TeamDrive Registration Server Administration Guide

Release 3.6.1.0

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2017

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CHAPTER

ONE

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CHAPTER

TWO

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CHAPTER

THREE

DOCUMENT OVERVIEW

This document primarily covers usage of the Admin Console, but also includes:

- Importing user data with a CSV import
- Configuring a system with backup, monitoring, failover, and scaling strategies
- Configuring TDNS settings
- and updating a registration server to version 3.5

This documentation describes the functionality of the current release version 3.6 which supports external authentication. The chapters which belong to 3.6 will be marked in this document. You also need a recent client version to use it together with version 3.6 of the TeamDrive Registration Server.

CHAPTER

FOUR

USING THE ADMINISTRATION CONSOLE

The TeamDrive Registration Server Administration Console is an application written in PHP that provides a web-based interface to perform the following tasks:

- View and edit user records / Import users using a CSV file
- View and edit user device records (manage clients, updates and banner)
- View and edit licences
- Create storage manually
- Manage Provider-specific email and html templates
- Manage general server and Provider-specific settings

Access to the individual sections of the Administration Console is controlled by access rights — most administration pages are only visible and accessible to users that have the required privileges.

Administrative users can be divided into three groups:

- The **default Provider** is usually the first one to be created. This Provider can access and manage all aspects of the Registration Server and can access his own users, devices, settings and licences as well as those of all other providers hosted on this Registration Server. (A Registration Server's default Provider can be changed later by modifying the global server setting `DefaultProvider`)
- **Additional providers** can only manage their own users, licences, and their Provider-specific settings. They can not access parts like global server settings.
- Each Provider can grant access to the Administration Console to **regular users**. These users can only access those sections enabled by their assigned privileges and may also only manage users of the provider they belong to.

4.1 Security Considerations

We strongly recommend accessing the Administration Console via SSL/HTTPS only. Our preconfigured Virtual Appliance images provide a self signed SSL certificate and access is possible via HTTPS only. You should replace this certificate with an official one, if this server is publicly accessible.

You can also limit access to the Administration Console to individual IP addresses, by using the built-in provider setting `LOGIN/LOGIN_IP`. This setting defines the IP addresses (as a comma-separated list) that are allowed to connect to the Administration Console as a given provider.

If you require more flexibility in restricing access, e.g. by restricting it to an IP address range or by host/domain names, we suggest using the Apache http Server's built-in functionality:

https://httpd.apache.org/docs/2.2/mod/mod_authz_host.html

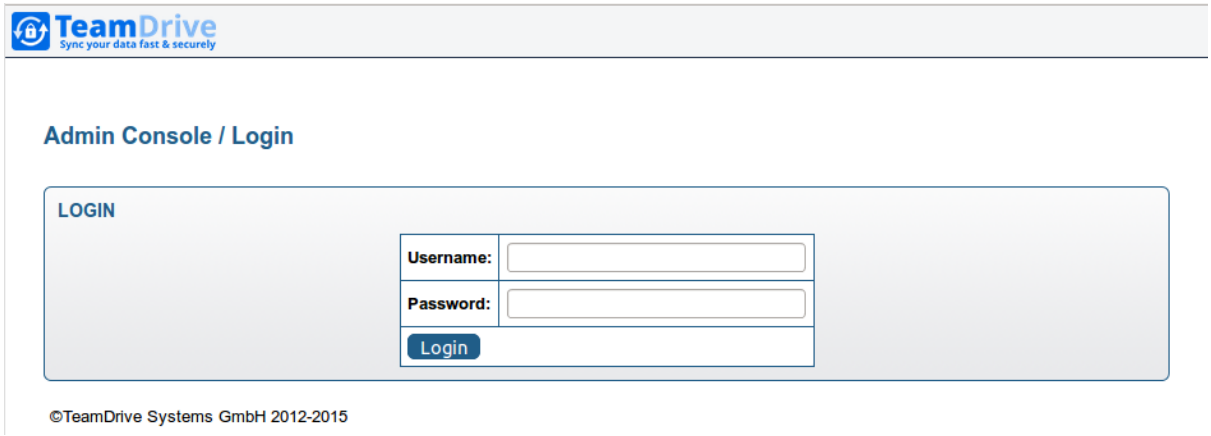
The safest strategy is separating the Administration Console from the Registration Server by installing it on a dedicated server, which is only accessible by you.

4.2 Logging in / Logging out

To log into the TeamDrive Registration Server Admin Console, open the Admin Console's URL in your web browser, e.g.

https://regserver.yourdomain.com/adminconsole/

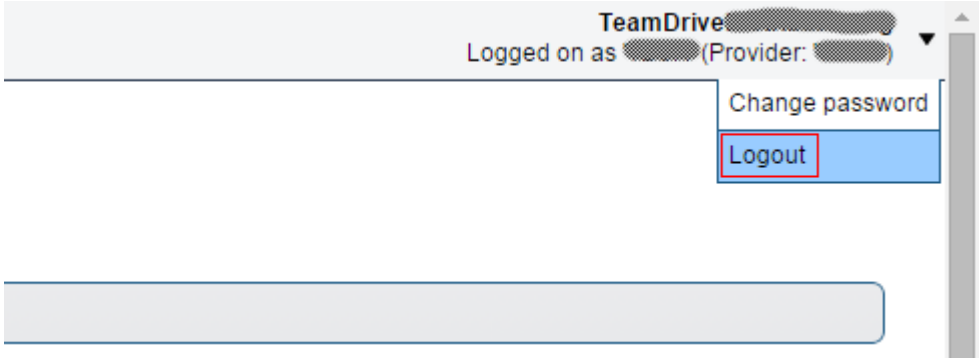
Enter your username and password to log in.



Access to the Administration Console is allowed for two separate user accounts:

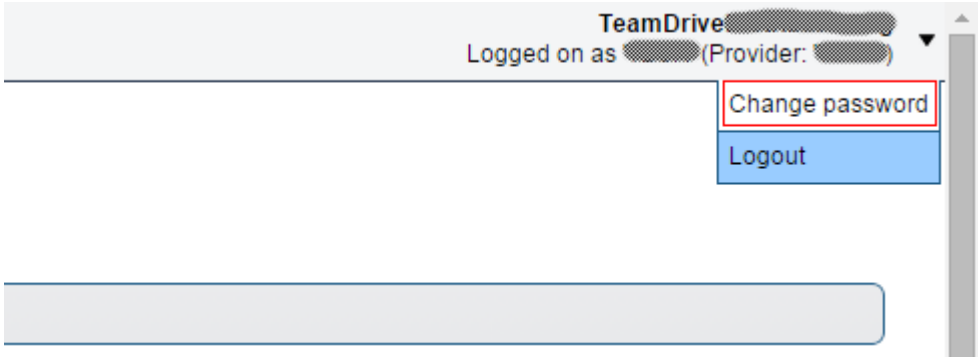
- The **provider accounts** that manage all aspects of a provider. These accounts are defined when setting up the Registration Server or by creating additional providers on the same Registration Server.
- **Regular TeamDrive users** can also log in, if they have permission to log in to the console (see *User Rights* (page 13)).

To log out, click the **Logout** button in the top right hand corner of any of the console pages.

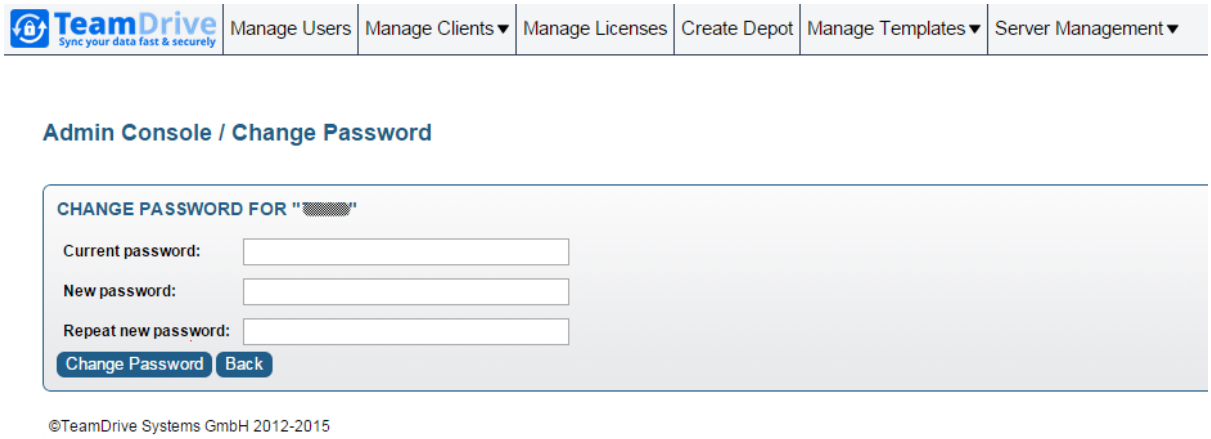


4.3 Changing the Login Password

To change the password for the account you are currently logged in with, click on the **Change Password** button in the top right-hand corner oft the screen, next to the **Logout** button.



You will see a form prompting you to enter your current password and a new one. Since the password is hidden, you are required to enter it twice, to ensure you have entered it correctly.

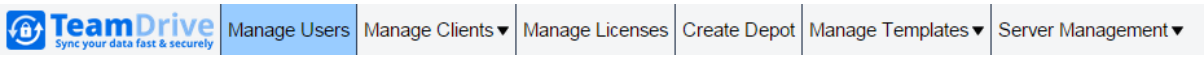


Once you have entered the current and new password, click **Change Password** to save the change, or click **Back** at any time to go back to the previous page.

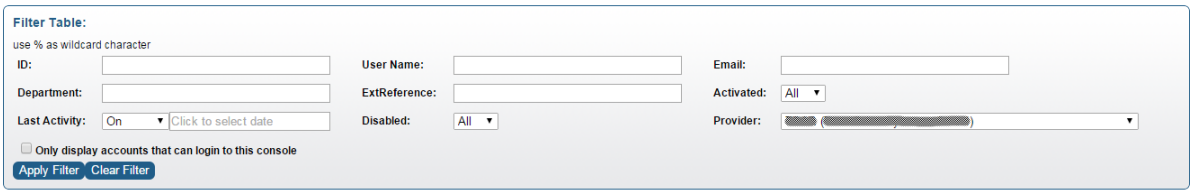
4.4 Managing Users

Providers have administrative privileges to manage all users associated with their provider code. If you log in as a Provider user, you will be able to create/delete/edit user records belonging to that Provider, as well as manage various additional provider specific settings. When logging in as the default Provider, you are able to manage all users as well as all provider settings.

To list users belonging to you, click **Manage Users**.



By default, all users are listed. You can narrow down the search by typing in search criteria in the **Filter Table** section at the top of the page, and then clicking **Apply Filter**.



Click **Clear Filter** at any time to go back to displaying all available users.

When filtering results, you can use the percent character ('%') as a wildcard: for example, entering '`john%smith`' into the email field will match users with an email like `john.smith@td.net`, `johnsmith@shaw.net`, `johnDoeSmith@gmail.com`, etc.

Users:

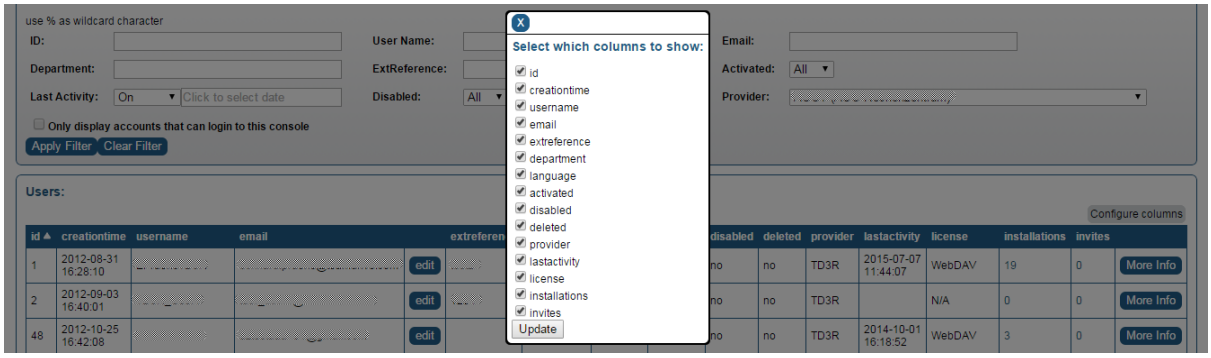
Configure columns

id ▲	creationtime	username	email		extreference	department	language	activated	disabled	deleted	provider	lastactivity	license	installations	invites	
1	2012-08-31 16:28:10	[redacted]	[redacted]	edit			de_DE	yes	no	no	[redacted]	2015-07-02 12:12:29	WebDAV	18	0	More Info
2	2012-09-03 16:40:01	[redacted]	[redacted]	edit			en	yes	no	no	[redacted]		N/A	0	0	More Info
48	2012-10-25 16:42:08	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2014-10-01 16:18:52	WebDAV	3	0	More Info
55	2012-11-19 17:38:07	[redacted]	[redacted]	edit			EN	yes	yes	no	[redacted]	2012-11-19 20:47:23	WebDAV	2	0	More Info
126	2013-01-18 11:19:18	[redacted]	[redacted]	edit			DE	no	no	no	[redacted]		N/A	0	0	More Info
127	2013-01-18 11:25:43	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2013-01-18 11:26:35	WebDAV	1	0	More Info
263	2013-05-27 12:26:09	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2013-08-15 12:52:58	WebDAV	2	0	More Info
267	2013-05-28 09:25:49	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]		N/A	0	0	More Info
285	2013-06-12 08:13:28	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]		N/A	0	0	More Info
286	2013-06-12 09:06:53	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2014-10-01 16:22:55	SecureOffice	6	0	More Info
322	2013-06-28 15:19:18	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2013-06-28 15:19:43	WebDAV	1	0	More Info
505	2013-10-31 08:43:23	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2013-10-31 08:48:57	WebDAV	1	0	More Info
554	2013-11-18 12:52:42	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2013-11-18 12:53:16	WebDAV	1	0	More Info
885	2014-07-04 09:51:09	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2015-06-15 12:19:05	WebDAV	1	1	More Info
918	2014-07-29 10:30:40	[redacted]	[redacted]	edit			DE	yes	no	no	[redacted]	2014-07-29 10:32:11	WebDAV	1	0	More Info

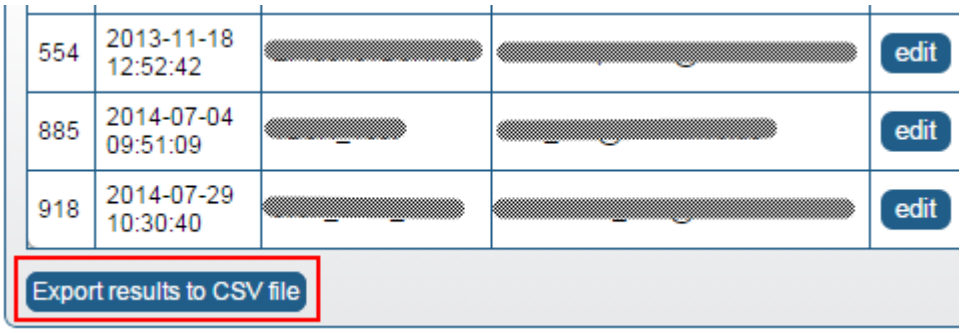
Export results to CSV file

Depending on the number of results, there may be more than one page of output. Click the numbers and arrows above the table to browse through results. To sort the table by a column value, click the column's name in the title row.

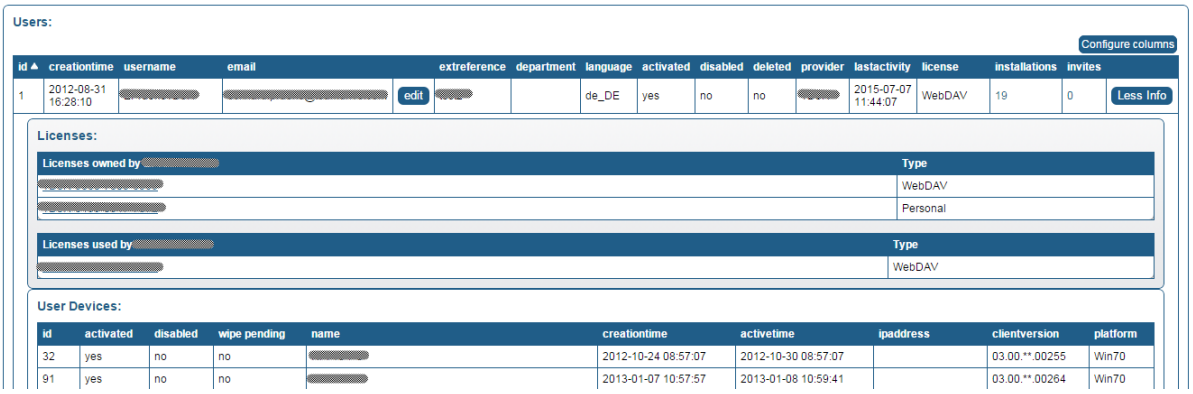
Click **Configure Columns** to bring up a dialogue that allows you to customize the table output. Select the columns that should be displayed and click **Update** to update the table view.



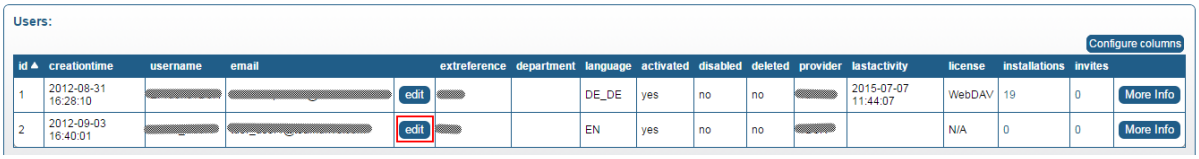
Click **Export results to CSV file** at the bottom of the result list if you want to save the resulting table output into a comma-separated text file. Your web browser will prompt you for a file name under which the file will be stored locally.



Click the **More Info** button at the end of a user's row of information to view the user's licence and device details. Click **Less Info** to hide this information again.



Click the **Edit** button next to a user's email address to open up the user details page, which displays all of the user's information, including licences and the user's devices in more detail.



The user details page is divided into several blocks and will show user information about:

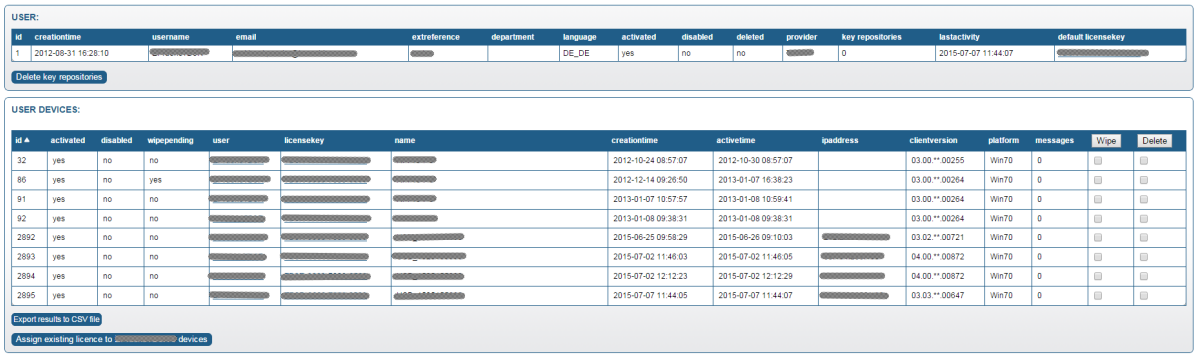
- Devices
- Licences
- Storage depots
- User rights
- User data

4.4.1 Devices

The device list shows information about all of the user's installed TeamDrive Clients with details about the used licence key, the creation and last active time, IP address at the time of the creation, the Client version, platform and pending messages from other users. Clicking the message number (if the value is greater than zero) displays a list of users that sent messages to this device.

Please note that it is normal for inactive devices to have pending messages, these messages will be picked up when the device becomes active again.

Devices will stop receiving new messages after their active time has been reached (defined in the global `InviteOldDevicesPeriodActive` configuration setting). Messages will be automatically deleted once the message store time is reached (defined in the global `InvitationStoragePeriod` configuration setting).



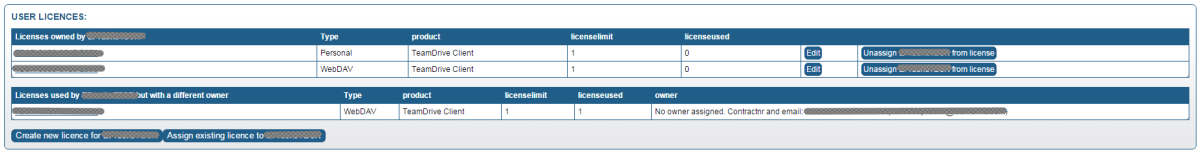
You can delete one or multiple devices by checking the **Delete** checklist item for the device(s) in the **User Devices** section and clicking the **Delete** button on top of the column.

Note: A deleted device can be re-activated by the user. If you don't want the user to re-activate his installation, you have to deactivate the user's account.

The **Wipe Device** functionality deletes the Device's entry in the Registration Server' database after the Client confimed that all local data were deleted successfully (Space directories, caches, registration information).

4.4.2 Licences

This block is divided into two parts.



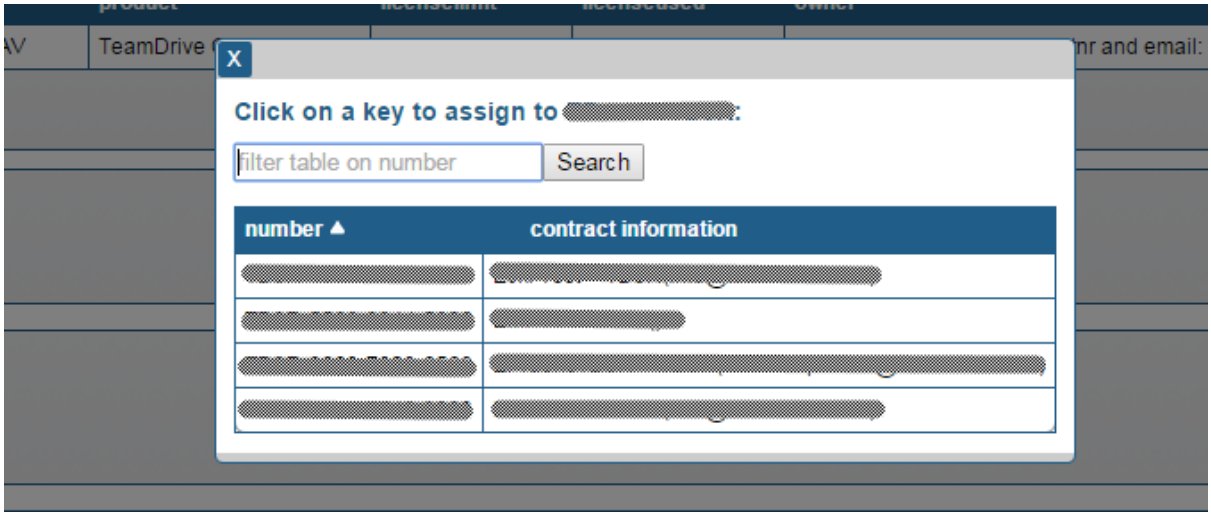
The first list shows licences owned by the user. By default, each user has at least one default licence.

If the licence limit is greater than one, more than one user can use the same licence key until the defined licence limit is reached.

Clicking a licence key will switch to the licence overview page. The **Edit** button will directly switch to the licence modification menu. See *Manage Licences* (page 23) for more details.

Clicking **Unassign <user> from licence** removes the reference between the user and the license key. The key will still exist and can be assigned to another user. Clicking **Assign existing licence to <user>** allows you to assign an additional unassigned license key to the current user.

An overlay dialogue will be displayed:

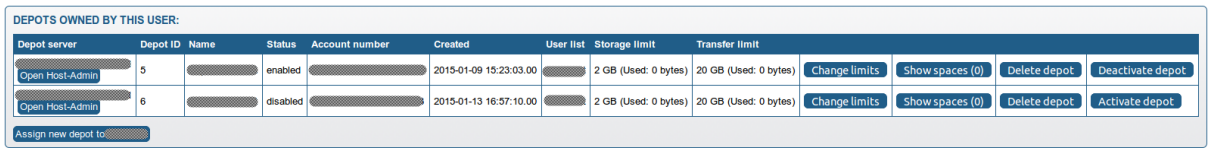


By clicking on an entry, the licence will be assigned to the selected user. The licence fields `Contractnumber` and `Email` will be filled with the selected user data.

The second block is only visible if the user is using a licence which belongs to another licence owner. A licence can also have no owner reference.

Clicking **Create new licence for ...** will open the licence creation page. See *Creating Licences* (page 25) for details.

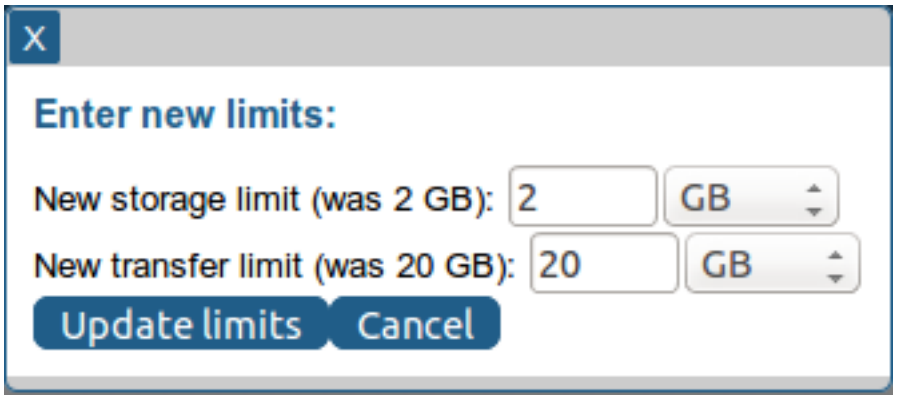
4.4.3 Space Depots



If the user has Space Depots on TeamDrive Host Servers (e.g. the default depot), the Depot information will be displayed. The first Depot usually is the default Depot (if configured), which is marked grey. If the user has additional Depots on other host servers, they will be listed here as well.

The Depot information for the user is retrieved from the Host Server via an API call. This only works if API communication to the Host Server is configured and enabled. It might take a few seconds to retrieve all Depot and Space information from the Host Server, please be patient until the table is loaded.

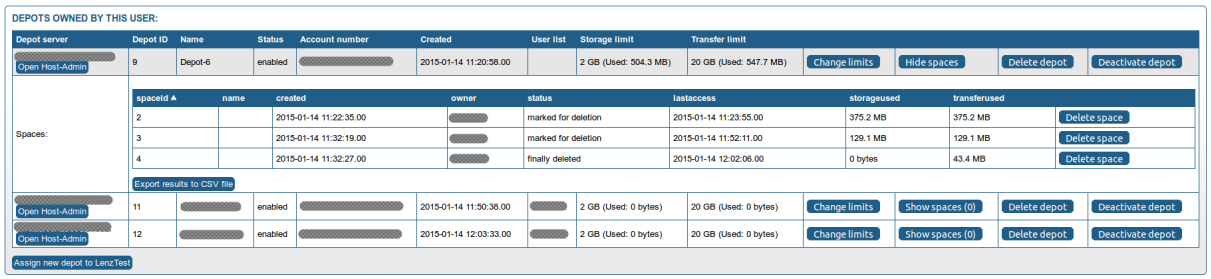
Clicking **Change limits** allows you to change the storage and transfer limits for a depot.



You can list all Spaces belonging to a Depot by clicking **Show Spaces**. Individual Spaces can be deleted as well, by clicking **Delete Space** in the respective table row.

An entire Depot including all Spaces can be deleted by clicking **Delete Depot**.

The button **Deactivate Depot** allows you to temporarily disable a user's Space Depot on the Host Server. The user's Clients will no longer be able to synchronize the Spaces contained in this Depot (the Spaces will be marked as "Disabled"), until you click **Activate Depot** again. This feature was added in version 3.0.018.4 of the Registration Server and requires version 3.0.013.8 (or later) of the Host Server.



Clicking **Assign new depot to ...** brings up the Depot creation page. See *Create Depot* (page 26) for more details.

Clicking **Open Host Admin** opens the respective TeamDrive Host Server's administration console in a new browser window/tab. Please refer to the Host Server documentation for more information.

4.4.4 User Rights

Depending on what user you log in as, you have different rights and privileges.

When you log in as a Provider, you are granted a fixed set of rights depending on whether you are the default Provider or not. The default Provider is granted all rights, and therefore has administrative access to all records and settings belonging to any other Provider.

A regular Provider is granted all rights except for the following Super admin rights:

- `HAS_EDIT_SETTINGS_RIGHTS`
- `HAS_MANAGE_SERVERS_RIGHTS`
- `HAS_MANAGE_TASKS_RIGHTS`
- `HAS_VIEW_ALL_RECORDS_RIGHTS`
- `HAS_VIEW_SERVER_LOGS_RIGHTS`

This means that regular Providers have administrative access to all records associated with their account, but can not edit records belonging to other Providers, or change settings that affect all Providers.

Providers can enable access to the Administration Console for selected users and grant them individual rights.

To grant/revoke user privileges, find the user you wish to modify in the list and click **edit** (this requires the `HAS_EDIT_USER_RIGHTS` privilege).

On the user editing page, you will see a panel titled **User Rights** (you will only see this section if you have `HAS_GRANT_PRIVILEGES_RIGHTS`)

Initially, there is only an unchecked checkbox labeled **User has permission to log in to this console**. Unless the box is checked, this user cannot log into the console.

Checking the box enables the `HAS_LOGIN_RIGHTS` privilege, which allows this user to log into the Administration Console using his username and password.

After the box is checked, a list of additional available rights will be displayed. The rights that are shown depend on your own privileges — you can only grant/revoke rights that you possess yourself.

USER RIGHTS:

☑ User has permission to log in to this console

Right	Description	Granted
Admin rights:		
HAS_EDIT_USER_RIGHTS	Rights to edit user records	☐
HAS_GRANT_PRIVILEGES_RIGHTS	Rights to assign privileges for users	☐
HAS_EDIT_LICENCE_RIGHTS	Rights to edit license records	☐
HAS_EDIT_DISTRIBUTOR_RIGHTS	Rights to edit distributor records	☐
HAS_MANAGE_BANNERS_RIGHTS	Rights to administrate the Banners	☐
HAS_MANAGE_DEPOTS_RIGHTS	Rights to administrate the Depots	☐
HAS_MANAGE_EMAILS_RIGHTS	Rights to administrate the mail queue	☐
HAS_MANAGE_UPDATES_RIGHTS	Rights to administrate the client updates	☐
HAS_API_LOG_RIGHTS	Right to view the API log	☐
HAS_EXPORT_USERS_RIGHTS	Can export the user table to csv format	☐
Super admin rights:		
HAS_VIEW_ALL_RECORDS_RIGHTS	Rights to view user records from other distributors	☐
HAS_EDIT_SETTINGS_RIGHTS	Rights to edit global server settings	☐
HAS_MANAGE_SERVERS_RIGHTS	Rights to en-/disable the servers available in the TDNS network	☐
HAS_MANAGE_TASKS_RIGHTS	Rights to administrate the Autotasks	☐
HAS_VIEW_SERVER_LOGS_RIGHTS	Able to view regserver log files	☐

Save Changes

The user's privileges can be defined individually by checking any of the following Admin rights:

HAS_EDIT_USER_RIGHTS The user can view/edit/delete/create user accounts, can view/delete user device records and can upload CSV files (to import user records). See *Managing Users* (page 9) for details.

HAS_GRANT_PRIVILEGES_RIGHTS The user is able to modify the permissions of other users (note that even with this right, users can only grant/revoke rights that they have themselves).

HAS_EDIT_LICENCE_RIGHTS Means that this user can create/edit licences via the **Manage Licences** page (which is only available if licence management is enabled for this Registration Server). See *Manage Licences* (page 23) for details.

HAS_EDIT_DISTRIBUTOR_RIGHTS With this right, a user can edit the custom settings associated with this Provider (the **Edit Provider Settings** menu). See *Editing Provider Settings* (page 35) for details.

HAS_MANAGE_BANNERS_RIGHTS User can access the **Manage Banners** page. See *Managing Banners* (page 21) for details.

HAS_MANAGE_DEPOTS_RIGHTS User can access the **Create Depot** page and view / edit existing depots. See *Create Depot* (page 26) for details.

HAS_MANAGE_EMAILS_RIGHTS User can access the **Manage Emails** page to administer the email out queue. See *View Mail Queue* (page 32) for details.

HAS_MANAGE_UPDATES_RIGHTS User can access the **Manage Updates** page. See *Manage Client Updates* (page 19) for details.

HAS_API_LOG_RIGHTS User can access the **View API Log** page. See *View API Log* (page 33) for details.

HAS_EXPORT_USERS_RIGHTS User can export the user table to csv fromat.

And the following Super admin rights:

HAS_VIEW_ALL_RECORDS_RIGHTS Indicates that this user can view/edit records that are associated with other providers. For example: with this privilege, a user belonging to provider D1 would be able to create/delete/edit users belonging to Provider D2. By default, only the default Provider has this privilege.

HAS_EDIT_SETTINGS_RIGHTS This means that the user can edit server-wide settings (the **Edit Settings** menu). By default, only the default Provider has this privilege. See *Registration Server Settings* (page 37) for details.

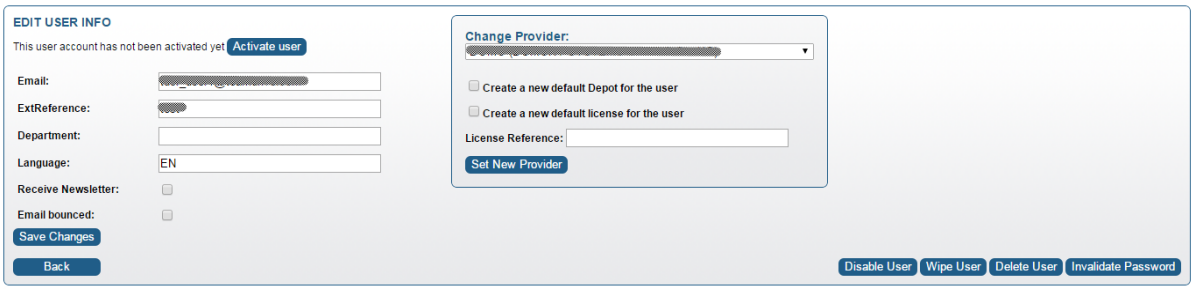
HAS_MANAGE_SERVERS_RIGHTS The user has access to the **Manage Servers** page where he can en-/disable communication between the own registration server and all other servers available in the TDNS network. See *Manage Servers* (page 36) for details.

HAS_MANAGE_TASKS_RIGHTS User can access the **Manage Auto Tasks** page. See *Manage Auto Tasks* (page 38) for details.

HAS_VIEW_SERVER_LOGS_RIGHTS User can access the **View Server Logs** page. See *View Server Logs* (page 32) for details.

Check the desired privileges you want to assign to this user and click **Save Changes** to apply the changes.

