Oracle Ksplice for Oracle Linux

Oracle Ksplice

Oracle Ksplice is an exciting new addition to the Oracle Linux Premier Support subscription. The Oracle Ksplice technology allows customers to update their systems with new kernel security errata (CVEs) without the need to reboot the system. This allows customers to remain current with their OS vulnerability patches while at the same time minimizing downtime. Oracle Ksplice actually actively applies these updates to the running kernel image, not just an on-disk change that would only take effect after a subsequent reboot.

As a general rule, the Linux kernel receives security updates approximately once a month. For any general purpose Operating System on the market today, applying these updates requires the system administrator to schedule downtime and reboot the server into the new OS kernel with the security updates. As system setups become more and more complex with multi-system interdependencies, the ability to schedule reboots is becoming more and more difficult and costly.

Oracle Ksplice is available as part of the Oracle Linux Premier and Premier Limited support subscriptions. It is also part of the Oracle Premier Support for Systems and Operating Systems subscriptions offering. Oracle Linux Basic, Basic Limited and Network Support subscribers can contact their sales representatives to discuss potential upgrade of their subscription to a Premier Support plan.

Another requirement for the Oracle Ksplice updates, is the use of the Oracle Unbreakable Enterprise Kernel(UEK). The lowest Linux kernel version at time of writing is 2.6.32-100.28.9. This kernel (and newer) can be installed on both Oracle Linux(OL) 5 and 6 distribution versions. Customers with Red Hat Enterprise Linux (RHEL) 5 and 6 can do the simple migration to Oracle Linux and apply the packages on their existing installation of RHEL. We do not offer Oracle Ksplice for the Red Hat compatible kernels.

Let's take a look at the few steps to get started and be current with Oracle Ksplice!

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Summary of actions :

- generate an Oracle Ksplice Uptrack access key through your Unbreakable Linux Network(ULN) account

- create an account in the Oracle Ksplice Uptrack system through the ksplice.com website

- download the `ksplice-instal`l script to your server

- run the install script which downloads the Uptrack packages

- run `uptrack-upgrade` to download and apply the Oracle Ksplice patches to your running system

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Generate an access key through ULN

