Acronis

Acronis Universal Restore

USER GUIDE

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1 What is Acronis Universal Restore

The Acronis Universal Restore tool is designed to help boot an operating system on a physical or a virtual machine. The tool finds and installs drivers for devices that are critical for the operating system start-up, such as storage controllers, motherboard, or chipset.

Universal Restore is extremely useful in the following scenarios:

1. Instant recovery of a failed system on different hardware.
2. Hardware-independent cloning and deployment of operating systems.
3. Physical-to-physical, physical-to-virtual and virtual-to-physical machine migration.

2 Installing Acronis Universal Restore

Download the installation package from http://www.acronis.com/aur/ and save it on the machine where you are going to install the product.

To install Acronis Universal Restore in Windows

1. Run the downloaded .msi file.
2. Follow the on-screen instructions.

To install Acronis Universal Restore in Linux

1. Go to the directory where the installation package (an .i686 or .x86_64 file) is located and run the following command:

   ```
   chmod 755 Acronis*
   ```

2. Run the installation file as the root user.
3. Follow the on-screen instructions.

3 Creating bootable media

To create bootable media

1. Run the installed executable file.

   In Windows, the product is installed by default to the following folder:

   - In 32-bit versions of Windows: **%CommonProgramFiles%\Acronis\UniversalRestore**.
   - In 64-bit versions of Windows: **%CommonProgramFiles(x86)%\Acronis\UniversalRestore**.

   In Linux, the product launcher is **/usr/sbin/universal_restore**.
2. Follow the on-screen instructions. For details, refer to the built-in help.

4 Using Acronis Universal Restore

To apply Universal Restore to an operating system, boot the machine from the bootable media. If there are multiple operating systems on the machine, you are prompted to choose the one to apply Universal Restore to.

4.1 Universal Restore in Windows

Preparation

Prepare drivers

Before applying Universal Restore to a Windows operating system, make sure that you have the drivers for the new HDD controller and the chipset. These drivers are critical to start the operating system. Use the CD or DVD supplied by the hardware vendor or download the drivers from the vendor's website. The driver files should have the *.inf, *.sys or *.oem extensions. If you download the drivers in the *.exe, *.cab or *.zip format, extract them using a third-party application.

The best practice is to store drivers for all the hardware used in your organization in a single repository sorted by device type or by the hardware configurations. You can keep a copy of the repository on a DVD or a flash drive; pick some drivers and add them to the bootable media; create the custom bootable media with the necessary drivers (and the necessary network configuration) for each of your servers. Or, you can simply specify the path to the repository every time Universal Restore is used.

Check access to the drivers in bootable environment

Make sure you have access to the device with drivers when working under bootable media. Use WinPE-based media if the device is available in Windows but Linux-based media does not detect it.

Universal Restore settings

Automatic driver search

Specify where the program will search for the Hardware Abstraction Layer (HAL), HDD controller driver and network adapter driver(s):

- If the drivers are on a vendor's disc or other removable media, turn on the **Search removable media**.
- If the drivers are located in a networked folder or on the bootable media, specify the path to the folder by clicking **Add folder**.

In addition, Universal Restore will search the Windows default driver storage folder. Its location is determined in the registry value **DevicePath**, which can be found in the registry key **HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion**. This storage folder is usually WINDOWS/inf.

Universal Restore will perform the recursive search in all the sub-folders of the specified folder, find the most suitable HAL and HDD controller drivers of all those available, and install them into the system. Universal Restore also searches for the network adapter driver; the path to the found driver is then transmitted by Universal Restore to the operating system. If the hardware has multiple network interface cards, Universal Restore will try to configure all the cards' drivers.

Mass storage drivers to install anyway

You need this setting if:

- The hardware has a specific mass storage controller such as RAID (especially NVIDIA RAID) or a fibre channel adapter.
- You migrated a system to a virtual machine that uses a SCSI hard drive controller. Use SCSI drivers bundled with your virtualization software or download the latest drivers versions from the software manufacturer website.
- If the automatic drivers search does not help to boot the system.

Specify the appropriate drivers by clicking **Add driver**. The drivers defined here will be installed, with appropriate warnings, even if the program finds a better driver.

Universal Restore process

After you have specified the required settings, click **OK**.

If Universal Restore cannot find a compatible driver in the specified locations, it will display a prompt about the problem device. Do one of the following:

- Add the driver to any of the previously specified locations and click **Retry**.
- If you do not remember the location, click **Ignore** to continue the process. If the result is not satisfactory, reapply Universal Restore. When configuring the operation, specify the necessary driver.

Once Windows boots, it will initialize the standard procedure for installing new hardware. The network adapter driver will be installed silently if the driver has the Microsoft Windows signature. Otherwise, Windows will ask for confirmation on whether to install the unsigned driver.

After that, you will be able to configure the network connection and specify drivers for the video adapter, USB and other devices.

4.2 Universal Restore in Linux

Universal Restore can be applied to Linux operating systems with a kernel version of 2.6.8 or later.

When Universal Restore is applied to a Linux operating system, it updates a temporary file system known as the initial RAM disk (initrd). This ensures that the operating system can boot on the new hardware.

Universal Restore adds modules for the new hardware (including device drivers) to the initial RAM disk. As a rule, it finds the necessary modules in the **/lib/modules** directory. If Universal Restore cannot find a module it needs, it records the module's file name into the log.

Universal Restore may modify the configuration of the GRUB boot loader. This may be required, for example, to ensure the system bootability when the new machine has a different volume layout than the original machine.

Universal Restore never modifies the Linux kernel.

Reverting to the original initial RAM disk

You can revert to the original initial RAM disk if necessary.

The initial RAM disk is stored on the machine in a file. Before updating the initial RAM disk for the first time, Universal Restore saves a copy of it to the same directory. The name of the copy is the name of the file, followed by the **_acronis_backup.img** suffix. This copy will not be overwritten if you run Universal Restore more than once (for example, after you have added missing drivers).

To revert to the original initial RAM disk, do any of the following:

- Rename the copy accordingly. For example, run a command similar to the following:

```
mv initrd-2.6.16.60-0.21-default_acronis_backup.img
initrd-2.6.16.60-0.21-default
```

- Specify the copy in the **initrd** line of the GRUB boot loader configuration.