4.4.5 User Data



If a newly registered user has not activated his account yet (**activated** is set to **no** in the user's details), you can activate the user's account manually by clicking **Activate user**. If the user's account was already activated, this option will not be displayed.

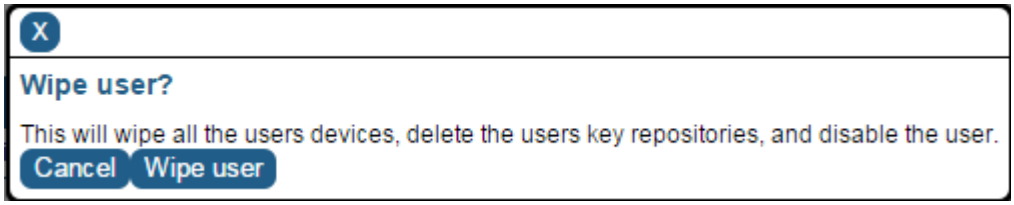
You can view and change the user's details like email address, set a reference, department or the preferred language. Click **Save Changes** to commit any changes you made to these fields.

You can move the user to a different provider (only possible for the default provider) by clicking **Set New Provider**. You can define if the user will get a new depot and license based on the new provider default settings.

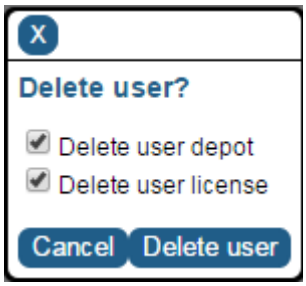
You can move the user to a different provider (only possible for the default provider) by clicking **Set New Provider**. You can define if the user will get a new depot and license based on the new provider default settings.

You can temporarily disable a user's account by clicking **Disable User**. If you disable a user, the user's Clients will receive a notification from the Registration Server and will inform the user about the account deactivation. At this point the Client disables all functionality and activity and the user can no longer use the TeamDrive service (e.g. creating Spaces, inviting users, etc.) until the account has been enabled again (access to the spaces in the filesystem is still possible).

Clicking **Wipe User** will wipe all of the user's devices, delete the user's key repositories, and disable the user. The devices of the user will delete all local data (Space directories, caches, registration information) and will delete itself on the in the Registration Server' database. Licences and Space Depots will be preserved.



Clicking **Delete User** will delete the user record and all of the user's devices. Additionally, you can choose to delete the user's Space Depots and licences by selecting the appropriate checkboxes in the confirmation dialogue.



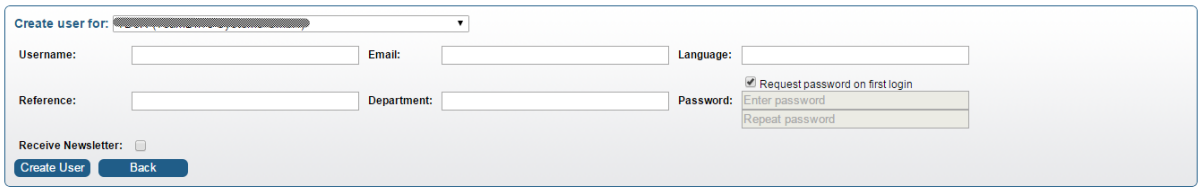
You can reset a user's password by clicking **Invalidate Password** in the bottom right-hand corner. The user's Client will perform an automatic logout and ask the user to request a new temporary password which must be used to define an own new password.

Return to the main user list at any time by clicking **Back** in the bottom left-hand corner.

4.4.6 Adding Users Manually

To add a new user, click **Create new user** at the top of the **Manage Users** page.

This brings up a form where you can enter the new user's details. Click **Create user** when you are done, or **Back** to cancel the operation and return to the user management page.



In case you are logged in as the default Provider, you will see a drop-down menu allowing you to specify the Provider that this user will belong to. A regular Provider can only create users for his own account.

Note: Note that usernames need to be unique, not just locally, but across the TDNS if your Registration Server is connected to the TDNS. If you enter an username that is already registered on another Registration Server, the Administration Console will return an error.

You can either specify a password by deactivating **Request password on first login**, or have the user request a temporary password upon first log in (the default).

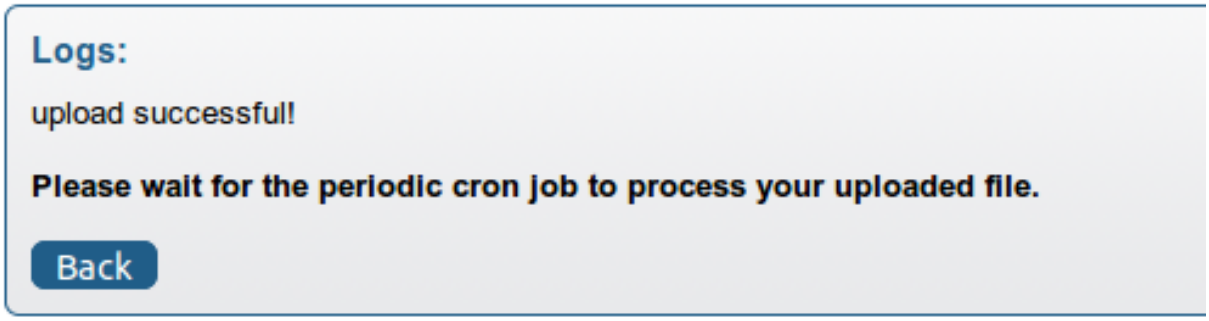
4.4.7 Adding Users via CSV File Import

In addition to adding users manually, you can automatically create multiple user accounts by importing them via CSV files (which could have been created by extracting the user data from another directory service or user account source).

This requires that CSV import is enabled and configured correctly in the provider settings. See chapter *Importing User Accounts via CSV Files* (page 43) for more details on the configuration of the CSV import functionality and the structure of the CSV file.

To upload a CSV user list via the Administration Console, go to the user management page and click **Upload CSV file** in the top left-hand corner (Your user account needs to have the `HAS_EDIT_USER_RIGHTS` privilege to have access to this page).

A file selection dialogue will pop up, allowing you to select a local CSV file to upload. Select a file and click **Open**. After the upload has finished, you will see a page that confirms if the upload was successful or if any errors occurred. Click **Back** to return to the user management page.

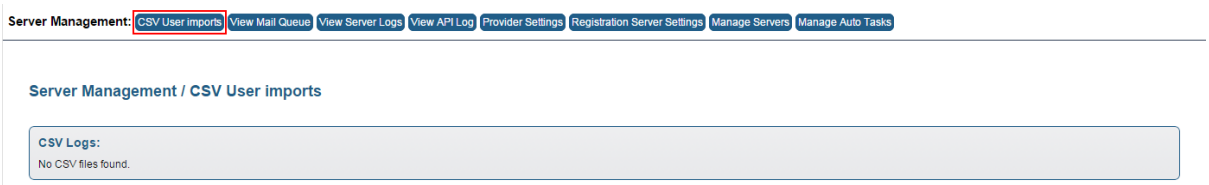


The users defined in the CSV file will be added or updated the next time the import script runs.

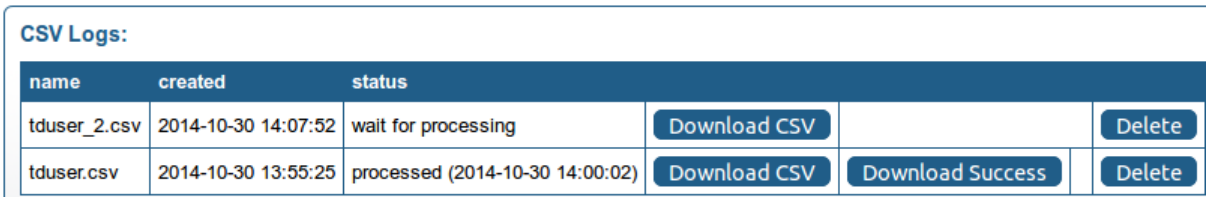
4.4.8 Downloading CSV Import Logs

When data is imported from a CSV file, an import log is created. This log contains information about the success/failure of the import.

Navigate to the **Server Management / CSV User imports** section to view a list of all uploaded CSV files, their status and the log output of the previous import run.



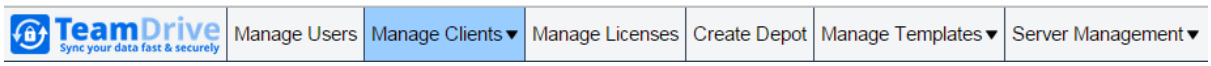
A page will come up that lists available logs. Each uploaded file can be downloaded again by clicking **Download CSV**. The status of each log indicates whether the import was successful, and at what time the log was created and processed. Click **Download Success** or **Download Error** to download a log of the successful or failed import. Click **Delete** to remove CSV files.



Click **Back** to return to the user management page.

4.5 Manage Clients

This section allows administrate all client related tasks, like manage Devices, Client Updates, Banners and Download Client Log Files.

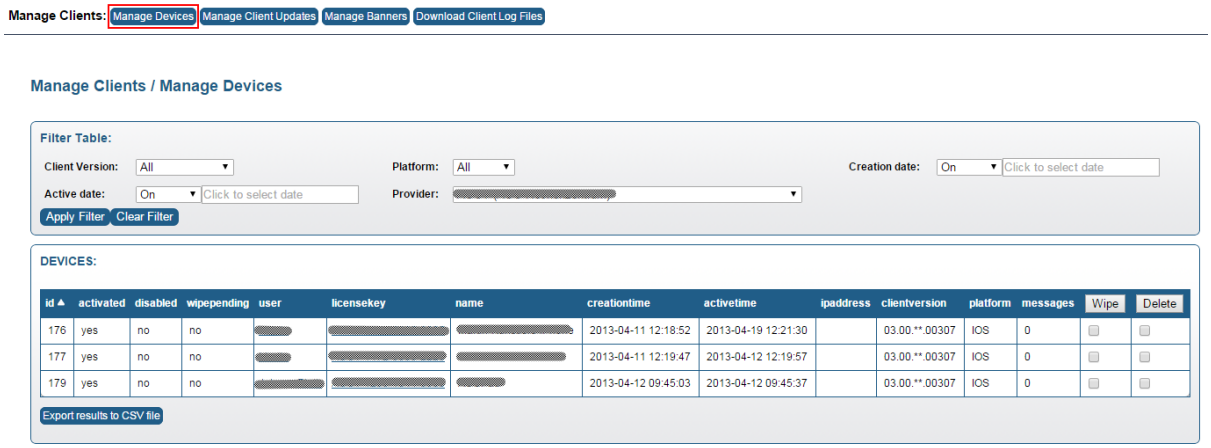


4.5.1 Managing Devices

The **Manage Devices** menu provides a user independent view of all Client installations. Different filters can be defined to limit the results, e.g. by Client version, OS platform or last active date. If you are logged in as the default provider, you can restrict the result list to only display a single provider's devices, too.

You can wipe or delete multiple devices by checking the respective devices and clicking the **Wipe** or **Delete** button on top of the column.

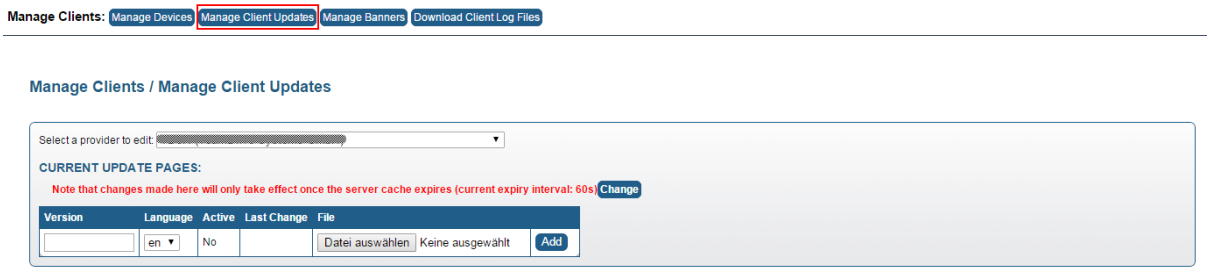
The result set can also be exported as a CSV file by clicking **Export results to CSV file** on the bottom of the table.



4.5.2 Manage Client Updates

To inform your users about the availability of a new version of the TeamDrive Client, you can utilize the "update notification" feature. These update notifications will only be displayed in the desktop clients and consist of HTML pages including the release notes and other update related information.

This feature can be activated and configured in the **Manage Client Updates** menu.



The default provider can create update notifications for any other provider record by selecting the desired Provider from the selection list on top of the page.

The admin console supports separate updates for TeamDrive 3 and 4.

For TeamDrive 3 client update notifications: You need to prepare HTML pages (with embedded CSS) that contain the notification text in advance, one for every language.

In both cases you have to upload the default update language of your available update languages in the "Provider Settings" (as defined in `UPDATE/UPDATE_DEFAULT_LANG`).

For TeamDrive 4 client update notifications: You could leave the HTML pages empty, only the version number is important. The TeamDrive 4 client could not display HTML pages. It will only show up, that a newer version exists.

For TeamDrive 4 client update notifications: You could leave the HTML pages empty, only the version number is important. The TeamDrive 4 client could not display HTML pages. It will only show up, that a newer version exists.

You can start by downloading the following template files as the basis:

http://static.teamdrive.com/downloads/update_notification_en.html (English Update Template)

http://static.teamdrive.com/downloads/update_notification_de.html (German Update Template)

If you don't have prior knowledge of creating HTML and CSS, here are some useful hints for customizing these templates:

- Open the files with any (pure) text editor
- Ignore most of the top and scroll down to the bottom
- Don't change any of the "HTML commands (tags)". A tag is everything that is in between < and >
- Replace all the placeholder text with your update notification (headlines and new/changed features in the list)
- If you want to change the text sizes and colors you can specify them in CSS under the "User-definable settings"

Note: Don't change the encoding type and leave it at UTF-8. Special Unicode characters like e.g. German Umlauts must not be encoded to HTML entities. So leave all the äöüß as they are and don't use `ä`, `ö`, `ü` or `ß`.

The **Version** field defines the new version number you want your users to update to. The number must be provided in the form of *<major>.<minor>.<maint>.<build>* e.g. "3.2.2.900".

The **Active** field defines whether the update notification is on, off or only be shown to a selected test user. You can specify a test user which will receive the notification every time he logs on by entering the user name in the provider setting `UPDATE/UPDATE_TEST_USER`.

Upload a file by selecting the local file name and clicking **Add**. After the HTML file has been uploaded, you can see a preview by clicking **View**. To upload a new version of the page, click **Upload**. You can obtain a copy of the page by clicking **Download**. To remove the page, click **Delete**.

By default, uploaded notifications are inactive. To test the notifications with your test user first, change **Active** to **Test**. If your tests are successful, change **Active** to **Yes**, which will trigger the update notifications for all languages of that version to be activated and displayed for all your users after the server cache has been refreshed.

Clicking **Update** in the TeamDrive Client update notification window will open a specified download page in the user's local web browser.

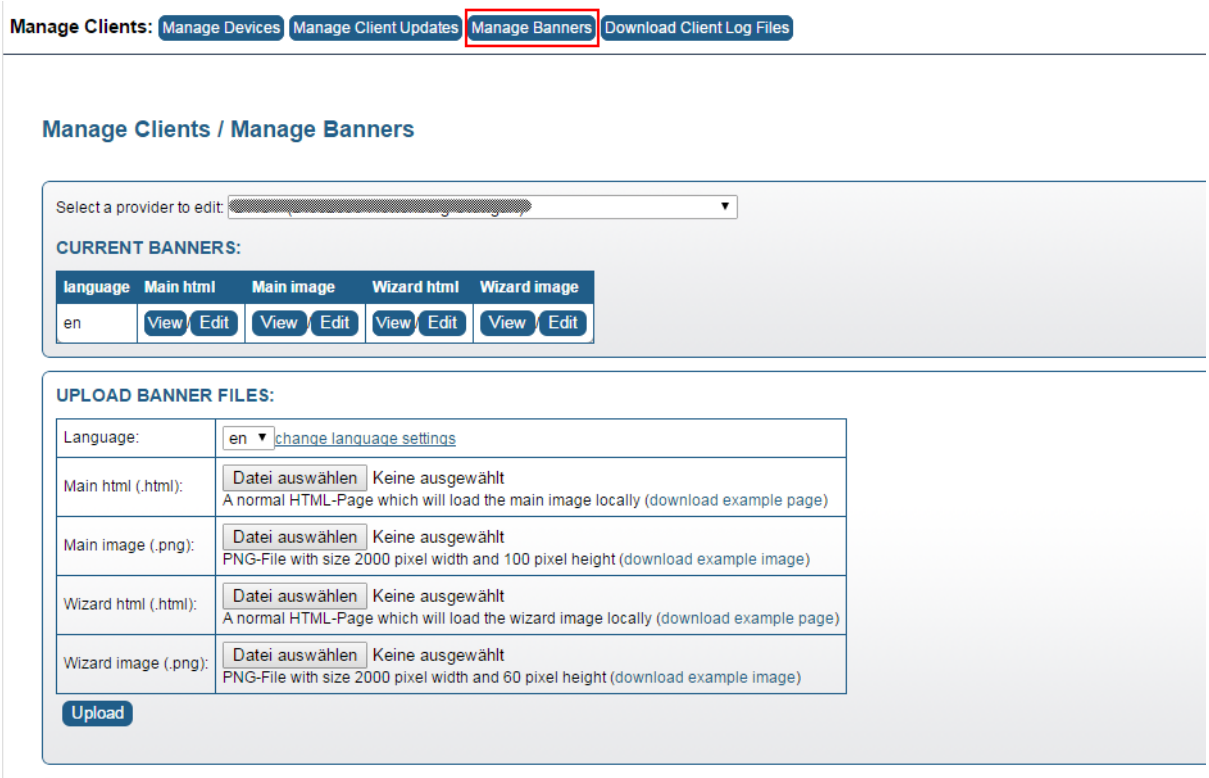
The URL of this download page can be defined in the provider setting `REDIRECT/REDIRECT_DOWNLOAD`. Usually it should point to the download location where your users can obtain a new version of the TeamDrive Client, e.g. `http://www.yourdomain.com/download.html`.

4.5.3 Managing Banners

The TeamDrive 3 desktop Client applications provide space at the bottom of the application window to display "Banner Ads" or other content (e.g. notifications, announcements, etc.). Additionally, a smaller banner can be displayed in the "Create Space" dialogue.

Banners are displayed by the Client if the license assigned to it includes the "Banner Package". This is the case for the default license that is created automatically, unless you have defined a custom default license (e.g. by changing the default value of `DEFAULT_FREE_FEATURE` or `DEFAULT_LICENSEKEY`). The provider setting `BANNER/BANNER_ENABLED` must be set to `True`.

Banners consist of static images and some surrounding HTML code that is rendered by the Client's embedded HTML rendering engine. You can customize banners by clicking **Manage Client / Manage Banners** on the navigation bar. You need to be logged in as the default provider or with a user account that has the `HAS_MANAGE_BANNERS_RIGHTS` privilege.



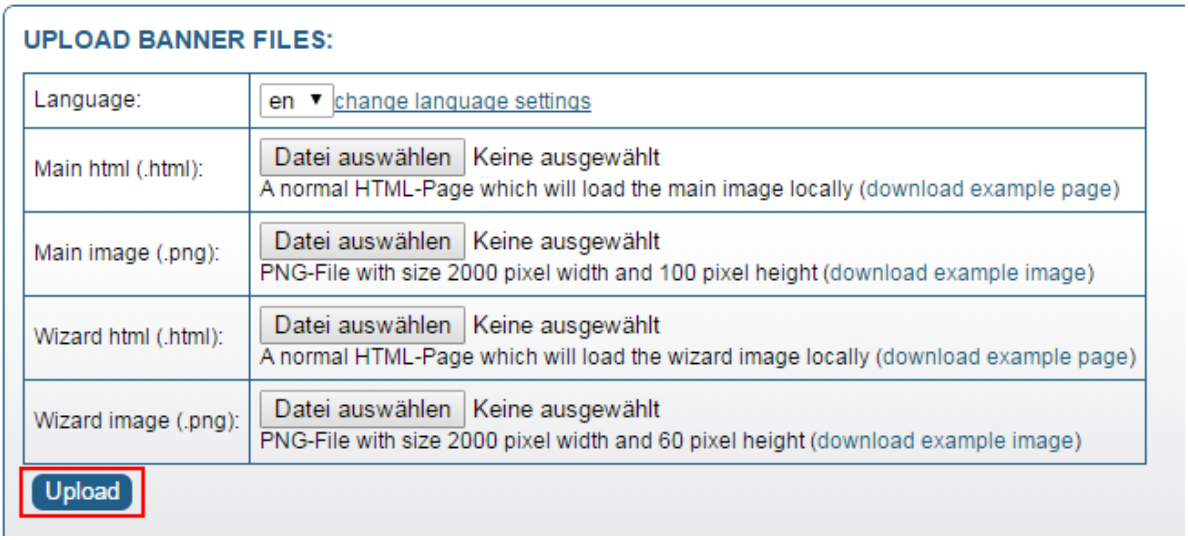
As the default Provider, you can choose which Provider's banners you want to manage by selecting the appropriate name from the selection list. As a regular provider, you can only edit and manage your own banners.

Banners are language-specific, you can define which languages you want to support by adding the desired language codes (comma separated) to the provider settings `BANNER/BANNER_ALLOWED_LANG` and `BANNER/BANNER_DEFAULT_LANG`. Select the language you want to manage by selecting it from the **Language** drop down list.

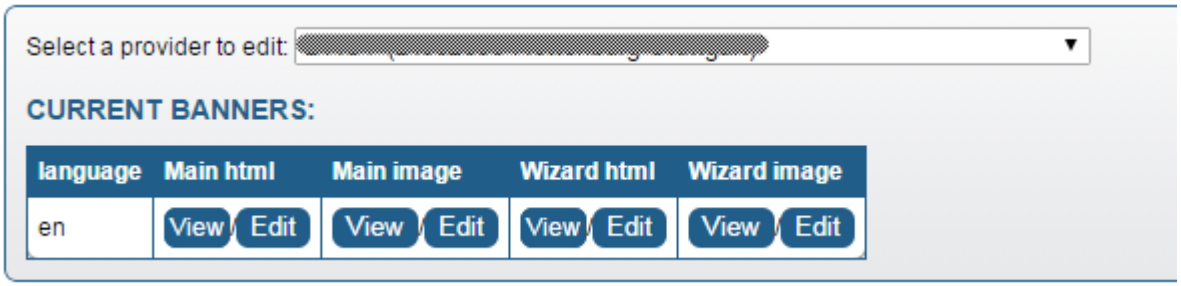
You need to create these HTML and PNG elements separately before uploading them to the Registration Server. You can download examples for each element from the Banner management page by clicking **download example page/image**.

Download and modify these to match your requirements. When done, select the appropriate file for each element in the **Upload Banner Files** block before clicking **Upload** to send the files to the Registration Server in one batch.

Repeat this upload steps until you have uploaded banners for all the languages you need to support.



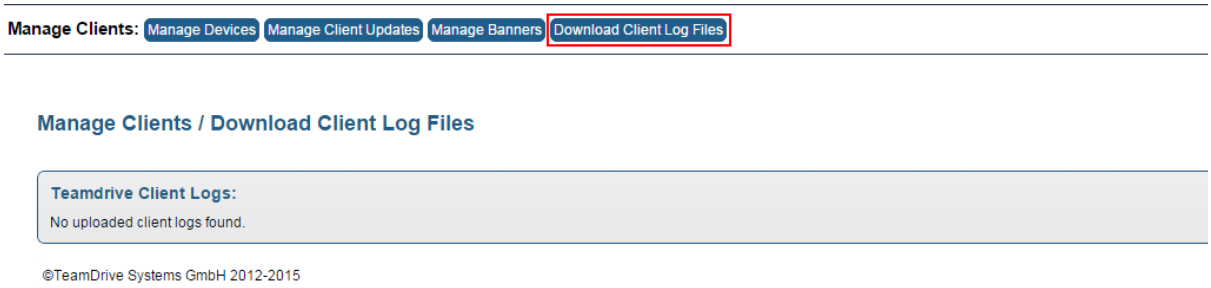
After you uploaded all banner elements for all languages, they will be listed in the **Current Banners** block of the page. Clicking **View** will display the current element (viewing the HTML code may result in what seems like an empty page). Clicking **Edit** will allow you to modify the code of the HTML elements and upload another version of the PNG image for the images.



Note: Note that new banners will only be displayed by the Clients after a restart.

4.5.4 Client Log Files

The Admin Console allows downloading client log files for troubleshooting purposes.



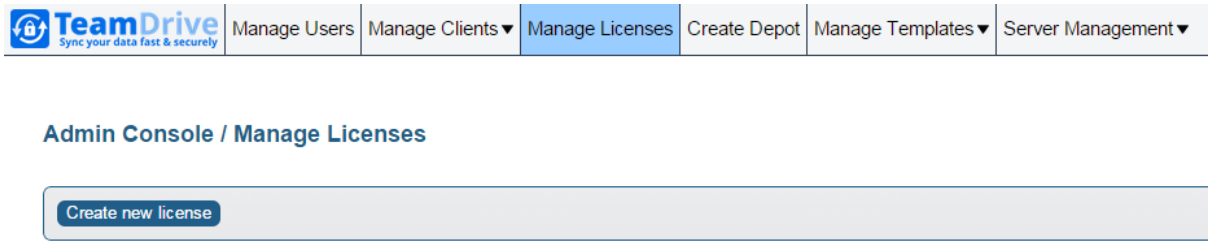
4.6 Manage Licences

The menu is only visible if the provider setting `LICENSE/ALLOW_MANAGE_LICENSE` is set to **True**. Users could only access the page having the `HAS_EDIT_LICENCE_RIGHTS` privilege.

Each user receives a default licence when he registers a device. The feature enabled for the default licence can be defined in the Provider settings via the `CLIENT/DEFAULT_FREE_FEATURE` setting.

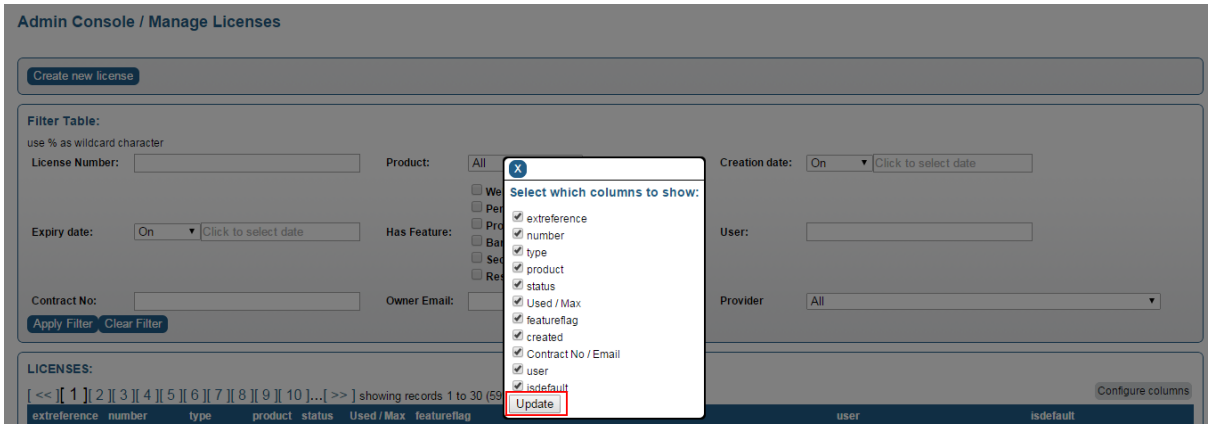
Instead of defining a default feature, it's also possible to define a default licence key which will be used by all users by entering the licence key in the `CLIENT/DEFAULT_LICENSEKEY` setting.

To manage licences, click **Manage Licences** in the top menu bar.



The table can be filtered in the same way that the user table can be filtered. Enter your search criteria in the **Filter table** form at the top of the page, click **Apply Filter** to apply your criteria. Click **Clear Filter** to return to the full table view.

To customize the columns displayed, click **Configure columns** on the top right of the table. Select the desired columns and click **Update** to refresh the table view.



As with the user page, the search results may be displayed over several pages. To export the result set in a CSV file, click **Export results to CSV file** at the bottom of the table. This will bring up your browser's file saving dialogue.

To display additional details about a licence, click **More Info** on the right side of the row. This will list all users this licence key has been assigned to as well as the change history of the licence. Click **Less Info** to hide these details again.

LICENSES:

[<<][1][2][>>] showing records 1 to 30 (33 in total) Configure columns

extreference	number	type	product	status	Used / Max	featureflag	created ▲	Contract No / Email	user	isdefault		
	[redacted]	Permanent	Client	Ok	1 / 1	Banner,WebDAV	2012-09-05	[redacted]		yes	Edit	More Info
	[redacted]	Permanent	Client	Ok	1 / 1	Banner,WebDAV	2012-10-24	[redacted]	Assign user	no	Edit	Less Info

Users:

User	Installations	
[redacted]	19	Remove License

Change History:

Date	Change description	Comment	Origin
2015-07-13	other, see comment	[redacted]	User removed from license
2012-10-24	License created	1	Unknown

4.6.1 Editing Licences

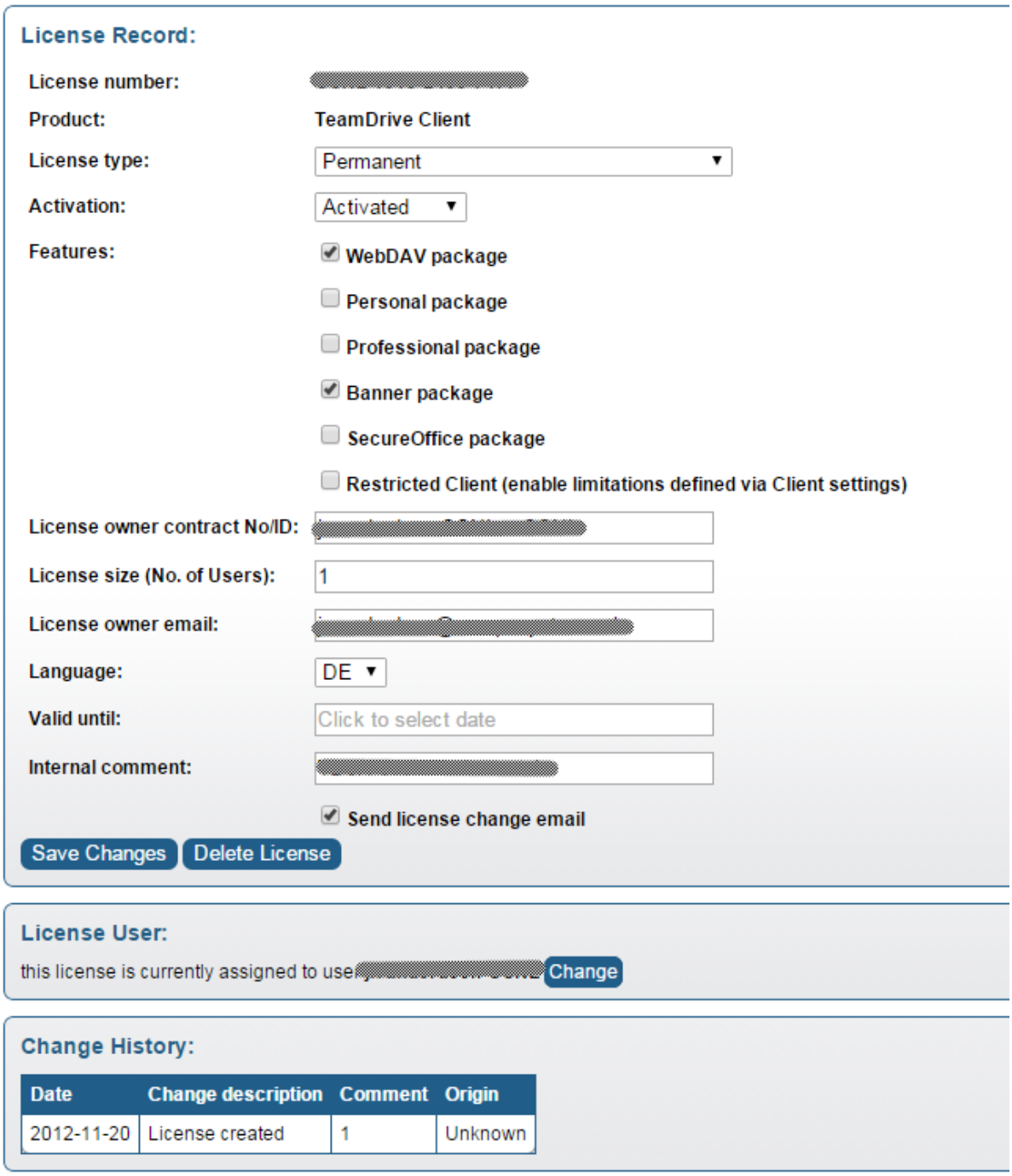
To edit a licence, find the licence in the **Licences** table and click **Edit**.

LICENSES:

Configure columns

extreference	number	type	product	status	Used / Max	featureflag	created ▲	Contract No / Email	user	isdefault		
	[redacted]	Permanent	Client	Ok	1 / 1	Banner,WebDAV	2012-11-13	[redacted]	[redacted]	yes	Edit	More Info
	[redacted]	Permanent	Client	Ok	1 / 1	Banner,WebDAV	2012-11-20	[redacted]	[redacted]	yes	Edit	More Info
	[redacted]	Permanent	Client	Ok	1 / 1	Banner,WebDAV	2012-11-27	[redacted]	[redacted]	yes	Edit	More Info
	[redacted]	Permanent	Client	Ok	0 / 1	Banner,WebDAV	2013-05-06	[redacted]	[redacted]	yes	Edit	More Info

This will bring up the licence editing menu:



On this page, you can change various features of a licence, e.g. the Client features, number of users, owner, user as well as an expiry date.

Once you have finished making changes, click **Save Changes** to apply them. Delete a licence by clicking **Delete license**.

