

**Weidmüller** 

# u-link Remote Access Service

**Technical User Guide**  
**Version 1.1**

September 21, 2016



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## **Chapter 1: Overview u-link Remote Access Service**

- 1.1 General information
- 1.2 How u-link is working / Involved components
- 1.3 Features of Entry Version (free of charge)
- 1.4 Features of chargeable Standard Versions
- 1.5 Link to buyable u-link licenses

### 1.1 General information

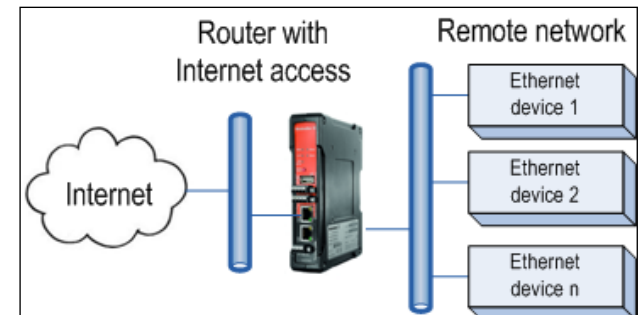
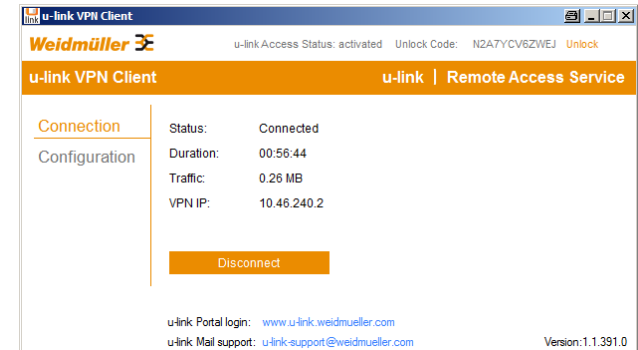
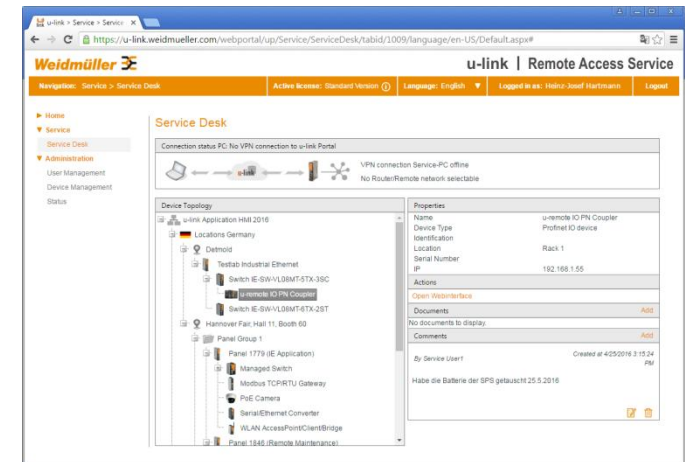
- The Weidmüller u-link Remote Access Service allows an easy and secure access of Service PCs to remote Ethernet devices via the Internet.
- The VPN-based access of a Service PC to remote devices will be provided by the web-based u-link Portal service (VPN server) and a Weidmüller Router (VPN client) located in a remote target network.
- The u-link VPN server is used as a meeting point and connects a Service PC to a Router (both running as VPN clients) to allow an encrypted data communication between the PC and remote Ethernet devices connected to the LAN port of the Router.
- Using the u-link VPN server as public accessible meeting point both a Service PC and a Router only need to establish an outgoing VPN connection to the Internet which usually is allowed and compliant to IT security requirements.
- For secure data integrity the u-link Remote Access Service uses for each u-link system account its own server and database instances (secure separation of u-link accounts).
- The data communication between an account specific u-link VPN server and remote clients (Service PCs and Router) is based on a certificate-secured OpenVPN communication (Encryption RSA 2048, x509 certificates).
- Based on customer requirements the u-link Remote Access Service is offered with following variants:
  - **Entry Version** (free of charge, no time limitation of use)
  - **Versions Standard 150/300/500/Unlimited** (Extended features, buyable use license, 1 year license validity)
  - When using a “**Standard Version**” additional **VPN licenses** can be purchased to use more than 3 simultaneous VPN pass-through connections of a Service PC to a remote router/network.



### 1.2 How the u-link Remote Access Service is working / Involved hard and software components

The u-link Remote Access Service consists of the 3 components...

- **Web accessible u-link Portal servers** to manage the customer specific account.
  - Device configuration representing the real devices located in the field.
  - User configuration representing the Service PCs which do a remote access.
  - Providing the VPN based pass-through connection between a Service PC and a Router / Remote network.
- Main u-link components: Web server (Portal access), VPN server, Database server and the WWH server (world wide heartbeat).
- By creating/registering an u-link system account for each account the Portal server instances will be created exclusively.
- **Windows-based PC**
  - Uses Software 'u-link VPN client' for secure communication with remote devices via the u-link VPN server.
  - Browser based access to u-link Portal to select the target devices for remote access.
  - Currently MS Windows versions 7, 8, and 10 are supported.
- **Weidmüller Router** located in the remote network providing the access to connected devices at LAN port.
  - Useable models: IE-SR-2GT-LAN or IE-SR-2GT-UMTS/3G
  - u-link is supported from firmware version 3.0.2 (Update downloadable).
  - Routers already installed in Security/Firewall applications can be extended to use u-link additionally.



## 1.3 Features of Entry Version (free of charge)

### General features

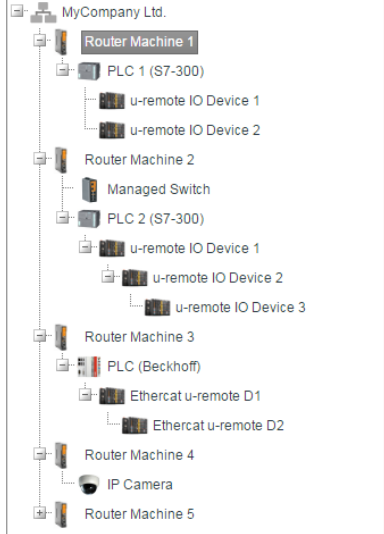
- Can be used free of charge, no time limitation of use
- Maximum 50 Router objects configurable (Access points to a remote network)
- No limit on the number of configurable service users
- 2 VPN connections simultaneously usable for access of a Service PC via u-link to a remote router/network
- Bandwidth VPN connection (calculated on total data volume of a system account)
  - max. 500 kBit/sec for data volume ≤ 1 GB/Month (not guaranteed)
  - max. 64 kBit/sec for data volume > 1 GB/Month
- No guaranteed system availability

**Service Desk**

Connection status PC: No VPN connection to u-link Portal

VPN connection Service-PC offline  
No Router/Remote network selectable

**Device Topology**



**Properties**

Name	Router Machine 1
Device Type	Router/Firewall
Identification	
Location	
Serial Number	
IP	192.168.1.110 (LAN)
Activation Code	UYZMZSPBVC1Z
Status-WWH	Inactive
Status-VPN Router ↔ u-link	Disconnected
Status-VPN PC ↔ u-link ↔ Router	Disconnected

**Action**

Discover	
Connect	
Disconnect	
Document	
No document	
Configure	
No configuration	

Sample screenshot of a flat Device topology.  
All Router objects always are arranged directly below the root container.  
All configured objects (Routers and user-defined Ethernet devices) are visible and accessible for each Service user.

### Functional features

- Device Management (Router/Device configuration representing the remote accessible devices)
  - Device topology can only be designed as a flat structure (All Router objects directly are arranged among the root container)
- User Management (Administration of Service users)
  - Each defined service user has access to any configured object (Router/Remote network devices)
  - Each created user is member of default “Service group” with pre-defined user permissions (not changeable)
- Administrator has full featured access, service users may maintain the Device management (no User Management)

## 1.4 Features of chargeable Standard Versions

### Variants


- Standard Versions having following extended features related to the Entry Version:
  - **Standard 150:** Maximum 10 Router objects configurable (Access points to a remote network)
  - **Standard 300:** Maximum 300 Router objects configurable
  - **Standard 500:** Maximum 500 Router objects configurable
  - **Standard Unlimited:** Unlimited Router objects configurable
- To use a standard version a use license has to be purchased having 1 year license validity.
- Upgrading from a lower version or extension of validity of a running version easily can be done by entering the purchased license key (u-link Portal account).

### General features of all Standard versions

- 3 VPN connections simultaneously usable for access of a Service PC via u-link to a remote router/network
- Optional use of additional VPN connections (buyable license key)
- Remote device topology can be organized by a tree-like structure (Locations, Groups, definable container objects)
- Group-based organization of service users with different permissions allows a selected access to device topology objects
- Advanced reporting and statistical information
- Bandwidth VPN connections (calculated on total data volume of a system account)
  - 1 Mbit/sec for each VPN tunnel up to a monthly data volume of 5 GB (guaranteed)
  - 500 kBit/sec for each VPN tunnel if the monthly data volume exceeds 5 GB
  - Additional 1 GB/Month at 1 Mbit/sec per additional purchased VPN connection
  - General bandwidth limitation of all VPN connections to 500 kBit/s if the monthly data volume exceeds 12 GB
- System availability:  $\geq 99,6\%$

**Service Desk**

Connection status PC: No VPN connection to u-link Portal



VPN connection Service-PC offline

No Router/Remote network selectable

**Device Topology**

- u-link Application HMI 2016
  - Locations Germany
    - Detmold
      - Testlab Industrial Ethernet
        - Switch IE-SW-VL08MT-5TX-3SC
        - Switch IE-SW-VL08MT-6TX-2ST
  - Hannover Fair, Hall 11, Booth 60
    - Panel Group 1
      - Panel 1779 (IE Application)
      - Managed Switch
      - Modbus TCP/RTU Gateway
      - PoE Camera
      - Serial/Ethernet Converter
      - WLAN AccessPoint/Client/Bridge
    - Panel 1846 (Remote Maintenance)
  - Panel Group 2
    - Panel 1847 (Signal Wiring)
  - Tripod

**Properties**

Name	Testlab Industrial Ethernet
Device Type	Router/Firewall
Identification	
Location	
Serial Number	
IP	
Activation	
Status-W	
Status-VP	
Status-VF	
Actions	
Disconnected	
Connect V	
Document	
No document	
Comment	
No comment	

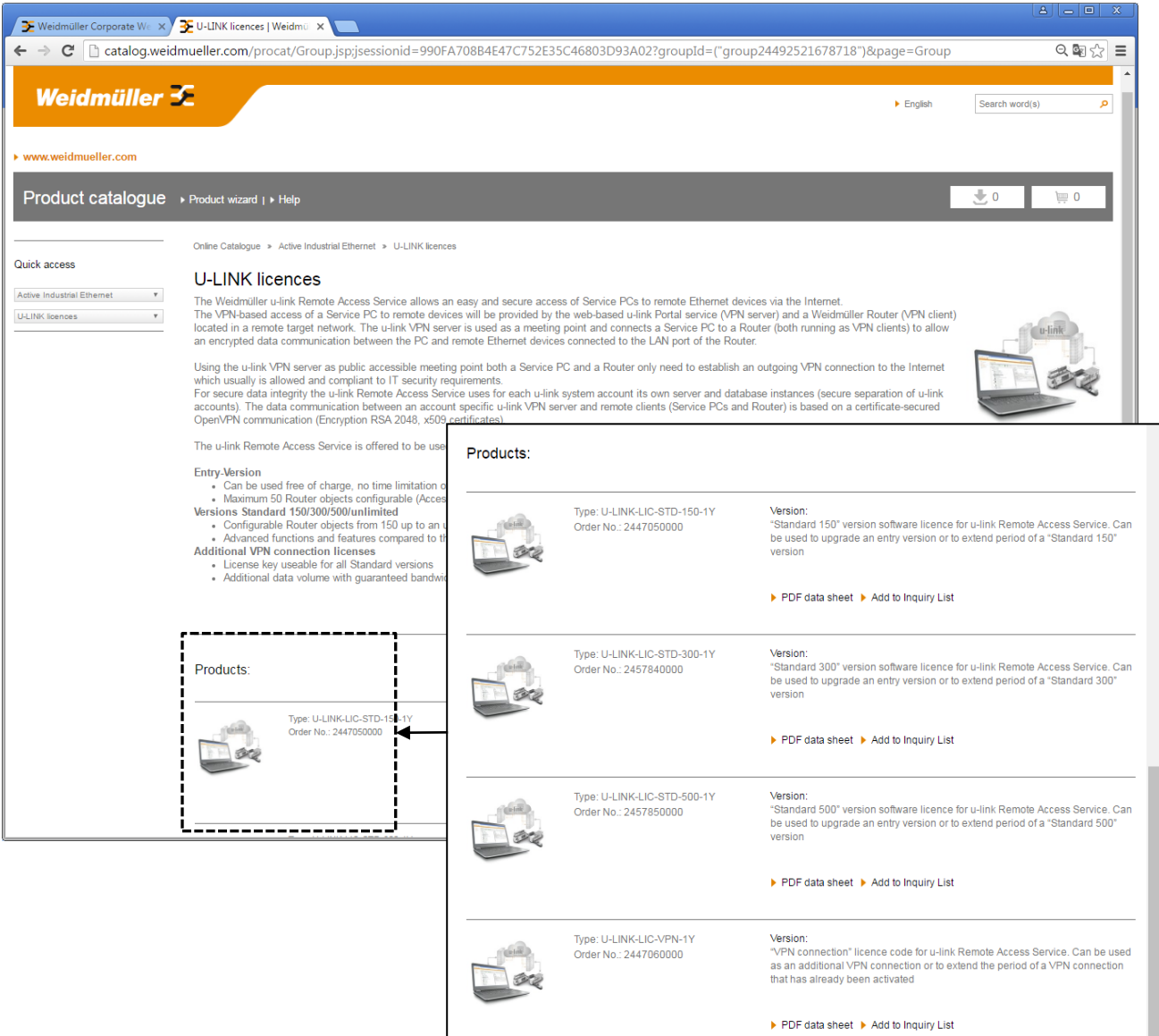
Sample screenshot of a complex Device topology. It is organized in hierarchical sub-structures (Locations /Groups) representing the real field applications. The visibility and accessibility of configured objects (Locations, Groups, Routers and user-defined Ethernet devices) can be individually configured for Service users by user groups.



## 1.5 Link to buyable u-link licenses

- For detailed information about available license types please check the Weidmüller product catalogue.
- Open [www.weidmueller.com](http://www.weidmueller.com)
- Select 'Product Catalogue'
- Select 'Active Industrial Ethernet'
- Then select section 'u-link Licenses' in product group overview

**Hyperlink to u-link licenses  
(Weidmüller product catalogue)**



**U-LINK licences**

The Weidmüller u-link Remote Access Service allows an easy and secure access of Service PCs to remote Ethernet devices via the Internet. The VPN-based access of a Service PC to remote devices will be provided by the web-based u-link Portal service (VPN server) and a Weidmüller Router (VPN client) located in a remote target network. The u-link VPN server is used as a meeting point and connects a Service PC to a Router (both running as VPN clients) to allow an encrypted data communication between the PC and remote Ethernet devices connected to the LAN port of the Router.

Using the u-link VPN server as public accessible meeting point both a Service PC and a Router only need to establish an outgoing VPN connection to the Internet which usually is allowed and compliant to IT security requirements.

For secure data integrity the u-link Remote Access Service uses for each u-link system account its own server and database instances (secure separation of u-link accounts). The data communication between an account specific u-link VPN server and remote clients (Service PCs and Router) is based on a certificate-secured OpenVPN communication (Encryption RSA 2048, x509 certificates).

The u-link Remote Access Service is offered to be used

**Entry-Version**

- Can be used free of charge, no time limitation of
- Maximum 50 Router objects configurable (Access)





**Versions Standard 150/300/500/unlimited**

- Configurable Router objects from 150 up to an unlimited number
- Advanced functions and features compared to the Standard version

**Additional VPN connection licenses**

- License key useable for all Standard versions
- Additional data volume with guaranteed bandwidth

**Products:**

	Type: U-LINK-LIC-STD-150-1Y Order No.: 2447050000	Version: "Standard 150" version software licence for u-link Remote Access Service. Can be used to upgrade an entry version or to extend period of a "Standard 150" version	<a href="#">PDF data sheet</a> <a href="#">Add to Inquiry List</a>
	Type: U-LINK-LIC-STD-300-1Y Order No.: 2457840000	Version: "Standard 300" version software licence for u-link Remote Access Service. Can be used to upgrade an entry version or to extend period of a "Standard 300" version	<a href="#">PDF data sheet</a> <a href="#">Add to Inquiry List</a>
	Type: U-LINK-LIC-STD-500-1Y Order No.: 2457850000	Version: "Standard 500" version software licence for u-link Remote Access Service. Can be used to upgrade an entry version or to extend period of a "Standard 500" version	<a href="#">PDF data sheet</a> <a href="#">Add to Inquiry List</a>
	Type: U-LINK-LIC-VPN-1Y Order No.: 2447060000	Version: "VPN connection" licence code for u-link Remote Access Service. Can be used as an additional VPN connection or to extend the period of a VPN connection that has already been activated	<a href="#">PDF data sheet</a> <a href="#">Add to Inquiry List</a>

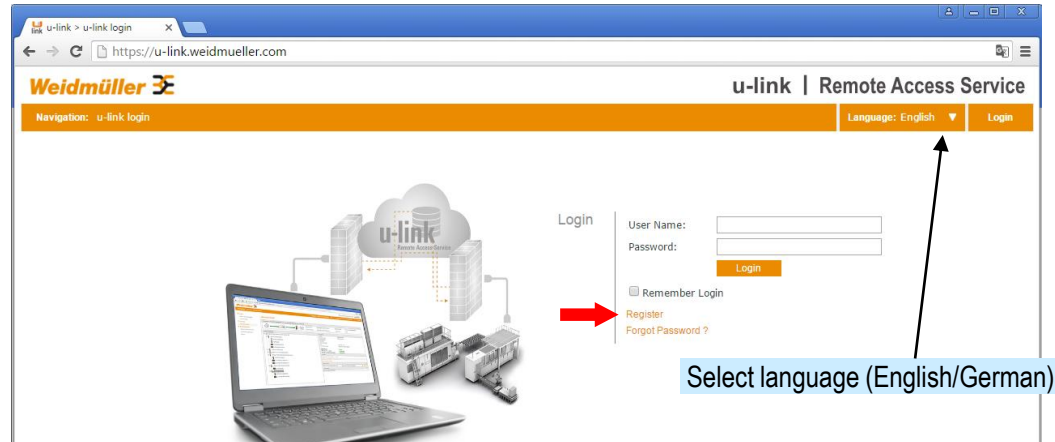
## **Chapter 2: Starting with u-link**

### 2.1 Registration of a new u-link account

### 2.1 Registration of a new u-link account

#### Open u-link Web page (Step 1)

- Open a browser and enter **u-link.weidmueller.com**.
- Click button 'Register'.

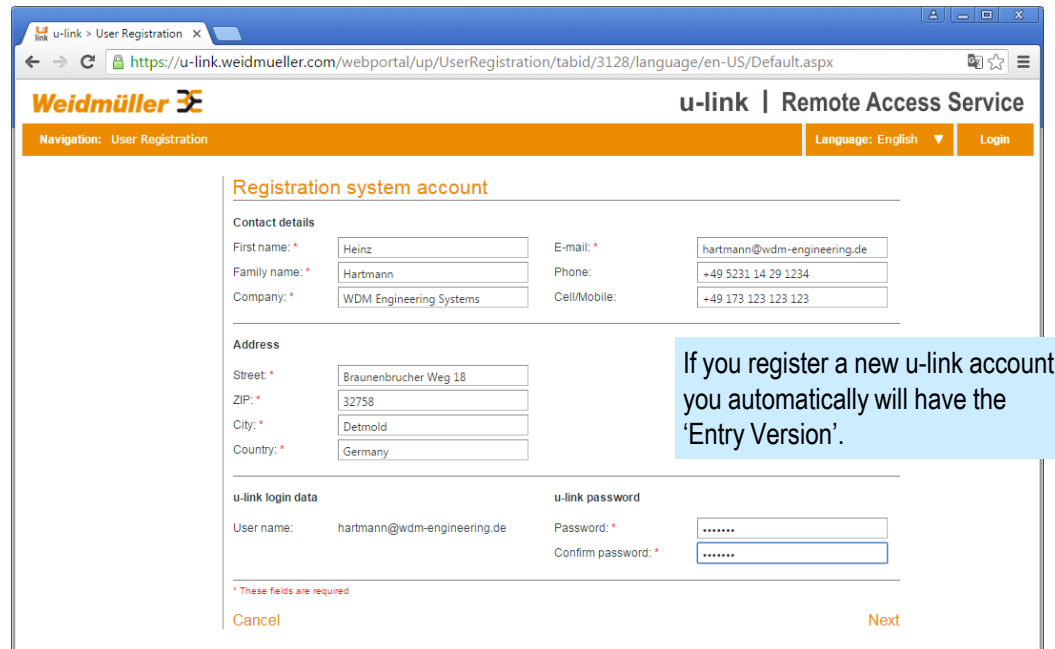


#### Starting the registration process (Step 2)

- Enter your registration data.
- Click button "Next".

#### Notes:

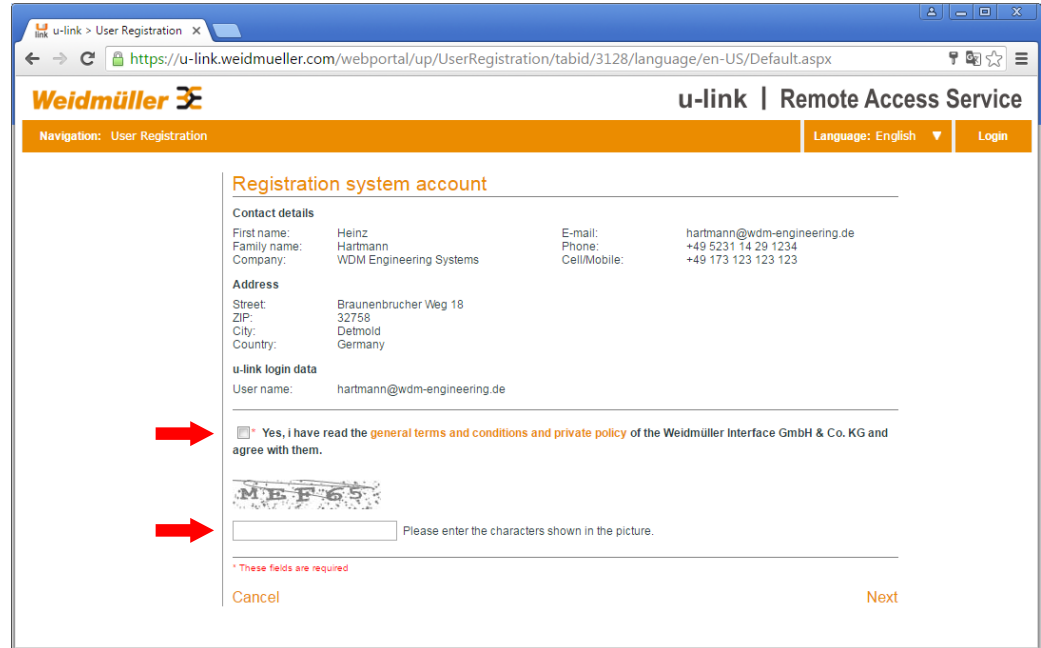
- This user will be the administrator of the u-link system account. Also this user can be used for remote access service.
- The mail address will be used for logon to the u-link account and must be unique in the global u-link system.
- The mail address must be existent because after registration a verification mail will be sent to the entered address.
- The entered password has to be used for logon to the u-link Portal after successful registration.



### 2.1 Registration of a new u-link account

#### Registration process (Step 3)

- Set checkbox that you agree to the “General u-link terms and conditions”.
- Enter for security reasons the captcha characters displayed as graphical image.
- Click button “Next”.



u-link > User Registration

https://u-link.weidmueller.com/webportal/up/UserRegistration/tabid/3128/language/en-US/Default.aspx

**Weidmüller** u-link | Remote Access Service

Navigation: User Registration Language: English Login

#### Registration system account

**Contact details**

First name: Heinz E-mail: hartmann@wdm-engineering.de  
Family name: Hartmann Phone: +49 5231 14 29 1234  
Company: WDM Engineering Systems Cell/Mobile: +49 173 123 123 123


**Address**

Street: Braunerbrucher Weg 18  
ZIP: 32758  
City: Detmold  
Country: Germany

**u-link login data**

User name: hartmann@wdm-engineering.de

☒ \* Yes, I have read the general terms and conditions and private policy of the Weidmüller Interface GmbH & Co. KG and agree with them.



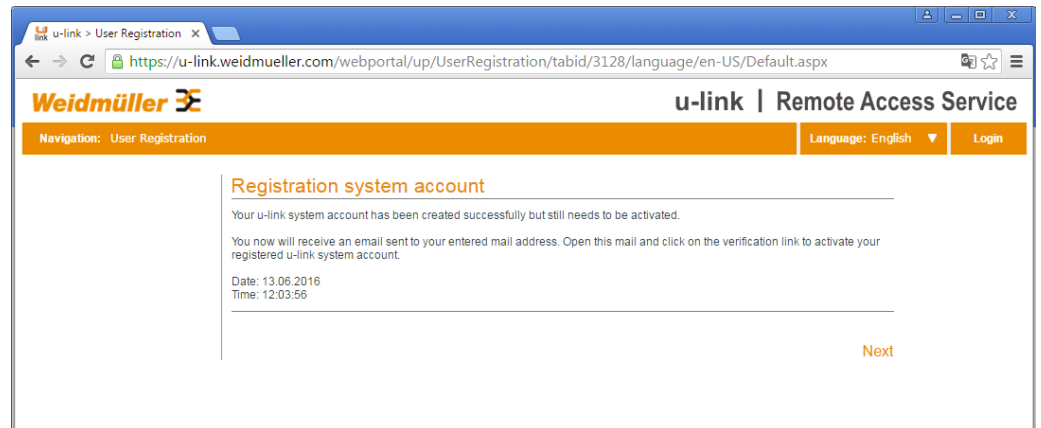
Please enter the characters shown in the picture.

\* These fields are required

Cancel Next

#### Registration process (Step 4)

- An information will be displayed that your u-link account successfully has been created but it is not yet activated
- You now will now receive a mail containing a hyperlink to verify and activate your u-link account.
- When clicking button “Next” the u-link Login page will be displayed. **Before your first login you need to activate your account via verification mail.**



u-link > User Registration

https://u-link.weidmueller.com/webportal/up/UserRegistration/tabid/3128/language/en-US/Default.aspx

**Weidmüller** u-link | Remote Access Service

Navigation: User Registration Language: English Login

#### Registration system account

Your u-link system account has been created successfully but still needs to be activated.

You now will receive an email sent to your entered mail address. Open this mail and click on the verification link to activate your registered u-link system account.

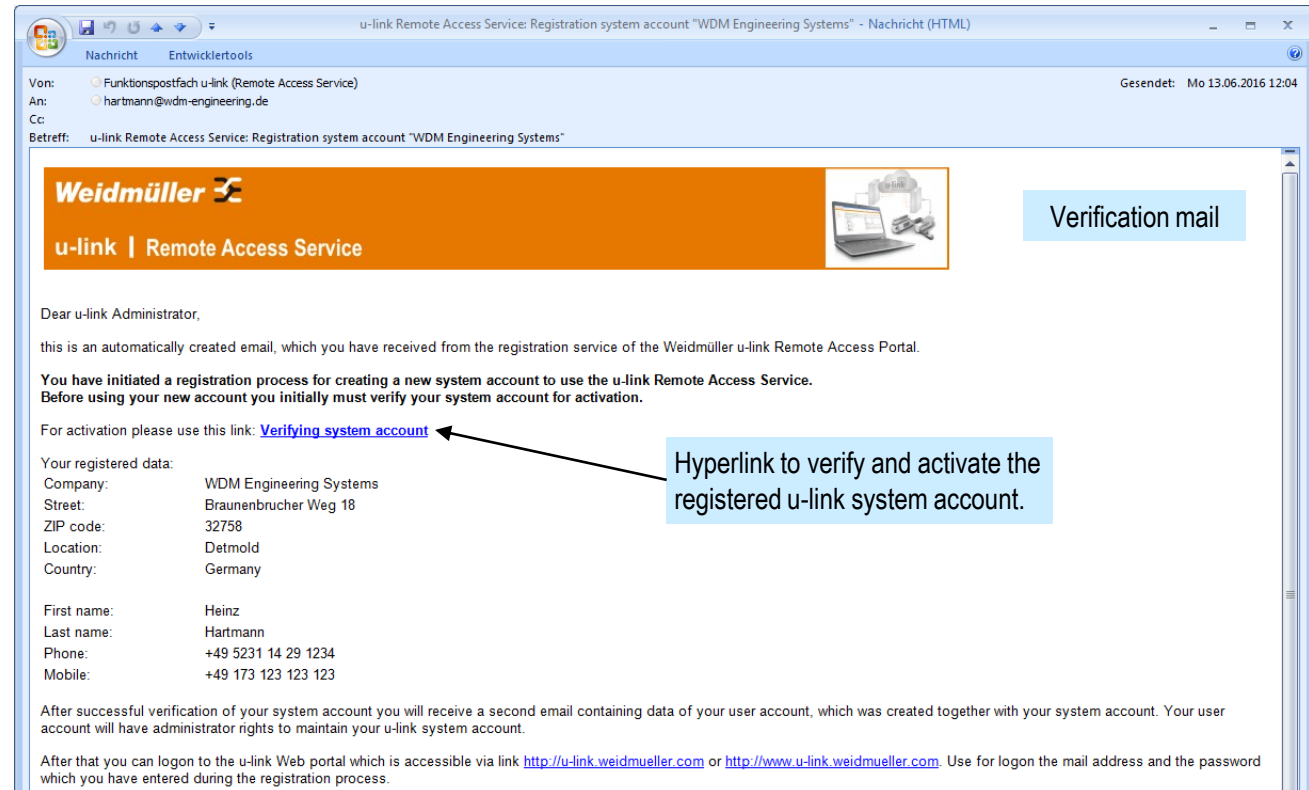
Date: 13.06.2016  
Time: 12:03:56

Next

### 2.1 Registration of a new u-link account

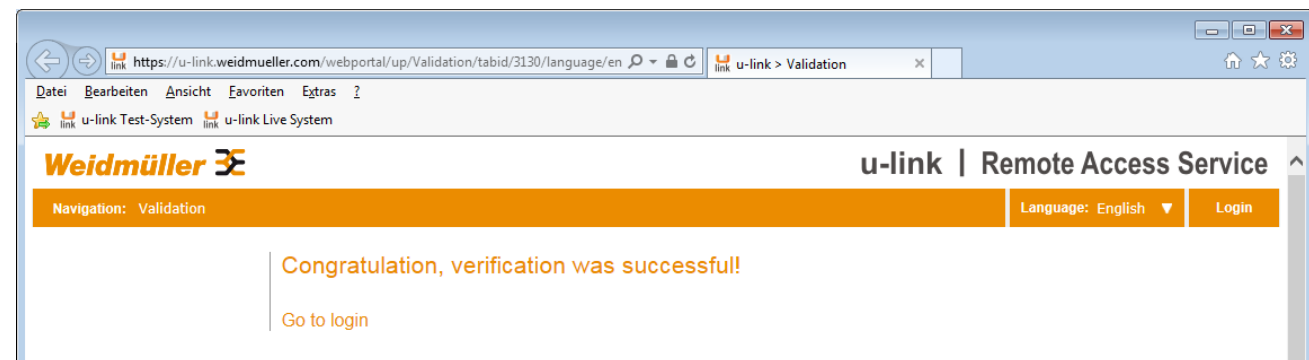
#### Registration process (Step 5)

- Open your received mail “Registration system account”.
- Click on hyperlink “Verifying system account”.



#### Registration process (Step 6)

- Now your standard browser will be opened displaying the information that your u-link successfully was activated.
- Additionally you will receive a second mail named “Registration Administrator” containing information about your user data (being the u-link administrator of the registered account).



