



# Driver Update Program Executive Summary

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# Improved Infrastructure for 3<sup>rd</sup> party drivers

- Detailed "whitelist" of approved stable interfaces
  - Documented instructions to build drivers
  - Standard RPM based delivery format
  - Infrastructure enhancements in RPM tools and kernel packaging
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- Prior to RHEL5, the approach 3rd party driver writers use to add their drivers into RHEL was rather ad-hoc. There was no thorough documentation on how to go about building and delivering drivers. Further complicating the situation is that there were certain low-level kernel interfaces which were considered internal-only and not safe for use by 3rd party modules as the interfaces were at risk of changes in RHEL Updates.
  - To remedy this situation in RHEL5, we now have a "whitelist" which defines the set of interfaces and global variables that 3rd party modules can safely rely on for compatibility purposes through the lifetime of the releases' maintenance lifecycle. This has obvious benefit to customers in the form of the added assurance that these 3rd party kernel modules will continue to function as kernel errata are released (for new update releases or asynchronous security errata).
  - We have composed a detailed whitepaper, complete with representative examples to illustrate all the steps the 3rd party driver writer should follow. This will result in a consistent and more reliable end-customer experience.

# Customer Benefits of the Driver Update Program

- Simplifies the end-user experience - install via conventional RPMs
  - Unifies ad-hoc procedures previously utilized by 3rd party kernel ISVs
  - Facilitates matching kernel modules with appropriate kernel
  - Modules continue to work through kernel errata maintenance lifecycle
  - Allows broader hardware certification possibilities
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- We have inclusively driven our driver update infrastructure with other Linux operating system vendors to make it as similar as possible. This consistency makes it easier for 3rd party ISVs as well as system administrator training efficiency.
  - The new approach helps eliminate errors of mismatching kernel modules with the corresponding kernel variant - including consistency checks on the symbol and interface dependencies.
  - A major benefit of the new driver update infrastructure is that 3<sup>rd</sup> party modules will continue to seamlessly operate throughout the maintenance lifecycle of the RHEL release - including updates and asynchronous errata.
  - This new capability gives Red Hat the option to perform official hardware certifications which include select drivers it delivers via this program. In this manner there is increased flexibility to perform more timely hardware certifications - rather than waiting for the next update release.