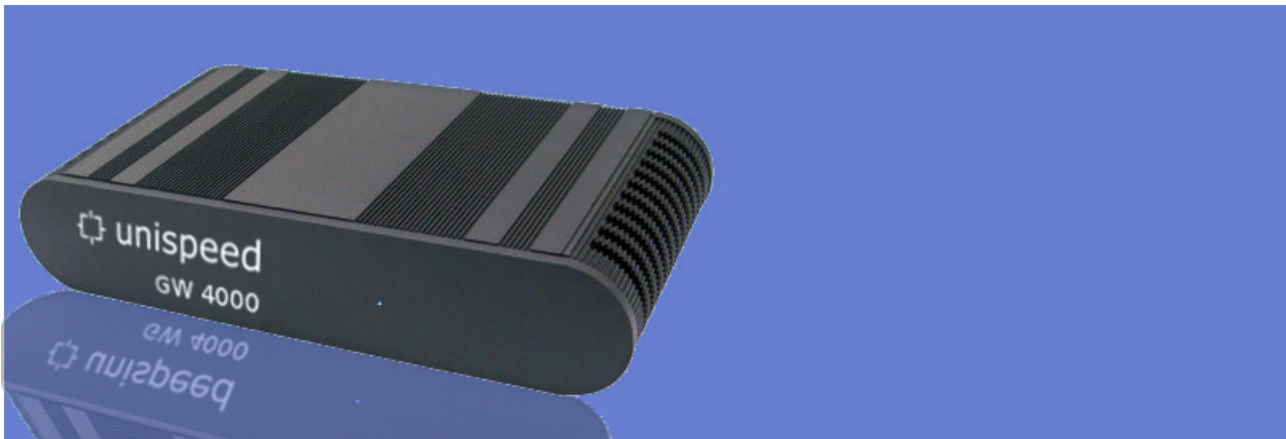


# Unispeed Bluegate Appendix 1

## The Bluegate configuration interface

The Bluegate Configuration interface is designed to facilitate initial installation at remote locations and to configure the behaviour of Internet access and the gateway routing, dhcp and various firewall options available on the Unispeed Bluegate.



# Table of Contents

1	Intro.....	2
2	Features and add-ons.....	3
2.1	Configurable Customer landing page.....	3
2.2	Login methods.....	3
2.3	Basic Gateway functionality.....	4
2.4	Gateway add-ons.....	4
3	Components.....	5
3.1	Customer landing page and login screen.....	5
3.2	Status screens.....	6
3.2.1	General.....	6
3.2.2	Client overview.....	7
3.2.3	Bandwidth.....	7
3.2.4	Client history.....	7
4	Network configurations.....	8
4.1	WAN.....	8
4.2	LAN.....	9
5	Firewall.....	9
6	Shaping.....	10
7	Filtering.....	10
8	Addons and Licenses.....	11
9	Gateway monitoring and configuration sync.....	12
10	User administration.....	13

## 1 Intro

The Unispeed Bluegate is designed to facilitate seamless installation and operation of commercial and public NAT networks. The system is in use at a great number of Hotels, Internet cafés, housing areas and public networks like airbases, schools, public transport and sporting arenas.

Featuring a fully integrated operating system the Bluegate can separately handle both the administration network the guest networks and Customer Information portals on a single device.

The high performance gateway offers the customer more functionality than any comparable router / gateway currently on the market.

When installed with the Blue Shield data retention system (IPDR) it fully complies with the European data retention act, and local lawful intercept (LI) requirements.

The vast amount of functionality and add-ons available on the Bluegate enable resellers and customers to configure and monitor their network precisely as they require.

**Embedded Shaping and Dynamic Content Filtering combined with a comprehensive Data Retention system safeguards that the network is being used for what it is intend to, and has proven a strong tool to ensure Quality of Service and Corporate Social Responsibility.**

**Numerous examples exist where clients are using the network for torrents, distribution of spam, illegal activity or other activity which consumes unreasonably amount of bandwidth and router resources.**

**Such activity can both be limited and blocked by the different filters and fair shaping technologies embedded in the Bluegate.**

**What's even so imported incidents are reported and documented and the effect of countermeasures can be precisely monitored**

