

# **μWARPPlus**

## **Administrator's Guide**

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## Contents

Contents.....	3
About this Document.....	5
Contacting PIKA Technologies .....	5
Chapter 1 – Introduction.....	6
Chapter 2 – Overview .....	7
System Requirements .....	7
Paging.....	7
Music On Hold.....	7
Licensing.....	7
Chapter 3 – Configuration Overview .....	8
Using the Web GUI.....	8
Logging On .....	8
The Login Page .....	8
The System Status page .....	9
Web GUI Menus.....	10
System Menu .....	10
Applications Menu .....	10
Using Configuration Files .....	11
Chapter 4 –System Configuration.....	12
System Settings Page .....	12
Network Interfaces Page.....	13
Editing the Network Interface.....	14
Changing from DHCP Protocol to Static IP Protocol .....	15
Configuring the Static IP Data .....	16
Changing from Static IP Protocol to DHCP Protocol .....	17
The Network File.....	18
Download Settings Page .....	20
TFTP Download .....	20
HTTPS Download.....	21
The dlconfig File .....	22

Backup / Flash Firmware..... 23

Reboot..... 24

Chapter 5 – Application Configuration ..... 25

    Pager ..... 25

        The pager File..... 28

    Music On Hold..... 29

        The music File..... 31

    SIP Connections..... 32

## About this Document

This document is for administrators who configure, troubleshoot and manage μWARPPlus applications.

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## Chapter 1 – Introduction

μWARPPlus provides a dedicated device located at the customer premise to complement a hosted PBX solution by delivering a subset of capabilities better suited to be delivered by customer premise equipment. A single product family provides a flexible combination of licensable features, allowing service providers to standardize on a single device to address their individual requirements.

μWARPPlus can be installed into new or existing hosted PBX systems and operates seamlessly with most common IP phones manufacturers.

The following applications are supported:

- On Premise Paging
- Local Music on Hold Source

### Features

- BroadSoft® BroadWorks® Compatible (IOT Approved)
- BroadWorks release independent
- Easily adaptable to other Hosted PBX systems
- Flexible, simplified configuration and installation procedure
- Uses Multicast for Paging
- Up to 10 Groups or Zones can be configured for Paging
- Can stream Music On Hold from an internet streaming source
- Web-based GUI for configuration, status, and troubleshooting information
- Automated configuration at startup via T/FTP and HTTPS downloads
- Very small form factor
- Isolated from the hosted solution: can be installed or removed without disruption to hosted services Customizable look so you can promote your brand

## Chapter 2 – Overview

### System Requirements

- Power source: 110V-240V AC (50-60 Hz) o Power supply and country specific power cord included in the μWARP appliance package
- Non-VLAN tagged LAN port at the customer premise on the same network as the IP phones in the paging group.
- Standard SIP User Agent (UA) account on the BroadSoft switch (unique user agents required for each of the Pager and Music on Hold)
- Phone receiving pages must support Multicast Paging
- Feature code or extension for each of the Pager and Music On Hold
- FTP, TFTP or HTTPS Server

### Paging

Once installed at the customer premise, page announcements are redirected through the μWARPPlus to a configurable Multicast IP address. Phones in the same network are configured to “listen” for pages from that Multicast IP address. On Premise Paging offloads WAN bandwidth demands and provides the local paging functionality typically available with traditional legacy PBX systems.

The μWARPPlus acts as a local SIP User Agent (SIP UA) registered with the BroadSoft switch. Page requests are handled locally by the μWARPPlus instead of sending multiple RTP media streams from the BroadSoft switch across the WAN to the customer premise.

### Music On Hold

μWARPPlus with Music on Hold (MOH) provides users with a customizable content source, routed directly through the μWARPPlus appliance. The μWARPPlus can stream music from an Internet source, play WAV and ulaw files from a USB key or play the one native file stored locally on the μWARPPlus.

An Identity/Device Profile must be created and provisioned as the external source on the Music on Hold services page on the BroadSoft switch.

### Licensing

The μWARPPlus is licensed in the factory for either the Pager application, the Music On Hold application or both applications. The μWARPPlus license cannot be augmented in the field.

## Chapter 3 – Configuration Overview

There are two methods to configure the μWARPPPlus:

- Using the Web GUI
- Configuration files located on a T/FTP or HTTPS server

### Using the Web GUI

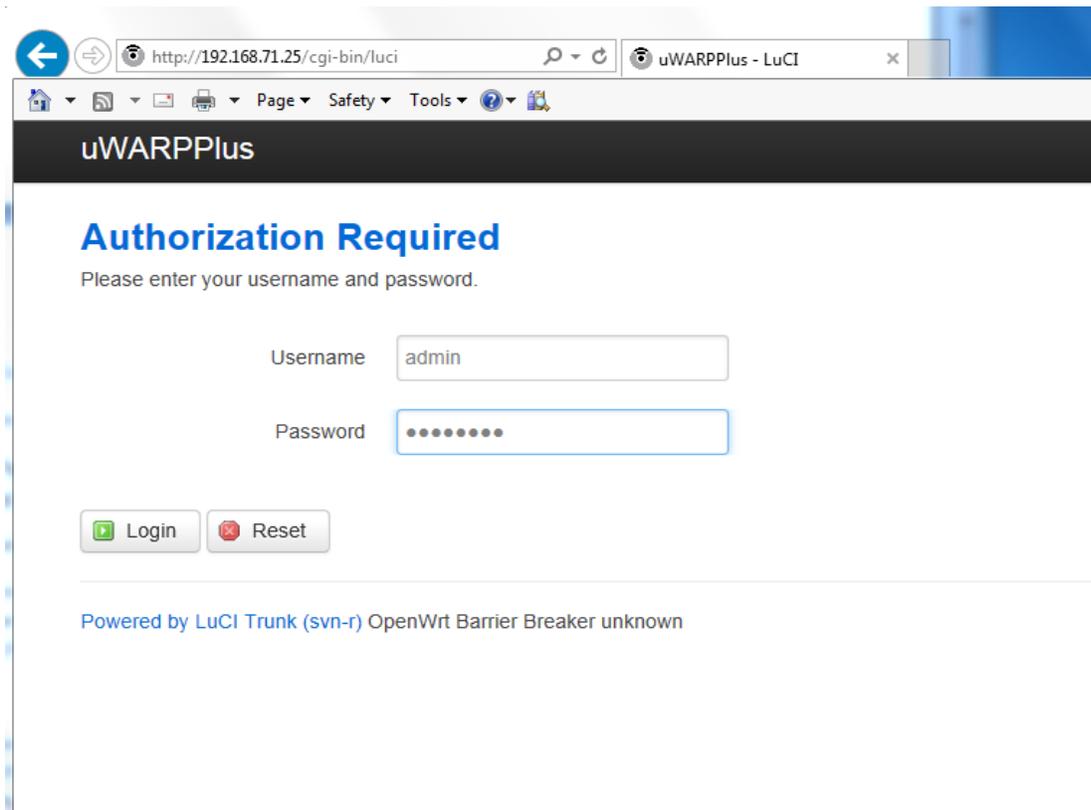
You can access the Web GUI from a standard Web browser such as Internet Explorer, Google Chrome or Firefox. When parameter values are entered in the Web GUI, configuration files are created that can be copied to a T/FTP or HTTPS server.

### Logging On

In the address bar of your browser, enter the IP address of your μWARPPPlus. You can insert a USB key that does NOT contain a μWARPPPlus image (as this will cause the μWARPPPlus to flash that image) into the μWARPPPlus and it will write a file called /uwarpp/uwarpp-info.txt that contains the IP address.

### The Login Page

The username is *admin* and the password is *pikapika*.



The System Status page

System	
Product Number	PIK-APP-00422
Licensed Applications	Pager, Music on Hold
Hostname	uWARPPPlus
Firmware Version	3.0.0
Serial Number	001E840022A7
Local Time	Thu Jul 7 15:06:23 2016
Uptime	0h 49m 13s

To logout, click the Logout on the menu bar.

## Web GUI Menus

All status screens and configuration functions are grouped under two menus: System and Applications.

### System Menu

Submenu	Description
Status	On this page, you can view the information: Product Number, Licensed Applications, Hostname, Firmware Version, Serial Number, Local Time, Uptime. Memory Usage, Network Status
System Settings	On this page, you can configure the following parameters: Hostname, Timezone, admin password, NTP servers
Network	From this page, you can edit the network interface to use DHCP or assign a Static IP address
Download Settings	On this page, you can configure the following server settings for downloading configuration files at boot: Download Type, Server, Path, Username, Password
Backup / Flash Firmware	On this page, you can backup or restore configuration files, and flash a new firmware image
Reboot	Reboots the μWARPPlus

### Applications Menu

Submenu	Description
Pager	Use this page to configure the Pager Settings for the μWARPPlus
Music On Hold	Use this page to configure the Music On Hold Settings for the μWARPPlus
SIP Connections	Use this page to view the connection status for your SIP connections. You can also force the μWARPPlus service to reload it's SIP configuration and restart the μWARPPlus service.

Note: If your μWARPPlus is not licensed for a given application, the Web GUI will allow you to enter configuration data, save and apply, but the configuration data will not be used by the μWARPPlus service.

## Using Configuration Files

As an alternative to the using the Web GUI, you can manually create configuration files using a standard text editor. μWARPPPlus services use configuration files which contain parameter names and values. Parameters can be listed in the files in any order. The files are retrieved from a central server accessed by FTP, TFTP or HTTPS. This provisioning method is typical for mass deployment.

Configuration files for each feature are uniquely identified using the MAC address of the μWARPPPlus, which is located on the underside of the unit. Files are named <mac-address>.<filename> where <mac-address> is the MAC address of the μWARPPPlus appliance, and *filename* is one of *pager*, *music*, *dlconfig* or *network*, for example, 001e840006d9.pager. Be sure to use lower case for the file name and do not use colons in the MAC address. When you create the file, ensure that parameters names are spelled correctly in lower case.

