** Generate DUD to work with both SUSE Linux Enterprise Server and Desktop products.
- n *NAME*, --name *NAME*** Name of the DUD. Used as UpdateName in the dud.config file.
- u *UPDATEDIR*, --updatedir=*UPDATEDIR*** Directory to be scanned for update files to be added to driver kit. Directory will be scanned for kernel packages, KMP packages, YaST2 modules (.ybc), and tar files (.tgz). (Default: ./updates)

-v *VENDOR*, **-vendor** *VENDOR* Specifies the base distro that the Update Media is for [default: suse]

-w *WORKDIR*, **-workdir** *WORKDIR* Work directory. Created if non-existent and remains after completion. If this option is not specified, temporary directory is created and deleted on exit.

USAGE

Creating Update Medium (DUD) with SUSE Driver Tools

To create an update media use the ‘create’ sub-command of the dud tool.

```
sdt dud create -u updates -b sles11sp1-x86_64 ./my-dud
```

The **-ur/--updatedir** option specifies a directory where the sdt command will find the files to be added to the Update Medium. The **-b/--base** option specifies the location of the base OS media (*DVD/CD1*) of the OS that the Update Medium is to be used with. If the **--updatedir** option is not specified, the *updates* subdirectory in the current working directory will be used by default.

PATH ARGUMENT

The dud create command requires a specified output path as the last argument to the command string. If creating a none archived (see **-archive** option) DUD, path should be an empty directory. When creating an archived DUD and path is not a directory, it will be the filename of the archived DUD. When creating an archived DUD and specifying an existing directory as *PATH*, a file named *out.dud* will be created.

DISTRO PATH

The top level path of the update medium is constructed as:

```
/linux/[vendor]/[arch]-[distro]  
i.e.  
/linux/suse/x86_64-sles11
```

The update media path for the target is configured in the *linuxrc.config* located in the *initrd* file on the base media. The SUSE driver tools will extract the *linuxrc.config* file and pull the needed information from it.

Optionally the distro and arch parts can be supplied via the following command line options:

```
-a ARCH, --arch=ARCH  
-d DISTRO, --distro=DISTRO  
-v VENDOR, --vendor=VENDOR
```

For example:

```
sdt dud create -u updates -v suse -a x86_64 -d sles11
```

The above command creates the following directory structure:

```
|-- linux
|   |-- suse
|       |-- x86_64-sles11
|           |-- install
|               |-- rpms
|                   |-- modules
```

NOTE: The `-v/--vendor` option defaults to `suse` so it's not required when building for a suse distribution.

SCRIPTS

The SUSE installer will execute the following scripts contained in the `install` directory:

- `update.pre`: executed right after YaST installer starts
- `update.post`: After basic installation has finished
- `update.post2`: Just before installer unmounts the installed system

To facilitate running multiple scripts at each checkpoint, the DUDs created by the SUSE Driver Tool will contain generic `update.pre`, `update.post`, and `update.post2` scripts that each execute all scripts contained in the `install/update.pre.d`, `install/update.post.d`, and `install/update.post2.d` directories respectively. To include your own custom scripts, place them in the same `update.*.d` directory in your `updatedir` path. For example to supply three different scripts to run at the `update.pre` checkpoint place them in:

```
updates/update.pre.d/10-first-script.sh
updates/update.pre.d/20-second-script.pl
updates/update.pre.d/30-third-script.sh
```

where `updates` is the directory passed to the `--updatedir` option.

INSTALL DIRECTORY

All RPMs in the `install` directory will be installed. YaST will attempt to install RPMs in this directory using the following command:

```
rpm -Ufv *.rpm"
```

While this works OK for one or two RPMs that are guaranteed to install without any dependency issues, it breaks down when used for installing KMPs. When

delivering KMP packages, you can't be sure which kernel flavor will end up on the installed system. Therefore all matching KMP flavors must be provided. When providing all KMP flavors the rpm command that YaST calls will try to install them all in one swipe. This command will fail as soon as a KMP that does not match the installed kernel flavor(s) is attempted to be installed.

To remedy this situation, the SUSE Driver Tools puts the rpm packages in a sub-directory called **rpms** which is used as an add-on repository automatically passed to the installer. That way the packages can be selected or de-selected by the user via the standard installer software installation interface and the SUSE installer will manage all package interdependencies automatically. *Note: unless auto-selected based on default installation dependencies, packages will need to be manually selected for installation. To automatically install all packages, use the **--classic** option as described below.*

Classic Mode

When using the **--classic** option, the DUD will be generated in a way the installs an **update.post** script that will attempt to install each package with a separate call to rpm. In addition, the script will log the installation process to **/var/log/DUD-{name_of_the_dud}.log**.

Note: This method will cause the packages to be installed unconditionally. If only providing updates to packages already installed use the **-freshen-only** option as described in the next section.

Freshen Only

With classic DUD type, packages are installed/updated unconditionally (rpm -U). With **-freshen-only** the packages will be updated only if previously installed (rpm -F). Only useful together with Classic Mode DUDs.

Use the freshen only option when providing updates to packages otherwise provided by the base product. That will avoid installing the packages when they are otherwise not installed explicitly or by dependency. In general it's best to avoid the classic mode and allow the setup to provide the packages via an add-on product repository.