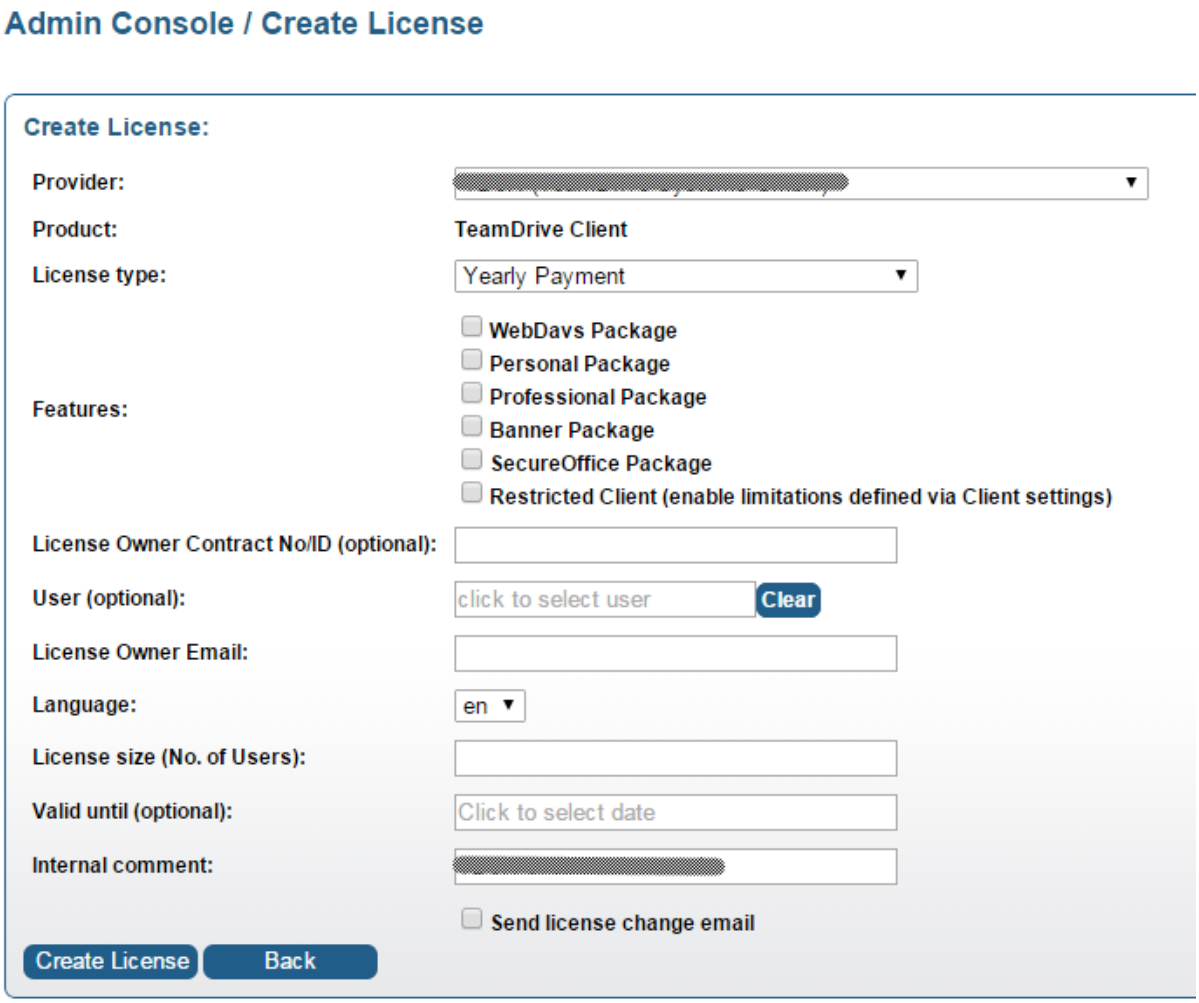
Each modification creates an entry in the licence's **Change History**, which is displayed below the editing dialogue.

4.6.2 Creating Licences

For creating new licenses the provider setting `LICENSE/ALLOW_CREATE_LICENSE` must be set to **True**.

To create a new licence, click **Create new licence**.

If you are logged in as the default provider, you will get a select list to choose a provider for which you would like to create a licence for. Otherwise you could only create licenses for yourself.



Customize terms and features of the licence according to your requirements.

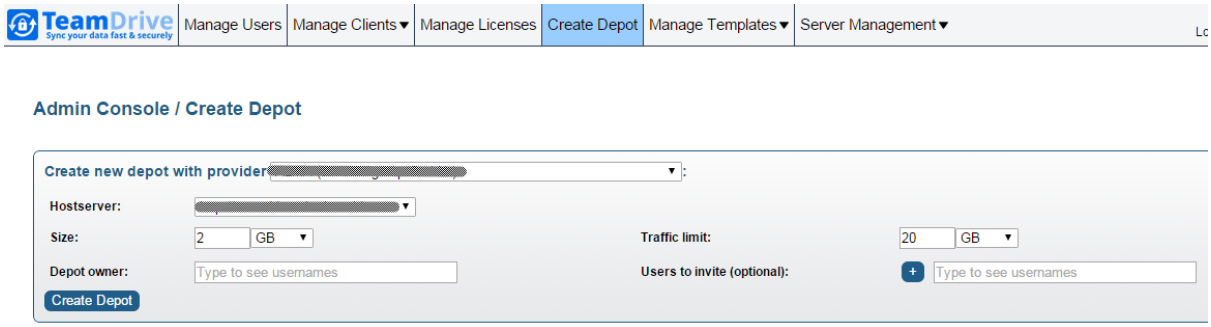
You can assign this licence to a user by clicking **click to select user** and selecting a user name from the popup window. This is optional. A licence without a user reference is an unbound licence.

Click **Create Licence** to create it. Clicking **Back** will return to the licence overview page.

4.7 Create Depot

Every user usually receives a default Space depot, if this is enabled in the provider settings (`HOSTSERVER/HAS_DEFAULT_DEPOT` must be set to **True**).

Click **Create Depot** to create new Space depots on a Host Server and assign them to selected users.



If there is more than one Host Server associated with your provider account, you can choose the location of the Space Depot by selecting the Host Server from a dropdown list all registered servers. Please set the provider settings `HOSTSERVER/AUTO_DISTRIBUTE_DEPOT` to **True** to distribute more than the default depot to new client installation.

Type in a letter in the Depot owner field to get a list of available user names. A select list below the field will show all matching user names.

You can define a **Storage Limit** by entering the desired amount in the input field. By default, the traffic limit will be set to 10 times the storage limit. If required, you can modify these limits later on via the user administration page as documented in chapter *Space Depots* (page 13).

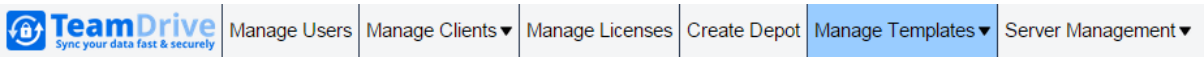
It is possible to assign a Space depot to multiple users. Type in a letter in **Users to invite** field to get a select list with matching usernames. Click on the '+'-sign to add more users which should also be able to create Spaces in this Depot.

Click **Create Depot** to finalize the Depot creation.

The user's Clients will automatically be notified about the additional Depot.

4.8 Manage Templates

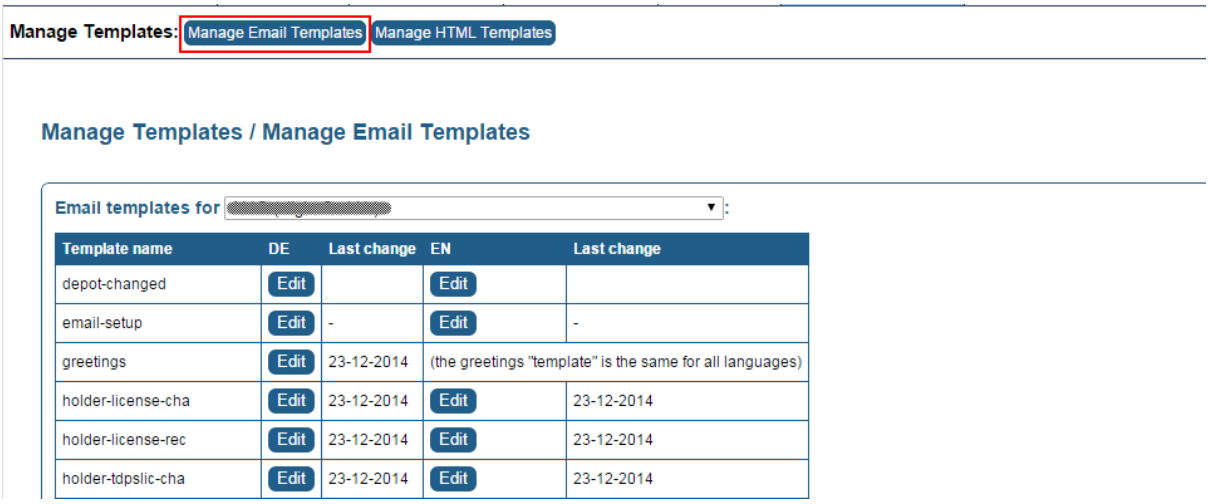
You could manage the email and html templates. The email templates will be used to send out notification emails to your users. The html templates will be shown when clicking on activation links for confirm the activation or changing the email address.



4.8.1 Manage Email Templates

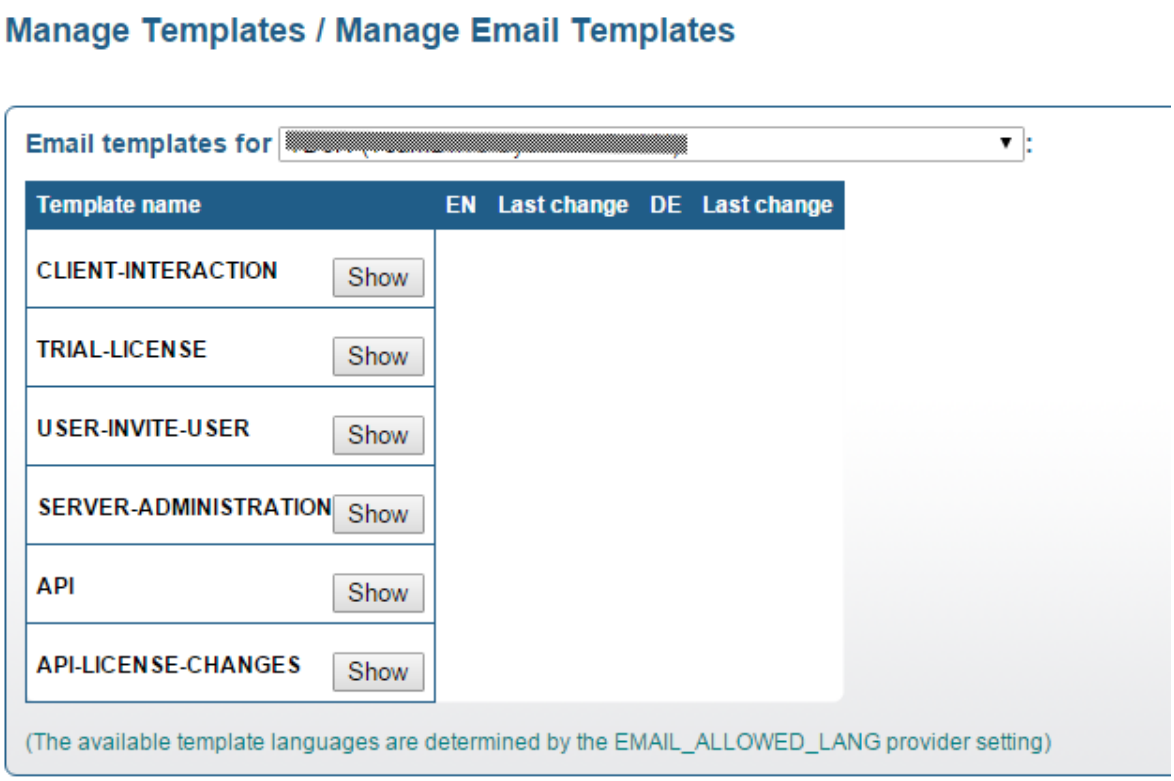
The Registration Server is shipped with the default set of email templates located in `/opt/teamdrive/regserver/setup/templates/email`.

A new created provider will use the default templates from the file system.



The templates are combined into groups for a better overview. A few groups will be hidden by default, because they are not necessary in your case due to your current settings. For example: The mail templates in the group `USER-INVITE-USER` are only necessary, if you define a value for the provider setting `REFERRAL/PROMOTION_UPGRADE`. Using the button **Show** you could make the templates visible even you are not using them.

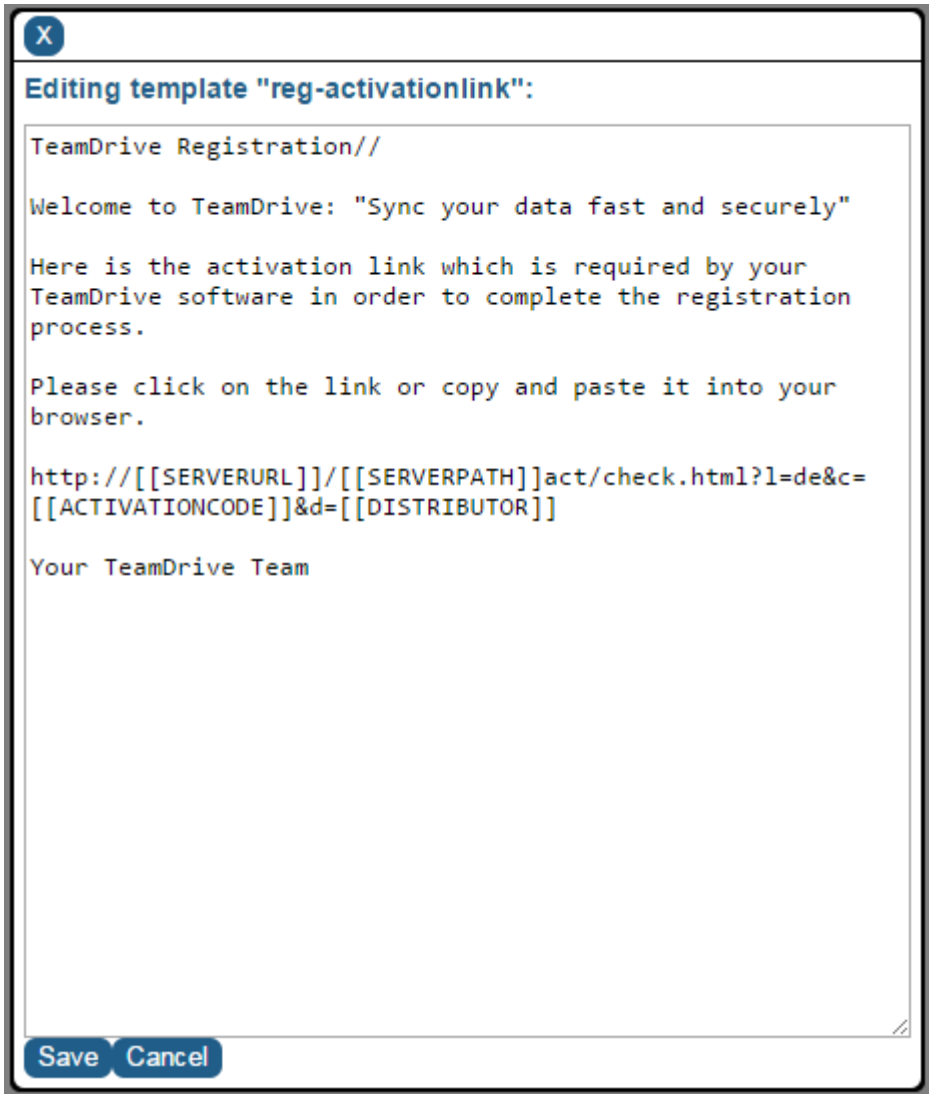
The templates are combined to the following groups:



- CLIENT-INTERACTION: This is the default set of templates which are necessary in all cases. They are important for the client interaction like recieving the activation mail, sending invitation mails to other users and for password and email changes.
- TRIAL-LICENSE: Only necessary if you offer trial licenses to your users.
- USER-INVITE-USER: Only necessary if you offer a referral program for your users.
- SERVER-ADMINISTRATION: These templates will only be used for the server setup and two-factor authentication in the admin console.

- API: Only necessary if you will offer an own web interface for your users and you will use the Registration Server API to allow users to register and manage their accounts. Will also be used by the adminconsole in case of changing the email address or password. You have to allow sending mails from the API using the provider setting `API/API_SEND_EMAIL`
- API-LICENSE-CHANGES: Only necessary if you use the API and you want to send confirmation mails for license creation and changes.

The provider could edit the default templates by clicking **Edit** next to each template to open it in an editor window. The templates are using macros which are placed into [[...]] and will be substituted by a value at the time when the template will be processed. You will find a list of all macros in the chapter *Templates for Client actions* in the *TeamDrive Registration Server Reference Guide*.



By saving the changes, the modified template will be stored in the database for this provider and the default template in the file system will not be used any more.

The templates are language specific. For each language you want to support you have to create a set of email templates. The supported languages for the mail templates will be defined in the provider setting `EMAIL/EMAIL_ALLOWED_LANG`.

4.8.2 Manage HTML Templates

The Registration Server is shipped with the default set of html templates located in `/opt/teamdrive/regserver/setup/templates/html`.

For the html templates the Registration Server is using the same logic as for the email templates. A new created provider will use the default templates from the file system until the provider is changing one of the template. The modified version will be stored in the database.

Manage Templates: Manage Email Templates | Manage HTML Templates

Manage Templates / Manage HTML Templates

Html templates for TD35 (TeamDrive Systems GmbH) ▾:

Template name	EN	Last change
activated-already	Edit	-
activated-android	Edit	-
activated-error	Edit	-
activated-invalid	Edit	-
activated-ios	Edit	-
activated-linux	Edit	-
activated-mac	Edit	-
activated-notfound	Edit	-
activated-win	Edit	-
newemail-activated	Edit	-
newemail-duplicate	Edit	-
newemail-error	Edit	-
newemail-invalid	Edit	-
newemail-notfound	Edit	-
portal-activate	Edit	-
portal-goog-auth-login	Edit	-
portal-goog-auth-ok	Edit	-
portal-goog-auth-setup	Edit	-
portal-login	Edit	-
portal-login-ok	Edit	-
portal-lost-pwd	Edit	-
portal-register	Edit	-

(The available template languages are determined by the ACTIVATION_ALLOWED_LANG provider setting)

The html templates are language specific too. The supported languages for them will be defined in the provider

setting `ACTIVATION/ACTIVATION_ALLOWED_LANG`.

There are three main template groups:

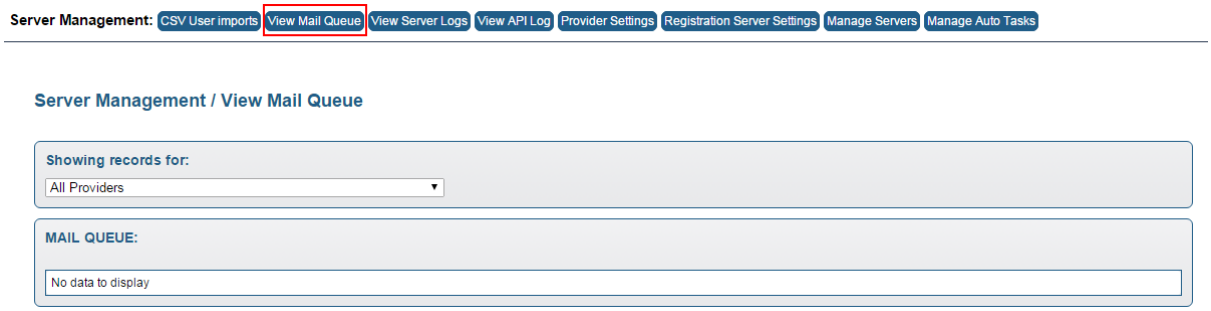
- activated-*: HTML templates to activate a client installation
- newemail-*: HTML templates to confirm email changes in the client
- portal-*: HTML templates for the web- and 2-factor-authentication (see *How to Setup Two-Factor Authentication* (page 73))

4.9 Server Management

This section allows administrate all Registration Server related configurations and the possibility to view several log files.

4.9.1 View Mail Queue

Click **View mail queue** to get an overview of the current mail queue, which lists all emails that have not been delivered to the respective users yet.

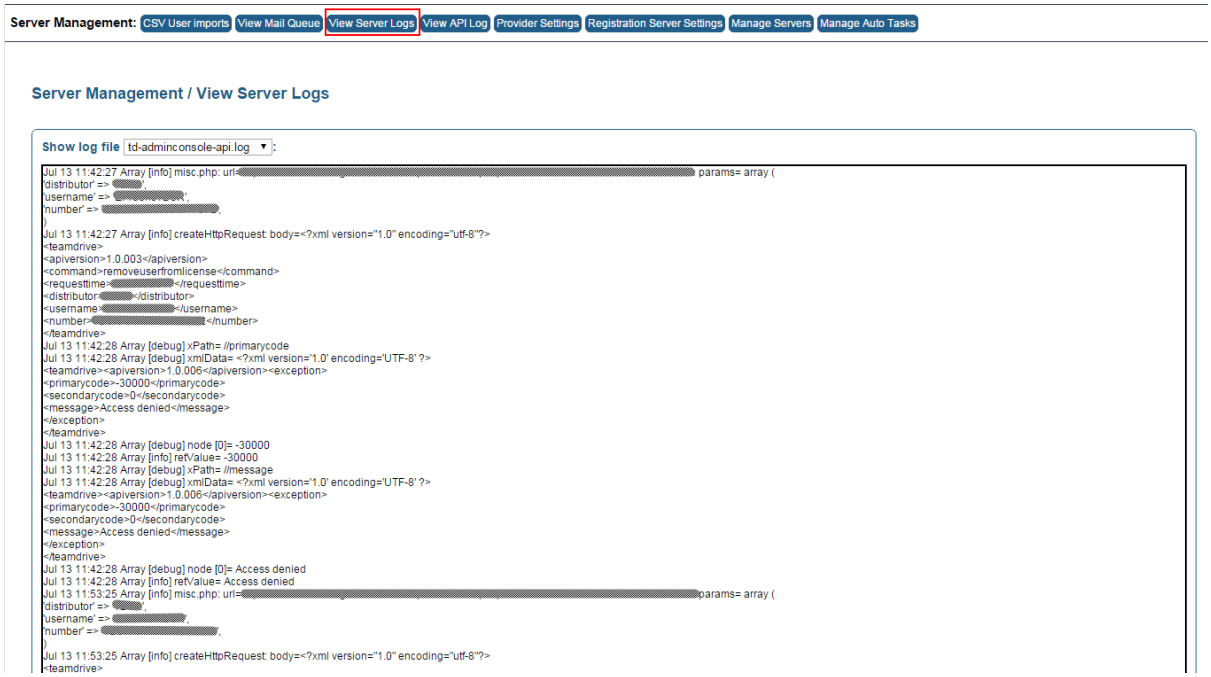


Pending outgoing emails can be shown here due to the fact that the "Send Emails" auto task hasn't procesed the mail queue recently (such messages have the status "created"), or there were issues with the email address or when submitting messages to the MTA (the status of these messages is "failed").

Click **Reset Status** to enqueue a message for delivery again. Click **Delete** to remove a message from the queue.

4.9.2 View Server Logs

The Admin Console allows viewing selected server log files for troubleshooting purposes. The **View Server Logs** page is only visible for the Registration Server's default provider and any user having the `HAS_VIEW_SERVER_LOGS_RIGHTS` privilege.



Depending on the availability and access permissions, the following log files can be viewed by selecting them from the selection list after **Show log file**:

- `/var/log/httpd/error_log`
- `/var/log/td-regserver.log`
- `/var/log/td-adminconsole-api.log`
- `/var/log/td-adminconsole-failedlogins.log`

As it requires physical read access to these logs, this feature works best when the Administration Console is installed on the same host where the Registration Server instance is running on. Log files can only be viewed if the user that the Apache HTTP Server is running under (usually `apache`) has the required read access privileges to view these files.

The list of log files is defined in the (read-only) Reg Server setting `ServerLogFiles` and can only be modified by updating the setting in the database directly.

`/var/log/httpd/error_log`: It's the standard apache error log file.

`/var/log/td-regserver.log`: The yvva background task will log errors into this file and also the errors which might occur from the client requests will be logged to this file.

`/var/log/td-adminconsole-api.log`: The API requests from the admin console to the registration server API and host server API will be logged to this file.

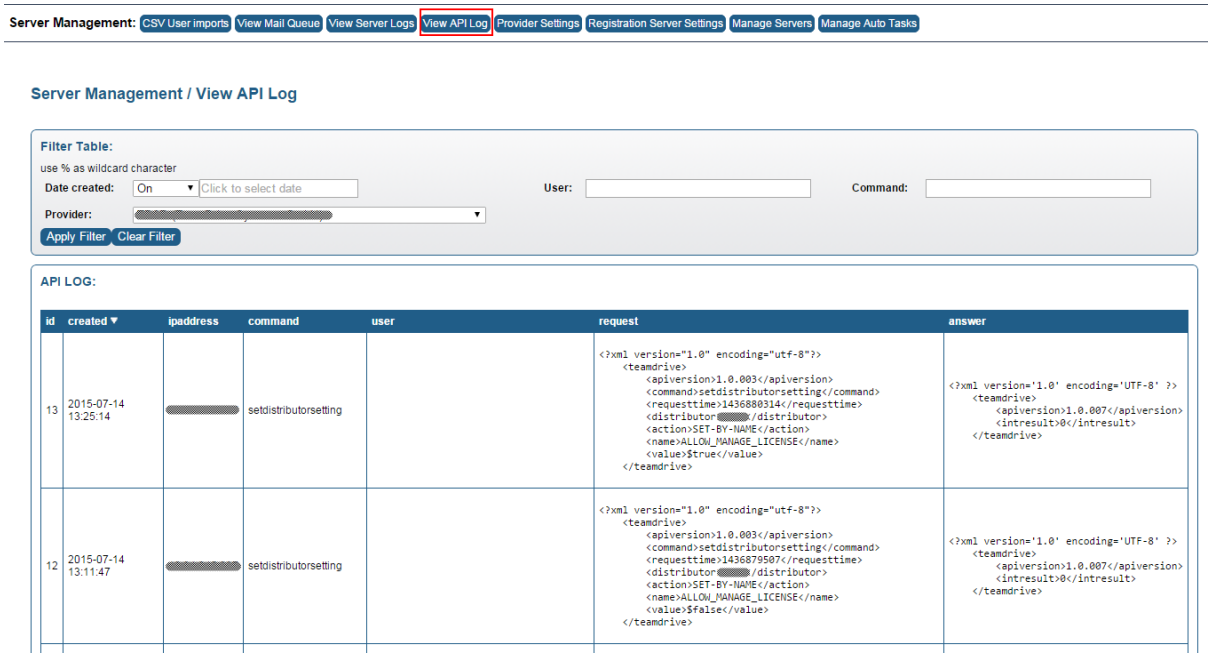
`/var/log/td-adminconsole-failedlogins.log`: Failed logins to the admin console will be logged to this file.

4.9.3 View API Log

Most of the tasks performed via the Administration Console result in API calls being sent to the Registration Server. You can also utilize API calls in your own applications, if you need to interact with the Registration Server.

See the chapter *Registration Server API* in the *TeamDrive Registration Server Reference Guide* for an overview of the available API calls.

If you enabled the logging in your provider setting `API/API_REQUEST_LOGGING` and you are either logged in as the default provider or with a provider/user account that has the `HAS_API_LOG_RIGHTS` privilege, you can view a log of all incoming API requests and their results by clicking **View API Log** in the menu bar.



The API request log is stored in the Registration Server's MySQL database and can be filtered by various criteria, e.g. **Date created**, **User**, and **Command**.

The default Provider is capable of viewing all API requests of all other Providers and can also apply a search filter by selecting a specific Provider name from the **Provider** dropdown menu. Regular Provider accounts can only view their own API requests.

Note: Note that enabling API logging by default will significantly contribute to the growth of the Registration Server's MySQL database. On a busy site, we recommend to only enable API logging for debugging purposes or to enable the `CleanUp` auto task that removes log entries older than 30 days from the API log table. See *Manage Auto Tasks* (page 38) for details.

4.9.4 Provider Settings

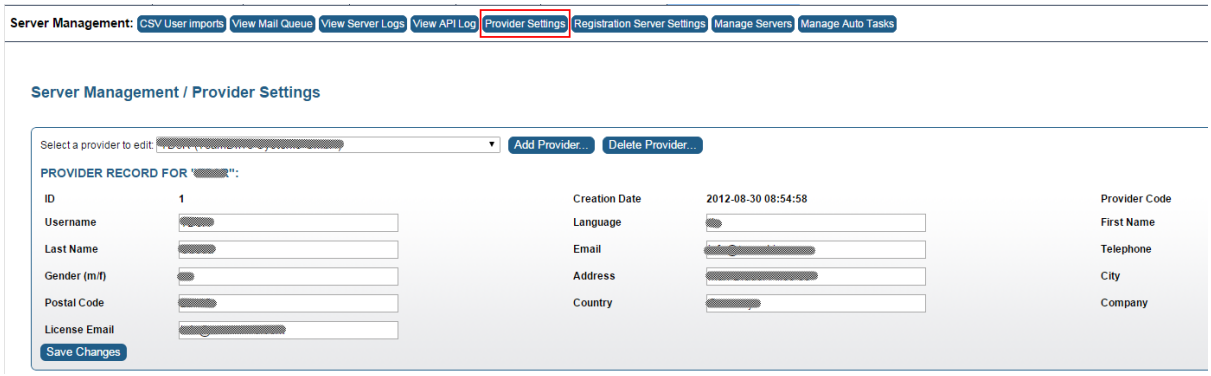
There is a number of provider specific configuration options that can be customized based on your requiremements. To edit Provider settings, click **Server Management/Provider Settings** in the top menu bar.

The provider specific data is devided into to parts: the provider record with the basic provider informations and the individual settings for the provider to control the features and functionality of the Registration Server.

Warning: Changes to the Provider settings will only be active after the caching period defined in `RegServer/CacheIntervall` has passed (the default is 1800 seconds or 30 minutes). If no cache interval was set, you need to restart the Apache HTTP Server of the Registration Server to reload these values.

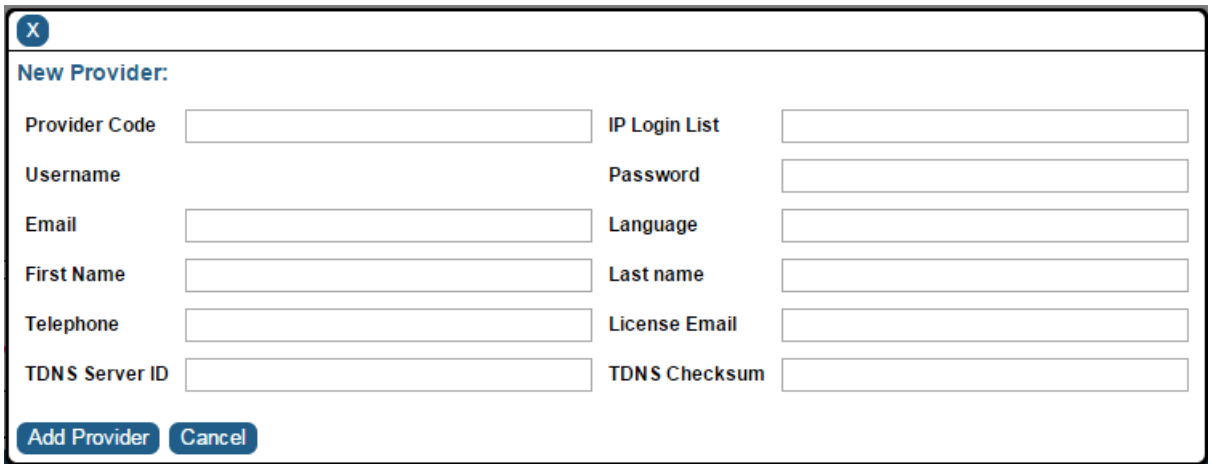
4.9.5 Provider record

The top of the page provides a section that allows you to edit the Provider user details itself. Edit the values in the text fields and click **Save Changes** to make changes.



Depending on your privileges, you will also see an option at the very top of the page **Select a Provider to edit**. The page will display the values and settings for whichever Provider is selected in this box. A new provider could also be added by clicking on **Add Provider...**. By default, only the default Provider has access to these both options.

For adding a provider you need a valid and pre-registered provider code:



Please provide values for the following required fields: the provider code you recieved from TeamDrive Systems GmbH, username, password, language, first and last name, company name and sender email.

Telephone and IP Login List are optional fields.

In case that your Registration Server is part of TDNS, you have to fill in the TDNS Server ID and TDNS Checksum.

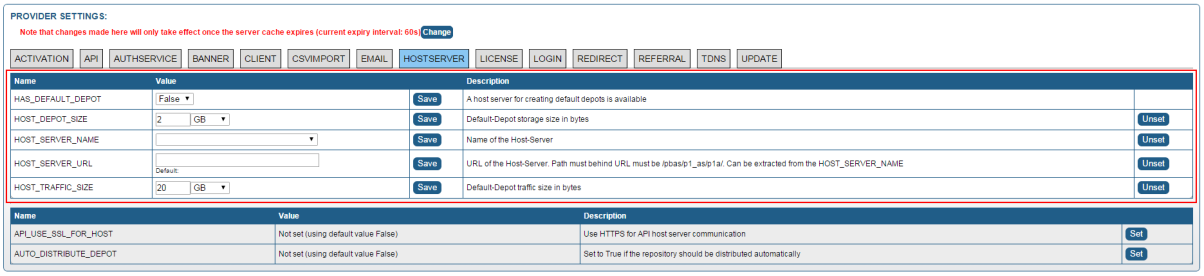
Deleting a Provider will remove all users, licenses and depots belonging to the Provider. If you proceed, the selected Provider will be scheduled for deletion. The deletion process will start after approximately 30 minutes. In case your Registration Server is connected to the TDNS (TeamDrive Name Server), contact TeamDrive and request the removal of the selected Provider from TDNS. Deletion of the Provider will only be completed once the reference to the Provider has been removed from TDNS. Once in progress, deletion cannot be undone, and the result is permanent.

4.9.6 Editing Provider Settings

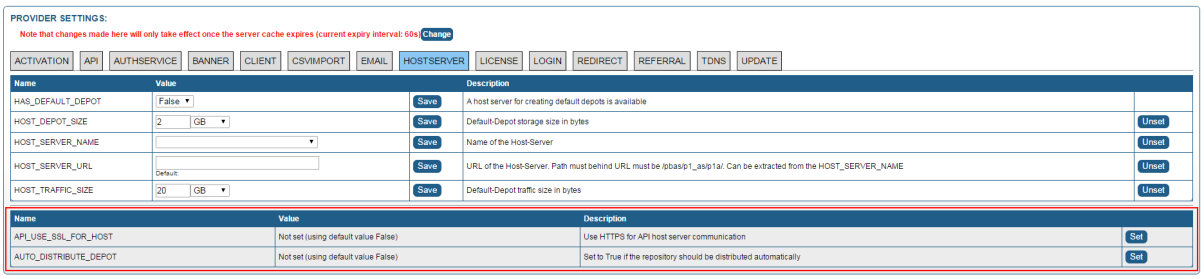
The lower section of the page shows list of customizable settings for the selected Provider, grouped in categories.

The available settings and their function are described in the *Reference Guide*.

To change a setting, select one of the categories (e.g. **AUTHSERVICE**, **CLIENT**, **EMAIL** or **HOSTSERVER**). The settings in each group are devided in two blocks:



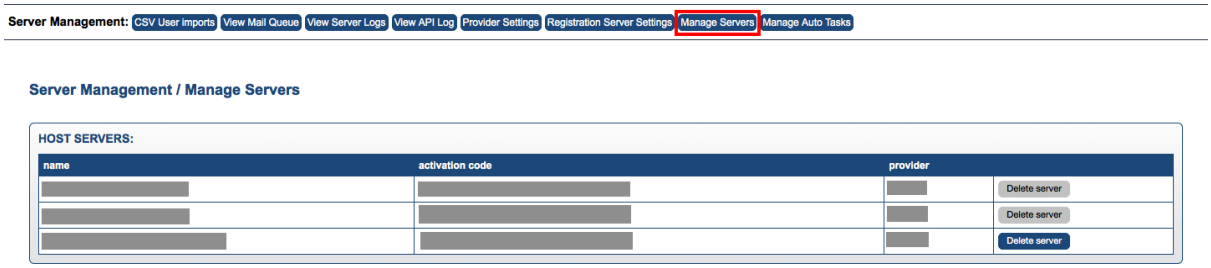
The upper white marked area with the settings which are added to the provider. Change the desired setting either by entering a new value or selecting one from the drop down menu, and click **Save** in that value's row. Do not change more than one value at once — always save your change before modifiying another value. Note that not all settings are editable. To remove a setting click **Unset**. The entry will disappear from the upper list and could be found in the lower list now and the pre-defined default value will be used. Note that not all settings could be removed.



