



# **Security group rules for AWS**

## **Cloud Manager**

Ben Cammett  
December 07, 2020

# Table of Contents

- Security group rules for AWS ..... 1
  - Rules for Cloud Volumes ONTAP ..... 1
  - Rules for the HA mediator external security group ..... 4
  - Rules for the HA mediator internal security group ..... 5
  - Rules for the Connector ..... 6

# Security group rules for AWS

Cloud Manager creates AWS security groups that include the inbound and outbound rules that the Connector and Cloud Volumes ONTAP need to operate successfully. You might want to refer to the ports for testing purposes or if you prefer your to use own security groups.

## Rules for Cloud Volumes ONTAP

The security group for Cloud Volumes ONTAP requires both inbound and outbound rules.

### Inbound rules

The source for inbound rules in the predefined security group is 0.0.0.0/0.

Protocol	Port	Purpose
All ICMP	All	Pinging the instance
HTTP	80	HTTP access to the System Manager web console using the IP address of the cluster management LIF
HTTPS	443	HTTPS access to the System Manager web console using the IP address of the cluster management LIF
SSH	22	SSH access to the IP address of the cluster management LIF or a node management LIF
TCP	111	Remote procedure call for NFS
TCP	139	NetBIOS service session for CIFS
TCP	161-162	Simple network management protocol
TCP	445	Microsoft SMB/CIFS over TCP with NetBIOS framing
TCP	635	NFS mount
TCP	749	Kerberos
TCP	2049	NFS server daemon
TCP	3260	iSCSI access through the iSCSI data LIF
TCP	4045	NFS lock daemon
TCP	4046	Network status monitor for NFS
TCP	10000	Backup using NDMP
TCP	11104	Management of intercluster communication sessions for SnapMirror
TCP	11105	SnapMirror data transfer using intercluster LIFs
UDP	111	Remote procedure call for NFS
UDP	161-162	Simple network management protocol
UDP	635	NFS mount

Protocol	Port	Purpose
UDP	2049	NFS server daemon
UDP	4045	NFS lock daemon
UDP	4046	Network status monitor for NFS
UDP	4049	NFS rquotad protocol

## Outbound rules

The predefined security group for Cloud Volumes ONTAP opens all outbound traffic. If that is acceptable, follow the basic outbound rules. If you need more rigid rules, use the advanced outbound rules.

### Basic outbound rules

The predefined security group for Cloud Volumes ONTAP includes the following outbound rules.

Protocol	Port	Purpose
All ICMP	All	All outbound traffic
All TCP	All	All outbound traffic
All UDP	All	All outbound traffic

### Advanced outbound rules

If you need rigid rules for outbound traffic, you can use the following information to open only those ports that are required for outbound communication by Cloud Volumes ONTAP.



The source is the interface (IP address) on the Cloud Volumes ONTAP system.

Service	Protocol	Port	Source	Destination	Purpose
Active Directory	TCP	88	Node management LIF	Active Directory forest	Kerberos V authentication
	UDP	137	Node management LIF	Active Directory forest	NetBIOS name service
	UDP	138	Node management LIF	Active Directory forest	NetBIOS datagram service
	TCP	139	Node management LIF	Active Directory forest	NetBIOS service session
	TCP & UDP	389	Node management LIF	Active Directory forest	LDAP
	TCP	445	Node management LIF	Active Directory forest	Microsoft SMB/CIFS over TCP with NetBIOS framing
	TCP	464	Node management LIF	Active Directory forest	Kerberos V change & set password (SET_CHANGE)
	UDP	464	Node management LIF	Active Directory forest	Kerberos key administration
	TCP	749	Node management LIF	Active Directory forest	Kerberos V change & set Password (RPCSEC_GSS)
	TCP	88	Data LIF (NFS, CIFS, iSCSI)	Active Directory forest	Kerberos V authentication
	UDP	137	Data LIF (NFS, CIFS)	Active Directory forest	NetBIOS name service
	UDP	138	Data LIF (NFS, CIFS)	Active Directory forest	NetBIOS datagram service
	TCP	139	Data LIF (NFS, CIFS)	Active Directory forest	NetBIOS service session
	TCP & UDP	389	Data LIF (NFS, CIFS)	Active Directory forest	LDAP
	TCP	445	Data LIF (NFS, CIFS)	Active Directory forest	Microsoft SMB/CIFS over TCP with NetBIOS framing
	TCP	464	Data LIF (NFS, CIFS)	Active Directory forest	Kerberos V change & set password (SET_CHANGE)
	UDP	464	Data LIF (NFS, CIFS)	Active Directory forest	Kerberos key administration
	TCP	749	Data LIF (NFS, CIFS)	Active Directory forest	Kerberos V change & set password (RPCSEC_GSS)
Backup to S3	TCP	5010	Intercluster LIF	Backup endpoint or restore endpoint	Back up and restore operations for the Backup to S3 feature

