

Typing Quest

Enabling SAML 2.0 web browser Single Sign-On with Typing Quest

The guide applies to the web-based typing tutor sold under the brand name Typing Quest, TypingMaster or NäppisTaituri, depending on program language.

In this guide, the typing tutor is referred to as Typing Quest.

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1. Introduction

This guide applies to the web-based typing tutor sold under the brand name Typing Quest, TypingMaster or NäppisTaituri, depending on program language. In this guide, Typing Quest refers to all language versions regardless of the marketing name of the service.

This document is written for an IT administrator to set up their user directory to use SAML 2.0 based Single Sign-On into Typing Quest. This document assumes that readers have a basic understanding of how to federate their user directory and does not include directory specific instructions.

When Typing Quest is set to use web browser Single Sign-On (SSO), user data is shared between the centralized user directory (Identity Provider, IdP) and Typing Quest (Service Provider, SP) and you will not need to maintain user information in Typing Quest. Users are auto-provisioned in Typing Quest when they successfully log in to Typing Quest for the first time so there is no need to upload student information.

Identity Provider requirements:

- Support SAML 2.0 webSSO protocol
- Support Service Provider Initiated SSO

Typing Quest SAML based SSO has been tested on AD FS 2.0 and AD FS 3.0, Google G Suite, Azure AD Premium and Hello ID, but basically any SAML 2.0 compatible identity provider should be able to connect with Typing Quest.

2. Setting Up Single Sign-On with Typing Quest

Here's an overview of what you will need to set up Single Sign-On for Typing Quest. Kindly note, that this guide does not include Identity Provider specific instructions. You can contact our technical support with any questions and we will do our best to help, but cannot guarantee that we are able to as our support staff is not trained to set up the Identity Provider side. To contact our tech support, please use the contact form on our website: <http://www.typingquest.com/contact.html>

We recommend starting using Single Sign-On from clean slate as that will ensure smooth deployment. However, it is possible to switch to SSO authentication even after your students have started using Typing Quest. In that case, matching login IDs need to be found in SAML attributes and Typing Quest users (see section 2.2).

2.1 Add Service Provider details to your Identity Provider

Please refer to your Identity Provider's instructions on how to configure single sign-on to applications that use the SAML 2.0 webSSO protocol.

Typing Quest accounts can be located on our server in the USA or in Germany. Usually, accounts of customers who reside in the European Union countries are located on our server in Germany, and all other accounts on our US server. If your dedicated Typing Quest login URL starts with `online3.typingmaster.com`, your account is on our US server. If your dedicated Typing Quest login starts with `edu.typingmaster.com`, your account is on our server in Germany.

You can upload or link to our metadata file or manually enter Service Provider information to your Identity Provider.

US server

Start URL: https://online3.typingmaster.com/login?id=<account_id>

Entity ID: online3.typingmaster.com

SAML Endpoint URL : https://online3.typingmaster.com/sso_handler

Public certificate: Copy from metadata.xml

Metadata.xml URL: https://online3.typingmaster.com/manuals/metadata_typingquest_us.xml

Icon (TypingQuest or TypingMaster, optional): <https://online3.typingmaster.com/manuals/icon T 256px.png>

EU server (Germany)

Start URL: https://edu.typingmaster.com/login?id=<account_id>

Entity ID: edu.typingmaster.com

SAML Endpoint URL : https://edu.typingmaster.com/sso_handler

Public certificate: Copy from metadata.xml

Metadata.xml URL: https://edu.typingmaster.com/manuals/metadata_typingmaster_eu.xml

Icon (TypingQuest or TypingMaster, optional): <https://edu.typingmaster.com/manuals/icon T 256px.png>

Icon (NäppisTaituri, optional): <https://edu.typingmaster.com/manuals/icon N 256px.png>

If your identity provider supports automatic updating of the metadata.xml (public certificate), we recommend that you use it.

2.2 Map outgoing attributes

So that Typing Quest can get the necessary user data from the SAML assertion sent by your Identity Provider when users access Typing Quest, in your Identity Provider settings, you need to map the attributes that are sent in the SAML assertion and let us know the respective attribute names.

Required information

Login ID: This is used in Typing Quest reporting only. Also, teachers can use this information to help users who've forgotten their login IDs.

Note that if you are switching to SSO and have users who've already started working with Typing Quest courses, the login ID value is used to match SSO authenticated users with users who already have accounts in Typing Quest. In this case, you need to make sure that the SAML assertion includes an attribute that matches users' current login IDs in Typing Quest. If there is a matching login ID in Typing Quest already, then the user will be able to continue from where they left off. If there is no match, a new user account will be created in Typing Quest.

