

Rapid Cloning Utility 2.1

Release Notes

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Changes in this release

New features in this release

This release of the Rapid Cloning Utility is an upgrade to Rapid Cloning Utility 2.0.1. It adds support for the following:

- ◆ FC and iSCSI support (for datastore creation and cloning source)
- ◆ Datastore deduplication
- ◆ Automated VM import into View Server
- ◆ XenDesktop export
- ◆ NFS datastore resize
- ◆ Customizable clone count increment (increment new clone numbers by 1, 2, 3, 4, or 5)
- ◆ Programmable SOAP-based API (access the RCU programmatically)
- ◆ Multi-VMDK file cloning (store virtual machine swap file in location other than default)
- ◆ Restrict resources (IP address/interface, volumes and aggregates) used by the RCU as sources and destinations for cloning operations
- ◆ MetroCluster
- ◆ Storage system-based RBAC
- ◆ VMware vCenter Server 2.5 Updates 1 and 5 (in addition to Updates 3 and 4 currently supported)
- ◆ These non-English Windows operating systems:
 - ❖ Japanese
 - ❖ German

Release Notes updates

The release notes might be updated between product releases. This section lists any updates since the original release.

No updates: There are currently no updates for this section.

About Rapid Cloning Utility

Overview

Using FlexClone® technology, the NetApp® Rapid Cloning Utility (RCU) allows users to quickly create and deploy VMware® virtual machines into new or existing NetApp NFS- and VMFS-based datastores. You can quickly and efficiently clone datastores, create virtual machine clones in VMware Virtual Center, power up virtual machines, and apply guest customization specifications to the guest operating system in each individual desktop or server.

What is included

The Rapid Cloning Utility includes an installation program that installs the utility.

System requirements

Host system requirements	
VMware	◆ VMware ESX 3.5 or ESXi 3.5 (all updates) ◆ VMware vCenter Server 2.5 Update 1, 3, 4, or 5 (formerly VirtualCenter Server)
Memory	At least 256 MB free
Virtual Machine cloning requirements	◆ Source VM must be powered off ◆ Source VM must not have a Raw Device Map (RDM) present

Storage system requirements	
Storage system models	◆ NetApp FAS2020, FAS2050 ◆ NetApp FAS/V-Series 3020, 3040, 3050, 3070 ◆ NetApp FAS/V-series 3140, 3160, 3170 ◆ NetApp FAS/V-series 6030, 6040, 6070, 6080 ◆ NetApp R200 ◆ NetApp MetroCluster
Licenses	◆ FlexClone ◆ NFS, FCP, or iSCSI
Data ONTAP	7.3.1.1 or later

Network requirements	
Network configuration	◆ Minimum of one VMkernel IP address and one NetApp storage system IP address in the same network

Known issues and limitations

Storage controller limitations

The following are not supported on the storage controller:

- ◆ MultiStore (vFilers)

qtrees not supported

VMs cannot be created on existing datastores that were created in qtrees, and new datastores cannot be created in qtrees.

Hardware compatibility error

Problem: The destination ESX host, or the ESX hosts in the destination datacenter/cluster, are not checked for complete hardware compatibility prior to cloning. This may result in a failure, with an error message similar to the following:

Virtual Machine requires 4 CPUs to operate, but the host hardware provides 2

Workaround: The administrator should ensure that the destination is compatible before executing a cloning operation. An example of an incompatible hardware situation is when a source Virtual Machine with four vcpus is being cloned to an ESX host with only one physical CPU.

Do not use a qtree or volume with the NTFS security style with the Rapid Cloning Utility

Problem: The Rapid Cloning Utility uses FlexClone technology at the file level to quickly and efficiently create clones of Virtual Machines. If the cloned files reside in a qtree or volume with the NTFS security style, the Data ONTAP software might panic.

Workaround: Before running the Rapid Cloning Utility, make sure all volumes presented to the Virtual Infrastructure are using Unix style security. For more information on qtree security styles, see the `na_qtree` man page.

This problem should be fixed in a future version of Data ONTAP software.

For more details or information on fixed-in version, see bug 350120 at Bugs Online: <http://now.netapp.com/NOW/cgi-bin/bol?Type=Detail&Display=350120>

Cloning tasks appear to be running but progress indicator stops

Problem: If the VMware Virtual Infrastructure Client disconnects from the vCenter Server, any RCU tasks that are in progress will stop. The tasks may appear to be running, but the progress indicator will not change.

Workaround: Right-click on the task from a VMware Virtual Infrastructure Client and choose **Cancel**.

In order to perform a massive clone operation (hundreds or thousands of clones) the RCU must submit many tasks to the vCenter Server. Large deployments should be executed from clients that are not likely to be interrupted or disconnected during the provisioning process.

For the best results in a mass deployment, restart the VMware vCenter Server service prior to execution. This will not impact the ESX hosts or the virtual machine, however it will disconnect any VMware Virtual Infrastructure Client sessions.

