SAML Transformation Fallback Workaround (Microsoft Entra ID)

Field	Details
Document Type	How-To Guide - SSO SAML Transformation Runbook
Applies To	Microsoft Entra ID, 3rd-Party WebApps & Single-name user accounts
Audience	2nd Line / Entra ID Admins / IT Engineer
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Overview

This document describes a targeted workaround implemented within Microsoft Entra ID to address a SAML single sign-on (SSO) integration limitation with 3rd-Party or InHouse LOB WebApp, where the service provider requires the givenName (first name) attribute to be present during authentication.

The workaround enables successful authentication for users who have a single name recorded in Entra ID (i.e. no givenName or surname attribute populated), without modifying directory data.

Background

During an investigation of a user login issue raised by a 3rd-Party Service Provider support team, it was identified that:

- The WebApp requires all user accounts to have both givenName and surName attributes to be populated in Entra ID.
- Microsoft Entra ID successfully completes SAML authentication even when givenName is empty.
- The WebApp enforces givenName as a mandatory SAML attribute and rejects authentication if it is missing.

This behaviour is Service Provider side and outside of Entra ID control. However, a controlled, application-scoped workaround is possible using SAML claim transformations.

Design Principles

The workaround was designed with the following principles in mind:

- **Application-scoped only** – no tenant-wide or directory-wide impact
- **Non-destructive** – no changes to user objects or identity source data
- **Least privilege / minimal impact** – only activates when givenName is empty
- **Reversible** – easy to remove if Service Provider configuration changes

Technical Summary

The SAML givenName claim for the WebApp Enterprise Application is configured using a conditional transformation:

- If user.givenName is populated > send user.givenName
- If user.givenName is empty > fall back to user.displayName

This ensures that the WebApp always receives a non-null givenName value, allowing authentication to complete successfully.

No other SAML claims are affected.

Implementation Details

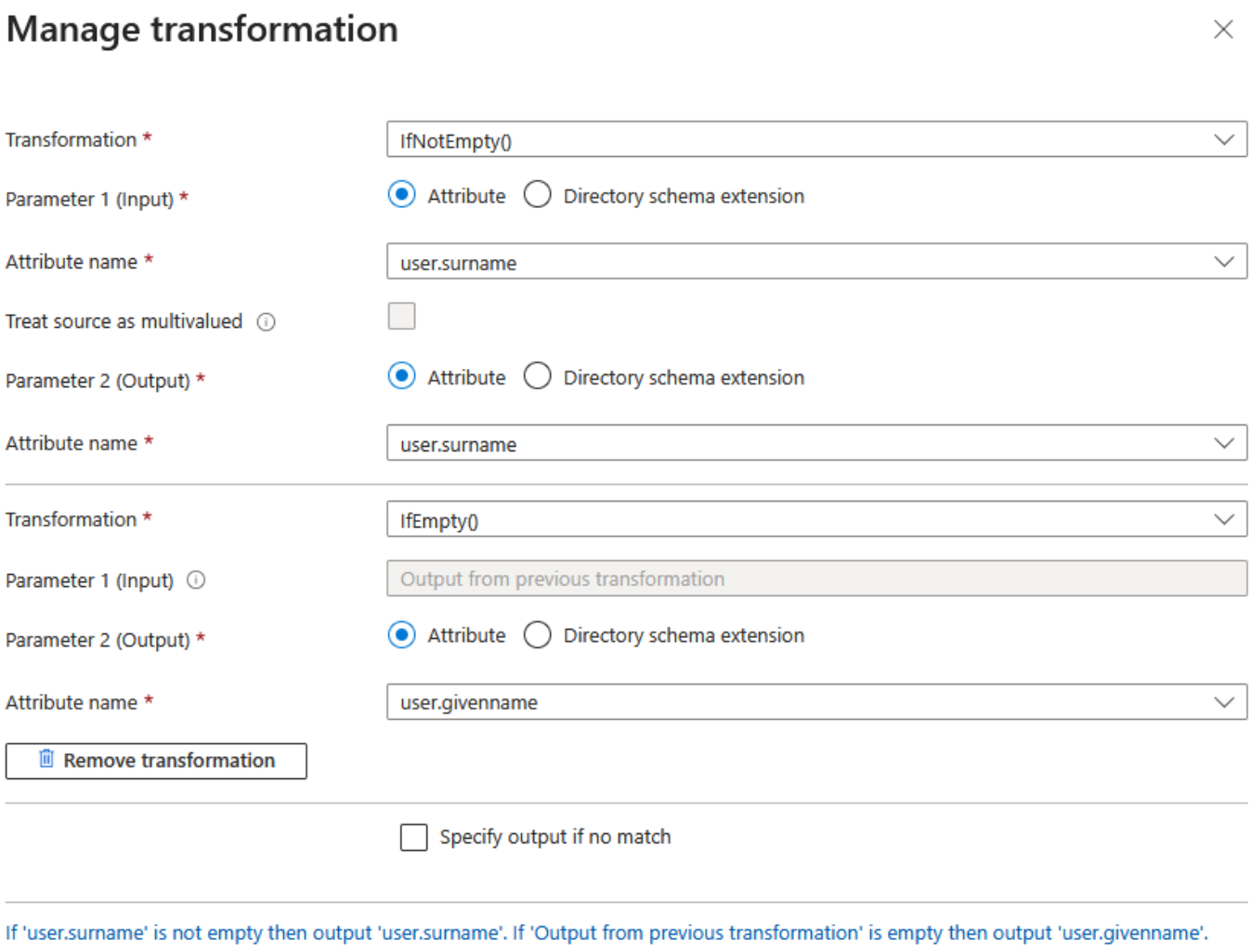
Microsoft Entra ID > Enterprise Applications > WebApp > Single sign-on >Attributes & Claims

Claim:

- Name: givenname
- Namespace: Default

Transformation Logic:

1. IfNotEmpty(user.surname) > output user.surname
2. IfEmpty(previous output) > output user.givenname



This transformation is evaluated at authentication time and does not write back to Entra ID.

Impact Assessment

Who is affected:

- Only users authenticating to WebApp via SAML
- Only users whose givenName attribute is empty

What changes:

- WebApp receives a synthetic givenName value for single-name users

What does NOT change:

- Entra ID user attributes

- Other enterprise applications
- Authentication behaviour for users with a populated givenName

Risks and Considerations

- The givenName value provided to the WebApp may not represent a true first name.
- If the WebApp stores or reuses the attribute internally, the fallback value may persist within their system.
- This workaround compensates for a Service Provider SAML attribute mandatory requirement and should be reviewed if Service Provider updates its SAML requirements.

This implementation should not be used as a general pattern unless explicitly required.

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