

Typing Quest

Guide to Using Lightweight Directory Access Protocol 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.

Contents

1. Introduction.....	2
2. Implementation of LDAP login with Typing Quest	3
2.1 Connecting to your LDAP server.....	3
2.1.1 Open firewall for Typing Quest	3
2.1.2 Send LDAP connection settings to Typing Quest.....	3
2.2 Grouping options.....	4
2.2.1 Effects of automatic grouping	4
2.2.2 Update groups setting	5
2.3 Preventing unauthorized use	5
2.4 Applying global course settings	6
3. Effects of LDAP on the use of Typing Quest	6
3.1 Authentication process.....	7
3.2 Effects of LDAP authentication.....	7
3.3 Teacher accounts.....	8
Group Ownership	8
4. Changes to LDAP connection Settings and troubleshooting	8
4.1 Error: Invalid credentials	8
4.2 Changes to your LDAP settings.....	9
4.3 Discontinuing LDAP authentication.....	9

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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.

When Typing Quest is set to use LDAP authentication, user data is shared between the LDAP Directory and Typing Quest and you will not need to maintain user information in Typing Quest.

In addition, you will not need to create student accounts to Typing Quest. Instead, they are created automatically when users successfully log in to Typing Quest for the first time with their LDAP credentials.

LDAP Directory Servers currently supported by Typing Quest are:

- Microsoft® Active directory®
- OpenLDAP™ (Beta)
- Novell® eDirectory™ (Beta)

Here's an overview of what you will need to set up LDAP Authentication for Typing Quest. Sections 2 - 4 will give detailed information on each step.

1. Prepare your LDAP Server for LDAP connectivity so that the Typing Quest server can connect to it successfully.
2. Set up Typing Quest if you already have users taking the courses. At simplest, you'll just need to make sure that "old" users' Typing Quest login IDs are the same as their network user IDs on the LDAP server. Or, you may simply want to archive or delete old users and have them start over with new user accounts (login IDs will need to be unique).
3. Prepare grouping. If you want Typing Quest to automatically assign users to groups, you will need to decide what base information will be used for the groups: your options are either the LDAP OU attribute(s) in user's Distinguished Name or an LDAP attribute of your choice. See section 2.2 Grouping Options for more information about grouping and to find out which alternative suits you the best.
4. Send an email to Typing Quest containing the LDAP connection information described in section. You'll find the contact form at the bottom of Typing Quest pages after logging in the service.

2. Implementation of LDAP login with Typing Quest

We recommend starting using LDAP authentication from clean slate as that will ensure smooth deployment. However, it is possible to switch to LDAP authentication even after your students have started using Typing Quest. In this case, there will be additional steps to take, but our tech team will guide you through them.

2.1 Connecting to your LDAP server

2.1.1 Open firewall for Typing Quest

You will need to set your firewalls to allow connections from Typing Quest. Please **contact us for the IP of the Typing Quest server**. We recommend allowing only the Typing Quest server to connect to the specified LDAP port, you should not open the port publically. By default, the port for LDAP is 389, and for LDAP over SSL it's 636. However, Typing Quest can be configured to connect to any port of your choice. You should also make sure that connections from Typing Quest will be forwarded to your LDAP server.

2.1.2 Send LDAP connection settings to Typing Quest Customer Care

Once the above steps have completed to allow requests from the Typing Quest server, please send the information described below to our Customer Care so that we can successfully connect to your LDAP server. We use this information to configure the LDAP settings on your Typing Quest account.

- **Type of LDAP server** you are using. Currently we support Windows Active Directory, OpenLDAP and Novell eDirectory.
- **Fully Qualified Domain Name or IP Address** for your LDAP Directory server. For added failover capacity, you can provide a primary server address and an optional secondary server.
- **Whether or not LDAP over SSL should be used** (ldap:// vs ldaps://). Remember that this also determines which port you need to open in your firewall. We highly recommend using SSL and to only use LDAP communication without SSL when testing

When you use LDAP over SSL, you must have a valid SSL certificate on your server that we will install on the Typing Quest server. We will retrieve the certificate automatically, provided that the connectivity works. In case the certificate cannot be retrieved, we will contact you.