The following file is an example of the Pager file:

```
config pager
  option username '6069'
  option password 'secret'
  option domain '192.168.44.1'
  option ivr '0'
  option multicast '238.0.0.1:1234'
  option usercont 'enabled'
```

## Chapter 4 –System Configuration

### System Settings Page

**System**  
Here you can configure the basic aspects of your device like its hostname or the timezone.

**System Properties**

Local Time Thu Jul 7 15:30:31 2016

Hostname

Timezone

**Admin Password**

Password

Confirmation

**Time Synchronization**

Enable NTP client

NTP server candidates

- 0.openwrt.pool.ntp.org
- 1.openwrt.pool.ntp.org
- 2.openwrt.pool.ntp.org
- 3.openwrt.pool.ntp.org

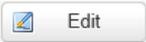
From the System -> System Settings page, you can modify the Hostname, Timezone, admin password and which NTP servers to synchronize time with.

## Network Interfaces Page

The screenshot shows a web browser window with the URL `http://192.168.71.25/cgi-bin/luci/stok=d2a1f044cdf7f65t`. The page title is "uWARPPPlus - Network - LuCI". The navigation bar includes "uWARPPPlus", "System", "Applications", and "Logout".

### Network Interfaces

#### Interface Overview

Network	Status	Actions
<b>WAN</b>  br-wan	Uptime: 1h 20m 45s MAC-Address: 00:1E:84:00:22:A7 RX: 5.53 MB (75703 Pkts.) TX: 1.80 MB (12182 Pkts.) IPv4: 192.168.71.25/22	 Edit
<b>WAN6</b>  @wan	Uptime: 0h 0m 0s MAC-Address: 00:00:00:00:00:00 RX: 5.53 MB (75703 Pkts.) TX: 1.80 MB (12182 Pkts.)	 Edit

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The System -> Network page shows the status of the network interface which is named WAN. Clicking the “Edit” button allows the user to configure the WAN interface.

## Editing the Network Interface

The screenshot shows a web browser window with the URL `http://192.168.71.25/cgi-bin/luci/stok=d2a1f044c`. The page title is "uWARPPPlus - Interfaces - L...". The navigation bar includes "uWARPPPlus", "System", "Applications", and "Logout", along with an "AUTO REFRESH ON" button. The main content area is titled "Interfaces - WAN" and contains the following information:

On this page you can configure the network interfaces.

### Common Configuration

If you change network configuration, you will need to logout and log back in.

**General Setup**

Status	 br-wan	<b>Uptime:</b> 1h 23m 0s <b>MAC-Address:</b> 00:1E:84:00:22:A7 <b>RX:</b> 5.74 MB (78325 Pkts.) <b>TX:</b> 1.92 MB (12894 Pkts.) <b>IPv4:</b> 192.168.71.25/22
--------	--	--

**Protocol:**

Buttons: **Save & Apply**, **Save**, **Reset**

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In the Edit screen, the user can configure the WAN interface protocol as a DHCP client or a static IP address. The factory default setting is DHCP.

## Changing from DHCP Protocol to Static IP Protocol

The screenshot shows the uWARPPPlus web interface. The browser address bar displays `http://192.168.71.25/cgi-bin/luci/stok=d2a1f044c`. The page title is "Interfaces - WAN". A navigation menu includes "System", "Applications", and "Logout". A dropdown menu for "Applications" is open, showing "Pager", "Music On Hold", and "SIP Connections". The main content area is titled "Interfaces - WAN" and includes a sub-section "Common Configuration" with a warning: "If you change network configuration, you will need to log out and log back in." Below this is a "General Setup" tab. The interface shows the status of the "br-wan" interface, including "Uptime: 1h 24m 40s", "MAC-Address: 00:1E:84:00:22:A7", "RX: 5.88 MB (80150 Pkts.)", "TX: 2.00 MB (13373 Pkts.)", and "IPv4: 192.168.71.25/22". The "Protocol" dropdown menu is set to "Static address". A "Really switch protocol?" section contains a "Switch protocol" button. At the bottom right, there are "Save & Apply", "Save", and "Reset" buttons. The footer text reads "Powered by LuCI Trunk (svn-r) OpenWrt Barrier Breaker unknown".

To change the WAN interface to static, select the “Static address” choice on the Protocol drop down menu and then press the “Switch protocol” button.

## Configuring the Static IP Data

The screenshot shows the uWARPPPlus web interface for configuring the WAN interface. The browser address bar shows the URL `http://192.168.71.25/cgi-bin/luci/stok=d2a1f044c`. The page title is "Interfaces - WAN". Below the title, there is a "Common Configuration" section with a "General Setup" tab. The interface shows the status of the "br-wan" interface, including its uptime and MAC address. Below this, there are several input fields for configuration: Protocol (set to "Static address"), IPv4 address (192.168.44.199), IPv4 netmask (255.255.255.0), IPv4 gateway (192.168.44.1), IPv4 broadcast (192.168.44.255), and Use custom DNS servers (192.168.44.1). At the bottom right, there are three buttons: "Save & Apply", "Save", and "Reset".

Once the “Switch protocol” button is clicked, the edit boxes for entering the IP address, netmask, gateway, broadcast and DNS server will appear. Enter the correct configuration data and press the “Save & Apply” button. If the actual IP address is changed during this step, you will now need to log back into the μWARPPPlus using this new IP address.

