

# Username considerations for external authentication

## In this article

About usernames with external authentication

About username normalization

---

When you use CAS, LDAP, or SAML for authentication, GitHub Enterprise Server follows certain rules to determine the username for each user account on your instance.

## About usernames with external authentication [↗](#)

You can configure external authentication for GitHub Enterprise Server using CAS, LDAP, or SAML. For more information, see "[About authentication for your enterprise](#)."

When you use external authentication, your GitHub Enterprise Server instance automatically creates a username for each person when the person signs into your GitHub Enterprise Server instance through your external authentication system for the first time.

Usernames must not exceed 39 characters.

## About username normalization [↗](#)

Usernames for user accounts on GitHub Enterprise Server can only contain alphanumeric characters and dashes ( - ).

When you configure CAS, LDAP, or SAML authentication, GitHub Enterprise Server uses an identifier from the user account on your external authentication provider to determine the username for the corresponding user account on GitHub Enterprise Server. If the identifier includes unsupported characters, GitHub Enterprise Server will normalize the username per the following rules.

- 1 GitHub Enterprise Server will normalize any non-alphanumeric character in your account's username into a dash. For example, a username of `mona.the.octocat` will be normalized to `mona-the-octocat`. Note that normalized usernames also can't start or end with a dash. They also can't contain two consecutive dashes.
- 2 Usernames created from email addresses are created from the normalized characters that precede the `@` character.
- 3 Usernames created from domain accounts are created from the normalized characters after the `\\` separator.
- 4 If multiple accounts are normalized into the same GitHub Enterprise Server username, only the first user account is created. Subsequent users with the same username won't be able to sign in.

## Examples of username normalization [↗](#)

Identifier on provider	Normalized username on GitHub	Result
The.Octocat	the-octocat	This username is created successfully.
!The.Octocat	-the-octocat	This username is not created, because it starts with a dash.
The.Octocat!	the-octocat-	This username is not created, because it ends with a dash.
The!!Octocat	the--octocat	This username is not created, because it contains two consecutive dashes.
The!Octocat	the-octocat	This username is not created. Although the normalized username is valid, it already exists.
The.Octocat@example.com	the-octocat	This username is not created. Although the normalized username is valid, it already exists.
internal\\The.Octocat	the-octocat	This username is not created. Although the normalized username is valid, it already exists.
mona.lisa.the.octocat.from.github.ub.united.states@example.com	mona-lisa-the-octocat-from-github-united-states	This username is not created, because it exceeds the 39-character limit.

## About username normalization with SAML [↗](#)

If you configure SAML authentication for your GitHub Enterprise Server instance, GitHub Enterprise Server determines each person's username by one of the following assertions in the SAML response, ordered by descending priority.

- 1 The custom `username` attribute, if defined and present
- 2 An `http://schemas.xmlsoap.org/ws/2005/05/identity/claims/name` assertion, if present
- 3 An `http://schemas.xmlsoap.org/ws/2005/05/identity/claims/emailaddress` assertion, if present
- 4 The `NameID` element

GitHub Enterprise Server requires the `NameID` element even if other attributes are present. For more information, see "[SAML configuration reference](#)."

GitHub Enterprise Server creates a mapping between the `NameID` from the IdP and the username on your GitHub Enterprise Server instance, so the `NameID` should be persistent, unique, and not subject to change for the lifecycle of the user.

**Note:** If the `NameID` for a user does change on the IdP, the person will see an error message when signing in to your GitHub Enterprise Server instance. To restore the person's access, you'll need to update the user account's `NameID` mapping. For more information, see "[Updating a user's SAML NameID](#)."

## Legal

© 2023 GitHub, Inc. [Terms](#) [Privacy](#) [Status](#) [Pricing](#) [Expert services](#) [Blog](#)