VM creation progress indicators do not match

Problem: Progress indicators for VM creation in VMware Infrastructure Client panels do not match.

Workaround: No action. This is an anomaly in VMware Infrastructure Client and can be safely ignored.

Storage controllers take a long time to load in RCU

Problem: The fields in the RCU **Specify Storage Controllers** screen can take several seconds to populate.

Workaround: No action. RCU cross-references datastore and controller information during this delay. The delay varies based on the sizes of the environment, the server running RCU, and the server running vCenter.

Cannot select an aggregate for a vFiler

Problem: After adding a vFiler using the RCU **Add Storage Controller** feature, you cannot select the aggregate in RCU.

Workaround: This release of RCU does not support vFilers (MultiStore).

“Create NetApp Rapid Clones” appears multiple times in VIC

Problem: Right-clicking the Inventory button in VMware Infrastructure Client displays the menu item “Create NetApp Rapid Clones” multiple times.

Additionally, if the second or later occurrence is selected, the following error occurs:

Error: Undefined is null or not an object

Workaround: Select the first (topmost) occurrence of the menu item. Or, restart VMware Infrastructure Client. If the issue is not resolved, restart the NetApp Plugin service.

Canceled RCU tasks are not deleted

Problem: Canceled RCU tasks may remain displayed in the VMware Infrastructure Client Recent Tasks pane indefinitely.

Workaround: Restart the Windows service. From Control Panel > Administrative Tools > Services, right-click VMware vCenter Server and select Restart. Or, run the following from the command line:

```
net stop vpxd
```

```
net start vpxd
```

Console error: flat.vmdk is NOT aligned

Problem: The block alignment of the filesystem (in the Virtual Machine) to the NetApp controller will have a significant impact on performance. For this reason, the Rapid Cloning Utility inspects the source vmdk file of any VM that is cloned. The result of this inspection can be found in the log file. If the filesystem in the VM is not properly aligned, a message is logged in the messages file on the controller as well as in the auto support data. Following is an example of a misalignment message:

```
Partition 1 of /vol/test/ntap_rcu1236650660984/0000hd0000-flat.vmdk  
is NOT aligned. (LBA=63).
```

Workaround: Refer to NetApp TR-3428, *NetApp and VMware Virtual Infrastructure 3 Storage Best Practices* at www.netapp.com/us/library/technical-reports/tr-3428.html for more information on this topic, or open a case with NetApp Global Support.

Datastore Destroy fails

Problem: If any host is unable to disconnect the datastore, the Destroy process fails. This can be caused by a VM being powered up after the Destroy process is started.

Workaround: Resolve the issue that caused the datastore disconnect to fail. Then perform the Destroy from the ESX host that was unable to disconnect.

Could not start the NetApp VI Plugin service on local computer

Problem: RCU installation completes as expected on a mapped drive, but RCU does not show up in VMware Infrastructure Client.

Workaround: The installation executable must be executed from a local file system (not a share or mapped drive). Copy RCUSetup_2_1_win32.exe to a local file system and execute it there.

Performance degradation

Problem: Cloning performance is affected by many factors, including vCenter Server hardware configuration, number and hardware configuration of the ESX hosts, and the current load on either or both. You might experience performance degradation if you request a very large number of clones in a single operation.

Workaround: Reduce the number of clones requested per operation. For example, instead of requesting 2,000 clones, perform two operations of 1,000 clones each.

Cannot access RCU from other machines running VIC

Problem: RCU can be accessed from the vCenter Server but not from other machines running VMware Infrastructure Client.

Workaround: When you registered the RCU, you specified an IP address. Try to access this address on port 61921 from one of the clients as shown below.

◆ <https://<IP Address>:61921/rcu/>

You should see a test page. If this is not accessible, check the firewall settings on the server and make sure TCP connections to port 61921 are allowed.

Password in custom specification not accepted

Problem: The password in a custom specification may not be applied (Windows operating systems only).

Workaround: Power up the source VM, set the password in the source VM, and power it down. Then rerun RCU to perform cloning.

NetApp button not visible in VMware Infrastructure Client

Problem: After installing the RCU, the **NetApp** button is not visible in VMware Infrastructure Client toolbar.

Workaround: Restart VMware Infrastructure Client. If this does not resolve the problem, the RCU service might not be running. Go to the list of services on the system and restart the RCU service if it is not running.

VMs are not created

Problem: During storage system takeover or giveback, virtual machine clone creation fails because the RCU cannot communicate with the storage controller.

Workaround: Restart the RCU when the takeover or giveback process is complete.

Utility does not recognize some datastores

Problem: The RCU does not seem to recognize some datastores even though they are on the controller.

Workaround: The use of `-actual` is not supported in exports. The following example will not be seen as a valid datastore:

```
/vmware_infrastructure      -actual=/vol/sata_vmware_infrastructure,  
sec=sys,rw,root=192.168.235:10.192.168.235.9
```

VMs remain after destroying them using the datastore Destroy option

Problem: After running Destroy on a datastore, some of the VMs still appear in the inventory tree. Attempting to remove them results in the following error message:

The request refers to an object that no longer exists or has never existed.

