**Advantages of RHEL6 over RHEL5**

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**Red Hat Enterprise Linux (RHEL) is an open source, linux based operating system developed by Red Hat Inc. It is popularly used as server operating system. Its first release was the RHEl 2.1 which was released in the year 2002. After the first version of RHEL, new and better versions quickly followed like RHEL 3,4,5,etc. Now in 2010, the newest version has been released. It is RHEL 6.**

**Now in this post lets discuss the main advantages of RHEL6 over RHEL5.**

**RHEL6 being the latest release obviously have a lot of new features.**

**The advantages are:**

**• A new level of virtualisation**

RHEL6 introduces the use of KVM (Kernel-based Virtual Machine) as its hypervisor. In the earlier releases Xen hypervisor was used. The main advantage of KVM is that a new kernel should not be installed like in Xen. It also supports the installation of many virtual operating systems like Windows, Linux, Solaris,etc. It is easy to manage.

**• Ext4 is made the default filesystem**

Ext4 has many new advantages than Ext3 which is used in earlier versions of RHEL. Ext4 is comparatively faster and easy to manage. It supports supports up to 100TB with the addition of Scalable Filesystem Add-one.

**• Improved level of Security**

RHEL6 has advanced level of security. SELinux (Security Enhanced Linux) features are improved and a new set of SELinux rules has been added to provide security to virtual machines from hackers and attackers. This new feature is called SVirt.

**• New Networking Features**

RHEL6 is released with improved and new networking features. It supportsIPv6. It uses NFSv4 (Network File Transfer) for the sharing of files in the network rather than NFSv3. It also supports iSCSI (internet Small Computer System Interface) partitions. The network manager in RHEL6 supports Wi-Fi capabilities.

**• Use of Drivers**

RHEL6 has drivers for speeding up operations under KVM, VMware and Xen.

**• Increase in the support period provided by Red Hat.**

RHEL6 has a long period of support provided by Redhat. It provides updates for 7 years and also extra 3 years of service as paid service. Therefore it means that its period of support is twice the period of support provided by other linux distributors like Ubuntu, Debian, etc.

**• Improvements of minor updates**

Red Hat releases minor versions such as 6.1, 6.2. These minor versions are the accumulated updates of the major version. The new minor releases will not only contain bug fixes but will also have major changes and new features.

**RHEL6 has been released with many new feature which make RHEL6 more useful than RHEL5. RHEL6 is somewhat similar to Fedora 12, so the Fedora users should find RHEL6 familiar. Due to all these reasons the release of RHEL6 is a huge step of advancement and also an achievement in the field of open source**

Advantages of RHEL6 over RHEL5

Ext4 file system is introduced.

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2. xen is removed and kernel virtualization machine (KVM) is introduced.

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3. neat command is removed.

4. portmap service is removed.

5. iscsi is introduced, which supports for SAN.

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6. rpmbuild is available, which is used to create our own rpms.

7. File encyption is added.

8. palimpsest is available for disk management.

9. Virtual machine will run only on 64bit processors.

10. postfix service is recommended instead of sendmail service

11.Improved level of security

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Differences between Ext2,Ext3 and Ext4 file systems.

EXT2 :

1.Ext2 was the standard file system for linux until the introduction of ext3.

2.It was introduced with the 1.0 kernel in 1993.Ext2 is flexible,can handle file system up to 4 TB,and supports long filenames up to 1012 characters.

3.It has sparse super blocks feature which increase file system performance.In case any user processes fill up a file system,ext2 normally reserves about 5% of disk blocks for exclusive use by root so that root can easily recover from that situation.Now our rescue diskettes use ext2 instead of minix.

4. much Fater

EXT3 :

1. Ext3 (Extended 3 file system) provides all the features of ext2,and also features journaling and backward compatibility with ext2.

2.The backward compatibility enables you to still run kernals that are only ext2-aware with ext3 partitions.we can also use all of the ext2 file system tuning,repair and recovery tools with ext3 also you can upgrade an ext2 file system to an ext3 file system without losing any of your data.

3.Ext3’s journaling feature speeds up the amount of time it takes to bring the file system back to a sane state if it’s not been cleanly unmounted (that is,in the event of a power outage or a system crash). Under ext2,when a file system is uncleanly mounted ,the whole file system must be checked.This takes a long time on large file systems.

4. On an ext3 system ,the system keeps a record of uncommitted file transactions and applies only those transactions when the system is brought back up.So a complete system check is not required and the system will come back up much faster.

5. A cleanly unmounted ext3 file system can be mounted and used as an ext2 file system,this capability can come in handy if you need to revert back to an older kernel that is not aware of ext3.The kernel sees the ext3 filesystem as an ext2 file system.

6. ext3 file system is slower compared with ext2.

Ext4 :

1. Ext4 is part of the Linux 2.6.28 kernel,Ext4 is the evolution of the most used Linux file system, Ext3.

2. In many ways, Ext4 is a deeper improvement over Ext3 than Ext3 was over Ext2. Ext3 was mostly about adding journaling to Ext2, but Ext4 modifies important data structures of the file system such as the ones destined to store the file data. The result is a filesystem with an improved design, better performance, reliability and features.

3. slower compared with ext2

Features of Ext4 file system :

1. Compatibility

2. Bigger filesystem/file sizes

3. Subdirectory scalability

4. Extents

5. Multiblock allocation

6. Delayed allocation

7. Fast fsck

8. Journal checksumming

9. Online defragmentation

10. Inode-related features

11. Persistent preallocation

12. Barriers on by default

Difference between RHEL 4 and RHEL 5 :

1) In RHEL 4 SELinux Block only 13 services, But on RHEL 5 SElinux Block 80 services.  
  
2) RHEL 4 have ext2 filesystem, but RHEL 5 we have ext3 filesystem that support Journal.  
  
3) RHEL 4 have no virtualization Feature, but in RHEL 5 we have virtualization with Hypervisor-V.  
  
4) In RHEL 4 we have no Yum, But in RHEL 5 we have Yum available.