## 2 Features and add-ons

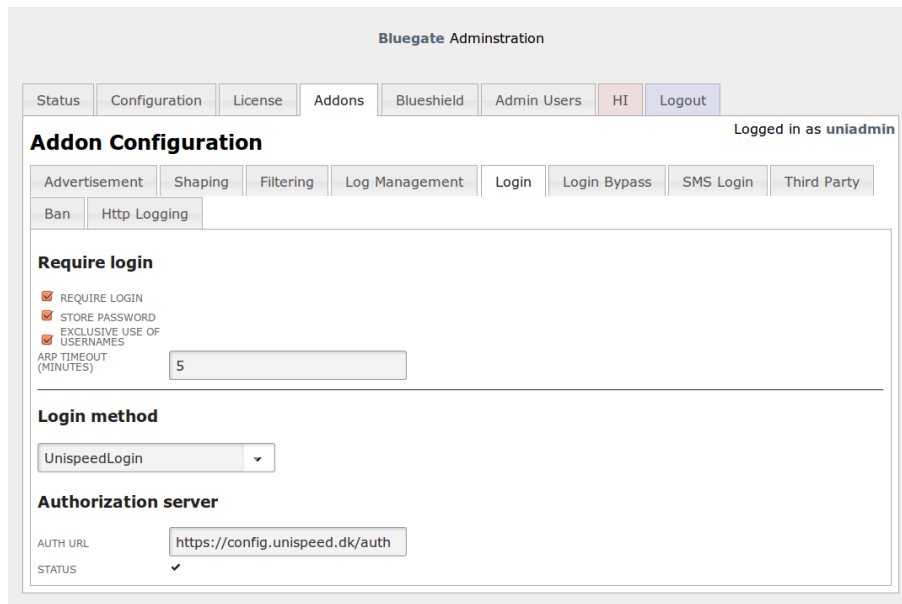
### 2.1 Configurable Customer landing page

The customer landing page is presented by the embedded Web server.

- This ensures very fast access to network login.
- Re-authorisation is done by the gateway itself, thus conserving bandwidth.
- Configurable Commercial adds and information screens are instantaneously presented to clients without an Internet login.
- The Bluegate can be delivered with desktop environment allowing for installation in Kiosk PC while operating as gateway for the entire network.
- Configurable network Login and payments methods and remote login screen test functionality.

### 2.2 Login methods

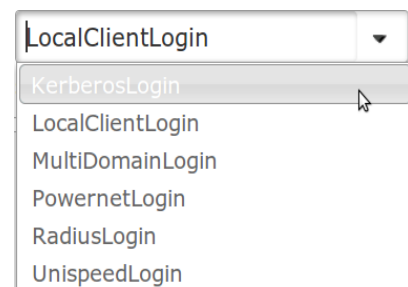
To obtain an Internet connection clients are required to login to the system. Bluegate can negotiate authorisation with various access control systems. Login credentials are stored on the system as required by applicable law. *All access control is handled over SSL to safe guard the client from identity theft!*



The screenshot shows the 'Bluegate Administration' interface. The 'Addons' tab is selected, and the 'Login' sub-tab is active. The 'Require login' section has three checked options: 'REQUIRE LOGIN', 'STORE PASSWORD', and 'EXCLUSIVE USE OF USERNAMES'. The 'ARP TIMEOUT (MINUTES)' is set to 5. The 'Login method' dropdown is set to 'UnispeedLogin'. The 'Authorization server' section shows the 'AUTH URL' as 'https://config.unispeed.dk/auth' and the 'STATUS' as checked.

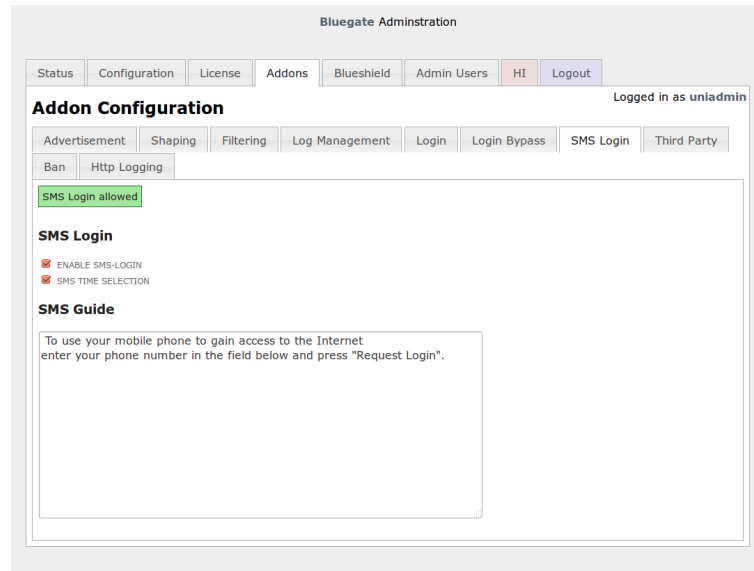
The Bluegate supports a variety of configurable user authorisation methods:

- RADIUS (Compatible with Windows server IAS and AD)
- Kerberos
- Perimeter
- Multi Domain
- Unispeed secure login or the customers own authority system
- Gateway integrated client administration interface (a lightweight client administration database is installed on the gateway allowing the network administrator to raise users locally)



The screenshot shows a dropdown menu with 'LocalClientLogin' selected. The menu is open, showing the following options: 'KerberosLogin', 'LocalClientLogin', 'MultiDomainLogin', 'PowernetLogin', 'RadiusLogin', and 'UnispeedLogin'.