## Changing from Static IP Protocol to DHCP Protocol

The screenshot shows the uWARPPPlus web interface for configuring network interfaces. The page title is "Interfaces - WAN". Below the title, there is a "Common Configuration" section with a "General Setup" tab. The interface configuration for "br-wan" is displayed, showing its status, uptime, MAC address, and traffic statistics. The "Protocol" is currently set to "DHCP client". A "Really switch protocol?" section contains a "Switch protocol" button. At the bottom right of the configuration area, there are three buttons: "Save & Apply", "Save", and "Reset".

For switching the protocol back to DHCP, select “DHCP client” choice in the Protocol drop down menu and press the “Switch protocol” button and then “Save & Apply”. Don’t forget to log back in.

## The Network File

To automate the configuration of the network of μWARPPPlus, the network file can be configured and stored on a T/FTP or HTTPS server. The title of the file should be *<mac-address>.network*.

The following network file example has the WAN interface protocol configured to DHCP which is the default setting:

```
config interface 'loopback'
    option ifname 'lo'
    option proto 'static'
    option ipaddr '127.0.0.1'
    option netmask '225.0.0.0'

config interface 'wan'
    option _orig_ifname 'eth0'
    option _orig_bridge 'false'
    option type 'bridge'
    option ifname 'eth0 eth1'
    option proto 'dhcp'

config interface 'wan6'
    option ifname '@wan'
    option proto 'dhcpv6'

config globals 'globals'
    option ula_prefix 'fdb9:4c99:3228::/48'
```

**Note:** only modify the 'wan' interface.

This next example uses the Static IP protocol:

```
config interface 'loopback'
    option ifname 'lo'
    option proto 'static'
    option ipaddr '127.0.0.1'
    option netmask '225.0.0.0'

config interface 'wan'
    option _orig_ifname 'eth0'
    option _orig_bridge 'false'
    option type 'bridge'
    option ifname 'eth0 eth1'
    option proto 'static'
    option ipaddr '192.168.44.199'
    option netmask '255.255.255.0'
    option gateway '192.168.44.1'
    option broadcast '192.168.44.255'
    option dns '192.168.44.1'

config interface 'wan6'
    option ifname '@wan'
    option proto 'dhcpv6'

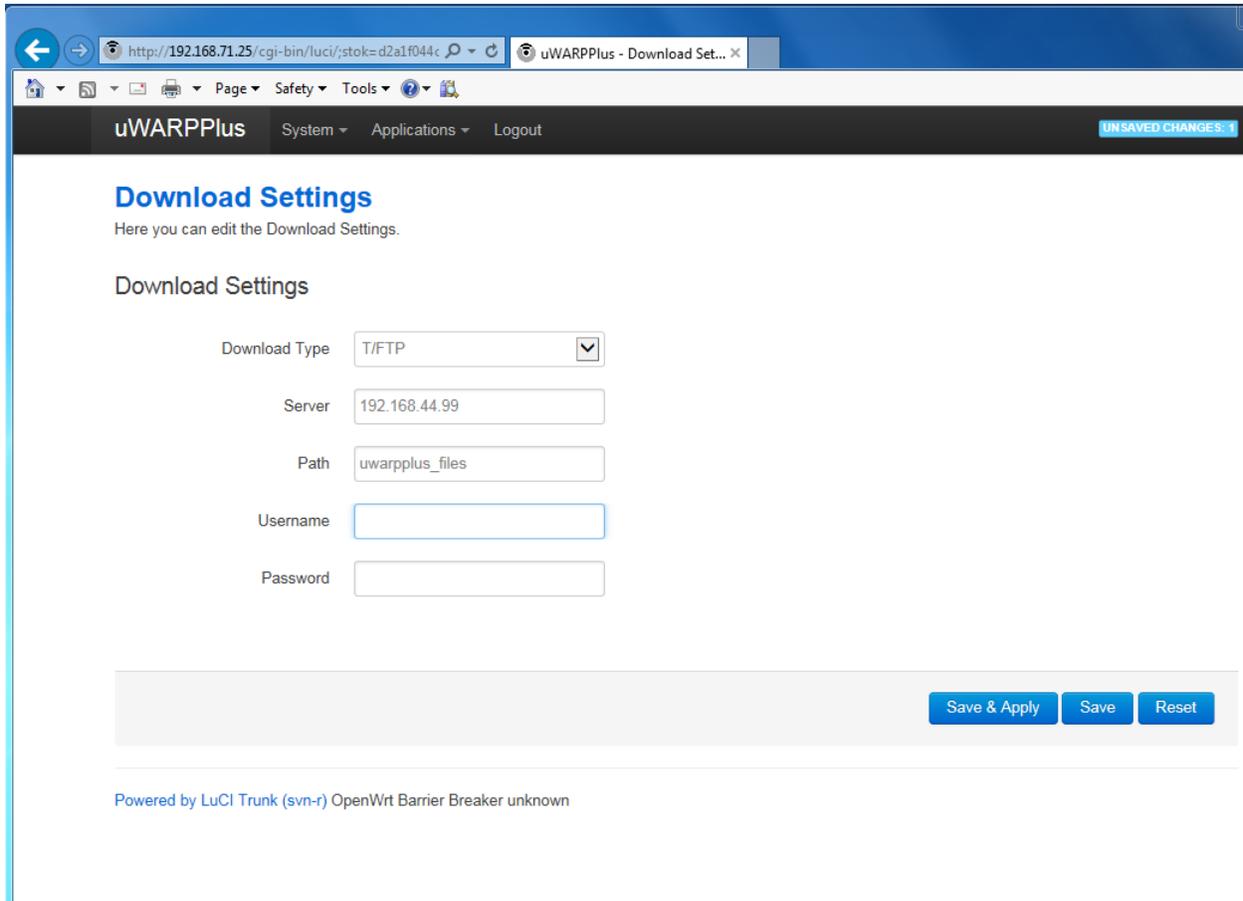
config globals 'globals'
    option ula_prefix 'fbd9:4c99:3228::/48'
```