Log into the Oracle Unbreakable Linux Network (http://linux.oracle.com) with your existing username and password. If you have an active subscription that has Ksplice privileges, you will see the message below : "KSplice Uptrack Registration". If you do not already have a Ksplice access key, click on this button.
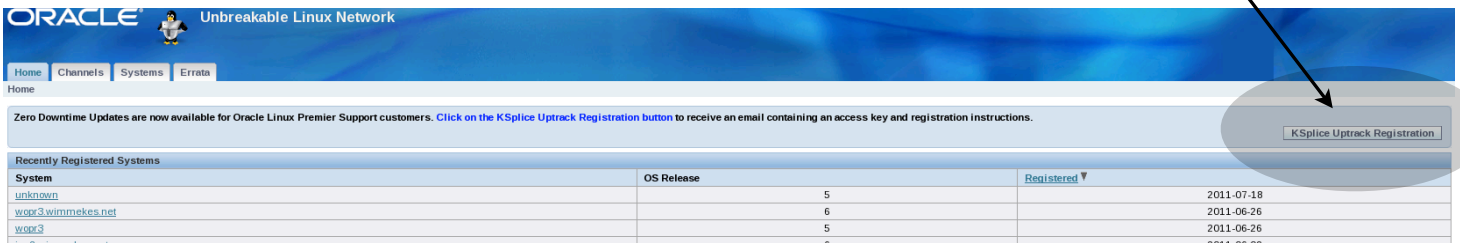
Next, the ULN site will list all valid Customer Support Identifiers(CSI) under your account. You can pick the CSI you want to use to generate the access key. Choose the CSI and click "Register".
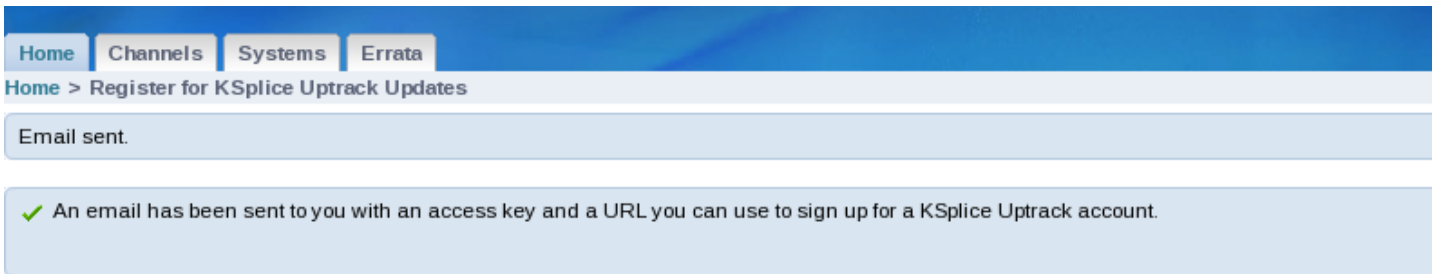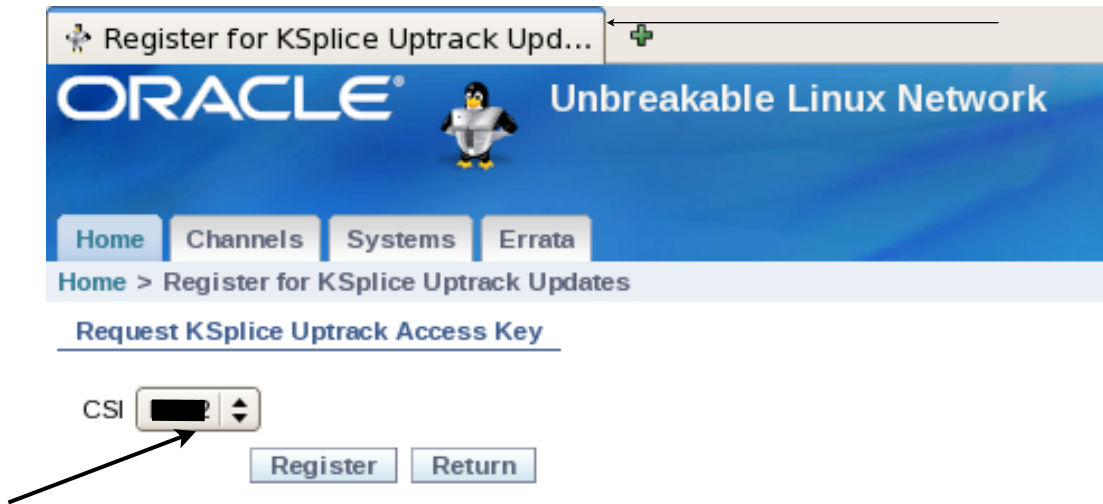
ULN will display an acknowledgement message on the screen that an account has been pre-created and an e-mail has been sent to your e-mail account.
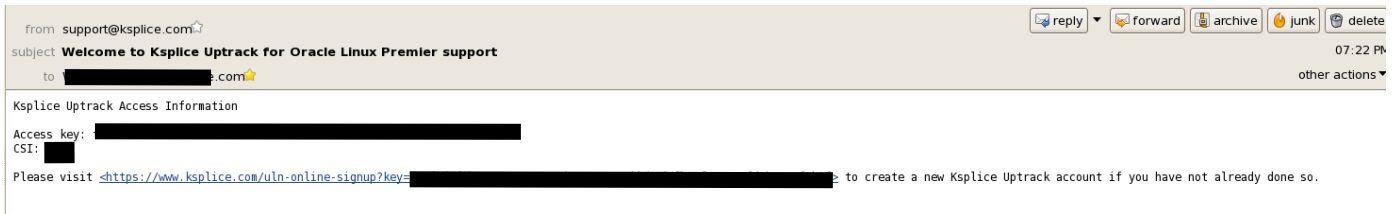
After a few minutes you should receive an welcome e-mail in your inbox which provides you with the generated access key and an embedded link to the ksplice.com website, to create your Oracle Ksplice Uptrack account.