Service	Protocol	Port	Source	Destination	Purpose
Cluster	All traffic	All traffic	All LIFs on one node	All LIFs on the other node	Intercluster communications (Cloud Volumes ONTAP HA only)
	TCP	3000	Node management LIF	HA mediator	ZAPI calls (Cloud Volumes ONTAP HA only)
	ICMP	1	Node management LIF	HA mediator	Keep alive (Cloud Volumes ONTAP HA only)
DHCP	UDP	68	Node management LIF	DHCP	DHCP client for first-time setup
DHCPS	UDP	67	Node management LIF	DHCP	DHCP server
DNS	UDP	53	Node management LIF and data LIF (NFS, CIFS)	DNS	DNS
NDMP	TCP	1860 0–18 699	Node management LIF	Destination servers	NDMP copy
SMTP	TCP	25	Node management LIF	Mail server	SMTP alerts, can be used for AutoSupport
SNMP	TCP	161	Node management LIF	Monitor server	Monitoring by SNMP traps
	UDP	161	Node management LIF	Monitor server	Monitoring by SNMP traps
	TCP	162	Node management LIF	Monitor server	Monitoring by SNMP traps
	UDP	162	Node management LIF	Monitor server	Monitoring by SNMP traps
SnapMirror	TCP	1110 4	Intercluster LIF	ONTAP intercluster LIFs	Management of intercluster communication sessions for SnapMirror
	TCP	1110 5	Intercluster LIF	ONTAP intercluster LIFs	SnapMirror data transfer
Syslog	UDP	514	Node management LIF	Syslog server	Syslog forward messages

## Rules for the HA mediator external security group

The predefined external security group for the Cloud Volumes ONTAP HA mediator includes the following inbound and outbound rules.

### Inbound rules

The source for inbound rules is 0.0.0.0/0.

Protocol	Port	Purpose
SSH	22	SSH connections to the HA mediator
TCP	3000	RESTful API access from the Connector

## Outbound rules

The predefined security group for the HA mediator opens all outbound traffic. If that is acceptable, follow the basic outbound rules. If you need more rigid rules, use the advanced outbound rules.

### Basic outbound rules

The predefined security group for the HA mediator includes the following outbound rules.

Protocol	Port	Purpose
All TCP	All	All outbound traffic
All UDP	All	All outbound traffic

### Advanced outbound rules

If you need rigid rules for outbound traffic, you can use the following information to open only those ports that are required for outbound communication by the HA mediator.

Protocol	Port	Destination	Purpose
HTTP	80	Connector IP address	Download upgrades for the mediator
HTTPS	443	AWS API services	Assist with storage failover
UDP	53	AWS API services	Assist with storage failover



Rather than open ports 443 and 53, you can create an interface VPC endpoint from the target subnet to the AWS EC2 service.

## Rules for the HA mediator internal security group

The predefined internal security group for the Cloud Volumes ONTAP HA mediator includes the following rules. Cloud Manager always creates this security group. You do not have the option to use your own.

### Inbound rules

The predefined security group includes the following inbound rules.

Protocol	Port	Purpose
All traffic	All	Communication between the HA mediator and HA nodes

## Outbound rules

The predefined security group includes the following outbound rules.

Protocol	Port	Purpose
All traffic	All	Communication between the HA mediator and HA nodes

## Rules for the Connector

The security group for the Connector requires both inbound and outbound rules.

### Inbound rules

Protocol	Port	Purpose
SSH	22	Provides SSH access to the Connector host
HTTP	80	Provides HTTP access from client web browsers to the local user interface and connections from Cloud Compliance
HTTPS	443	Provides HTTPS access from client web browsers to the local user interface
TCP	3128	Provides the Cloud Compliance instance with internet access, if your AWS network doesn't use a NAT or proxy

## Outbound rules

The predefined security group for the Connector opens all outbound traffic. If that is acceptable, follow the basic outbound rules. If you need more rigid rules, use the advanced outbound rules.

### Basic outbound rules

The predefined security group for the Connector includes the following outbound rules.

Protocol	Port	Purpose
All TCP	All	All outbound traffic
All UDP	All	All outbound traffic

### Advanced outbound rules

If you need rigid rules for outbound traffic, you can use the following information to open only those ports that are required for outbound communication by the Connector.



The source IP address is the Connector host.



Service	Protocol	Port	Destination	Purpose
Active Directory	TCP	88	Active Directory forest	Kerberos V authentication
	TCP	139	Active Directory forest	NetBIOS service session
	TCP	389	Active Directory forest	LDAP
	TCP	445	Active Directory forest	Microsoft SMB/CIFS over TCP with NetBIOS framing
	TCP	464	Active Directory forest	Kerberos V change & set password (SET_CHANGE)
	TCP	749	Active Directory forest	Active Directory Kerberos V change & set password (RPCSEC_GSS)
	UDP	137	Active Directory forest	NetBIOS name service
	UDP	138	Active Directory forest	NetBIOS datagram service
	UDP	464	Active Directory forest	Kerberos key administration
API calls and AutoSupport	HTTPS	443	Outbound internet and ONTAP cluster management LIF	API calls to AWS and ONTAP, and sending AutoSupport messages to NetApp
API calls	TCP	3000	ONTAP cluster management LIF	API calls to ONTAP
	TCP	8088	Backup to S3	API calls to Backup to S3
DNS	UDP	53	DNS	Used for DNS resolve by Cloud Manager
Cloud Compliance	HTTP	80	Cloud Compliance instance	Cloud Compliance for Cloud Volumes ONTAP

## Copyright Information

Copyright © 2021 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

## Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.