



How FPolicy works with external FPolicy servers

ONTAP 9

NetApp
June 12, 2023

This PDF was generated from <https://docs.netapp.com/us-en/ontap/nas-audit/fpolicy-external-fpolicy-servers-concept.html> on June 12, 2023. Always check docs.netapp.com for the latest.

Table of Contents

- How FPolicy works with external FPolicy servers 1
 - How FPolicy works with external FPolicy servers overview..... 1
 - How control channels are used for FPolicy communication..... 1
 - How privileged data access channels are used for synchronous communication..... 1
 - How FPolicy connection credentials are used with privileged data access channels 1
 - What granting super user credentials for privileged data access means..... 2
 - How FPolicy manages policy processing..... 2

How FPolicy works with external FPolicy servers

How FPolicy works with external FPolicy servers overview

After FPolicy is configured and enabled on the storage virtual machine (SVM), FPolicy runs on every node on which the SVM participates. FPolicy is responsible for establishing and maintaining connections with external FPolicy servers (FPolicy servers), for notification processing, and for managing notification messages to and from FPolicy servers.

Additionally, as part of connection management, FPolicy has the following responsibilities:

- Ensures that file notification flows through the correct LIF to the FPolicy server.
- Ensures that when multiple FPolicy servers are associated with a policy, load balancing is done when sending notifications to the FPolicy servers.
- Attempts to reestablish the connection when a connection to an FPolicy server is broken.
- Sends the notifications to FPolicy servers over an authenticated session.
- Manages the passthrough-read data connection established by the FPolicy server for servicing client requests when passthrough-read is enabled.

How control channels are used for FPolicy communication

FPolicy initiates a control channel connection to an external FPolicy server from the data LIFs of each node participating on a storage virtual machine (SVM). FPolicy uses control channels for transmitting file notifications; therefore, an FPolicy server might see multiple control channel connections based on SVM topology.

How privileged data access channels are used for synchronous communication

With synchronous use cases, the FPolicy server accesses data residing on the storage virtual machine (SVM) through a privileged data access path. Access through the privileged path exposes the complete file system to the FPolicy server. It can access data files to collect information, to scan files, read files, or write into files.

Because the external FPolicy server can access the entire file system from the root of the SVM through the privileged data channel, the privileged data channel connection must be secure.

How FPolicy connection credentials are used with privileged data access channels

The FPolicy server makes privileged data access connections to cluster nodes by using a specific Windows user credential that is saved with the FPolicy configuration. SMB is the only supported protocol for making a privileged data access channel connection.

If the FPolicy server requires privileged data access, the following conditions must be met:

- A SMB license must be enabled on the cluster.
- The FPolicy server must run under the credentials configured in the FPolicy configuration.

When making a data channel connection, FPolicy uses the credential for the specified Windows user name. Data access is made over the admin share `ONTAP_ADMIN$`.

What granting super user credentials for privileged data access means

ONTAP uses the combination of the IP address and the user credential configured in the FPolicy configuration to grant super user credentials to the FPolicy server.

Super user status grants the following privileges when the FPolicy server accesses data:

- Avoid permission checks

The user avoids checks on files and directory access.

- Special locking privileges

ONTAP allows read, write, or modify access to any file regardless of existing locks. If the FPolicy server takes byte range locks on the file, it results in immediate removal of existing locks on the file.

- Bypass any FPolicy checks

Access does not generate any FPolicy notifications.

How FPolicy manages policy processing

There might be multiple FPolicy policies assigned to your storage virtual machine (SVM); each with a different priority. To create an appropriate FPolicy configuration on the SVM, it is important to understand how FPolicy manages policy processing.

Each file access request is initially evaluated to determine which policies are monitoring this event. If it is a monitored event, information about the monitored event along with interested policies is passed to FPolicy where it is evaluated. Each policy is evaluated in order of the assigned priority.

You should consider the following recommendations when configuring policies:

- When you want a policy to always be evaluated before other policies, configure that policy with a higher priority.
- If the success of requested file access operation on a monitored event is a prerequisite for a file request that is evaluated against another policy, give the policy that controls the success or failure of the first file operation a higher priority.

For example, if one policy manages FPolicy file archiving and restore functionality and a second policy manages file access operations on the online file, the policy that manages file restoration must have a higher priority so that the file is restored before the operation managed by the second policy can be allowed.

- If you want all policies that might apply to a file access operation to be evaluated, give synchronous policies a lower priority.

You can reorder policy priorities for existing policies by modifying the policy sequence number. However, to have FPolicy evaluate policies based on the modified priority order, you must disable and reenable the policy with the modified sequence number.

Copyright information

Copyright © 2023 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.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

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.