The lower grey marked area with additional settings which are not currently added to the provider and which will use the pre-defined default values. To change the default value, click on **Set** to add this setting for the provider and change the value as described above in the upper list. If you added all available settings, the grey marked box will disappear.

4.9.7 Manage Servers

Click **Manage Servers** in the navigation bar to perform some management tasks related to the Host Servers associated with your Registration Server and how your Registration Server communicates with other Registration Servers in the TeamDrive Network.



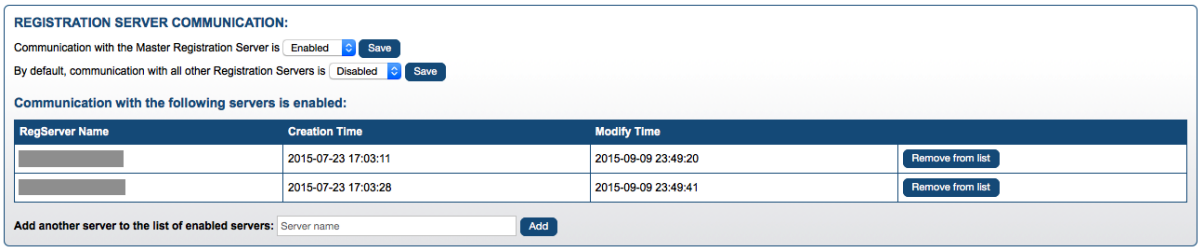
The **Host Servers** section lists all Host Servers that have been registered/associated with providers hosted on your Registration Server instance. From here you can also obtain the **Activation Code** that is required to finalize the Host Server installation and registration process (see the *Team Drive Host Server Installation Guide* for details). It's also possible to remove a Host Server by clicking **Delete Server**, which detaches it from the provider account it has been registered with and deletes the corresponding user and device entry.

Note: Only a Host Server which is not already in use by clients can be deleted.

Important: Please enable HTTPS for the API communication between Registration Server and Host Server in case that your Server is configured to allow HTTPS communication (setting

`HostServer/API_USE_SSL_FOR_HOST`).

If TDNS access is enabled (setting `RegServer/TDNSEnabled`), the **Manage Servers** page also allows you to enable communication with other Registration Servers.



Enabling a Registration Server allows your local users to directly invite users managed on that other Registration Server into their Spaces.

By default, communication with all other servers is disabled/enabled according to the `RegServer/TDNSAutoWhiteList` setting. This setting can either be changed directly on the **Server Management/Registration Server Settings** page, or on the **Manage Servers** page by changing the default to enabled/disabled and clicking "Save".

Note: The communication to `TeamDriveMaster` must always be enabled in case your are using the TeamDrive standard client.

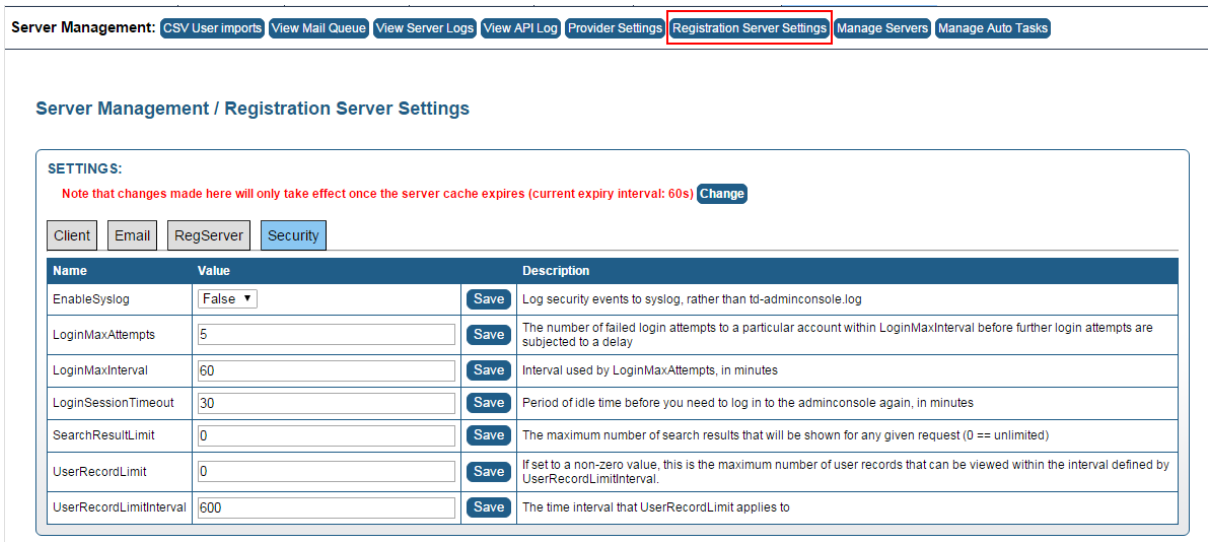
You can set exceptions to the current default rule by entering a specific server name in the form field at the bottom of the page and clicking "Add". The current list of exceptions is displayed along with the the chosen default rule.

Another exception to the default is the Master Registration Server, which is enabled/disabled separately via the selection field at the top of this section of the page.

If communication with other servers is enabled by default, your Registration Server obtains a list of all known Registration Servers from the Master Registration Server "TeamDriveMaster" every 12 hours via a background task (see *Manage Auto Tasks* (page 38)).

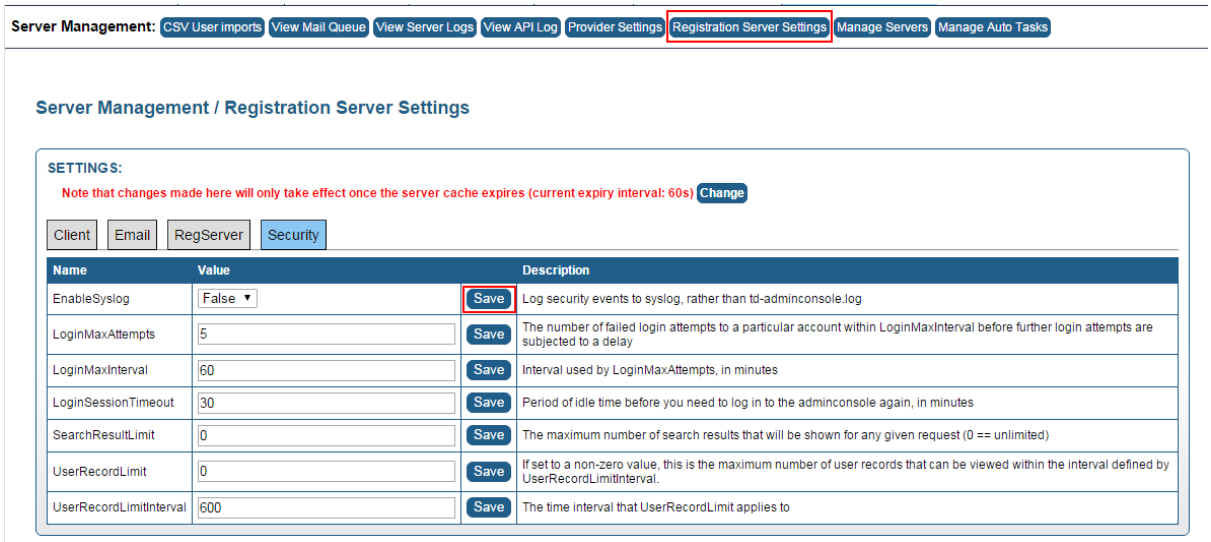
4.9.8 Registration Server Settings

By default, the Registration Server's global settings can only be changed by the default provider. Click **Server Management/Registration Server Settings** in the navigation bar.



> **Warning:** Changes to the Registration Server settings will only be active after the caching period defined in `RegServer/CacheIntervall` has passed (the default is 1800 seconds or 30 minutes). If no cache interval was set, you need to restart the Apache HTTP Server of the Registration Server to reload these values.

To change a setting, select one of the toplevel categories (e.g. **Client** or **RegServer**), change the desired setting either by entering a new value or selecting one from the drop down menu, and click **Save** in that value's row. Do not change more than one value at once — always save your change before modifiying another value. Note that not all settings are editable.



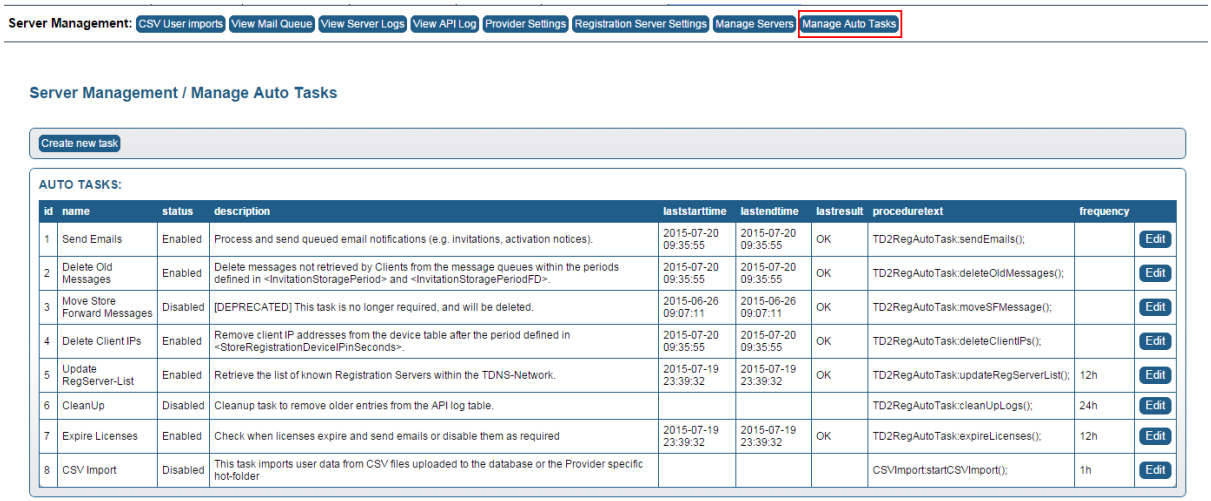
Each setting provides a short description about its meaning. All settings and possible values are explained in more detail in the *Reference Guide*.

4.9.9 Manage Auto Tasks

There is a number of background jobs that are being performed by the Yvva-based `td-regserver` service. The individual tasks are explained in more detail in chapter *Auto Tasks* (page 75).

To review and configure these automatic tasks, click **Server Management -> Manage Auto Tasks** in the top menu bar. Note that this option is only available to the default provider and users having the `HAS_MANAGE_TASKS_RIGHTS` privilege. In general it's not necessary to change the default values.

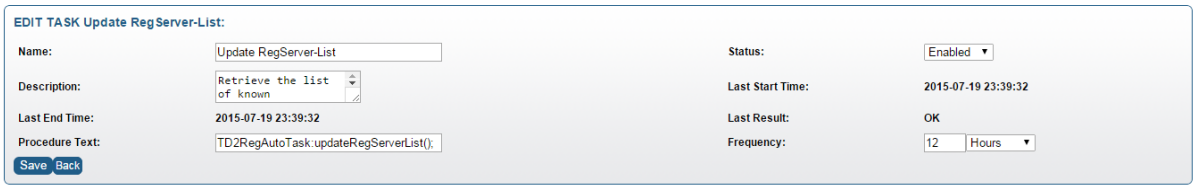
You will see a list of currently available tasks, their status and description as well as some run time information.



To edit a task, click **Edit** next to the desired task. You will see a form that allows you to enable or disable the task and modify some of the task's parameters, e.g. the frequency in which this task will be called.

If no frequency is provided, the task is scheduled to run every time the `td-regserver` background service wakes up (10 seconds by default, as defined in file `/etc/td-regserver.conf`).

We do not recommend to change any other settings of existing tasks or to remove or disable the system's default tasks.



After you are finished, click **Save** to save any changes you have made, or **Back** to return to the list of tasks.

To create a new task, click **Create new task** on top of the page. Creating new tasks can be necessary to add custom functionality which requires server side processing. New background tasks need to be implemented in PBT code and must be integrated into to Registration Server's code base.

Fill in the form fields with the required values and click **Create Task**.

CHAPTER

FIVE

SETTING UP A PROVIDER

You must specify a Provider (formerly called "Distributor") when setting up a Registration Server. The first Provider will be the default Provider and has all rights to administrate all additional provider and their users and licenses. This first provider will be created during the server setup as described in (see provider setup)

After setting up the Registration Server, more Providers can be added as required. Adding a new Provider is explained in (see *Provider record* (page 34)). After setup, changes can be made to the Provider settings using the Admin Console as described in the same chapter.

CHAPTER

SIX

IMPORTING USER ACCOUNTS VIA CSV FILES

Instead of manually creating individual user accounts via the Administration Console as described in chapter *Adding Users Manually* (page 17), it is possible to import multiple user accounts into the Registration Server's database from a file containing the account information as a CSV (comma-separated values) list.

The CSV import can be enabled and configured via the Provider Settings located in the `CSVIMPORT` group. See the *TeamDrive Registration Server Reference Guide* for more details on these settings.

There are two options on how to upload the CSV file:

- Upload the import file to a "hot folder", which can be configured using the `CSV_IMPORT_DIR` setting. The upload can be performed by an external system, e.g. via `rsync`, `scp` or `sftp`, or via a local cron job (e.g. using `wget` or any other tool to pull the file from a remote location).
- Upload the import file manually via the Registration Server Administration Console.

The data import via a hot folder is performed by an Auto Task which polls a directory for files containing CSV data at a defined interval (once every hour by default). See *"CSV Import" Task* (page 76) for details.

6.1 CSV File Structure

The CSV file must contain the following fields, separated by comma or semicolon:

username Unique user name which will be used to create the user account. If set, this value must not change, as it is the unique refererence to identify an existing user account. Alternatively, it is possible to use "magic usernames" which are generated by the Registration Server automatically. In this case, the user uses his email address to log into his account. To use magic usernames, leave the username field blank and select another field instead of the user name in the provider setting `CSVIMPORT/CSV_IDENTITY_COLUMN` to clearly identify a user. You also need to set the provider setting `CLIENT/USE_EMAIL_AS_REFERENCE` to `True`, to enable using the email address to identify the account.

email Email address of the user. This value may change, if the user's email address has changed. The email address must be unique, if the Provider Setting `CLIENT/USE_EMAIL_AS_REFERENCE` is set to `True` or if the Registration Server Setting `UserEmailUnique` is set to `True`.

password A password for the user. If empty, the user can define a password during the initial registration process as described in the *Reference Guide*. Changes to an existing user password will be ignored.

distributor The Provider Code of the user's Provider.

reference A free text field which can be used to assign an external reference id (e.g. a cost center)

department A free text field which can be used to set a department reference for the user. May be changed, if the provider setting `CSVIMPORT/CSV_ALLOW_SET_DEPARTMENT` is set to `True` (which is the default).

language Language code of the user. This value may change.

authid This field is optional. It can contain a unique ID that can be used as an alternative reference.

Example file structure (without an authid field):

```
username;email;password;distributor;reference;department;language
TeamDriveUser1;TD_User1@yourdomain.com;;password1;1234;Int1;EN
TeamDriveUser2;TD_User2@yourdomain.com;;password2;1342;Int2;DE
TeamDriveUser3;TD_User3@yourdomain.com;;password3;1452;Int2;DE
```

Note: Note that even though the CSV file contains a field to define a user's provider code, this value is currently not used. Instead, the provider code is defined by the user that uploads the CSV file via the Administration Console or by the directory the file is located in. If you need to upload user accounts for multiple providers, create one file per provider account and upload them separately.

6.2 Enable CSV Upload via the Administration Console

You can enable the CSV import functionality via the Administration Console by adding the provider setting `CSVIMPORT/CSV_IMPORT_ACTIVE` and setting it to `True` via the Administration Console.

Additionally, the Auto Task "CSV Import" must be enabled, by setting its status to `Enabled` via the Administration Console (**Server Management -> Manage Auto Tasks**). Change the frequency to the desired time interval in which this Auto Task should be executed. For testing purposes, it might make sense to set it to a very short frequency (e.g. 1 minute).

Note: The import of a single user requires about 1 second. Make sure that the Auto Task's Frequency allows enough time for the currently running job to finish before another task is started.

If your list of users does not change frequently, it might make sense to keep the Auto Task disabled and only activate it temporarily, after a new CSV file has been uploaded.

In this mode, the CSV files and result logs are stored in the Registration Server's database and can be managed via the Administration Console.

To upload your CSV user data manually via the Administration Console, follow the instructions outlined in chapter *Adding Users via CSV File Import* (page 18).

6.3 Uploading CSV Files to a Directory

As an alternative to the manual upload via the Administration Console, you can define a directory on the Registration Server that will be scanned for new CSV files periodically.

This so called "hot folder" allows for an automated process to create or disable user accounts by uploading updated CSV files using tools like `scp`, `sftp` or `rsync` from another server. An example directory structure can be created in `/var/tmp` using the following command (replace `XXXX` with your provider code):

```
[root@regserver ~]# install -m 700 -d /var/tmp/csvimport/XXXX/error
[root@regserver ~]# install -m 700 -d /var/tmp/csvimport/XXXX/success
[root@regserver ~]# chown -R apache:apache /var/tmp/csvimport
[root@regserver ~]# tree /var/tmp/csvimport
csvimport/
`-- XXXX
    |-- error
    `-- success

3 directories, 0 files
```

In addition to activating CSV import via the `CSV_IMPORT_ACTIVE` setting as outlined above, you need to add and configure the following Provider Settings via the Administration Console:

CSVIMPORT/CSV_USE_FILESYSTEM: Set this option to `True` to use a directory on the Registration Server for uploading user account information in a CSV file. You should only enable this setting after you created the required directory structure and updated the following settings accordingly. Changing this setting to `True` will automatically add the following settings to your Provider Settings.

CSVIMPORT/CSV_UPLOAD_DIR: This directory is the location for uploading new CSV files that should be processed by the import script (e.g. `/var/tmp/csvimport/XXXX/` in the example above). The name must end with a slash. Each provider must to use a different directory. It must be readable and writable for the Linux user that the CSV import job is running under (`apache` by default).

CSVIMPORT/CSV_SUCCESS_DIR: This directory contains the log files for successful CSV imports (e.g. `/var/tmp/csvimport/XXXX/success` in the example above). The name must end with a slash. It must be readable and writable for the Linux user that the CSV import job is running under (`apache` by default).

CSVIMPORT/CSV_ERROR_DIR: This directory contains the log files for failed CSV imports (e.g. `/var/tmp/csvimport/XXXX/error` in the example above). The name must end with a slash. It must be readable and writable for the Linux user that the CSV import job is running under (`apache` by default).

Now copy the CSV file containing your user accounts into the directory defined in `CSV_UPLOAD_DIR` (e.g. `/var/tmp/csvupload/XXXX` in the example above).

Note: Please ensure that the file's ownership and permissions are set correctly, so that the Auto Task can delete the file after it has been processed.

After the Auto Task has been executed, the file will be imported into the database and processed. Afterwards, you can review the processing status via the Administration Console (**Manage Servers -> CSV user imports**).

6.4 Customizing the CSV Import

The CSV import can be further customized using the following Provider settings:

CSVIMPORT/CSV_ALLOW_SET_DEPARTMENT: Set this to `False`, if the department may not be changed by the CSV import of an existing user account.

CSVIMPORT/CSV_IDENTITY_COLUMN: This setting specifies which field in the CSV file will be used to identify users during the CSV import (options are: `username`, `email`, `reference` and `authid`)

CSVIMPORT/DISABLE_MISSING_CSV_USERS: If set to `True`, any user account not present in the CSV file will be disabled on the Registration Server. In this mode, your CSV user file always needs to contain all active user accounts.

CLIENT/USE_EMAIL_AS_REFERENCE: Set this setting to `True` if you wish to use the user's email address to reference your users between your system and the Registration Server. A few things need to be changed:

1. The username fields in the CSV file must be left empty
2. The Registration Server will generate a unique username for new users. The generated usernames will continue to be used internally, because the system is based upon using usernames. You will still see them in the Administration Console of the Registration Server and the Host Server Administraion Console, however in the Client application (required version at least 3.0.7 (257)) users will only see their email address. The CSV import will match the email address back to the usernames (for users that existed before the import). You have to make sure, that no duplicate email address will be created using the Admin Console.
3. The Client Setting `allow-email-login` must be set to `true`, so that your users can login using their email addresses.

CHAPTER

SEVEN

BACKUPS AND MONITORING

7.1 System Backup Strategies

The most important asset of a live Registration Server is the content of its MySQL database.

The Registration Server's MySQL databases that need to be backed up are named `td2reg` and (optionally) `td2apilog`. They use MySQL's InnoDB storage engine to provide transaction support, fast recovery and consistency.

The backup schedule depends on the amount of users, their activity and your recovery point objective. We recommend to run a backup at least once a day. The backups should be safely stored on another system.

Ideally, the time and frequency of the Registration Server backup should be synchronized with the backup schedule used on the associated Host Server(s) — this ensures that the information about Users and their Space Depots is consistent across these servers.

In a virtualized environment, the usage of VM snapshots is highly recommended, as these provide atomic and instant full-system copies across multiple systems that can be backed up offline.

The MySQL backup can be performed using any established MySQL backup method, e.g. running a `mysqldump` via a cron job, or using more sophisticated tools like Percona XtraBackup or Oracle's MySQL Enterprise Backup. Other commercial backup solutions usually offer MySQL-specific plugins or extensions as well.

An example MySQL backup job using `mysqldump` could look like as follows. The SQL dump is piped through `gzip` for compression before it is written to a directory `/backup`, using a time stamp for the file name:

```
[root@regserver ~]# mysqldump -u root -p --single-transaction \
--databases td2reg td2apilog \
| gzip > /backup/td-regserver-mysql-$(date +%Y-%m-%d_%H.%M).sql.gz
```

See the MySQL documentation at https://dev.mysql.com/doc/refman/5.1/en/backup-and-recovery.html for more details and hints on how to define a MySQL backup strategy.

If the I/O overhead introduced by running the backup job on the production database is a concern, we recommend setting up a MySQL replication slave on another host and use this one to perform the backup. This second MySQL instance can also function as a hot standby server for high-availability purposes.

More details about MySQL replication and high availability can be found in the MySQL reference manual at https://dev.mysql.com/doc/refman/5.1/en/replication.html and https://dev.mysql.com/doc/refman/5.1/en/ha-overview.html.

In addition to the MySQL databases, we recommend to create backup copies of the Server's configuration files. Please refer to the *TeamDrive Registration Server Installation Guide* for details on the relevant configuration files.

These files should be backed up at least every time you changed them. These backups can be performed using any file-based backup method, e.g. using `tar`, `rsync` or more sophisticated backup tools, e.g. Amanda or Bacula.

7.2 System Monitoring

It's highly recommended to set up some kind of system monitoring, to receive notifications in case of any critical conditions or failures.

Since the TeamDrive Registration Server is based on standard Linux components like the Apache HTTP Server and the MySQL database, almost any system monitoring solution can be used to monitor the health of these services.

We recommend using Nagios or a derivative like Icinga or Centreon. Other well-established monitoring systems like Zabbix or Munin will also work. Most of these offer standard checks to monitor CPU usage, memory utilization, disk space and other critical server parameters.

In addition to these basic system parameters, the existence and operational status of the following services/processes should be monitored:

- The MySQL Server (system process `mysqld`) is up and running and answering to SQL queries
- The Apache HTTP Server (`httpd`) is up and running and answering to http requests. This can be verified by accessing the following URL: https://regserver.yourdomain.com/pbas/td2as/reg/ping.xml?tdns=\protect\T1\textdollartrue (remove the `?tdns=true` part, if your Registration Server is not connected to the TeamDrive Name Service TDNS)
- The `td-regserver` auto task is running (process name `yvvad`)
- The mail service (e.g. a local `postfix` instance) is up and running and mails are sent out correctly

CHAPTER

EIGHT

REGISTRATION SERVER FAILOVER AND SCALABILITY CONSIDERATIONS

8.1 Scaling a TeamDrive Registration Server Setup

A first step in increasing a single Registration Server's performance would be to monitor and review the system's CPU and RAM utilization, and to adjust the server configuration by adding more RAM or CPUs, if necessary (also called "scale-up strategy").

Adding more CPUs typically increases the maximum number of possible concurrent connections to the service and reduces the latency. However, the ability to handle more connections also requires more memory, as the system needs to spawn more concurrent Apache instances. So usually both parameters need to be adjusted.

Adding more RAM can also help to improve database throughput and latency, as it allows the database to keep more of its working set in memory, which enables it to return query results quicker.

If your setup has reached the physical limits of a single server instance, you can further improve the scalability as well as the redundancy of a TeamDrive Registration Server by implementing a "scale out" strategy.

In this setup, you distribute the load across several independent systems, by deploying multiple virtual or physical Apache server instances of the TeamDrive Registration Server behind one or more load balancers.

This configuration also mitigates the risk of a service outage, e.g. if an instance fails or needs to be taken offline for maintenance purposes.

A migration from a single instance setup to such a scaled-out configuration can usually be performed with very little downtime, so you can start small and grow your setup as the need arises.

However, you must ensure that in case of a node failover/outage, the remaining nodes can handle the load that is usually distributed across all server instances.

Note: In a scale-out scenario, the Registration Server's MySQL database server must be set up as a separate instance, so each Registration Server node has access to the same data set.

To avoid the MySQL database to become a single point of failure, we recommend to set up MySQL in a redundant configuration, too (e.g. by using MySQL replication or other clustering technologies like Galera/Percona Cluster).

Note: The TeamDrive Registration Server configuration does not support accessing more than one MySQL Server; you need to use a floating/virtual IP address that gets assigned to the currently active MySQL instance.

If you intend to run multiple independent Registration Server instances (e.g. to serve a globally distributed user base), you can assign users to local Registration Servers using different Provider Codes. Use TDNS to facilitate collaboration (e.g. exchanging Space invitations) between these independent TeamDrive Registration Server instances (which can in turn be scaled using the strategies above).

In a single instance configuration, a re-appearing server can suffer from a "thundering herd problem", as a large number of TeamDrive Clients will try to synchronize their accumulated pending changes simultaneously. This can

lead to a peak in the number of concurrent connections to this server and its MySQL database, as well a noticable increase in network and disk I/O.

This effect can be mitigated by temporarily extending the poll interval used by the Clients, by increasing the number of Apache instances, or by temporarily assigning more resources like vCPUs or vRAM to a virtual machine.

The MySQL server's configuration might also need to be reviewed in order to support more concurrent database connections.

8.2 Registration Server Failure Scenarios

This chapter discusses the most likely outages that can occur on a TeamDrive Registration Server, if no additional redundancy is provided.

Chapter *Registration Server Failover Test Plan* (page 52) outlines some possible tests you should perform, and what results to expect.

8.2.1 Entire Registration Server Outage

An outage of the entire TeamDrive Registration Server can be triggered by any of the following events:

- Failure of the entire Registration Server host system (e.g. a hardware or OS crash/failure)
- Network failure that renders the Registration Server unavailable
- Failure of the Registration Server's Apache HTTP Server
- Failure of the Registration Server's MySQL Database

Running Clients will indicate that the Registration Server can not be reached (for example, the TeamDrive 3 Desktop Client has an LED-like indicator icon in the bottom right corner, which will turn from green to red in case the Registration Server cannot be reached).

The following Client operations will continue to work:

- Running Clients can still operate on their existing Spaces (e.g. adding/removing files, uploading new versions)
- Clients can create new Spaces and delete existing Spaces
- Creating Space invitations to users stored in the Client's local addressbook

The following operations will be not be possible while the Registration Server is unavailable:

- Performing a login after having logged out of the TeamDrive Client
- Registration of a new device/Client
- Sending out Space Invitations to other users
- Changing the password or email address, requesting a temporary password
- Distributing comments on files via email
- Enabling/disabling the Key Repository

Once the Registration Server is reachable again, the Clients will proceed with sending out any pending invitations. The notification icon will change from red to green.

Except for the MySQL Server outage, this failure scenario can be avoided by setting up multiple instances of the Registration Server behind a load balancer with failover capabilities.

8.2.2 MySQL Database Outage

A failure of the Registration Server's MySQL Database could be triggered by one of the following events:

- Failure of the entire MySQL Server host system (e.g. a hardware or OS crash/failure)
- Network failure that renders the MySQL Server unavailable for the Registration Server
- Failure of the MySQL Server's `mysqld` process

The failure will be indicated by error messages in the following Registration Server log file.

`/var/log/td-regserver.log`:

```
[Error] -12036 (2002): Can't connect to local MySQL server through
socket '/var/lib/mysql/mysql.sock' (2)
```

A MySQL Database server failure will affect the entire Registration Server functionality as described in chapter *Entire Registration Server Outage* (page 50).

The service will return to normal operations as soon as the MySQL service is reachable again.

To mitigate the risk of a MySQL Server outage, consider setting up a cluster of MySQL Servers, using MySQL replication, DRBD or other replication and HA technologies like Pacemaker/Corosync to provide synchronization and redundancy.

8.2.3 SMTP Server Outage

If the local or remote SMTP server is unavailable for sending out email, the Registration Server will no longer be able to send out invitations, registration email notifications or file comment notification to the TeamDrive users. These messages will be kept in the Registration Server's internal mail queue until the SMTP service is available again.

Note: Note that sending out messages from a TeamDrive Client perspective still works — the Client receives a success notification as soon as the Registration Server has queued the message in its database for delivery.

Failures to connect to the SMTP server will be logged in file `/var/log/pbvm.log` as follows:

```
[ERROR] Connect to 'localhost:25' failed, getsockopt(SO_ERROR) returned
(111): Connection refused
```

The pending messages can also be viewed from the Registration Server Administration Console by clicking **Manage Emails -> View mail queue**.

Once the SMTP service is back online again, pending messages can be rescheduled for delivery by clicking **Reset Status** in the mail queue overview page.

Currently, there is no automatic method for rescheduling all pending messages in a bulk operation.

8.2.4 Outage of the `td-regserver` Background Service

The `td-regserver` background service is responsible for running a number of tasks, see the chapter *Auto Tasks* (page 75) in the *TeamDrive Registration Server Reference Guide*.

If the `td-regserver` background service (process name `yvvad`) has failed or was not started at bootup time, a number of operations will be affected, including the following:

- Emails won't be delivered anymore, including invitations, activation and email change messages.
- Licenses that have expired will not be processed.
- CSV imports will not be processed.

- Client change notifications that have been delayed will not be sent.
- Old messages will not be removed from the device-to-device message queues.
- Old entries won't be purged from the API log table (if enabled).
- Providers marked for deletion will not be deleted.

Restarting the `td-regserver` background service will pick up where the previous process has stopped.

For increased redundancy, it is possible to run this service on each TeamDrive Registration Server instance in a multi-server installation. In this setup, each instance needs to have a functional SMTP configuration, to ensure that email messages can be delivered.

8.3 Registration Server Failover Test Plan

Based on the failover scenarios described in chapter *Registration Server Failover and Scalability Considerations* (page 49), the following tests should be performed to verify the correct behaviour and recovery from failures of individual TeamDrive Registration Server components.

This test plan assumes an environment consisting of two virtualized TeamDrive Registration Server instances (regserv01 and regserv02), located behind a load balancer and using a dedicated single MySQL Server instance (td-mysql). Other setups/configurations may require additional tests, depending on the environment.

Note: Note that this configuration contains several components for which no redundancy is provided, therefore these components are considered single points of failure (SPOF). In particular, the following components can become a SPOF:

- The MySQL database instance (td-mysql). If this instance becomes unavailable, the entire TeamDrive service will be affected and rendered unavailable until the service is restored.
- The load balancer/firewall. If the public-facing load balancer/firewall fails, the TeamDrive service will be unavailable.

8.3.1 Single Registration Server Instance Failure

An outage of one of the TeamDrive Registration Server instances (regsrv01 or regserv02) should be simulated/triggered in the following ways:

- Shutting down the Apache HTTP Server running `service httpd stop`.
- Shutting down the network connection, e.g. by running `service network stop`, `ifconfig eth0 down` or by disconnecting the virtual network interface via the virtual machine management console.
- Shutting down the entire virtual machine e.g. via the virtual machine management console or by running `poweroff`.

Expected results:

- The load balancer should detect that the Registration Server instance is no longer available and redirect any incoming traffic to the remaining instance instead. If configured, a notification about the outage should be sent out to the monitoring software.
- The monitoring software should raise an alert about the Registration Server instance being unavailable, specifying the nature of the outage (e.g. httpd process missing, network unavailable, etc.).
- The remaining Registration Server instance should handle all incoming Client requests. The TeamDrive Service should not be impacted/affected in any way.

Once the outage has been resolved and the instance has recovered, the following is expected to happen:

- The load balancer should detect that the Registration Server instance is available again. Incoming traffic should be spread across both instances again.

- The monitoring software should detect the service recovery and perform the respective actions (e.g. resetting the alert, sending an update notification).
- The TeamDrive Service should continue unaffected throughout this process

8.3.2 Multiple Registration Server Failures

An outage of **both** of the TeamDrive Registration Server instances (regsrv01 and regserv02) should be simulated/triggered in the following ways:

- Shutting down the Apache HTTP Servers running `service httpd stop` on both instances.
- Shutting down the network connections, e.g. by running `service network stop`, `ifconfig eth0 down` on both instances, or by disconnecting the virtual network interfaces via the virtual machine management console.
- Shutting down the entire virtual machines e.g. via the virtual machine management console or by running `poweroff`.

Expected results:

- The load balancer should detect that the Registration Server instances are no longer available and stop redirecting any incoming traffic to the instances. Incoming requests should be answered with an appropriate error code (HTTP error code 503 - Service Unavailable). If configured, a notification about the outage should be sent out to the monitoring software.
- The monitoring software should raise an alert about the Registration Server instances being unavailable, specifying the nature of the outage (e.g. httpd process missing, network unavailable, etc.).
- The TeamDrive Service will be impacted/affected as outlined in chapter *Entire Registration Server Outage* (page 50).

Once the outage has been resolved and at least one of the Registration Server instances has been recovered, the following is expected to happen:

- The load balancer should detect that a Registration Server instance is available again. Incoming traffic should be redirected to this instance and incoming requests should no longer result in HTTP errors.
- The monitoring software should detect the service recovery and perform the respective actions (e.g. resetting the alert, sending an update notification).
- Once the TeamDrive Clients have noticed the service being available again, operations should proceed as before.

8.3.3 Testing MySQL Server Failures

An outage of one of the MySQL Server instance (td-mysql) should be simulated/triggered in the following ways:

- Shutting down the MySQL Server by running `service mysqld stop`.
- Shutting down the network connection, e.g. by running `service network stop`, `ifconfig eth0 down` or by disconnecting the virtual network interface via the virtual machine management console.
- Shutting down the entire virtual machine e.g. via the virtual machine management console or by running `poweroff`.