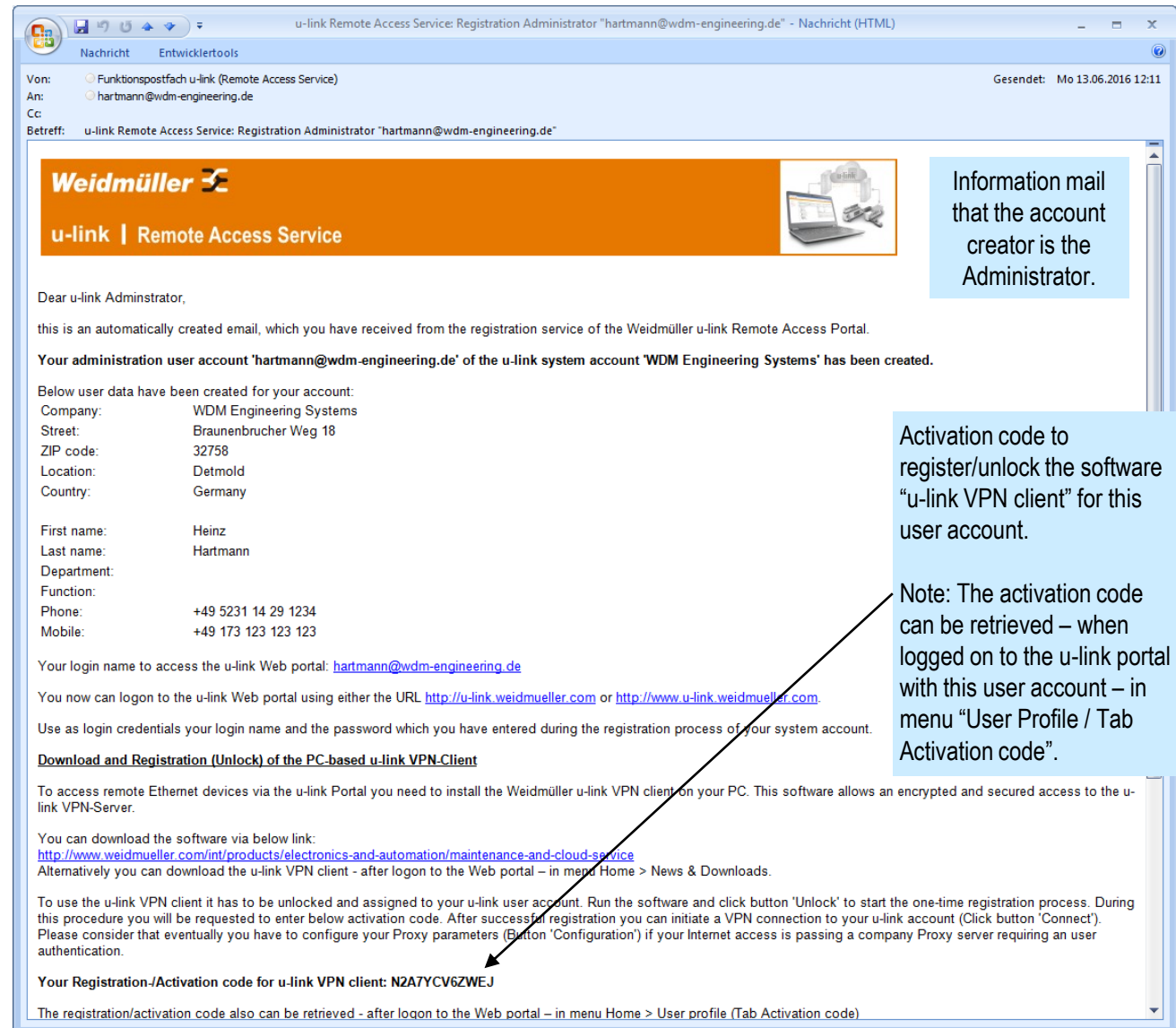
### 2.1 Registration of a new u-link account

#### Registration process (Step 7)

- Check your mailbox regarding the mail “Registration Administrator”.
- This mail contains some information about your entered registration data and how to logon to the u-link Web portal.
- Additionally it contains the “Activation code” to register / unlock the software “u-link VPN client” using this account for remote access.

#### Registration process finished!

- Now you can logon to your u-link account via web page [u-link.weidmueller.com](http://u-link.weidmueller.com) using your registered mail address and entered password.




u-link Remote Access Service: Registration Administrator "hartmann@wdm-engineering.de" - Nachricht (HTML)

Nachricht   Entwicklertools

Von: Funktionspostfach u-link (Remote Access Service)  
An: hartmann@wdm-engineering.de  
Cc:  
Betreff: u-link Remote Access Service: Registration Administrator "hartmann@wdm-engineering.de"

Gesendet: Mo 13.06.2016 12:11

**Weidmüller** 

**u-link | Remote Access Service**

Information mail that the account creator is the Administrator.

Dear u-link Administrator,

this is an automatically created email, which you have received from the registration service of the Weidmüller u-link Remote Access Portal.

Your administration user account 'hartmann@wdm-engineering.de' of the u-link system account 'WDM Engineering Systems' has been created.

Below user data have been created for your account:

Company:	WDM Engineering Systems
Street:	Braunenbrucher Weg 18
ZIP code:	32758
Location:	Detmold
Country:	Germany
First name:	Heinz
Last name:	Hartmann
Department:	
Function:	
Phone:	+49 5231 14 29 1234
Mobile:	+49 173 123 123 123

Your login name to access the u-link Web portal: [hartmann@wdm-engineering.de](mailto:hartmann@wdm-engineering.de)

You now can logon to the u-link Web portal using either the URL <http://u-link.weidmueller.com> or <http://www.u-link.weidmueller.com>.

Use as login credentials your login name and the password which you have entered during the registration process of your system account.

**Download and Registration (Unlock) of the PC-based u-link VPN-Client**

To access remote Ethernet devices via the u-link Portal you need to install the Weidmüller u-link VPN client on your PC. This software allows an encrypted and secured access to the u-link VPN-Server.

You can download the software via below link:  
<http://www.weidmueller.com/int/products/electronics-and-automation/maintenance-and-cloud-service>  
Alternatively you can download the u-link VPN client - after logon to the Web portal - in menu Home > News & Downloads.

To use the u-link VPN client it has to be unlocked and assigned to your u-link user account. Run the software and click button 'Unlock' to start the one-time registration process. During this procedure you will be requested to enter below activation code. After successful registration you can initiate a VPN connection to your u-link account (Click button 'Connect'). Please consider that eventually you have to configure your Proxy parameters (Button 'Configuration') if your Internet access is passing a company Proxy server requiring an user authentication.

**Your Registration-/Activation code for u-link VPN client: N2A7YCV6ZWEJ**

The registration/activation code also can be retrieved - after logon to the Web portal - in menu Home > User profile (Tab Activation code).

Activation code to register/unlock the software “u-link VPN client” for this user account.

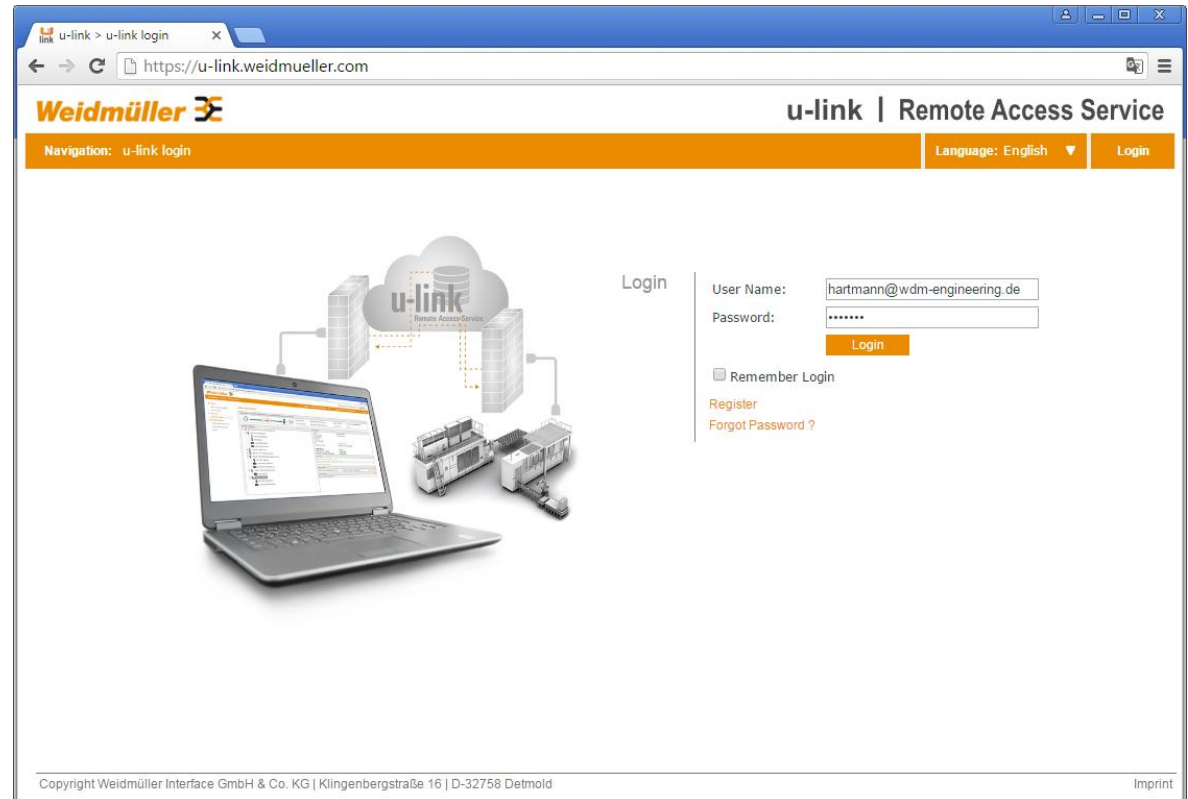
Note: The activation code can be retrieved – when logged on to the u-link portal with this user account – in menu “User Profile / Tab Activation code”.

## **Chapter 3: Overview features and functions of u-link Web portal**

- 3.1 u-link Login page
- 3.2 Menu News & Downloads
- 3.3 Menu User Profile
- 3.4 Menu Service Desk
- 3.5 Menu User Management
- 3.6 Menu Device Management
- 3.7 Menu Status

### 3.1 u-link Login page

- For logon to the u-link Web portal any standard browser is supported.
- Open a browser and enter **u-link.weidmueller.com**
- Login with user name (Mail address) and password of the account creator (is automatically the Administrator).

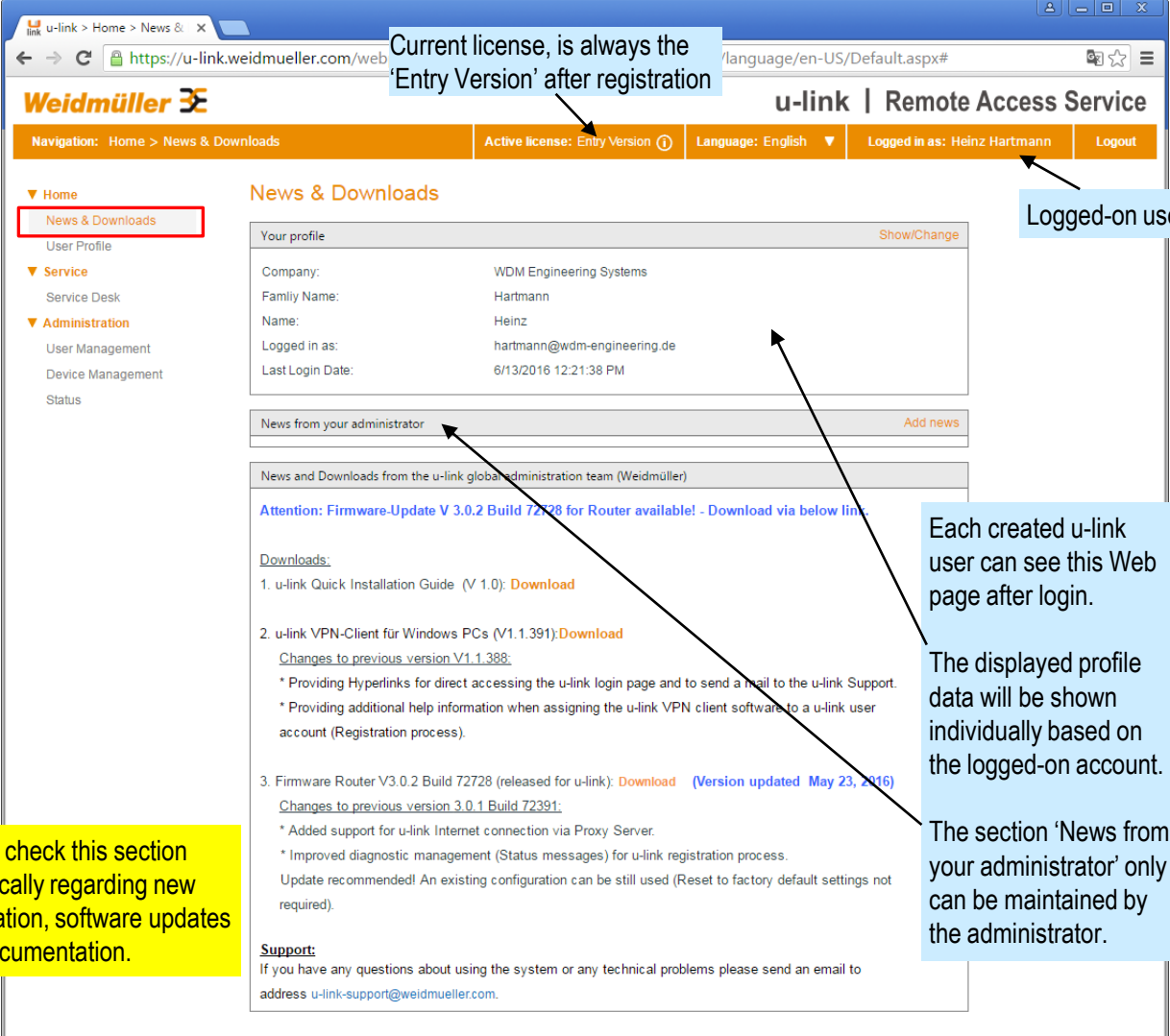




### 3.2 Menu 'News & Downloads' (Initial state after registration)

- After successful login the menu "News & Downloads" automatically is opened (Home page).
- This page is separated into the 3 sections:
  - "Profile data"** → Contains information about the data of the logged-on user.
  - "News from administrator"** → Here any text information can be provided by the local administrator of this account to all other users of this account (Button "Add news").
  - "News and Downloads from global u-link administrator"** → Here the Weidmüller u-link administration team is providing data (any information, downloads, documents) to all u-link users of all u-link accounts.

Please check this section periodically regarding new information, software updates and documentation.



The screenshot shows the 'u-link | Remote Access Service' web portal. The browser address bar displays 'https://u-link.weidmueller.com/web/language/en-US/Default.aspx#'. The page header includes the Weidmüller logo, navigation links (Home > News & Downloads), active license (Entry Version), language (English), and user information (Logged in as: Heinz Hartmann, Logout).

The main content area is titled 'News & Downloads' and is divided into three sections:

- Your profile:** A table showing user information: Company (WDM Engineering Systems), Family Name (Hartmann), Name (Heinz), Logged in as (hartmann@wdm-engineering.de), and Last Login Date (6/13/2016 12:21:38 PM). A 'Show/Change' link is present.
- News from your administrator:** A section for local administrator news, with an 'Add news' button.
- News and Downloads from the u-link global administration team (Weidmüller):** A section for global updates, including:
  - Attention: Firmware-Update V 3.0.2 Build 72728 for Router available! - Download via below link.**
  - Downloads:**
    - 1. u-link Quick Installation Guide (V 1.0): [Download](#)
    - 2. u-link VPN-Client für Windows PCs (V1.1.391): [Download](#)  
[Changes to previous version V1.1.388:](#)
      - \* Providing Hyperlinks for direct accessing the u-link login page and to send a mail to the u-link Support.
      - \* Providing additional help information when assigning the u-link VPN client software to a u-link user account (Registration process).
    - 3. Firmware Router V3.0.2 Build 72728 (released for u-link): [Download](#) (Version updated May 23, 2016)  
[Changes to previous version 3.0.1 Build 72391:](#)
      - \* Added support for u-link Internet connection via Proxy Server.
      - \* Improved diagnostic management (Status messages) for u-link registration process.
  - Support:** If you have any questions about using the system or any technical problems please send an email to address [u-link-support@weidmueller.com](mailto:u-link-support@weidmueller.com).

Annotations on the screenshot:

- Current license, is always the 'Entry Version' after registration:** Points to the 'Active license: Entry Version' header.
- Logged-on user:** Points to the 'Logged in as: Heinz Hartmann' header.
- Each created u-link user can see this Web page after login.** Points to the 'News & Downloads' title.
- The displayed profile data will be shown individually based on the logged-on account.** Points to the 'Your profile' section.
- The section 'News from your administrator' only can be maintained by the administrator.** Points to the 'News from your administrator' section.

### 3.3 Menu 'User Profile' (Initial state after registration)

#### ■ Tab 'User data'

- Show / Edit the data of logged-on user
- Change Password
- Select default language when logged on
- Select default Home page when logged on

**Note:** Group membership and User permissions cannot be changed in the Entry-Version. The account creator automatically is member of group 'Administrators', additionally created users automatically becomes member of group 'Service'.

#### ■ Tab 'Status Information'

- Shows several date and time values for information

#### ■ Tab 'Activation Code'

- Activation code: Shows the key which this user has to use to register/unlock the software "u-link VPN Client".
- States: "**Not used**" as long as the u-link VPN Client never has initiated a VPN connection to u-link.

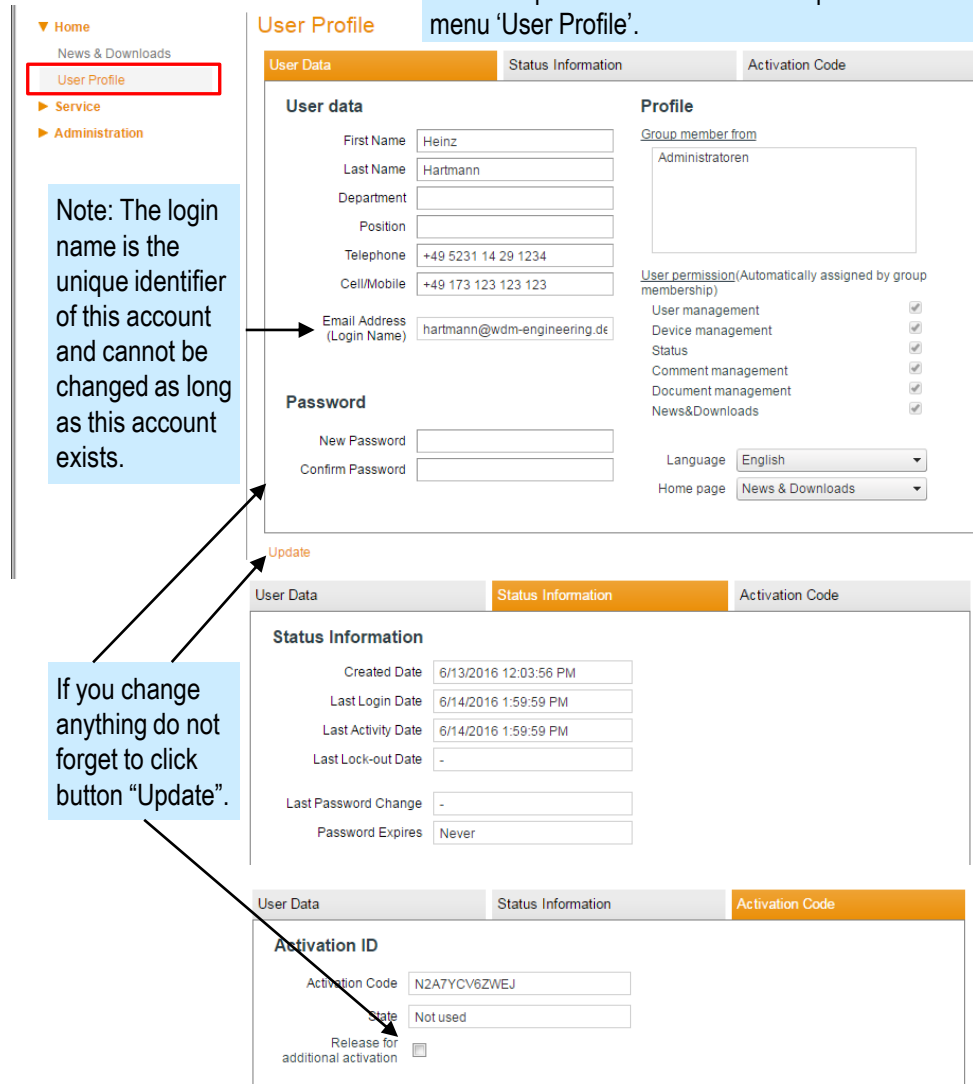
"In Use" after first establishing a VPN connection to u-link.

- Release for additional activation: If state is 'In Use' and if you want to release a second PC as u-link VPN Client using this activation code you first must enable the checkbox.

Note 1: Checkbox first can be set if state is 'In Use'!

Note 2: If you release several Service PCs with the same activation code (all are clones from the perspective of the VPN server) be aware that you do not start the VPN connection on these PCs at the same time (A new connection is interrupting the previous one).

Each logged-on u-link user can change his own - editable - profile data and set a new password via menu 'User Profile'.



**User Profile**

**User Data** | Status Information | Activation Code

**User data**

First Name: Heinz  
 Last Name: Hartmann  
 Department:   
 Position:   
 Telephone: +49 5231 14 29 1234  
 Cell/Mobile: +49 173 123 123 123  
 Email Address (Login Name): hartmann@wdm-engineering.de  
 Password:  New Password:  Confirm Password:

**Profile**

Group member from: Administratoren  
 User permission (Automatically assigned by group membership):  
 User management: ☒  
 Device management: ☒  
 Status: ☒  
 Comment management: ☒  
 Document management: ☒  
 News&Downloads: ☒  
 Language: English  
 Home page: News & Downloads

**Status Information**

Created Date: 6/13/2016 12:03:56 PM  
 Last Login Date: 6/14/2016 1:59:59 PM  
 Last Activity Date: 6/14/2016 1:59:59 PM  
 Last Lock-out Date: -  
 Last Password Change: -  
 Password Expires: Never

**Activation Code**

Activation ID  
 Activation Code: N2A7YCV6ZWEJ  
 State: Not used  
 Release for additional activation: ☐

**Note:** The login name is the unique identifier of this account and cannot be changed as long as this account exists.

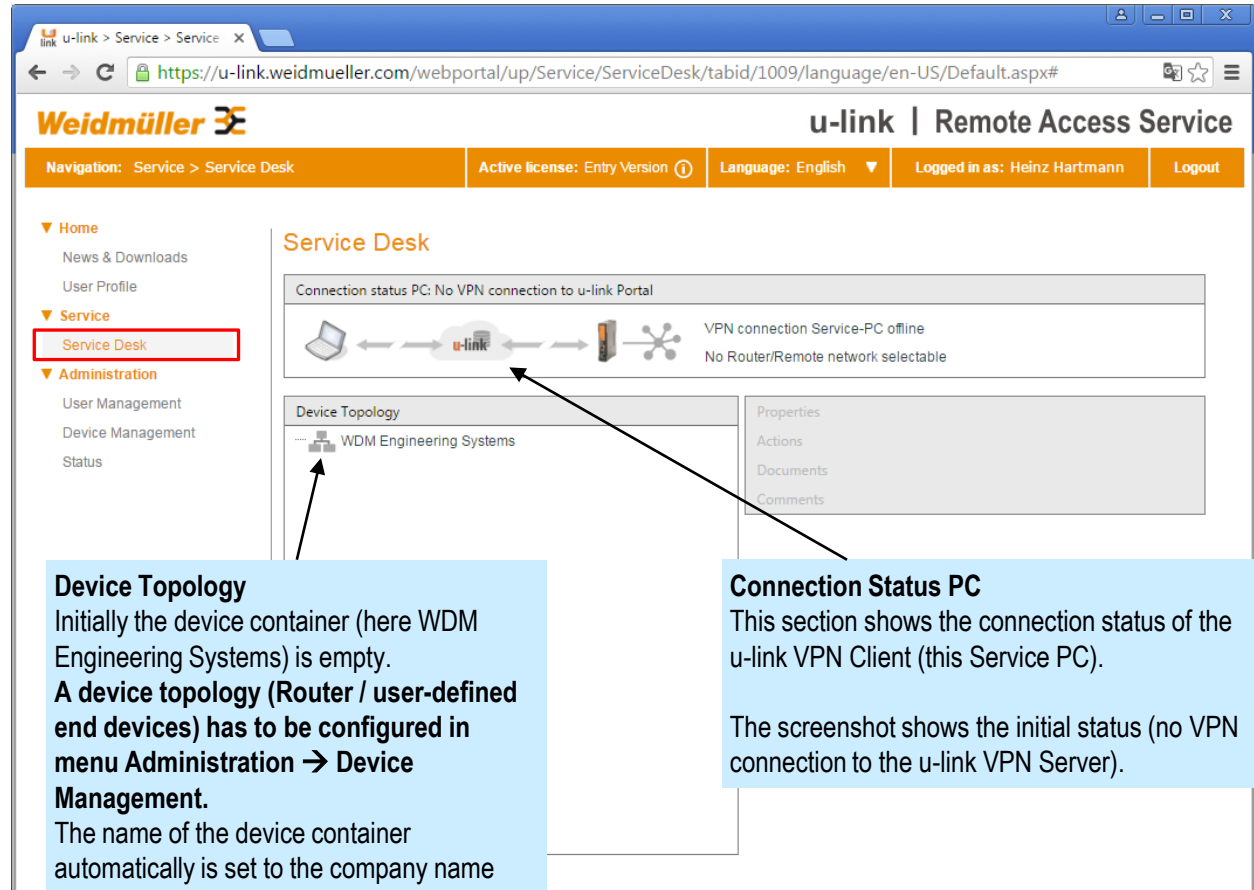
**If you change anything do not forget to click button "Update".**

### 3.4 Menu 'Service Desk' (Initial state after registration)

- This menu will be used for access of remote devices (connecting to remote Router / Network devices)
- The screenshot is displaying the initial status after registering a new u-link system account:

#### Status:

- No devices configured.
- No active VPN connection of this Service PC to the u-link Portal (The software 'u-link VPN client' still has to be installed and assigned/registered to this administrator account if it will be used for remote access).



**Service Desk**

Connection status PC: No VPN connection to u-link Portal

VPN connection Service-PC offline  
No Router/Remote network selectable

**Device Topology**

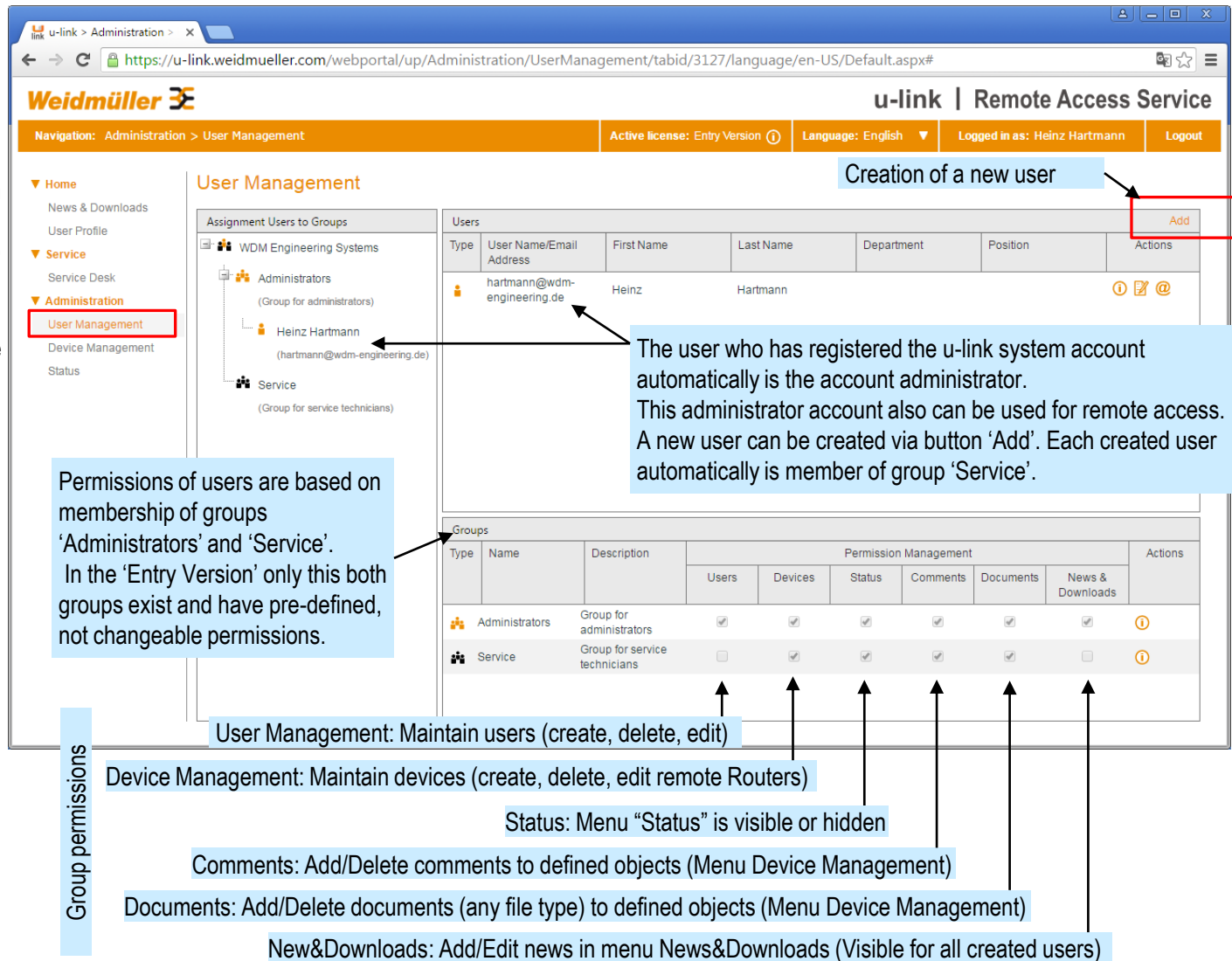
WDM Engineering Systems

**Connection Status PC**  
This section shows the connection status of the u-link VPN Client (this Service PC).  
The screenshot shows the initial status (no VPN connection to the u-link VPN Server).

**Device Topology**  
Initially the device container (here WDM Engineering Systems) is empty.  
**A device topology (Router / user-defined end devices) has to be configured in menu Administration → Device Management.**  
The name of the device container automatically is set to the company name which you have entered during the registration process of this u-link system account.

## 3.5 Menu 'User Management' (Initial state after registration)

- This menu will be used for creating and configuring the accounts of Service users.
- The screenshot is displaying the initial status after registering a new u-link system account. At this time only the account creator (Administrator) of this u-link account is existent.
- All users are organized into the 2 groups 'Administrators' and 'Service'. In the Entry-Version the account creator automatically is the Administrator belonging to group 'Administrators'.
- Each new created user will become a member of group 'Service'.
- The Administrator is allowed to fully maintain the account.
- A Service user may maintain the device topology (creating Routers and user-defined Ethernet devices) via Menu 'Device Management' but may not maintain users (Menu 'User Management' is hidden).



**u-link | Remote Access Service**

Navigation: Administration > User Management | Active license: Entry Version | Language: English | Logged in as: Heinz Hartmann | Logout

**User Management**

Creation of a new user

The user who has registered the u-link system account automatically is the account administrator. This administrator account also can be used for remote access. A new user can be created via button 'Add'. Each created user automatically is member of group 'Service'.

Permissions of users are based on membership of groups 'Administrators' and 'Service'. In the 'Entry Version' only this both groups exist and have pre-defined, not changeable permissions.

User Management: Maintain users (create, delete, edit)

Device Management: Maintain devices (create, delete, edit remote Routers)





Status: Menu "Status" is visible or hidden

Comments: Add/Delete comments to defined objects (Menu Device Management)

Documents: Add/Delete documents (any file type) to defined objects (Menu Device Management)

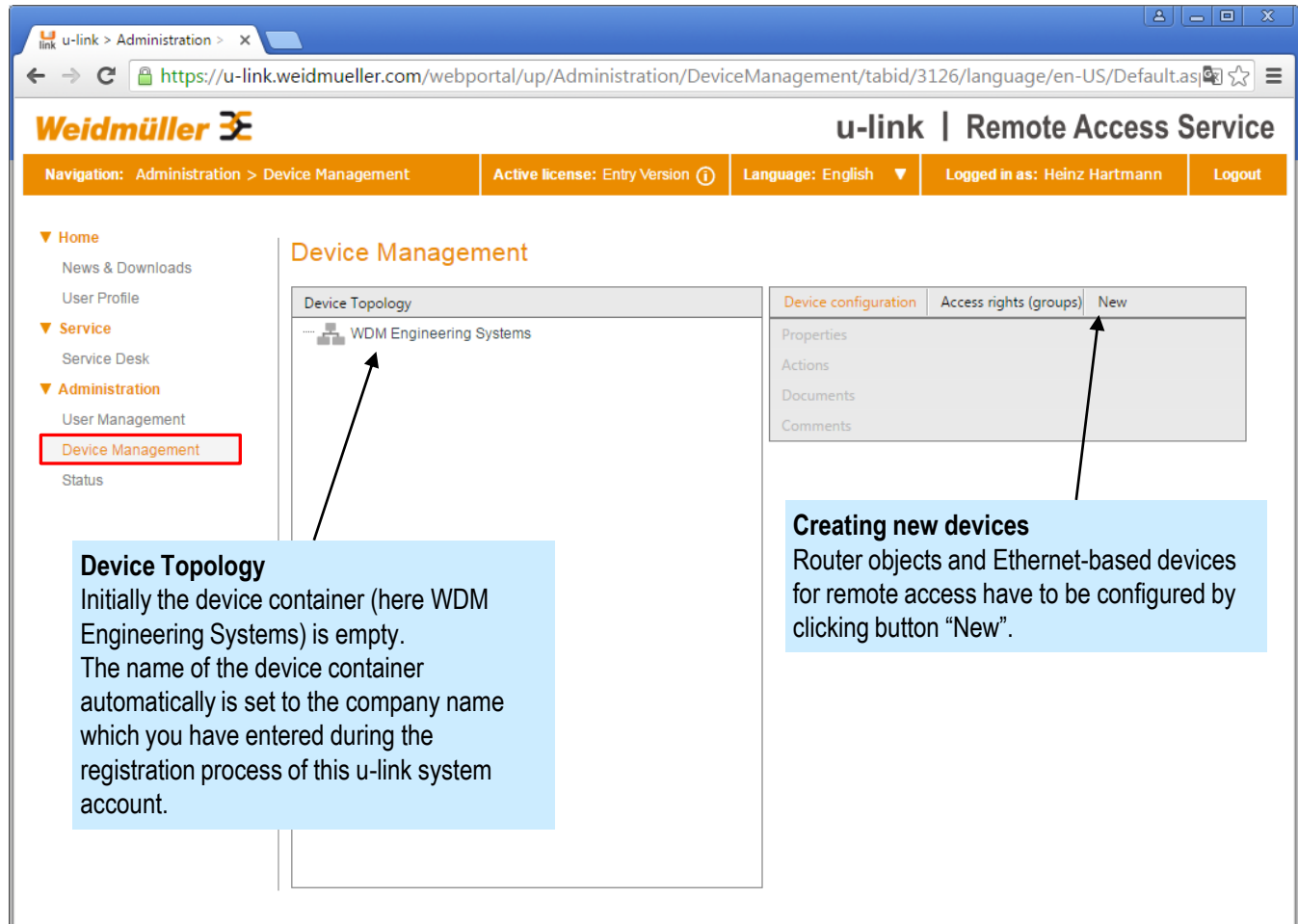
New&Downloads: Add/Edit news in menu News&Downloads (Visible for all created users)

Group permissions

Type	Name	Description	Permission Management						Actions
			Users	Devices	Status	Comments	Documents	News & Downloads	
	Administrators	Group for administrators	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Service	Group for service technicians	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

### 3.6 Menu 'Device Management' (Initial state after registration)

- This menu will be used to configure device objects (Router, Ethernet-based devices connected to the Router) representing the physical remote devices.
- The screenshot is displaying the initial status after registering a new u-link system account.
  - No devices configured (Container 'Device Topology' is empty).
- After setup the configured device topology will be displayed in menu 'Service Desk' to initiate a remote access to Ethernet devices via defined Router objects.



