

**ctys-cloneVM**  
**Copy and configure VMs**  
for  
**QEMU/KVM, VBOX, VMW, and XEN**

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## 1 NAME

ctys-cloneVM - Copy and configure VMs

## 2 SYNTAX

ctys-cloneVM

```

[--ctys-standard-structure]
[-d <debug-level>]
[--defaults-file=<file-name>]
[-f]
[-h]
[-H <help-options>]
[--ip=<IP-address>]
--label=<the-target-vm-label>
--label-old=<the-source-vm-label>
[--mac=<MAC-address>]
[--no-create-image]
[--no-ctys-standard-structure]
[--no-save-para-kernel]
[--source-directory=<directory>]
-t <session-type>
--target-directory=<directory>
[--tcp=<TCP-DNS-name>]
[-V]
[--vm-state=<VSTAT>]
[--uuid=<UUID>]
[-X]

```

## 3 DESCRIPTION

**ctys-cloneVM** provides the automated duplication of present virtual machines. Therefore first the VM is copied to a defined target and second the configuration parameters are altered to new values. The duplicated new VM is executable without any further required modification. The conversion between different hypervisors - a.k.a. session types - is provided by the tool **ctys-convertVM**.

The **current version** of **ctys-cloneVM** could be applied by **batch processing mode to offline-VMs**, where basic values could be consistently altered for the new VM. **Local targets** are supported only, thus a remote VM target requires the remote copy by OS means.

Additional fine grained configuration parameters could be set by **ctys-createConfVM**. The target VM could be stored locally or to a remote location by secure connections via 'scp' from the OpenSSH package. The full scope of authorisation for remote connections by OpenSSH could be applied, this comprises particularly SSH-Keys and Kerberos.

The current version provides the following features:

- Copy and configuration of VMs including hypervisor:  
This is provided for the following supported systems - **QEMU/KVM** , and **XEN** . The actual modification of the included operating system has to be proceeded by the provided native facilities.
- Copy and configuration of VMs with required additional hypervisor registration:  
This is provided for all supported systems - **VBOX** , and **VMW** , either open source, or commercial closed source products. Some additional administration such as registration of the VMs is required for

some versions of the hypervisors by their native tools. The actual modification of the included operating system has to be proceeded by the provided native facilities.

The following table shows a sumup of available features for the current version. The sessiontypes requiring specific tools for their repositories has to be executed on a platform with installed tools and probably with running and enabled hypervisor including helper processes. In cases with specific storage addressing the appropriate mapping functions are required.

Hypervisor/Emulator	VM-Copy	VM-Config	VM-Registration	GuestOS-Config
QEMU/KVM	x	x	ctys	ffs. 3.)
VBOX	x	x	ctys	ffs. 3.)
VMW	x	x	ctys + OEM 2.)	ffs. 3.)
VMWE - VMware ESX(TM)	ffs.	ffs.	ffs.	ffs. 3.)
VMWEi - VMware ESXi(TM)	ffs.	ffs.	ffs.	ffs. 3.)
XEN	x	x	ctys	ffs. 3.)
XENS - XenServer(TM)	ffs.	ffs.	ffs.	ffs. 3.)

Table 1: Clone Automation

ctys Ctys database by ctys-vdbggen and ctys-vhosts.

OEM Registration within the native inventory of the OEM.

- 2.) Requires for some versions additional registration in runtime database by VMware-Gui. Registration for VMware-Server-2.x could be performed implicitly when providing User and non-encrypted Password at the commandline, which should be avoided.
- 3.) Requires the native configuration, which depends on the OS. E.g. a MS-Windows(TM) workstation may require the reconfiguration of system parameters for networking and in addition the new registration in it's ADS domain.

The available call options are partly set by the commandline options, but could the majority of the values are used by pre-assigned environment variables. This is similar to the call of **ctys-createConfVM**, the variables are the same. The modification of the configuration parameters is accomplished by **ctys-createConfVM**. Therefore the values are just passed through to **ctys-createConfVM**.