Expected results:

- The Registration Server instances will no longer be able to handle incoming Client requests as outlined in chapter *MySQL Database Outage* (page 51).
- The monitoring software should raise an alert about the MySQL Server instance being unavailable, specifying the nature of the outage (e.g. `mysqld` process missing, network unavailable, etc.).

Once the outage has been resolved and the MySQL Server is available again, the following is expected to happen:

- The TeamDrive Registration Server instances will continue to operate where they were interrupted by the MySQL Server outage. The TeamDrive Clients will pick up where they left, synchronizing all accumulated/pending changes.
- The monitoring software should detect the service recovery and perform the respective actions (e.g. resetting the alert, sending an update notification).

8.3.4 Testing Load Balancer Failure

Since all TeamDrive instances are accessed through a load-balancer, an outage of this component should be tested as well:

- Shutting down the load balancer
- Removing the network connections to the TeamDrive Server components

Expected results:

- The Registration Server instances will no longer be able to handle incoming Client requests as outlined in chapter *Entire Registration Server Outage* (page 50).
- The monitoring software should raise an alert about the load balancer instance being unavailable, specifying the nature of the outage.

Once the outage has been resolved and the load balancer is available again, the following is expected to happen:

- The TeamDrive Registration Server instances will continue to operate as soon as they receive incoming Client requests again. The TeamDrive Clients will pick up where they left, synchronizing all pending changes that have accumulated in the meanwhile.
- The monitoring software should detect the service recovery and perform the respective actions (e.g. resetting the alert, sending an update notification).

CHAPTER

NINE

CONNECTING USERS BETWEEN DIFFERENT REGISTRATION SERVERS

The TeamDrive Name Server (TDNS) settings are one of the more important settings which must be defined during the setup and which can not be enabled later on when users are already registered on your Registration Server.

The TDNS helps send invitations between users which are registered on different Registration Server by mappings the user to their respective servers. This is necessary because invitations must be send to the Registration Server for which the user is registered with their devices.

Usernames, unlike email addresses, are unique within the TDNS network. If you enable TDNS access, any username that is already in use by a server within the TDNS network can not be used by your own Registration Server.

TDNS access will modify the registration, login, search and invitation calls in the Registration Server (as well as the API calls) and check the TDNS, determining which username exists on which Registration Server in the TDNS network.

Every Provider requires a record on the TDNS. A record will have a *ServerID* and a *checksum*. All requests will contain the *ServerID* and *checksum* to verify that the request is coming from a valid Registration Server.

You have to enable outgoing access on the HTTP-Port 80 to `tdns.teamdrive.net` to enable the communication from your Registration Server to the global TDNS.

CHAPTER

TEN

CONFIGURING EXTERNAL AUTHENTICATION USING MICROSOFT ACTIVE DIRECTORY / LDAP

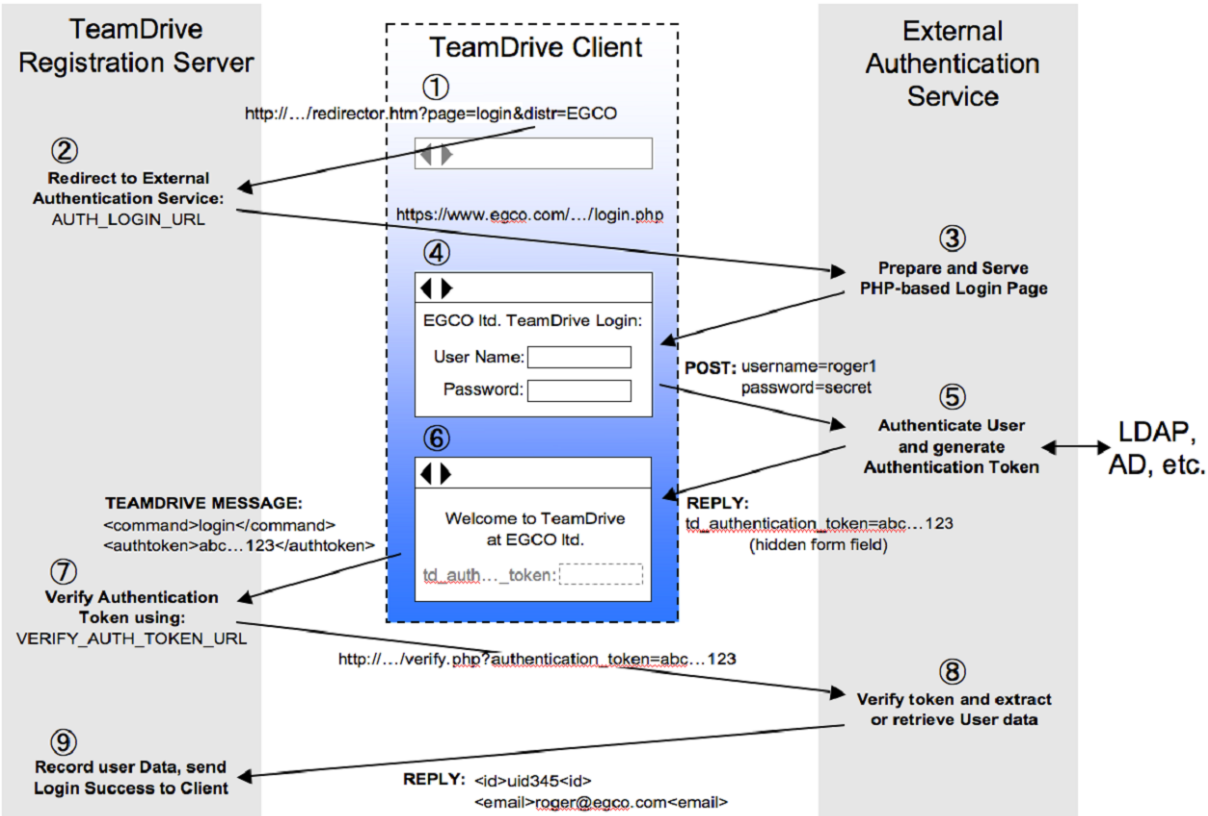
10.1 Overview

TeamDrive supports "External Authentication", where the authentication data is not stored on the Registration Server.

TeamDrive Client versions 3.1.1 and higher offer an alternative login window in an embedded browser, which resides in a different panel than the standard login dialogue. By default this window is disabled. It must be explicitly activated in the Client settings of the Registration Server. This process is described in detail below.

External Authentication is performed by an external web service, hosted on a web server separate from the TeamDrive Registration Server. This instance and the related web pages are referred to as an "Authentication Service".

Below is a general overview of the TeamDrive Client login process.



If a sign-in attempt was successful, the Authentication Service will return an "Authentication Token" which is received by the client and sent to the Registration Server. The Registration Server then uses a pre-defined URL to verify the token. If the token is valid, the login phase ends successfully and the TeamDrive Client is registered.

This service can be configured to work with various authentication mechanisms, such as NIS, LDAP, Active Directory, Shibboleth and others. Only the Authentication Service needs to contact your directory server in order to verify the user names and passwords provided. The Registration Server has no knowledge of these values. See the chapter "*External Authentication*" in the *TeamDrive Registration Server Reference Guide* for more details.

The TeamDrive Registration Server installation ships with a PHP-based implementation of an Authentication Service for LDAP and Microsoft Active Directory Server.

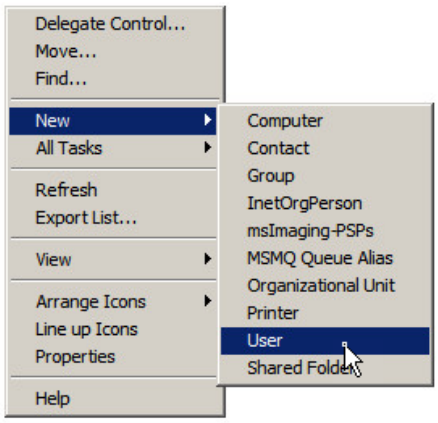
10.2 Active Directory

This section covers the Authentication of a TeamDrive Client using the Active Directory directory service offered by Microsoft Windows Servers. Since Windows Server 2008, this is also referred to as ADDS. ADDS manages various objects on a network such as users, groups, computers, services, servers, and shared folders. With the help of Active Directory, an administrator can organize, deploy, and monitor the information of these objects.

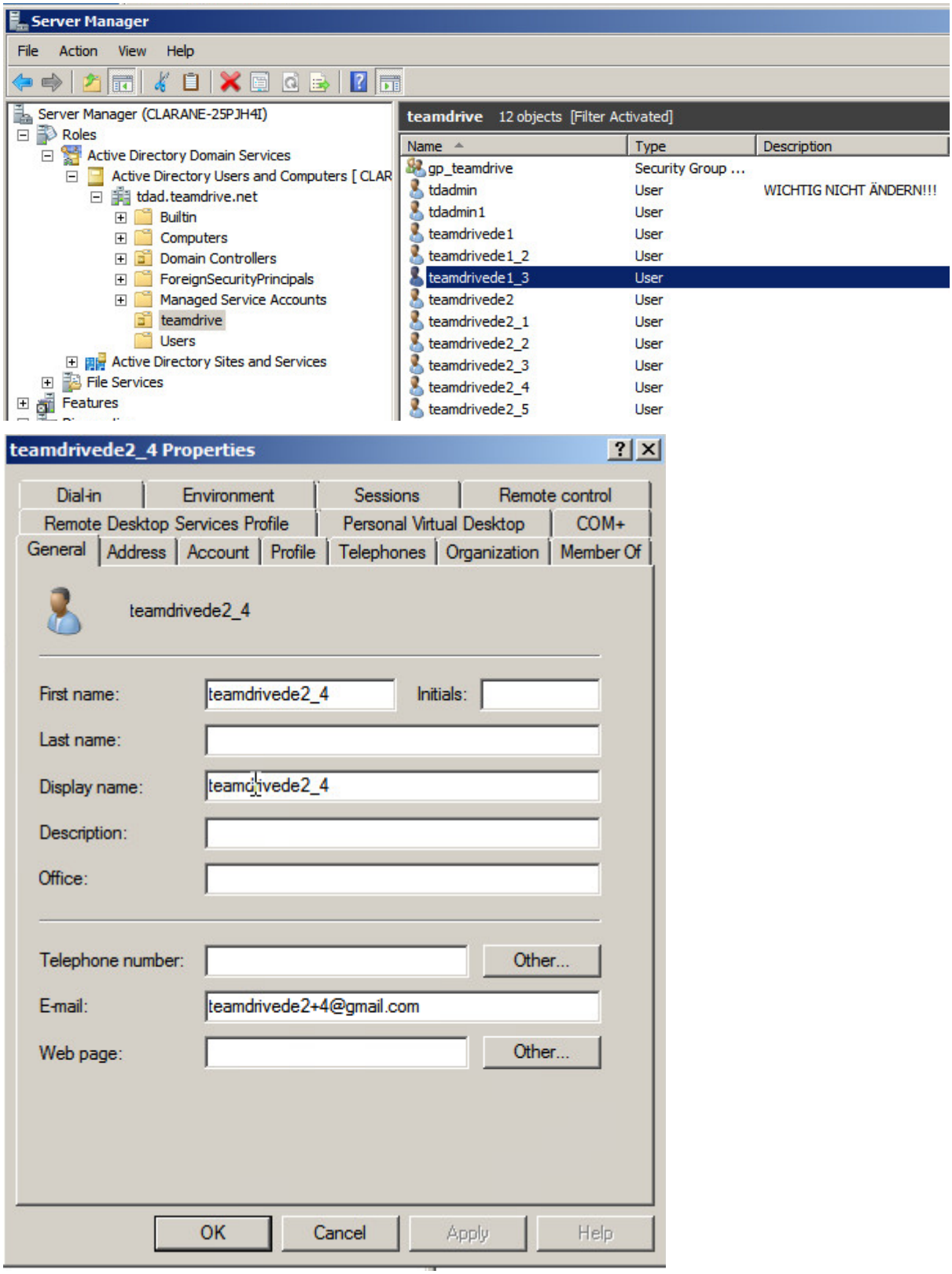
10.3 Configuring Microsoft Active Directory Server

10.3.1 Managing Users

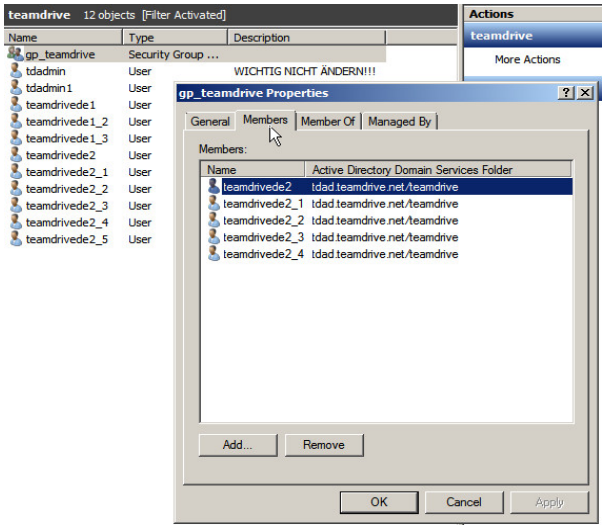
In the Server Manager, in the "Active Directory User and Computer" branch, create a new Organizational Unit with a meaningful name ("TeamDrive" for example). Select this newly created Organizational Unit and right click the middle panel to create a new user.



All users require an email address and need to be part of the group "gp_teamdrive".



In this picture it can be seen that the user is a member of the group “gp_teamdrive”.



10.4 Authentication Service Installation

Reference code to interface between an Active Directory or LDAP Server and the Registration Server is included in the TeamDrive Registration Server installation package (see Installing the Registration Server External Authentication) and is also installed on the TeamDrive Registration Server Virtual Appliance (in directory `/var/www/html/authservice`).

However, for security reasons, we strongly recommend to set up a dedicated system for the Authentication Service and to not use the Registration Server's web server for this.

The Authentication Service code can be deployed on any Linux system that supports running an HTTP Server (e.g. Apache) with the PHP scripting language and the PEAR extension enabled. It is strongly recommended to enable SSL for accessing the authentication web service, to protect the transmission of usernames and passwords from the TeamDrive Client to the Authentication Service.

The host providing the Authentication Service needs to be reachable by the TeamDrive Clients via HTTPS (TCP Port 443) as well as by your Registration Server via HTTP (TCP Port 80, if both systems are in a trusted environment) or HTTPS (TCP Port 443). Additionally, the Authentication Service needs to be able to access your directory service in order to verify usernames and passwords.

The detailed setup and configuration of this framework is out of the scope of this document; please refer to the installation instructions of your operating system and your local environment.

The following example assumes Red Hat Enterprise Linux 6 or a derivative like CentOS 6, CentOS 7, Oracle Linux 6 or Scientific Linux 6. The names of packages or directories might differ on other Linux distributions.

On a minimal system, make sure that the following packages have been installed with `yum`: `httpd`, `php`, `php-pear`, `php-ldap`, `php-mcrypt`, `openldap-clients`.

The following PEAR modules should be installed using `pear install`: `Log`, `Auth`.

For testing purposes, it's possible to simply open the login PHP page ("/authservice/ldap_login.php") in a regular web browser.

10.5 Authentication Service Customisation

You may change the user interface and behaviour of the LDAP Authentication Service by modifying the layout and content of the following files:

- `/authservice/ldap/index.html`: This is the default page, which redirects to `ldap_login.php` by default.

- `/authservice/ldap/ldap_login.php`: You can change this page to present a login page that would be recognised by your users. For example, change the page to conform to you companies CI (Corporate Identity).
- `/authservice/ldap/ldap_verify.php`: The only reason to change this file is to change the data returned to the Registration Server when an authentication token has been verified.

  For example, returning the email address is optional. If you do not return an email address, the Registration Server will return an error if a user with the specified "User ID" does not already exist.

  If an email address is returned, a user will be automatically created with the given User ID.
- `/authservice/ldap/ldap_web_login.php`: This page is identical to the `ldap_login.php` page, but is is used as target login page for the Web Portal. In other words the `AuthLoginPageURL` setting must be set to reference this page, not the *ldap_login.php*' page.

  The `ldap_login.php` page is used as the target page for the TeamDrive Client embedded browser. This page must be reference by the `AUTH_LOGIN_URL` Provider setting.

Note: All changes you make to other files under the `authservice` directory will be **overwritten** when you update to the latest td-regserver-ext-auth RPM.

10.6 Authentication Service Configuration

Once you have installed the external Authentication Service code, you must duplicate the file `ldap_config.php.example`, and rename it to `ldap_config.php`. The settings in this file must then be edited to access your LDAP or AD service.

Optional parameters may be set to "".

During testing of the LDAP connection, set the variable `$ldap_enable_debug` to `true`, in `ldap_config.php`. When set to `true` a trace of the LDAP/AD login attempt will be printed to the HTML page. In production this variable should be set to `false`.

10.6.1 Registration Server Parameters

The Registration Paramaters are required.

- `$reg_server_name`: Set this parameter to the name of your Registration Server. On successful login, the TeamDrive Client is passed this value in the `td_registration_server` hidden field.
- `$provider_code`: This is the Provider Code of the Provider associated with this external login service.

10.6.2 Web Portal Parameters

- `$webportal_domain`: When using the LDAP/AD Authentication Service in conjunction with a TeamDrive Web Portal, set this variable to the value of the `WebPortalDomain` Web Portal setting.

10.6.3 Encryption Parameters

Note: The encryption parameters are random sequences that **must** be changed for every new installation. Failure to do this results in a major security failure.

- `$user_secret_salt`:

  This random sequence of character **must be unique** for each installation. After setting this value at installation, it should **never be changed again**. It is important that this value must **remain secret** at all times as it is used to generate the, so-called, "user secret" value.

  Any sequence of strings, of any length (preferably at least 50 characters) may be used.

  Changing the value will result in the user not being able to access his/her key repository stored on the Registration Server, after TeamDrive is installed on a new device. This will mean the user does not have automatic access to all his/her Spaces created on other devices.

  However, access can be restored for the new device if the user has an old device and performs a re-login (for example, after the password is reset on the Registration Server). Re-login forces the TeamDrive Client to re-encrypt the data in the Key Repository which will then make the Space keys available to new devices.

- `$token_encryption_key`:

  This random sequence is used as a key to encrypt token sent to the client. The value **must be unique** for every installation. This string may be changed at any time since tokens are only valid of a short time.

  Any sequence of strings, of any length (preferably at least 50 characters) may be used.

10.6.4 LDAP/AD Parameters

For querying LDAP/AD, this implementation uses the PEAR "`Auth`" object. More information can be found at the URL http://pear.php.net/package/Auth/docs.

The configuration file contains parameters which the set the PEAR Authentication fields. The examples use values for an Active Directory query.

Connection Parameters

These parameters are required.

- `$ldap_server_domain`:

  This is domain name of the host on which the LDAP server is running.

- `$ldap_server_port`:

  This is the port on which the LDAP server is listening. The default port for LDAO is 389.

- `$ldap_basedn`:

  This is the base "distinguished name" of the part of the Directory that will be searched. Examples: "dc=teamdrive,dc=com", "dc=egco,dc=teamdrive,dc=net"

Authentication

If the LDAP server does not allow anonymous connections then you must provide credentials for the connection here.

- `$ldap_binddn`:

  This is the name of the user that has access to the part of the directory that is to be searched. For example: "cn=Manager,dc=teamdrive,dc=com", "cn=TDAdmin,ou=global,ou=kkh,egco=tdad,dc=teamdrive,dc=net",

- `$ldap_bindpw`:

  The password of the user.

User Attributes

A number of user attributes can be sent to the TeamDrive Client after successful authentication. The user_id and email are required.

- `$ldap_user_id_attr`:

  This is the name of the attribute which contains a unique identifier of the user. Usually this value is "uid".

  In order for external authentication to work the LDAP/AD server must store a unique, unchanging, identifier for each user. Note that if the identifier changes TeamDrive will fail to recognise The user, and assume the user is new. For this reason the email address is not a choice.

- `$ldap_email_attr`:

  The name of the attribute that contains the user's email address. Note that this email address is used within TeamDrive in order to invite users to a Space.

- `$ldap_common_name_attr`:

  This is the name of the attribute that contains the user's common name. If provided, TeamDrive will display this name, instead of the email address in the user interface.

- `$ldap_telephone_attr`:

  This attribute contains the user's home or work telephone number.

- `$ldap_mobile_attr`:

  This attribute contains the user's mobile telephone number.

User Identification

These parameters are required. They are used to locate a user in the directory.

- `$ldap_userdn`:

  This specifies the user distinguished name to be searched. `$ldap_userdn` is added to `$ldap_basedn` when performing the search.

- `$ldap_userattr`:

  This parameter specifies the attribute that will be searched for the user's "login name". Any parameter that uniquely identifies the user may be used.

- `$ldap_userfilter`:

  This is added to the search filter when searching. It is usually used to specify the object type of the users, for example: "(objectClass=inetOrgPerson)" or "(objectClass=posixAccount)"

Group Specification

By specifying a group you can ensure that only users of a particular group are authorised to access TeamDrive.

Use the parameters below to to determine how to check whether a user is a member of a group.

- `$ldap_groupdn`:

  If this variable is empty, then no group check will be performed. The value of `$ldap_groupdn` is added to `$ldap_basedn` when searching for a group.

- `$ldap_groupscope`:

  The scope for group search, either `one`, `sub`,or ``base`. `sub` is the default.

- `$ldap_groupfilter`:

  This is added to the search filter when searching for a group. It usually identifies the group object type, for example: "(objectClass=groupOfUniqueNames)".

- `$ldap_group`:

  This is the name of the group to be searched. User's that wish to Login to TeamDrive must be members of this group.

- `$ldap_groupattr`:

  This variable specifies the group attribute to searched forto find the group name: `$ldap_group`.

- `$ldap_memberattr`:

  This is the attribute in the group object that specifies the names of the members.

- `$ldap_memberisdn`:

  Set this variable to `true` if the `$ldap_memberattr` is the complete distinguished name (dn) of the user. If not, it is assumed to be just the value of the the memberattr is the dn of the user (default) or the value `$ldap_userattr` attribute.

10.7 Authentication Procedure

The `ldap_login.php` (or ‘‘ldap_web_login.php‘) page generates an HTML form with standard fields to collect the user's credentials and generate the required query with it. If the authentication was successful, the PHP code of the login page generates the authentication token based on information returned from the directory server (Active Directory) and returns it to the client.

The HTML form also includes some hidden fields, which are evaluated by the TeamDrive Client. In these fields the Registration Server's name and the Provider Code are included.

The values are taken from the `$reg_server_name` and `$provider_code` settings.

```
<div id="loginFormWrapper">
        <form id="loginForm" action="ldap_login.php" method="post" enctype=
↪"multipart/form-data">
                <input type="hidden" id="td_login_page" value="login" />
                <input type="hidden" id="td_registration_server" value=
↪"TeamDriveMaster" />
                <input type="hidden" id="td_distributor_code" value="EGCO" />
```

Note: The communication between the Authentication Service and the directory service (e.g. LDAP or Active Directory) is performed without encryption by default. If these services communicate via an untrusted network, we strongly advise to enable some form of encryption, to protect against the potential eavesdropping of usernames and passwords. For example, LDAP supports encryption via SSL (LDAPS), other alternatives would be using a VPN or an SSH tunnel.

The content of the authentication token that is returned to the client is encrypted with a secret key. This key is stored in the `$token_encryption_key` parameter.

For debugging the generated query for the Active Directory, it is helpful to have the debugging information display in the browser, by setting `$ldap_enable_debug` to `true`.

Output is written to the login page, for example:

```
Logging Output:
DEBUG:AUTH: Auth::start() called.
DEBUG:AUTH: Auth::assignData() called.
DEBUG:AUTH: Auth::checkAuth() called.
DEBUG:AUTH: No login session.
DEBUG:AUTH: Auth::login() called.
DEBUG:AUTH: Loaded storage container (LDAP)
DEBUG:AUTH: Auth_Container_LDAP::fetchData() called.
DEBUG:AUTH: Auth_Container_LDAP::_connect() called.
DEBUG:AUTH: Connecting with host:port
DEBUG:AUTH: Successfully connected to server
DEBUG:AUTH: Switching to LDAP version 3
DEBUG:AUTH: Switching LDAP referrals to false
DEBUG:AUTH: Binding with credentials
DEBUG:AUTH: Binding was successful
DEBUG:AUTH: Auth_Container_LDAP::_getBaseDN() called.
DEBUG:AUTH: UTF8 encoding username for LDAPv3
DEBUG:AUTH: Searching with ldap_search and filter (&(mail=Teamdrivede2+1@gmail.com)(objectClass=user)) in dc=tdad,dc=teamdrive,dc=net
DEBUG:AUTH: User(s) found
DEBUG:AUTH: Saving attributes to Auth data in AUTH format
DEBUG:AUTH: Storing additional field: cn
DEBUG:AUTH: Storing additional field: uid
DEBUG:AUTH: Storing additional field: mail
DEBUG:AUTH: Bind as CN=teamdrivede2_1,OU=teamdrive,DC=tdad,DC=teamdrive,DC=net
DEBUG:AUTH: Bind successful
DEBUG:AUTH: Checking group membership
DEBUG:AUTH: Auth_Container_LDAP::checkGroup() called.
DEBUG:AUTH: Searching with ldap_list and filter (&(samAccountName=gp_teamdrive)(member=CN=teamdrivede2_1,OU=teamdrive,DC=tdad,DC=teamdrive
DEBUG:AUTH: User is member of group
DEBUG:AUTH: Auth_Container_LDAP::_disconnect() called.
DEBUG:AUTH: disconnecting from server
INFO:AUTH: Successful login.
DEBUG:AUTH: Auth::setAuth() called.
DEBUG:AUTH: Auth::checkAuth() called.
INFO:AUTH: Session OK.
DEBUG:AUTH: Auth::checkAuth() called.
INFO:AUTH: Session OK.
```

After the Authentication Service has confirmed the credentials of a user, an authentication token is passed to the TeamDrive client. The client then sends the token on to the registration server to complete the registration. Before the login process can be successfully completed, the registration server then verifies the authentication token by sending it to the Authentication Service.

This is done via the URL specified in the `VERIFY_AUTH_TOKEN_URL` setting (see provider settings/authservice settings/verify_auth_token_url in the *Settings* chapter of the *Reference Guide*). The page referenced by the URL is referred to as the "verification page."

Note: If you use SSL to encrypt the token verification communication between the Registration Server and the Authentication Service (by providing an URL starting with `https://` in the `VERIFY_AUTH_TOKEN_URL`), you must install properly signed SSL certificates on the Auth Service's web server — using self-signed certificates will result in an authentication failure, displaying the error message `REG SERVER EXCEPTION "-24918" ( "0" ) "Verify authentication failed: result file not found"` in the Client log file. You can use the command line tool `curl` on the Registration Server to test opening the verification page. It should not complain about `SSL certificate problem: self signed certificate` or other SSL-related problems when opening the URL. Check your SSL configuration using the service from SSL Labs: `https://www.ssllabs.com/ssltest/analyze.html` and make sure that the "Handshake Simulation" is working for current platforms and browser. The following ssl parameters for the apache web server will create an A-rating and make sure that the handshake is working for current platforms and browser:

SSLProtocol all -SSLv2 -SSLv3

SSLHonorCipherOrder on

SSLCipherSuite ECDH+AESGCM:DH+AESGCM:ECDH+AES256:DH+AES256:ECDH+AES128:DH+AES:ECDH+3DES:DH+

To complete the registration process, the registration server requires the user's ID and e-mail address. If the validation is successful, this information is sent back from the site as confirmation.

10.8 Web Portal Configuration

How to configure the TeamDrive Web Portal to use an external Authentication Service is described in the TeamDrive Web Portal Administration Guide.

Note: When an Authentication Service is used by the Web Portal, the authentication token will be verified twice: once by the Web Portal and once by the TeamDrive Agent (running in the Docker container).

10.9 TeamDrive Client Configuration

Enabling external authentication requires various settings to be adjusted using the Registration Server's Admin Console. For more information, see external authentication and/or settingsChapter in the *Reference Guide*.

Log in as the user that has the privileges to modify your provider settings.

Under "Edit Provider Settings" the following parameters need to be set. Add the setting `AUTHSERVICE/USE_AUTH_SERVICE` and set `USE_AUTH_SERVICE` to **True**.

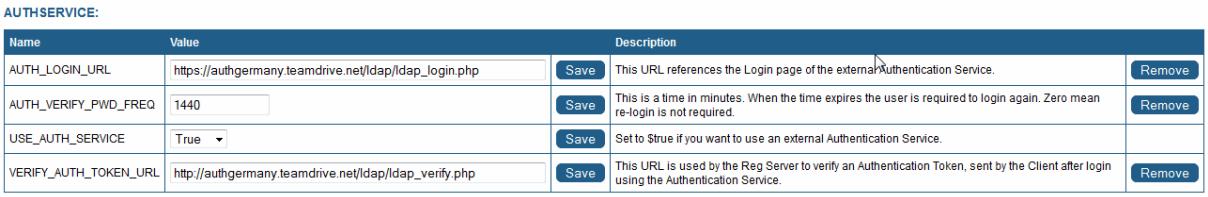
The `AUTH_LOGIN_URL` must hold the URL of the webpage that handles Authentication. This page is the so called "Web-Login-Panel" and will be displayed to the user in the TeamDrive Client.

Set `AUTH_LOGIN_URL` to the Authentication Service's login URL, e.g. `http://authserver.yourdomain.com/authservice/ldap/ldap_login.php`.

Set `VERIFY_AUTH_TOKEN_URL` to the Authentication Service's token verification URL, e.g. `http://authserver.yourdomain.com/authservice/ldap/ldap_verify.php`.

Now the TeamDrive Client needs to be informed to use external Authentication Service for this Provider. In the Provider Settings, set `CLIENT/PRE_LOGIN_SETTINGS` as follows:

```
enable-login=false
enable-lost-password=false
enable-registration=false
enable-web-login=true
```



AUTHSERVICE:

Name	Value		Description	
AUTH_LOGIN_URL	https://authgermany.teamdrive.net/ldap/ldap_login.php	Save	This URL references the Login page of the external Authentication Service.	Remove
AUTH_VERIFY_PWD_FREQ	1440	Save	This is a time in minutes. When the time expires the user is required to login again. Zero mean re-login is not required.	Remove
USE_AUTH_SERVICE	True	Save	Set to $true if you want to use an external Authentication Service.	
VERIFY_AUTH_TOKEN_URL	http://authgermany.teamdrive.net/ldap/ldap_verify.php	Save	This URL is used by the Reg Server to verify an Authentication Token, sent by the Client after login using the Authentication Service.	Remove

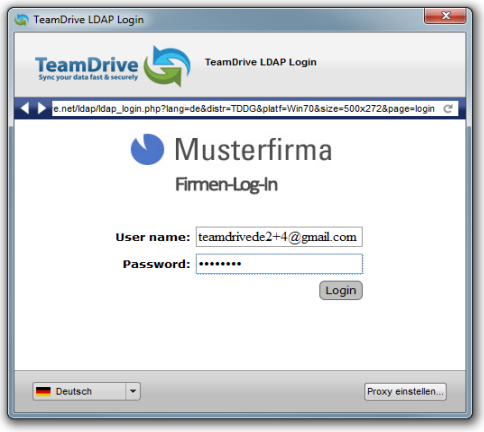
The web-login-panel will be displayed if the "`enable-web-login`" setting is set to "`true`" or "`default`" (see provider concept/login and registration settings/enable-web-login in the *Reference Guide*).

If the standard-login panel is also activated (see provider concept/login and registration settings/enable-login in the *Reference Guide*), `enable-web-login` should be set to `default`. This ensures that when the client is started, the Web-Login-Panel is shown to the user (as opposed to the Standard-login-panel).

The TeamDrive Client now calls the alternative login page within an embedded browser.

When logging in, AD users must enter their e-mail address (as opposed to their username) into the username field.

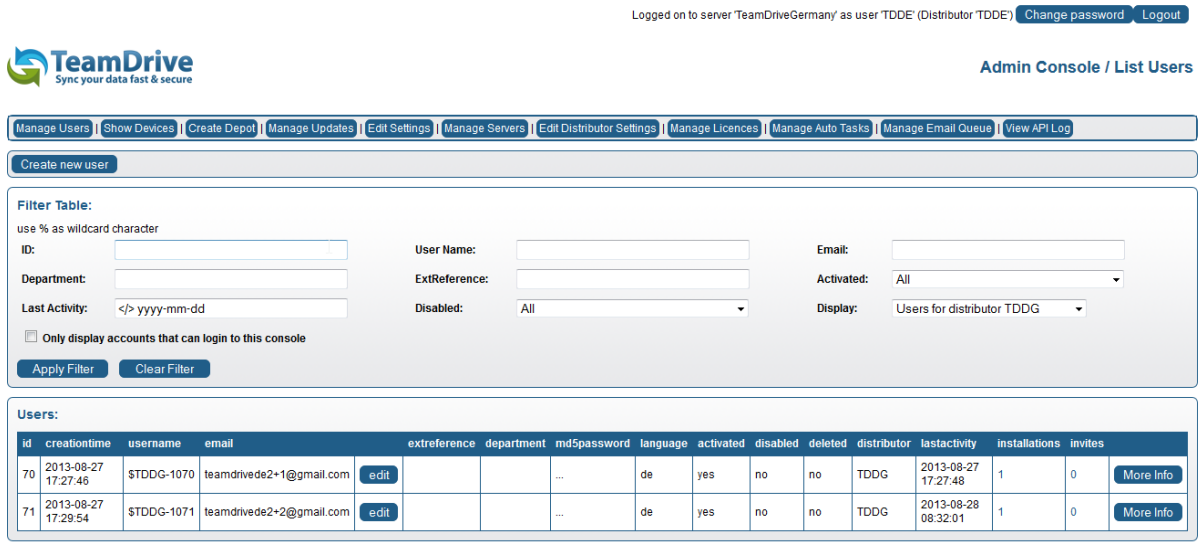
Finally, set `CLIENT/USE_EMAIL_AS_REFERENCE` to `True`, so API requests to the Registration Server can be performed using the e-mail address instead of the (dynmically generated) username. (see provider settings/client settings/use_email_as_reference in the *Reference Guide*)



CLIENT

Name	Value		Description	
ALLOWED_DIST_CODES	*	Save	Permitted client Distributor Codes (besides TicketPrefix). '*' means accept all, '*.' means all on this Reg Server (multiple entries separated by ',').	
CLIENT_NETWORKS		Save	Networks (CIDR notation) or IP addresses that correspond to this Distributor (multiple settings must each be placed on a new line).	
CLIENT_SETTINGS	enable-login=false enable-web-login=true enable-registration=false enable-web-registration=false enable-lost-password=false	Save	Client settings which are applied after login (multiple settings must each be placed on a new line).	
DEFAULT_FREE_FEATURE	3	Save	Default feature which will be used to create a default license.	
FREE_LIMIT_SIZE	2147483648	Save	The free limit of a client. Should be identical to HOST_DEPOT_SIZE, but it's not mandatory.	Remove
PRE_LOGIN_SETTINGS	enable-login=false enable-web-login=true enable-registration=false enable-web-registration=false enable-lost-password=false	Save	Client settings which are applied before login (multiple settings must each be placed on a new line).	
USE_EMAIL_AS_REFERENCE	True	Save	In case that the email address will be used to identify the account, an username will be generated automatically in the API.	