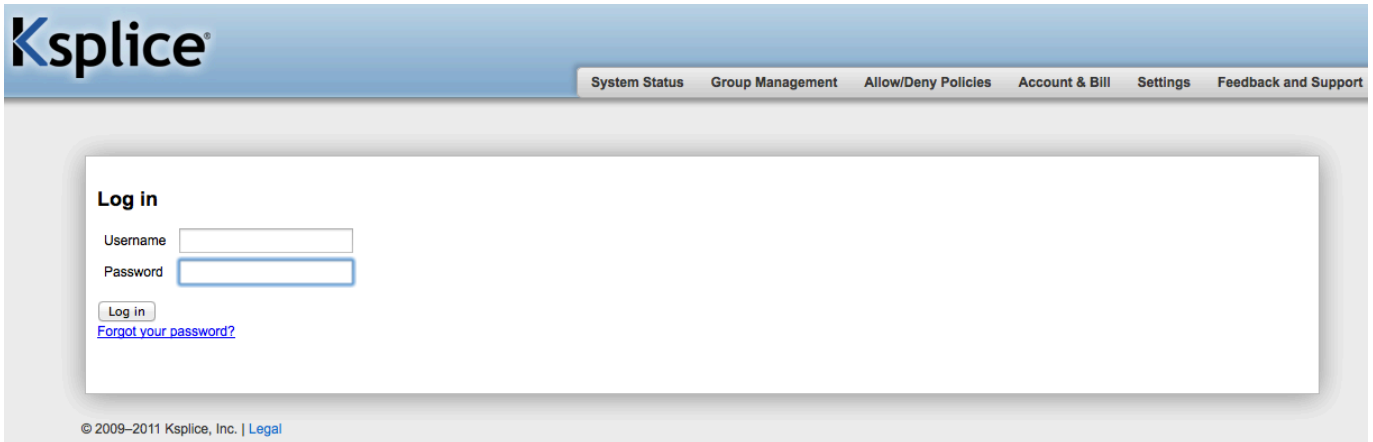## Create your Oracle Ksplice Uptrack account

Click on the URL in your e-mail and your browser will open up a page that has a web form to fill out to create your new account.