The system supports delivery of login credentials via text message gateway (sms) ( Self provisioning). This is particular use full on locations where clients are not otherwise in contact with the network provider



**One of the valued advantages the Bluegate system offers, is to store clients network authentication credentials remotely on the Bluegate. This allows network operators to pre-authorise network access ( in conjunction with the purchase of a ticket or a hotel room etc. ) The Bluegate is now able to allow or deny access according to the access list and immediate access is obtained even if the connection is temporarily unavailable.**

**Also the presence of an on-board web-server allows Bluegate to present advertisements and offline content to users without an Internet connection or awaiting authorisation.**

**The on-board data-logging system can count and document off-line add views and advertising bill-back is made possible without routing data through a billing gateway.**

## 2.3 Basic Gateway functionality

The Unispeed Gateway integrates all components required for safe and efficient network access and routing.

The basic configuration includes configurable:

- Linux NAT routing including DNS caching for improved network speed.
- Linux firewall ( IP table )
- DHCP server ( DNS Masq )
- VPN tunnelling support ( L2TP VPN, IPSec, PPTP, UPnP )
- Port forwarding, IP- and MAC-pinning ( Auto configuration of payment terminals)
- Gateway real-time status monitoring, Client overview and Connection history
- Graphic presentation of bandwidth consumption etc.

## 2.4 Gateway add-ons

A comprehensive and automated licence system enables the reseller or customer to request or add extended features to the Bluegate.

Upon requesting and accepting the terms the Bluegate automatically acquires a licence key from the supplier and the Add-ons are readily available.

Add-ons include:

- Advertisements
- Traffic shaping
- Traffic filtering
- Regulatory Data retention / Data retrieval
- Lawful interception
- Advanced firewall options etc.

### 3 Components

#### 3.1 Customer landing page and login screen

- Configurable login methods
- Configurable left and right advertisement or information columns
- Upload of Location logo from local desktop
- Configurable welcome announcements
- Configurable Terms of use with upload of terms of use PDF from local desktop
- Configurable Guest trouble shooting guide with upload of detailed usages guide PDF from local desktop



Hello ulrich

Login time: 2011-06-24 07:51:22 UTC  
 IP Address: 192.168.2.210  
 MAC Address: 00:21:5a:41:af:3e

This systems complies with the Danish and European data retention acts.  
 Users who connect to the Internet via this network accept the terms and conditions. <https://terms.html>

[Log off](#)

Bluegate © 2006-2011 Unispeed A/S in partnership with [PowerNet](#)  
[Admin](#)

Bluegate Administration

Status Configuration License Addons Blueshield Logout Logged in as uniadmin

#### Gateway Configuration

Location WAN LAN Firewall

**Location**

Unit shortname

Location name

Redirect URL

Alert Mobile Phone

Location Zip Code

Location Address

Comment

Contact Name

Contact Phone

Contact Email

---

**Problem guide**

h3. Are you having trouble logging in?  
 If you have any problems accessing the Internet, please contact Tech-Support.

---

**Terms of use**

Refer to terms pdf using "link":/terms.pdf

This systems complies with the Danish and European data retention acts.  
 Users who connect to the Internet via this network accept the "terms and conditions":/terms.pdf.

Detailed terms of use

---

**Login screen Logo Upload**

New logo

**Current logo**



## 3.2 Status screens

### 3.2.1 General

- Monitoring of all running systems and network configuration and connections
- Validity of Licenses and Certificates
- Round trip and ping times to external servers
- Check of firewall and network permissions