The login ID used to match user information does not necessarily need to be the login ID used in SSO, for as long as the login ID is unique (login ID is used as the unique identifier (primary key) of users in Typing Quest). For example, even if your users do SSO login with an email address (UPN), the stored ID can be a Windows account name such as "johnd". This is a common case when a Typing Quest account with existing users is switched to SSO.

First name: Needed for reporting purposes so that teachers can follow student progress.

Last name: Needed for reporting purposes so that teachers can follow student progress.

Optional information

Email: Optional information. Can be used by teachers to contact students but is required if you stop using SSO on the account and student passwords need to be replaced.

User Group: If group names are sent in the SAML assertion, Typing Quest will be able to automatically group users. You can set the program to only group users at first login and ignore group information after that. Or, you can set the program to move users to new groups if their group information has changed in the SAML assertion.

For more information about grouping, please see section 3 of this guide.

User type: If user type is sent in the SAML assertion, Typing Quest can automatically assign the correct access rights to your users. To be able to do this, Typing Quest will need to know the name of the attribute that has user type data AND the values that need to be matched to give admin or teacher rights.

The user type is assigned only when a user account is created after first login. If an account already exists, Typing Quest will ignore user type.

Any user with admin rights will be able to afterwards modify the user type of individual users, i.e. to upgrade a teacher to admin or student to teacher, or respectively, downgrade to limit access rights.

If you decide not to send user type, all users will get basic user rights (student accounts). In this case, we do recommend importing admin and teacher users to Typing Quest in advance so that you don't need to manually update user type for each teacher or admin separately. Alternatively, Typing Quest tech support can upgrade users of your choice to admin status and those admin users can then upgrade other users to teacher or admin.

For details of user types in Typing Quest, see table in section 3.2.

2.3 Send your IdP information to Typing Quest tech support

To complete the SSO setup, be sure to send your Identity Provider information to Typing Quest tech support: <http://www.typingquest.com/contact.html>

This is what is needed:

- Identity Provider URL
- Attribute names (required + optional)
- Values of user types admin and teacher, if used
- Test user login ID and password. If user type is sent, we recommend to send two test users, one for a student and one for a teacher user.
- Optional: Logout URL

By default, when a user logs out of Typing Quest, their SSO session remains open. If you would like to redirect users to SSO logout page, you should let us know the URL of your logout page. Note however that this is not a Single Log Out service but just a redirect to web page other than TypingQuest default.

3. Automatic Grouping

When setting Typing Quest up to use SSO, you can choose to automatically create groups and assign user to the groups. Map your group attribute or attributes to outgoing claims and let us know the names of the attribute or attributes that are sent in the SAML assertion.

Typing Quest can form group names from one or more attributes. For example, you may have an attribute that contains the school name and another attribute that holds grade. If both attributes are sent to Typing Quest, we can create a group name “school + grade”. If either of the values is empty or the attribute is missing, Typing Quest will create the group name using the values that are successfully passed in the SAML assertion.

If you decide not to send a group attribute or attributes in the assertion, or the value is empty, Typing Quest will not move users to groups automatically. Instead, new users will be assigned to the Default Group when they first log in and teachers can later create groups and move students to them.

Effects of using automatic grouping

Grouping is used and group already exists in Typing Quest

If group name is sent in the SAML assertion and group already exists in Typing Quest, the user will be assigned to that group.

Grouping is used and group does not yet exist in Typing Quest

If group name is sent in the SAML assertion and the group does not exist in Typing Quest, a new group will be created and user is assigned to the new group.

‘Update groups’ setting

If you decide to use automatic grouping, you will also need to make a decision whether or not to reassign users to new groups if their group changes in the Identity Provider.

If you enable the setting called “Update groups” on your SSO settings page, any user whose group has changed in the Identity Provider will automatically be reassigned to the new group the next time that he or she logs in to Typing Quest. If the group does not yet exist, it will be created automatically during login.

Note: When “Update groups” is enabled and a new group is created in Typing Quest, all course settings from the student’s old group are copied to the new group. This will only happen when the first user is assigned to the new group.

When ‘Update groups’ is enabled, all grouping is done based on group names sent by the IdP. Teachers or admins will not be able to move a student to another group, and students will not be able to change their group themselves.