Please fill out the form and click on continue. Once this account has been created you are ready to get Ksplice'd!
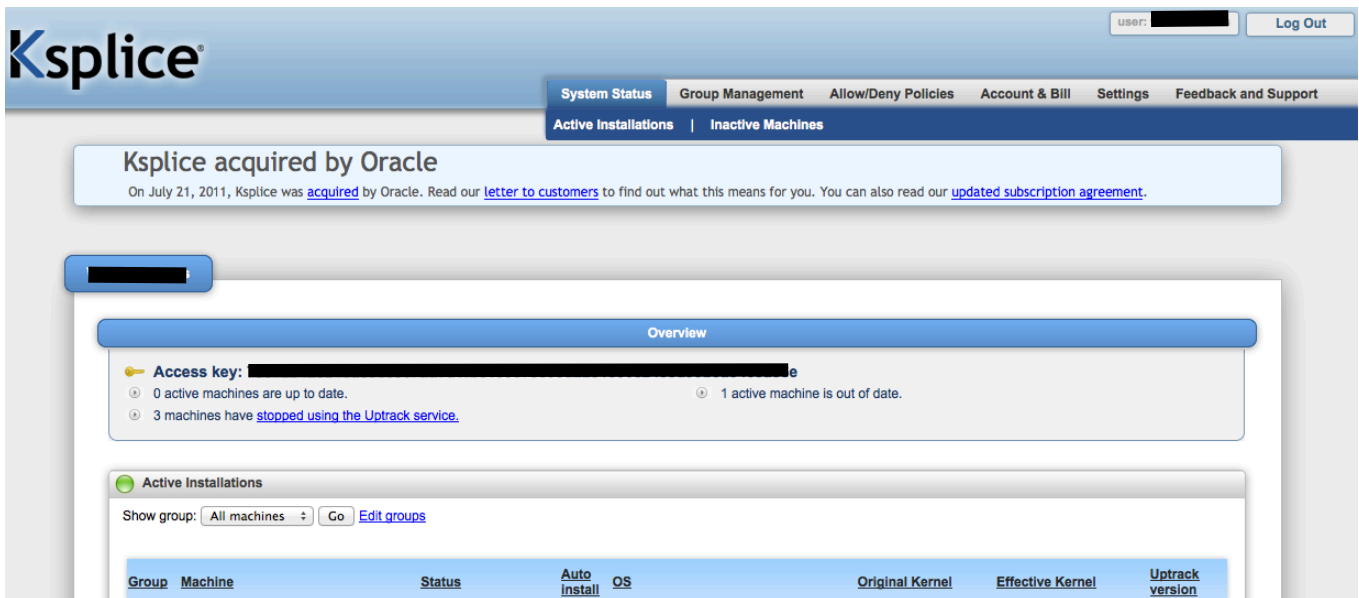
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To log in, go to https://uptrack.ksplice.com/login and log in with your newly created account's username and password.
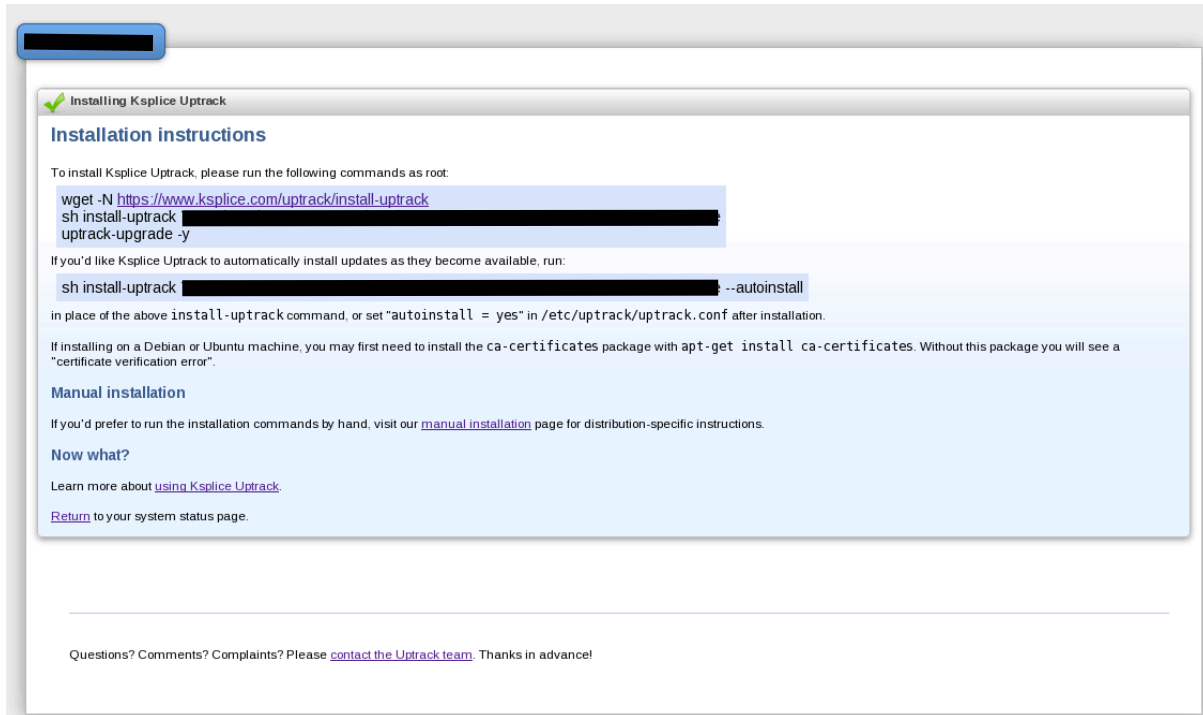

The uptrack homepage will list your access key and an overview of active and inactive machines.

Set up your server with the uptrack tools

At the bottom part of the Active Installations pane, you will find a link to the installation instructions, click on the link to get to the instructions.