**Bluegate Administration**

Status
Configuration
License
Addons
Blueshield
Admin Users
HI
Logout



Logged in as **uniadmin**

### Gateway Status

General
Client Overview
Client History
Bandwidth

<h4>Interfaces</h4> <p><b>LAN</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>ADDRESS</td><td>10.0.0.1</td></tr> <tr><td>BROADCAST</td><td>192.168.127.255</td></tr> <tr><td>MAC</td><td>b8:ac:6f:85:73:38</td></tr> <tr><td>MODE</td><td>manual</td></tr> <tr><td>NETMASK</td><td>255.255.128.0</td></tr> </table> <p><b>WAN</b></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td>ADDRESS</td><td>192.168.168.181</td></tr> <tr><td>MAC</td><td>b8:ac:6f:85:73:39</td></tr> <tr><td>MODE</td><td>dhcp</td></tr> <tr><td>NETMASK</td><td>255.255.255.0</td></tr> </table>	ADDRESS	10.0.0.1	BROADCAST	192.168.127.255	MAC	b8:ac:6f:85:73:38	MODE	manual	NETMASK	255.255.128.0	ADDRESS	192.168.168.181	MAC	b8:ac:6f:85:73:39	MODE	dhcp	NETMASK	255.255.255.0	<h4>General status</h4> <table style="width: 100%; border-collapse: collapse;"> <tr><td>FIREWALL PERMISSION</td><td>OK</td></tr> <tr><td>DHCP PERMISSION</td><td>OK</td></tr> <tr><td>NETWORK PERMISSION</td><td>OK</td></tr> <tr><td>ONLINE</td><td>OK</td></tr> <tr><td>GOOGLE ROUND TIME</td><td>630 MS</td></tr> <tr><td>PING TIME GATEWAY</td><td>FAILED</td></tr> <tr><td>SSL VALID UNTIL</td><td>08/12/2012 11:47</td></tr> <tr><td>LOGGER TIME</td><td>01/25/2012 14:21</td></tr> <tr><td>LICENSED UNTIL</td><td>01/16/2013 21:35</td></tr> </table>	FIREWALL PERMISSION	OK	DHCP PERMISSION	OK	NETWORK PERMISSION	OK	ONLINE	OK	GOOGLE ROUND TIME	630 MS	PING TIME GATEWAY	FAILED	SSL VALID UNTIL	08/12/2012 11:47	LOGGER TIME	01/25/2012 14:21	LICENSED UNTIL	01/16/2013 21:35	<h4>Blueshield status</h4> <table style="width: 100%; border-collapse: collapse;"> <tr><td>PING TIME BLUESHIELD SERVER</td><td>34.82 MS</td></tr> </table> <h4>Services status</h4> <table style="width: 100%; border-collapse: collapse;"> <tr><td>UNISPEED NETLOGGER</td><td>OK</td></tr> <tr><td>DHCP SERVER</td><td>RUNNING</td></tr> </table>	PING TIME BLUESHIELD SERVER	34.82 MS	UNISPEED NETLOGGER	OK	DHCP SERVER	RUNNING
ADDRESS	10.0.0.1																																											
BROADCAST	192.168.127.255																																											
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UNISPEED NETLOGGER	OK																																											
DHCP SERVER	RUNNING																																											

### 3.2.2 Client overview







- Online users with facility to  disconnect and  ban a client from the network
- Client history with login / logout times and logout reason or cause of failed login
- Graphic client login count, failed logins, arp counts and DHCP leases
- Graphic view of network utilisation with zoom

Status Configuration License Addons Blueshield Logout Logged in as uniadmin

**Gateway Status**

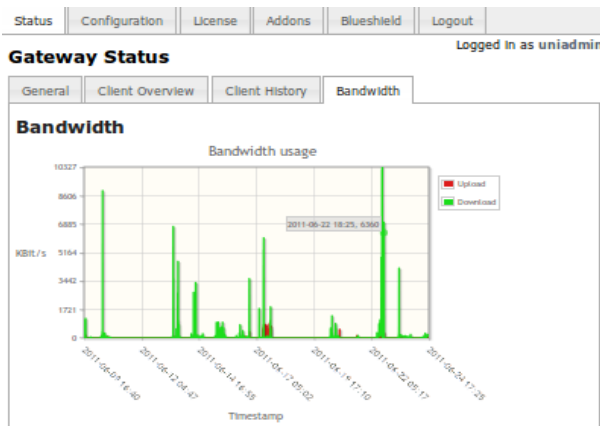
General Client Overview Client History Bandwidth

**Online users**

Username	IP	MAC	Login time	Uploaded	Downloaded	
jens	192.168.2.86	00:40:f4:36:54:8d	Today 08:41	15M	338M	 
martin	192.168.2.64	00:19:d2:7b:17:71	Today 09:52	1633K	18M	 
uniadmin	192.168.2.212	00:21:6a:41:af:3e	Today 10:39	864K	5735K	 

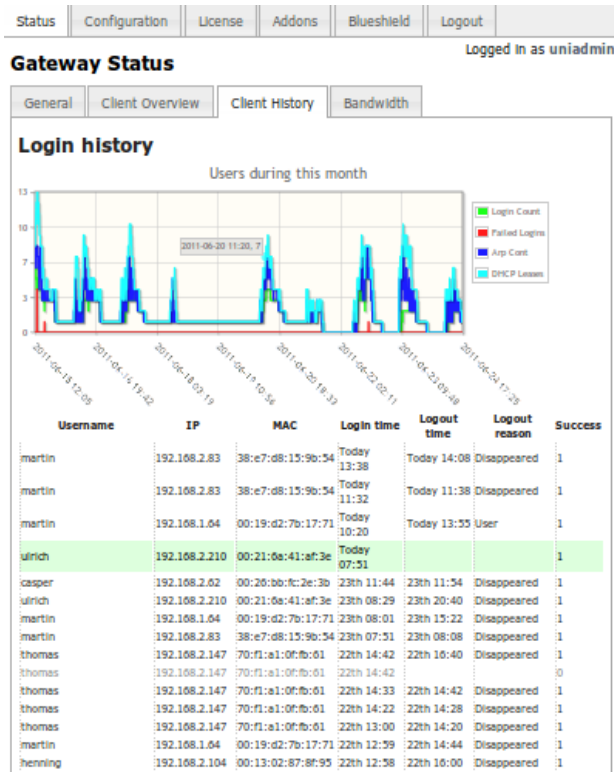
### 3.2.3 Bandwidth

- Upstream and downstream bandwidth usage is continuously monitored and displayed.
- The graph has auto zoom allowing for precise drill down. This enables the customer to apply timely network planning, and to monitor whether the purchased network connection actually delivers what is expected.



