Acronis Backup & Recovery 11.5 Server for Linux

Update 2

Installation Guide

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Acronis patented technologies

Technologies used in this product are covered by the following patents: U.S. Patent # 7,047,380; U.S. Patent # 7,246,211; U.S. Patent # 7,318,135; U.S. Patent # 7,366,859; U.S. Patent # 7,636,824; U.S. Patent # 7,831,789; U.S. Patent # 7,886,120; U.S. Patent # 7,934,064; U.S. Patent # 7,949,635; U.S. Patent # 7,979,690; U.S. Patent # 8,069,320; U.S. Patent # 8,073,815; U.S. Patent # 8,074,035.

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1   Before installation

This section answers questions that might arise before the product installation.

1.1   About using the product in the trial mode

Before buying an Acronis Backup & Recovery 11.5 license, you may want to try the software. This can be done without a license key.

To install the product in the trial mode, run the setup program locally or use the remote installation functionality. Unattended installation and other ways of installation are not supported.

Limitations of the trial mode

When installed in the trial mode, Acronis Backup & Recovery 11.5 has the following limitation:

- The Universal Restore functionality is disabled.

Additional limitations for bootable media:

- The disk management functionality is not available. You can try the user interface, but there is no option to commit the changes.
- The recovery functionality is available, but the backup functionality is not. To try the backup functionality, install the software in the operating system.

Upgrading to the full mode

After the trial period expires, the product GUI displays a notification requesting you to specify or obtain a license key.

To specify a license key, click **Help** > **Change License**. Specifying the key by running the setup program is not possible.

If you have activated a trial or purchased subscription for the online backup service, online backup will be available until the subscription period expires, regardless of whether you specify a license key.

1.2   Types of licenses (stand-alone and advanced editions)

Acronis Backup & Recovery 11.5 licensing is based on the number of machines backed up by the product.

Stand-alone editions

These are the following editions:

- Acronis Backup & Recovery 11.5 Server for Windows
- Acronis Backup & Recovery 11.5 Server for Linux
- Acronis Backup & Recovery 11.5 Workstation

The stand-alone editions are designed for backing up the data of a single machine. With any of the above licenses, you can install all the product components on the same machine only. You will be asked for the license key of any of the above editions during the product installation.

Advanced editions (editions with centralized management)

These are the following editions:

- Acronis Backup & Recovery 11.5 Advanced Server
- Acronis Backup & Recovery 11.5 Virtual Edition
- Acronis Backup & Recovery 11.5 Advanced Server SBS Edition
- Acronis Backup & Recovery 11.5 Advanced Workstation

These editions are designed for backing up multiple machines. In addition to components that need to be installed on a backed-up machine, these editions include a management server that enables centralized management, and storage nodes for storing backed up data on them. Unlike stand-alone editions, advanced editions allow remote connection to a backed-up machine.

As with stand-alone editions, a separate license is required for every machine you want to back up. During installation of a licensed component (agent), you can either specify a license server or enter a license key manually. Installation of other components is not licensed. For example, you can install as many storage nodes as you wish - up to 50.

Components of stand-alone editions do not interact with the components of advanced editions.

1.3   Acronis Backup & Recovery 11.5 components

This section contains a list of Acronis Backup & Recovery 11.5 components with a brief description of their functionality.

Components for a managed machine (agents)

These are applications that perform data backup, recovery and other operations on the machines managed with Acronis Backup & Recovery 11.5. Agents require a license to perform operations on each managed machine. Agents have multiple features, or add-ons, that enable additional functionality and so might require additional licenses.

Console

The console provides Graphical User Interface to the agents. Usage of the console is not licensed. In stand-alone editions of Acronis Backup & Recovery 11.5, the console is installed together with the agent and cannot be disconnected from it.

Bootable Media Builder

With Bootable Media Builder, you can create bootable media in order to use the agents and other rescue utilities in a rescue environment. In stand-alone editions of Acronis Backup & Recovery 11.5, Bootable Media Builder is installed together with the agent. All add-ons to the agent, if installed, will be available in a rescue environment.

1.3.1   Agent for Linux

This agent enables disk-level and file-level data protection under Linux.

Disk backup

Disk-level data protection is based on backing up either a disk or a volume file system as a whole, along with all information necessary for the operating system to boot; or all the disk sectors using the

sector-by-sector approach (raw mode.) A backup that contains a copy of a disk or a volume in a packaged form is called a disk (volume) backup or a disk (volume) image. It is possible to recover disks or volumes as a whole from such backup, as well as individual folders or files.