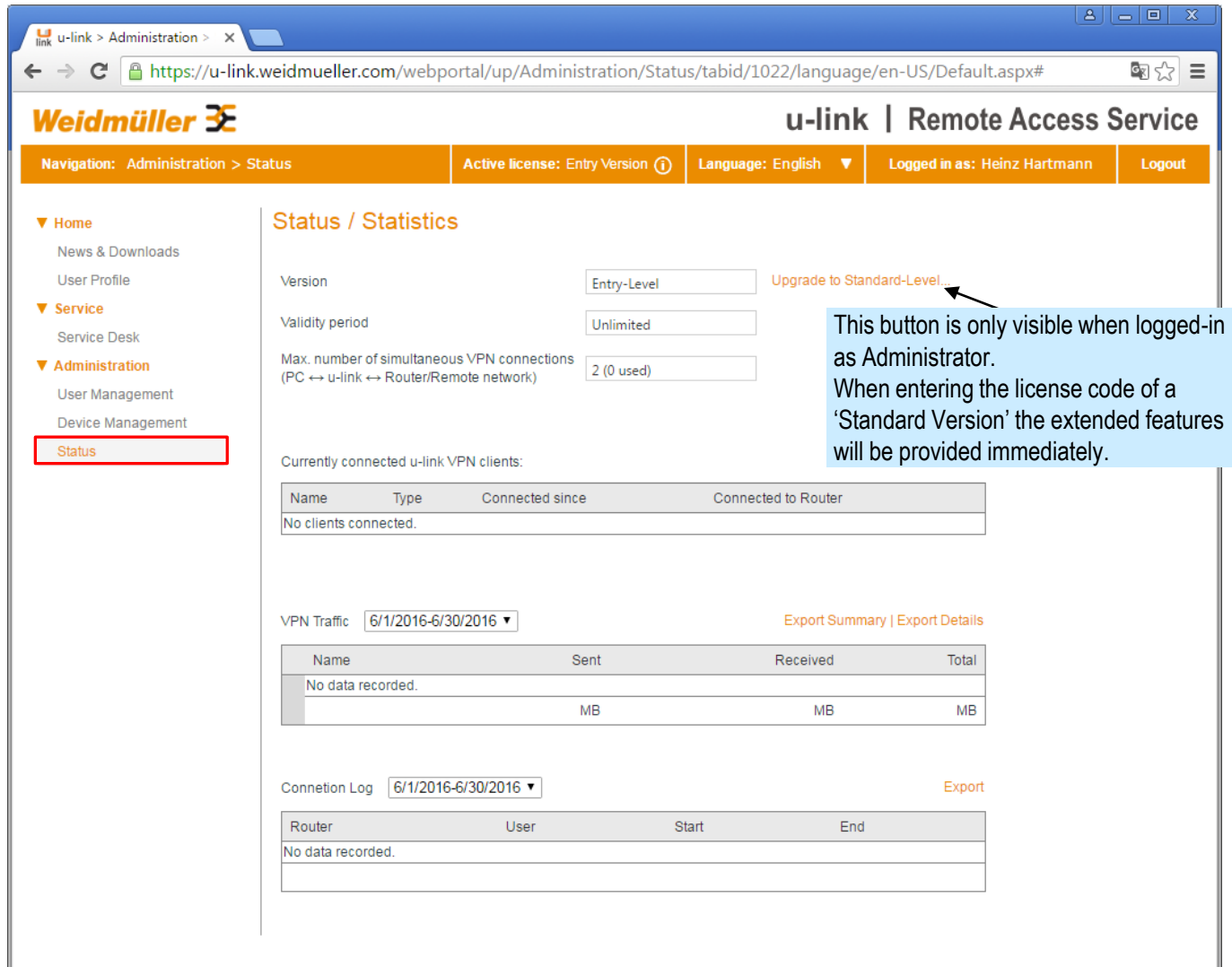
The screenshot shows the u-link Web portal interface. The breadcrumb navigation is 'u-link > Administration > Device Management'. The page title is 'u-link | Remote Access Service'. The navigation bar includes 'Navigation: Administration > Device Management', 'Active license: Entry Version', 'Language: English', 'Logged in as: Heinz Hartmann', and a 'Logout' button. The left sidebar shows a tree structure with 'Home', 'Service', 'Administration', and 'Status'. 'Device Management' is highlighted under 'Administration'. The main content area is titled 'Device Management' and contains a 'Device Topology' section with a tree view showing 'WDM Engineering Systems'. To the right of this is a table with columns 'Device configuration', 'Access rights (groups)', and 'New'. The 'New' button is highlighted with an arrow. A callout box points to the 'Device Topology' section, and another points to the 'New' button.

**Device Topology**  
Initially the device container (here WDM Engineering Systems) is empty. The name of the device container automatically is set to the company name which you have entered during the registration process of this u-link system account.

**Creating new devices**  
Router objects and Ethernet-based devices for remote access have to be configured by clicking button "New".

### 3.7 Menu 'Status' (Initial state after registration)

- This menu is displaying status and license information of this system account.
- When registering a new u-link system account the version always will be the 'Entry Version'. An upgrade to a chargeable 'Standard Version' can be done via button 'Upgrade to Standard-Level'.
- For logging and reporting purposes following information will be provided:
  - Current connections (Service user to Remote Router)
  - Monthly data volume (VPN traffic) of a Service user
  - Connection history (Service user to Remote Router)
  - The VPN traffic and the connection history additionally can be exported to a csv-based text file.



**u-link | Remote Access Service**

Navigation: Administration > Status    Active license: Entry Version ⓘ    Language: English ▼    Logged in as: Heinz Hartmann    Logout

**Status / Statistics**

Version: Entry-Level    [Upgrade to Standard-Level...](#)

Validity period: Unlimited

Max. number of simultaneous VPN connections (PC ↔ u-link ↔ Router/Remote network): 2 (0 used)

Currently connected u-link VPN clients:

Name	Type	Connected since	Connected to Router
No clients connected.			

VPN Traffic: 6/1/2016-6/30/2016 ▼    [Export Summary](#) | [Export Details](#)

Name	Sent	Received	Total
No data recorded.			
	MB	MB	MB

Connction Log: 6/1/2016-6/30/2016 ▼    [Export](#)

Router	User	Start	End
No data recorded.			

**This button is only visible when logged-in as Administrator. When entering the license code of a 'Standard Version' the extended features will be provided immediately.**

## **Chapter 4: Setup of a remote access scenario (Example)**

- 4.1 Illustration of sample application
- 4.2 Creating a new user account (u-link Web portal)
- 4.3 Administration of a user account (u-link Web portal)
- 4.4 Setup of the Device configuration (u-link Web portal)
- 4.5 Preparing of the Service PC
- 4.6 Configuration of the Router




### 4. 1 Illustration of sample application (Setup described on next slides)

#### Windows Service PC

Having any kind of Internet access, eg. via company network or via DSL Router or via mobile connection.

PC may have any IP except an IP from the range of the remote network (otherwise the Routing to remote network will not work).

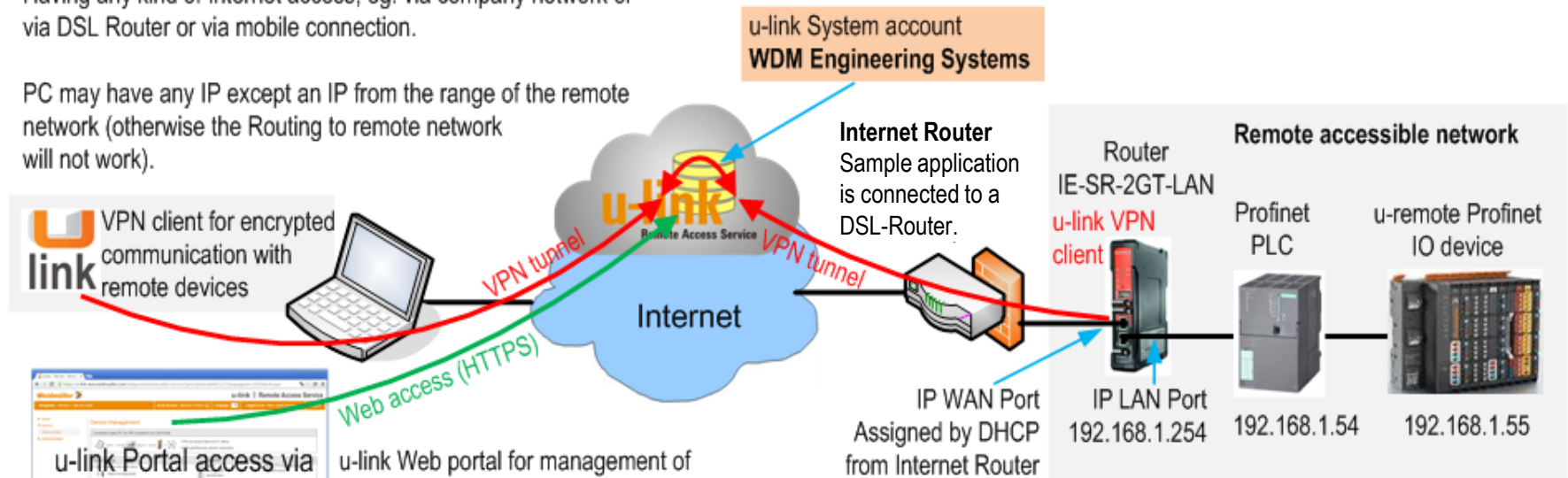
 VPN client for encrypted communication with remote devices



u-link Portal access via Standard browser

u-link Web portal for management of Service users, configuration of the remote Device topology and selecting a target Router for remote access.

u-link System account  
**WDM Engineering Systems**





## 4.2 Creating a new user account

### 4.2 Creating a new user account (u-link Web portal)

#### Creating a new Service user (Step 1)

##### Note:

After registration of a new u-link system account only the administrator account exists. For doing a remote access the administration account also can be used, there is no need to create an additional service user. Next slides describe how to create and maintain a service user. For the later described example of a remote access session the administrator account is used, not the service user which we will create on the next slides.

- Goto menu 'User Management'.
- Click button 'Add' in section 'Users'.
  - A new window will be displayed to enter the user data.
- Enter the describing user data.
- Enter the users mail address.
  - It will be used for Login to the u-link Web portal.
- Click button 'Insert'.
  - Now the user will be created.
  - The activation code for registering the u-link VPN client of this user automatically will be generated.



**User Management**

Assignment Users to Groups

- WDM Engineering Systems
  - Administrators (Group for administrators)
    - Heinz Hartmann (hartmann@wdm-engineering.de)
  - Service (Group for service technicians)

Users

Type	User Name/Email Address	First Name	Last Name	Department	Position	Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann			① ✎ @

Groups

Type	Name
	Administrators
	Service

**Add**

##### Attention:

- The Login name (mail address ) is used as unique identifier of this user account inside of the global u-link system.
- It may be used only one time.
- The Login name cannot be changed and cannot be used a second time as long as this user accounts exists.

**Add new user**

First Name

Last Name

Department

Position

Telephone

Cell/Mobile

Email Address (Login Name)

Activation ID

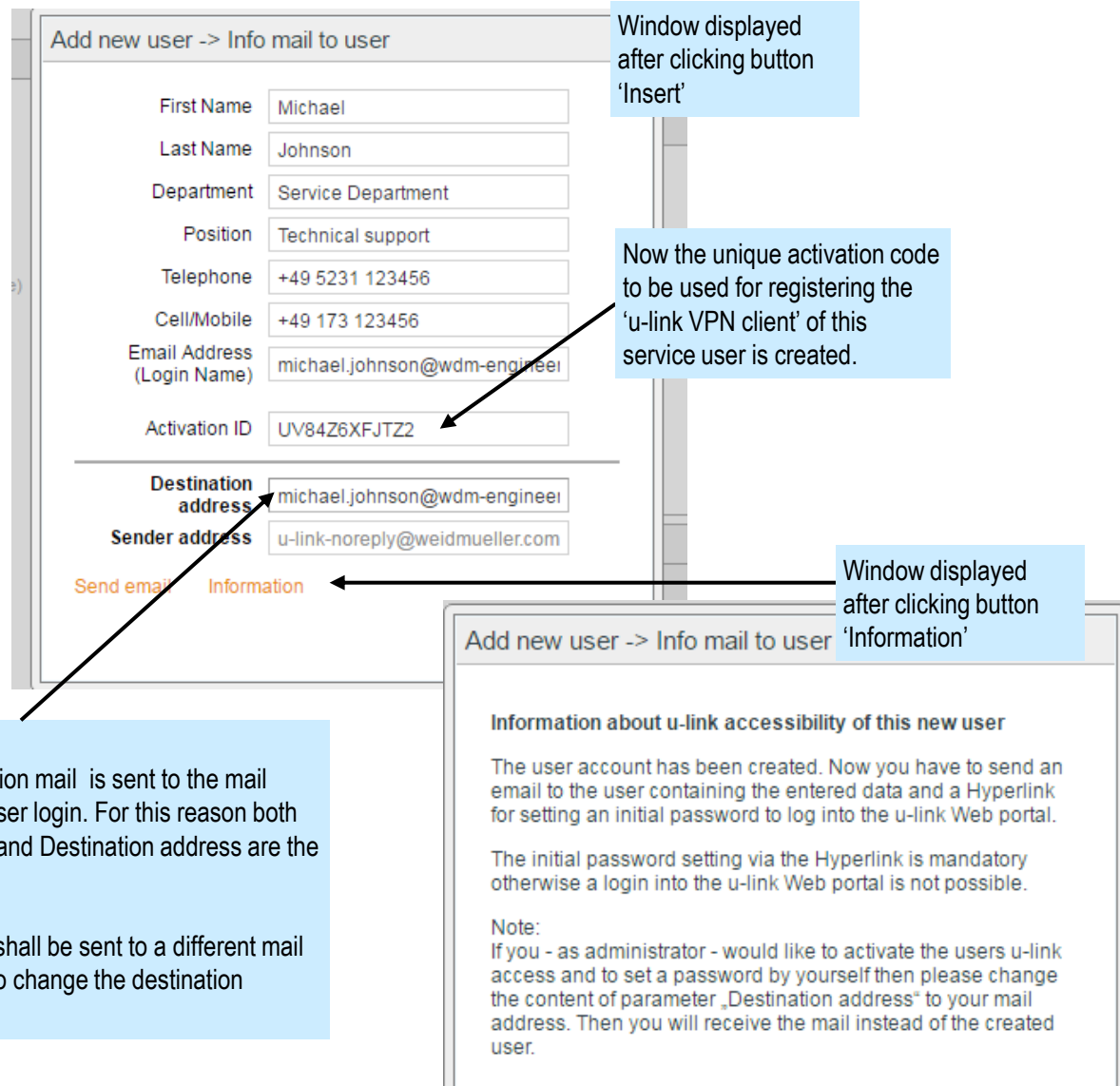
**Insert** **Cancel**

Window displayed after clicking button 'Add'

### 4.2 Creating a new user account (u-link Web portal)

#### Creating a new Service user (Step 2)

- As next step the new user will be informed by mail that the administrator has created a u-link user account.
- After clicking button 'Insert' this window will be displayed to send the 'User registration mail' to the mail address of field 'Destination address'.
- Click button 'Send email'.
  - The recipient will receive a mail of type 'Registration User' from sender address **u-link-noreply@weidmueller.com**.



**Add new user -> Info mail to user**

First Name	Michael
Last Name	Johnson
Department	Service Department
Position	Technical support
Telephone	+49 5231 123456
Cell/Mobile	+49 173 123456
Email Address (Login Name)	michael.johnson@wdm-engineer
Activation ID	UV84Z6XFJTZ2
Destination address	michael.johnson@wdm-engineer
Sender address	u-link-noreply@weidmueller.com

Send email    Information

**Window displayed after clicking button 'Insert'**

Now the unique activation code to be used for registering the 'u-link VPN client' of this service user is created.

**Window displayed after clicking button 'Information'**

**Information about u-link accessibility of this new user**

The user account has been created. Now you have to send an email to the user containing the entered data and a Hyperlink for setting an initial password to log into the u-link Web portal.

The initial password setting via the Hyperlink is mandatory otherwise a login into the u-link Web portal is not possible.

**Note:**  
If you - as administrator - would like to activate the users u-link access and to set a password by yourself then please change the content of parameter „Destination address“ to your mail address. Then you will receive the mail instead of the created user.

#### Note:

By default the user registration mail is sent to the mail address which is used for user login. For this reason both Mail address (Login name) and Destination address are the same.

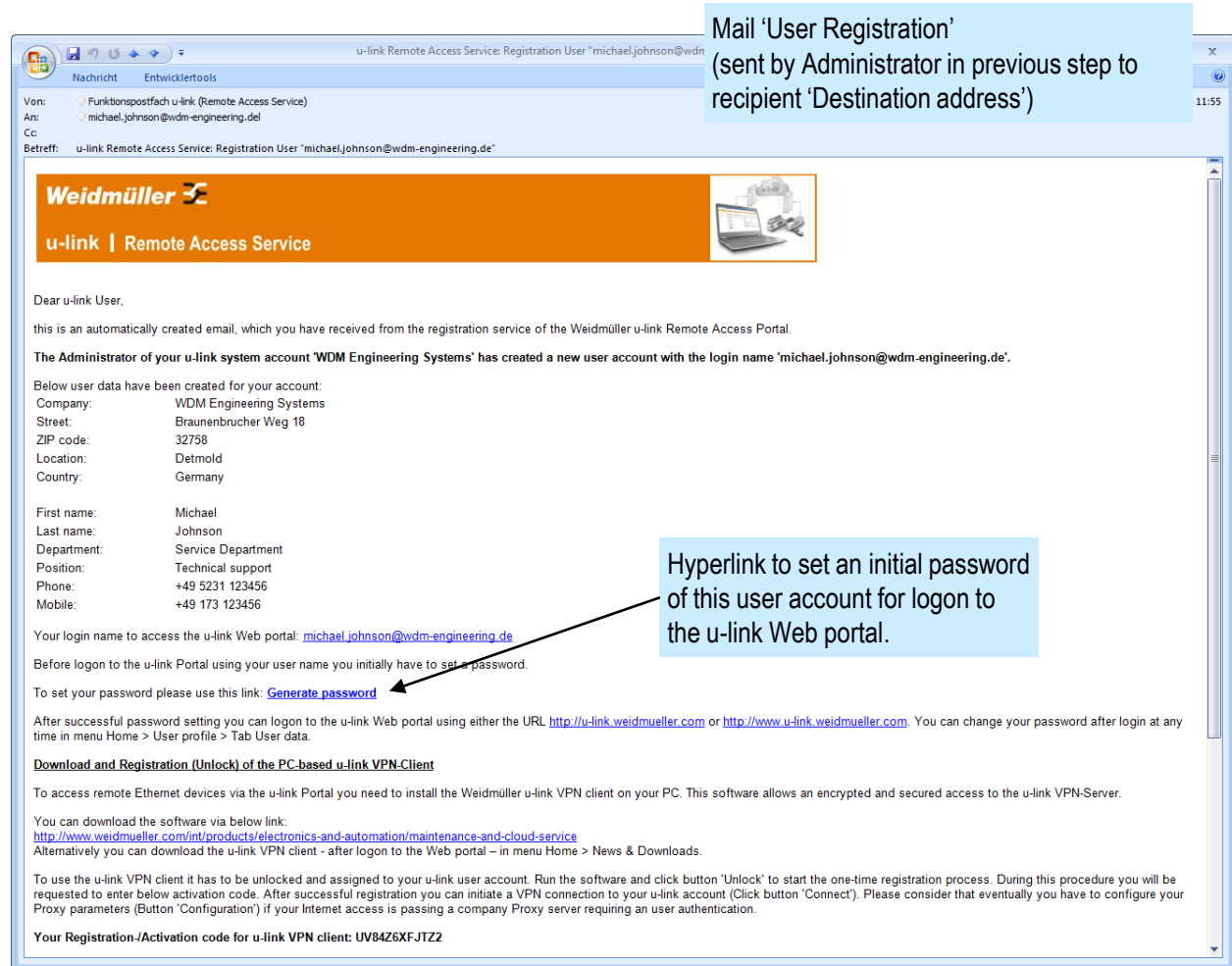
If the user registration mail shall be sent to a different mail address then it is possible to change the destination address.

### 4.2 Creating a new user account (u-link Web portal)

#### Creating a new Service user

##### (Step 3 – To-Do by new user)

- Screenshot shows the mail (Type 'User Registration') which the new user has received from the u-link administrator.
  - At his time the user account already is active but before login to the u-link Web portal the new user has to set an initial password.
- Open the mail.
- Click hyperlink 'Generate password'.
- Now an u-link Web page will be opened to enter the initial password of this user.



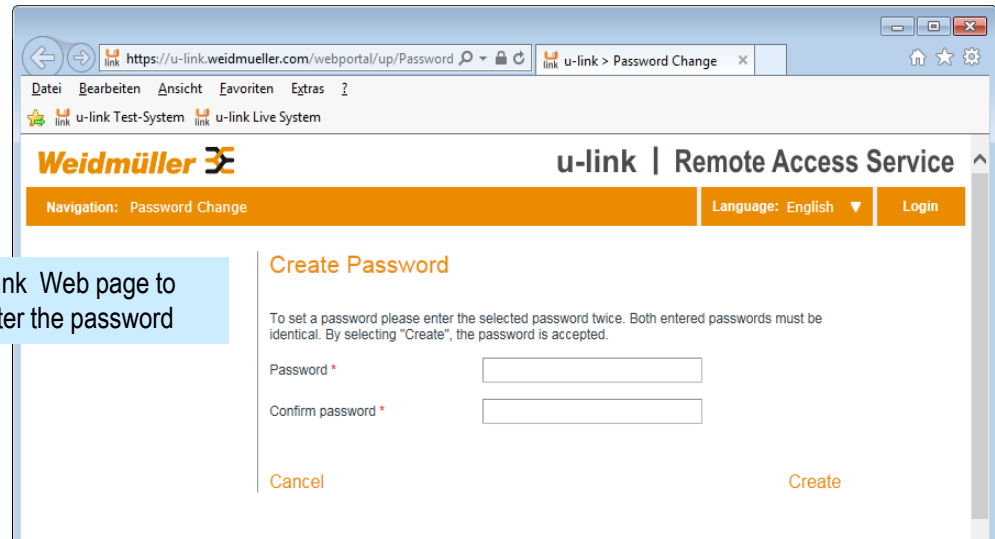
### 4.2 Creating a new user account (u-link Web portal)

#### Creating a new Service user

##### (Step 4 – To-Do by new user)

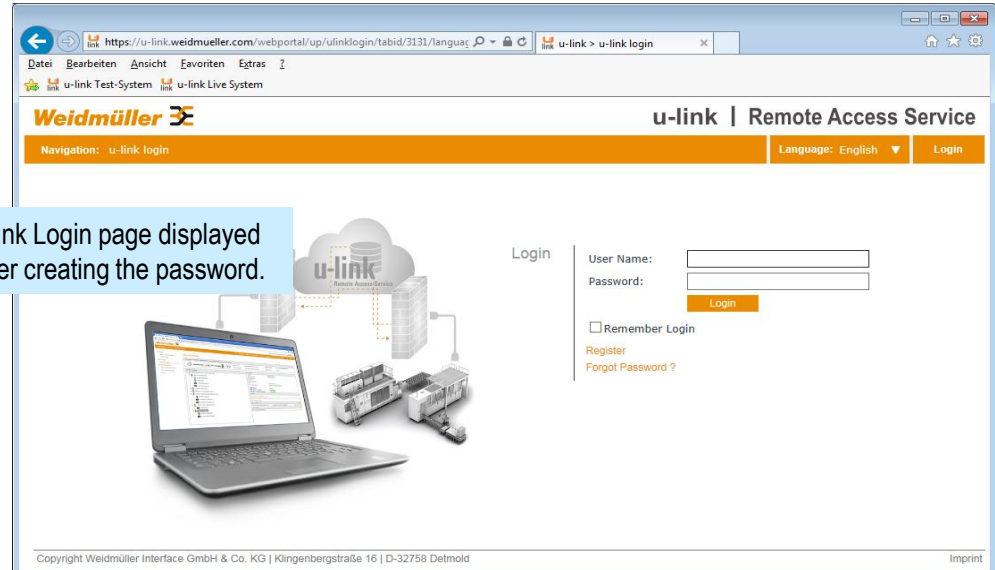
- Enter the password twice.
- Click button 'Create'.
  - After successful creation the u-link Login page is displayed.
- Now the user can login to the u-link Web portal using his login name (mail address) and the entered password.

u-link Web page to enter the password



The screenshot shows the 'u-link | Remote Access Service' web portal. The navigation bar indicates 'Password Change'. The main heading is 'Create Password'. Below it, a message states: 'To set a password please enter the selected password twice. Both entered passwords must be identical. By selecting "Create", the password is accepted.' There are two input fields labeled 'Password \*' and 'Confirm password \*'. At the bottom, there are 'Cancel' and 'Create' buttons.

u-link Login page displayed after creating the password.

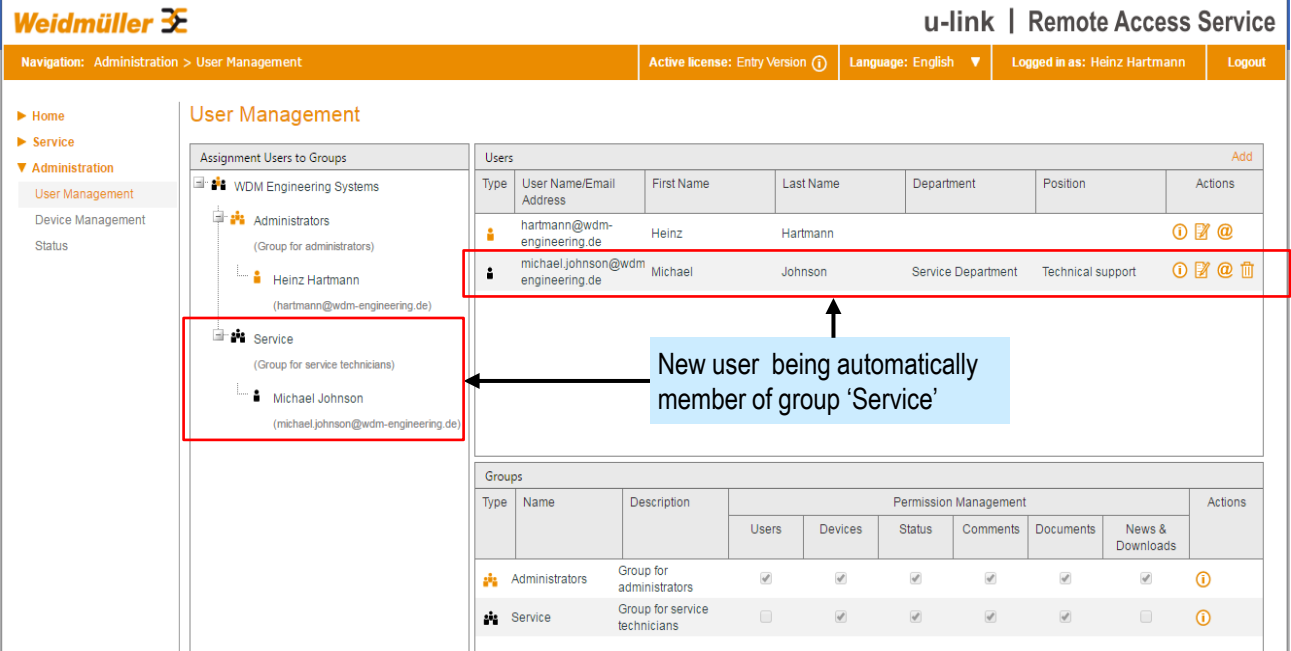


The screenshot shows the 'u-link | Remote Access Service' web portal. The navigation bar indicates 'u-link login'. The main heading is 'Login'. On the left, there is a graphic showing a laptop connected to a server cloud labeled 'u-link'. On the right, there is a login form with fields for 'User Name:' and 'Password:', a 'Login' button, a 'Remember Login' checkbox, and links for 'Register' and 'Forgot Password?'. The footer contains copyright information: 'Copyright Weidmüller Interface GmbH & Co. KG | Klingenbergstraße 16 | D-32758 Detmold' and an 'Imprint' link.

## 4.2 Creating a new user account (u-link Web portal)

### Creating a new Service user (Step 5)

- The new user now is displayed in section 'Users' and automatically assigned to group 'Service'.
- The permissions of this user are based on the permissions of group 'Service' having following rights:
  - User Management is prohibited (only allowed for Administrator account).
  - Device Management is allowed (Maintain Router, user-defined end devices).
  - Access to Menu 'Status' is allowed.
  - Documents and Comments can be stored to defined device objects (Menu Device Management).
  - Creation of information messages in Menu 'News & Downloads' is prohibited.
- The permissions cannot be changed in the Entry-Version.



**u-link | Remote Access Service**

Navigation: Administration > User Management    Active license: Entry Version    Language: English    Logged in as: Heinz Hartmann    Logout

**User Management**

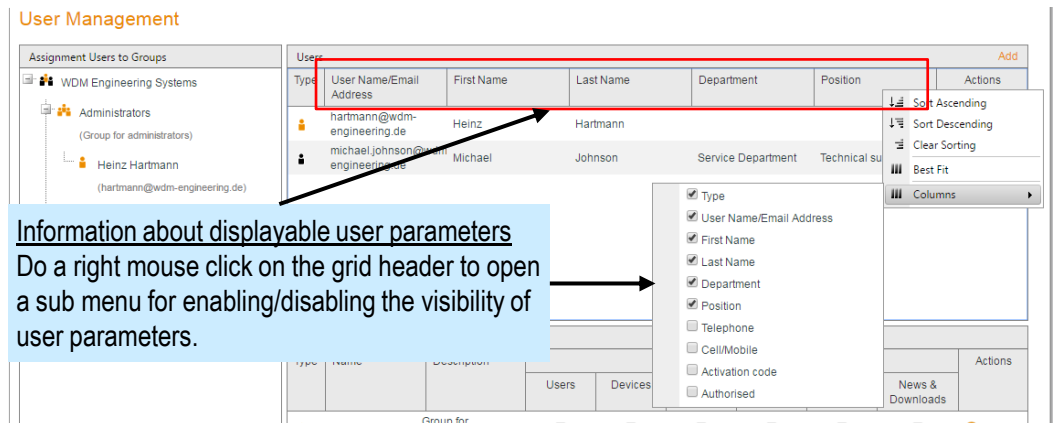
Assignment Users to Groups

- WDM Engineering Systems
  - Administrators (Group for administrators)
    - Heinz Hartmann (hartmann@wdm-engineering.de)
  - Service (Group for service technicians)
    - Michael Johnson (michael.johnson@wdm-engineering.de)

Type	User Name/Email Address	First Name	Last Name	Department	Position	Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann			
	michael.johnson@wdm-engineering.de	Michael	Johnson	Service Department	Technical support	

**Groups**

Type	Name	Description	Users	Devices	Status	Comments	Documents	News & Downloads	Actions
	Administrators	Group for administrators	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Service	Group for service technicians	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



**User Management**

Assignment Users to Groups

- WDM Engineering Systems
  - Administrators (Group for administrators)
    - Heinz Hartmann (hartmann@wdm-engineering.de)
  - Service (Group for service technicians)
    - Michael Johnson (michael.johnson@wdm-engineering.de)

Type	User Name/Email Address	First Name	Last Name	Department	Position	Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann			
	michael.johnson@wdm-engineering.de	Michael	Johnson	Service Department	Technical support	

**Information about displayable user parameters**  
Do a right mouse click on the grid header to open a sub menu for enabling/disabling the visibility of user parameters.

- ☒ Type
- ☒ User Name/Email Address
- ☒ First Name
- ☒ Last Name
- ☒ Position
- ☐ Telephone
- ☐ Cell/Mobile
- ☐ Activation code
- ☐ Authorised

## 4.3 Administration of a user account


## 4.3 Administration of a user account (u-link Web portal)

### Provided actions to maintain a service user

- Following user-related actions are provided:
  - View user data
  - Edit user data
  - Send an information mail to user containing the user data
  - Delete the user account

#### Note:

The administration of user accounts only can be done by the Administrator. The menu item 'User Management' is not visible for service users.



u-link | Remote Access Service








Navigation: Administration > User Management
Active license: Entry Version ⓘ
Language: English ▼
Logged in as: Heinz Hartmann
Logout

Home
Service
Administration
User Management
Device Management
Status



### User Management

Assignment Users to Groups

- WDM Engineering Systems
  - Administrators (Group for administrators)
    - Heinz Hartmann (hartmann@wdm-engineering.de)
  - Service (Group for service technicians)
    - Michael Johnson (michael.johnson@wdm-engineering.de)

Type	User Name/Email Address	First Name	Last Name	Department	Position	Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann			  
	michael.johnson@wdm-engineering.de	Michael	Johnson	Service Department	Technical support	   

Provided user-related actions








Type	Name	Description	Permission Management						Actions
			Users	Devices	Status	Comments	Documents	News & Downloads	
	Administrators	Group for administrators	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Service	Group for service technicians	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



### 4.3 Administration of a user account (u-link Web portal)

#### Action 'View user data'

- Click button 'View' to open a new window showing the user data on tabs
  - User Data
  - Status Information
  - Activation Code
- In viewing mode no data can be changed.