Upon successful first authentication, the user will be automatically created on the Registration Server. The user can then be managed through the Registration Server's Management Console under the "Manage Users" tab.



For more information about managing users, see *Managing Users* (page 9).

CHAPTER

ELEVEN

CONFIGURING AND TESTING THE MYSQL DATABASE CONNECTIONS

11.1 Configuring the Registration Server's MySQL configuration

If the username, password or host name to connect to the MySQL database server have been changed from the installation defaults, you need to update the login credentials used by the Registration Server's Yvva Runtime Environment.

To change the MySQL login credentials for the Registration Server's database connections, open the file `/etc/td-regserver.my.cnf` in a text editor.

The `user` field identifies the user name, while the `password` field contains the MySQL user's password in plain text:

```
#
# This configuration file defines the MySQL login credentials (e.g. username,
# password, host name) used by the TeamDrive Registration Server Apache module
# (mod_yvva), the TeamDrive Registration Server Auto Tasks (service
# td-regserver) and (optionally) the PHP-based TeamDrive Registration Server
# Admin Console. You need to restart httpd and the TeamDrive Registration
# Server background process after making changes to this file.
#

[regdb]
database=td2reg
user=teamdrive
password=teamdrive
host=localhost
socket=/var/lib/mysql/mysql.sock
```

Note: Please note that this file contains the MySQL login credentials in plain text. Make sure to restrict the access permissions to this file so that only the root user and the Apache HTTP Server (`mod_yvva` in particular) can open this file. The file ownerships should be set to `apache:apache`, the file permissions should be set to "600".

After making changes to the credentials, you have to restart the Apache HTTP Server and the `td-regserver` background service.

If you're seeing any errors at this stage, please consult the chapter troubleshooting for guidance. Double check that the MySQL login credentials are correct. Also try to connect to the MySQL database using these values from the `mysql` command line client.

11.2 Administration Console MySQL Configuration

In order to being able to manage the Registration Server, the PHP-based Administration Console needs to be able to connect to the Registration Server's MySQL Database.

By default, the Administration Console uses the same configuration file as the Registration Server (`/etc/td-regserver.my.cnf`), so any changes made in this file also apply to the Administration Console, if it's located on the same host as the actual Registration Server.

The location of the MySQL configuration file is specified in the configuration file `/var/www/html/tdlibs/globals.php`. The distribution ships with an example configuration file `/var/www/html/tdlibs/globals-sample.php` — just copy it to `globals.php` and modify it to match your environment:

```
<?php
  /*
   * This file specifies how the TeamDrive Registration Server
   * Adminstration Console connects to the MySQL database.
   *
   * Please change these settings to suit your environment, and then
   * save this file as "globals.php"
   */

  /*
   * Specify a path to a local MySQL configuration file (default).
   * If found, these values override any settings provided in $dsn2import
   * below.
   *
   * The file should look as follows (MySQL INI-style format):
   *
   * [regdb]
   * database=td2reg
   * user=teamdrive
   * password=teamdrive
   * host=localhost
   */
   $mysqlConfigFile = '/etc/td-regserver.my.cnf';

  /*
   * Alternatively, enter the connection string to connect the MySQL database.
   * Use this option if the Admin Console is installed on a separate host and
   * there's no TeamDrive specific MySQL configuration file
   *
   * The format is: mysql://<username>:<password>@<host>/<database>
   */
   //$dsn2import = 'mysql://teamdrive:teamdrive@127.0.0.1/td2reg';
?>
```

As an alternative to providing the location of a MySQL configuration file (e.g. when installing the Administration Console on a different host), you can define the username, password and hostname required to connect to the MySQL database server in `globals.php` directly, by commenting out the `$mysqlConfigFile` variable and updating the connection string in the variable `$dsn2import` accordingly:

```
$dsn2import = 'mysql://teamdrive:teamdrive@127.0.0.1/td2reg';
```

The format is `mysql://<username>:<password>@<hostname>/databasename`. The database name usually does not need to be modified (`td2reg` is the default name).

The file must be readable by the user that the Apache HTTP Server is running under, usually `apache`, but should otherwise be protected against unauthorized viewing (e.g. by setting the file ownerships to `apache:apache` and the access privileges to `600`).

CHAPTER

TWELVE

REGISTRATION SERVER HOW TO'S

This chapter covers a number of common tasks that you may want to or need to perform with the Regisration Server.

12.1 Configuring a Default License

A default license is generated for each user on registration. The features of this license are determined by the Provider setting `LICENSE/DEFAULT_FREE_FEATURE` (see provider settings/license settings/default_free_feature). In this way, individual default licenses can be generate for users, each with the specified features.

Alternatively, it is possible to create a single license which is to be used as a default for multiple users. To do this, first create the license using the Admin Console (see *Creating Licences* (page 25)).

Then set the Provider setting `LICENSE/DEFAULT_LICENSEKEY` to the key of the newly created license. Note that you will must ensure that the "License size" (number of users) is sufficiently high to cover the number of users that will register and use the license.

12.2 Changing the Default Depot Size

A default Depot for storage of Space data, may be created for a user on registration. For this purpose, a Hosting Service must be connected to the Registration Server. If this is the case, then you will be able to set the `HOSTSERVER/HOST_SERVER_NAME` Provider setting by selecting the Hosting Service from a popup menu.

The default size of the Depot is specified using the `HOST_DEPOT_SIZE` setting. By default, this value is 2 GB.

If you change this value then, for TeamDrive 3 users, you should also change the `CLIENT/FREE_LIMIT_SIZE` setting to the same value.

TeamDrive 3 clients limit the amount of data that will be processed by the Client when not using a Personal or Professional license. This means that if you do not increase `FREE_LIMIT_SIZE` in accordance with the *HOST_DEPOT_SIZE* value, users will not be able to use all the disk space available in the default Depot.

12.3 Setting up a Master User

A master user is a user that is automatically invited to all Spaces of users of a Provider. This has a number advantages, for example:

- All Spaces keys used by users can be collected as a backup, in case the keys are lost.
- It creates a central repository where an Administrator can enter any Space used by any of the users.

A disadvantage is that anyone with access to the Master User account has access to all Spaces.

You create a master user by setting the `master-user` client setting to the username of the master user. The value must be set in the `CLIENT/CLIENT_SETTINGS` Provider setting (see provider settings/client settings/client_settings). This user will now be automatically invited to all Spaces with the "Master User" rights.

It is now possible to install a TeamDrive client, login as the master user and setup the client to automatically accept invitations sent to it. This can be done by setting the client setting `auto-accept-invitation` to `true`.

Do not set this setting in the `CLIENT_SETTINGS` Provider setting as this would mean that users, in general, will loose control of how they wish to handle Space invitations. Instead, it is possible to set this setting in a local configuration file, so that it only applies to the master user installation.

This is the "/Users/Shared/teamdrive.ini" file on Mac OS X, "/etc/teamdrive.ini" on Linux and "%ProgramData%/TeamDrive3/teamdrive.ini" (usually "C:\ProgramData\TeamDrive3\teamdrive.ini") on Windows.

When run on a machine that is "always on" (i.e. a server) this will ensure that all invitations are received when sent to the master user from other clients.

The behaviour, whether files are downloaded directly after accepting the invitation, or just the "meta-data" of the Space, is determined by the `auto-accept-invitation-mode` client setting. This can be set to one of the following values: `non-offline-available`, `offline-available` or `archived`. The default is `archived`, which means the Space key is stored, and the Space will be marked as "Inactive". The Space can then be activated manually at a later stage.

12.4 Using a "Restricted" Client License Model

The Restrict License Model is intended to provide users with a limited but free version of TeamDrive. For this reason a restricted license is usually set to be the default license which a user receives on first time registration.

Note: The Restricted Client License Model is only supported by TeamDrive 4 Clients.

A restricted license tells the TeamDrive Client that certain restrictions apply. Currently this may only be a restriction to the number of Space that may be active at any one time.

To setup a Restricted Client License Model, do the following:

Set the Provider setting `DEFAULT_FREE_FEATURE` to 24. See provider settings/license settings/default_free_feature for details in this setting. Setting `DEFAULT_FREE_FEATURE` to 24 causes default licenses to be created with the "Professional" and "Restricted Client" feature bits.

Ensure that the setting `DEFAULT_LICENSEKEY` is blank.

Then add the client setting `active-spaces-limit=1` to the `CLIENT/CLIENT_SETTINGS` Provider setting. You may set `active-spaces-limit` to a value greater than one to allow the free license user to have more current active Spaces.

The `active-spaces-limit` setting only has an effect if the "Restricted Client" feature bit is set on the user's license. This means that users with a standard Professional License (that have just the "Professional" feature bit set) are not effected by this limitation.

In order to upgrade such a user to the a standard Professional License you can either remove the Restricted Client" feature bit manually in the Admin Console, or it can be done using the "downgradedefaultlicense" API call (see downgradedefaultlicenseRef), which can be used to remove features from a license.

12.5 How to Restrict Device Registration

As a Provider you may wish to restrict the creation of new TeamDrive installations by your users. For example, the users of a certain Provider may be prevented from using private devices, in order to control the proliferation of company data.

In order to do this, you can configure the Registration Server require manual approval for every new device registration.

First set the `AllowActivationWithoutEmail` Registration Server setting to `False`. This will ensure that all new installations require activation before they can be used.

Now alter the "reg-activationlink" email template for your Provider. Remove the activation link in the email and replace it with a notification to contact the Registration Server Administrator. As Administrator it is then possible to perform manual activation for the users new device in the Admin Console.

Note: Since `AllowActivationWithoutEmail` is a global setting it effects all users of the Registration Server. Users of Providers that are not restricted are able to activated new devices themselves by clicking on the link in the "reg-activationlink" email.

12.6 How to Setup Two-Factor Authentication

The Reg Server version 3.6 supports two-factor authentication (2FA) using the Google Authenticator App (https://support.google.com/accounts/answer/1066447?hl=en).

You can enable the use of 2FA for a particular Provider by setting `USE_AUTH_SERVICE` to `True`. You must then add the following settings to `CLIENT/PRE_LOGIN_SETTINGS`:

```
enable-login=false
enable-web-login=true
```

This will ensure that the user is directed to the "external" (web-based) login page when logging in to the TeamDrive Client.

The external pages use templates stored by the Registration Server and can be modified for each Provider. Use the Admin Console to upload customised versions of the pages for your users as described in *Manage HTML Templates* (page 29)

Two-factor authentication must be activated individually by each user by entering the following URL in a Web-browser:

```
https://regserver.yourdomain.com/pbas/td2as/int/setup-2fa.html
```

In the future, a link to this page will be made available directly in the client application. Follow the instructions for downloading the Google Authenticator App and activating the 2FA functionality.

Two-factor authentication can also be configured to work with the TeamDrive Web Portal. Following the instructions on how to do this provided by the Web Portal documentation.

Web-Portal users must use the `/portal/setup-2fa.html` page to setup two-factor authentication.

Note that, since the Register Server external authentication pages do not yet support LDAP or Active Directory, it is not possible to use two-factor authentication in combination with LDAP or any other external authentication service.

CHAPTER

THIRTEEN

AUTO TASKS

There are a number of background jobs that are performed by the Yvva-based `td-regserver` service.

You can review and manage them via the Registration Server Administration Console by clicking **Server Management -> Manage Auto Tasks**. See *Manage Auto Tasks* (page 38) for details.

The overall frequency of how often the background service will wake up can be changed by modifying the setting `repeat` in file `/etc/td-regserver.conf`. The default value is 10 seconds.

Note that the frequency of the individual tasks can be defined differently, by changing each task's **Frequency** setting (if required).

13.1 "Send Emails" Task

This process sends out email notifications generated by actions from the Team Drive Clients and Registration Server (e.g. device activation or Space invitation messages, license expiry reminders), which are queued in the Registration Server's internal email queue.

13.2 "Delete Old Messages" Task

Messages not retrieved by Clients will be deleted from the Registration Server's internal message queues after the period defined in the Registration Server settings `<InvitationStoragePeriod>` (e.g. invitations and other client messages, store-forward invitations) and `<InvitationStoragePeriodFD>` (invitations for future devices).

See registration server settings and teamdrive client-server interaction/messages, invitations & invitation types for details on these settings and the various message types.

13.3 "Delete Client IPs" Task

For privacy/data protection reasons, this task removes the Client IP addresses from the Devices table according to the value of `<StoreRegistrationDeviceIPinSeconds>` as described in registration server settings.

13.4 "Update RegServer-List" Task

If TDNS access is active, this task will poll the TeamDrive Master Registration Server to retrieve a list of all Registration Servers within the TDNS network.

Users registered on your Registration Server can only invite users from white listed Registration Servers to their Spaces.

By default, this task will be performed every 12 hours.

The automatic white listing of servers depends on the setting `<TDNSAutoWhiteList>`.

- If set to `True`, new Registration Servers will be automatically white listed.
- If set to `False` you have to enabled each Registration Server manually, using the **Manage Servers** page of the Administration Console.

13.5 "CleanUp" Task

If API logging is enabled (the Provider setting `API_REQUEST_LOGGING` is set to `True`), each API request is logged in a database table. On a busy server, these log entries can significantly increase the size of the Registration Server's database over time.

Enabling this task will remove entries from the API log table, if they are older than 30 days. This task is disabled by default.

13.6 "Expire Licenses" Task

If you issue licenses with an expiration date (e.g. by issuing trial licenses or by entering a date in the **Valid until** field manually), this task takes care of sending out reminder emails to the license's user(s), informing them about the upcoming expiration. Once the expiration date has been reached, the license will be invalidated and the user's TeamDrive clients will fall back to their default license.

13.7 "CSV Import" Task

Enable this task if you want to manage your users by importing the user names and other details from an external source via a CSV file. This auto task will perform the import on a periodic basis. See *Importing User Accounts via CSV Files* (page 43) for details on how to accomplish this.

13.8 "Delete Providers" Task

This task deletes Providers that have been marked for deletion.

13.9 "Send Notifications" Task

Send notifications of user change events that could not be sent synchronously.

Further details are provided in the chapter user_change_notifications.

CHAPTER

FOURTEEN

CLIENT LOG FILES

TeamDrive clients can upload support requests / bug reports to the Registration Server. To configure this, install the log upload script included in the TeamDrive Registration Server installation package (see Installing the Registration Server client log upload) and change the `RegServer/LogUploadURL` setting to `http://<your-registration-server>/upload/upload.php`

Uploaded log files and bug reports can then be viewed from the `Manage Clients / Download Client Log Files` page.

CHAPTER

FIFTEEN

UPGRADING THE TEAMDRIVE REGISTRATION SERVER

15.1 General Upgrade Notes

There are two basic approaches to updating a TeamDrive Registration Server: **in-place**, by replacing the software with a newer version on the live system, or starting a **new instance and migrating the configuration** and data (MySQL Database and configuration files) to the new instance.

For older installations, performing a migration to a freshly installed instance might be the better approach, to get rid of accumulated "cruft" and to start from a clean slate.

In case the current system is still running a 32-bit installation, moving to a 64-bit system is **required**, as newer versions of the Registration Server **no longer support 32-bit environments**.

In case the current system uses a Linux OS other than Red Hat Enterprise Linux 6 or a derivative like Cent OS 6, Oracle Linux 6, Scientific Linux 6 or Amazon Linux, you **must** perform the upgrade by starting a new instance and migrating the configuration as outlined in *Moving an Older Installation to a Newly Installed Instance* (page 85).

Updating requires a brief service interruption, as the Registration Server components (e.g. the Apache HTTP Server) need to be stopped while the update is in progress. Short downtimes usually pass unnoticed by the TeamDrive Clients, they will simply try again after a short waiting period. Local Client operations can continue.

The Registration Server-specific MySQL Databases and local configuration files and templates are the crucial pieces of data that need to be preserved during updates. Take backups prior to performing an update and *verify they worked correctly*. In case of an in-place upgrade, the databases and most configuration files can be taken over "as is". When performing a migration to a new instance, the databases and supporting files need to be copied or moved to the new host.

Updates between different Registration Server major versions (e.g. from 3.0.017 to 3.0.018) may require changes to the MySQL table structures.

These changes need to be applied manually prior to starting the services after updating. Reversing these changes (e.g. reverting to the previous database version) requires going back to the previous backup, there is **no automatic roll-back of changes to the database/table structures**.

Starting with version 3.0.018, updates to a new build (e.g. from 3.0.018.0 to 3.0.018.1) can be performed using yum/RPM. Updating from older major versions (e.g. 3.0.017 or 3.0.015) requires manual intervention, as the installations were performed without automatic package management.

15.2 Upgrading Version 3.5.0 or Later to a Newer Build

Note: To enable the 3.6 TeamDrive Registration Server yum repository, you need to download the updated `td-regserver.repo` file and place it into the directory `/etc/yum.repos.d/`, e.g. by using `wget`:

```
[root@regserver ~]# wget -O /etc/yum.repos.d/td-regserver.repo http://repo.
↪teamdrive.net/td-regserver.repo
```

The use of RPM packages makes updating within a major version from one build to another (e.g. from 3.5.0 to 3.5.1 or 3.6.0 to 3.6.1) a fairly straightforward and automatic process.

Usually, you can simply replace the existing packages while the service is running. The update performs an immediate restart of the services (`httpd` and `td-regserver` automatically):

[root@regserver ~]# yum update td-regserver td-regserver-adminconsole yvva

The admin console of version 3.6 requires the pear package "HTTP2". Please install it with:

```
[root\@regserver ~]# pear install HTTP2
```

Check the chapter releasenotes-3.6.0 for the changes introduced in each build.

To update the database from 3.5.x to 3.6 please follow the steps below *Update the database using a browser* (page 83) or *Update the database using the linux shell* (page 83)

15.3 In-place Upgrading from 3.0.018 to 3.5.0 or later

These instructions assume a default installation of the TeamDrive Registration Server (version 3.0.018) on RHEL6 or a derivative distribution like CentOS 6 (64-bit) that was set up based on the Registration Server installation instructions or using the TeamDrive Registration Server Virtual Appliance for VMware. They further assume that the MySQL database and Administration Console run locally as well.

The overall procedure is similar in all cases — we'll remove the old software components while retaining the MySQL databases and configuration files, install the current versions of the Registration Server RPM packages and and manually migrate a few configuration settings by performing the following steps:

- Stop the Apache HTTP Server and PrimeBase processes (PBAC)
- Perform a backup of the Registration Server's MySQL Databases and support files
- Remove the PrimeBase Application Environment and related files
- Remove old Apache modules
- Install the new Registration Server RPM package `td-regserver`
- Review/update the configuration files, remove backup configuration files after merging the settings
- Perform necessary conversions of the MySQL table structures
- Review/update the email templates
- Start the TeamDrive Registration Server background service and Apache http Server, check the log files for any errors
- Test the new setup with a local test client before allowing all user Clients to connect to the new instance again

The following paragraphs explain these steps in more detail.

15.3.1 Stop the TeamDrive Services

As a first step, the currently running TeamDrive Registration Server needs to be shut down. If you have any monitoring services that send out alerts for system outages, you might want to disable these beforehand. If your Registration Server is behind a load balancer or firewall, it might make sense to block incoming Client connections from there, too. This prevents unwanted accesses while you are still working on bringing up the updated instance.

Start by stopping the Apache HTTP Server:

```
[root@regserver ~]# service httpd stop
```

Next, stop the Registration Server background tasks:

```
[root@regserver ~]# pbctl stop
```

Use `pbctl status` to check that the services have been stopped (their `Status` needs to be `Stopped`) and `ps` or `pstree` to double check that there are no stray `httpd`, `pbeas`, `ase`, `pbas`, `pbac` or `smm` processes running. Use `kill <pid>` or `pkill <name>` to terminate these, if they don't disappear shortly after you issued the stop commands.

15.3.2 Create a MySQL Backup

After all TeamDrive Services have been stopped, you should now create a backup of the MySQL databases, e.g. using `mysqldump`:

```
[root@regserver ~]# mysqldump -u root -p --force \
--databases td2apilog td2reg \
| gzip > td-regserver-mysql-$(date +%Y-%m-%d_%H.%M).sql.gz
```

15.3.3 Backup the old Installation and Configuration Files

Next, create a backup the old PrimeBase Application Environment, Apache Modules and config files, if you don't have a full system backup already (e.g. a VM snapshot) that you could revert to in case of issues.

Note that some of these files might not exist on your local installation. The following sample shell script will skip these and add all existing ones to a backup tar archive named `td-regserver-backup-YYYY-MM-DD.tar.gz` in the current directory:

```
#!/bin/sh
BACKUP="td-regserver-backup-$(date +%Y-%m-%d).tar"

FILES="
/etc/httpd/conf.d/adminconsole.conf
/etc/httpd/conf.d/fastcgi.conf
/etc/httpd/conf.d/pbt.conf
/etc/httpd/conf.d/ssl.conf
/etc/httpd/conf/httpd.conf
/etc/httpd/modules/mod_pbt*.so
/etc/httpd/myssl
/etc/init.d/primebase.boot
/etc/logrotate.d/teamdrive
/etc/php.ini
/etc/php-fpm.d/www.conf
/etc/primebase
/etc/profile.d/custom.csh
/etc/profile.d/custom.sh
/etc/profile.d/primebase.sh
/etc/profile.d/teamdrive.sh
/etc/sysconfig/httpd
/usr/local/lib
/usr/local/lib64
/usr/local/primebase
/var/www/html/activation
/var/www/html/adminconsole"
for a in $FILES
do
  if [ -e $a ]
  then
      tar rvf $BACKUP $a
  fi
```

```
done
gzip $BACKUP
```

15.3.4 Review and save values from Configuration File

Before starting the upgrade, please copy a few existing settings. They are stored in a binary file and could not be extracted later on after the old Primebase components are removed. As described in the documentation for version 3.0.018:

http://docs.teamdrive.net/RegServer/3.0.018.8/html/TeamDrive-Registration-Server-Admin-Guide-en/Upgrading.html#review-configuration-files

use the tool `pbee` (PrimeBase Environment File Editor) to review and copy the values from the following settings to store them later on in the admin console after the update:

```
240    Mail Server Address            <SMTP Server hostname>
243    Email Sender Address           <you@yourdomain.com>
244    Host Name                      <reg server hostname>
```

Leave the tool `pbee` with the command `quit`

15.3.5 Install the new Registration Server Software

The TeamDrive Registration Server components are available in the form of RPM packages, hosted in a dedicated `yum` repository. This makes the installation and applying of future updates very easy — you can simply run `yum update` to keep your Registration Server software up to date.

Note: Please just follow the steps that describe the software installation! The MySQL user and databases have been created already, so there is no need to perform these steps again.

To enable the 3.5 TeamDrive Registration Server yum repository, you need to download the updated `td-regserver.repo` file and place it into the directory `/etc/yum.repos.d/`, e.g. by using `wget`:

```
[root@regserver ~]# wget -O /etc/yum.repos.d/td-regserver.repo \
http://repo.teamdrive.net/td-regserver.repo
```

Now you can simply update the installed packages by entering:

```
[root@regserver ~]# yum update td-regserver td-regserver-adminconsole \
PrimeBase_TD
```

The update removes the old primebase components in `/usr/local/primebase` but will keep your mail templates in the path `/usr/local/primebase/setup/scripts/template/`. They will be imported to the database later on in the update process.

Removing the old primebase components might require additional changes in the configuration. If you used the default teamdrive user and the default password for the mysql database connection, the update will automatically create a new connection definition using the default values. Please change the mysql user and password in the file `/etc/td-regserver.my.cnf` in case that you dont use the defaults.

As described in the Release Notes 3.5 the Apache HTTP Server no longer requires to be configured using the "worker" MPM, which simplifies the overall installation and configuration of the base operating system and allows for using the PHP Apache module instead of the FastCGI implementation for the Administration Console. Please remove the FastCGI module with:

```
[root@regserver ~]# yum remove php-fpm
```

Please disable using the "worker" MPM in the file:

/etc/sysconfig/httpd

and comment out the line:

```
HTTPD=/usr/sbin/httpd.worker
```

to:

```
#HTTPD=/usr/sbin/httpd.worker
```

In order to facilitate access to the Registration Server's API and update screens via SSL, the following needs to be added to the end of the default `<VirtualHost>` section in `/etc/httpd/conf.d/ssl.conf`:

```
#   Per-Server Logging:
#   The home of a custom SSL log file. Use this when you want a
#   compact non-error SSL logfile on a virtual host basis.
CustomLog logs/ssl_request_log \
          "%t %h %{SSL_PROTOCOL}x %{SSL_CIPHER}x \"%r\" %b"

Include conf.d/td-regserver.httpd.conf.ssl
</VirtualHost>
```

Proceed with the database update step. This could be done using a web browser or the linux shell. For using a web browser you have to start the apache server again, but you have to make sure, that no client could connect during the database update.

To be safe we recommend using the linux shell.

15.3.6 Update the database using a browser

Start the apache again:

```
[root@regserver ~]# service httpd start
```

and follow the update process in the web interface:

https://regserver.yourdomain.com/setup/

Please restart the apache after the successfull update:

```
[root@regserver ~]# service httpd restart
```

and make sure, that all other necessary services will be started as described in chapter startingstoppingcomponents

15.3.7 Update the database using the linux shell

To view the databases changes and start the database update use the command:

```
[root@regserver ~]# yvva
```

The upgrade commands will be listed:

```
UPGRADE COMMANDS:
-----------------
To upgrade from the command line, execute:
yvva --call=upgrade_now --config-file="/etc/yvva.conf"

print_changes;;
Print a list of changes will be performed when you run 'upgrade_now'.

upgrade_now;;
Perform upgrade changes to the database (this command cannot be undone).
```

Type in `print_changes;;` to view the list of changes and start the update with `upgrade_now;;`.

You will get the output:

```
Upgrade in progress...

Upgrade completed successfully.
```

Exit yvva with `quit`.

15.3.8 Review Configuration Files

During installation, RPM may detect that some local configuration files differ from the ones to be installed. Instead of overwriting these, RPM will create the distribution's default configuration files as `<filename>.rpmnew`. Carefully review the differences and manually migrate any relevant changes to the new files before renaming them to their original file names, which will overwrite the previous versions.

15.3.9 Update the MySQL Configuration

Review the content of the `/etc/my.cnf` configuration file. In particular, make sure that the option `max_allowed_packet` and `max_connections` is included in the `[mysqld]` option group and is set to:

```
[mysqld]
max_allowed_packet=2M
max_connections=512
```

The max_allowed_packet value is necessary for Registration Server Version 3.5.0 and later, to support the upload of user profile data by Clients that support this feature.

The max_connections=512 is the minimum value. It might be necessary to increase the value on your system depending on how many clients are connected to your server.

15.3.10 Start the Registration Server Components

Now start the TeamDrive Registration Server background service:

```
[root@regserver ~]# service td-regserver start
Starting TeamDrive Registration Server Auto Tasks:          [  OK  ]
```

Check the log file for any errors:

```
[root@regserver ~]# less /var/log/td-regserver.log
```

Next, start the Apache HTTP Server if not already done above:

```
[root@regserver ~]# service httpd start
Starting httpd:                                             [  OK  ]
```

Check the log files for any errors:

```
[root@regserver ~]# less /var/log/httpd/error_log
```

In case of any errors, check the chapter troubleshooting for guidance.

15.3.11 Log into the Administration Console

Clear your browser cache before accessing the admin console. Set the above email configuration values in the admin console in **Server Management –> Registration Server Settings –> Email**. The old values must be stored in these new fields:

```
Mail Server Address --> SMTPServer
Mail Server Timeout --> SMTPServerTimeOut
Email Sender Address --> MailSenderEmail
Host Name --> MailSenderHost
```

Check other new values in the provider settings section. Former global server settings are now provider specific settings. A full list of all settings could be found in the chapter settingsChapter

15.3.12 Mail templates

The name of the mail templates beginning with "`td3-`" in the file name changed:

"`td3-privacyinvited-email-utf8`" to "`inv-email-invited`"

"`td3-privacyinvitedsecure-email-utf8`" to "`inv-email-invited-passwd`"

"`td3-privacyinvited-user-utf8`" to "`inv-user-invited`"

"`td3-privacyinvitedsecure-user-utf8`" to "`inv-user-invited-passwd`"

Please check the imported mail templates in the admin console in Manage Templates and customize new email templates for your provider(s).

Please delete the old path `/usr/local/primebase/` using the command:

```
[root@regserver ~]# /bin/rm /usr/local/primebase/ -R
```

15.3.13 Enable the TeamDrive Registration Server at System Boot

If the update was successful and the service is up and running, make sure they get started automatically when the system reboots:

```
[root@regserver ~]# chkconfig | grep td-regserver
td-regserver          0:off   1:off   2:off   3:off   4:off   5:off   6:off
[root@regserver ~]# chkconfig td-regserver on
[root@regserver ~]# chkconfig | grep td-regserver
td-regserver          0:off   1:off   2:on    3:on    4:on    5:on    6:off
[root@regserver ~]# chkconfig | grep httpd
httpd                 0:off   1:off   2:on    3:on    4:on    5:on    6:off
```

15.4 Moving an Older Installation to a Newly Installed Instance

Please contact TeamDrive Systems for further information.

CHAPTER

SIXTEEN

TROUBLESHOOTING

16.1 List of relevant configuration files

/etc/httpd/conf.d/td-regserver.httpd.conf: This configuration file loads and enables the TeamDrive Registration Server-specific Apache module `mod_yvva.so`. This Apache module is responsible for providing the web-based Registration Server Installer and the Registration Server API.

/etc/logrotate.d/td-regserver: This file configures how the log files belonging to the TeamDrive Registration Server are being rotated. See the `logrotate(8)` manual page for details.

/etc/td-regserver.conf: This file defines how the `td-regserver` background service is started using the `yvvad` daemon.

/etc/td-regserver.my.cnf: This configuration file defines the MySQL credentials used to access the `regdb` MySQL database. It is read by the Apache module `mod_yvva`, the PHP-based Administration Console as well as the `yvvad` daemon that runs the `td-hostserver` background tasks and the `yvva` command line client.

/etc/yvva.conf: This configuration file contains configuration settings specific to the Yvva Runtime Environment that are shared by all Yvva components, namely the `mod_yyva` Apache module, the `yvvad` daemon and the `yvva` command line shell.

/var/www/html/tdlibs/globals.php: This configuration file defines the MySQL login credentials required for the TeamDrive Registration Server Administration Console.

16.2 List of relevant log files

In order to debug and analyse problems with the Registration Server configuration, there are several log files that you can consult:

- `/var/log/td-regserver.log`: The log file of the `mod_yvva` Apache module that performs the actual Registration Server functionality (e.g. Client/Server communication and API calls) and the web-based initial setup process. The amount of logging information can be defined by changing the value `YvvaSet log-level` in configuration file `/etc/httpd/conf.d/td-regserver.httpd.conf`. The following debug levels (with increasing verbosity) can be set: `error`, `warning`, `notice`, `trace` or `debug`. The default is `error`. Changing this value requires a restart of the Apache HTTP Server.

  This log file is also used by the `td-regserver` background service (managed by `yvvad`). The amount of logging information can be defined by changing the value `log-level` in configuration file `/etc/td-regserver.conf`. The following debug levels (with increasing verbosity) can be set: `error`, `warning`, `notice`, `trace` or `debug`. The default is `error`. Changing this value requires a restart of the `td-regserver` service using `service td-regserver restart`. This log file needs to be owned by the Apache user. Logging only occurs if the log file exists and is writable by the Apache user.

- `/var/log/httpd/`: The Apache HTTP Server's log files (e.g. `error_log`) might also contain additional relevant error messages that should be checked.

- `/var/log/td-adminconsole-api.log`: A log file to track API accesses from the Admin Console. The location of this log file can be configured with the Registration Server setting `RegServer/ApiLogFile` via the Admin Console. The file needs to be owned by the Apache user. Logging only occurs if this file exists and is writable by the Apache user.
- `/var/log/td-adminconsole.log`: A log file to keep track of various events on the Administration Console, e.g.
  - Failed logins
  - Failed two-factor-authentication attempts (only admin console logins, not client two-factor-authentication attempts)
  - Password changes
  - Changes to security-related Provider/Server settings (login timeouts, API access lists, etc.)
  - Modifications of user account privileges
  - Failed session validations

16.3 Enable Logging with Syslog

As outlined in list of relevant log files, the TeamDrive Registration Server logs critical errors and other notable events in various log files by default.

Starting with Registration Server version 3.5 and Yvva 1.2, it is now possible to redirect the log output of most server components to a local `syslog` instance as well.

Syslog support is an essential feature for auditing, security and/or compliance reasons, as it allows you to funnel all log messages into a centralized syslog server.

This makes it easier to monitor the logs for critical events or errors and prevents tampering with the log files in case of a security breach. It also helps to maintain control over the disk space utilization on the server, as growing log files can't accidentally fill up the file system.

To enable syslog support, the log file name in the `log-file` setting has to be replaced with the keyword `syslog`. Optionally, a custom process identifier can be supplied, by appending it to the `syslog` keyword, using a colon as the separator, e.g. `log-file=syslog:my_process_identifier`. If not used, the default process identifier will be used, which is the name of the program executable.

To enable syslog support for the Yvva-based `td-regserver` background service, edit the `log-file` setting in file `/etc/td-regserver.conf` as follows:

```
log-file=syslog:td-regserver
```

You need to restart the `td-regserver` background service via `service td-regserver restart` in order to activate this change. If the `log-level` is set to `debug` you will now see log messages appearing in `/var/log/messages`:

```
Jun 23 14:13:43 localhost td-regserver: notice: yvvad startup
Jun 23 14:13:43 localhost td-regserver: notice: Using config file:
/etc/td-regserver.conf
Jun 23 14:13:43 localhost td-regserver: notice: No listen port
Jun 23 14:13:43 localhost td-regserver: notice: yvvad running in repeat 10
(seconds) mode
```

To enable syslog support for the Registration Server Client/Server communication and API, edit the `YvvaSet log-file` setting in file `/etc/httpd/conf.d/td-regserver.httpd.conf`:

```
YvvaSet log-file=syslog
```

You need to restart the Apache HTTP Server via `service httpd restart` in order to activate this change. If the `log-level` is set to `debug` you will now see log messages appearing in `/var/log/messages`:

```
Jun 23 14:21:01 localhost mod_yvva: notice: mod_yvva 1.2.1 (May 21 2015
11:00:12) startup OK
```

To enable logging of security related Administration Console events to syslog instead of the log file `/var/log/td-adminconsole.log`, you need to change the Registration Server Setting `Security/EnableSyslog` to `True` via the Administration Console.