**Note:** only modify the 'wan' interface.

## Download Settings Page

The System -> Download Settings page allows you to setup a T/FTP or HTTPS server for downloading your μWARPPlus configuration files at boot time.

### TFTP Download



The screenshot shows a web browser window displaying the uWARPPlus administration interface. The browser's address bar shows the URL `http://192.168.71.25/cgi-bin/luci/stok=d2a1f044c`. The page title is "uWARPPlus - Download Set...". The navigation bar includes "uWARPPlus", "System", "Applications", and "Logout", along with a notification for "UNSAVED CHANGES: 1".

The main content area is titled "Download Settings" and includes the instruction: "Here you can edit the Download Settings." Below this, the "Download Settings" section contains the following form fields:

- Download Type: A dropdown menu with "T/FTP" selected.
- Server: A text input field containing "192.168.44.99".
- Path: A text input field containing "uwarpplus\_files".
- Username: An empty text input field.
- Password: An empty text input field.

At the bottom right of the form, there are three buttons: "Save & Apply", "Save", and "Reset". Below the form, a footer note reads: "Powered by LuCI Trunk (svn-r) OpenWrt Barrier Breaker unknown".

For TFTP, no username or password is required. The entered path should be relative to the server's tftp path. For example, if your server's tftp path is `/tftp/` and your μWARPPlus configuration files are stored in `/tftp/uwarpplus_files/`, then enter just the `"uwarpplus_files"` portion of the path. The GUI is smart enough to add or remove leading and trailing backslashes (`/`).

For FTP and HTTPS, a username and password should be entered.

## HTTPS Download

The screenshot shows the uWARPPPlus web interface. The browser address bar displays the URL `http://192.168.71.25/cgi-bin/luci/stok=d2a1f044c`. The page title is "uWARPPPlus - Download Settings". The navigation menu includes "System", "Applications", and "Logout". A notification in the top right corner indicates "UNSAVED CHANGES: 1".

### Download Settings

Here you can edit the Download Settings.

**Download Settings**

Download Type:

Server:

Path:

Username:

Password:

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To use HTTPS, select HTTPS from the Download Type drop down menu, fill in the configuration for the Server, Path, Username and Password and click the “Save & Apply” button. On the next reboot, the μWARPPPlus will attempt to download the configuration files from this server.

## The dlconfig File

To automate the configuration of the download settings of μWARPPlus, the dlconfig file can be configured and stored on a T/FTP or HTTPS server. The title of the file should be:

*<mac-address>.dlconfig.*

The following dlconfig file example uses *tftp* to download the configuration data:

```
config dlconfig
  option dltype 'tftp'
  option server '192.168.44.99'
  option path 'uwarppplus_files'
```

This next file would use *ftp* to download the configuration data (same as tftp but with username and password):