- **Search base directory** to use (base DN). This DN indicates the unique starting point within your LDAP Directory where user credentials are found. Usually this is the Directory root, for example: DC=mycompany,DC=com. If you wish, you can also specify a specific OU, for example: OU=Students&Teachers,OU=Users,DC=mycompany,DC=com.
- **User filter**. By default, Typing Quest searches for a match between given login name and LDAP attribute 'cn' (&(objectclass=user)(cn=login name)). If we should match to another attribute such as 'sAMAccountName' or 'uid', let us know.

Advanced feature: Restricting access with user filter (authorization)

If you are familiar with defining user filters for LDAP searches, you can use the user filter to limit access

to Typing Quest to users who match the given criteria (such as school, group, student year, for example).

Kindly note, however, that Typing Quest's tech support is not able to help you in creating the user filter 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.

- **Full Distinguished Name and password of your bind user.**
Note that Typing Quest doesn't offer support for anonymous binding.
- **A test user name and password.**

Once we have the above details, our tech team will enable LDAP authentication for you and send you a confirmation email. Your next step is to decide how to group users.

2.2 Grouping options

When setting Typing Quest up to use LDAP authentication, you have three alternatives for grouping your users.

1. **Do not use automatic grouping at all.** In this case, all new users will be assigned to the Default Group in Typing Quest.

If you decide not to use LDAP groups, you can create groups in Typing Quest and have teachers manually assign users to their groups after first login. An easy way to mass create groups is to import all your teachers in Typing Quest with group names (for instructions, log in to Typing Quest and go to 'Tools > Import users'). You can also leave group creation to individual teachers or do it later once you are more familiar with Typing Quest.

2. **Use LDAP attribute OU** (Organizational Unit) in user's Distinguished Name to create groups in Typing Quest. This is a simple grouping option to get started without needing any changes to your LDAP Directory. If the user DN contains more than one OU attribute, Typing Quest will take the first (deepest, most granular OU from the directory structure) and use that as the group name.
3. **Use another LDAP attribute** that you have already populated in the Directory with data suitable for grouping in Typing Quest. If this option is used, any user whose attribute is empty will get assigned to Default Group in Typing Quest.
4. Use LDAP group membership (limited support in Typing Quest). In some fairly simple Directory structures, you can use the `memberOf[group]` as group name. The limitation here is that if user belongs to more than one group, Typing Quest will simply pick the first `memberOf` entry and use its CN as the group name.

2.2.1 Effects of automatic grouping

Group exists in Typing Quest:

If group already exists in Typing Quest, the user will be assigned to that group.

Group does not yet exist in Typing Quest:

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

Important: If new group is created, Typing Quest will copy the course settings for the new group from the user's old group. If old group does not exist, course settings are copied from the Default Group (see also section 4: Applying Global Course Settings).

2.2.2 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 your Directory. If you enable this setting - called "Update groups" on your LDAP settings page - any user whose group has been changed in the Directory 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 by the system.

Note: When "Update groups" is enabled and results in the creation of a new group in Typing Quest, all course settings from the student's old group are copied to the new group.

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 Directory does not work very well when your teachers start managing 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 gets updated at each login, the teacher will need to reassign students back to their correct groups again and again.

2.3 Preventing unauthorized use

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

You can 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 courses.

Advanced user filtering to prevent access

If you are familiar with defining user filters for LDAP searches, you can use the user filter to limit access to Typing Quest to users who match the given criteria (such as school, group, student year, for example). User filter limits Directory searches and users who don't match the user filter criteria will be denied access to Typing Quest (error message 'User not found').

Kindly note, however, that Typing Quest's tech support is not able to help you in creating the user filter 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.

2.4 Applying global course settings

At the moment Typing Quest does not feature global course settings. However, when using LDAP authentication, 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 LDAP authentication; AND
- Update groups is enabled; AND
- Group does not yet exist in Typing Quest.

To use global defaults, 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 gets 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.

Note: If default group settings have not been changed, then the program will use factory default settings for all courses.

3. Effects of LDAP on the use of Typing Quest

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

If grouping is enabled, users are assigned to groups either based on OU or another LDAP attribute that you have given to Typing Quest. At your option, user's group gets checked at each login and updated if it has changed.