## 4 OPTIONS

### -ctys-standard-structure

Adapts to complete standard storage structure of ctys. This is mainly the assembly of the whole machine into the VM directory. E.g. in case of VirtualBox the 'Machine' and 'Harddisk' files are stored within the VM directory, whereas else at least the 'Machine' files remain within the standard directory.

This case is the default case.

### -d <debug-level>

Same as ctys.

### -defaults-file=<file-name>

Filename of pre-stored default values for copied VM, the creation could be performed by usage of **ctys-createConfVM**.

### -f

Force the processing when the target directory is present.

**-h|--help|-help**

Print help, refer to "-H" for additional information.

**-H <help-option>**

The extended help option is based on system interfaces for display of manpages, PDF and HTML documents. This comprises the man pages and installed manuals.

For additional help refer to the documents or type **ctys -H help**.

**-ip=<IP>**

The IP address, else the source address is used. This value is currently stored in the configuration file only and has to be configured separately within the GuestOS.

**-label=<label-for-target-vm>**

The label - the name - for the target VM to be created.

**-label=<label-for-source-vm>**

The label - the name - for the source VM to be cloned.

**list-env-var-options|levo**

List of current options to be set by environment variables. For additional information refer to **ctys-createConfVM**.

**-mac=<MAC>**

The MAC address, else the source address is used. This value is almost as important as the UUID and has for the networking domain the same functionality. In most cases the remaining TCP/IP parameters depend, on this value and therefore may be automatically derived from a MAC-Mapping database such as DHCP.

The current version supports one MAC address only, this is applied to the first interface only. When more than one interface is required, this has to be set manually.

**-no-create-image**

Suppresses the copy of the virtual file image.

**-no-ctys-standard-structure**

Adapts to the storage structure of the supported products, which may be varied partially by ctys specific storage within the defined directory for the VM.

**-vm-state=<VSTAT>**

The state to be set for the target machine. For additional information on values refer to **ctys-states**.

**-no-save-para-kernel**

Suppresses the copy of the external runtime kernels. External runtime kernels are frequently required for paravirtualized DomU of Xen and in some cases of QEMU.

**-source-directory=<directory>**

Parent directory for source VM which is required to be stored within a subdirectory named by '-label-old'. The value of '<directory>' is required to be absolute. If this option is not set, the call directory is used as '<directory>/<label-old>'.

**-t <session-type>**

The session type the VM has to be created for. Currently **QEMU** (for QEMU and KVM on x86), **VMW**, **VBOX**, and **XEN** are supported. Each defines a common set of parameters with additional specific variations.

**-target-directory=<directory>**

Parent directory for storage of cloned VM. The actually created directory path is '<directory>/<label>'. The value of '<directory>' is required to be absolute.

**-tcp=<MAC>**

The TCP address, else the source address is used. The DNS name which has to be consistent with the IP address.

**-V** Version.

**-X** Terse.

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## 5 ARGUMENTS

None.

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## 6 EXAMPLES

For examples refer to **ctys-cloning-vms**.

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## 7 EXIT-VALUES

**0: OK:** Result is valid.

**1: NOK:** Erroneous parameters.

**2: NOK:** Missing an environment element like files or databases.

## 8 SEE ALSO

Use-Cases `ctys-cloning-vms`.

### ctys executables

*ctys-attribute(1)* ,  
*ctys-createConfVM(1)* ,  
*ctys-convertVM(1)*

### ctys plugins PMs

*ctys-PM(1)*

### VMs

*KVM(1)* , *ctys-QEMU(1)* , *ctys-VBOX(1)* , *ctys-VMW(1)* , *ctys-XEN(1)*

### HOSTS

*ctys-CLI(1)* , *ctys-RDP(1)* , *ctys-VNC(1)* , *ctys-X11(1)*

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## 10 COPYRIGHT

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