File backup

File-level data protection is based on backing up files and directories residing on the machine where the agent is installed or on a network share accessed using the smb or nfs protocol. Files can be recovered to their original location or to another place. It is possible to recover all files and directories that were backed up or select which of them to recover.

Conversion to a virtual machine

Agent for Linux performs the conversion by recovering a disk backup to a new virtual machine of any of the following types: VMware Workstation, Microsoft Virtual PC, Citrix XenServer Open Virtual Appliance (OVA) or Red Hat Kernel-based Virtual Machine (KVM). Files of the fully configured and operational machine will be placed in the directory you select. You can start the machine using the respective virtualization software or prepare the machine files for further usage.

1.3.1.1   Universal Restore

The Universal Restore add-on enables you to use the restore to dissimilar hardware functionality on the machine where the agent is installed and create bootable media with this functionality. Universal Restore handles differences in devices that are critical for the operating system start-up, such as storage controllers, motherboard or chipset.

1.3.2   Management Console

Acronis Backup & Recovery 11.5 Management Console is an administrative tool for local access to Acronis Backup & Recovery 11.5 agent. Remote connection to the agent is not possible.

1.3.3   Bootable Media Builder

Acronis Bootable Media Builder is a dedicated tool for creating bootable media. The media builder that installs on Linux creates bootable media based on Linux kernel.

The Universal Restore (p. 6) add-on enables you to create bootable media with the restore to dissimilar hardware functionality. Universal Restore handles differences in devices that are critical for the operating system start-up, such as storage controllers, motherboard or chipset.

1.4   Supported operating systems

Acronis Backup & Recovery 11.5 Management Console, Acronis Backup & Recovery 11.5 Agent for Linux

Linux with kernel from 2.4.20 to 3.9 and glibc 2.3.2 or later

Various x86 and x86_64 Linux distributions, including:

Red Hat Enterprise Linux 4.x, 5.x, and 6.x

Ubuntu 9.10, 10.04, 10.10, 11.04, 11.10, 12.04, 12.10, 13.04, and 13.10

Fedora 11, 12, 13, 14, 15, 16, 17, and 18

SUSE Linux Enterprise Server 10 and 11

Debian 4, 5, and 6

CentOS 5.x and 6.x

Oracle Linux 5.x and 6.x – both Unbreakable Enterprise Kernel and Red Hat Compatible Kernel

Before installing the product on a system that does not use RPM Package Manager, such as an Ubuntu system, you need to install this manager manually; for example, by running the following command (as the root user): `apt-get install rpm`

1.5   System requirements

The components installed in Linux

To calculate the total required disk space, add up the values specified in the third and fourth columns of the table for the components you are planning to install.

Component	Memory (above the OS and running applications)	Disk space required during installation or update	Disk space occupied by the component(s)	Additional
Server for Linux (complete installation)	500 MB	420 MB	700 MB	Screen resolution 800*600 pixels or higher
Bootable Media Builder (Linux)	130 MB	300 MB	330 MB	

Bootable media

Media type	Memory	ISO image size	Additional
Linux-based	370 MB	490 MB	

2   Installing Acronis Backup & Recovery 11.5

This section helps answer questions that might arise during the product installation.

2.1   Preparation

This section describes preparatory steps for installation in Linux.

2.1.1   RPM Package Manager

Make sure that the RPM Package Manager (RPM) is installed in your system. Before installing the product on a Linux distribution that does not use RPM, such as Ubuntu, you need to install RPM manually; for example, by running the following command:

```
sudo apt-get install rpm
```

Linux distributions where RPM is already installed include Red Hat Enterprise Linux, Fedora, and SUSE Linux Enterprise Server.

2.1.2   Linux packages

To add the Acronis Backup & Recovery 11.5 modules to the Linux kernel, the setup program needs the following Linux packages:

- The package for building kernel modules. The package version must match the kernel version.
- The GNU Compiler Collection (GCC) compiler system. The GCC version must be the one with which the kernel was compiled.
- The Make tool.

The names of these packages vary depending on your Linux distribution.

In Red Hat Enterprise Linux and CentOS, the packages normally will be installed by the setup program. In other distributions, you need to install the packages if they are not installed or do not have the required versions.

Are the required packages already installed?

To check whether the packages are already installed, perform these steps:

1. Run the following command to find out the kernel version and the required GCC version:

   ```
   cat /proc/version
   ```

   This command returns lines similar to the following: `Linux version 2.6.35.6` and `gcc version 4.5.1`

2. Run the following command to check whether the Make tool and the GCC compiler are installed:

   ```
   make -v
   gcc -v
   ```

   For **gcc**, ensure that the version returned by the command is the same as in the `gcc version` in step 1. For **make**, just ensure that the command runs.