Note: If ‘Update Groups’ is not used, students will be able to change groups themselves unless this is disabled in Typing Quest’s global settings (Manager > Settings > Group selection = Disabled | Enabled).

Reasons for deciding not to use the automatic updating of student group

In many cases, it can be convenient to assign users to default groups upon first login so that teachers can easily find them. However, you may have a hunch that the grouping that you have in the Identity Provider does not work very well when your teachers start to manage their classes in Typing Quest. For example, teachers may want to rename or create their own groups using a different naming logic or create groups based on student

skill levels. In this case, if user group is updated at each login, the teacher will need to reassign students back to their correct groups again and again.

4. Effects of Single Sign-On on the Use of Typing Quest

When SSO is enabled, all students and teachers must use their directory user names and passwords to enter Typing Quest. If user credentials are authenticated by your Directory and user is authorized by your rules, a new user account will be automatically created to Typing Quest the first time that the user logs in (auto-provisioning).

If user type is defined in the SAML assertion returned by the Identity Provider, admin, teacher or student access rights will be assigned to users. If user type is not defined, then all users who log in will get basic user rights (student accounts) and can be upgraded by admin users.

If grouping is enabled, users are assigned to groups based on the group name attribute that your IdP returns to Typing Quest. At your option, user's group gets checked at each login and updated if it has changed ('Update groups' setting).

4.1 Auto-provisioning of user accounts, updating user information

All Typing Quest users need to use the same sign in name and password that they use for your network.

Case 1: New user signs in through SSO

If the user is not found on your Typing Quest account, but is found in the Identity Provider and successfully authenticated and authorized, the user is automatically added as a new user in Typing Quest (auto-provisioning). User ID, first name and last name are passed from the Directory and saved to the user's Typing Quest account. Optional information email, user type and user group are set if returned in the SAML assertion.

This is the user information that will be saved in Typing Quest:

- Login ID (unique identifier/primary key of users in Typing Quest)
- First Name
- Last Name
- Optional: Email Address
- Optional: User group based on attribute values returned in the SAML assertion
- Optional: User type (student, teacher, admin) based on attribute value returned in the SAML assertion

Case 2: Existing user signs in through SSO

If user is found in the Identity Provider and user is authorized to use the service, the sign in is successful. If user's last name, first name or email has changed in the Directory, it will be updated in Typing Quest. If group has changed and 'Update Groups' is enabled, user is moved to a new group.

Case 3: Existing user is deleted from Identity Provider

If you delete a user from your Identity Provider and user attempts to log in to Typing Quest, authentication will fail and the user will be unable to log in. Typing Quest does not remove such users from the Service. Instead,

you can clean up the account from idle users manually. You can either archive the user or delete the user permanently.

Case 4: User signs in through SSO but matching user account is archived in Typing Quest

If you archive a user account in Typing Quest and they try to log in later through SSO, access will be denied even if SSO is successful. If such user needs to use Typing Quest, any teacher or admin can move the user from the Archived Users group to any active group, and the user can continue from where they left off.

4.2 Teacher and admin accounts

If your SAML assertion is configured to return user type, Typing Quest will use that and assign the correct access rights when user account is created at first login.

After the first login, user type is not automatically updated, but can be modified in Typing Quest Manager by users with teacher or admin access rights.

At your option, you can limit user type switching to admin only by using a global setting named "User type switching" and setting it to "Disabled". If user type switching is disabled, only admin users will be able to change user type.

When you need to change the access rights of users already created in Typing Quest, you can change their user type in User settings (Users & Reports > Click on user name > Change Settings).

We recommend limiting the number of users with Admin rights to minimum.

Administrator Level User ("Admin")

Highest level user account. Has full access to all areas of the product. Set to this level any user who needs full access to the product.

- Allowed to view and modify all student records
- Allowed to view and modify all group settings
- Full control over global settings

Teacher Level User ("Teacher")

Second highest level user account. Has limited access to the Manager side. Assign to this level any user who needs access to their users and groups only.

- Allowed to view and modify only their own groups and shared groups
- No access to student records in other teachers' groups
- Not allowed modify the user settings of other Admins or Teachers
- No access to global settings and additional tools

To have a higher level of security, use the teacher account to prevent people from viewing all student records and having full access to the Manager.

Basic User ("User")

These are the basic users who can only access the Study Area of the program and can view their personal information only, in other words "students". The majority of your users should be at this level.

Group Ownership

If you have a lot of teachers and groups in Typing Quest, we recommend that you ask your teachers to claim ownership to their own classes. When teachers own groups, the study records of the students in their groups

can be viewed and group's course settings modified by that teacher only. This will make it easier for the teachers to manage their classes.