Users <span>Add</span>						
Type	User Name/Email Address	First Name	Last Name	Department	Position	Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann			  
	michael.johnson@wdm-engineering.de	Michael	Johnson	Service Department	Technical support	   

Button 'View User Data' →

View user data (Michael Johnson)

**User Data** | Status Information | Activation Code

**User data**

First Name: Michael  
 Last Name: Johnson  
 Department: Service Department  
 Position: Technical support  
 Telephone: +49 5231 123456  
 Cell/Mobile: +49 173 123456  
 Email Address (Login Name): michael.johnson@wdm-engineer

**Profile**

Group member from: Service

User permission (Automatically assigned by group membership)

User management ☐  
 Device management ☒  
 Status ☒  
 Comment management ☒  
 Document management ☒  
 News&Downloads ☐

Language: English  
 Home page: News & Downloads  
 Authorised: Yes  
 Administrator: No

Close

View user data (Michael Johnson)

User Data | **Status Information** | Activation Code

**Status Information**

Created Date: 7/6/2016 11:43:52 AM  
 Last Login Date: -  
 Last Activity Date: -  
 Last Lock-out Date: -  
 Last Password Change: -  
 Password Expires: Never

Close

View user data (Michael Johnson)

User Data | Status Information | **Activation Code**

**Activation ID**

Activation Code: UV84Z6XFJTZ2  
 State: Not used










Close

After first VPN connection of this service user to the u-link VPN server the status is changed to 'In Use'.

## 4.3 Administration of a user account (u-link Web portal)

### Action 'Edit user data'

- Click button 'Edit' to open a new window showing the user data on tabs
  - User Data
  - Activation Code
- In this mode data can be changed.

Type	User Name/Email Address	First Name	Last Name	Department	Position	Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann			  
	michael.johnson@wdm-engineering.de	Michael	Johnson	Service Department	Technical support	   

Button 'Edit User Data'

**Edit user data (Michael Johnson)**

User Data
Activation Code

**User data**

First Name: Michael

Last Name: Johnson

Department: Service Department

Position: Technical support

Telephone: +49 5231 123456

Cell/Mobile: +49 173 123456

Email Address (Login Name): michael.johnson@wdm-engineer

**Profile**

Group member from

Service

User permission (Automatically assigned by group membership)

User management ☐

Device management ☒

Status ☒

Comment management ☒

Document management ☒

News&Downloads ☐

Language: English

Home page: News & Downloads

Authorised: Yes

Administrator: No

**Password**

New Password:

Confirm Password:

Update Cancel

**Edit user data (Michael Johnson)**

User Data
Activation Code

**Activation ID**

Activation Code: UV84Z6XFJTZ2

State: Not used

Release for additional activation: ☐

Update Cancel

**Changeable parameters**

**Not changeable parameters (Permissions assigned by group membership)**

**Default language when logged in to u-link Portal**

**Default Home page when logged in to u-link Portal**

**Activate / Deactivate the users u-link access.**

**Password change by Administrator**

**Button 'Edit User Data'**

If set to 'Yes' then this user will be the new Administrator having full permissions.

**Attention:** The current administrator will become a Service user (Member of group 'Service') having these limited group permissions.

If you want to use a second PC running as 'u-link VPN Client' using this activation code then - if state is 'In Use' - you first must enable the checkbox 'Release for additional activation' to allow an additional use.











**Note 1:** Checkbox first can be set if state is 'In Use' (is changed when service user first time connects to u-link).

**Note 2:** If you release several Service PCs with the same activation code be aware that you do not start a VPN connection on these PCs at the same time. All are VPN connections are identical clones from the perspective of the VPN server. If you would do this a new connection is interrupting the previous one).

### 4.3 Administration of a user account (u-link Web portal)

#### Action 'Send information mail to user'

- Click button '@' to open a new window for sending an information mail (containing the user data) to the users mail address.

Users							Add
Type	User Name/Email Address	First Name	Last Name	Department	Position		Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann				   
	michael.johnson@wdm-engineering.de	Michael	Johnson	Service Department	Technical support		   

Button 'Send mail with user data'

#### Send info mail to user again

First Name

Last Name

Department

Position

Telephone

Cell/Mobile

Email Address (Login Name)

Activation ID

---

Destination address

Sender address

Note: Mail can be sent to a different recipient by changing the content of field "Destination address"

Send email

Cancel

This window will be displayed after clicking button '@'.

u-link Remote Access Service Information User "michael.johnson@wdm-engineering.de" - Nachricht (HTML)

Nachricht

Entwicklertools

Von:

Funktionspostfach u-link (Remote Access Service)

An:

michael.johnson@wdm-engineering.de

Cc:

Betreff:


u-link Remote Access Service: Information User "michael.johnson@wdm-engineering.de"

Gesendet:

MI 06.07.2016 16:16

Weidmüller

u-link | Remote Access Service



Dear u-link User,

this is an automatically created email, which you have received from the registration service of the Weidmüller u-link Remote Access Portal.

**The Administrator of your u-link account 'WDM Engineering Systems' has sent this mail - containing your user account data - for your information.**

Below user data have been created for your account:

Company:	WDM Engineering Systems
Street:	Braunenbrucher Weg 18
ZIP code:	32758
Location:	Detmold
Country:	Germany

First name:	Michael
Last name:	Johnson
Department:	Service Department
Position:	Technical support
Phone:	+49 5231 123456
Mobile:	+49 173 123456

Your login name to access the u-link Web portal: [michael.johnson@wdm-engineering.de](mailto:michael.johnson@wdm-engineering.de)

For logon to the u-link Portal please enter your user name and your valid password. This you either have set initially during the activation process of your user account (refer to your received mail "u-link Registration User") or you have already changed it after first logon to the u-link Web portal.

Link to u-link login: <http://u-link.weidmueller.com> or <http://www.u-link.weidmueller.com>

**Download and Registration (Unlock) of the PC-based u-link VPN Client**

To access remote Ethernet devices via the u-link Portal you need to install the Weidmüller u-link VPN client on your PC. This software allows an encrypted and secured access to the u-link VPN-Server.

You can download the software via below link:  
<http://www.weidmueller.com/int/products/electronics-and-automation/maintenance-and-cloud-service>  
 Alternatively you can download the u-link VPN client - after logon to the Web portal - in menu Home > News & Downloads.

To use the u-link VPN client it has to be unlocked and assigned to your u-link user account. Run the software and click button 'Unlock' to start the one-time registration process. During this procedure you will be requested to enter below activation code. After successful registration you can initiate a VPN connection to your u-link account (Click button 'Connect'). Please consider that eventually you have to configure your Proxy parameters (Button 'Configuration') if your Internet access is passing a company Proxy server requiring an user authentication.

**Your Registration-/Activation code for u-link VPN client: UV84Z6XFJT22**









The registration/activation code also can be retrieved - after logon to the Web portal - in menu Home > User profile (Tab Activation code)

Sample mail which the addressed service user will receive.

### 4.3 Administration of a user account (u-link Web portal)

#### Action 'Delete user'

- Click button 'Delete' to delete the user.
  - A window will appear asking you if you are sure to delete the user. After confirmation the user will be deleted.
  - The list user item in the section 'Users' will be removed.

Users						Add
Type	User Name/Email Address	First Name	Last Name	Department	Position	Actions
	hartmann@wdm-engineering.de	Heinz	Hartmann			  
	michael.johnson@wdm-engineering.de	Michael	Johnson	Service Department	Technical support	   

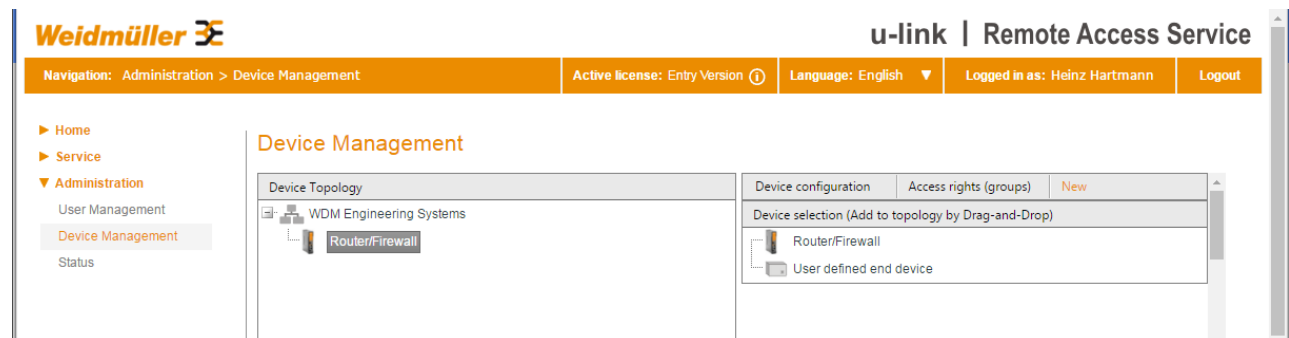
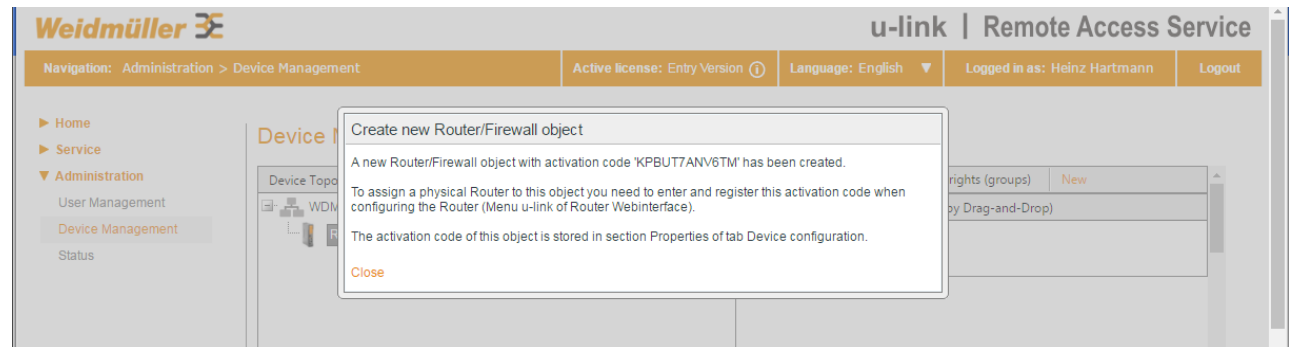
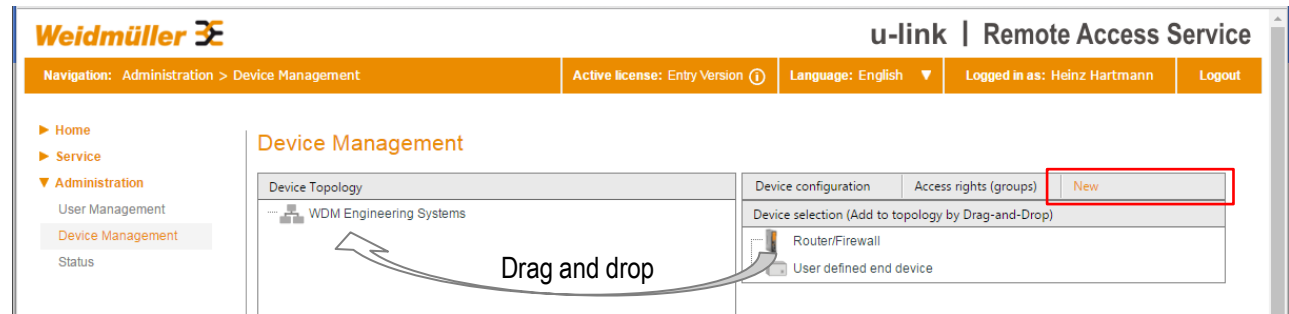
Button 'Delete user'

## 4.4 Setup of the Device configuration

### 4.4 Setup of the Device configuration (u-link Web portal)

#### Create a Router object (Step 1)

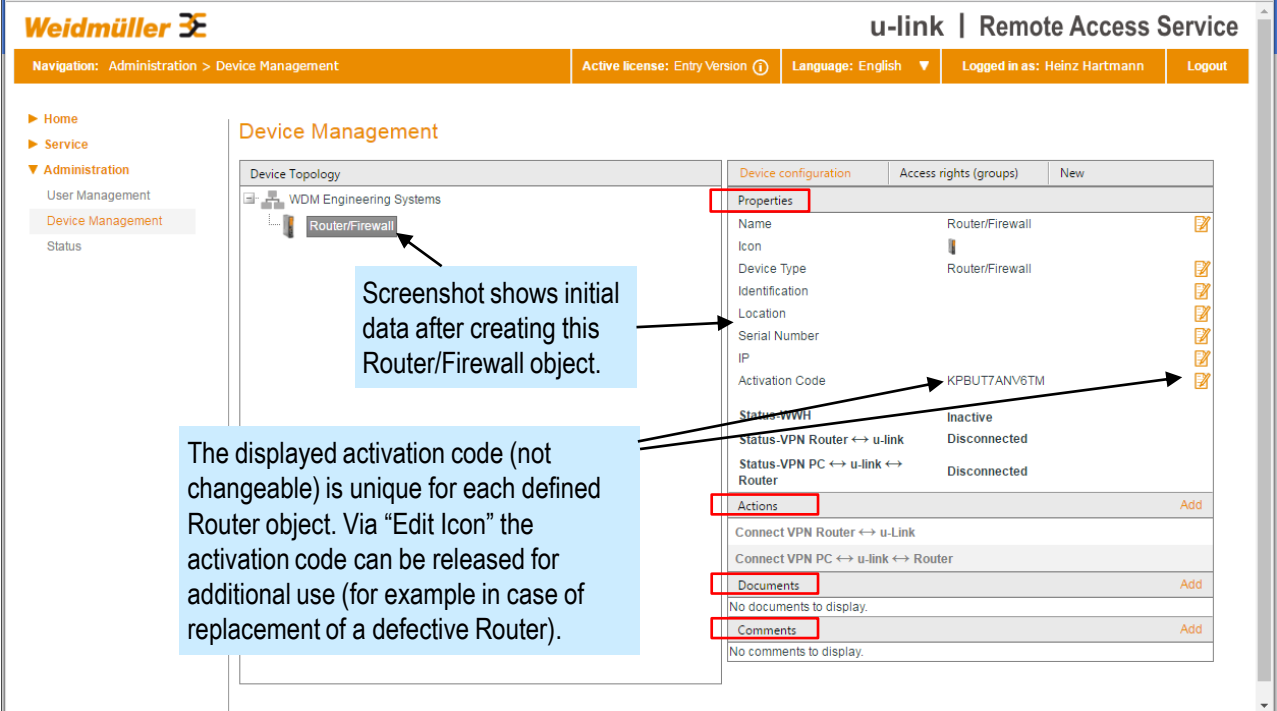
- Goto menu “Device Management”.
- Click Tab “New” to configure the first Router object (access point to devices at remote network).
- Drag from “Device selection” the Router/Firewall object and drop it on the container object in ‘Device Topology’.
- An information window will be displayed showing that this action was accepted. By creating a Router object an unique activation code will be created, which later has to be used to assign a physical Router to this defined object.
- Now the new Router object is defined as first device in the device topology container.
- Next the properties of this Router object have to be configured.



### 4.4 Setup of the Device configuration (u-link Web portal)

#### Configuration of properties of new Router object (Step 2)

- Highlight the Router/Firewall object and click Tab “Device configuration” to display object specific item parameters.
- Section **“Properties”**  
All items with an “Edit Icon” (except parameter Activation code) can be edited to store individual data to this object. These parameters (text-based fields) are used only for information. They have no relevance regarding the remote access functionality.
- Section **„Actions“**  
By default the 2 actions  
**Connect VPN Router ↔ u-link** and  
**Connect VPN PC ↔ u-link ↔ Router**  
are predefined.  
First action can be used to start a VPN connection on the Router to the u-link VPN Server remotely from the u-link Portal (via WWH function).  
Second action will be used to initiate a VPN pass-through connection from a Service PC via u-link VPN Server to the Router (to access remote devices).  
Via button „Add“ customized actions (currently only http/https based calls) can be defined and started via mouse click).  
Note: Actions are only active in menu „Service Desk“



The screenshot shows the 'u-link | Remote Access Service' web portal. The navigation bar includes 'Navigation: Administration > Device Management', 'Active license: Entry Version', 'Language: English', 'Logged in as: Heinz Hartmann', and 'Logout'. The left sidebar shows a tree structure with 'Home', 'Service', 'Administration', 'User Management', 'Device Management', and 'Status'. The main content area is titled 'Device Management' and shows a 'Device Topology' with a 'Router/Firewall' object selected. A blue callout box points to the 'Router/Firewall' object with the text: 'Screenshot shows initial data after creating this Router/Firewall object.' The 'Properties' tab is active, displaying a table of properties for the 'Router/Firewall' object. The 'Activation Code' is 'KPBUT7ANV6TM'. The 'Status' is 'WWH'. The 'Status-VPN Router ↔ u-link' is 'Disconnected'. The 'Status-VPN PC ↔ u-link ↔ Router' is 'Disconnected'. The 'Actions' section shows two predefined actions: 'Connect VPN Router ↔ u-link' and 'Connect VPN PC ↔ u-link ↔ Router'. The 'Documents' and 'Comments' sections are empty. A blue callout box points to the 'Activation Code' with the text: 'The displayed activation code (not changeable) is unique for each defined Router object. Via “Edit Icon” the activation code can be released for additional use (for example in case of replacement of a defective Router).'

Properties	Access rights (groups)	New
Name	Router/Firewall	
Icon		
Device Type	Router/Firewall	
Identification		
Location		
Serial Number		
IP		
Activation Code	KPBUT7ANV6TM	
Status-wwh	Inactive	
Status-VPN Router ↔ u-link	Disconnected	
Status-VPN PC ↔ u-link ↔ Router	Disconnected	

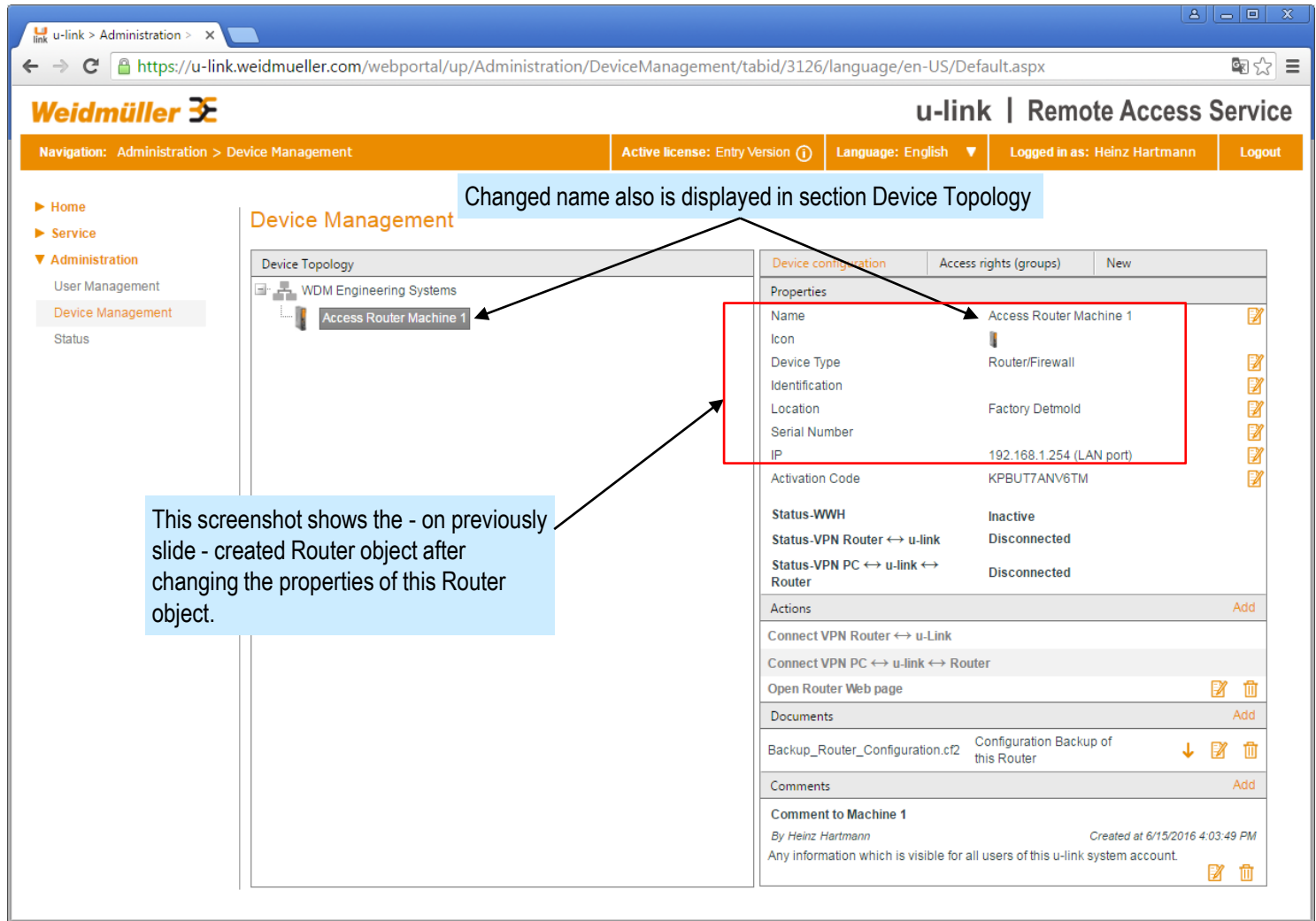
#### Note:

**For preparing a remote access session via a Router (which will be assigned to this Router object) you only need the activation code.** Copy and save this activation code which later is necessary when preparing the physical Router for u-link access.

For a remote access session it is not necessary to edit anything. But we recommend to edit the text-based fields in section “Properties” to better identify the defined object.









### 4.4 Setup of the Device configuration (u-link Web portal)

Screenshot of created Router object after changing the values of some parameters in section Properties.



The screenshot displays the u-link Remote Access Service web portal. The navigation bar shows the current path: Administration > Device Management. The main content area is titled "Device Management" and contains a "Device Topology" section. In this section, a router object named "Access Router Machine 1" is listed under "WDM Engineering Systems". A callout box points to this object, stating: "This screenshot shows the - on previously slide - created Router object after changing the properties of this Router object."

To the right of the "Device Topology" section is a "Device configuration" table. A callout box points to the "Name" field in this table, stating: "Changed name also is displayed in section Device Topology". The "Name" field is highlighted with a red box and contains the value "Access Router Machine 1". Other fields in the table include "Icon", "Device Type" (Router/Firewall), "Identification", "Location" (Factory Detmold), "Serial Number", "IP" (192.168.1.254 (LAN port)), "Activation Code" (KPBUT7ANV6TM), "Status-WWH" (Inactive), "Status-VPN Router ↔ u-link" (Disconnected), and "Status-VPN PC ↔ u-link ↔ Router" (Disconnected). Below the table are sections for "Actions", "Documents", and "Comments".

Device configuration		Access rights (groups)	New
<b>Properties</b>			
Name	Access Router Machine 1		
Icon			
Device Type	Router/Firewall		
Identification			
Location	Factory Detmold		
Serial Number			
IP	192.168.1.254 (LAN port)		
Activation Code	KPBUT7ANV6TM		
Status-WWH	Inactive		
Status-VPN Router ↔ u-link	Disconnected		
Status-VPN PC ↔ u-link ↔ Router	Disconnected		
<b>Actions</b> <span>Add</span>			
Connect VPN Router ↔ u-Link			
Connect VPN PC ↔ u-link ↔ Router			
Open Router Web page <span></span> <span></span>			
<b>Documents</b> <span>Add</span>			
Backup_Router_Configuration.cf2	Configuration Backup of this Router <span></span> <span></span> <span></span>		
<b>Comments</b> <span>Add</span>			
<b>Comment to Machine 1</b>			
By Heinz Hartmann <span style="float: right;">Created at 6/15/2016 4:03:49 PM</span>			
Any information which is visible for all users of this u-link system account. <span></span> <span></span>			

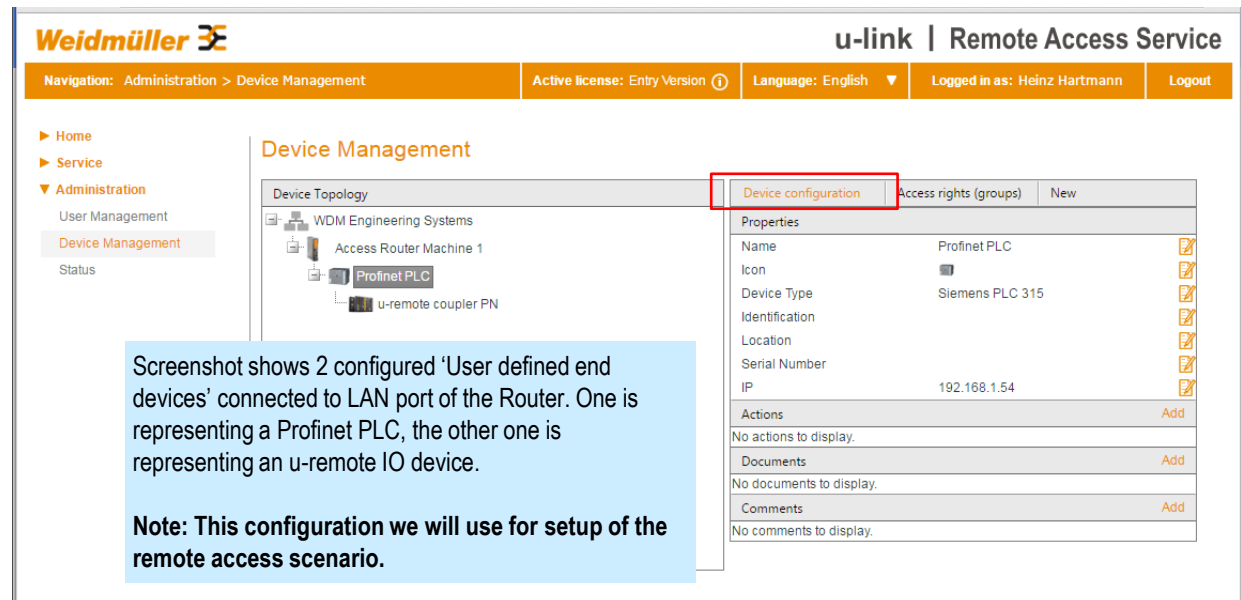
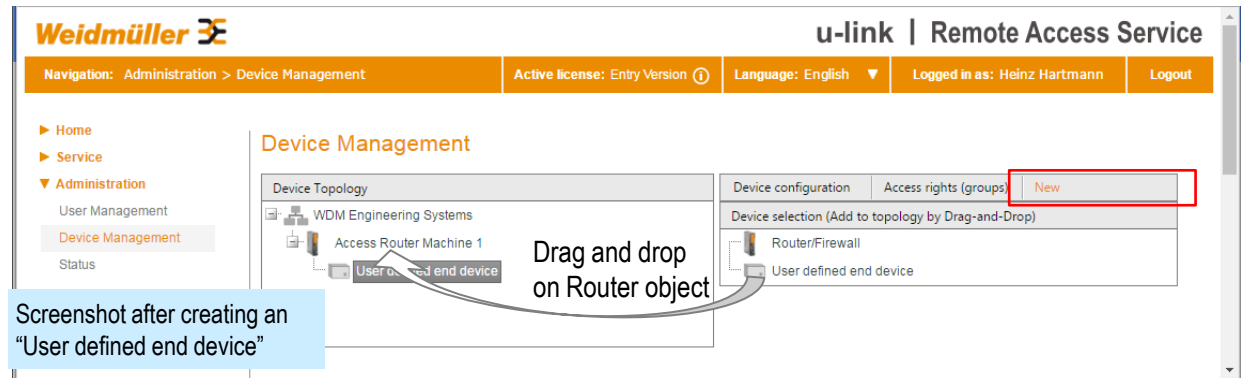


### 4.4 Setup of the Device configuration (u-link Web portal)

#### Configuration of a 'User defined end device' connected to Router LAN port (Step 3)

- The object type „User defined end device“ can be used to define any device type being accessible by an Ethernet communication (TCP/UDP).
- This object type will be used to provide a mapping of remote accessible devices behind the Router. It is not necessary to create 'User defined end devices' for remote access because all IP addresses at Router LAN port are accessible when having a pass-through VPN connection to the Router.

- Select Tab 'New'
- Drag from 'Device selection' the object 'User defined end device' and drop to the container object 'Access Router Machine 1'.
- Click Tab 'Device configuration' and configure the object specific properties as you want (Screenshot shows 2 already configured 'User-defined end devices'). These parameters (text-based fields) are used only for information. They have no relevance regarding the remote access functionality.
- Same as for a Router object the features 'Actions', 'Storing documents and comments' are provided for this object type.



**Preparing of the device configuration now is finished !**

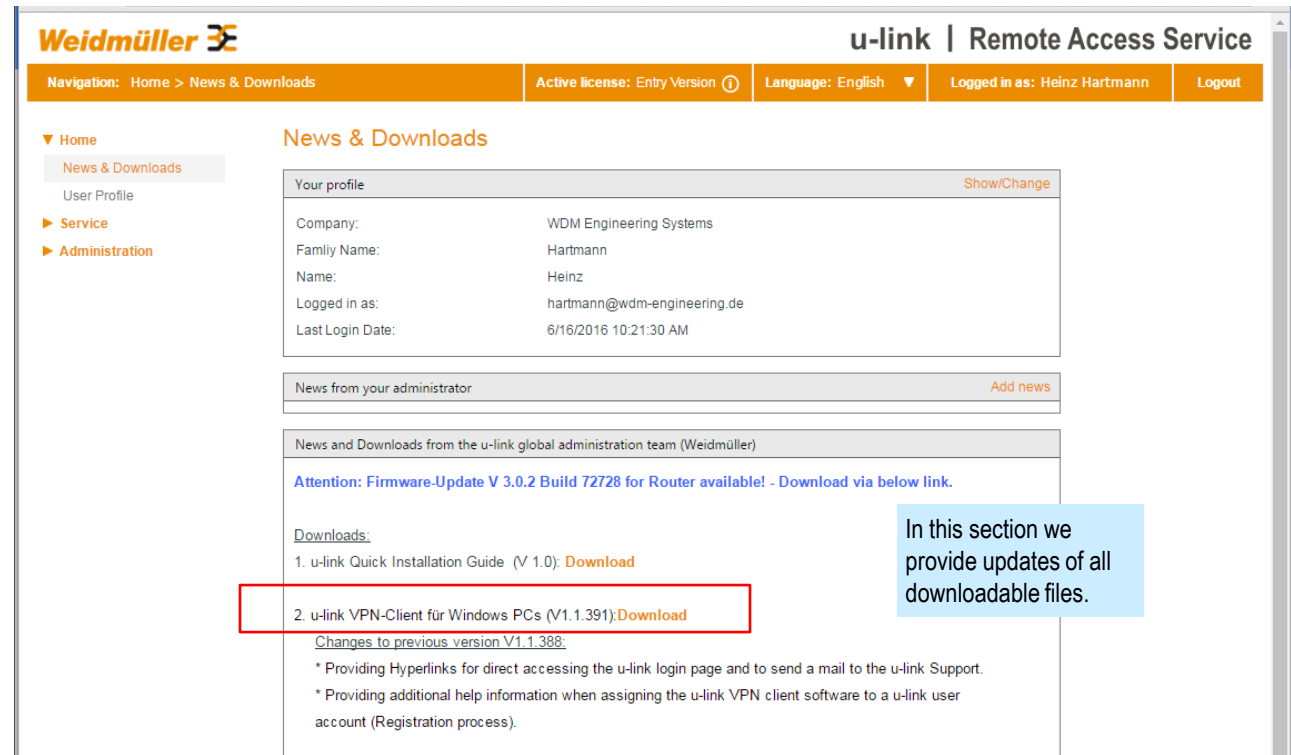
In the next steps both the Service PC (using this administrator account) and the physical Router (which later is located in the remote network) have to be configured.

## 4.5 Preparing of the Service PC

### 4.5 Preparing the Service PC

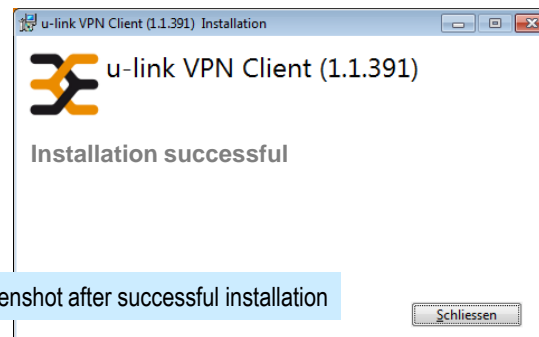
#### Download and installation of Windows software 'u-link VPN Client' (Step 1)

- Logon to the u-link Web portal using your user name and password
- Goto menu "News & Downloads"
- Download the provided software from section "News&Download from global u-link administration"



#### Unzip the download file and install the software (Step 2)

- For installation you need admin rights.