3. Check whether the appropriate version of the packages for building kernel modules is installed:

   - In Red Hat Enterprise Linux, CentOS, and Fedora, run the following command:

     ```
     yum list installed | grep kernel-devel
     ```

   - In Ubuntu, run the following commands:

     ```
     dpkg --get-selections | grep linux-headers
     dpkg --get-selections | grep linux-image
     ```

   In either case, ensure that the package versions are the same as in `Linux version` in step 1.

Installing the packages from the repository

The following table lists how to install the required packages in various Linux distributions.

Linux distribution	Package names	How to install
Red Hat Enterprise Linux	**kernel-devel** **gcc** **make**	The setup program will download and install the packages automatically by using your Red Hat subscription.
CentOS	**kernel-devel** **gcc** **make**	The setup program will download and install the packages automatically.

Fedora	**kernel-devel** **gcc** **make**	Run the following commands as the root user (specify the required GCC version in the GCC package name): ```yum install kernel-devel-`uname -r` yum install gcc-4.5.1 yum install make```
Ubuntu	**linux-headers** **linux-image** **gcc** **make**	Run the following commands (specify the required GCC version in the GCC package name): ```sudo apt-get update sudo apt-get install linux-headers-`uname -r` sudo apt-get install linux-image-`uname -r` sudo apt-get install gcc-4.6 sudo apt-get install make```

The packages will be downloaded from the distribution's repository and installed.

For other Linux distributions, please refer to the distribution's documentation regarding the exact names of the required packages and the ways to install them.

Installing the packages manually

You may need to install the packages **manually** if:

- The machine does not have an active Red Hat subscription or Internet connection.
- The setup program cannot find the **kernel-devel** or **gcc** version corresponding to the kernel version. If the available **kernel-devel** is more recent than your kernel, you need to either update the kernel or install the matching **kernel-devel** version manually.
- You have the required packages on the local network and do not want to spend time for automatic search and downloading.

Obtain the packages from your local network or a trusted third-party Web site, and install them as follows:

- In Red Hat Enterprise Linux, CentOS, or Fedora, run the following command as the root user:
  ```
  rpm -ivh PACKAGE_FILE1 PACKAGE_FILE2 PACKAGE_FILE3
  ```

- In Ubuntu, run the following command:
  ```
  sudo dpkg -i PACKAGE_FILE1 PACKAGE_FILE2 PACKAGE_FILE3
  ```

Example: Installing the packages manually in Fedora 14

Follow these steps to install the required packages in Fedora 14 on a 32-bit machine:

1. Run the following command to determine the kernel version and the required GCC version:
   ```
   cat /proc/version
   ```

   The output of this command includes the following:
   ```
   Linux version 2.6.35.6-45.fc14.i686
   gcc version 4.5.1
   ```

2. Obtain the **kernel-devel** and **gcc** packages that correspond to this kernel version:
   ```
   kernel-devel-2.6.35.6-45.fc14.i686.rpm
   gcc-4.5.1-4.fc14.i686.rpm
   ```

3. Obtain the **make** package for Fedora 14:
   ```
   make-3.82-3.fc14.i686
   ```

4. Install the packages by running the following commands as the root user:

```
rpm -ivh kernel-devel-2.6.35.6-45.fc14.i686.rpm
rpm -ivh gcc-4.5.1.fc14.i686.rpm
rpm -ivh make-3.82-3.fc14.i686
```

You can specify all these packages in a single `rpm` command. Installing any of these packages may require installing additional packages to resolve dependencies.

2.1.3 Installation file

Depending on the machine platform (x86 or x86_64), you need the .i686 or the .x86_64 installation file. Make sure that the file is assigned the necessary access permissions to execute it; for example, by running the following command:

```
chmod 755 ABR11*
```

2.2 Installation in the interactive mode

1. Ensure that you have the license for Acronis Backup & Recovery 11.5 and (optionally) Universal Restore.

2. Run the appropriate installation file (an .i686 or an .x86_64 file) as the root user.

3. Accept the terms of the license agreement.

4. Do either of the following:
   - To install the product in the trial mode, select **Install in trial mode**.
   - To install the product in the full mode, select **Enter the license key**, and then type your Acronis Backup & Recovery 11.5 license key. Likewise, you can add a license key for Universal Restore.