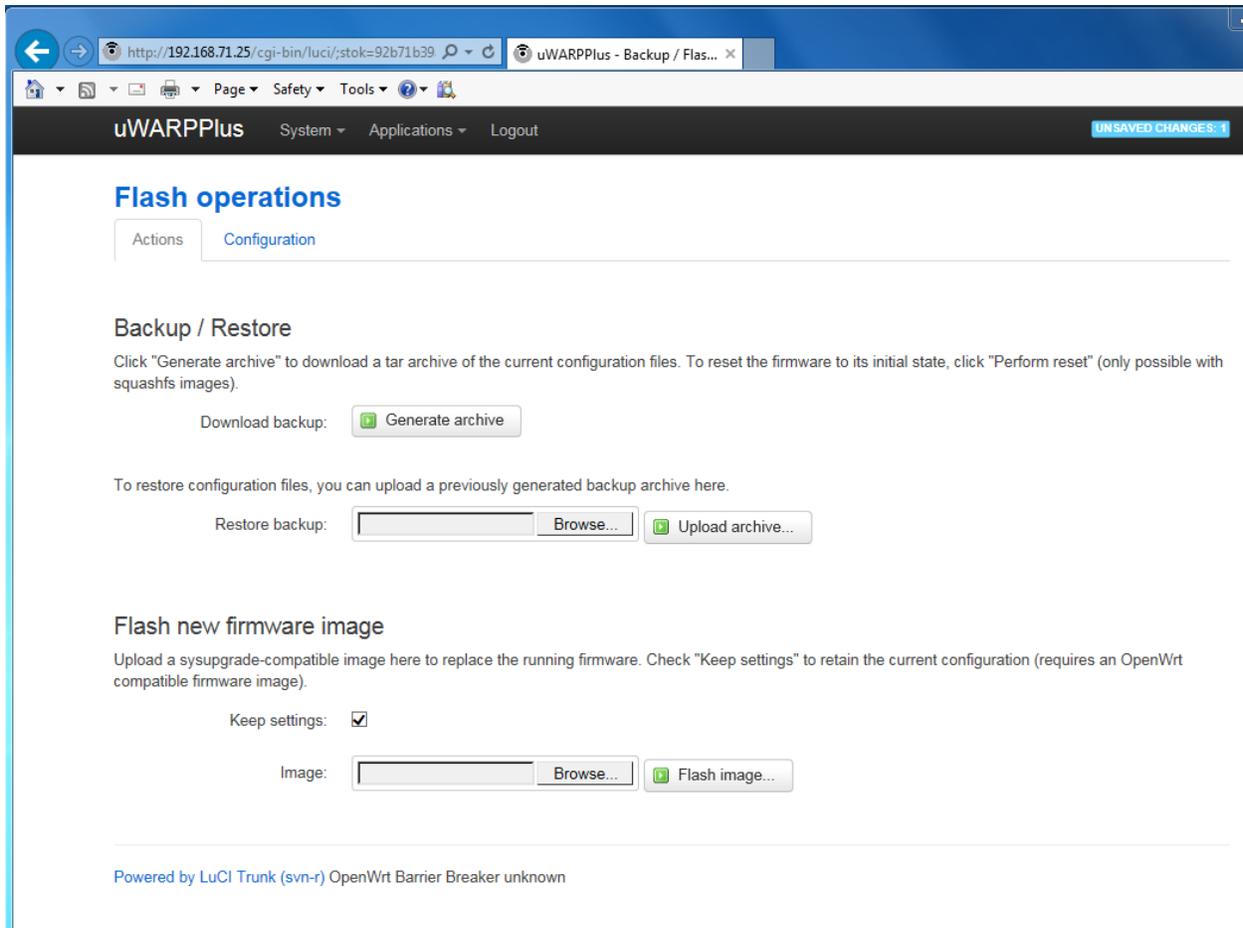
```
config dlconfig
  option dltype 'tftp'
  option server '192.168.44.99'
  option path 'uwarppplus_files'
  option username 'admin'
  option password 'dlpassword'
```

This final example will use *https* to download the configuration data:

```
config dlconfig
  option dltype 'https'
  option server '192.168.44.99'
  option path 'uwarppplus_files'
  option username 'admin'
  option password 'dlpassword'
```

## Backup / Flash Firmware

The System -> Backup /Flash Firmware page allows you to archive configuration data and update the firmware on your μWARPPPlus.

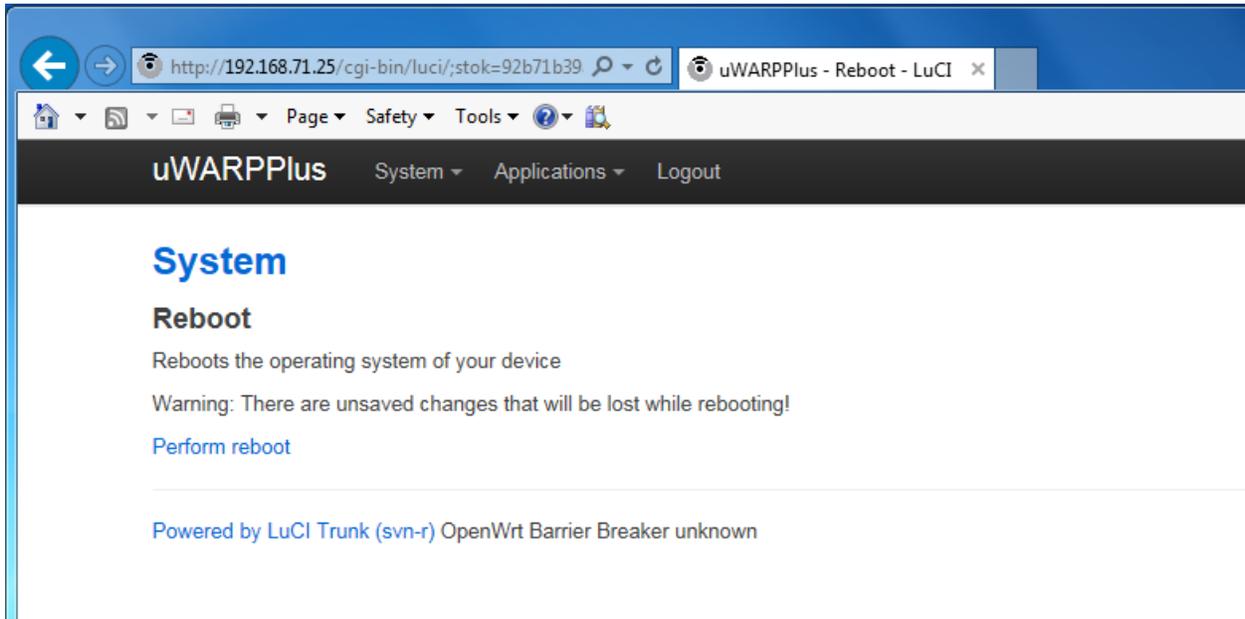


To backup configuration files, click the “Generate archive” button. This will allow you to save an archive of the configuration data on your computer. This archive could be uploaded later using via the “Restore archive” utility.

