Part One: Key features at a glance

The advantages of WinRAR over other data compressing and archiving tools

We asked several editors why they liked WinRAR. The answers varied from, "It's the best data compressor" and, "The Recovery Records are just very practical" to, "If someone asks me about a data compressor, I simply say: 'Use WinRAR, that's a good one.'" In this article, we will point out the advantages WinRAR has over other compressing tools and give a short description of its key features.

"Besides its high technical standards, WinRAR stands out due to a user-friendly licensing policy, an extensive test phase and its excellent customer support. WinRAR further offers uniform format support," says Öncül Kaya, Managing Director of win.rar GmbH. "With every new version, WinRAR adds new compression methods to the ZIP format which are not part of the ZIP 2.0 standard. Often these updates are unsupported by the previous version."

Some background facts: The inventor of the RAR format

The RAR algorithm, which forms the basis for the RAR archiver WinRAR, was invented by the Russian programmer Alexander Roshal. Besides the RAR format, WinRAR supports several non-RAR formats such as 7Z, ACE, ARJ, BZ2, CAB, GZ, ISO, JAR, LZH, TAR, UUE, Z and the ZIP format as well, thus offering the highest compatibility possible.

WinRAR is the 32-bit Windows version of the RAR archiver (with native 64-bit support since version 3.90), and is also available for Linux, FreeBSD, DOS, OS/2 and Mac OS X operating systems. For Windows systems, the data compressor is available either as a command-line interface (Rar.exe) or with a graphical user interface (WinRAR.exe).

Compressing large archives effectively: Solid archives

The RAR format offers a very high compression rate, especially when using 'solid archiving', which handles many small but similar files together as a single data stream and compresses them into a single file. Less redundancy means a higher compression rate, but also results in a lower compression speed – especially when unpacking individual parts of the RAR archive. If the user wishes to create an archive which will rarely be renewed and will only be unpacked as a whole, and considers the compression rate more important than the compression speed, then solid archives is the right choice.

Splitting large archives into several files: Split archives (Multivolume files)

Another important feature is the support of 'split archives' (multivolume files). Volumes are individual parts of a split archive. They allow the user to save large archives on multiple discs or other removable media. Volumes may also be solid or self-extracting. The first self-extracting volume has a different file extension (other than .rar), e.g. .exe for Windows SFX volumes.

Protecting archives from destruction: Recovery Records

The RAR format also has several features which are missing from the ZIP format, such as Recovery Records – which allow the user to repair archives saved on damaged data-storage media.

The RAR archive format supports a special kind of redundant information known as Recovery Records. If an archive has a Recovery Record, it can be repaired even after having been damaged due to a defect on a disc or other data loss. The ZIP format does not support Recovery Records.

The Recovery Record contains up to 524,288 Recovery Sectors. If the data is damaged continuously then each Recovery Sector is capable of recovering 512 bytes of damaged data. This value may be lower if several areas are damaged.

Archives for everyone: Self-extracting archives (SFX - SelF-eXtracting archive)

A self-extracting or SFX (SelF-eXtracting) archive is an archive which is merged with an executable module. This module is used to unpack files within an archive when the SFX archive is executed. This is why no external program is needed to unpack the contents of an SFX archive; it will execute by itself. Nevertheless, WinRAR is able to handle SFX archives like any other archive. If a user prefers not to execute a received SFX archive (due to possible viruses, for example), WinRAR is able to simply view or unpack the contents of the archive.

SFX archives are useful if a user would like to pass an archive on to somebody without knowing whether this person has access to a program for extracting archives. For the user's convenience, the SFX archive further extracts the files to the right location. Software producers may also use SFX archives to distribute their own software. The WinRAR installation, for example, is an SFX archive which is based on the GUI RAR SFX module Default.sfx.

Protecting your archive from unintended modifications: Locking archives

Another advantage of the RAR format is the possibility to lock important archives in order to protect them from unintended modifications.

The RAR format supports a locking feature for archives. Locked archives can no longer be modified by WinRAR. Locking important archives can help prevent accidental changes to your archives.

Transforming archives into another packing format: Converting archives

WinRAR's command 'Convert archives' allows for the recompression of archives from one format to another. Depending on the mode, the user can either select several files or directories to convert, or only convert the current archive. All file types supported by WinRAR can be converted to RAR or ZIP formats.

Some advantages illustrating this feature:

-        Better compression

This feature is very useful if a user wishes a significantly better compression for an archive: For example, if the user is using a Standard ZIP 2.0 archive, recompressing it into an RAR archive would be the most suitable thing to do. RAR compresses more effectively than Standard ZIP 2.0.

-        A uniform archive format

Many users wish to use a uniform archive format (RAR) on their computer, instead of many different types such as CAB, ARJ, LZH, TAR, GZ, ACE, UUE, BZ2, JAR, 7Z or Z archives.

-        Standardized compressing options

The conversion feature is very useful for providing several archives with a single password, to switch from non-solid to solid compression or to simply repack all archives with better options.

Whether considering solid archiving, split archives or Recovery Records: this article offers you an overview of the benefits of the RAR format and the data compressing and archiving tool WinRAR. But this is just the beginning: In a series of articles, we will provide you with a detailed step-by-step presentation of all of WinRAR's important features. You will be amazed by the features WinRAR has to offer.