### 3.2.4 Client history

- Accumulated Client history chart with zoom
- login success and failed login attempts is displayed, allowing for quick detection of users in need of assistance together with unauthorised login attempts.
- Users can be disconnected or banned from the network with a single click in the user interface.



## 4 Network configurations

### 4.1 WAN

- The Bluegate defaults to DHCP - For static IP address the Wan connections must be configured at or prior to the time of installation.
- The Bluegate can handle multiple public IP addresses and separately control administration networks and guest networks.
- The advanced network configuration setting allows for configuration of VLAN and virtual bridges

Status Configuration License Addons Blueshield Logout

Gateway Configuration Logged In as uniadmin

Location WAN LAN Firewall

### WAN Setup

Internet connection status: OK

Use DHCP

Static IP

Netmask

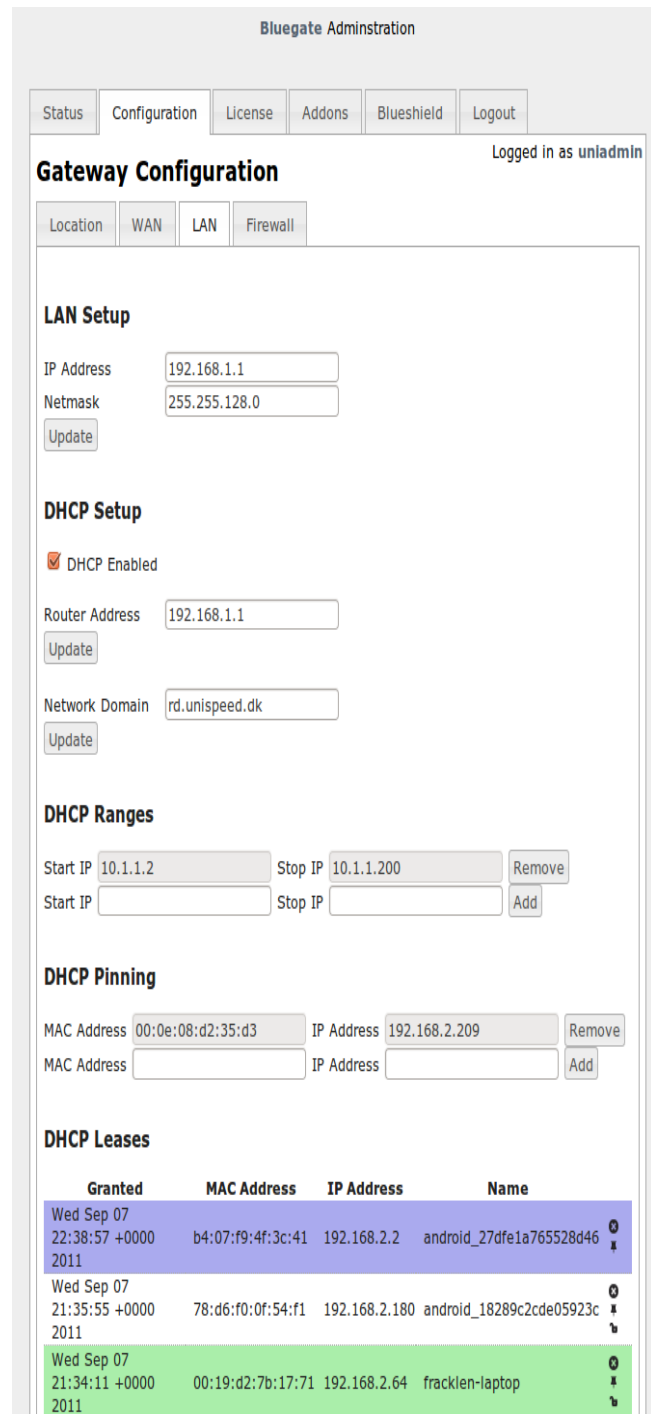
Gateway

Primary DNS

Secondary DNS

## 4.2 LAN

- The Bluegate is by default configured to act as DHCP server.
  - Multiple DHCP ranges can be configured in any of the available subnets.
  - Local DNS caching accelerates the network and increases customer experience.
  - ✚ Pinning of network components, e.g. payment terminals or web-cams is provided and easy configured by simply clicking the "pin" icon adjacent to the dhcp lease record.
  - ✖ To ban a user the administrator clicks the "ban" user icon. the "unban functionality is located in the addons section.
  - 🔑 To allow for MAC pass-through the administrator clicks the "passthrough" icon, and the network component is exempted from login via the authorisation system. The component will be marked with blue background in the interface
- Typically the administration network, payment terminals, and web-cams belongs to this category.