5. Select the components that you want to install.

6. If you install the software in Red Hat Enterprise Linux or CentOS, the setup program may notify you about the absence of some of the required Linux packages. Select **Continue** to try to install these packages automatically (recommended), or select **Skip** to skip the package installation. For more detailed information about the required packages, see the "Linux packages" (p. 8) section.

7. The setup program tries to automatically compile the SnapAPI module for your Linux kernel. If it fails to do so, please refer to the file: **/usr/lib/Acronis/BackupAndRecovery/HOWTO.INSTALL**.

2.3 Installation in the unattended mode

To install the product or any of its components in the unattended mode (without asking for confirmations), run the installation file with the **-a** command-line parameter. You may need to use other parameters (p. 11) to specify how to perform the installation.

The following example assumes that the name of the installation file is ABR11ServerForLinux.i686.

The following command installs Acronis Backup & Recovery 11.5 Agent for Linux and Acronis Backup & Recovery 11.5 Management Console in the unattended mode (without asking for confirmations) and uses the license key 12345-7890-ABCDE:

```
./ABR11ServerForLinux.i686 -a -i BackupAndRecoveryAgent,ManagementConsole -l
12345-67890-ABCDE
```

2.4   Command-line parameters

When running the installation file of Acronis Backup & Recovery 11.5, you can specify one or more of command-line parameters.

Parameters

`-a` or `--auto`

Performs installation in the so-called unattended setup mode, as opposed to the default interactive mode.

The setup program will proceed without asking for interaction, such as typing the license key or clicking the **Next** buttons. Specify the license key by using the **-l** parameter. Specify the component to install by using the **-i** parameter.

If the SnapAPI module needs to be compiled and the compilation is possible, the setup program will automatically compile the module; otherwise, it will skip the compilation.

`-n` or `--nodeps`

Ignores dependencies during an unattended setup. This option is effective only in the unattended setup mode (see the **-a** parameter described previously).

`-u` or `--uninstall`

Uninstalls the component. You do not need to specify a license key.

`-s` or `--disable-native-shared`

Forces using the setup program's own redistributable libraries during installation, instead of those present in the system.

Redistributable libraries are standard sets of internal tools. Programs use these libraries for purposes such as displaying the user interface.

The setup program contains copies of all the libraries it needs. By default, it uses a copy of a library only when no such library is present in the system. With this parameter, the setup program always uses the copy.

You may want to use this parameter when experiencing problems with installation; for example, when the user interface of the setup program is not displayed correctly.

`-d` or `--debug`

Puts verbose information to the installation log.

`-i <Component name>` or `--id=<Component name>`

Specifies the name of the component being installed:

For Acronis Backup & Recovery 11.5 Agent for Linux: **BackupAndRecoveryAgent**

For Acronis Backup & Recovery 11.5 Bootable Components and Media Builder: **BackupAndRecoveryBootableComponents**

For Acronis Backup & Recovery 11.5 Management Console: **ManagementConsole**

The names are case-sensitive.

Without this parameter, all components will be installed.

`--aur`

Enables the Universal Restore feature. You need to specify a license key for this feature, by using the `-l` parameter.

`-l <License key>` or `--serial=<License key>`

Specifies the license key for Acronis Backup & Recovery 11.5.

If you are enabling the Universal Restore feature (see the `--aur` parameter described previously), also specify the corresponding license key, separating it by a comma; for example:

```
-l 11111-AAAAA,22222-UUUUU
```

`-v` or `--version`

Displays the product version and then exits.

`-?` or `--help`

Displays help and then exits.

`--usage`

Displays a brief usage message and then exits.

3   Upgrading from a stand-alone product to the advanced platform

Purchasing licenses

Prior to upgrade, purchase the advanced platform licenses for each machine where you are planning to upgrade Acronis Backup & Recovery 11.5. Names of the licenses depend on the stand-alone product installed on the machine.

Installed product	Licenses suitable for upgrade
Server for Windows (on any Windows edition)	Advanced Server for Windows [Optional] Universal Restore for Advanced Server for Windows * [Optional] Deduplication for Advanced Server for Windows **
Server for Windows (on Windows SBS, Windows Server 2012 Essentials/Foundation, or Windows Server 2012 R2 Essentials)	Advanced Server SBS Edition Universal Restore comes free with this edition [Optional] Deduplication for Advanced Server SBS Edition**
Server for Linux	Advanced Server for Linux [Optional] Universal Restore for Advanced Server for Linux * [Optional] Deduplication for Advanced Server for Linux **
Workstation	Advanced Workstation [Optional] Universal Restore for Advanced Workstation * [Optional] Deduplication for Advanced Workstation **

* The license is required if you want to use or continue using Acronis Universal Restore (p. 6).