From this point on, you have to be logged in as `root` on the server you want to prepare and install Oracle Ksplice on. Make sure a few prerequisites are met :

- The OS has to be Oracle Linux 5 or 6 with the Unbreakable Enterprise Kernel installed. The minimum kernel level is 2.6.32-100.28.9. Verify this by running `uname –a`

- The current running kernel is the one that will be updated, Oracle Ksplice does not apply updates to installed, but not running, kernels.

- Ensure your server has access to the internet. If a proxy is used, set the proxy in your shell before running the commands listed above.

    export http_proxy=http://proxy.company.com:port

    export https_proxy=http://proxy.company.com:port

```
# wget -N https://www.ksplice.com/uptrack/install-uptrack
--2011-09-01 21:05:52--
https://www.ksplice.com/uptrack/install-uptrackl-uptrack
Resolving proxy.company.com... 10.0.19.20
Connecting to proxy.company.com|10.0.19.20|:80... connected.
Proxy request sent, awaiting response... 200 OK
Length: 8843 (8.6K) [text/plain]
Remote file is newer, retrieving.

--2011-09-01 21:05:53--  https://www.ksplice.com/uptrack/install-uptrack
Connecting to proxy.company.com|10.0.19.20|:80... connected.
Proxy request sent, awaiting response... 200 OK
Length: 8843 (8.6K) [text/plain]
```

Run the `install-uptrack` script using your access key as argument.

```
# sh install-uptrack
1234567890123456790abcdef1234568901234567890123456789012334656544
[ Release detected: ol ]
--2011-09-01 21:10:41--
```

The Uptrack package will set up a yum repository (`/etc/yum.repos.d/ksplice-uptrack.repo`) and download the required packages for the `uptrack-*` utilities to be able to work correctly.

The following packages will be installed :

```
# rpm -qa|grep uptrack
uptrack-libyaml-0.1.3-1.el5
uptrack-PyYAML-3.08-4.el5
uptrack-1.2.1-0.el5
uptrack-python-pycurl-7.15.5.1-4.el5
ksplice-uptrack-release-1-3
```

After the installation is complete, the tool will automatically register your system with the Uptrack service and check for any available Oracle Ksplice updates for your running kernel. If new versions are available, the Uptrack tools will provide you with the list of updates.

To download and list updates, run `/usr/sbin/uptrack-upgrade.` If you want to automatically apply the patches, add `-y` as an argument. Once updates are applied, you will be running a kernel version which is called an effective kernel version. The `uname -a` command will show you the original boot kernel version. You can run `uptrack-uname -a` to see what kernel you are effectively running with all the Ksplice updates applied.

```
#uname -r
2.6.32-100.37.1.el5uek
# uptrack-uname -r
2.6.32-200.19.1.el5uek
```

A few useful commands :

`uptrack-show` : list the active Oracle Ksplice updates in your running kernel.

`uptrack-upgrade` : connect to the Uptrack update server, check and download new updates when available. These can be applied immediately as well.

`uptrack-remove` : remove applied updates from the running system and return to the original kernel version and state.

`uptrack-uname` : modified version of `uname` that knows how to read the effective kernel version based on active Oracle Ksplice updates.

`uptrack-install` : install patches that have been downloaded manually.

Uninstall

Uninstall of Uptrack is very easy. You should consider removing the updates with `uptrack-remove --all` followed by `yum remove uptrack.`

You can find the instructions on the Uptrack website as well.

Uninstallation instructions

If you would like to uninstall Uptrack from a machine, simply use the operating system's package manager. For a dpkg-based system (Debian or Ubuntu), run

`apt-get remove uptrack`

For an RPM-based system (RHEL, CentOS, Fedora, Virtuozzo, or OpenVZ), run

`yum -y remove uptrack`

After you remove Uptrack, the machine will move down to the "Inactive Installations" list on the Uptrack web interface and you will not be billed for it anymore.