The screenshot shows the 'Bluegate Administration' interface, specifically the 'Gateway Configuration' section. The user is logged in as 'uniadmin'. The interface is divided into several sections:

- LAN Setup:** IP Address (192.168.1.1), Netmask (255.255.128.0), and an Update button.
- DHCP Setup:** DHCP Enabled (checked), Router Address (192.168.1.1), Network Domain (rd.unispeed.dk), and Update buttons.
- DHCP Ranges:** A table with Start IP and Stop IP fields. One range is shown: Start IP 10.1.1.2, Stop IP 10.1.1.200. Buttons for Remove and Add are present.
- DHCP Pinning:** A table with MAC Address and IP Address fields. One entry is shown: MAC Address 00:0e:08:d2:35:d3, IP Address 192.168.2.209. Buttons for Remove and Add are present.
- DHCP Leases:** A table with columns: Granted, MAC Address, IP Address, Name. It lists three leases with their respective dates, MAC addresses, IP addresses, and device names.

Granted	MAC Address	IP Address	Name
Wed Sep 07 22:38:57 +0000 2011	b4:07:f9:4f:3c:41	192.168.2.2	android_27dfe1a765528d46
Wed Sep 07 21:35:55 +0000 2011	78:d6:f0:0f:54:f1	192.168.2.180	android_18289c2cde05923c
Wed Sep 07 21:34:11 +0000 2011	00:19:d2:7b:17:71	192.168.2.64	fracklien-laptop

## 5 Firewall

- The Bluegate firewall is highly configurable firewall based on Linux IP-tables
- All common tunnel protocols are supported and can be enabled or disabled according customer requirement.
- Port forwarding is available to enable outside connection to reach network components hosted on the network. Status indicators next to each rule indicate whether the target is online and if the port forwarding rule qualifies
- Both Secure Shell and VPN reverse tunnels are available for remote configuration of units situated behind third-party firewalls.

Bluegate Administration

Status Configuration License Addons Blueshield Admin Users FT H12 Logout

Logged in as uniadmin

### Gateway Configuration

Location WAN LAN Firewall

#### VPN settings

Options	Enabled	Disabled
L2TP VPN	<input checked="" type="radio"/>	<input type="radio"/>
IPSEC	<input checked="" type="radio"/>	<input type="radio"/>
PPTP	<input checked="" type="radio"/>	<input type="radio"/>
UPNP	<input checked="" type="radio"/>	<input type="radio"/>

#### Port forwarding

INPUT PORT: 2880 FORWARD IP: 192.168.168.25 FORWARD PORT: 443 Remove ✓ ↗

INPUT PORT: FORWARD IP: FORWARD PORT: Add

#### SSH Reverse Tunnel

ENABLED:  PORT: 0 Update

#### VPN Reverse Tunnel

VPN RUNNING:   
 VPN CONNECTED:   
 ENABLED:   
 VPN SERVER:   
 VPN BRIDGE IP:   
 USERNAME:   
 PASSWORD:   
 Update

Target online & Rule qualification indicators

## 6 Shaping

- Stochastic fair queuing ( SFQ ) can be enabled in it's default configuration. The default configuration ensures fair sharing of the network connection among the connected users. More complex sharing models are available on request.
- Limiting the total available upload and download speeds for guest networks allows for preserving bandwidth for administrative purposes.