To do this, ask the teacher to go on the Groups page and find their class. Then click on "Settings" and select the radio button "My group". One teacher can claim ownership more than one group, but groups can't be owned by more than one teacher. If more than one teachers need to oversee the same class then you should leave the group as a shared group.

Note: If a group is not owned by a teacher, it will be visible to all teachers and admins as a "Shared group".

Note: Admin users will be able to view and modify all groups and student records.

4.3 Preventing unauthorized use

Typing Quest does not feature options for allowing or preventing access based specific SAML assertion data. For this reason, any user who can successfully log in with their credentials from your Identity Provider (successful authentication and authorization), will get a user account in Typing Quest and can take the typing courses.

Advanced claim rules in Identity Provider

If you are familiar with limiting access by creating rules on the Identity Provider, you can create a claim rule to limit access to Typing Quest to users who match the specified rule. Creating rules on the IdP side will give access only to those users who are allowed to use the resource.

Kindly note, however, that Typing Quest's tech support is not able to help you in creating the rules because our support staff is not trained to do that, but we can of course help you test that the filter you created works properly.

Workaround : Require license password

To prevent unauthorized users from reserving licenses, you can use Typing Quest's "License password" feature which you will find in Typing Quest Manager > Settings page.

When "Require Password" is set to Enabled, the users need to enter a License Password created by you to be able to take a license and access the course material.

Note that the license password will not prevent users from logging in to Typing Quest and user accounts will be created for all users who are successfully authenticated. The license password will be asked when users open any lesson. You can then periodically delete the accounts of users who've not started any courses.

4.4 Applying global course settings

At the moment Typing Quest does not feature global course settings as such. However, when using Single Sign-On, you have an easy workaround for applying the same base course settings to all new groups that are automatically created when students start using the typing tutor.

The prerequisite for applying global course defaults is that:

- You are using automatic grouping with SSO; AND
- Update groups is enabled OR Group does not yet exist in Typing Quest.

To use global course settings, do this:

1. Go to 'Courses' page and select group 'Default group' from the group dropdown. Default group should be the first on the list.

If your default group has been renamed, go to 'Groups' page where you will find it easily as it is tagged as 'Default' group. Then click on 'View courses'.

2. For each course that is active for your students, configure the course settings to your liking. See the Manager Manual for details on course settings.

Important: Modifying the course settings for the Default Group will not update the new settings in any of the old groups in Typing Quest. The copying is only done when new group is created at user login.

If you want to apply modified settings from Default Group to any other group, select the group for which you want to copy the settings and use the tool "Copy settings for this group from group: Default group" at the bottom of the Settings page. Alternatively, you can simply delete existing groups and let the program recreate them when students start logging in again.

Note: If default group settings have not been changed, the program will use factory default settings for all groups that are created automatically.

5. Maintenance tasks

5.1 Recommended maintenance tasks

Any user who starts a typing course or takes a typing test will use a license. To release transferable licenses for reuse, you will need to periodically purge user accounts from your Typing Quest account. Licenses are released when you place a user in the Archived Users group or permanently delete a user account.

We recommend that you archive or delete users from Typing Quest at least once a year. Note that a user placed in the "Archived Users" group will not be able to log in to the program, but teachers have the opportunity to revisit their result reports or recover the user from the archive if they need access again.

5.2 Changes to SSO Settings

At the moment, most Typing Quest SSO settings can only be modified by our technical staff. If you need to change Identity Provider details or re-map attribute values, please contact our technical support.

If you decide to discontinue using Single Sign-On, please contact Typing Quest tech support to disable Single Sign-On from your Typing Quest account.

Once that is done, all users will need to reset their passwords to be able to continue using Typing Quest as native users. Resetting the password is done using the 'Forgot login ID or Password' link on the login page. Pre-requisite for this is that user information includes a functioning email address that the user has access to.

If users do not have functioning email addresses in Typing Quest, teachers and account administrators can change student passwords one by one manually. Mass updating passwords is not possible for security reasons.

If resetting passwords is not possible, as a workaround you can simply stop using the old user accounts. To do this, first archive all users and next simply create new user accounts for everyone using a different login ID than what is used in the Directory. In Typing Quest, the unique identifier for each user is their login ID, and new user accounts can be created with the same first name, last name and email address but just a different login ID. This way teachers can keep student study records in archive if they want to later revisit the progress reports.