Important: Administrators are always non-LDAP users and must use the login ID and password that are natively created in Typing Quest. You can create additional accounts with administrator privileges on the Users page.

3.1 Authentication process

When a user attempts to sign in to Typing Quest on the login page:

1. If the user is already found on your Typing Quest account, the user is authenticated against your LDAP Directory.
 - If that user is found on the LDAP Directory and the sign in name and password match, the sign in is successful. If user's last name, first name or email has changed in the Directory, it will get updated in Typing Quest.
 - If that user is not found in your Directory or the sign in name and password do not match, the sign in fails. Note that sign in may also fail because of bind errors – see section 5.1 to troubleshoot.
2. If the user is not found on your Typing Quest account, but is found in your Directory and successfully authenticated, the user is automatically added as a new user in Typing Quest. User ID, first name, last name and email address are passed from the Directory and saved to the user's Typing Quest account.

This is the user information that saved in Typing Quest:

- Sign In Name / User ID
- First Name
- Last Name
- Email Address
- Optional: User group based on the selected group attribute

3.2 Effects of LDAP authentication

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

When users go to edit their personal settings in Typing Quest, they will not be able to change their Login ID, First Name, Last Name and Email, or password because those are maintained in the LDAP Directory.

Users will not be able to change their group themselves. Teachers and account administrator(s) can change user group provided that automatic updating of groups is not being used.

If you delete a user from your LDAP Directory, you do not need to delete that user from Typing Quest. If such user attempts to log in to Typing Quest, authentication will fail and the user will be unable to log in.

Each user who starts a typing course or takes a typing test will take up a license. To release licenses for reuse, you will need to periodically purge non-functioning 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.

3.3 Teacher accounts

Typing Quest does not recognize user types from your Directory and therefore by default assigns student privileges to your teachers if their account is automatically created upon login. With student privileges a teacher will have no access to his/her classes' study records or course configuration.

For this reason, we recommend that you **import teachers** in Typing Quest in advance. You can do this one by one on the Users & Reports page or you can mass-import users on the page Tools > Import users . So that teachers are able to login with LDAP credentials, make sure that the login ID matches their user ID on LDAP servers.

If you need to give teacher rights to user already created in Typing Quest, you can change their user type in User settings (Users & Reports > Click on user name > Change Settings).

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. This will make it easier for the teachers to manage their classes as they will only see users in their own groups and the shared groups in Typing Quest.

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.

4. Changes to LDAP connection Settings and troubleshooting

4.1 Error: Invalid credentials

Typing Quest returns error message "Invalid credentials. Check your login and password." for all errors with LDAP: error code 49. It does not consider sub-codes.

If you receive the error when you are just setting up your LDAP authentication, or authentication has worked before and stopped, or it works for some but not all users, the error may be caused by a failed bind instead of the user entering incorrect user ID or password.

Please investigate your Directory servers Bind Error options in case server configuration has caused the problem at Typing Quest login. You can also contact Typing Quest in case we have received LDAP error notifications from your account.

Good online source for Active Directory and eDirectory bind errors is the LDAP Wiki: <http://ldapwiki.willeke.com>

Active Directory bind errors:

<http://ldapwiki.willeke.com/wiki/Common Active Directory Bind Errors>

eDirectory bind errors:

<http://ldapwiki.willeke.com/wiki/Common Edirectory Bind Errors>

OpenLDAP bind errors:

<http://www.openldap.org/doc/admin24/appendix-common-errors.html#Common causes of LDAP errors>

4.2 Changes to your LDAP settings

Once LDAP authentication is set up and running, account administrator can at any time change the bind method, bind user credentials, and the grouping settings. This is done on the page 'Tools > LDAP Settings'.

Connection settings can only be modified by Typing Quest's technical support. The following changes to your LDAP environment can cause your students to not be able to use Typing Quest. For this reason, we recommend that you contact us so that we can update your LDAP settings for Typing Quest.

- You renew your SSL certificate and Typing Quest will need to reinstall it.
- You opt to start using or discontinue using SSL.
- You move your LDAP Directory to a different server.
- You make IP Address changes.
- You change your LDAP server provider.

4.3 Discontinuing LDAP authentication

If you decide to discontinue using LDAP authentication, please contact Typing Quest tech support to disable LDAP login 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.