Screenshot after successful installation

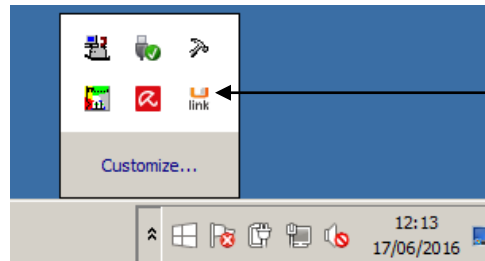


New u-link desktop icon

### 4.5 Preparing the Service PC

#### Start software “u-link VPN Client” on the Service PC (Step 3)

- The program window will be opened and the u-link icon will be displayed in the notification area of the taskbar.
- Initially the software is not assigned to a u-link user account.
- Before starting a VPN connection to the u-link VPN server the software has to be unlocked (registered) using the unique activation code of the u-link user account which shall be used for remote access.

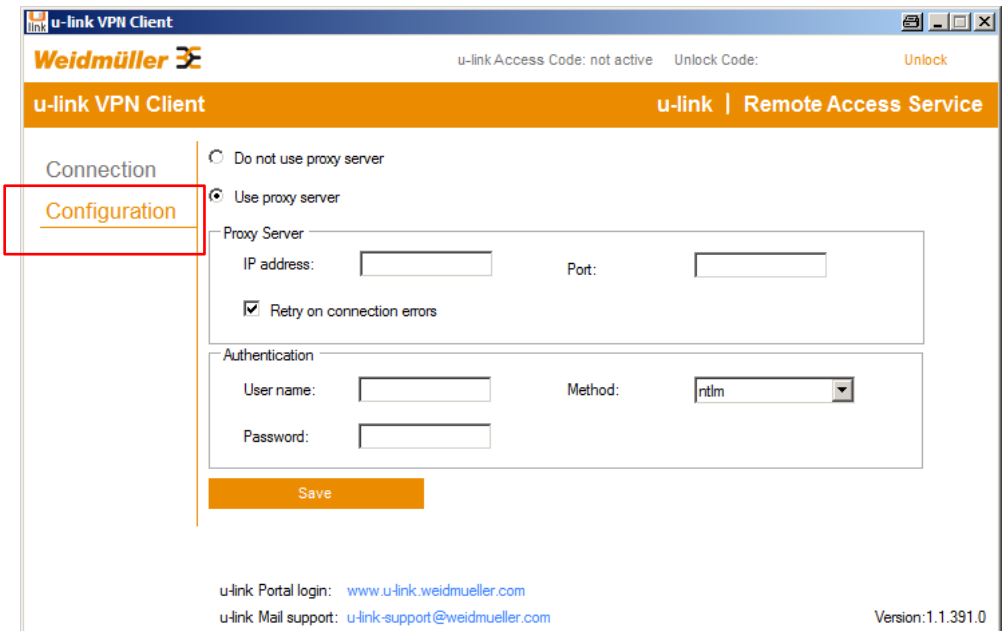


### 4.5 Preparing the Service PC

#### **Configure Proxy server connection parameters if your Internet access is passing a Proxy server (Step 4)**

- Click button “Configuration”
- Enable checkbox “Use proxy server”
- Enter the your Proxy server specific parameters (provided by IT department).
- Click button “Save”

Skip this step if the Service PC is not passing a Proxy server for Internet access.



u-link VPN Client

u-link Access Code: not active    Unlock Code:    Unlock

u-link VPN Client    u-link | Remote Access Service

Connection

**Configuration**

☐ Do not use proxy server

☒ Use proxy server

Proxy Server

IP address:    Port:   

☒ Retry on connection errors

Authentication

User name:    Method:    ntlm

Password:   

Save

u-link Portal login: [www.u-link.weidmueller.com](http://www.u-link.weidmueller.com)

u-link Mail support: [u-link-support@weidmueller.com](mailto:u-link-support@weidmueller.com)

Version: 1.1.391.0

#### **Note:**

If this Service PC is member of a company-based Windows domain (controlled by IT department) then often the Internet access is secured by a Proxy Server. A Windows user (logged-in with his domain account) normally does not know anything about Proxy configuration because a Browser-based Internet access automatically is allowed when logged-on to the PC using the credentials of the users domain account.

To pass the Proxy Server the proxy parameters of then 'u-link VPN client' have to be set manually because it is not part of the programs controlled by domain policies.

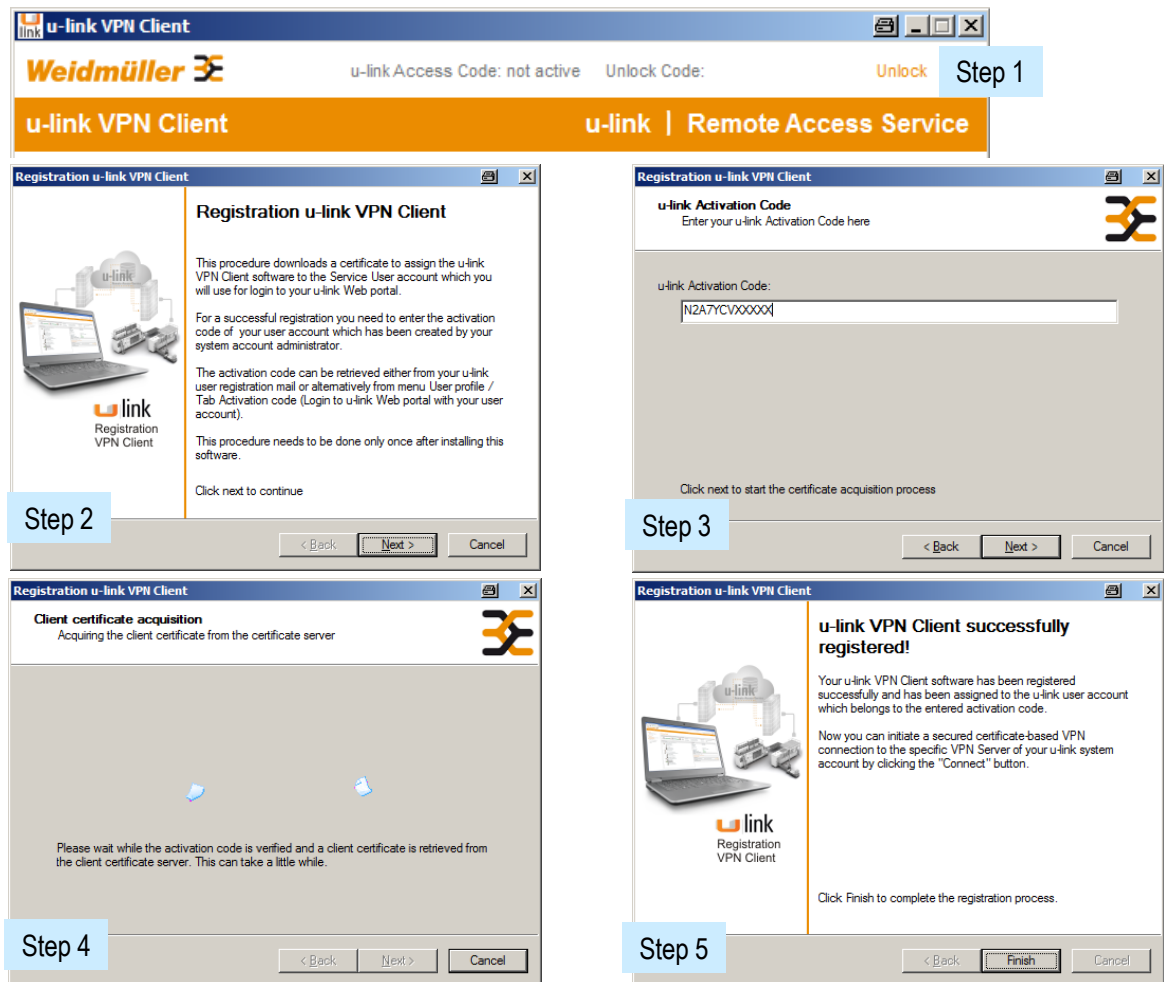
The authentication credentials 'User name' and 'Password' normally are the same as used for logon to the Windows PC.

**Keep in mind - when using the domain-based login credentials – that if the password has changed you also have to update the password in section 'Authentication'. Otherwise the Proxy server will block the u-link VPN connection.**

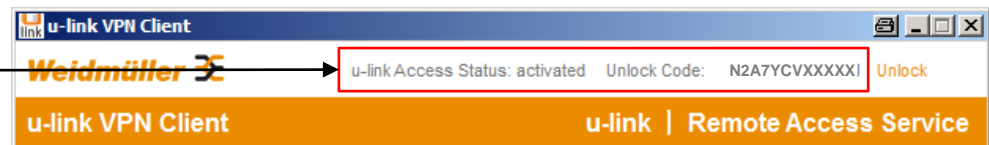
### 4.5 Preparing the Service PC

#### Unlock (Register) software 'u-link VPN Client' (Step 5)

- This step has to be done to assign the installed 'u-link VPN Client software' to the defined service user in the u-link system account (here we use the Administrator account).
  - For the registration process we need the user specific activation code. The activation code can be found either in the received mail 'User Registration' or in menu 'User Profile' on tab 'Activation Code' when logged-on to the u-link Web portal.
- Click button 'Unlock' and follow the instructions of the registration process.
- After clicking button 'Finish' the software is unlocked and assigned to the u-link user account.



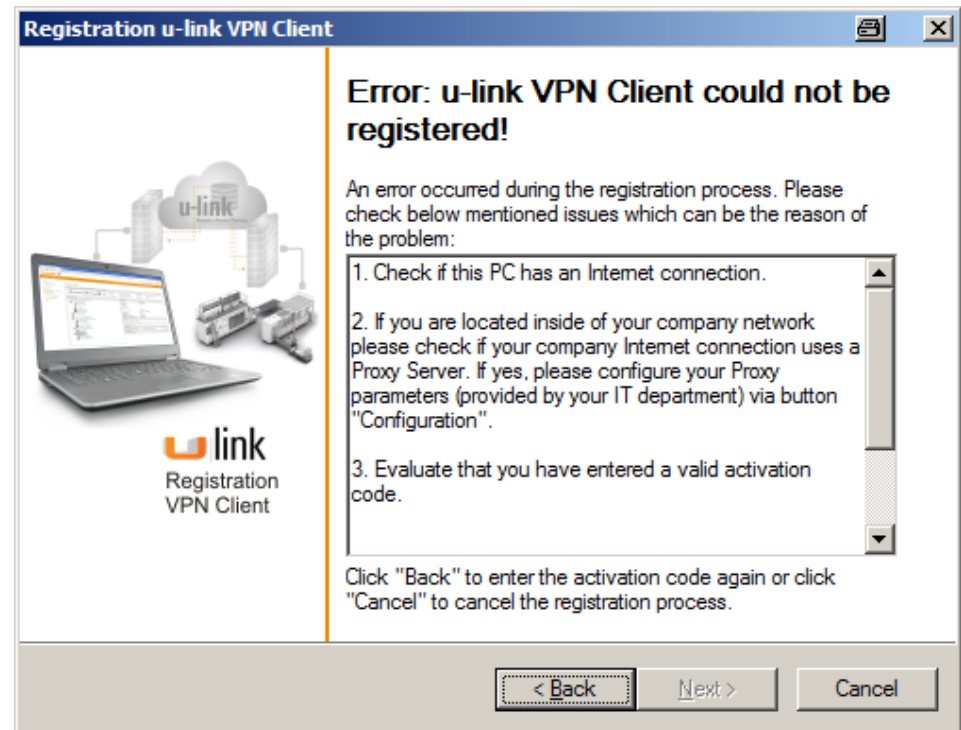
Screenshot of a successfully registered 'u-link VPN client'



### 4.5 Preparing the Service PC

**Possible errors if the unlock (Register) process of “u-link VPN Client” has failed**

- **No Internet access**  
Ensure that your PC is accessible to the Internet.
- **Registration process blocked by Proxy Server**  
If you are located inside of your company network please check if your company Internet connection uses a Proxy server. If yes, please configure your Proxy parameters (provided by your IT department) via button "Configuration".
- **Wrong activation code**  
Evaluate that you have entered a valid activation code.
- **Activation code already registered and not released for additional use (Status “In use”)**  
If you have entered an already registered activation code (for using on a second PC) you first must release the additional use of this activation code.
  - Login to u-link Web portal using your user account.
  - Goto menu User profile / Tab Activation Code.
  - Activate checkbox “Release for additional activation”.
  - Click button “Update” (not displayed in screenshot below).



This window will appear if the unlock (Register) process has failed!

#### User Profile

User Data	Status Information	Activation Code
<b>Activation ID</b>		
Activation Code <input type="text" value="N2A7YCVXXXXX"/>		
State <input type="text" value="Released for additional activation"/>		
Release for additional activation <input checked="" type="checkbox"/>		

#### Note:

If you are logged-in as Administrator you can set the checkbox for each user in menu “User Management”. Click on the Edit icon of a user item and select Tab “Activation Code”.

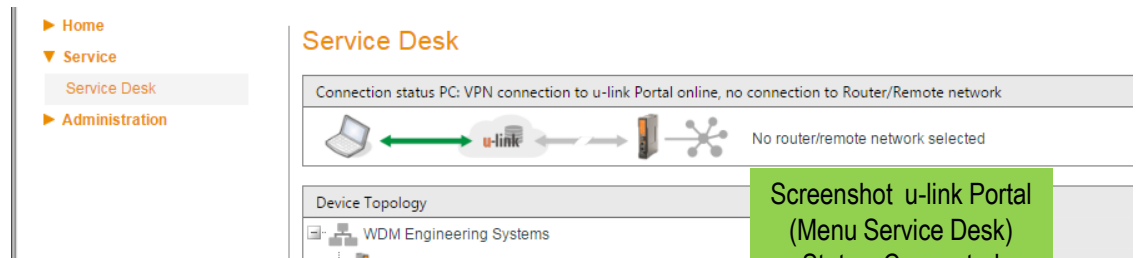
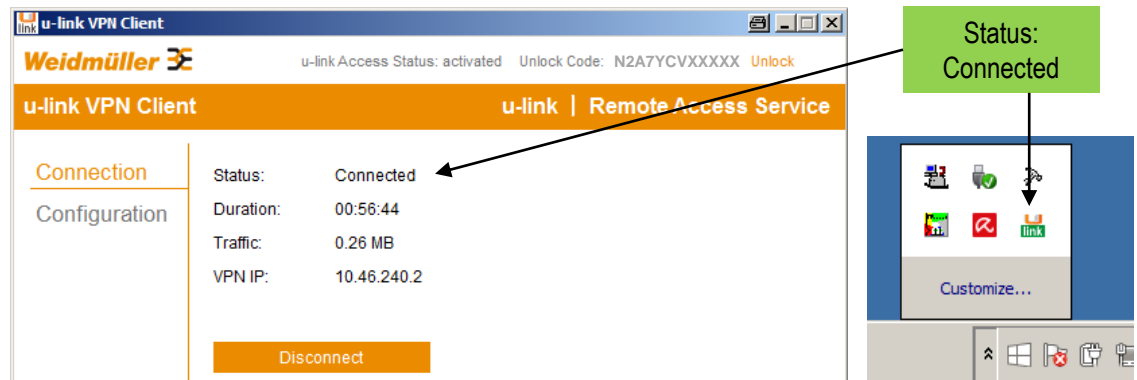
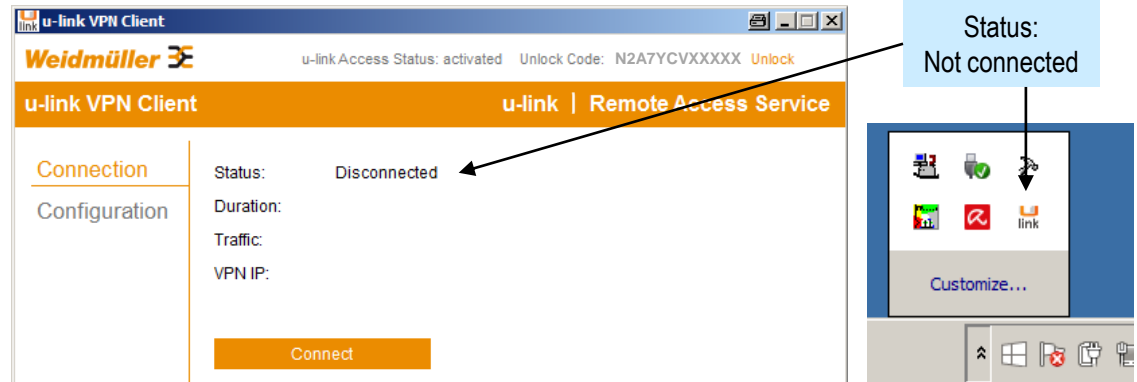
#### Note:

If the problem cannot be solved please read later described topic ‘**Failure management in case of problems to establish a VPN connection or any failure issues**’.

### 4.5 Preparing the Service PC

#### Initiate a VPN connection to the u-link VPN server for testing (Step 6)

- Condition: The u-link VPN client is unlocked (Status 'activated' and displaying an activation code)
- Click button 'Connect'.
  - The VPN client is starting the connection to the u-link VPN server.
  - When successfully connected the status and some additional information will be displayed in the program window.
  - The u-link icon in the task bar is displaying a connected status.
- Open a browser and logon to the u-link Web portal with user name and password of the user having this activation code.
  - In menu 'Service Desk' the PCs connection to the u-link VPN server will be signaled by a green colored double arrow.
  - Now you are connected to the u-link VPN server but at this time you still do not have any pass-through connection to a Router/Remote network. This has to be configured in the next steps.
- Click button 'Disconnect'
  - The green colored connection status in menu 'Service Desk' will disappear.



**Preparing of the Service PC now is finished !**

Next the physical Router (which later is located in the remote network) has to be configured.

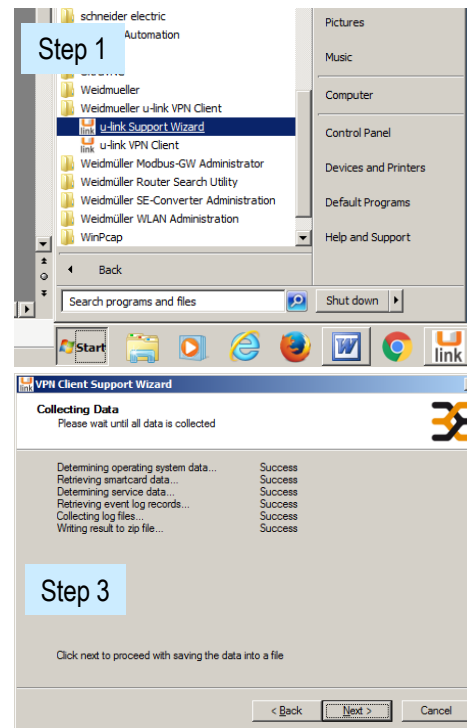
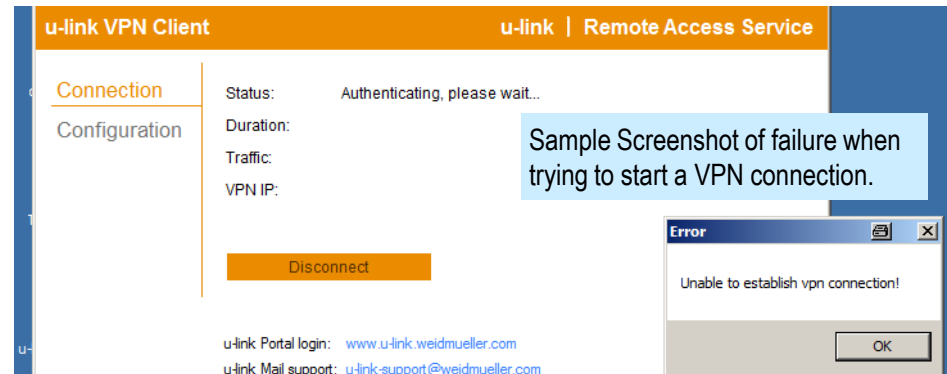


### 4.5 Preparing the Service PC

#### Failure management in case of problems to establish a VPN connection or any failure issues

- To evaluate the reason of a problem regarding the 'u-link VPN client' the tool 'u-link Support Wizard' can be used to gather detailed logging information about the failed process which is saved in a zip-file. Please send this file to the u-link Support department to analyze the problem.

- Start the "u-link Support Wizard"
  - Run the steps based on the displayed instructions.
  - Save the zip-file containing the gathered logging data to a directory.
- Send the zip-file to mail address [u-link-support@weidmueller.com](mailto:u-link-support@weidmueller.com).
  - The u-link support department then will analyze the issue and contact you to solve the problem.



## 4.6 Configuration of the Router


### 4.6 Configuration of the Router

#### Download of latest Router firmware (Step 1)

- Only the Router models IE-SR-2GT-LAN and IE-SR-2GT-UMTS/3G (which support VPN functions) can be used for u-link.
  - If you would like to use an already running Router with u-link then you need a firmware version 3.0.2 or higher.
- 
- Logon to the u-link Web portal using your user name and password.
  - Goto menu 'News & Downloads'.
  - Download the provided firmware from third section 'News and Downloads from global u-link administration'.

#### Unzip the downloaded firmware (Step 2)

- The ZIP file is containing the binary file (firmware) and a pdf-file (Change log).

**Weidmüller**  **u-link | Remote Access Service**

Navigation: Home > News & Downloads    Active license: Entry Version ⓘ    Language: English ▼    Logged in as: Heinz Hartmann    Logout

▼ Home  
 News & Downloads  
 User Profile  
 ► Service  
 ► Administration

### News & Downloads

Your profile [Show/Change](#)

Company:	WDM Engineering Systems
Family Name:	Hartmann
Name:	Heinz
Logged in as:	hartmann@wdm-engineering.de
Last Login Date:	6/16/2016 10:21:30 AM

News from your administrator [Add news](#)

News and Downloads from the u-link global administration team (Weidmüller)

**Attention: Firmware-Update V 3.0.2 Build 72728 for Router available! - Download via below link.**

Downloads:

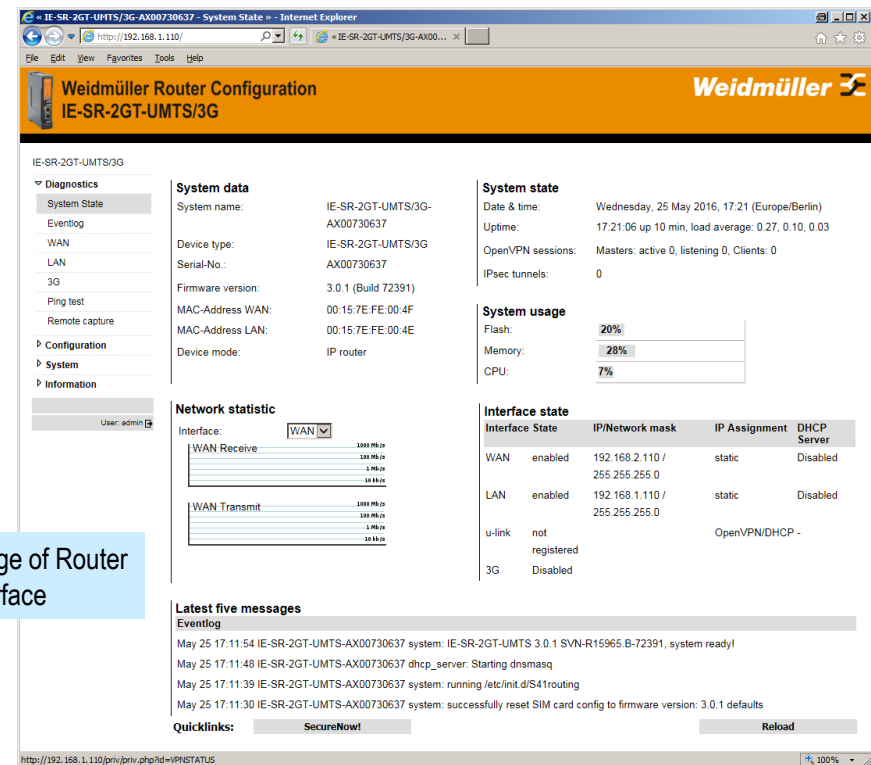
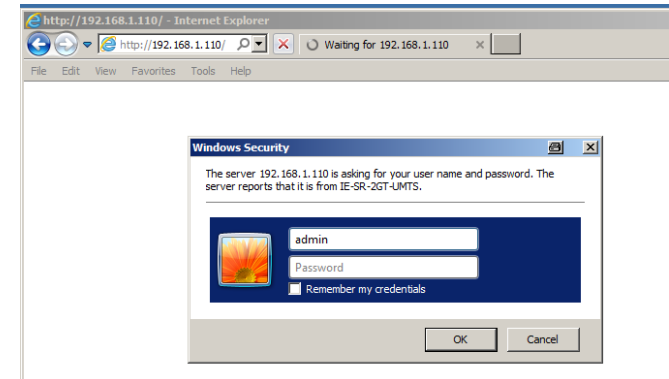
1. u-link Quick Installation Guide (V 1.0): [Download](#)
2. u-link VPN-Client für Windows PCs (V1.1.391): [Download](#)  
[Changes to previous version V1.1.388:](#)  
 \* Providing Hyperlinks for direct accessing the u-link login page and to send a mail to the u-link Support.  
 \* Providing additional help information when assigning the u-link VPN client software to a u-link user account (Registration process).
3. Firmware Router V3.0.2 Build 72728 (released for u-link): [Download](#) (Version updated May 23, 2016)  
[Changes to previous version 3.0.1 Build 72391:](#)  
 \* Added support for u-link Internet connection via Proxy Server.  
 \* Improved diagnostic management (Status messages) for u-link registration process.  
 Update recommended! An existing configuration can be still used (Reset to factory default settings not required).

Support:

### 4.6 Configuration of the Router

#### Connecting to the Router and open the Web interface (Step 3)

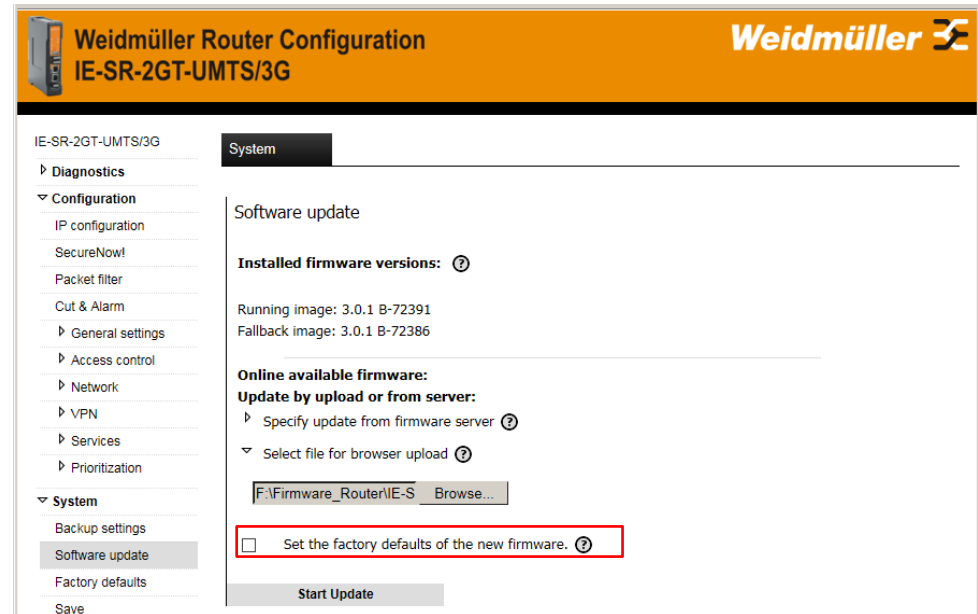
- We assume that the Router configuration is set to factory default values (LAN IP: 192.168.1.110, WAN IP: 192.168.2.110).
- Connect the PC to the Router LAN or WAN port (Here we use the LAN port).
- Configure the PCs Ethernet interface to the same IP network range as the Router (eg. 192.168.1.99).
- Open a browser and enter IP address 192.168.1.110 to open the Router Web interface.
- Enter user name **admin** and password **Detmold**.
  - The home page (System state) will be displayed.



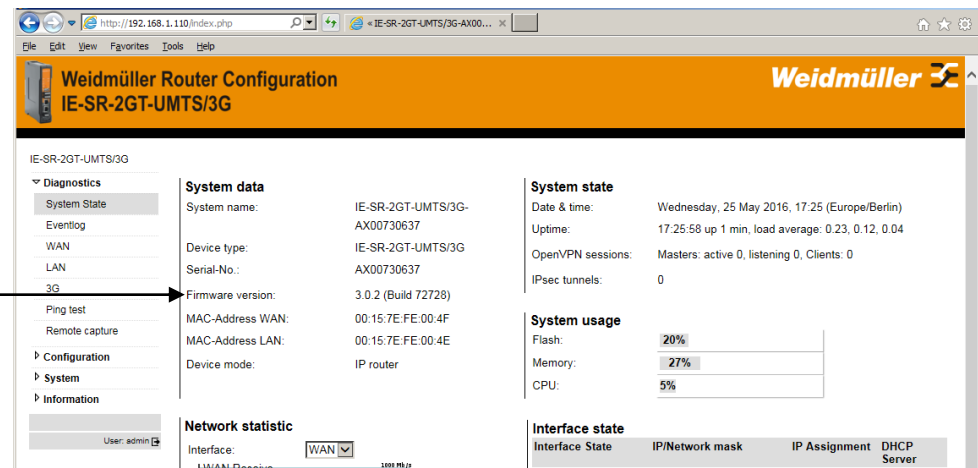
### 4.6 Configuration of the Router

#### Updating the Router firmware to a u-link enabled version (Step 4)

- Note: If you update an individually configured Router with an older firmware version the stored configuration will not be changed as long as if you not enable checkbox “Reset to factory defaults”.
- Goto menu System → Software Update.
- Click button browse and select the firmware file (eg. IE-SR-2GT-LAN\_FN\_3G\_V3.0.2\_Build\_72728.bin).
- Click button ‘Start Update’.
  - Wait around 2 minutes (until the PWR LED is no longer blinking).
- Open the browser window again using the same IP address.
  - In section ‘System data’ of menu ‘System state’ the new current firmware version is displayed.



Firmware version



### 4.6 Configuration of the Router

#### Configuration of basic IP parameters (Step 5a)

##### Internet access via WAN port and using DHCP

- Now the IP parameters of the Router's Ethernet interfaces have to be configured. The LAN port has to be set according to the IP range of the remote network. The WAN port will be used for Internet access.
  - Based on our example we will configure the IP parameters as shown in the screenshot. If you have a 3G Router (IE-SR-2GT-UMTS/3G) and inserted a SIM card (any provider with Internet flat) you alternatively can configure the Internet access via the 3G connection.
- Goto menu Configuration → IP Configuration.
  - Set WAN port to DHCP (getting IP parameters from a DHCP server).
  - Set LAN IP to 192.168.1.254.
  - Enable checkbox 'NAT Masquerading' at LAN port.
  - Click button 'Apply Settings'.
- Note: Now the Router will apply the settings. As result you will lose the browser connection to the Router due to changed LAN IP. Wait some seconds and re-open the Web interface using the new IP address 192.168.1.254.

Currently connected to PC via Router LAN port (IP: 192.168.1.110)

Screenshot after parameter configuration (but still not applied).

**Internet access via WAN port (IP parameters via DHCP)**

**Important note**  
"NAT Masquerading" has to be activated if devices – connected to Router LAN port - does **not** have configured the Router LAN IP as gateway.

**Effect of NAT masquerading**  
If the checkbox is enabled then the Router is replacing the source IP of an incoming IP packet (via u-link VPN tunnel) with its own LAN IP when the packet is outgoing out of the LAN port to a target device. Internally the Router stores the requesting source IP to be able to forward a reply packet back to the original sender. When the LAN device receives the request packet it believes that the request comes from a member of its own network (Router's LAN IP) and is able to reply without having configured a gateway.

**Recommendation:** Activate generally "NAT masquerading" at LAN port when using the Router with u-link.

Router receives Default gateway from DHCP server

### 4.6 Configuration of the Router

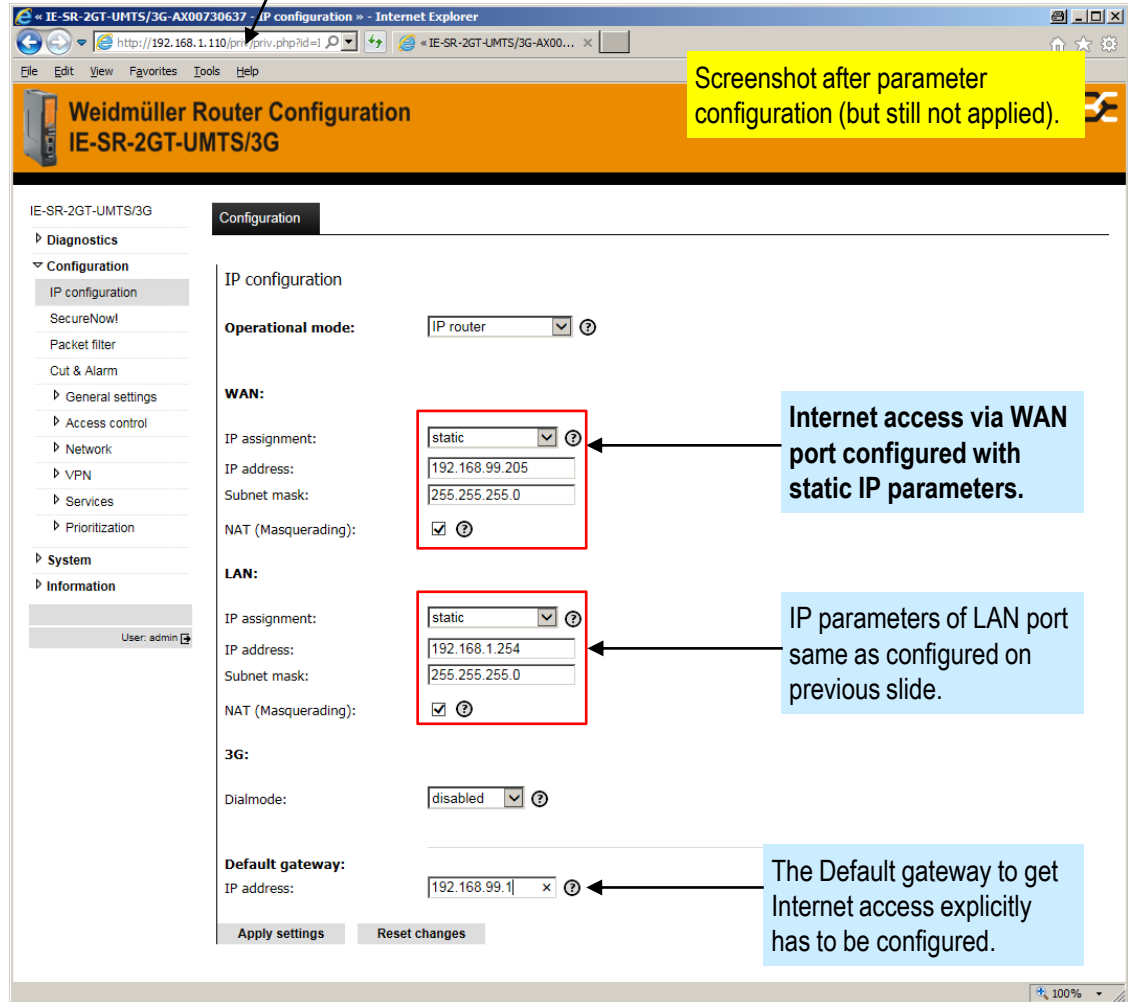
#### Configuration of basic IP parameters (Step 5b)

##### Internet access via WAN port and using a static IP address

- Goto menu Configuration → IP Configuration.
- Configure the WAN IP settings according to the network to which the WAN port will be connected.
  - Enter IP address and subnet mask.
  - Enable WAN checkbox 'NAT Masquerading'.
  - Enter the Default gateway (IP address of a Router located in the WAN side network which is providing the Internet access).
- In this example the LAN IP settings are configured with same value as used in previous slide.
  - Set LAN IP to 192.168.1.254 and subnet mask to 255.255.255.0.
  - Enable LAN checkbox 'NAT Masquerading'.
- Click button 'Apply Settings'.
  - Now the Router will apply the settings. As result you will lose the browser connection to the Router due to changed LAN IP. Wait some seconds and re-open the Web interface using the new IP address 192.168.1.254.