Click **Server Management** -> **Registration Server Settings** -> **Security** and change the **Value** for `EnableSyslog` to `True`. Click **Save** to apply the change. From this point on, security relevant events triggered via the Administration Console will be logged to `/var/log/secure`:

```
Jun 23 14:25:36 localhost td-adminconsole-log[4165]: 2015-23-06 14:25:36
[info] [/var/www/html/adminconsole/editSettings.php:38]: RegServer setting
'EnableSyslog' changed from '$false' to '$true' by user 'xxxx'
Jun 23 14:29:58 localhost td-adminconsole-log[4168]: 2015-23-06 14:29:58
[info] [/var/www/html/adminconsole/libs/auth.php:48]: Failed login for
account 'xxxx'
Jun 23 14:34:09 localhost td-adminconsole-log[4161]: 2015-23-06 14:34:09
[info] [/var/www/html/adminconsole/changePassword.php:54]: Password for
account 'xxxx' has been changed
```

16.4 Common errors

16.4.1 Web Installation: "500 Internal Server Error"

This error can be triggered by several error conditions. Check the log file `/var/log/td-regserver.log` for details.

Some common errors include:

```
[Error] -12036 (2002): Can't connect to local MySQL server through socket
'/var/lib/mysql/mysql.sock' (25)
[Error] "open TD2REG_WRITE dbms option '[regdb]';" (1)
[Error] "sql.pbt" SQL:openDBMSAndDB(387)
[Error] "startup.yv" (32)
```

The local MySQL Server's socket file can't be opened. This could either be a permission problem, or the MySQL Server is simply not available. Check that MySQL is actually up and running (e.g. by running `service mysqld status`) and restart it, if necessary. If the error persists, check the MySQL error log file (usually `/var/log/mysqld.log`) for hints.

Similarly, an error like the following one indicates that a remote MySQL Server might not be answering (e.g. because of a firewall rule or because it's not running):

```
[Error] -12036 (2003): Can't connect to MySQL server on
'mysql.yourdomain.com' (107)
[Error] "open TD2REG_WRITE dbms option '[regdb]';" (1)
[Error] "sql.pbt" SQL:openDBMSAndDB(387)
[Error] "startup.yv" (32)
```

If you see `Access denied` errors like the following one:

```
[Error] -12036 (1045): Access denied for user 'teamdrive'@'localhost' (using
password: YES)
[Error] "open TD2REG_WRITE dbms option '[regdb]';" (1)
[Error] "sql.pbt" SQL:openDBMSAndDB(387)
[Error] "startup.yv" (32)
```

Either the username or password used to connect to the MySQL Server are wrong. Double check that the MySQL username and password provided in `/etc/td-regserver.my.cnf` are correct, e.g. by trying to connect to the MySQL server using these credentials with the `mysql` command line client.

If you see the following error when connecting to a remote MySQL Server:

```
[Error] -12036 (1130): Host 'regserver.yourdomain.com' is not allowed to
connect to this MySQL server
[Error] "open TD2REG_WRITE dbms option '[regdb]';" (1)
[Error] "sql.pbt" SQL:openDBMSAndDB(387)
[Error] "startup.yv" (32)
```

Check the TeamDrive MySQL user's privileges on the remote MySQL server, e.g. by running `SHOW GRANTS FOR `teamdrive`@`regserver.yourdomain.com`;` and make sure that this user is allowed to connect to the MySQL server from the Registration Server's host.

16.4.2 Invitation emails are not being sent

If users don't receive invitation emails, there are several aspects that should be checked:

- On the Admin Console, check the "Manage Auto Tasks" page: did the task "Send Emails" succeed and was it run recently (check the value of "laststarttime"?). On the "Manage Email Queue", do you see emails with status "Failed"?
- Is the service `td-regserver` up and running? Check with `service td-regserver status` and use `service td-regserver start` to start the process. Also ensure that the service is configured to be started at system bootup time. See chapter startingstoppingcomponents for details.
- Check the `/var/log/td-regserver.log` log file for errors.
- Does sending of email work in general? Try using the `mail` utility and check your MTA logs (e.g. `/var/log/maillog`) for delivery status notifications.

16.4.3 Admin console: Error connecting to the MySQL server

If you get an error like:

```
Error connecting to the MySQL server:
MDB2 Error: connect failed
```

Verify that the MySQL Server is up and running and that the connection parameters like username and password in file `/etc/td-regserver.my.cnf` are set up correctly. See chapter Administration Console MySQL Configuration for details.

16.4.4 Admin console: API error code: -30000, message: Access denied

If some operations on the web-based Administration Console (e.g. changing a configuration option) result in an error message `API error code: -30000,message: Access denied`, the IP address of the server hosting the Administration Console host is likely not on the white list of IPs that are allowed to perform API calls.

Check the content of the Registration Server setting `API_IP_ACCESS` ("Edit Provider Settings" -> "API" -> "API_IP_ACCESS") and make sure that the external IP address of the server running the Administraton Console is included in the list. If necessary, add the missing address in a new line and click **Save**.

16.4.5 Email messages sent by the registration server show encoding issues

Invitation emails and other notifications sent out by the Registration Server are encoded as UTF-8. Before they are sent out, they are first inserted into the MySQL database before the `td-regserver` background service delivers

them to the configured MTA. If you notice encoding issues (special chars or umlauts not displayed properly), check the following:

- Double check that your templates are UTF-8 encoded. The default templates shipped with the TeamDrive Registration Server use the correct encoding, but if you're updating from previous versions, the encoding might be off.

CHAPTER

SEVENTEEN

RELEASE NOTES - VERSION 3.6

TeamDrive Registration Server version 3.6 is the next major public release following after version 3.5.

Version 3.6 of the Registration Server contains the following features and notable differences compared to version 3.5.

17.1 Installation

- The Reg Server 3.6 supports CentOS 7. RPM's are available for this version of the OS.

17.2 Registration Server Functionality

- Added the "Web Portal Access" capability bit. This bit represents user-level permission to access Web Portals. The capability bit is only used if the `ALLOW_WEB_PORTAL_ACCESS` Provider setting is set to `peruser` (see below).
- Added `ALLOW_WEB_PORTAL_ACCESS` Provider setting. This setting determined whether users are permitted to access a Web Portal or not. Possible settings are:
  - `permit`: All users are permitted to login to Web Portals (this is the default).
  - `deny`: Web Portal access is denied to all users.
  - `peruser`: Access is determined by the "Web Portal Access" capability bit.
- TeamDrive Authentication Services now includes an example of how to connect to Vasco IDENTIKEY Authentication Server. When used in conjunction with the Web Portal, Web Portal version 1.0.6 is required.
- Emails sent by the server now have a maximum size of 16 MB. Previously the limit was 64 K (REGSERVER-1131).
- Implemented support for Two-Factor Authentication using the Google Authenticator App.
- Added the `AUTH_SETUP_2FA_URL` Provider setting. This value must be set to the URL of the page used to setup two-factor authentication.

  See *How to Setup Two-Factor Authentication* (page 73) for details.
- Added `ALLOW_MAGIC_USERNAMES` Provider setting. When set to True, users of the Provider may register with usernames that match the standard "magic username" pattern.
- Added `ISOLATED_EMAIL_SCOPE` Provider setting. When set to True, the users of the Provider may use email addresses that are in use by other users, as long as the email addresses are unique for the Provider (REGSERVER-1125).
- Added the `HIDE_FROM_SEARCH` Provider setting. When set to True, this setting will prevent users from being found by a Client when doing the standard username and email address searches, during login and when inviting users to a Space (REGSERVER-1124).

- Added the `PROVIDER_DEPOT` Provider setting. This setting may be used to specify that a certain Depot should be used as default Depot for all users of a Provider (REGSERVER-1117).
- Added the `SUPPORT_EMAIL` Provider setting. This setting specifies the email address that will be notified if support content is uploaded to the Registration Server.
- Users will now receive "store forward" invitations no matter which Registration Server the invitation is located on. Previously a user had to register on the same Registration Server as the store forward message.

  A store forward invitation is created when a user invites another user via email, but the user is not yet registered.
- HTTPS is now used for all communications with a Host Server if the Provider setting API_USE_SSL_FOR_HOST is set to True.
- Added the Registration Server setting: `EmailGloballyUnique`. When set to `True` the Registration Server will check to ensure that an email address is not in use by any other Registration Server in the TeamDrive Network (REGSERVER-809).

  This value is automatically set to the same value as ''UserEmailUnique' on upgrade to version 3.6 or later.

  See registration server settings/regserver settings/emailgloballyunique for details.

17.3 Registration Server API

- Added notifications: the Registration Server can be configured to send a notification when a change is made to a user. To do this, the Provider setting `API_SEND_NOTIFICATIONS` must be set to `True`, and the setting `API_NOTIFICATION_URL` must be set to the URL that will receive the notification (TRUS-136).
- The tag `<webportal>` has been added to the API functions: "searchuser", "loginuser", "getuserdata" and "registeruser". This tag indicates whether the user is permitted to access a Web Portal.

  Note that if the Provider setting `ALLOW_WEB_PORTAL_ACCESS` is set to `permit` or `deny`, the the value returned in the `<webportal>` tag will reflect this setting, not the value of the user's Web Portal Access capability bit.

  When calling "setcapability" the `<capability>` tage may be set to the value "webportal", in order to set Web Portal Access capability bit.
- The "searchuser" API call now accepts the input tags `<distributor>`, `<reference>` and `<authid>`, which are used to search for users with specific external reference or external authentication ID. This tags can be used in addition to or in place of other search tags. The '*' search wildcard is not recognised which searching for these values.

  When search by `<authid>` the `<distributor>` will automatically be added to the search conditions (normally this is only done when you set `<onlyownusers>true</onlyownusers>`).

  Note that setting `<distributor>` to a value is other than your own Provider code is only permitted if you are the "main Provider". Web Portals working on the behalf of a Provider may also set the `<distributor>` tag accordingly.
- The "registeruser" API call now returns a `<userdata>` block with the complete details of the user.
- Client API: the client version will now be extracted from the path: "/teamdrive/clientversion", in addition to the paths used previously. Command names are case-insensitive.
- Added the Provider setting `EXT_LICENCE_REF_UNIQUE`, default `True`. If set to `False` duplicate license references are allowed (REGSERVER-1130).
- Removed the Provider setting `CLIENT_DEFAULTLICREF`. The license reference must now be provided as parameter to the API call (REGSERVER-1130).
- Updated version number of API to 1.0.007.

- The `<licensereference>` tag can now be used to specify the license in place of the `<licensenumber>` tag (REGSERVER-808). Note that the license reference must be unique for each Provider, if `EXT_LICENCE_REF_UNIQUE` is set to `True` (which is the default).
- Added the "sendtemplatemail" API call. This call can be used to sent standard template based emails to user, Providers or some other recipient (REGSERVER-1103).
- Added lookup of an Email on TDNS to the "tdnslookup" call. The result is a list of Registration Servers (REGSERVER-1113).

17.4 Administration Console

- Added "Delete Provider" Functionality (REGSERVER-1127). Deleting a Provider will delete all user, licenses and depots that belong to the Provider. If the Reg Server is connected to TDNS, the delete process will be suspended until the Provider has been removed from TDNS.
- If too many failed logins are detected for an account, further attempts are subjected to a delay that increases with the number of login attempts, up to a maximum delay of 2 minutes. The previous system of a constant 5 second delay will still be used if the account is protected by the LOGIN_IP provider setting (REGSERVER-534)
- Added an option to move spaces from one depot to another (REGSERVER-1116)
- Depot change history can be displayed on the edit-user page, when available (REGSERVER-1040)
- A users Spaces are fetched more efficiently when displaying them on the edit-user page, which solves some browser memory problems when a user has a lot of spaces. Unfortunately this also means that the list of spaces can no longer be sorted (REGSERVER-1122)
- The list of spaces on the edit-user page can now be exported as a CSV document (eg. for opening in Excel) (REGSERVER-1128)
- Users can now be added or removed from a license on the edit-license page (REGSERVER-1129)
- Changing a license owner can now be done only via the edit-license page. The function has been removed from the edit-user and license overwiew pages to avoid confusion with the 'add user to license' function (REGSERVER-1129)
- The Admin Console now displays the Host Server version number. The version number is only correctly updated with Host Server version 3.6.1 or later. Otherwise, the number displayed is the version of the original Host Server installation. Note that, in this case, the version number displayed is of the form: <major>.<minor>.**.<patch>, for example: Host Server version 3.0.011 (for example) is displayed as: 03.00.**.00011.

CHAPTER

EIGHTEEN

CHANGE LOG - VERSION 3.6

18.1 3.6.1 (2016-12-02)

- Fixed a crash that occurred when search user was called from a TeamDrive Client that is registered at a different Registration Server (REGSERVER-1161)

18.2 3.6.0 (2016-11-25)

- Initial release.
- LDAP/AD Connectivity (REGSERVER-506): The LDAP/AD external authentication reference code has been improved so that all important parameters are in one configuration file.

  The file "ldap_config.php.example" must be duplicated and renamed to "ldap_config.php" on installation. The file parameters should then be modified as required. Further instructions and a description of the parameters is provided in the "ldap_config.php" file.

CHAPTER

NINETEEN

RELEASE NOTES - VERSION 3.5

TeamDrive Registration Server version 3.5 is the next major public release following after version 3.0.018.

Note: Please note the the version numbering scheme for the Registration Server has been changed starting with version 3.5. The first two digits of the version string now identify a released version with a fixed feature set. The third digit, e.g. "3.5.1" now identifies the patch version, which increases for every public release that includes backwards-compatible bug or security fixes. A fourth digit identifies the build number and ususually remains at zero, unless a rebuild/republishing of a release based on the same code base has to be performed (e.g. to fix a build or packaging issue that has no effect on the functionality or feature set).

Version 3.5 of the Registration Server contains the following features and notable differences compared to version 3.0.018. This includes all changes made for version 3.0.019, which was an internal interim release used to deploy and test most of the new functionality described below.

19.1 Installation

- The initial configuration and initialization of a Registration Server is no longer performed by filling out the `RegServerSetup.xml` file and running the `RegServerSetup.pbt` script on the command line. Instead, a web-based setup process has been implemented, which guides the administrator through the steps involved.
- The Registration Server no longer depends on the PrimeBase Application Environment (e.g. the `mod_pbt` Apache module or the `pbac` command line client), provided by the RPM package `PrimeBase_TD` in version 3.0.018). Instead, it is now based on the Yvva Runtime Environment which is already used for the TeamDrive Host Server since version 3.0.013 and newer. The environment is provided by the `yvva` RPM package, which will automatically replace any installed `PrimeBase_TD` RPM package during an upgrade. The central log file `/var/log/td-regserver.log` is the central log location for all Yvva-based components; the previous log files (e.g. `/var/log/pbt_mod.trace`, `/var/log/pbvm.log` or `/var/log/pbac_mailer.log`) will no longer be used.
- The Apache HTTP Server configuration file for the Registration Server has been renamed from `/etc/httpd/conf.d/pbt.conf` to `/etc/httpd/conf.d/td-regserver.httpd.conf`.
- The installation no longer requires the Apache HTTP Server to be configured using the "worker" MPM, which simplifies the overall installation and configuration of the base operating system and allows for using the PHP Apache module instead of the FastCGI implementation for the Administration Console.
- The login credentials required to access the Registration Server's MySQL database server are now stored in a single configuration file `/etc/td-regserver.my.cnf`, which is consulted by all components (e.g. the Administration Console, Registration Server or the Auto Task background service).
- The background service providing the Registration Server Auto Tasks has been renamed from `teamdrive` to `td-regserver` and is now based on the `yvvad` daemon instead of the PrimeBase Application Client `pbac`. Please make sure to update any monitoring systems that check for the existence of running processes. The configuration of the `td-regserver` background service is stored in file `/etc/td-regserver.conf`.

- The PBT-based code of the Registration Server is no longer installed in the directory `/usr/local/primebase`. The content of the `td-regserver` RPM package has been restructured and relocated to the directory `/opt/teamdrive/regserver`.

19.2 Registration Server Functionality

- Added support for the new business model introduced with TeamDrive 4 Clients (e.g. full support for trial licenses with an expiration date, restricted Client functionality via Client settings).
- The CSV import of user accounts is no longer performed by a cron job running a separate PHP script anymore. Instead, there is now an additional "CSV Import" Auto Task that provides this functionality.
- Email and HTML activation page templates are no longer stored and managed in the Registration Server's file system. Instead, they are now stored in the Registration Server's database and managed via the Registration Server Administration Console. During an upgrade from a previous version, any existing template files will be imported from the file system into the database. As a result, the following server settings have have been deprecated and will be removed during an upgrade: `PathToEMailTemplates`, `ActivationURL`, `ActivationHtdocsPath`, `HTDocsDirectory`.
- The "Move Store Forward Messages" Auto Task has been removed, as it's no longer required. Store Forward invitations are now forwarded automatically, when a user activates the new account.
- Some license related provider settings have been moved from the `CLIENT` category to the more appropriate `LICENSE` category, namely `CLIENT_DEFAULTLICREF`, `DEFAULT_FREE_FEATURE` and `DEFAULT_LICENSEKEY`.
- The provider setting `API/API_USE_SSL_FOR_HOST` has been moved into the more appropriate `HOSTSERVER` category.
- A number of Registration Server Settings that used to apply to all providers hosted on a Registration Server can now be defined on the provider level. The following provider settings have been added:
  - `API/API_REQUEST_LOGGING`: Set to `True` to enable logging of API requests in the API log. The value is `False` by default.
  - `EMAIL/USE_SENDER_EMAIL`: Set to `True` if you wish to use the actual email address of the user when sending emails to unregistered users, otherwise the value of `EMAIL_SENDER_EMAIL` is always used.
  - `HOSTSERVER/AUTO_DISTRIBUTE_DEPOT`: Set to `True` if the Depot should be distributed automatically.
  - `LICENSE/ALLOW_CREATE_LICENSE`: Set to `True` to allow the creation of licenses. The value is `False` by default and can only be changed by the default provider.
  - `LICENSE/ALLOW_MANAGE_LICENSE`: Set to `True` to allow the management of existing licenses. The value is `False` by default and can only be changed by the default provider.
- Log messages and errors from the Yvva-based Registration Server components as well as the Administration Console can now be logged via `syslog` as well.

19.3 Registration Server API

Numerous enhancements and additions to the Registration Server API, to provide more functionality for integrating with external applications (e.g. web shops).

- Added API call `deletelicense`, which marks a license as "deleted". The API call `cancellicense` will set a license to "disabled" instead of "deleted" now.
- Added API call `tdnslookup`, which performs a lookup at the TeamDrive Name Service (TDNS) to find a given user's Registration Server.

- Added new functions: `deactivateuser`, `disableuser`, `enableuser`, updated API reference documentation accordingly.
- Added new function `setdepartment` to set the department reference for a user.

19.4 Administration Console

Various security and usability enhancements as well as modifications to support changes made to the Registration Server API and functionality.

19.4.1 Usability Improvements

- Re-organized the navigation for the various Administraion Console pages, ordered and grouped them in a more logical fashion.
- Error messages when making changes to the Provider or Registration Server Settings are now displayed more prominently.
- The Administration Console now prohibits the manual creation of Depot files for system accounts such as a Host Server's `tdhosting-<hostname>` user.
- The workflow of the **Create Depot** page has been reworked to be more straightforward, and will perform better validation to prevent users from different providers getting assigned to the same Depot. The form now also allows creating a depot as the default depot for the selected user. (REGSERVER-700, REGSERVER-907, REGSERVER-913)
- The login page now displays a notice to enable JavaScript if JavaScript is disabled in the user's browser. (REGSERVER-916)
- You can now filter the license table by expiry date, contract number, and holder email. The contract number and holder email have been added to the table, and the rest of the columns have been compacted slightly to create more space. (REGSERVER-885)
- Trial licenses are marked with a "Trial: <end date>" tag in the "More Details" section of the user overview table, the user editing page, and the license overview. (REGSERVER-891)
- The user overview will display 'N/A' rather than 'Free' as the user's highest license, if the user has no installations yet. (REGSERVER-904)
- Banner management: Example banner elements are now downloaded with an appropriate file name. (REGSERVER-725)
- Searching for a username on the main user list is now case insensitive when the entire username is provided. (REGSERVER-906)
- Most of the input forms on the Administration Console will automatically trim leading and trailing whitespace from text fields. (REGSERVER-912)
- Can reset/delete multiple messages in the email queue at once (REGSERVER-773)
- Can delete multiple CSV-import log files at once (REGSERVER-990)
- The email templates are sorted into categories which can be shown or hidden. Categories of templates that are not relevant (based on provider settings) are hidden by default (REGSERVER-1026)
- The create-provider dialog will only show the TDNS related fields if TDNS access is enabled in the registration server settings (REGSERVER-1032)
- Multiple spaces can be deleted at once, without requiring a complete page reload (REGSERVER-573)
- Deleted licenses are hidden by default, and can be shown by setting a filter option (REGSERVER-825)
- Merged the "LoginSecurity" server settings group into the "Security" group
- Edited some table column labels to be more descriptive (REGSERVER-1057)

19.4.2 Security Enhancements

- The Administration Console can now be configured to require two-factor authentication via email for users that want to log in. The provider-specific setting `LOGIN/LOGIN_TWO_FACTOR_AUTH` can be used to enable this feature. Two-factor authentication is disabled by default.
- A Password complexity level is now indicated when creating/changing passwords.
- Security relevant events are logged either into a local log file `/var/log/td-adminconsole.log` or via `syslog`. In particular, the following events are logged:
  - Failed logins
  - Failed two-factor authorization attempts
  - Changes to security-related Provider/Server settings (e.g. login timeouts, API access lists, etc.)
  - Password changes
  - Changes to the privileges of user accounts
  - Failed session validations
- If the account being logged into already has an active session, require a two-factor authentication step.
- Added server settings that can be used to limit the number of records that may be viewed in the console. (`SearchResultLimit`, `UserRecordLimit`, `UserRecordLimitInterval`)
- When logging in to an account that already has an active session, there is the option to immediately end existing sessions (after completing the two- factor authentication step) (REGSERVER-1036)
- The `Manage Servers` page no longer lists all servers on the TDNS network. Instead, there is an option to either enable/disable communication with all other Registration Servers, and exceptions to the chosen default need to be set by entering the exact server name. This is done so that the name of a customer's Registration Server is not automatically visible to everyone else on the TDNS network (REGSERVER-1042).

19.4.3 Added Functionality

- It is now possible to edit the list of users belonging to a Space Depot on the user editing page (REGSERVER-905). Editing of Depots (change limits, delete, activate, etc.) now takes place in a separate dialogue.
- Added a page that can be used to edit the HTML templates for web pages.
- The Administration Console now adds the `<changeinfo>` tag to the following Host Server API calls: `createDepot`, `(de)activateDepot`, and `createDepot`.
- Added functionality to resend Depot information to the user. (REGSERVER-896)
- The Administration Console now uses the Registration Server API to enable/disable/wipe user accounts. (REGSERVER-803)
- Licenses will now be marked as "deleted" with the new `deletelicense` API function. (REGSERVER-883)
- Removing a user from a license will now also remove that license from the user's devices. (REGSERVER-720)
- Licenses are edited strictly via the API, added the **Send email** button to all forms, made license type editable.
- Added support for the new API calls, added support to manage the new license feature flag "Restricted Client" (which allows to enable configurable Client-side restrictions like the maximum number of Spaces).
- Client log files and support requests can now be viewed on the "Download Client Log Files" page. The default provider can view log files for all providers. (REGSERVER-1025 and REGSERVER-1024)

- If the default provider has assigned a hostserver to another provider via the HOST_SERVER_NAME setting, the other provider will be able to create depots on that server even if the provider would not normally have access to the server

CHAPTER

TWENTY

CHANGE LOG - VERSION 3.5

20.1 3.5.9 (YYYY-MM-DD)

- Added `<showlicense>true/false</showlicense>` tag to the "searchuser" API call. When set to `true`, license information is returned in the result. This includes `<licensenumber>`, `<featurevalue>` and `<licensestatus>` tags in the `<user>` tag which indicate the current license set for the user, and the features of the license. A `<licenselist>` tag is also returned with a list of the licenses that belong to the user.

20.2 3.5.8 (2016-08-26)

Note: Version 3.5.8 will fix an error in the depot documents as described below in REGSERVER-1141. To save the successull update the file /var/opt/td-regserver/StartupCache.pbt will be updated. This might fail in case of the wrong user "root" ownership. Please correct the ownership with:

```
chown apache:apache /var/opt/td-regserver/StartupCache.pbt
```

Note: Updating the registration server on CentOS 7 with "yum update" might update the apache to a newer version. This update could re-install the deleted "conf"-files in the folder `/etc/httpd/conf.modules.d/` and will prevent starting the apache. Please follow the modified instruction to disable all modules in the "conf"-files instead of deleting them as described in configure-apache-24

- Documented additional client settings and ordered client settings alphabetically.
- Fixed the problem that email notifications, such as comments on files, to users on other Registration Servers were ignored. In future, only registered and activated users will be able to send emails. However, the sender can specify an email address instead of a username, in order to send a notification to non-registered users, or users on other Regisration Servers (REGSERVER-1147).
- The Host Server may return a Depot document with a SERVERFLAGS field with an incorrect terminator. These documents will be corrected in the database and when returned by the Host Server (REGSERVER-1141).
- Fixed a bug in "wipedevice" API call (REGSERVER-1139)
- The adminconsole will make requests to hostservers over the hostserver proxy, if one is configured (REGSERVER-1148)

20.3 3.5.7 (2016-07-12)

- Fixed a bug in "createlicense" API call: if the user has no other default license, then the created license will now be correctly set as the default.
- The [[GREETING]] in emails templates: "inv-user-invited-passwd" and "inv-user-invited", incorrectly used the name of the sender of the invitation, instead if the invitee (REGSERVER-1136).
- Deleting users, depots, or spaces in the Adminconsole now requires the user to type the word 'DELETE' in a confirmation dialog, to prevent accidental deletion (REGSERVER-1133)

20.4 3.5.6 (2016-06-21)

- The ssl configuration has changed. All settings are now located in a separate configuration file. Please remove the old configuration in your ssl.conf:

```
RewriteEngine on
RewriteLogLevel 0
RewriteLog "/var/log/httpd/rewrite.log"

RewriteRule ^/setup$ /setup/ [R]
RewriteRule ^/setup(.*) /yvva/setup$1 [PT]
RewriteRule ^/pbas/td2as/(.*)$ /yvva/$1 [PT]
RewriteRule ^/pbas/td2api/(.*)$ /yvva/$1 [PT]
```

  and add the new include as described in chapter configure-mod-ssl

- The authenticate call now handles authentication tokens that do not contain an email address. The allows an external Authentication Service prevent the automatic creation of a user if the user does not exist.

  If the email address is missing from the authentication token then the Registration Server will return the "user not found" error if the user ID in the authentication does not match an existing user.

  As before the user ID in the token is compared to the "External Authentication ID" field of the user. This field can be edited in the Admin Console, if `USE_AUTH_SERVICE` is enabled (set to `True`). If users are not created automatically then it is most likely that this field must be set manually when the user is created.

  The alternative is to import the value of the "External Authentication ID" when creating and users using the CSV import facility.

- Updated Yvva version to 1.3.6 (required with CentOS 7)

20.5 3.5.5 (2016-05-14)

- Add support for CentOS 7 with apache 2.4
- When a user is removed, if the users licenses are not removed, the licenses are now correctly freed so the may be assigned to another user (REGSERVER-1120) . Note that the default license is no longer a default license when freed.
- Corrected handling of default license. This could be overbooked (REGSERVER-1119). If a default license is assigned to the owner, and it is overbooked, then it will now be automatically removed from a number of users as required. Removal begins with less active users (users that accessed a device more recently will be favoured when removing licences).

  When a license is removed, the user license is reset to the user's default. Note that this may fail if the user is not the owner of his/her default license, which may be the case when using the `DEFAULT_LICENSEKEY` Provider setting.

- When changing the Provider of a user update of TDNS was not correct in the case when the case-sensitivity of usernames changed (REGSERVER-361).

- The order of the XML tags in the API documentation now matches the actually order of tags returned by the server. Some tags that were ommitted have been added (REGSERVER-949).
- Added `<intresult>` tag to result of "createlicense" API call.
- No longer send email notification message for 4.3.1 clients, because they are able to synchronise user data using the "mod protocol" (REGSERVER-1110).

20.6 3.5.4 (2016-01-25)

- The contents of the <message> tag in an exception was not correctly encoded which lead to invalid XML returned by the DISTRIBUTOR_REDIRECT (-30004) exception, which includes a URL in the message tag.
- Fixed a crash which could occur when assigning a license to a user with a device that was not activated (REGSERVER-1104)
- /bal/*html and /act/*html URLs were incorrectly returning "text/xml" as content type. This has been changed to "text/html" (REGSERVER-1106).

20.7 3.5.3 (2016-01-14)

- Added a "Registration Server How To's" chapter to the Admin Guide.
- The transfer limit for depots on hostservers that do not enforce the traffic limit is now displayed as 'Unlimited' (REGSERVER-742)
- Added ',' to the reserved characters that are not allowed in usernames. This is in addition to ';' and '$'.
- When `DEFAULT_LICENSEKEY` is specified the setting `PROFESSIONAL_TRIAL_PERIOD` no longer has an effect. It is considered to be 0, which means that no trial period is available.
- `ClientPollInterval` was incorrectly stored in the database in seconds by the Admin Console. The unit used in the database is 0.2 seconds (i.e. seconds x 5). This has been corrected. Default value is 60 seconds, as before.
- Fixed a bug editing / deleting depots belonging to a provider other than the default provider
- The "registeruser" API call will now always returns a <username> tag as well as the standard <intresult> tag on success. For example:

```
<teamdrive><username>$NEW1-1061</username><intresult>0</intresult></teamdrive>
```

  This is useful if the caller wishes to know the magic username generated by the server (REGSERVER-838).
- Implemented "one-off-secureoffice-trial" license purchase. This will allow users to start a trial period when using the SecureOffice version of TeamDrive.
- Removed the following Registration Server settings: `MediaURL`, `NotificationURL`, `RedirectorURL`, `UpdateAvailableURL`. All these Settings now use hard-coded URLs that reference the Registration Server (REGSERVER-1100).
- Removed all references to `providerinfo.html` and `clientinfopage.php`. These were used as default redirect pages. Now, if no redirect URL is set, the Registration Server will return a HTML page with a messsage. For example, if a forum URL is not specified by the Provider (`REDIRECT_FORUM` setting), or in the Registration Server setting (`ForumURL`), then a page with the message: "Sorry, your service provider has not specified a forum page", will be returned (REGSERVER-1080).
- The `LoadBalancerURL` may contain multiple URLs separated by a '|' character. In this case, the TeamDrive Clients will automatically use a different URL for each call the Registration Server.

- Removed `BalanceURL` Registration Server setting. TeamDrive Clients that still use this setting will be directed to a hard-coded URL on the Registration Server: `http://<reg-server-domain>/pbas/td2as/bal/server.xml` (REGSERVER-917).
- Fixed the "MAIL FROM:" header in emails sent. The Reg Server now correctly sets this field according to the `MAIL_SENDER_EMAIL` Provider setting (REGSERVER-1099)
- If a user is created via the API, or by CSV import, then it may not be known which language the user will use. In this case the language may be set to "-". The "-" will be ignored by the TeamDrive Client. API calls will return the default language in this case (REGSERVER-1097)
- Fixed a bug: the language passed to the Reg Server on registration was incorrectly converted to upper case and stripped of the location information. The unconverted language sent by the Client is now stored in the database (REGSERVER-1097)
- Fixed a bug in the admin console displaying the license language when editing (REGSERVER-1096)
- The Reg Server now supports a single Web Portal that manages internet access for multiple providers. This means that Multiple providers can use the same IP number in the `API_WEB_PORTAL_IP` setting (REGSERVER-1095)

20.8 3.5.2 (2015-12-04)

- Changed API function "confirmuserdelete": allow using the call without sending the user password (REGSERVER-1089)
- Fixed sending Store Forward invitation for a "standalone" Registration Server (REGSERVER-1092)
- Fixed API function "setdistributor" to handle more than one depot in case of switchdepot = true (REGSERVER-1087)
- Fixed sending a store forward invitation in case of device not found fails, if sender is registered at a foreign Reg-Server (REGSERVER-1088)
- AdminConsole: Fixed misleading error message in case of deleting a user

20.9 3.5.1 (2015-11-04)

- Fixed api call "setdepotforuser" and "removedepotfromuser": The depot information sent to the clients used a wrong format (REGSERVER-1085)
- API log view in the admin console will now display API requests from the Web-Portal (REGSERVER-1083)
- Greetings macro was not replaced in mail templates (REGSERVER-1079)
- Added hint in the admin console to show if the background task for sending mails and processing other background tasks is running (REGSERVER-1078)
- Added API call "changelicensepassword" (REGSERVER-1075) and use bcrypt for license password encryption (REGSERVER-965)
- Fixed API access in the Apache configuration using the URL from older API documentations (using ../td2api/.. in the URL instead of ../td2as/..) (REGSERVER-1071)
- Fixed deleting a depot for an user in the admin console. Depot was deleted on the Host Server, but the reference on the Registration Server was not removed (REGSERVER-1070)
- Fixed access to missing language column in the email change confirmation page (REGSERVER-1069)
- Fixed wrong path to tdlibs-library folder in upload.php (REGSERVER-1067)
- Changed the default value for the setting TDNSAutoWhiteList to `True` (REGSERVER-1072) and handle the special case of the Master-Server when changing the setting back to false in the admin console. Master-Server could only be disabled when using a white label client (REGSERVER-1073)

- Fixed api call "getusedlicense" to avoid duplicate usernames in user list (REGSERVER-1066)
- Fixed connecting TeamDrive Master Server during the setup in case of server-type "standalone" (REGSERVER-1064)
- Replaced TeamDrive 3 screenshot with TeamDrive 4 in chapter "TeamDrive Client-Server interaction" (REGSERVER-977)
- Added hint in documentation to enable HTTPS for the API communication between Registration Server and Hosting Server (REGSERVER-499)

20.10 3.5.0 (2015-09-21)

- Initial release.

CHAPTER

TWENTYONE

RELEASE NOTES - VERSION 3.0.019

TeamDrive Registration Server version 3.0.019 is the next major release following after version 3.0.018.