This page can also be used to flash a new firmware image onto your μWARPPPlus. Get the new firmware binary from PIKA Technologies and store it on your computer. It should be in the format of:

*uwarppplus-<version>-squashfs-<factory or sysupgrade>-<release date>.bin*

## Reboot



On the System -> Reboot page, you can click the “Perform reboot” link to reboot your μWARPPlus.

## Chapter 5 – Application Configuration

### Pager

The screenshot shows the LuCI web interface for uWARPPPlus. The browser address bar shows the URL: `http://192.168.71.25/cgi-bin/luci/stok=92b71b39`. The page title is "uWARPPPlus - Pager - LuCI". The breadcrumb navigation shows "System" > "Applications" > "Logout". A notification bar at the top right says "UN SAVED CHANGES: 1".

The main content area is titled "Pager" and contains the text: "Here you can edit the Pager Settings." Below this is the "Pager Settings" section with the following fields:

- Username:** Input field containing "6069". Help text: "SIP username or number for the Pager extension".
- Authorization User:** Input field (empty). Help text: "SIP authorization user for the Pager extension. If unsure, leave blank or set to the same value as Username."
- Password:** Input field containing "secret". Help text: "SIP secret for the Pager extension".
- Domain:** Input field containing "192.168.44.1". Help text: "IP Address of the PBX".
- User Context:** Dropdown menu set to "Enabled". Help text: "Enabled uses the Username in the Contact header. Disabled uses the internal context warppager in the Contact header."
- Group/Zone Paging Enabled:** Check box (unchecked).
- Multicast IP and Port:** Input field containing "238.0.0.1:1234". Help text: "Specifies the multicast paging port and should look like this: 238.0.0.1:1234".

At the bottom right of the form, there are three buttons: "Save & Apply", "Save", and "Reset".

The Applications -> Pager page allows you to configure the μWARPPPlus for Paging. The **username** and **domain** parameters are mandatory.

**Username:** SIP user agent account name.

**Authorization User:** used when a Registration Request is challenged. If left blank, the μWARPPPlus will use the Username as its Authorization User.

**Password:** the password used to authenticate the μWARPPPlus with the external SIP server.

**Domain:** the domain or IP address of the external SIP server to register the μWARPPPlus against.

**User Context:** The μWARPPPlus uses an internal context, for example **warppager**, in its Address of Record in the Contact header used during registration, for example, **warppager@IP\_ADDRESS**. Some edge

devices need the username to match the To header. This parameter indicates whether to use the username assigned to the SIP UA account in the Contact header. If you use an edge device and are having problems with call routing, enabling this parameter may resolve the problem. If you use an edge device and are having problems with call routing, enabling this parameter may resolve the problem.

**Group/Zone Paging Enabled:** when this option is enabled, you can have up to ten different paging groups on your μWARPPPlus. When dialing the Pager, you will be prompted to press a digit corresponding to the Group that you want to page. If disabled, only one paging group is available and it will be immediately paged once the Pager is dialed.

**Multicast IP and Port:** This is the IP address and port that the phones be listening to for receiving pages. It is recommended that you disable barging on the phone if you do not want pages to interrupt phone calls in progress.

## Multicast IP configuration with Group/Zone Paging Enabled

With the Group/Zone Paging feature enabled, you will have the option to configure up to 10 Multicast IP addresses and ports:

The screenshot shows the uWARPPPlus configuration page. At the top, the browser address bar shows the URL `http://192.168.71.25/cgi-bin/luci/stok=92b71b39`. The page header includes the uWARPPPlus logo and navigation links for System, Applications, and Logout. A notification in the top right corner indicates 'UNSAVED CHANGES: 1'.

The main configuration area includes:

- User Context:** A dropdown menu set to 'Enabled'. A tooltip below it states: 'Enabled uses the Username in the Contact header. Disabled uses the internal context warppager in the Contact header.'
- Group/Zone Paging Enabled:** A checkbox that is checked.
- Multicast IP and Port for Group 0:** An input field with a tooltip: 'Specifies the multicast paging port and should look like this: 238.0.0.1:1234'.
- Multicast IP and Port for Group 1 through 9:** Ten empty input fields for configuring multicast IP and port for each group.

At the bottom right of the configuration area, there are three buttons: 'Save & Apply', 'Save', and 'Reset'.