Currently connected to PC via Router LAN port (IP: 192.168.1.110)

Screenshot after parameter configuration (but still not applied).



The screenshot shows the 'Weidmüller Router Configuration' web interface for the 'IE-SR-2GT-UMTS/3G' model. The 'Configuration' menu is active, and the 'IP configuration' section is selected. The 'Operational mode' is set to 'IP router'. The 'WAN' section is configured with 'static' IP assignment, IP address '192.168.99.205', subnet mask '255.255.255.0', and 'NAT (Masquerading)' enabled. The 'LAN' section is also configured with 'static' IP assignment, IP address '192.168.1.254', subnet mask '255.255.255.0', and 'NAT (Masquerading)' enabled. The '3G' section shows 'Dialmode' set to 'disabled'. The 'Default gateway' section shows the IP address '192.168.99.1'. The 'Apply settings' button is visible at the bottom.

Internet access via WAN port configured with static IP parameters.

IP parameters of LAN port same as configured on previous slide.

The Default gateway to get Internet access explicitly has to be configured.

### 4.6 Configuration of the Router

#### Configuration DNS server (Step 5c)

**Only necessary if WAN port is using a static IP address for Internet access.**

- Note: To resolve DNS names (like www.google.com) the Router must have access to a DNS Server. If the WAN port is configured using DHCP then the IP address of the DNS server automatically will be provided by the DHCP server.
- If the IP address of the WAN port is configured with a static IP then additionally a DNS server has to be set manually.
- Goto menu Configuration → Network → DNS.
- Enter your own Hostname (is optional).
- Enter at least 1 IP address of a DNS server (starting with parameter '1st DNS server').
- Click button 'Apply Settings'.

Skip this step if the WAN port of the Router is configured to DHCP.

Router now is connected via IP 192.168.1.254

Configuration State

**Weidmüller Router Configuration**  
IE-SR-2GT-UMTS/3G

IE-SR-2GT-UMTS/3G

Diagnostics

Configuration

IP configuration

SecureNow!

Packet filter

Cut & Alarm

General settings

Access control

Network

**DNS**

IP routing

HTTP proxy

Forwarding

1:1 NAT

Network groups

Hardware groups

Ethernet

VPN

Services

Prioritization

System

Information

User: admin

DNS

Hostname: Router-Machine-1

Serial no. as hostname: ☐

Domain name (search suffix):

1st DNS server: 8.8.8.8

2nd DNS server:

3rd DNS server:

Register hostname at DHCP server: ☒

Use all servers concurrently: ☐

Apply settings Reset changes

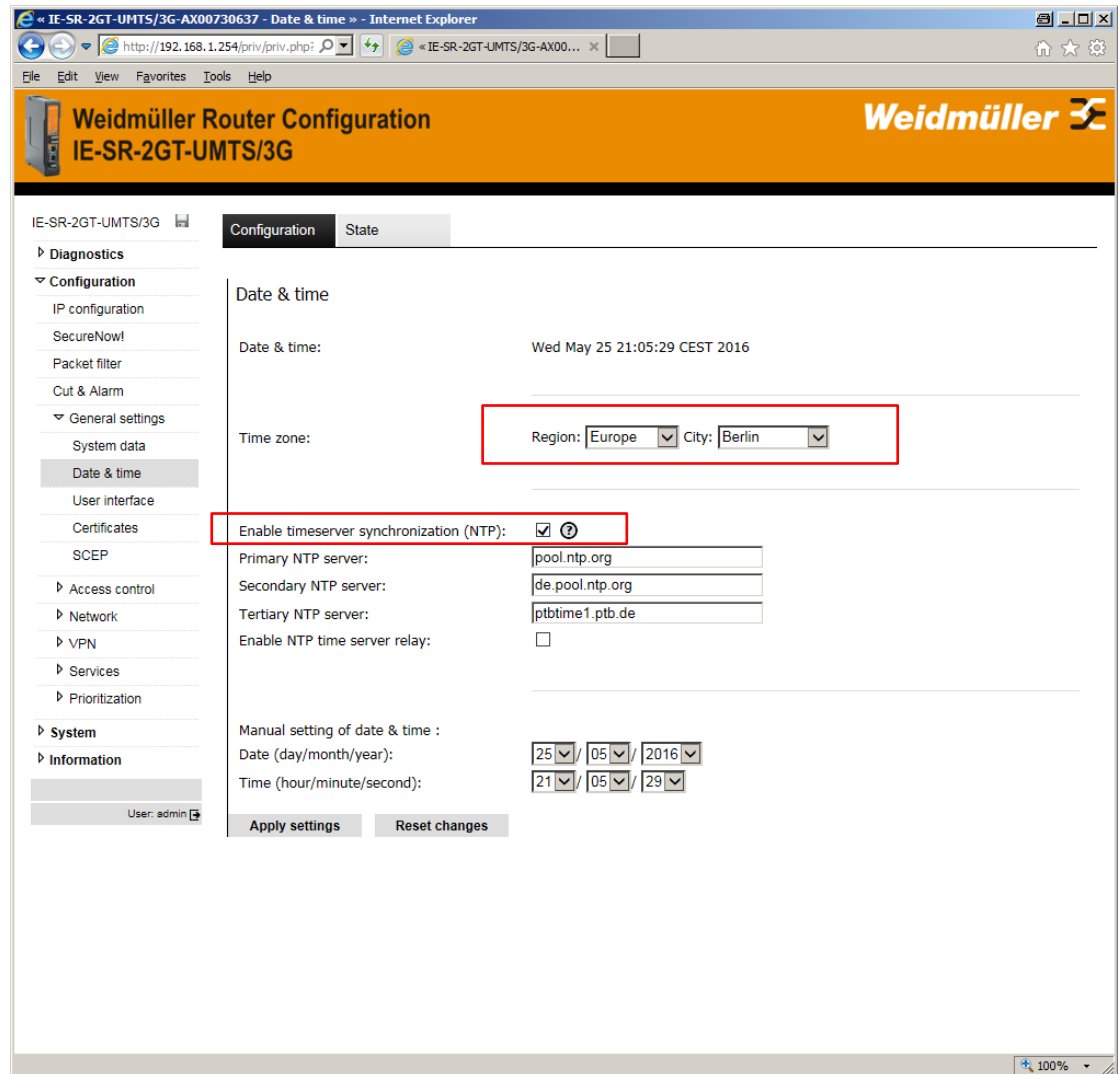
In this example the public Google DNS server (IP 8.8.8.8) is used.



## 4.6 Configuration of the Router

### Configuration of date / time parameters (Step 6)

- Note: The VPN connection to the u-link VPN server will use a certificate for encryption. Generally the validity of a certificate depends on date/time stamps (valid from/valid until). For this reason the Router's date and time settings should be set to a current value. Due to the fact that for an u-link access the Router always must have an Internet connection it is recommended to enable the time server synchronization (NTP) that the Router automatically will update date and time. If no time synchronization is possible then date and time values have to be set manually.
- Goto menu Configuration → General settings → Date & Time.
- Select your time zone.
- Enable checkbox 'Time Server Synchronization'.
- Enter your preferred NTP servers or use the defaults ones.
- Click button 'Apply Settings'.



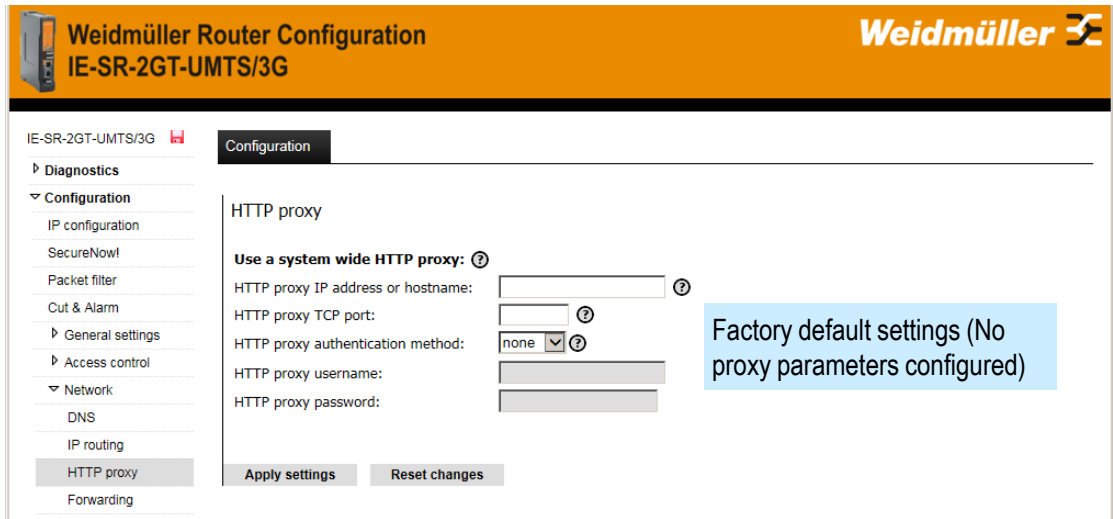
The screenshot shows the 'Weidmüller Router Configuration' web interface for the 'IE-SR-2GT-UMTS/3G' model. The 'Configuration' tab is active, and the 'Date & time' section is selected in the left sidebar. The main content area displays the current date and time as 'Wed May 25 21:05:29 CEST 2016'. Below this, the 'Time zone' is set to 'Europe' and 'Berlin'. The 'Enable timeserver synchronization (NTP)' checkbox is checked. The NTP servers are listed as 'pool.ntp.org', 'de.pool.ntp.org', and 'ptbtime1.ptb.de'. The 'Manual setting of date & time' section shows the date as '25/05/2016' and the time as '21:05:29'. The 'Apply settings' and 'Reset changes' buttons are at the bottom.

### 4.6 Configuration of the Router

Configuration of HTTP proxy parameters if the Internet connection is passing a Proxy server, requiring authentication by user name and password (Step 7)

- See section 'Preparing the Service PC (u-link VPN client)' for additional information in terms of proxy settings. Be aware that the Router proxy parameters depend on the network security settings of the Routers location.
- Goto menu Configuration → Network → HTTP Proxy.
- Enter the Proxy Server specific parameters (provided by IT department of remote network which the Router is using for Internet access).
- Click button 'Apply Settings'.

Skip this step if the Routers Internet access is not passing a Proxy server.



**Weidmüller Router Configuration**  
IE-SR-2GT-UMTS/3G

**Configuration**

IE-SR-2GT-UMTS/3G

- Diagnostics
- ▼ Configuration
  - IP configuration
  - SecureNow!
  - Packet filter
  - Cut & Alarm
  - General settings
  - Access control
  - ▼ Network
    - DNS
    - IP routing
    - HTTP proxy**
    - Forwarding

**HTTP proxy**

**Use a system wide HTTP proxy:** ☒

HTTP proxy IP address or hostname:

HTTP proxy TCP port:

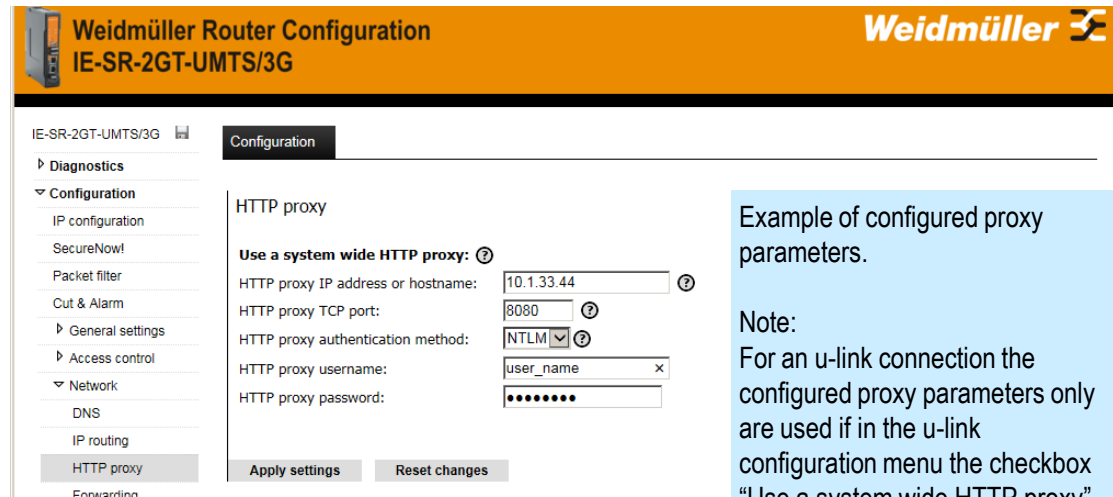
HTTP proxy authentication method:

HTTP proxy username:

HTTP proxy password:

**Apply settings** **Reset changes**

Factory default settings (No proxy parameters configured)



**Weidmüller Router Configuration**  
IE-SR-2GT-UMTS/3G

**Configuration**

IE-SR-2GT-UMTS/3G

- Diagnostics
- ▼ Configuration
  - IP configuration
  - SecureNow!
  - Packet filter
  - Cut & Alarm
  - General settings
  - Access control
  - ▼ Network
    - DNS
    - IP routing
    - HTTP proxy**
    - Forwarding

**HTTP proxy**

**Use a system wide HTTP proxy:** ☒

HTTP proxy IP address or hostname:

HTTP proxy TCP port:

HTTP proxy authentication method:

HTTP proxy username:

HTTP proxy password:

**Apply settings** **Reset changes**

Example of configured proxy parameters.

**Note:**  
For an u-link connection the configured proxy parameters only are used if in the u-link configuration menu the checkbox "Use a system wide HTTP proxy" is activated.

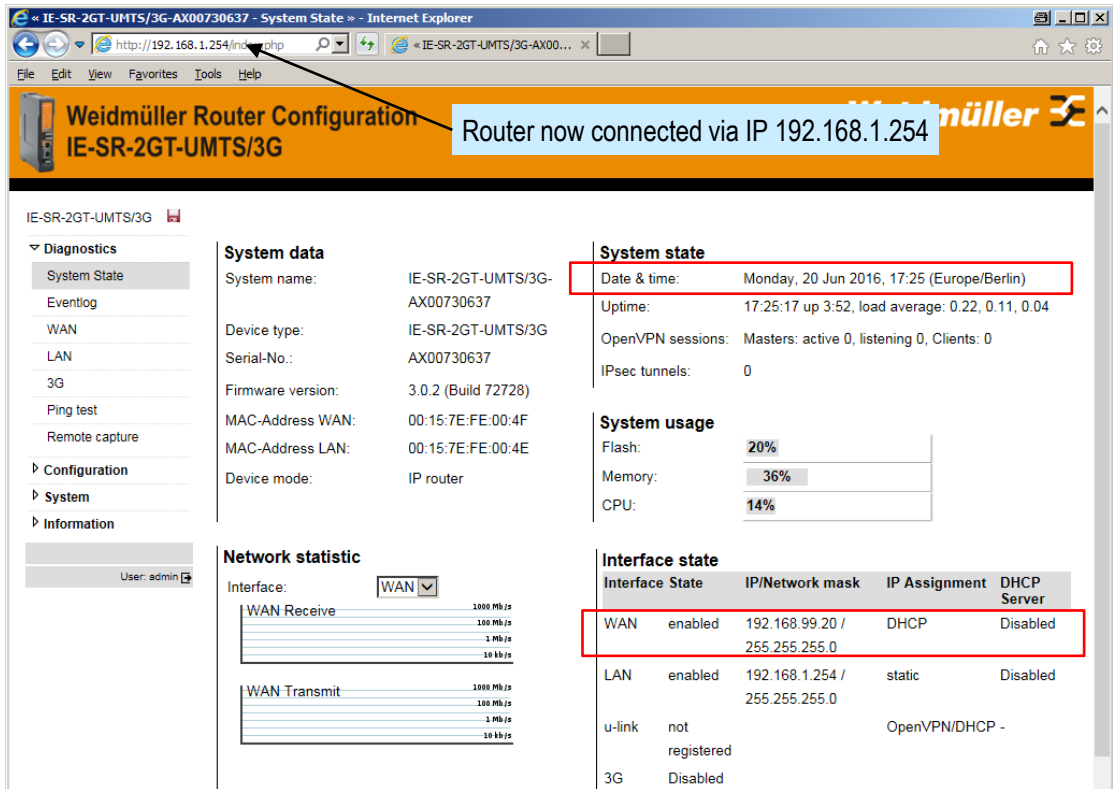
## 4.6 Configuration of the Router

Establishing a network connection via WAN port (Step 8) / In this example we use DHCP for IP settings of WAN port.

- Connect the WAN port to a network which is providing DHCP and allowing Internet access.
  - Wait around 30 seconds that the Router is getting IP data from DHCP server.
- Goto menu Diagnostic → System state (Home page).
- Check section 'Interface state' if WAN port has received an IP address.
- Check menu 'System state' if date and time values have current values.

### Check Internet access (Step 9)

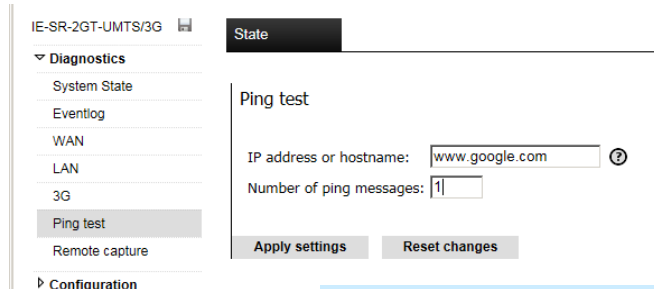
- Goto menu Diagnostic → Ping test.
- Enter a DNS name (eg. www.google.com) or an IP address (eg. 8.8.8.8) and click button 'Apply Settings'.
  - When having an Internet connection the Router will displaying the result.



Router now connected via IP 192.168.1.254

System state			
Date & time:	Monday, 20 Jun 2016, 17:25 (Europe/Berlin)		
Uptime:	17:25:17 up 3:52, load average: 0.22, 0.11, 0.04		
OpenVPN sessions:	Masters: active 0, listening 0, Clients: 0		
IPsec tunnels:	0		

Interface state				
Interface	State	IP/Network mask	IP Assignment	DHCP Server
WAN	enabled	192.168.99.20 / 255.255.255.0	DHCP	Disabled
LAN	enabled	192.168.1.254 / 255.255.255.0	static	Disabled
u-link	not registered	OpenVPN/DHCP -		
3G	Disabled			



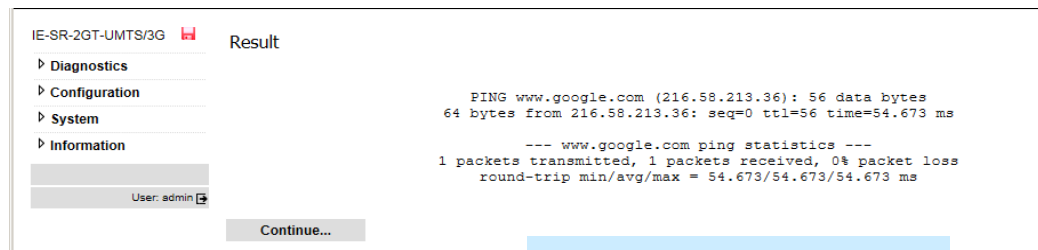
Ping test

IP address or hostname:

Number of ping messages:

Apply settings Reset changes

Screenshot of menu "Ping test"



Result

```

PING www.google.com (216.58.213.36): 56 data bytes
64 bytes from 216.58.213.36: seq=0 ttl=56 time=54.673 ms

--- www.google.com ping statistics ---
1 packets transmitted, 1 packets received, 0% packet loss
round-trip min/avg/max = 54.673/54.673/54.673 ms
  
```

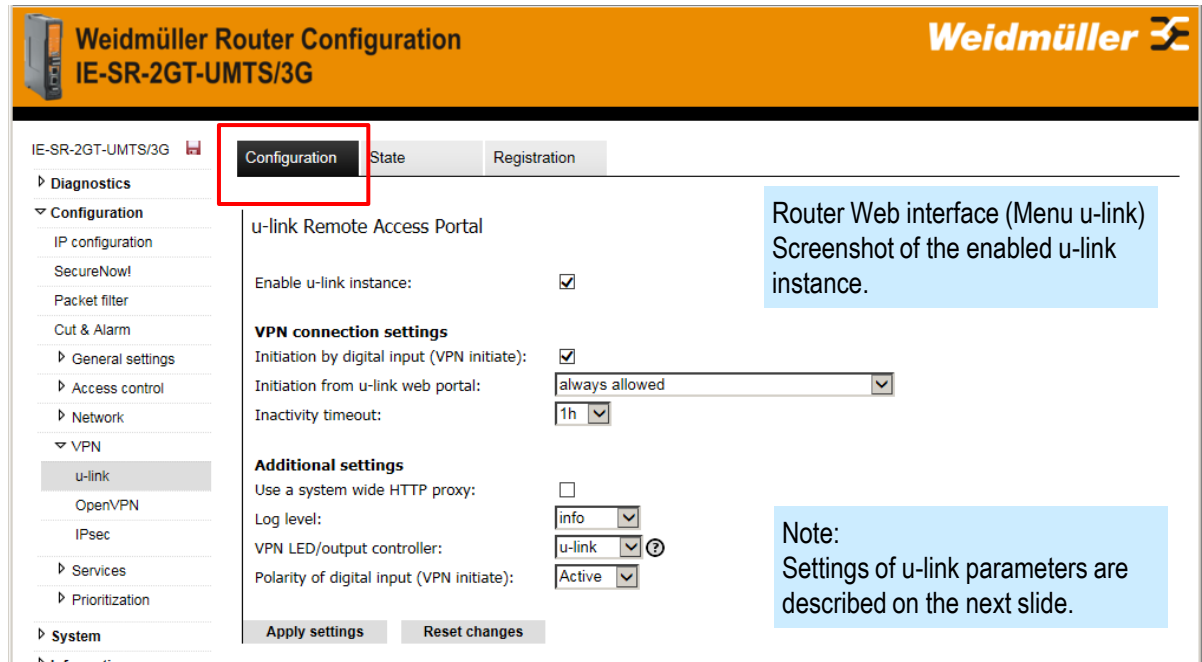
Continue...

Screenshot of a successful "Ping" test

### 4.6 Configuration of the Router

#### Activate the Router for u-link (Step 10)

- Goto menu Configuration → VPN → u-link (Tab 'Configuration').
- Enable checkbox 'Enable u-link instance'.
- Use default values of section 'VPN connection settings'.
- Enable checkbox 'Use a system wide HTTP proxy' if the Router Internet access is passing a Proxy Server.
  - Note: If the checkbox will be enabled the Proxy server settings must be configured as described previously.
- Use default settings of the other parameters.
- Click button 'Apply settings'.



**Weidmüller Router Configuration**  
IE-SR-2GT-UMTS/3G

Configuration State Registration

IE-SR-2GT-UMTS/3G

u-link Remote Access Portal

Enable u-link instance: ☒

**VPN connection settings**

Initiation by digital input (VPN initiate): ☒

Initiation from u-link web portal: always allowed

Inactivity timeout: 1h

**Additional settings**

Use a system wide HTTP proxy: ☐

Log level: info

VPN LED/output controller: u-link

Polarity of digital input (VPN initiate): Active

Apply settings Reset changes

Router Web interface (Menu u-link)  
Screenshot of the enabled u-link instance.

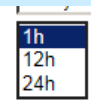
Note:  
Settings of u-link parameters are described on the next slide.

### 4.6 Configuration of the Router

#### Explanation of u-link configuration parameters

##### Inactivity timeout (Dropdown box)

The Router automatically will shutdown a VPN connection after the selected time if no traffic was recognized during this time.

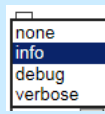
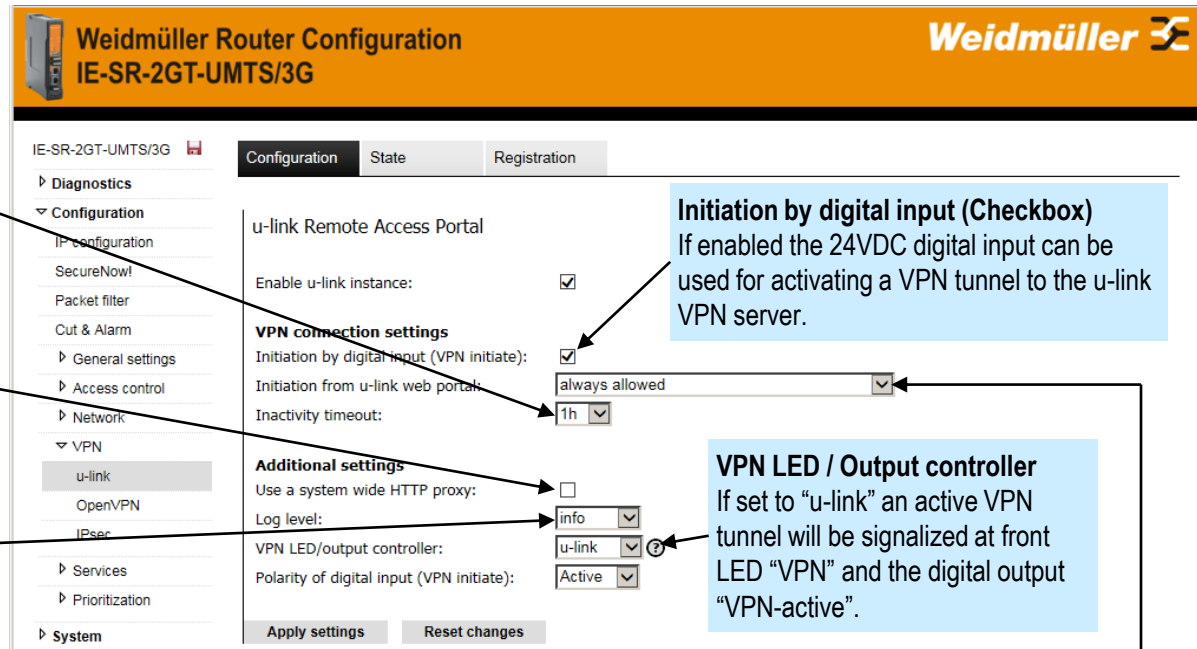


##### HTTP Proxy (Checkbox)

Enable if the Internet access is passing a Proxy server (Configure Proxy settings in menu Configuration → Network → HTTP Proxy)

##### Log Level (Dropdown box)

Selection of logging level (Messages shown in the Event Log).

**Weidmüller Router Configuration**  
IE-SR-2GT-UMTS/3G

Configuration | State | Registration

u-link Remote Access Portal

Enable u-link instance: ☒

**VPN connection settings**

Initiation by digital input (VPN initiate): ☒

Initiation from u-link web portal:

Inactivity timeout:

**Additional settings**

Use a system wide HTTP proxy: ☐

Log level:

VPN LED/output controller:

Polarity of digital input (VPN initiate):

Apply settings | Reset changes

##### Initiation by digital input (Checkbox)

If enabled the 24VDC digital input can be used for activating a VPN tunnel to the u-link VPN server.

##### VPN LED / Output controller

If set to “u-link” an active VPN tunnel will be signaled at front LED “VPN” and the digital output “VPN-active”.

##### “Initiation from u-link web portal” (Dropdown box)

Controls if the u-link VPN tunnel can be activated/deactivated remotely from the u-link Web portal via the WWW (world wide heartbeat) function.

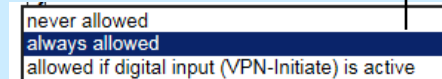
Selections:

Never allowed: Remote activation/deactivation of the VPN tunnel from u-link Web portal never is allowed.

Always allowed: Remote activation/deactivation of the VPN tunnel from u-link Web portal always is allowed.

Allowed if digital input (VPN-Initiate) is active: Means that remote activation/deactivation from u-link Web portal only is allowed when the digital input “VPN-Initiate” is set to 24VDC.

**Explanation:** If a machine operator at Router location has activated the 24VDC digital input “VPN-Initiate” (eg. by key switch) then the VPN tunnel will be started providing the remote access. But if the service guy will not immediately start the service (means no traffic on the VPN tunnel) then by default the Router automatically de-activates the VPN tunnel after 1 hour of no traffic. But to due to the fact that the key switch still is on (means the access permission is still granted), the remote Service user may re-activate the VPN tunnel remotely. If the key switch again is set to off (24VDC removed from digital input) then the VPN tunnel will be de-activated immediately and the remote Service user no longer is allowed to activate the VPN tunnel remotely.



### 4.6 Configuration of the Router

**Register (Assign) the Router to the defined Router object configured in the u-link Web portal (Step 11)**

- For the registration process we need the unique activation code of the Router object. The activation code can be found in the properties of the created Router object (u-link Portal: Menu 'Device Management').
- Select Tab 'Registration'.
- Enter the activation code of the defined Router object in field 'Registration code'.
- Click button 'Register'.
  - Now the Router is initiating the registration process to the u-link Portal server. This process typically takes time of around 30 seconds.
- Please click button "Reload" repeatedly to update the current registration status.

#### Device Management

Device Topology	Device configuration	Access rights (groups)	New																											
<div><div><div><div><div></div><div>WDM Engineering Systems</div></div><div><div></div><div>Access Router Machine 1</div></div></div></div></div>	<div><div>Properties</div><table><tr><td>Name</td><td>Access Router Machine 1</td><td><div></div></td></tr><tr><td>Icon</td><td><div></div></td><td><div></div></td></tr><tr><td>Device Type</td><td>Router/Firewall</td><td><div></div></td></tr><tr><td>Identification</td><td></td><td><div></div></td></tr><tr><td>Location</td><td>Factory Detmold</td><td><div></div></td></tr><tr><td>Serial Number</td><td></td><td><div></div></td></tr><tr><td>IP</td><td>192.168.1.254 (LAN port)</td><td><div></div></td></tr><tr><td>Activation Code</td><td>KPBUT7ANV6TM</td><td><div></div></td></tr><tr><td>Status-WWH</td><td>Inactive</td><td></td></tr></table></div>			Name	Access Router Machine 1	<div></div>	Icon	<div></div>	<div></div>	Device Type	Router/Firewall	<div></div>	Identification		<div></div>	Location	Factory Detmold	<div></div>	Serial Number		<div></div>	IP	192.168.1.254 (LAN port)	<div></div>	Activation Code	KPBUT7ANV6TM	<div></div>	Status-WWH	Inactive	
Name	Access Router Machine 1	<div></div>																												
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IP	192.168.1.254 (LAN port)	<div></div>																												
Activation Code	KPBUT7ANV6TM	<div></div>																												
Status-WWH	Inactive																													

Screenshot u-link Portal  
(Menu Device Management)

IE-SR-2GT-UMTS/3G

Configuration

State

Registration

u-link Remote Access Portal

Status Registration u-link Portal:

not registered

Registration Code:

KPBUT7ANV6TM

Register

Reload

Router Web interface  
(Menu u-link / Tab Registration)

Status: Not registered (Registration code already entered)

**As result the Router should have the status "registered".**

**If the registration process has failed please refer to Appendix A (Registration of Router to u-link failed).**

Configuration

State

Registration

u-link Remote Access Portal

ongoing registration process

Status Registration u-link Portal:

registering...

Registration Code:

KPBUT7ANV6TM

Cancel Registration

Reload

Configuration

State

Registration

u-link Remote Access Portal

Successful registration

Status Registration u-link Portal:

registered

Registration Code:

KPBUT7ANV6TM

Unregister

Reload

### 4.6 Configuration of the Router

#### Check the status of the u-link connection (Step 12)

➤ Select tab 'State'.

- After successful registration the Router is initiating the WWH communication to the u-link (Status 'Online').

#### Notes about WWH

The WWH function (World Wide Heartbeat) is an outgoing SSL connection (TCP/443, like HTTPS) to the u-link WWH server and is independent from a VPN connection which will be used for remote access.