** The license is required if you want to use Acronis Deduplication.

After the purchase, you will receive an e-mail with the license keys.

Upgrading the product

To upgrade Acronis Backup & Recovery 11.5 from a stand-alone product to the advanced platform, do the following:

Step 1. Changing licenses

On each machine where you want to upgrade Acronis Backup & Recovery 11.5, change a license as follows:

1. Run Acronis Backup & Recovery 11.5.
2. On the **Help** menu, click **Change license**.
3. Click **Change** to the right of **License for backup of disks/files**, click **Change**, and then click **Use the following license keys**.
4. Enter the new license keys for this machine.
5. Click **OK** to apply the new licenses, click **Yes** in the warning message, and then click **OK**.

The licenses previously assigned to the machine will be revoked and the management console will restart. Now, you can connect the console to a remote machine and connect to this machine from a remote location.

Step 2. Downloading the setup program

Download the setup program for the advanced platform from the Acronis website as described at http://kb.acronis.com/content/1642.

Step 3. Installing the management server

Install Acronis Backup & Recovery 11.5 Management Server on a machine running Windows. The machine must have at least 8 GB of RAM and 4.5 GB of free space on a system disk.

It is acceptable to install the management server on one of the machines where you have upgraded the product. To do this:

1. Run the setup program, and then click **Install Acronis Backup & Recovery 11.5**.
2. After accepting the terms of the license agreement, click **Modify**.
3. In the components tree, select **Management Server**.
4. Follow the on-screen instructions. In most cases, you can leave the default settings.

In large environments, we recommend setting up a dedicated physical or virtual server. For detailed information, refer to the installation documentation for advanced editions.

Step 4. Adding the upgraded machines to the management server

1. On any machine where the product was upgraded, run Acronis Backup & Recovery 11.5.
2. Click **Connect to a management server** and type the server name or IP address. If prompted for credentials, specify the user name and password of a user who is a member of the **Acronis Centralized Admins** and **Acronis Remote Users** groups on the management server.
3. In the **Navigation** tree, select **Machines with agents**.
4. Click **Add multiple machines** on the toolbar.
5. Add the upgraded machines in any of the following ways:
   - By specifying their names or IP addresses.
   - By browsing the network.

- By browsing an Active Directory domain.
- By importing a list of machines from a .txt or .csv file.

For detailed information, refer to the "Specifying the list of machines" section of the installation documentation for advanced editions.

Tips for further usage

The added machines will appear in the **Machines with agents** view of the management server.

The backup plans on the machines will remain intact. To view them on the management server, right-click the machine name > **View details** > **Backup plans and tasks**. The product continues doing backups and you can recover from the backups created before the upgrade.

You can now create centralized backup plans that will simultaneously back up several machines to a single location.

4   Checking for software updates

Each time you start the management console, Acronis Backup & Recovery 11.5 checks whether a new version of the software is available on the Acronis Web site. If so, the software provides a link for downloading a setup program of the new version.

To check for updates manually, start the management console and then click **Help > Check for updates**. In that window, you also can disable the automatic checks for updates.

5   Uninstalling Acronis Backup & Recovery 11.5

To uninstall all components of Acronis Backup & Recovery 11.5

Do the following as the root user:

1. Run the following commands to uninstall Acronis Backup & Recovery 11.5 components:

```
# /usr/lib/Acronis/BackupAndRecovery/uninstall/uninstall
# /usr/lib/Acronis/BootableComponents/uninstall/uninstall
# /usr/lib/Acronis/BackupAndRecoveryConsole/uninstall/uninstall
```

2. Run the following command to delete the source files of the SnapAPI module:

```
# rm -rf /usr/src/snapapi*
```

To uninstall all components in the unattended mode, run each of the **./uninstall** commands with the **-a** parameter.

6   Deleting Acronis Secure Zone

Uninstallation of Acronis Backup & Recovery 11.5 does not affect Acronis Secure Zone and its contents. You will still be able to recover data from Acronis Secure Zone on booting from bootable media.

If you need to delete Acronis Secure Zone, perform the following steps in the operating system (before the agent uninstallation) or under bootable media.

To delete Acronis Secure Zone

1. On the **Actions** menu, click **Manage Acronis Secure Zone**.

2. In the **Delete Acronis Secure Zone** window, select volumes to which you want to add the space freed from the zone and then click **OK**.

    If you select several volumes, the space will be distributed proportionally to each partition. If you do not select any volume, the freed space becomes unallocated.

After you click **OK**, Acronis Backup & Recovery 11.5 will start deleting the zone.