



Enable multi-factor authentication

Element Software

NetApp
June 11, 2021

Table of Contents

- Enable multi-factor authentication 1
- Set up multi-factor authentication. 1
- Additional information for multi-factor authentication 2

Enable multi-factor authentication

Multi-factor authentication (MFA) uses a third-party Identity Provider (IdP) via the Security Assertion Markup Language (SAML) to manage user sessions. MFA enables administrators to configure additional factors of authentication as required, such as password and text message, and password and email message.

Set up multi-factor authentication

You can use these basic steps via the Element API to set up your cluster to use multi-factor authentication.

Details of each API method can be found in the [Element API Reference](#).

1. Create a new third-party Identity Provider (IdP) configuration for the cluster by calling the following API method and passing the IdP metadata in JSON format: `CreateIdpConfiguration`

IdP metadata, in plain text format, is retrieved from the third-party IdP. This metadata needs to be validated to ensure that it is correctly formatted in JSON. There are numerous JSON formatter applications available that you can use, for example: <https://freeformatter.com/json-escape.html>.

2. Retrieve cluster metadata, via `spMetadataUrl`, to copy to the third-party IdP by calling the following API method: `ListIdpConfigurations`

`spMetadataUrl` is a URL used to retrieve service provider metadata from the cluster for the IdP in order to establish a trust relationship.

3. Configure SAML assertions on the third-party IdP to include the “NameID” attribute to uniquely identify a user for audit logging and for Single Logout to function properly.
4. Create one or more cluster administrator user accounts authenticated by a third-party IdP for authorization by calling the following API method: `AddIdpClusterAdmin`



The username for the IdP cluster Administrator should match the SAML attribute Name/Value mapping for the desired effect, as shown in the following examples:

- `email=bob@company.com` — where the IdP is configured to release an email address in the SAML attributes.
 - `group=cluster-administrator` - where the IdP is configured to release a group property in which all users should have access. Note that the SAML attribute Name/Value pairing is case-sensitive for security purposes.
5. Enable MFA for the cluster by calling the following API method: `EnableIdpAuthentication`

Find more information

- [SolidFire and Element Resources page](#)
- [NetApp Element Plug-in for vCenter Server](#)

Additional information for multi-factor authentication

You should be aware of the following caveats in relation to multi-factor authentication.

- In order to refresh IdP certificates that are no longer valid, you will need to use a non-IdP admin user to call the following API method: `UpdateIdpConfiguration`
- MFA is incompatible with certificates that are less than 2048 bits in length. By default, a 2048-bit SSL certificate is created on the cluster. You should avoid setting a smaller sized certificate when calling the API method: `SetSSLCertificate`



If the cluster is using a certificate that is less than 2048 bits pre-upgrade, the cluster certificate must be updated with a 2048-bit or greater certificate after upgrade to Element 12.0 or later.

- IdP admin users cannot be used to make API calls directly (for example, via SDKs or Postman) or used for other integrations (for example, OpenStack Cinder or vCenter Plug-in). Add either LDAP cluster admin users or local cluster admin users if you need to create users that have these abilities.

Find more information

- [Managing storage with the Element API](#)
- [SolidFire and Element Resources page](#)
- [NetApp Element Plug-in for vCenter Server](#)

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.