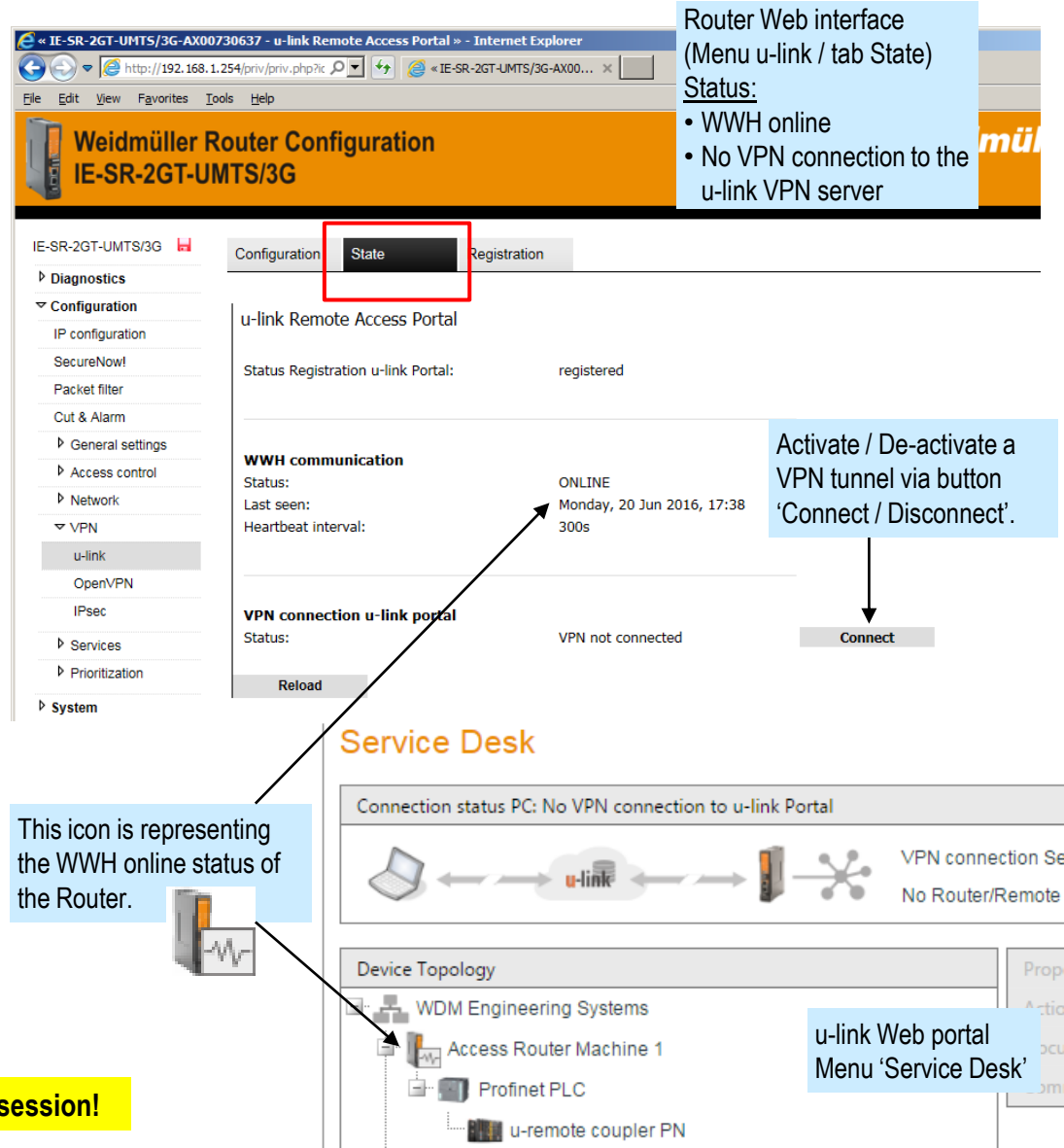
The Router sends via this peer connection periodically minutes a „Still alive“ message to the WWH server. The WWH server then signalizes the u-link Web server that the Router is alive. This status is displayed in the Service Desk of the u-link Web portal.

Via this connection it is possible to activate/de-activate the VPN tunnel of the Router remotely from the u-link Web portal server.

The encrypted WWH connection automatically is started when the Router is powered on, having an Internet connection and is registered to a Router object in a u-link account.

#### Activating the VPN tunnel via menu "State"

Additionally to the most used methods to initiate a VPN tunnel (remotely via u-link Portal or by 24 VDC digital input) the VPN connection can be activated / de-activated via button 'Connect'.



**Router Web interface (Menu u-link / tab State)**

**Status:**

- WWH online
- No VPN connection to the u-link VPN server

**Configuration** **State** **Registration**

IE-SR-2GT-UMTS/3G

u-link Remote Access Portal

Status Registration u-link Portal: registered

**WWH communication**

Status: ONLINE  
Last seen: Monday, 20 Jun 2016, 17:38  
Heartbeat interval: 300s

**VPN connection u-link portal**

Status: VPN not connected

**Service Desk**

Connection status PC: No VPN connection to u-link Portal

VPN connection Se  
No Router/Remote

**Device Topology**

WDM Engineering Systems

Access Router Machine 1

Profinet PLC

u-remote coupler PN

**u-link Web portal Menu 'Service Desk'**

**This icon is representing the WWH online status of the Router.**

**Activate / De-activate a VPN tunnel via button 'Connect / Disconnect'.**

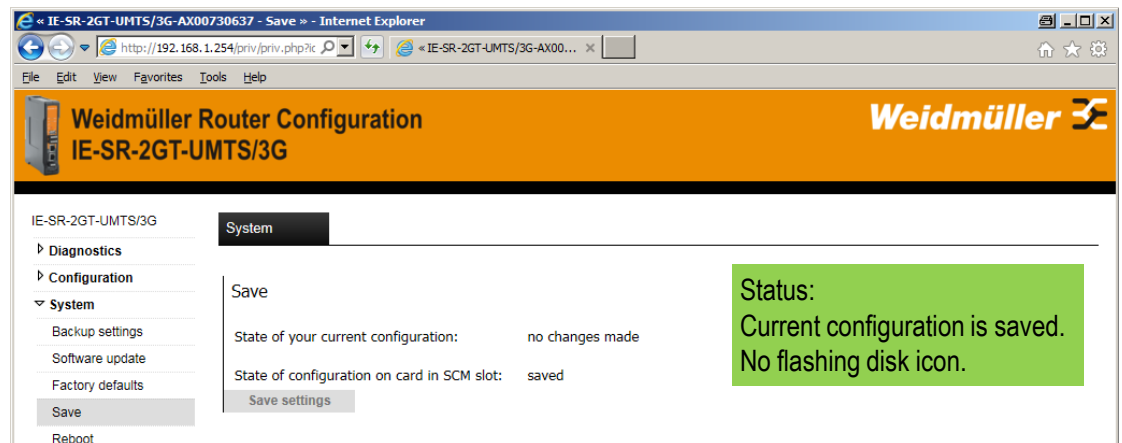
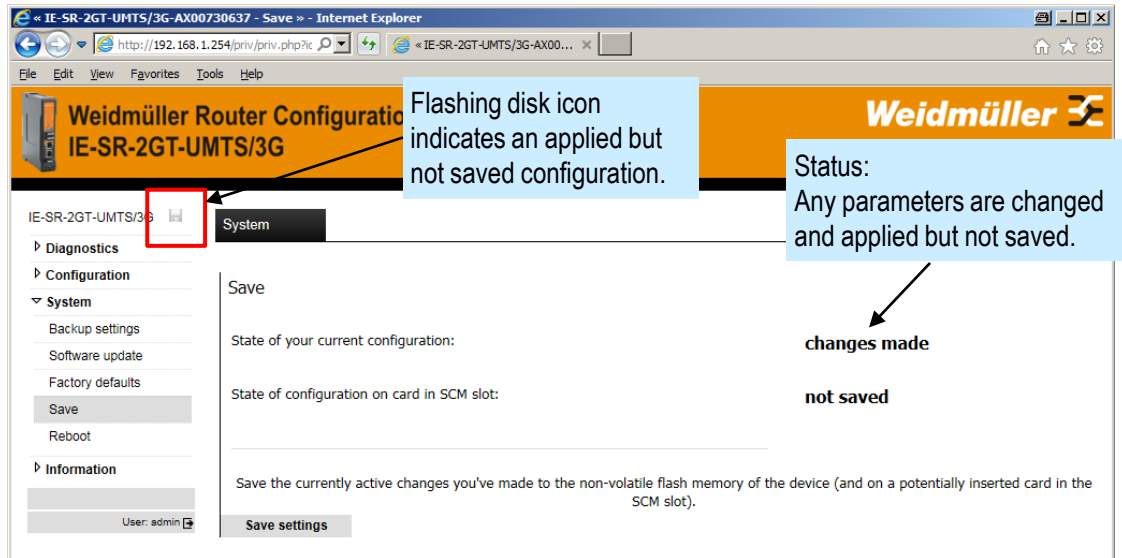
**Now the Router is ready for initiating a remote access session!**



### 4.6 Configuration of the Router

#### Save the Router configuration (Step 13)

- Goto menu System → Save.
  - If you have changed and applied any settings then in each menu a flashing disk icon is displayed, indicating that the applied settings not yet are saved to the flash memory. By clicking on the disk icon the menu 'Save' directly will be opened.
- Click button 'Save settings' to store the configuration in the non-volatile memory.





## Chapter 5: Initiating an access to remote LAN devices

### Conditions

Device configuration in u-link Web portal has been done.

Software 'u-link VPN client' is installed on Service PC and unlocked (Registered).

Router has been configured and unlocked (Registered).

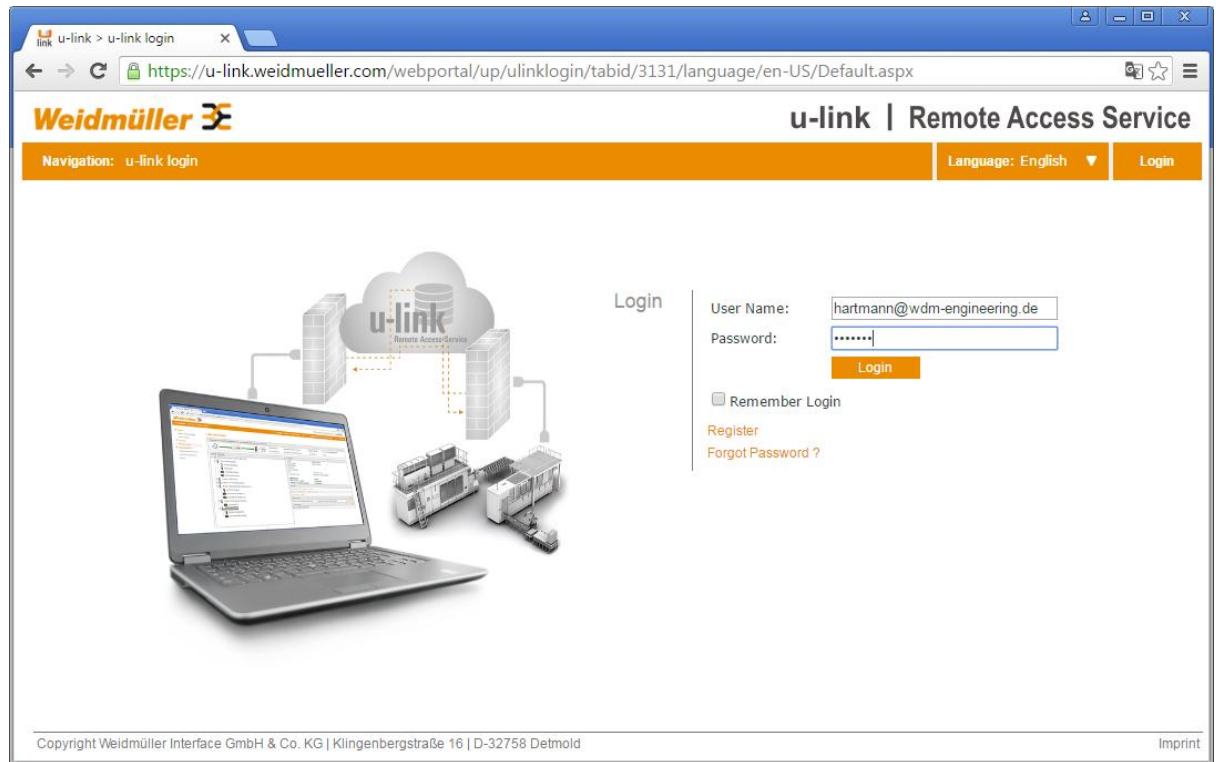
### Note:

**For demonstrating the access to remote LAN devices we will use the Administrator account.**

### 5.1 Starting a remote access session

#### Logon to the u-link Web portal using your administrator account (Step 1)

- Enter user name and password of the u-link administrator.
- Click button 'Login'.



### 5.1 Starting a remote access session

#### Goto menu Service Desk (Step 2)

- In section 'Device Topology' the same defined objects are displayed which previously have been created in menu 'Device Management'.
- In section 'Connection status PC' the current VPN connection status (of this PC) to the u-link VPN server is displayed.
- In the 'Device Topology' the current connection status of a Router is signaled by following different icon symbols:



- The Router has no connection to u-link.
- Device not configured to use u-link or
  - Device is powered off or
  - Having no Internet access.



The Router has an online connection to u-link WWH server.



The Router has an active VPN connection to the u-link VPN server.



The Service PC has a pass-through VPN connection via the Router to its LAN network.

**u-link | Remote Access Service Desk**

Navigation: Service > Service Desk | Active license: Entry Version | Language: English | Logged in as: Heinz Hartmann

**Service Desk**

Connection status PC: No VPN connection to u-link Portal

VPN connection Service-PC offline  
No Router/Remote network selectable

**Device Topology**

- WDM Engineering Systems
  - Access Router Machine 1
    - Profinet PLC
      - u-remote coupler PN

**Status Service PC (u-link VPN client):**

- Not connected to u-link

**Status Router:**

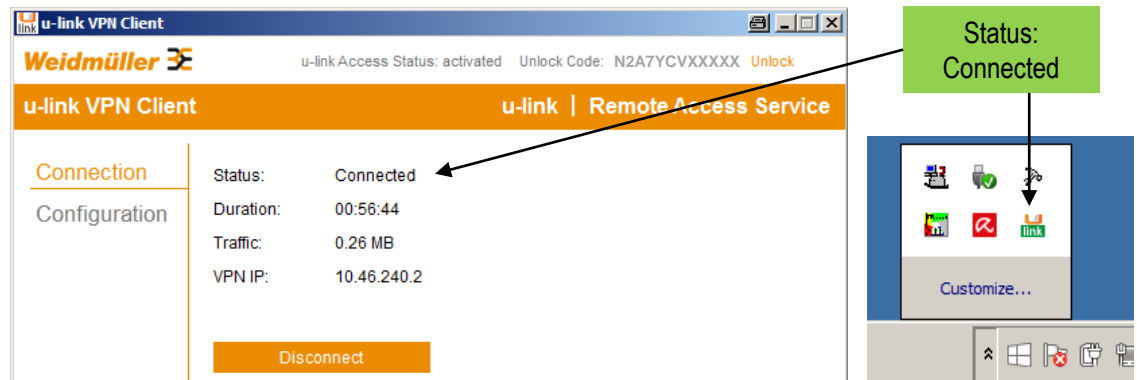
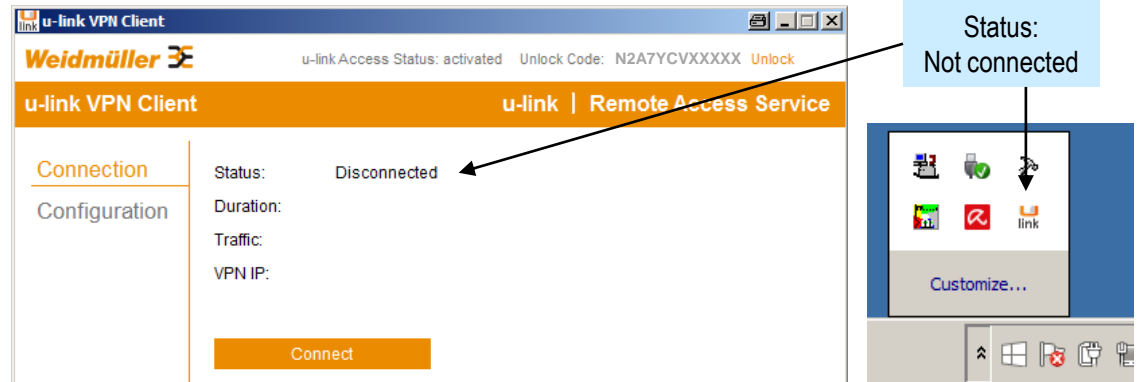
- Connected to u-link via WWH communication
- No VPN connection

For initiating a remote access session the Router must have at least one of these both states.

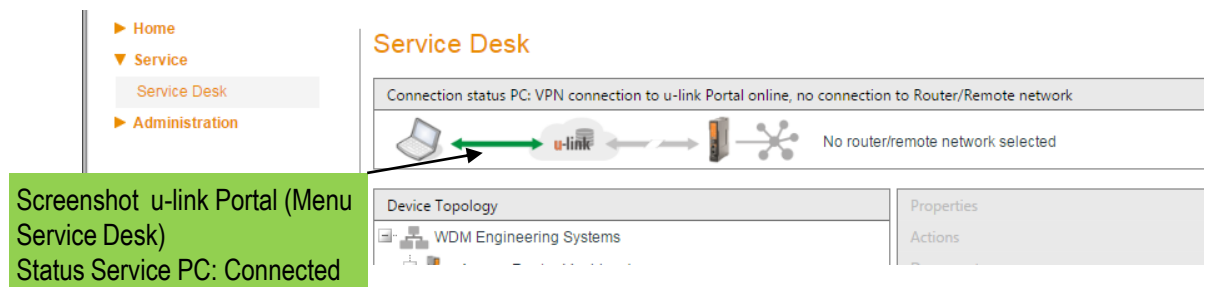
### 5.1 Starting a remote access session

#### Connect the Service PC to u-link VPN server (Step 3)

- Start program 'u-link VPN client'.
- Click button 'Connect'.
  - When successfully connected the status and some additional information will be displayed in the program window.
  - The u-link icon in the task bar is displaying a connected status.



- Go back to menu 'Service Desk' of the u-link Web portal.
- The PCs connection to the u-link VPN server will be signalized by a green colored double arrow.
  - Now you are connected to the u-link VPN server but at this time you still do not have a pass-through connection to a Router/Remote network.



## 5.1 Starting a remote access session

### Start the Router VPN connection remotely via Portal (Step 4)

- The VPN connection of the Router to the u-link VPN server can be activated via WWH communication. The permission to activate the Router VPN tunnel remote via u-link Portal can be set or prohibited in menu 'u-link' of the Routers Web interface (default allowed).
- Select the Router by clicking on the Router object (Icon or name) to display the object parameters (Properties, Actions, ...)
- Start the VPN connection by clicking button 'Connect VPN Router ↔ u-link' (Section Actions).
- Now a 'VPN activate command' will be sent to the Router via WWH connection.
- Wait around 30...40 seconds then the new status 'Connected' will be displayed.
- Finally both the Service PC and the Router are connected to the u-link VPN server but no pass-through connection via the u-link VPN server is established until now.

Service Desk

Connection status PC: VPN connection to u-link Portal online, no connection to Router/Remote network

No router/remote network selected

Device Topology

- WDM Engineering Systems
  - Access Router Machine 1
  - Profinet PLC
  - u-remote coupler PN

Properties

Name	Access Router Machine 1
Device Type	Router/Firewall
Identification	
Location	Factory Detmold
Serial Number	
IP	192.168.1.254 (LAN port)
Activation Code	KPBUT7ANV6TM
Status-WWH	Active
Status-VPN Router ↔ u-link	Disconnected
Status-VPN PC ↔ u-link ↔ Router	Disconnected

Actions

Connect VPN Router ↔ u-link

Connect VPN PC ↔ u-link ↔ Router

Open Router Web page

Documents

Add

Configuration

Status Router **before** clicking  
'Connect VPN Router ↔ u-link'

- Active WWH communication to u-link
- No VPN connection

Service Desk

Connection status PC: VPN connection to u-link Portal online, no connection to Router/Remote network

No router/remote network selected

Device Topology

- WDM Engineering Systems
  - Access Router Machine 1
  - Profinet PLC
  - u-remote coupler PN

Properties

Name	Access Router Machine 1
Device Type	Router/Firewall
Identification	
Location	Factory Detmold
Serial Number	
IP	192.168.1.254 (LAN port)
Activation Code	KPBUT7ANV6TM
Status-WWH	Active
Status-VPN Router ↔ u-link	Connected
Status-VPN PC ↔ u-link ↔ Router	Disconnected

Actions

Disconnect VPN Router ↔ u-link

Connect VPN PC ↔ u-link ↔ Router

Open Router Web page

Documents

Add

Configuration

Status Router **after** clicking  
'Connect VPN Router ↔ u-link'

- Active WWH communication to u-link
- VPN connection to u-link VPN server established

## 5.1 Starting a remote access session

### Initiate a pass-through connection between Service PC and remote Router (Step 5)

- Click button 'Connect VPN PC ↔ u-link ↔ Router' to establish a pass-through connection between Service PC and the Router.
- A successful pass-through connection is displayed in section 'Connection Status PC' containing following information:
  - Connected to: Name of the selected accessible Router / remote network.
  - Accessible remote network: IP range of accessible remote network.
  - Router VPN IP: Additional VPN-IP address of the Router beside LAN/WAN IP's. Exists as long as the pass-through connection is established. Via this VPN-IP the Router's Web interface also is accessible.
  - Routing to remote network: Status 'active' means that the Service PC has accepted an additional setting in its routing table how to access devices at the remote network.

► Home  
▼ Service  
Service Desk  
► Administration

#### Service Desk

Connection status PC: VPN connection to u-link Portal online, no connection to Router/Remote network

No router/remote network selected

Device Topology

- WDM Engineering Systems
  - Access Router Machine 1
    - Profinet PLC
      - u-remote coupler PN

Properties

Name	Access Router Machine 1
Device Type	Router/Firewall
Identification	
Location	Factory Detmold
Serial Number	
IP	192.168.1.254 (LAN port)
Activation Code	KPBUT7ANV6TM
Status-WWH	Active
Status-VPN Router ↔ u-link	Connected
Status-VPN PC ↔ u-link ↔ Router	Disconnected

Actions

Disconnect VPN Router ↔ u-link

**Connect VPN PC ↔ u-link ↔ Router**

Open Router Web page

Documents Add

Click button to start a pass-through connection between Service PC and Router.

► Home  
▼ Service  
Service Desk  
► Administration

#### Service Desk

Connection status PC: Connected to Router/Remote network via u-link Portal Disconnect

Connected to: Access Router Machine 1 192.168.1.0/255.255.255.0 10.46.240.4 active

Device Topology

- WDM Engineering Systems
  - Access Router Machine 1
    - Profinet PLC
      - u-remote coupler PN

Properties

Name	Access Router Machine 1
Device Type	Router/Firewall
Identification	
Location	Factory Detmold
Serial Number	
IP	192.168.1.254 (LAN port)
Activation Code	KPBUT7ANV6TM
Status-WWH	Active
Status-VPN Router ↔ u-link	Connected
Status-VPN PC ↔ u-link ↔ Router	Connected

Actions

Disconnect VPN Router ↔ u-link

Disconnect VPN PC ↔ u-link ↔ Router

Open Router Web page

Documents Add

Changed Router icon signaling a pass-through connection to this Service PC

Established pass-through connection between Service PC and Router.

Now the remote devices (any IP address) connected to LAN port of remote Router can be accessed.

## 5.1 Starting a remote access session

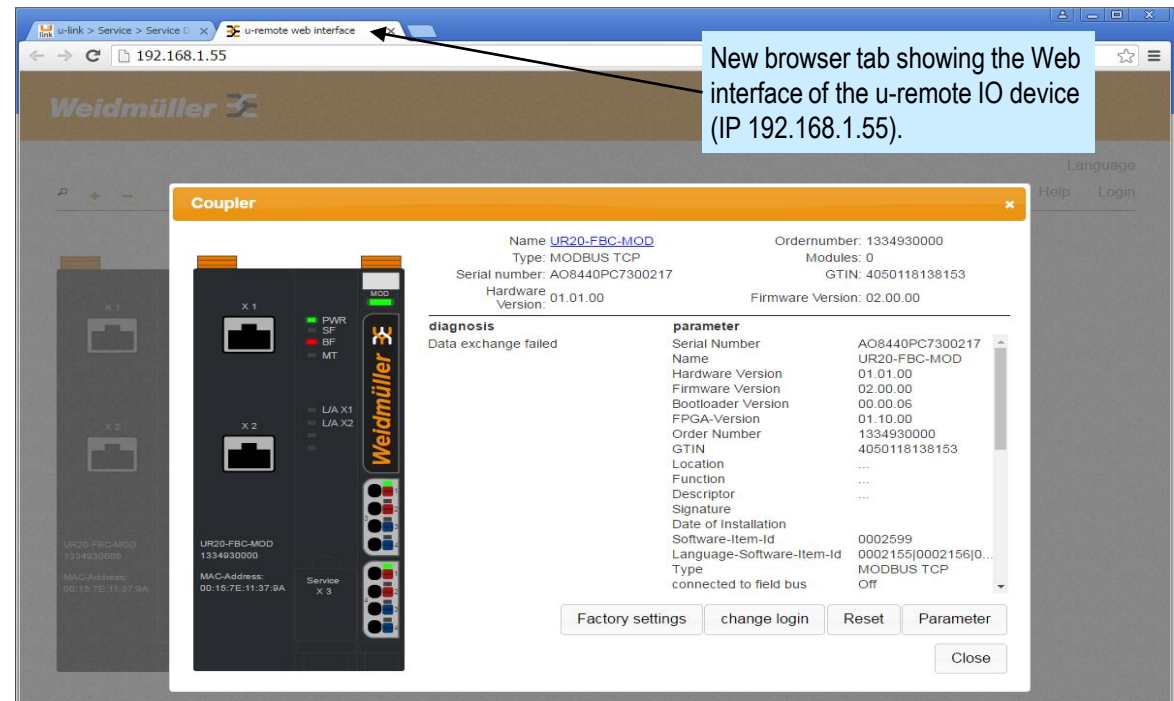
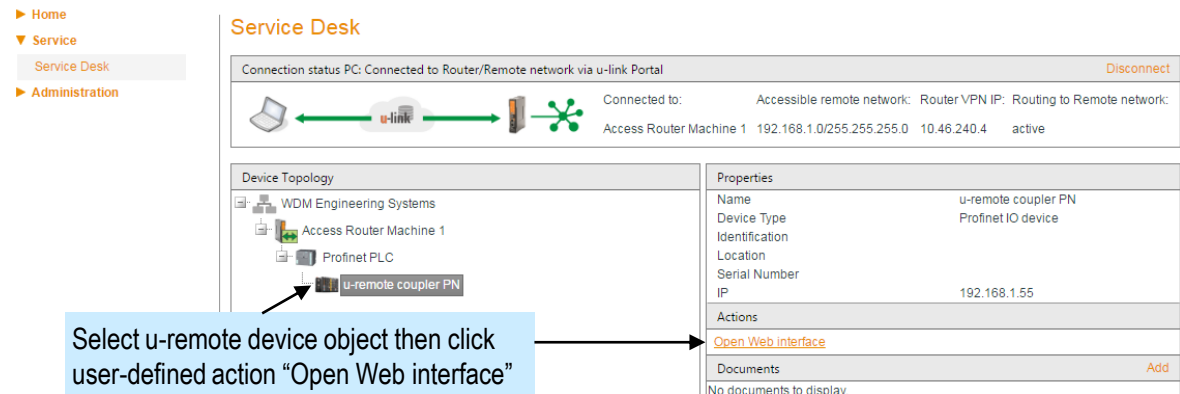
### Accessing a remote LAN device (Step 6)

**Example shows a Web access to an u-remote IO device.**

- When having a VPN pass-through connection then generally all devices at the remote network - matching the LAN net/subnet - are accessible by the Service PC. In this example we will access the Web interface of device 'u-remote coupler PN' (is of type 'User defined end device') via IP 192.168.1.55. For the Web access we use the action "Open Web interface" defined for this object in menu 'Device Management'.
- Select (Highlight) item 'u-remote coupler PN'.
- Click button 'Open Web interface' in section Actions.
- Now a new browser tab will be opened showing the Web interface of the u-remote IO device.
- If no action is defined open a browser manually and enter the directly the IP address into the input line.

#### Note:

- For security reasons currently only a Web access can be defined as an u-link action.
- But as long as the pass-through connection is established you can run any program or application which needs access to an IP of the remote network.





## 5.2 Closing the remote access session

### Disconnect from the selected Router / remote network (Step 7)

#### (Finish the remote access session)

- First close all active sessions or programs which are accessing IP addresses of the remote network.
- Click button 'Disconnect'.
  - Now you will have the previous status that both the Service PC and the Router are still connected to the u-link VPN server but you have no longer a pass-through connection.
- Select the Router item and click 'Disconnect VPN Router ↔ u-link' to shutdown the Routers VPN tunnel.

▶ Home  
▼ Service  
Service Desk  
▶ Administration

#### Service Desk

Connection status PC: Connected to Router/Remote network via u-link Portal

Connected to: Accessible remote network: Router VPN IP: Routing to Remote network: Access Router Machine 1 192.168.1.0/255.255.255.0 10.46.240.4 Active

**Disconnect**

**Step 1: Close the VPN pass-through connection of the Service PC to Router / remote network (Use one of the 2 options).**

Device Topology

- WDM Engineering Systems
  - Access Router Machine 1
    - Profinet PLC
      - u-remote coupler PN

Properties

Name	Access Router Machine 1
Device Type	Router/Firewall
Identification	
Location	Factory Detmold
Serial Number	
IP	192.168.1.254 (LAN port)
Activation Code	KPBUT7ANV6TM
Status-WWH	Active
Status-VPN Router ↔ u-link	Connected
Status-VPN PC ↔ u-link ↔ Router	Connected

Actions

- Disconnect VPN Router ↔ u-link
- Disconnect VPN PC ↔ u-link ↔ Router**
- Open Router Web page

Documents Add

▶ Home  
▼ Service  
Service Desk  
▶ Administration

#### Service Desk

Connection status PC: VPN connection to u-link Portal online, no connection to Router/Remote network

No router/remote network selected

Device Topology

- WDM Engineering Systems
  - Access Router Machine 1
    - Profinet PLC
      - u-remote coupler PN

Properties

Name	Access Router Machine 1
Device Type	Router/Firewall
Identification	
Location	Factory Detmold
Serial Number	
IP	192.168.1.254 (LAN port)
Activation Code	KPBUT7ANV6TM
Status-WWH	Active
Status-VPN Router ↔ u-link	Connected
Status-VPN PC ↔ u-link ↔ Router	Disconnected

Actions

- Disconnect VPN Router ↔ u-link**
- Connect VPN PC ↔ u-link ↔ Router
- Open Router Web page

Documents Add

**Step 2: Shutdown the Router VPN connection to the u-link VPN server.**

Device Topology

- WDM Engineering Systems
  - Access Router Machine 1
    - Profinet PLC
      - u-remote coupler PN

**Status 3: New Router status after VPN shutdown showing an active WWH connection.**



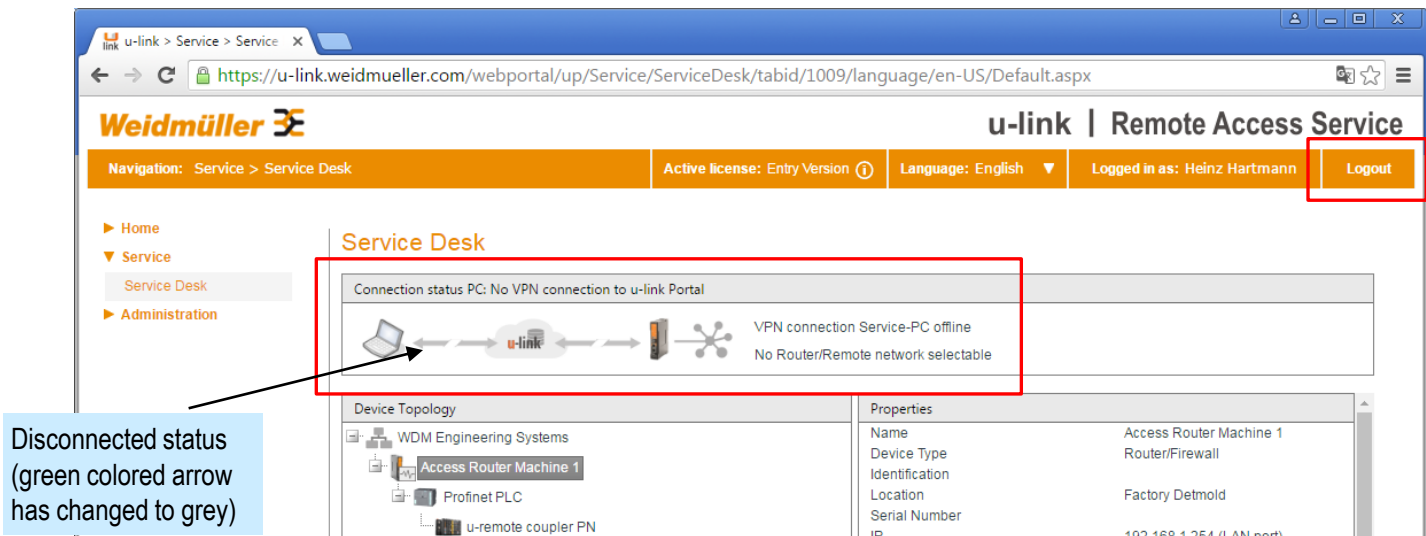
### 5.2 Closing the remote access session

#### Shutdown the VPN connection of the Service PC / Logout from u-link Portal (Step 8)

- Open the window of the 'u-link VPN client' by clicking the u-link taskbar icon.
- Click button 'Disconnect'.
- Go back to menu 'Service Desk' of the u-link Web portal.
  - After some seconds in section 'Connection status PC' the disconnected status is displayed.
- Click button 'Logout' to close the u-link portal session.
- Finally exit program 'u-link VPN client'.