## The pager File

To automate the configuration of the Pager, the pager file can be configured and stored on a T/FTP or HTTPS server. The title of the file should be: *<mac-address>.pager*

The following pager file example has *Group/Zone Paging disabled*:

```
config pager
  option username '6069'
  option password 'secret'
  option domain '192.168.44.1'
  option ivr '0'
  option multicast '238.0.0.1:1234'
  option usercont 'enabled'
```

This example pager file has *Group/Zone Paging enabled*:

```
config pager
  option username '6069'
  option password 'secret'
  option domain '192.168.44.1'
  option usercont 'enabled'
  option ivr '1'
  option multicast0 '238.0.0.1:1234'
  option multicast1 '238.0.0.2:1234'
  option multicast2 '238.0.1.1:1234'
  option multicast3 '238.0.1.2:1234'
  option multicast4 ''
  option multicast5 ''
  option multicast6 ''
  option multicast7 ''
  option multicast8 ''
  option multicast9 ''
```

## Music On Hold

The screenshot shows the uWARPPPlus web interface for Music On Hold Settings. The browser address bar shows the URL `http://192.168.71.25/cgi-bin/luci/stok=92b71b39`. The page title is "uWARPPPlus - Music On Hold...". The navigation bar includes "uWARPPPlus", "System", "Applications", and "Logout", along with a "UNSAVED CHANGES: 1" indicator. The main content area is titled "Music On Hold Settings" and contains the following fields:

- Username:** 6079. Help text: SIP username or number for the Music On Hold extension.
- Authorization User:** (empty). Help text: SIP authorization user for the Music On Hold extension. If unsure, leave blank or set to the same value as Username.
- Password:** secret. Help text: SIP secret for the Music On Hold extension.
- Domain:** 192.168.44.1. Help text: IP Address of the PBX.
- User Context:** Enabled (dropdown). Help text: Enabled uses the Username in the Contact header. Disabled uses the internal context warpmoh in the Contact header.
- Music Source:** Stream from Internet URL (dropdown).
- Streaming IP Address:Port:** http://108.163.215.90:8030. Help text: For example: http://108.163.215.90:8030.

At the bottom right, there are three buttons: "Save & Apply", "Save", and "Reset".

**Username:** SIP user agent account name.

**Authorization User:** used when a Registration Request is challenged. If left blank, the μWARPPPlus will use the Username as its Authorization User.

**Password:** the password used to authenticate the μWARPPPlus with the external SIP server.

**Domain:** the domain or IP address of the external SIP server to register the μWARPPPlus against.

**User Context:** The μWARPPPlus uses an internal context, for example **warpmoh**, in its Address of Record in the Contact header used during registration, for example, **warpmoh@IP\_ADDRESS**. Some edge devices need the username to match the To header. This parameter indicates whether to use the username assigned to the SIP UA account in the Contact header. If you use an edge device and are

having problems with call routing, enabling this parameter may resolve the problem. If you use an edge device and are having problems with call routing, enabling this parameter may resolve the problem.

**Music Source:** The μWARPPlus has three options for the music source:

- Stream from Internet URL
- Files on a USB Key
- Files on the μWARPPlus

The *Stream from Internet* option allows you to hear music streamed from an internet radio station or custom streaming application when connected to Music On Hold.

The *Files on USB Key* option supports files in the WAV or ulaw formats. MP3 files will cause performance issues on the μWARPPlus. The music files should be in a directory called “/Music” off the root directory of your USB key. **Please ensure the USB key is inserted in the μWARPPlus before clicking the “Save & Apply” button.**

The *Files on μWARPPlus* option may be best suited as testing option as there is only one music file on the μWARPPlus and listeners who are on hold will find this option very repetitive.

**Streaming IP Address:Port:** This is the IP address or URL of an internet radio station or custom IP streaming service. Some internet radio stations make their streaming addresses available in a *.pls* file. This would be the address and port that you enter in order to stream this source to phones that are on hold.

## The music File

To automate the configuration of Music On Hold, the music file can be configured and stored on a T/FTP or HTTPS server. The title of the file should be: *<mac-address>.music*

The following music file example has **Internet Streaming** as its Music Source:

```
config music
  option username '6079'
  option password 'secret'
  option domain '192.168.44.1'
  option usercont 'enabled'
  option source 'internet'
  option streamurl 'http://108.163.215.90:8030'
```

This example music file has the **Files on uWARPPPlus** music source:

```
config music
  option username '6079'
  option password 'secret'
  option domain '192.168.44.1'
  option usercont 'enabled'
  option source 'native'
```

## SIP Connections

The screenshot shows the uWARPPlus SIP Connections page in a Mozilla Firefox browser. The page title is "SIP Connections" and the URL is "192.168.44.189/cgi-bin/luci/stok=f8d0fcb440c55feaec79a41855c:". The page content includes a header with "uWARPPlus", "System", "Applications", and "Logout" links. Below the header, there is a section titled "SIP Connections" with a sub-header "Connection Status". A table displays the connection status for two hosts. Below the table, there are two buttons: "Reload Configuration" and "Restart uWARPPlus Services".

Host	Username	State
192.168.44.1:5060	6079	Registered
192.168.44.1:5060	6069	Registered

Reload Configuration

This will reload the uWARPPlus service configuration

Restart uWARPPlus Services

This will momentarily STOP and then START the UWARPPlus Pager and Music on Hold services

The Applications -> SIP Connections page will show the Connection Status of the Pager and Music On Hold services. If the Username, Authorization User, Password and Domain are all correct and the μWARPPlus service is functioning correctly, the state should show "Registered". If all the configuration is confirmed to be correct and the state is not Registered, then you may want to try pressing the Reload button or the Restart button.

The Restart button will momentarily stop all applications and interrupt service. Do not refresh your browser after clicking the Restart button as this will stop and start the service again. Instead, navigate back to the SIP Connections page under the Applications menu.