### Shaping settings

SHAPING ENABLED

UPLOAD SPEED: 0 KBit/s

DOWNLOAD SPEED: 0 KBit/s

Update

## 7 Filtering

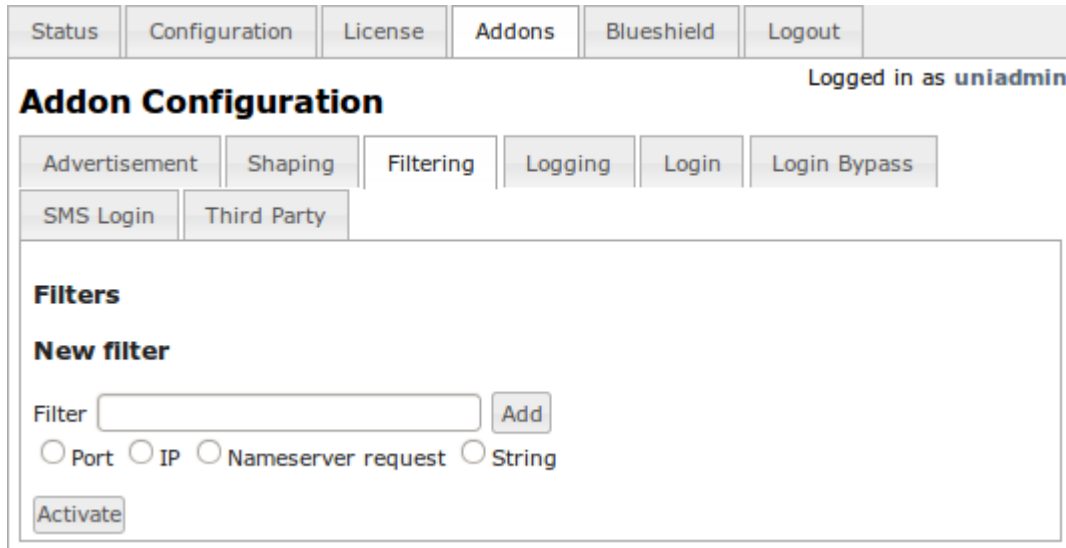
With focus on Corporate social Responsibility Unispeed Bluegate has the ability to filter off undesired traffic like Child Sexual Abuse Material.

Bluegate support unlike most router / gateways filtering on both IP-address, Port, DNS and Content strings.

Often a combination of these methods is necessary to make filtering effective.

Traffic filter rules are either configured directly through the Bluegate configuration interface or the settings are polled from the Blueserver ( Domain management system )

Filtering of traffic is a delicate task which requires closely monitoring to avoid undesired effects. Bluegate has the advantage of employing a comprehensive data retention system which apart from fulfilling regulatory data retention requirements also delivers very effective feed-back to evaluate the efficiency of the applied filters.



Below is a sample of a log file generated by the Bluegate showing unsuccessful connection attempts to betting sites being blocked during a WTA tennis tournament (connection attempts time out after 20 seconds)

192.168.1.65	195.95.193.6	a1.unicdn.net	http://www.unibet.com/start	www.unibet.com	/start	18.899144	702
192.168.1.23	96.17.106.67	a1.unicdn.net	http://ru.unibet.com/start	ru.unibet.com	/start	19.105437	702
192.168.1.65	78.24.214.10	www.unibet.com	http://www.unibet.com/start	www.unibet.com	/start	18.900658	702
192.168.1.65	195.95.193.6	a1.unicdn.net	http://www.unibet.com/start	www.unibet.com	/start	18.907453	702
192.168.1.23	96.17.106.67	a1.unicdn.net	http://ru.unibet.com/start	ru.unibet.com	/start	20.833306	702
192.168.1.65	195.95.193.6	a1.unicdn.net	http://www.unibet.com/start	www.unibet.com	/start	18.898919	702

## 8 Addons and Licenses

The License section of the Bluegate enables the system administrator or the entity hosting or managing the solution to enable or disable Addon modules on the Bluegate.

The value added reseller can as such decide which functionalities the network provider is offered in the basic package and which are available as an upgrade.

An automatic billing record is generated when adding a new module.

When the service provider receives the Bluegate he will have to acquire a licence from the Blueserver before the gateway will function properly. Renewal of licenses and upgrade of functionality ( Addons) together with request for more client licenses is automated in the Blue Shield system.

**Bluegate Administration**

---

Status
Configuration
License
Addons
Blueshield
Logout

Logged in as unladmin

**Blueshield license key**

Terms accepted:	true
Product:	bluegateway
Netlogger license key:	Y67K7-W0TEW-F4HMU-1BGMK
Version:	0.3-rc17
Shortname:	office
Client limit:	60
License expires:	2012-09-12T10:53:10Z

**Addons**

Advertisement:	true
Shaping allowed:	true
Filtering:	true
Logging:	true
Login:	true
Login Bypass:	true
SMS Login:	true
Third party:	true
Ban:	true

**Request License Key from server**

Blueshield server

Username

Password

Client limit

- Advertisement
- Shaping
- Filtering
- Logging
- Login
- Login Bypass
- SMS Login
- Third party
- Ban

By requesting a new license key, I agree to the license terms.