Workaround: Restart the VI Client.

Warning: aggr does not have sufficient space for the operation

Problem: This warning can appear when specifying the size of a new datastore.

Workaround: Cancel the RCU. Increase the space in the aggregate to accommodate the cloning operation, then rerun the RCU.

**Unable to continue.
No IP address
found...**

Problem: RCU task may end in error, accompanied by the following log entry:

Unable to continue. No ip addresses found when cross-referencing kernel ip addresses and addresses on the controller.

Unable to find a matching network to NFS mount volume to these hosts.

Workaround: Make sure that at least one VMkernel IP address and one storage system IP address are in the same network.

**error: The selected
virtual machine is
powered on**

Problem: This message appears after selecting “Create NetApp Rapid Clone” for a Virtual Machine that is powered on. VMs must be off during cloning.

Workaround: Cancel the RCU, power off the VM, and restart the RCU.

**RCU uses multiple
IPs on storage
system**

Problem: Any matching network between the storage system and the ESX VMkernel will be used to mount datastores.

Workaround: To prevent a network from being used to mount datastores, use the setting `default.restrict.mount.networks` in the preferences file. This file is stored in the following location:

install_directory/rcuPreferences.xml

The following example tells the RCU to ignore the 192.168.2.0 and 10.1.0.0 networks when determining the storage system IP address to use for the next datastore.

```
<entry key="default.restrict.mount.networks"
value="192.168.2.0;10.1.0.0"/>
```

**Connectivity to
storage controller is
lost**

Problem: If the connection is broken, the current task fails.

Workaround: Resolve the communication issue. No additional steps need to be taken in the application. RCU creates a new connection for each new task.

For information about additional problems

Occasionally, additional problems are reported with the Utility or known bugs are fixed. The problems are listed in an online system called Bugs Online.

For a list of known and fixed bugs, access Bugs Online by completing the following steps.

Step	Action
1	Use a Web browser to go to http://now.netapp.com .
2	Click Service & Support.
3	Click Bugs Online & Release Tools.
4	In the Bug Search Tools section, choose Rapid Cloning Utility from the Bug Type(s) menu.
5	Click Go. Result: The Bugs Online - Advanced Search Results lists all bugs for the Rapid Cloning Utility.

Contact Technical Support

If you have a question that is not resolved by the *Release Notes*, contact NetApp Technical Support.

Things to check before you call Technical Support

Before calling NetApp Technical Support, there are several things you can try in effort to solve the problem yourself. These include:

- ◆ Review the known issues and resolutions in this document to see if they contain information on your problem.
- ◆ Review the *Rapid Cloning Utility Installation and Administration Guide* to make sure you are performing all steps correctly.
- ◆ Review “[System requirements](#)” on page 2 to verify that your environment is in compliance with NetApp requirements.
- ◆ Check all cables to make sure that they are connected properly.

Information you need to provide to Technical Support

Before you contact Technical Support, you need to gather the following information about your system and your problem:

- ◆ A valid NetApp storage controller serial number that is licensed and under warranty.
- ◆ Your contact information.
- ◆ A list of all the NetApp products you are using including software versions and licenses.
- ◆ All the error messages from the system.
- ◆ Information on your VMware environment.

How to contact NetApp Technical Support

You can contact NetApp Technical Support by telephone or from the NetApp NOW site.

To contact Technical Support by telephone, use the following numbers:

- ◆ 888 4-NETAPP (US and Canada)
- ◆ 00.800.44.NETAPP (EMEA/Europe)
- ◆ +800.800.80.800 (Asia/Pacific)

To contact Technical Support from the Web, use the following address:

- ◆ <http://now.netapp.com>

For a detailed listing of Technical Support phone numbers, go to the NetApp Support page at

<http://www.netapp.com/us/support/ngs-contacts.html>

Where to find additional information

Where to go for more information

The following table describes documents with the most current information about host and storage system requirements and additional documentation.

If you want...	Go to...
General guidelines for configuring your storage systems to connect to hosts running ESX 3.5	<i>VMware ESX Host Utilities 5.0 Installation and Setup Guide</i> (supports both FC and iSCSI) at http://now.netapp.com/NOW/knowledge/docs/san/#iscsi_host
The latest supported configurations and the NetApp Interoperability Matrix	◆ <i>System Configuration Guides</i> at http://now.netapp.com/knowledge/docs/hardware/NetApp/syscfg/ ◆ <i>NetApp Interoperability Matrix</i> at http://now.netapp.com/products/interoperability/
Architecture, deployment, and management guidelines for VMware View and NetApp storage	<i>NetApp and VMware View (VDI) Solution Guide</i> at http://media.netapp.com/documents/tr-3705.pdf
Best practices for implementing VMware Virtual Infrastructure on NetApp FAS systems.	<i>NetApp and VMware Virtual Infrastructure 3 Storage Best Practices</i> at http://media.netapp.com/documents/tr-3428.pdf