Version 3.0.019 contains the following features and notable differences compared to version 3.0.018:

- Support for the new business model introduced with TeamDrive 4 Clients (e.g. full support for trial licenses with an expiration date, restrict Client functionality via settings).
- Numerous enhancements and additions to the Registration Server API, to provide more functionality for integrating with external applications (e.g. web shops).
- Administration Console: added support for the new API calls, added support to manage the new license feature flag "Restricted Client" (which allows to enable configurable Client-side restrictions like the maximum number of Spaces).
- API call `removeuserfromlicense` failed in case of empty `<changeid>`
- Added API call `deletelicense`. The API call `cancellicense` will set a license to disabled instead of deleted now.
- Administration Console: The workflow of the **Create Depot** page has been improved and now allows creating default Depots for users that do not yet have a default Depot.
- Administration Console: can set whether or not a user should receive the newsletter when creating and editing users

21.1 Change Log - Version 3.0.019

21.1.1 3.0.019.8 (YYYY-MM-DD)

- Fixed the key-repository count on the edit-user page (REGSERVER-1020)
- Fixed an issue where the Administration console was not using the correct API functions when adding or removing users from a depot (REGSERVER-1061)

21.1.2 3.0.019.7 (2015-07-08)

- Fix for handling update notifications between version 3.x and 4.x. 3.x clients will not get a 4.x upgrade notification (REGSERVER-985)

21.1.3 3.0.019.6 (2015-07-07)

- Can now set the newsletter capability bit when creating and editing users (REGSERVER-1010, REGSERVER-1015, REGSERVER-1008, REGSERVER-1007)
- Added new templates to confirm recieving a newsletter (REGSERVER-1009)

- Handle messages larger 20K to use 1.0 encryption to avoid timeouts (500x faster than 2.x encryption) (REGSERVER-1014, REGSERVER-1012, REGSERVER-418)

21.1.4 3.0.019.5 (2015-06-23)

- Fixed bug caused by WEB_PORTAL_IP handling (REGSERVER-969)
- Administration Console: Support Host-Server version 3.0.010 (REGSERVER-976)
- Extend TDNSRequest to handle provider code returned from TDNS (REGSERVER-980)
- Handling update notifications between version 3.x and 4.x. 3.x clients will not get a 4.x upgrade notification (REGSERVER-985)
- Activation code length for email change reduced (same logic as requesting a new password)
- API: upgradedefaultlicense and downgradedefaultlicense accepts the feature strings instead of license bits

21.1.5 3.0.019.4 (2015-06-02)

- Administration Console: It is now possible to edit the list of users belonging to a Space Depot on the user editing page (REGSERVER-905). Editing of Depots (change limits, delete, activate, etc.) now takes place in a separate dialogue.
- Administration Console: Display a notice to enable JavaScript if JavaScript is disabled in the user's browser. (REGSERVER-916)
- Administration Console: fixed a bug that could cause entries in the license- change history to appear in the wrong order (REGSERVER-943)
- API: Function setreference() use newreference XML tag (REGSERVER-936)
- Fixed access to statistic database (REGSERVER-941)
- API: Added tdnslookup-call (REGSERVER-956)
- API: Fixed searchuser-call (handling user and device status)
- API: Security improvement when to switch distributor
- API: Added WEB_PORTAL_IP to allow API access from the web prtal

21.1.6 3.0.019.3 (2015-04-09)

- Administration Console: Fixed a bug then when editing licenses, the correct license type will now be displayed.
- Administration Console: Select the 'yearly' license type by default when creating licenses.
- Administration Console: Will send the correct license-type identifier to the API when creating TDPS licenses.
- Administration Console: The Administration Console now uses the Registration Server API to enable/disable/wipe user accounts. (REGSERVER-803)
- Administration Console: Added functionality to resend Depot information to the user. (REGSERVER-896)
- Administration Console: You can now filter the license table by expiry date, contract number, and holder email. The contract number and holder email have been added to the table, and the rest of the columns have been compacted slightly to create more space. (REGSERVER-885)
- Administration Console: Trial licenses are marked with a "Trial: <end date>" tag in the "More Details" section of the user overview table, the user editing page, and the license overview. (REGSERVER-891)
- Administration Console: Licenses will now be deleted with the new `deletelicense` API function. (REGSERVER-883)

- Administration Console: The user overview will display 'N/A' rather than 'Free' as the user's highest license, if the user has no installations yet. (REGSERVER-904)
- Administration Console: The **Create Depot** page has been reworked to be more straightforward, and will perform better validation to prevent users from different providers getting assigned to the same Depot. The form now also allows creating a depot as the default depot for the selected user. (REGSERVER-700, REGSERVER-907, REGSERVER-913)
- Administration Console: Searching for a username on the main user list is now case insensitive when the entire username is provided. (REGSERVER-906)
- Administration Console: Most of the input forms on the Administration Console will automatically trim leading and trailing whitespace from text fields. (REGSERVER-912)
- API: Fixed a bug in the `wipedevice` function that prevented the "wipeout pending" flag to be set. (REGSERVER-892)
- API: Fixed a bug in the `sendinvitation` function that caused additional Depots not longer to be sent to a user's devices. (REGSERVER-896)
- API: Fixed a bug creating default licenses for a user belonging to a different provider. (REGSERVER-889)
- Installation: Fixed a minor syntax error in RegServerSetup.pbt
- See the changelog-3.0.018.8 change log for additional changes.

21.1.7 3.0.019.2 (2015-03-05)

- Administration Console: Added support for setting the `restricted` feature flag on licenses (previously labeled `enterprise`).
- Administration Console/Documentation: Updated the TeamDrive logo to the new branding.
- Administration Console: Check a license's `extreference` before allow editing of TDPS licenses. (REGSERVER-855)
- Administration Console: Continue to show only the selected license after jumping to a specific license in `licenceAdmin.php` and then removing a user from it.
- Administration Console: Licenses are edited strictly via the API, added the **Send email** button to all forms, made license type editable.
- API: Added new functions: `deactivateuser`, `disableuser`, `enableuser`, updated API reference documentation accordingly.
- Registration Server: added check to handle an empty `LicenseEmail` field when sending out license change notifications to a provider. (REGSERVER-871)
- See the changelog-3.0.018.7 change log for additional changes.

21.1.8 3.0.019.1 (2015-02-19)

- API: Added new function `setdepartment` to set the department reference for a user.
- Administration Console: Added `<changeinfo>` to the following Host Server API calls: `createDepot`, `(de)activateDepot`, and `createDepot`.
- Registration Server: Fixed bug in returning the Server's capability bits to the Client.
- See the changelog-3.0.018.6 change log for additional changes.

21.1.9 3.0.019.0 (2015-01-22)

- Initial release (based on 3.0.018.5).

CHAPTER

TWENTYTWO

RELEASE NOTES - VERSION 3.0.018

TeamDrive Registration Server version 3.0.018 is the next major release following after version 3.0.017.

Version 3.0.018 contains the following features and notable differences compared to version 3.0.017:

- As a security enhancement, TeamDrive user passwords stored on the Registration Server are now hashed using the bcrypt algorithm instead of the previously used salted MD5 method. When logging in with a TeamDrive Client version 3.2.0 (Build: 536) or newer, existing hashed passwords are automatically converted into the new format.
- Changing, invalidating or resetting a user's password now also triggers sending an email to the affected user. For this purpose, the following new mail templates were added: `passwd-changed`, `passwd-invalidated` and `passwd-reset`.
- The Registration Server now supports sharing and synchronizing user profile information across all of the user's devices and with other users, e.g. initials, registration email, profile picture, full name, phone (telephone number), mobile (telephone number). Before, this information was shared with other users on a per-Space basis. Only users that share Spaces are able to exchange profile data with this new method. This feature will be supported by a future TeamDrive Client version.
- The expiry date of licenses is now properly checked via the "Expire Licenses" auto task. Users receive an advance notification 10 and 3 days before the license expires. When the date provided in the **Valid until** field has been reached, the user receives a final notification and his license will be reverted to the default free license. The following email templates were added to facilitate the notification: `license-expirein10days`, `license-expirein3days` and `license-expired-en`. To avoid disruptions/surprises when upgrading from previous Registration Server versions, the update function `setLicenseExpiryDefault()` will set the default value of `ENABLE_LICENSE_EXPIRY` to `False` for providers that already have licenses with an expiry date. When performin a new installation or adding a new provider account, license expiration will be enabled by default.
- Email templates now support the `[[BRAND]]` macro, to replace the term "TeamDrive" with another string if required. This can be defined via the `EMAIL/BRAND_NAME` provider setting. The default is `TeamDrive`.
- Most parts of the TeamDrive Registration Server installation can now be performed via RPM on Red Hat Enterprise Linux 6 and derivative distributions, which significantly improves the installation procedure and the process of applying updates. In particular, the following components are now provided in the form of RPM packages:
  - The PBT-based Registration Server (td-regserver-3.6.1.0-0.el6.noarch.rpm, files installed in `/usr/local/primebase/setup/scripts`)
  - The PHP-based Administration Console and support files (td-regserver-adminconsole-3.6.1.0-0.el6.noarch.rpm, files installed in `/var/www/html/adminconsole` and `/var/www/html/tdlibs`)
  - The Registration Server documentation in HTML format (td-regserver-doc-html-3.6.1.0-0.el6.noarch.rpm, files installed in the Apache server's document root `/var/www/html/td-regserver-doc/`, access to the documentation can be restricted by editing `/etc/httpd/conf.d/td-regserver-doc.conf`).

  - The PrimeBase Application Environment (PrimeBase_TD-4.5.48.<build>-0.el6.x86_64.rpm installed in `/usr/local/primebase`), including the PrimeBase Apache module `mod_pbt` (installed in `/usr/lib64/httpd/modules/mod_pbt.so`) and some support scripts and configuration files in `/etc/`.

- The installation package now contains a script `mysql_install.sh` that performs the creation of the required `teamdrive` MySQL user account and populating the databases required for the Registration Server.
- The installation package now contains a log rotation script, to support rotation and compression of the Registration Server's log files.
- The installation now uses the default MySQL data directory location (`/var/lib/mysql`) instead of defining a custom one (`/regdb`). The default MySQL configuration settings for `my.cnf` have been reviewed and adjusted.
- The automatic service startup at bootup time is now configured using the distribution's `chkconfig` utility instead of changing the `Boot` options in file `/usr/local/primebase/pbstab`. The PrimeBase_TD RPM package provides the required SysV init script `/etc/init.d/teamdrive` to facilitate this.
- The term "Distributor" has been replaced with "Provider" in most occasions.
- The obsolete settings `UseExternalAuthentification` and `UseExternalAuthentificationCall` have been removed. External authentication is now enabled by setting `AUTHSERVICE/USE_AUTH_SERVICE` to `True`.
- In previous versions, the setting `AUTH_VERIFY_PWD_FREQ` did not have any effect (it was added without the actual implementation by accident). Starting with version 3.0.018, a user's Clients will be logged out from the TeamDrive Service after the time defined in this setting. To avoid surprises and a change in behaviour after an upgrade, updating from a previous version of the Registration Server suggests calling the update function `setLoginFreqToZero();` to change this setting to `0` for any existing Provider.

The PHP-based Administration Console received several new features, numerous usability enhancements and security improvements. Some notable highlights include:

- Tabular output (e.g. a filtered list of users, devices or licenses) can now be exported to CSV files.
- Tabular output now indicates the current sort order and column name with a small arrow icon.
- The columns visible in the table displayed on the **Manage Users** and **Manage Licences** pages are now configurable.
- The summary display of a user's licenses ("Licenses owned" and "Licenses used") on the **Manage Users** page has been simplified.
- The list of Spaces in a user's Depot is now displayed as a sortable table.
- It's now possible to wipe or delete multiple devices of a user at once.
- The Registration Server's Authorization Sequence (required for exchanging invitations with users on other Registration Servers via TDNS) can now be obtained from the Administration Console via **Edit Settings -> RegServer -> AuthorizationSequence**.
- After sucessful registration, a Host Server's activation key is now displayed on the **Manage Servers** page, to simplify the registration process for new Host Servers.
- It is now possible to remove registered Host Servers via the **Manage Servers** page.
- The Administration Console now supports viewing a selection of server log files directly in the web browser instead of requiring logging in on the server's console. The **View Server Logs** page is only visible for the Registration Server's default provider and any user having the `HAS_VIEW_SERVER_LOGS_RIGHTS` privilege. The list of log files is defined in the (read-only) Reg Server setting `ServerLogFiles` and can only be modified by updating the setting in the database directly. Log files can only be viewed if the user that the Apache HTTP Server is running under (usually `apache`) has the required access privileges to view these files.

- Most of the Administration Console Settings are now stored in table `TD2Setting` of the MySQL database instead of the configuration file `tdlibs/globals.php` and can be configured via the Administration Console instead:
  - `LoginSecurity/LoginSessionTimeout` (default: `30`)
  - `LoginSecurity/FailedLoginLog` (default: `/var/log/td-adminconsole-failedlogins.log`)
  - `LoginSecurity/LoginMaxAttempts` (default: `5`)
  - `LoginSecurity/LoginMaxInterval` (default: `60`)
  - `RegServer/ApiLogFile` (default: `/var/log/td-adminconsole-api.log`)
  - `RegServer/RegServerAPIURL` (previously known as `$regServerUrl`, not set by default)
  - `RegServer/ServerTimeZone` (default: `Europe/Berlin`)

  The only information required in `globals.php` is the MySQL connection string to access the Registration Server's MySQL database. Alternatively, these credentials can be provided from a separate MySQL configuration file. See chapter Administration Console MySQL Configuration for details.
- Disabling a user does no longer provide the **apply to devices** option, as it's sufficient to disable the user account to block access to the TeamDrive service.
- A user's Space Depots on a Host Server can be activated/deactivated (added in 3.0.018.4, requires Host Server version 3.0.013.8 or later).
- The default provider can now set new passwords for other providers (added in 3.0.018.3).
- Changing the Provider setting `AUTHSERVICE/USE_AUTH_SERVICE` to `True` now automatically adds the other required settings like `AUTH_LOGIN_URL` and `VERIFY_AUTH_TOKEN_URL`.
- The provider filter selection list now also prints the company name after the 4-letter code.
- An option was added to assign an existing license to a user when editing the user's details.
- Various settings that used to expect values in bytes only now provide an option to select other units like "MB" or "GB".
- Input fields that expect a date now provide a date picker, to simplify the entering of dates.
- Filter options by date now provide a more intuitive way to define "before", "at" or "after" the entered date.

22.1 Change Log - Version 3.0.018

22.1.1 3.0.018.9 (YYYY-MM-DD)

- Administration Console: update copyright date (REGSERVER-915)
- Administration Console: fixed a session-handling issue related to parallel ajax requests (the result would usually be a "session variables not set" error in the adminconsole)

22.1.2 3.0.018.8 (2015-04-07)

- Administration Console: prevent editing of the `valid until` license field for licenses that are not either in the `active` or `expired` phase, as this may cause problems with the `restricted` license feature. (REGSERVER-886)
- Administration Console: the `restricted` license feature flag will be sent to the API as `restricted` rather than `enterprise` (REGSERVER-869)
- Administration Console: Restricted licenses are marked with `(Restricted)` on the user overview and user details pages. (REGSERVER-877)

- Administration Console: Allow displaying and entering language codes longer than two characters on the user editing page. (REGSERVER-898)
- Administration Console: Fixed a bug that caused an incorrect count of a user's installations and invitations on the user overview page. (REGSERVER-901)
- Administration Console: Fixed a bug on the edit-user page that prevented editing accounts that had been flagged for deletion. (REGSERVER-902)
- Administration Console: The Administration Console will now send the affected user's provider code instead of the provider code of the user logged into the Administration Console when creating Depots and inviting other users to that Depot. (TRUS-61)
- API: The API now allows setting language codes as defined in **RFC 5646** (e.g. `en_US` or `de_DE`) which will be used by TD4 clients when registering a new user. (REGSERVER-898)
- Registration Server: Improved error logging: the output of several error messages (e.g. error codes -24916, -24919, -24909, -24913 or -24912) is now truncated and reduced to the relevant parts.

  Error messages are now dumped in the following form:

  ```
  03/16/2015 15:23:19 #1 ERROR: ERROR -24777: "reg_shared.pbt"@client line 183:
  This is an error! [command=setparcels;device=377]
  ```

  The Registration Server now reads out the log level defined in variable 342 of the `pbvm.env` configuration file so that it is used in code run by the PBT Apache module `mod_pbt` (previously, the log level was ignored by the PBT module). Valid log values are: 0=Off, 1=Errors, 2=Warnings, 3=Trace. (REGSERVER-859)
- Registration Server: When creating a new device, the device now receives the same license as all other devices, independent of the license's status. (REGSERVER-888)
- Documentation: Fixed link structure in the HTML documentation so that clicking **Next** and **Previous** works as expected (REGSERVER-908)
- Documentation: Removed the chapter that describes the MySQL databases and tables that will be installed from the Reference Guide. (REGSERVER-899)

22.1.3 3.0.018.7 (2015-03-05)

- Administration Console: Added support for setting the `restricted` feature flag on licenses (previously labeled `enterprise`).
- Administration console: Updated list of template types viewed in the mail queue view. (REGSERVER-841)
- Administration console: Updated misleading text when viewing device messages from users located on another server. (REGSERVER-839)
- Registration Server: Fixed that `ProfileDataExchangeEnabled` was not checked when changing a user's email address and the Registration Server database schema has not been converted to the 3.0.018 schema. (REGSERVER-849)
- API: Fixed that `UserEmailUnique` was not enforced when registering users via the API. (REGSERVER-730)
- API: Added support for setting the "Restricted" license flag, which can be used to disable/limit certain TD 4 Client functionality. Previously, this feature flag was labeled "Enterprise", but it was not actively used. (REGSERVER-867)
- Registration Server: Added missing provider setting `REDIRECT/REDIRECT_HOME` that sets the provider's home page URL used in the user's start menu. (REGSERVER-851)
- Registration Server: fixed mail template fallback code to fall back to the English templates as a last resort, if a default template in the provider's default language is not available. (REGSERVER-858)
- Documentation: Updated API chapter and replaced the incorrect statement that the temporary password generated by the `sendpassword` API call expires after a time period of 10 minutes with a notice that

a generated temporary password remains active and unchanged until the user's password will be changed. (REGSERVER-870)

22.1.4 3.0.018.6 (2015-02-19)

- Installation: To simplify the configuration for new deployments, the default license issued to Clients is now a Professional license including WebDAV support (the value of `CLIENT/DEFAULT_FREE_FEATURE` was changed from `3` to `10`). This change only affects new Registration Server installations, the setting remains unchanged when updating existing installations. (REGSERVER-821)
- Installation: Updated `mysql_install.sh` to re-create InnoDB log files after changing `innodb_log_file_size` in `my.cnf`. (REGSERVER-847)
- Installation: fixed bug in the `setLicenseExpiryDefault()` upgrade routine which inserted incorrect entries into the `td2reg.TD2OwnerMeta` table for existing licenses having a non-NULL value in the `ValidUntil` column. (REGSERVER-848)

  If you have have performed an upgrade from a previous Registration Server version to version 3.0.018 before (which included calling `setLicenseExpiryDefault()`) **and** you have issued licenses with an expiry date, please perform the following steps to remove the incorrect entries. Start the MySQL client `mysql` as user `teamdrive` and enter the following command to delete the entries:

```
mysql> DELETE FROM td2reg.TD2OwnerMeta \
    -> WHERE Name="ENABLE_LICENSE_EXPIRY" AND \
    -> OwnerID NOT IN (SELECT DISTINCT ID FROM td2reg.TD2Owner);
```

  Afterwards, verify the setting `ENABLE_LICENSE_EXPIRY` for all Providers hosted on your Registration Server and only set it to `True` when this provider intends to issue licenses with an expiry date.

  Note that while it was possible to create licenses with an expiry date in previous versions, the Registration Server did not actually check this date prior to version 3.0.018. To avoid an unexpected expiry of existing licenses after upgrading to version 3.0.018, the upgrade function `setLicenseExpiryDefault()` checks all existing licenses during an upgrade and sets the Provider setting `ENABLE_LICENSE_EXPIRY` to `False` for the respective Provider.

- Administration Console: Added missing `<distributor>` field to the `cancellicense` and `resetpassword` API calls that prevented the default provider from deleting licenses or resetting the user passwords for other providers hosted on the same Registration Server. (REGSERVER-827)
- Administration Console: Fixed bug where **View mail queue** did not show all queued email messages (outgoing invitation emails to unregistered users were not displayed). (REGSERVER-818)
- Administration Console: when importing email templates from the file system into the database, line endings are now automatically converted to be properly terminated with CRLF (`\r\n`)
- Admin Console: Fixed error message `API error code: -30100,message: User name not provided` when deleting a user's default Depot (the Depot was still deleted as requested). (REGSERVER-835)
- Administration Console: updated the regular expression that checks for valid URLs in the the `LogUploadURL` field to accept URLs beginning with `https` as well. (REGSERVER-837)

  Note that this change is not applied automatically to the configuration table during an update. For existing installations, you need to update the field `Format` in table `td2reg.TD2Setting` for this setting as follows, if you want to change the URL via the Administration Console:

```
mysql> UPDATE td2reg.TD2Setting \
SET Format="^(http|https)://[a-zA-Z0-9\-\./]+/.-$" \
WHERE NAME="LogUploadURL";
```

- Administration Console: Fixed bug that prevented users logged into the Admin Console with their "magic username" to set their password. Also improved session handling to not drop the session when a user logged into the Admin Console changes his own password (which invalidated the existing session before).

- API: The call `getuserdata` failed with `User does not exist`, if `USE_EMAIL_AS_REFERENCE` was set to `True` and the email address was used as the user name. (REGSERVER-824)
- Registration Server: When using external authentication, TD4 Clients could sometimes receive spurious logout events, requiring the user to log in again. Please note that this bug fix may cause Clients that use external authentication to logout again *once* after the upgrade. After that, such apparently random log-outs should no longer occur. (REGSERVER-820)
- Registration Server: Fixed wrong path in the fallback routine that is supposed to use the default mail template for templates missing from a provider's template folder. (REGSERVER-842)
- Registration Server: Fixed bug that caused file comment notification emails to include the recipient's email address in the From:-Header instead of the sender's email address. (REGSERVER-843)
- Registration Server: When changing `HAS_DEFAULT_DEPOT` from `True` to `False`, a user's devices no longer offered a user's already existing default depot for creating Spaces. (REGSERVER-834)
- Registration Server: Outgoing email messages (e.g. Space invitations) could violate **RFC 5321**, if templates did not use the appropriate line termination character sequence (CRLF, `\r\n`). Now, all outgoing email messages are reformatted before submission to the MTA. (REGSERVER-833)
- Registration Server: Fixed bug that prevented users from logging in with their user name in different capitalization if `UserNameCaseInsensitive` was set to `True` (which is the default) (REGSERVER-823)
- Registration Server: Shortened the temporary password that gets generated and mailed to a user when a user's password needs to be changed (e.g. via the "Forgotten Password" option in the Client or via the `sendpassword` API call. Previously, the temporary password consisted of a random MD5 string (32 characters), that turned out to be difficult to handle (e.g. on mobile devices). It now returns a combination of the characters 0-9, a-z and A-Z (excluding 0, O, l and 1, which can be misread). The length of the temporary password now depends on the Client version: 2.x –> 32 characters (unchanged), 3.x –> 8 characters, 4.x –> 5 characters. The 3.x and 4.x Clients have been changed to accept 4 or more characters, the API uses the version of the most recently used device. (REGSERVER-831)
- `upload.php`: Improved security of the PHP script that accepts Client debug log uploads (e.g. to prevent potential XSS attacks), removed absolute path name from the generated upload status file. Note: this script is not included in the RPM distribution and is not installed by default. (REGSERVER-836)

22.1.5 3.0.018.5 (2015-01-23)

- Registration Server: Fixed Space invitation emails to existing users that contained the recipient as the sender in the mail header. (REGSERVER-817)
- Installation: added a new RPM package `td-regserver-doc-html` that contains the Registration Server documentation in HTML format, installed in the Registration Server's Apache document root `/var/www/html/td-regserver-doc/`. Access to the documentation can be restricted by editing `/etc/httpd/conf.d/td-regserver-doc.conf`. (REGSERVER-816)
- Registration Server: disabled banner support for legacy TD 2.x clients

22.1.6 3.0.018.4 (2015-01-13)

- Administration Console: Improved reporting of HTTP errors during API requests. (REGSERVER-798)
- Administration Console: Fixed API error changing a user's email address if the user name contained UTF-8 characters. (REGSERVER-775)
- Administration Console: fixed support for activating/deactivating Space Depots. (REGSERVER-810) This requires Host Server version 3.0.013.8 or later.

22.1.7 3.0.018.3 (2014-12-17)

- Administration Console: fixed incorrect hex encoding of email templates when initially importing them from the file system into the database. (REGSERVER-806)
- Administration Console: added new Reg Server setting `RegServer/RegServerAPIURL` for setting a custom URL to issue Reg Server API requests (e.g. in case of a dedicated API server or if https should be used for API requests). If not set, the API URL will be derived from the `RegServerURL` setting (REGSERVER-799).
- Administration Console: The default provider can now set new passwords for other providers (REGSERVER-768).
- Installation: removed `<APIChecksumSalt>` from `RegServerSetup.xml` and updated the installation instructions accordingly, to simplify the installation process (this value is generated by `RegServerSetup.pbt` automatically during the initial installation).
- Installation: updated installation instructions and VM installation script to install the `php-mbstring` package (required for the email template import into the database). (REGSERVER-802)
- Installation: updated installation instructions and VM installation script to set `date.timezone` in `/etc/php.ini`, to avoid frequent PHP warning messages when using the CSV import cron job. (REGSERVER-801)
- Installation: the RPM now automatically re-creates the file `StartupCache.pbt` and calls `HTTPRequest.pbt` during an upgrade (e.g. to add new Reg Server settings) (REGSERVER-800)
- Installation: added `max_allowed_packet=2M` to the MySQL configuration file `my.cnf`, to support uploading User Profile information containing profile pictures. In order to support this feature, the `PrimeBase_TD` package also needs to be updated to version 4548.120 or newer (TDCLIENT-1663).
- Installation: changed `MaxRequestsPerChild` in `httpd.conf` from `0` to `10000`, to ensure Apache child processes are restarted from time to time (REGSERVER-762)
- Registration Server: Fixed that `SETTING_TDNS_PROXY_URL` gets overwritten by the `SETTING_HOST_PROXY_URL` setting (in case accessing TDNS requires using a different proxy server than accessing the Host Server (REGSERVER-769).

22.1.8 3.0.018.2 (2014-11-12)

- Fixed bug in propagating email address changes to other devices belonging to a user
- Fixed bug in deleting a user's privileges when deleting the user's account (REGSERVER-734)
- Fixed issue with store forward messages that were not forwarded to a user upon registration (REGSERVER-759)
- Administration Console: Fixed encoding issue when adding users with usernames containing UTF-8 characters (REGSERVER-756)
- Administration Console: Fixed minor bug in the "Add new provider settings" menu (REGSERVER-747)
- RegServerSetup.xml: Fixed missing closing bracket in the `APIChecksumSalt` tag.
- API: fixed `addXMLDepot` call that returned invalid URLs when the setting `SIMULATE_REGSERVER_20` was enabled. (REGSERVER-741)

22.1.9 3.0.018.1 (2014-11-05)

- Initial public release

CHAPTER

TWENTYTHREE

RELEASE NOTES - VERSION 3.0.017

Table 23.1: Release Notes - Version 3.0.017

Build Date	Version	Comment
2014-09-02	30017.13	• Admin Console: show extreference in the license Administration screen • Security improvement: fixed OS permissions/ownerships of some configuration files and log files containing plaintext passwords (REGSERVER-599) • Admin Console: Security improvement: Don't display the Console version on the login page (REGSERVER-558) • Virtual Appliance: set `ServerTokens` to `Prod` and `ServerSignature` to `Off` in `httpd.conf`, to disable displaying the Apache HTTP Server version and OS version in the HTTP headers and on error pages (REGSERVER-608) • Added missing tag `<APISendEmail>` in `DIST.xml` template file • Security improvement: disabled unneeded HTTP methods in `pbt.conf` (only allow GET, POST, disable PUT, HEAD, OPTIONS, TRACE) (REGSERVER-613) • API: added new API call `removedepotfromuser` extended `setdepotforuser`. Fixed bug in `setreference` and removed deprecated `location`-Support in `getHostForDistributor`. Fixed error handling in `setinviteduser`. Updated API-Version number to "1.0.005". • For monitoring purposes, calling the Reg Server's ping URL with the optional parameter `tdns=$true``(e.g. ``http://regserver.yourdomain.com/pbas/td2as/reg/ping.xml?tdn` now also performs a TDNS lookup, to verify that the communication between the Reg Server and TDNS is working properly.
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Table 23.1 – continued from previous page

Build Date	Version	Comment
2014-07-09	30017.12	• Updated to requiring PrimeBase 4.5.48, updated `pbstab` and documentation accordingly. This version of PrimeBase now installs a shell profile file by default and provides a proper SysV init script that can be used to enable/disable the `pbac_mailer` background task. • Admin Console: Fixed wrong escaping of HTML characters in the device messages popup (REGSERVER-575) • Admin Console: changed session timeout from 10m to 30m • Admin Console: Added more fields to license editing page • `RegServerSetup.pbt` now sets `APIAllowSettingDistributor` to `true` if another distributor is added (REGSERVER-579) • Added missing `globalDepotID` to default depots for clients with two accounts on the same server(s). (REGSERVER-583) (this fix also requires an updated Host Server having the fix from HOSTSERVER-326)
2014-06-26	30017.11	• Admin Console: "Create Depot" now accepts storage limits in other units than bytes. Unified the UI with regards to selecting a Depot owner and selecting Users to invite (REGSERVER-574)
2014-06-17	30017.10	• Admin Console: Added confirmation checkbox for deleting a user's license when deleting the user (REGSERVER-554) • Admin Console: Improved listing of licenses to no longer show one entry per Device for the same license (REGSERVER-565) • Admin Console: Replaced "parcel" with "key repository", replaced "Packet" with "Package" in the License creation/editing dialogues (REGSERVER-567) • Admin Console: Added exporting tables as CSV function. • Fixed missing `LOG_UPLOADS` setting in `upload.php` log upload script (REGSERVER-559) • Added Proxy support in `upgradeDefaultDepot` • Major documentation rewrite: added general reference and API documentation, converted all documents to reStructuredText/Sphinx • `RegServerSetup.xml`: Fixed incorrect closing tag (`</ProviderInfoURL>` -> `</DownloadURL>`)
2014-04-17	30017.9	• Removed misleading error output in `csvimportregserver.php` • Fixed default license key error using the API (REGSERVER-526) • Improved description for `StoreRegistrationDeviceIPinSeconds` (REGSERVER-532) • Admin Console: bugfix for `editUser.php`: wrong user got displayed when changing depot limits. • Admin Console: `editUser.php` didn't display "extauthid" in all cases (REGSERVER-537) • Admin Console: Display activation code in device-list entry for deactivated tdhosting "users"

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Table 23.1 – continued from previous page

Build Date	Version	Comment
2014-03-27	30017.8	• Admin Console: server/distributor settings can now be empty strings (REGSERVER-476) • Admin Console: displays a warning if LOGIN_IP is not set • REGSERVER-464: `RegServerSetup.pbt` now prints the Authentication Sequence during initial install • REGSERVER-494: Sending notification to users located on different Reg-Server returned "remote authorization not allowed" • Improved error handling in case of empty `hosting_url` or `hosting_name` • REGSERVER-507: Don't create user accounts in `p1reg.sql` • `RegServerSetup.pbt`: Improved screen output for readability and clarity • `RegServerSetup.xml`: Default for `<TDNSEnabled>` must be `$true` to avoid errors for a default setup • `CSV_IMPORT_ACTIVE` should not add `CSV_UPLOAD_DIR`, `CSV_ERROR_DIR` and `CSV_SUCCESS_DIR`, because we support import using the database or a hot folder. Default is using the database and therefore the Dir-Settings are not required. • Packaging: Updated and added `DIST.xml` to the distribution • Fixed link in `bannerAdmin.php` • Removed duplicate code in `RegServerSetup.pbt`
2014-03-14	30017.7	• Fixed nasty typo in `RegServerSetup.xml`
2014-03-14	30017.6	• REGSERVER-478: Deleting `TD2FreeUserStorage` and `TD2Parcel` in case of deleting a user • `reg_init.pbt`: Now only use the curl-based code to verify external logins (both via http and https) • External auth: Updated LDAP ext auth example: implement function `base64url` to encode the token, to avoid "+" and "/" being included in the token string. • REGSERVER-471: Admin Console XSS security fixes related to TD2User • External auth: fixed REGSERVER-443 (Sample login page defaults to "Password lost", not "Login"), changed error messages to show the same error regardless if user name or password are wrong. • Admin Console: moved failed-logins log file to `/var/log/td-adminconsole-failedlogins.log`. NOTE: this log file must now be created during installation
2014-02-25	30017.5	• Updated `pbstab` version number from 4546 to 4547 • Added `deleteDistributor` to `RegServerSetup.pbt` • Executing `HTTPRequest.pbt` in `RegServerSetup.pbt` requires no location • `RegServerSetup.pbt`: Generate a mysql update script if changes are required to the database structure • Handle the case that the TD2Setting.Format column does not exist, when creating system variables

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Table 23.1 – continued from previous page

Build Date	Version	Comment
2014-02-07	30017.4	• REGSERVER-426: Admin Console: changed API log file location to `/var/log/td-adminconsole-api.log` • Admin Console: added option to edit a depots transfer limit • REGSERVER-428: Removed duplicate entry `<UserEmailUnique>` from section `<RegServer>` in `RegServerSetup.xml` and `RegServerSetup.pbt` • Admin Console: improved test to check if the `setDepot` function is available on a host server • Install `upload.php` into `logupload/upload.php` instead the document root • Admin: user simply gets a warning when trying to call `setdepot` on a host server that does not support it • `pbt.conf`: Reduced `mod_pbt` log level from 2 (PBT_TRACE) to 1 (ERROR_TRACE) to reduce default log noise in `/tmp/pbt_mod.trace` • Admin: fixed regex that prevented changing the `LogUploadURL` setting • REGSERVER-432: API call upgradelicense no longer throws an error if feature is empty • Admin Console: the API log now correctly shows entries that don't have usernames • REGSERVER-436: Setting `HAS_DEFAULT_DEPOT` to true, creates all missing hosting system parameters
2014-02-04	30017.3	• Bug fixes: REGSERVER-424, double `<teamdrive>` tag removed, fixed invitations when a user was registered with same e-mail on 2 other Reg Servers, Added Download-URL for invitation mail templates
2014-01-30	30017.2	• Renamed `out.log` to `api.log` • Fixed RegEx for `API_IP_ACCESS` • Admin Console: Changed default mysql username to teamdrive • Updated `pbvm.env` to write the log file into `/var/log/pbvm.log` (REGSERVER-423) • REGSERVER-422: changed the default log file location in pbstab for the `pbac_mailer` from `/tmp/mail.log` to `/var/log/pbac_mailer.log` • Removed `setup/pbas.env` from the installation package
2014-01-23	30017.1	• First build using the scripted build, updated `RegServerSetup.pbt` and included some Admin Console fixes
2013-10-23	30017	• Not final; Bcrypt is still missing

CHAPTER

TWENTYFOUR

APPENDIX

24.1 Glossary

Client The software application used by users to interact with the TeamDrive system. Can be customized to various degrees. Every device requires a Client application.

Device A computer used by a user to access the TeamDrive system.

Installation Simply refers to the installation of the client application on a device.

User A person using the TeamDrive System.

Provider (aka Distributor or Tenant) The "owner" of some set of Users. See provider concept for a detailed explanation.

Space A virtual folder containing data that can be shared with other TeamDrive users. This is what TeamDrive is all about.

24.2 Abbreviations

PBAC **P**rime **B**ase **A**utomation **C**lient

PBAS **P**rime **B**ase **A**pplication **S**erver

PBEE **P**rime **B**ase **E**nvironment **E**ditor

PBCON **P**rime **B**ase **Con**sole

PBT **P**rime **B**ase **T**alk

SAKH **S**erver **A**ccess **K**ey **H**TTP for TeamDrive 2.0 Clients

TDES **T**eam **D**rive **E**nterprise **S**erver

TDNS **T**eam **D**rive **N**ame **S**ervice

TDPS **T**eam **D**rive **P**ersonal **S**erver

TDRS **T**eam **D**rive **R**egistration **S**erver

TDSV Same as **SAKH**, but for TeamDrive 3.0 Clients: **T**eam **D**rive **S**er **v**er

R

RFC
    RFC 5321, 120
    RFC 5646, 118