**Remote access procedure is finished!**

u-link icon in the notification area of the task bar (Connected/Disconnected)



Disconnected status (green colored arrow has changed to grey)

## **Appendix**

- 1 – Registration of Router to u-link failed (How to solve)
- 2 – General support in case of Router problem issues
- 3 – Functional diagram of u-link
- 4 – Connection requirements of u-link VPN clients (Service PC / Router)
- 5 – Activating / de-activating Router VPN connection by digital input
- 6 – Technical u-link support

### A1 - Router registration failed

**Failure message 1:** *Registration failed - Check registration code, ensure that status of activation code in u-link portal is set to 'not used' or 'Released for additional activation'*

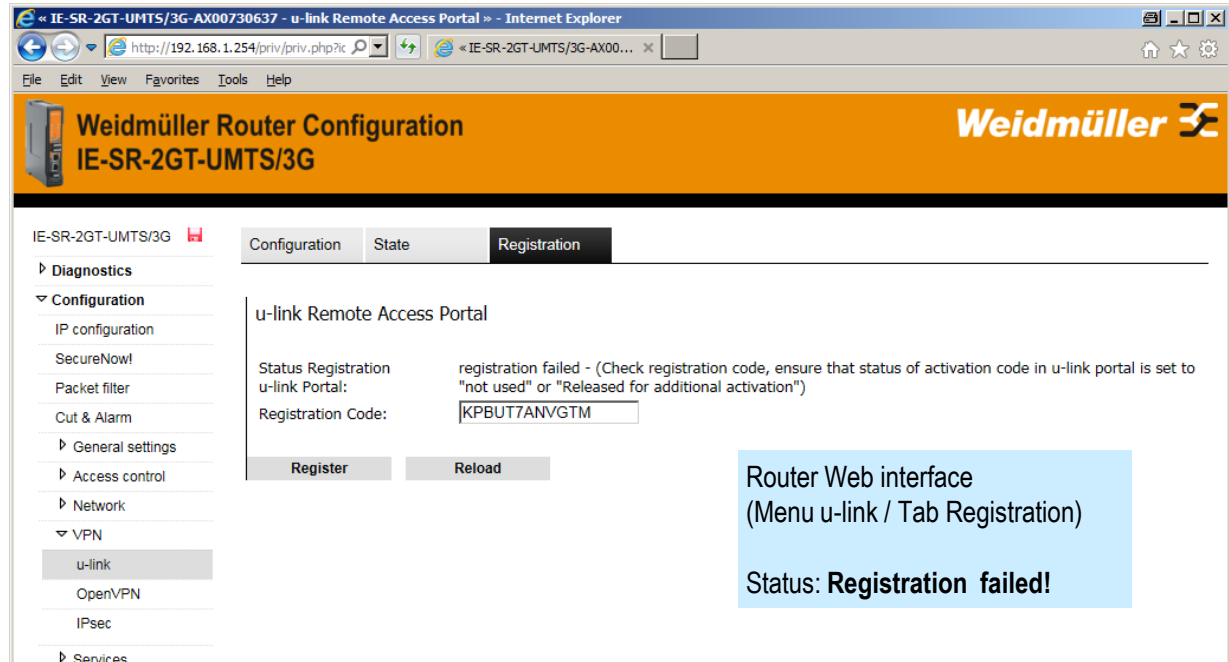
**Following issues can cause this error:**

**Error 1 - A wrong activation code was entered.**

- Please verify the activation code. If entered wrong repeat the registration process.

**Error 2 - Values Date / Time of the Router are not set correctly.**

- Goto menu 'General settings → Date&Time', enter values for Date/Time manually and enable checkbox NTP synchronization. Then click button 'Apply settings'. Then repeat the registration process.



## A1 - Router registration failed

### Failure message 1 continued

**Error 3 - The entered activation code already has been used either for registering another Router or you have tried to register this Router a second time.**

A registration / activation code may be used only one time for registering a Router. The activation code is used to dedicate uniquely a physical Router to a configured u-link Router object (u-link Device Management). In order to avoid an un-controlled multiple use of the same activation code an additional use has to be released before re-registering.

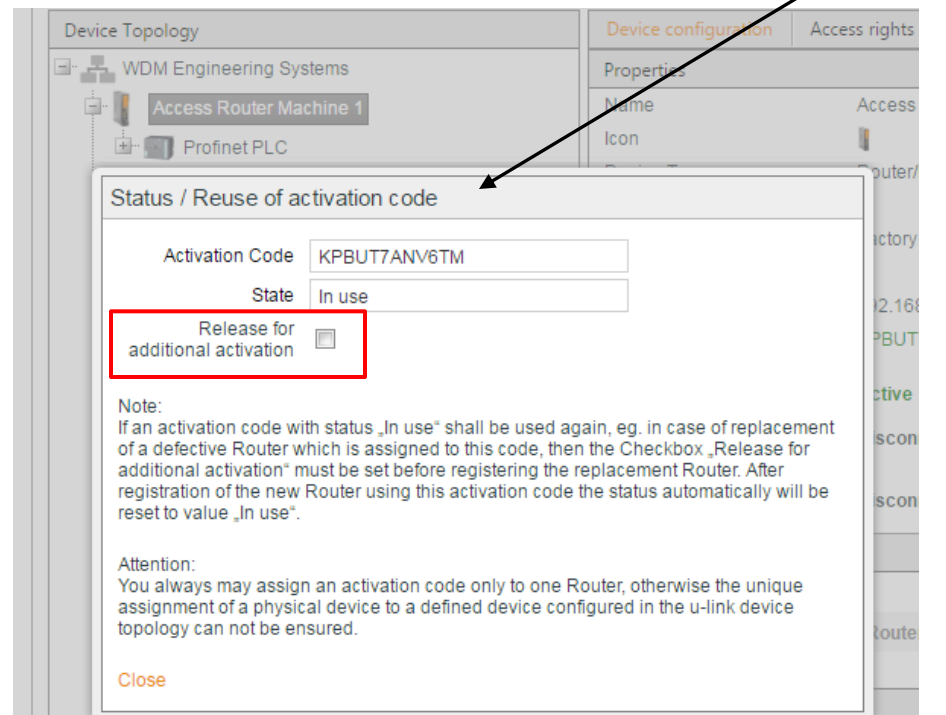
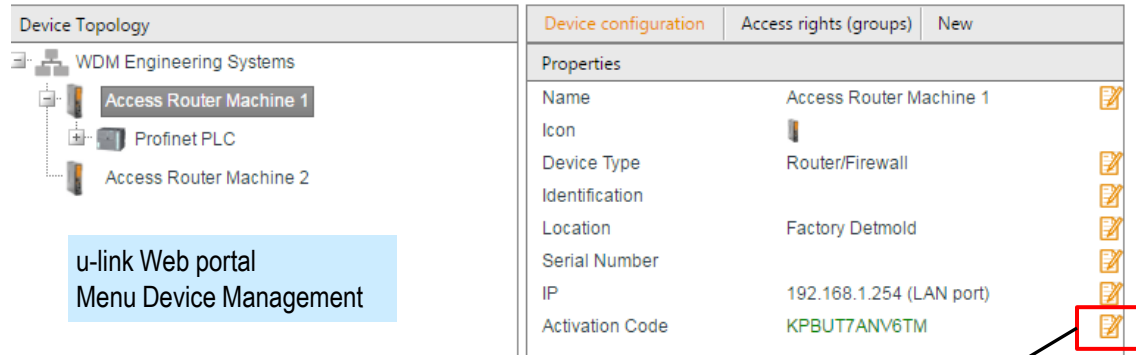
Normally there are only 2 use cases for additional use of an activation code:

1. A defective u-link Router has to be replaced by a new device (manually configured like the defective Router).
2. The configuration of an u-link Router was overwritten (eg. un-registered) or a reset to factory defaults has been done.

### How to release for additional use:

- Logon-on to the u-link Web portal.
- Open menu 'Device Management' and highlight the Router object.
- In section 'Device Configuration' click icon 'Edit' of parameter 'Activation code'.
- Then enable checkbox 'Release for additional activation'.
- Now try again to register the Router.

**Note:** The checkbox only can be set if the status is 'In Use', a new not assigned activation code displays the status 'Not used'.



### A1 - Router registration failed

**Failure message 2:** *Registration failed - Network error (Check network and proxy settings)*

#### 1. Investigate generally the Internet accessibility in terms of configured network parameters:

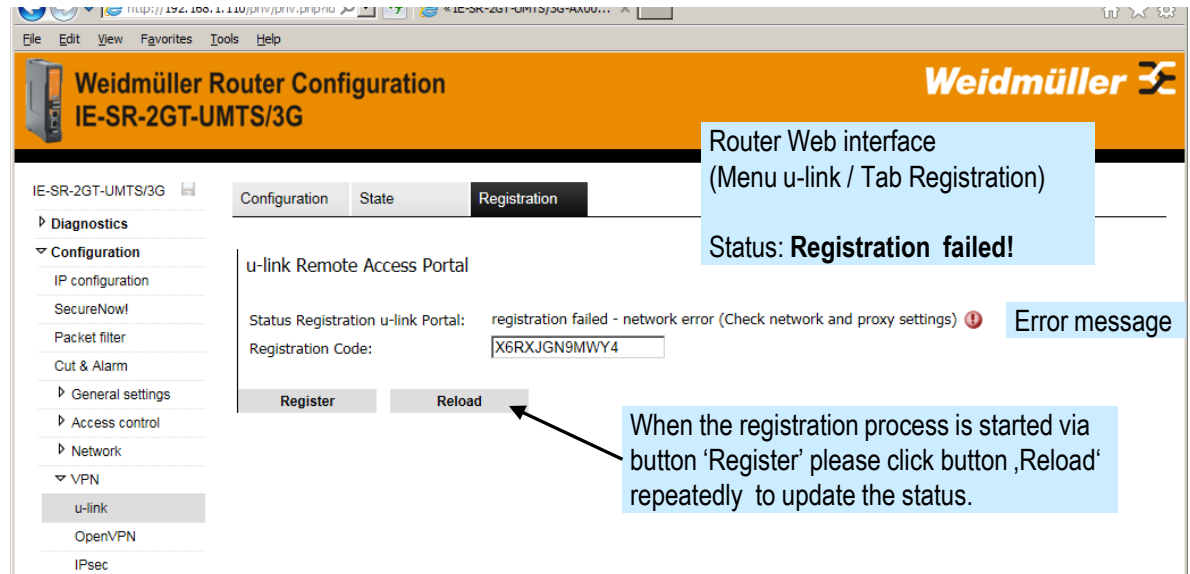
- Check via menu 'Diagnostics → Ping test' if an Internet IP (eg. 8.8.8.8) is accessible.
- Check via menu 'Diagnostics → Ping test' if an Internet device via DNS name (eg. www.google.com) is accessible.
- Please read Chapter 4.6 (Setup of a remote access scenario / Configuration Router).

#### 2. Router Internet access is blocked by company-based Firewall rules

- Please read Appendix (Required Protocols and ports for u-link).
- Clarify with IT department to allow the outgoing u-link communication based on the required protocols / ports.

#### 3. Router Internet access is passing a company-based Proxy server which requires an authentication to establish an Internet connection

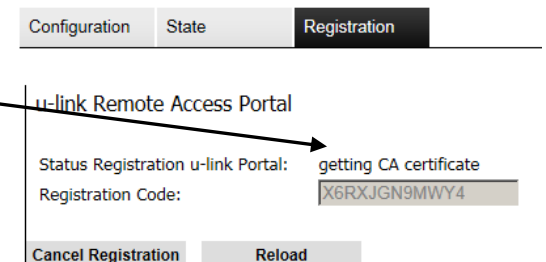
- Configure in menu 'Network → HTTP proxy' the required settings (provided by IT department).
- Enable checkbox "Use system wide HTTP proxy" in menu u-link → Configuration.



#### Note:

If during the registration process - before displaying the final status 'Registration failed' – only the status "getting CA certificate" is displayed in the meantime (and not the status 'enrolling certificate') then this is an indication that a corporate Firewall or Proxy server is blocking the registration process.

Please press button 'Reload' repeatedly to monitor the temporary status messages.



### A2 - General Router support by Weidmüller

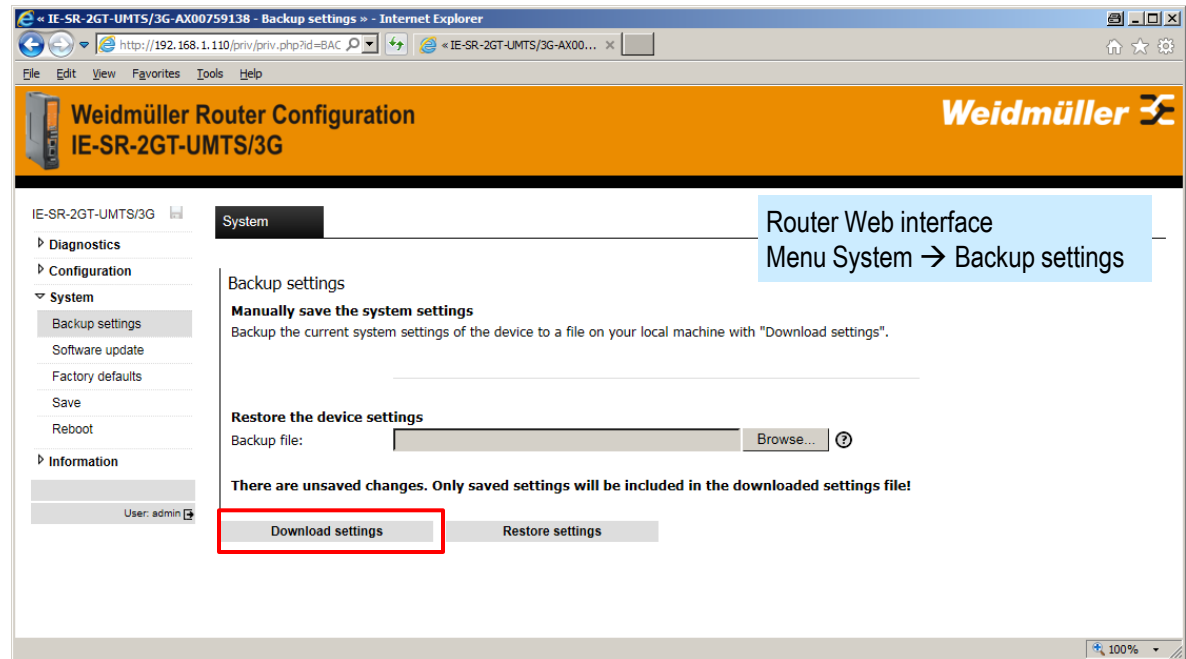
If any problems in terms of u-link connectivity or other Router features require support from Weidmüller please proceed as described below.

- Goto menu 'System → Backup settings'
- Click button 'Download settings' to export the configured Router settings (a file with extension .cf2) will be created.

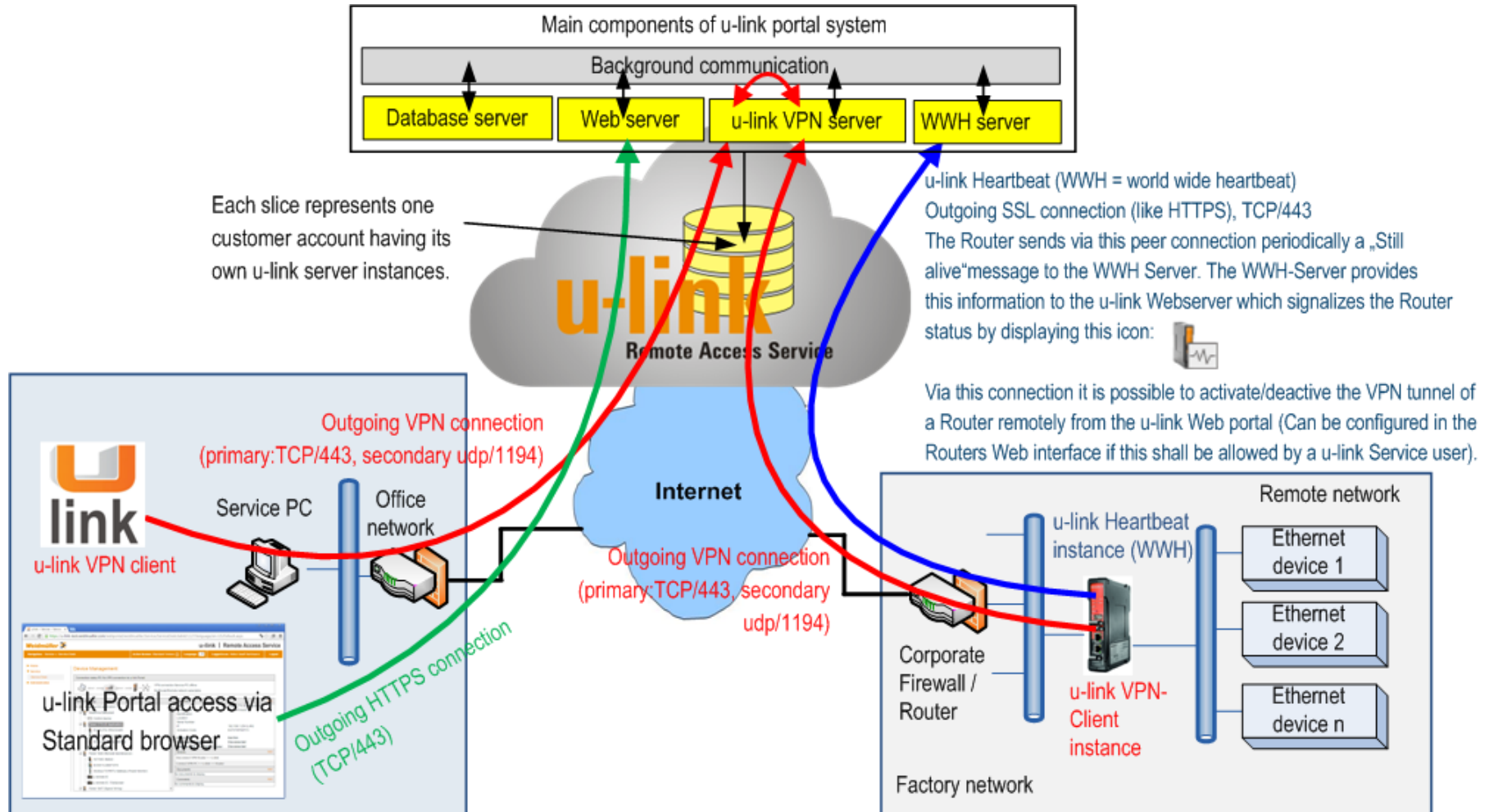
Note:

Only a saved configuration will be exported into a backup file. If you have changed and applied Router parameters but still not saved then you need to save the configuration before creating the backup file.

- Send the cf2-file to mail address [u-link-support@weidmueller.com](mailto:u-link-support@weidmueller.com).
  - The u-link support department then will analyze the issue and contact you to solve the problem.



## A3 - Functional diagram of involved u-link components



## A4 - Overview of used u-link connection parameters

Required protocols / ports for outgoing connections of u-link VPN Clients (PC and Router) :				
	Protocol / Port	Target IP	Target DNS names	Connection type
Client registration	TCP / 80	217.119.57.24	u-link.weidmueller.com, www.big-linx.de	Outgoing
Establishing a VPN tunnel (Main access)	TCP / 443 (Priority 1)	217.119.57.23	idaprof2.ads-tec.de	Outgoing
	UDP / 1194 (alternatively if TCP/443 is blocked)			
Establishing a VPN tunnel (Redundant access)	TCP / 443 (Priority 1)	217.119.57.22	idaprof.ads-tec.de	Outgoing
	UDP / 1194 (alternatively if TCP/443 is blocked)			
Heartbeat Router (WWH):	TCP / 443 (SSL/TLS) / Priority 1	217.119.57.27	wwh.big-linx.de	Outgoing
	TCP / 443 (SSL/TLS) / Alternatively	217.6.47.168	wwh2.big-linx.de	Outgoing


Note: If a Service PC (u-link VPN client) or Router is passing a corporate firewall to access the Internet please clarify with the responsible IT administration - if you have any connection problems - that the listed connection types are allowed.



## A5 - Activating / de-activating a VPN tunnel via 24 VDC digital input


Start/Stop VPN tunnel:

- Activate VPN tunnel by connecting Pin 2 (VPN initiate) to 24 VDC and Pin 4 (GND) to ground of power supply.
- Deactivate VPN tunnel by removing 24 VDC from Pin 2.
- Status of VPN tunnel is signalized by Pin 3 (Digital output, VPN active).  
For output signalizing you need to connect Pin 1 (VCC) to 24 VDC.



**Weidmüller Router Configuration**  
**IE-SR-2GT-UMTS/3G**

Router Web interface  
(Menu u-link, Tab Configuration)

IE-SR-2GT-UMTS/3G 

Configuration

State

Registration

Diagnosics

Configuration

IP configuration

SecureNow!

Packet filter

Cut & Alarm

General settings

Access control

Network

VPN

u-link

OpenVPN

IPsec

Services

Prioritization

System

Information

### u-link Remote Access Portal

Enable u-link instance: ☒

**VPN connection settings**

Initiation by digital input (VPN initiate): ☒

Initiation from u-link web portal: always allowed

Inactivity timeout: 1h

**Additional settings**

Use a system wide HTTP proxy: ☐

Log level: info

VPN LED/output controller: u-link


Polarity of digital input (VPN initiate): Active

Apply settings
Reset changes

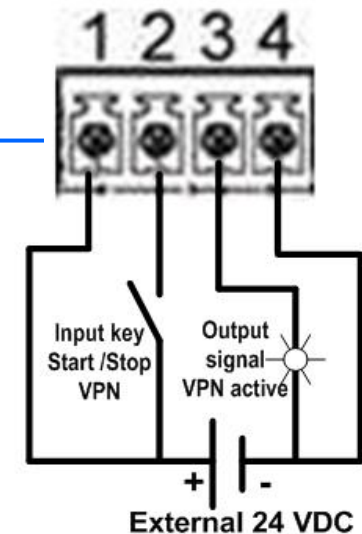
Checkbox 'Initiation by digital input' must be enabled to initiate a VPN tunnel by digital input 'VPN init' (default value).

Must be set to 'u-link' for signalizing an active VPN tunnel by digital output 'VPN active' enabled (default value).

Must be set to 'Active' (default value).



Pin number	SIGNAL NAME
1	24V DC (VCC)
2	Initiate VPN (24 V In)
3	VPN active (24 V Out)
4	GND



Sep 21, 2016 / V1.1 / HJH

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### A6 - Change LAN IP address/netmask of a remote Router via u-link VPN connection

#### Situation (Example):

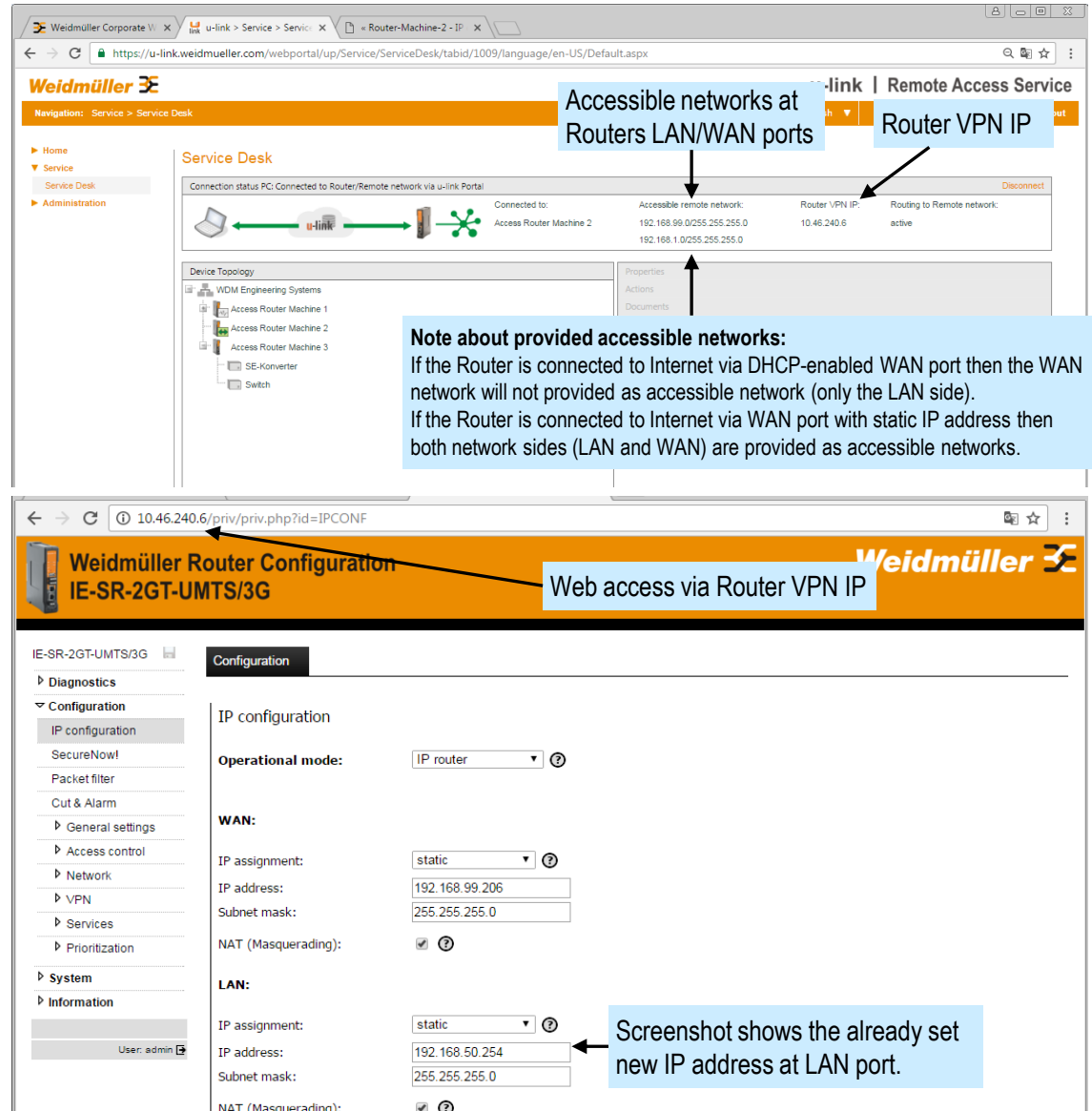
- Current IP configuration of remote Router:  
LAN port IP/Subnet: 192.168.1.110 / 255.255.255.0  
WAN port IP/Subnet: 192.168.99.206 / 255.255.255.0

#### Requirement:

- The LAN port IP/Subnet shall be changed via u-link to:  
IP address: 192.168.50.254  
Subnet mask: 255.255.255.0

#### Solution:

- Connect to the remote Router via u-link.
  - The u-link VPN client (PC) now has got route settings how to access the IP networks 192.168.1.0/24 (Router LAN) and 192.168.99.0/24 (Router WAN). See upper screenshot.
  - The Routers Web interface can be accessed via LAN IP, WAN IP or via the Routers u-link VPN IP (see upper screenshot). Due to the fact that we want to change the LAN-IP we may not use the current LAN-IP for accessing the Web interface but we can use the Router VPN IP.
- Open the Routers Web interface by using the Routers VPN IP.
- Goto menu IP configuration.
- Change IP address data of LAN port.
- Click button 'Apply settings'.
  - Now the new LAN-IP address is active and the connected devices at Routers LAN port must be adapted to the new IP range.
- Save the configuration (Menu System → Save).



**Accessible networks at Routers LAN/WAN ports**

**Router VPN IP**

**Note about provided accessible networks:**  
If the Router is connected to Internet via DHCP-enabled WAN port then the WAN network will not provided as accessible network (only the LAN side).  
If the Router is connected to Internet via WAN port with static IP address then both network sides (LAN and WAN) are provided as accessible networks.

**Web access via Router VPN IP**

**Screenshot shows the already set new IP address at LAN port.**

**Service Desk**

Connection status PC: Connected to Router/Remote network via u-link Portal

Connected to: Access Router Machine 2

Accessible remote network: 192.168.99.0/255.255.255.0  
192.168.1.0/255.255.255.0

Router VPN IP: 10.46.240.6

Routing to Remote network: active

**Device Topology**

WDM Engineering Systems

- Access Router Machine 1
- Access Router Machine 2
- Access Router Machine 3
- SE-Konverter
- Switch

**Configuration**

**IP configuration**

**Operational mode:** IP router

**WAN:**

IP assignment: static

IP address: 192.168.99.206

Subnet mask: 255.255.255.0

NAT (Masquerading): ☒

**LAN:**

IP assignment: static

IP address: 192.168.50.254

Subnet mask: 255.255.255.0



NAT (Masquerading): ☒

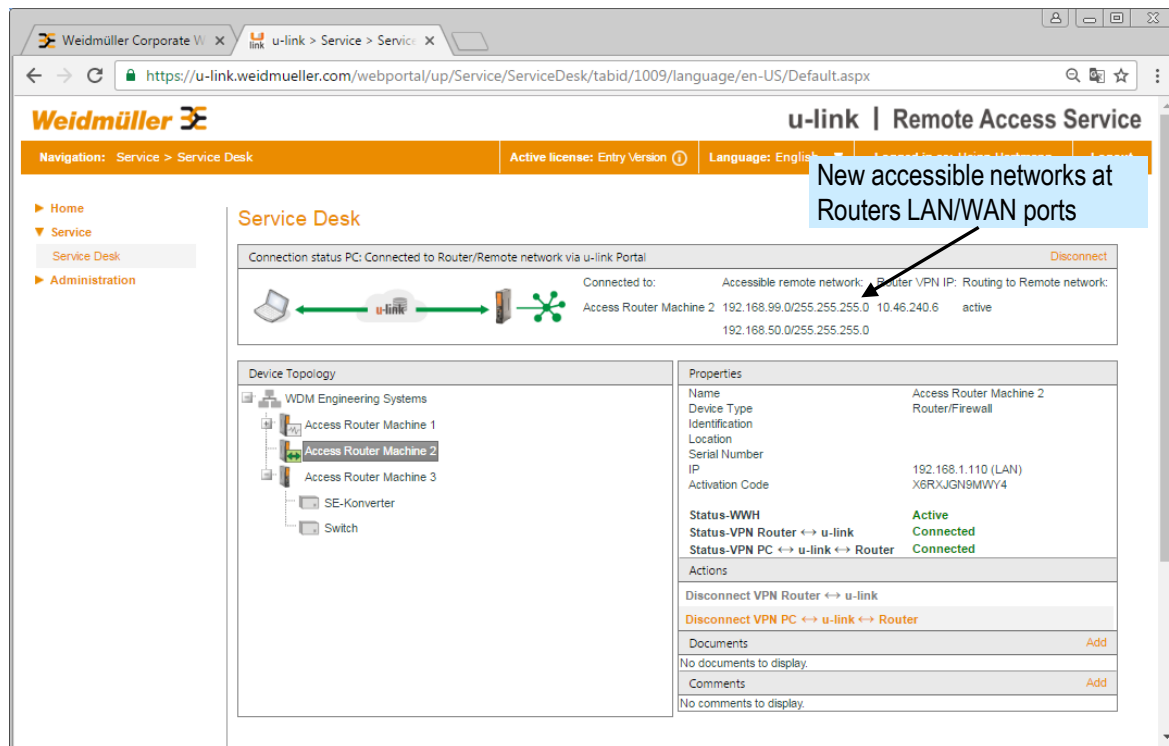
### A6 - Change LAN IP address/netmask of a remote Router via u-link VPN connection

#### Note:

The connected PC still has the routing entries to previous Router LAN and WAN IP networks 192.168.1.0/24 and 192.168.99.0/24.

To update the PCs routing table do following:

- Disconnect the PC from the remote Router.
- Disconnect the Router VPN connection to u-link.
  - Wait until the Router icon changes to this symbol: 
- Connect the Router again to u-link.
  - Wait until the Router icon changes to this symbol: 
- Finally re-connect the PC to the remote Router.
  - As result the PC's routing table should be updated and the new accessible networks **192.168.50.0/24** and **192.168.99.0/24** should be displayed in the connection status of the Service desk.



**u-link | Remote Access Service**

Navigation: Service > Service Desk | Active license: Entry Version | Language: English

**Service Desk**

Connection status PC: Connected to Router/Remote network via u-link Portal Disconnect

Connected to: Access Router Machine 2 | Accessible remote network: 192.168.99.0/255.255.255.0 | Router VPN IP: 10.46.240.6 | Routing to Remote network: 192.168.50.0/255.255.255.0

**Device Topology**

- WDM Engineering Systems
  - Access Router Machine 1
  - Access Router Machine 2**
  - Access Router Machine 3
  - SE-Konverter
  - Switch

**Properties**

Name	Access Router Machine 2
Device Type	Router/Firewall
Identification	
Location	
Serial Number	
IP	192.168.1.110 (LAN)
Activation Code	X6RXJGN9MWY4
Status-WWH	Active
Status-VPN Router ↔ u-link	Connected
Status-VPN PC ↔ u-link ↔ Router	Connected

**Actions**

- Disconnect VPN Router ↔ u-link
- Disconnect VPN PC ↔ u-link ↔ Router
- Documents Add
- No documents to display.
- Comments Add
- No comments to display.

### A7 – Technical customer support

For any technical issues or support requests in terms of the u-link Remote Access Service  
please send a mail to address

[u-link-support@weidmueller.com](mailto:u-link-support@weidmueller.com).