**Provide License Key Manually**

## 9 Gateway monitoring and configuration sync.

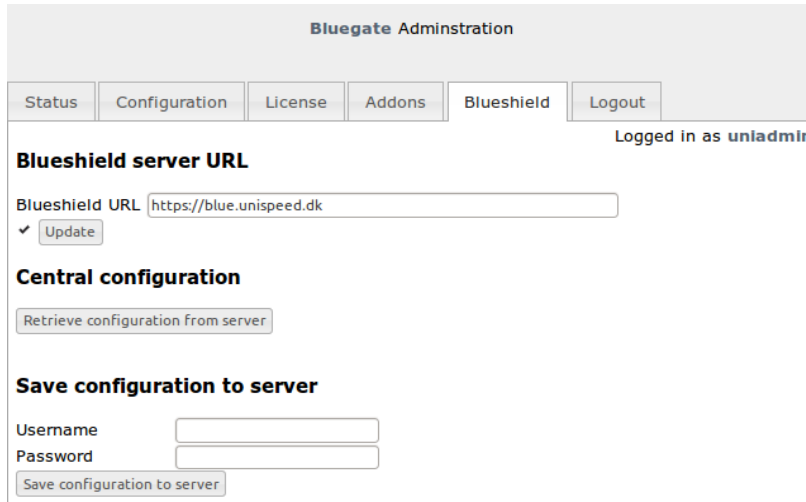
The Unispeed Bluegate is a complex gateway system with high focus on Quality of service and maintainability. The Bluegate can work as a stand alone appliance or as a managed device controlled by the Blue Shield management system.

When controlled by the Blue Shield system the gateway reports it's current status to the central management server every 5 minutes. It also synchronise configuration changes and logfiles with the Blueserver.

The Bluegate is designed to be configured individually or it can be individually or bulk configured from the Blueserver. For example the Hosting or Domain System Manager can bulk configure or update a whole group or domain of Gateways to block DNS requests or block traffic to certain IP addresses collectively.

This functionality can be used to update lists of web addresses containing "**child sexual abuse content**" or blacklist IP addresses or ranges spreading mal-ware etc.

The Bluegate Increases Corporate Social Responsibility for the customers who purchase the system.



**Bluegate Administration**

Status Configuration License Addons **Blueshield** Logout

Logged in as **uniadmin**

**Blueshield server URL**

Blueshield URL

Update

**Central configuration**

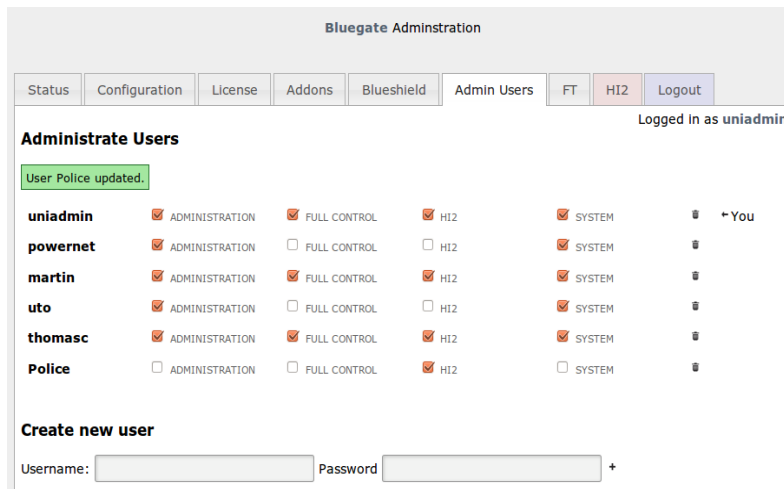
**Save configuration to server**

Username

Password

## 10 User administration

The user administration tab allows for enabling and removing admin users. Each user is assigned privileges according to his requirements and security level



**Bluegate Administration**

Status Configuration License Addons Blueshield **Admin Users** FT HI2 Logout

Logged in as **uniadmin**

**Administrate Users**

User Police updated.

<b>uniadmin</b>	<input checked="" type="checkbox"/> ADMINISTRATION	<input checked="" type="checkbox"/> FULL CONTROL	<input checked="" type="checkbox"/> HI2	<input checked="" type="checkbox"/> SYSTEM	<input type="checkbox"/> You
<b>powermet</b>	<input checked="" type="checkbox"/> ADMINISTRATION	<input type="checkbox"/> FULL CONTROL	<input type="checkbox"/> HI2	<input checked="" type="checkbox"/> SYSTEM	<input type="checkbox"/>
<b>martin</b>	<input checked="" type="checkbox"/> ADMINISTRATION	<input checked="" type="checkbox"/> FULL CONTROL	<input checked="" type="checkbox"/> HI2	<input checked="" type="checkbox"/> SYSTEM	<input type="checkbox"/>
<b>uto</b>	<input checked="" type="checkbox"/> ADMINISTRATION	<input type="checkbox"/> FULL CONTROL	<input type="checkbox"/> HI2	<input checked="" type="checkbox"/> SYSTEM	<input type="checkbox"/>
<b>thomasc</b>	<input checked="" type="checkbox"/> ADMINISTRATION	<input checked="" type="checkbox"/> FULL CONTROL	<input checked="" type="checkbox"/> HI2	<input checked="" type="checkbox"/> SYSTEM	<input type="checkbox"/>
<b>Police</b>	<input type="checkbox"/> ADMINISTRATION	<input type="checkbox"/> FULL CONTROL	<input checked="" type="checkbox"/> HI2	<input type="checkbox"/> SYSTEM	<input type="checkbox"/>

**Create new user**

Username:  Password:  +