Return to web interface

Ksplice Uptrack	Support	Technology	About
Overview	Installation instructions	How it works	Contact us
Why go rebootless?	Uninstallation instructions		
Features	Supported kernels		
Download	Using Ksplice Uptrack		
	FAQ		

Some extra features of the Uptrack website

The Uptrack website has an easy to use interface that lets you view registered systems, patches installed, available patches, status of systems and create groups with access control.
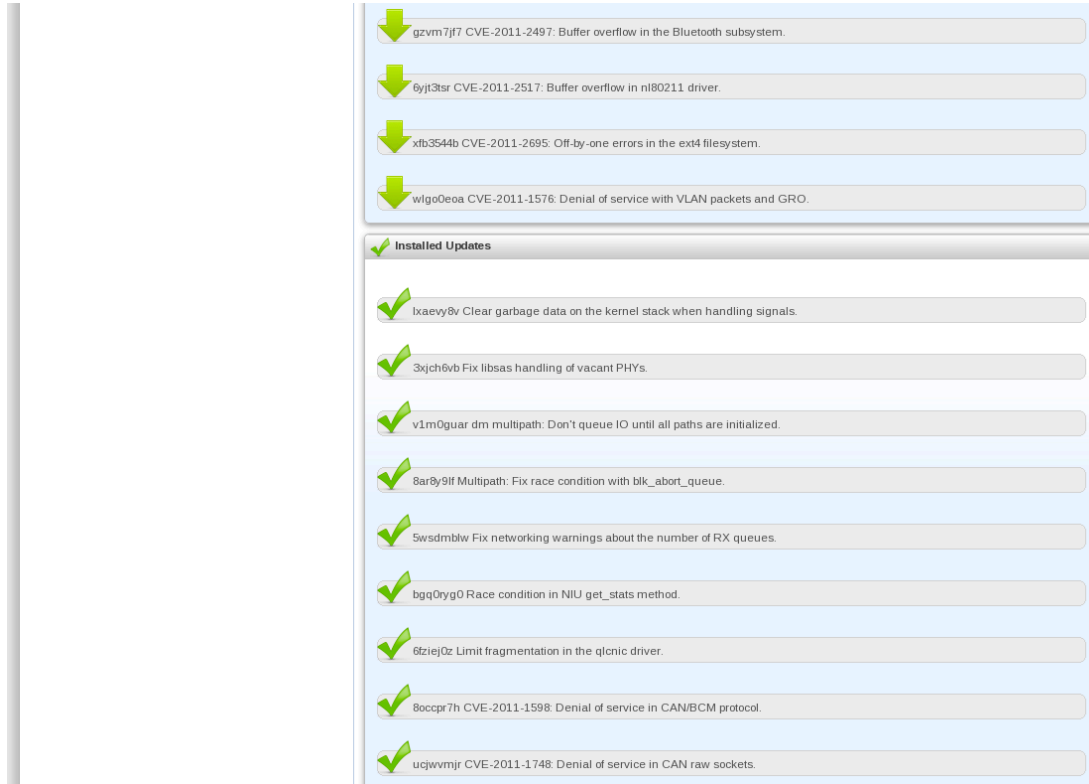
For each server it shows available updates that have not yet been applied. Each update lists a one-liner description of the update.

Further down you see a list of actually installed updates on your running kernel.

Oracle Ksplice patches are provided for each individual CVE or bugfix. They typically are downloaded in a specific order and can only be applied (and removed) sequentially. It is not possible at this point in time to select which individual updates to apply. Each applied update will be visible as an installed Linux kernel module on the running system. You can execute `lsmod` on a running system. `lsmod` will list each loaded kernel module.

The Uptrack configuration file location is : `/etc/uptrack/uptrack.conf`. Modify this file if you want to configure a proxy server, automatically install updates at boot time or automatically check for new updates and apply at same time.

Oracle Ksplice patches are stored locally on the filesystem in `/var/cache/uptrack` and by default will automatically be re-applied after a reboot (very early in the bootprocess). It is a good practice to also install the regular kernel rpm packages for released errata, this allows you to boot into a newer kernel version when you did have a restart of the operating system. At that point the Oracle Ksplice patches will be applied starting from this new kernel as a baseline. We will continue the regular process of releasing Linux kernel rpm packages for each errata kernel.

This information should be enough to get you started and actively running the latest errata updates on your Oracle Unbreakable Enterprise Kernels. Happy ksplicing.