

# HWg-SMS-GW3

# An SMS gateway for HW group products



# **Recommended connection**

HWg-SMS-GW allows sending of alarm SMS messages from any number of connected HW group devices via a single GSM modem with netGSM.

![](_page_1_Figure_4.jpeg)

# **Technical parameters**

ETHERNET	
Interface	RJ45 (10BASE-T) – 10 Mbps or 10/100 Mbps network compatible
Supported protocols	IP: ARP, TCP/IP (http, NTP), UDP/IP (SNMP), netGSM
SNMP compatibility	Ver:1.00 compatible, some parts of the ver 2.0 implemented
GSM	
Interface	Quad-Band 850/ 900/ 1800/ 1900 MHz, Compliant to GSM phase 2/2+ – Class 4 (2 W @850/ 900 MHz) – Class 1 (1 W @ 1800/1900MHz
Antenna connector	SMA male
POWER input	
Port	POWER 9-30V DC
Туре	Main device power input (typically 400 mA + external devices)
Connector	Jack (barrel, inner 2.5 mm outer 6.3 mm) & Terminal block (parallel connection)
LED Status indicator	'S
POWER	Green - power OK
Modem	Blue – Activity on GPRS
Status	Yellow – blinking if device is OK
Alarm	Red – Error on device
LINK & Activity	Yellow - Ethernet connectivity
Physical parameters	
Temperature range	Operating: -10 to 65 °C / Storage: -25 to 85 °C
MTBF	> 90 000 hours
Dimensions / Weight	92 x 76 x 28 [mm] / 300g
EMC	FCC Part 15, Class B, CE - EN 55022, EN 55024, EN 61000

![](_page_2_Figure_4.jpeg)

## Restarting into the default settings (LOAD TO DEFAULTS)

- Restarting into the default settings via HWg Config Right-click the MAC address of the device in HWg Config. Within the first 60 seconds after powering up the device the factory settings can be restored through HWg Config.
- Hardware restarting into the default settings
   Disconnect the power supply, press the Reset button and at the same time reconnect the power adapter and wait for 10 seconds. The default settings will be restored.

# First start

# **Connecting the cables**

- Note down the MAC address of the device, printed on the side of the unit.
- Set DIP switches to <u>DIP1=Off</u>, <u>DIP2=Off</u>.
- Connect HWg-SMS-GW to the Ethernet network.
- Plug the power adapter and connect it to a connector on the device.
- Green <u>POWER</u> LED will light up.
- If the connection to Ethernet network is working, <u>LINK</u> LED will light up (orange light on RJ45 connector) and it then flashes during the data transmission (Activity signalisation).

## Connectors

- Power Connect the power adapter (9-30V)
- USB A connector for service purposes
- Ethernet Network/data connector
- **GSM SIM** A SIM card socket.
- GSM An SMA connector for connecting an external antenna
- Reset Reset button for restoring the factory default settings – more on page 3

## **LED** indication

- Power (green) Power supply connected
- Status (yellow) Flashes slowly if the device is working correctly
- Alarm (red) Device /Modemu error. Lights up if out of signal, flashes in case of SIM card errors (incorrect PIN entered, etc.)
- Modem (blue) Flashes during SMS sending
- Link Activity (yellow LED on the Eth. connector) Flashes during network activity
- Link OK (green LED on the Eth. connector) Light on when connected to Ethernet

![](_page_3_Picture_23.jpeg)

# IP address settings - HWg Config

HWg Config application - main directory on the attached CD (Windows / Linux version).

The software can be downloaded from www.HW-aroup.com Software -> HWg Config.

- Start HWg-Config by clicking on its icon - software will automatically search for connected devices.
- Search for the devices by clicking the Find Devices icon (Start search).

HWg Config searches for devices in your LAN. Clicking on a MAC address of the device opens a window with basic network parameters settings.

## Network parameters of the device

- Enable DHCP
- or
- Set IP address / HTTP port (80),
- Set the mask of your network.
- Gateway IP address for the local network,

Save the settings with Apply Changes button

# Open the WEB setup of the device

Enter IP address of the device directly into an internet browser.

Or open the web setup via HWg-Config>> Click the underlined IP address, or through the context menu (as shown on the picture).

UDP S

Devid MAC

UDP Config 4.11.3 for H	W group pro Version: 4.11.3 Config utility I	www.hw-i	HW group group.com	n) Your PC network IP address: 1 Netmask: 2 Gateway: 1	settings	105 2.0 254	*	About Eind Devices
Device list: MAC Name 00.104.59:00.CC:43 P cei	e idon SMS Gate	IP <u>192.168.3.</u>	Device to 72 HWg-Sh	vpe 4S-GW	Port 80	Parameters TCP setup=	Y, DHC	P=Y
Right	click	<b>&gt;</b>	Show deta Open in W Open TCP	il settings of de EB Browser (po Setup (telnet o	evice ort 80) on port 9	99)		
Ready			Load defau	ult values		-		

DP Setup 2.2.0	for HW group products (www.hw-group.com)		
	Yersion: HW group 2.2.1 www.hw-group.com	Your PC network settings IP address: 192.168.1.214 Netmask: 255.255.255.0	
	Details		
Device list: MAC 00:0A:59:01:E0 00:0A:59:03:0D 00:0A:59:00:AA	Name:	IP address:         Port:           80.250.21.85         :         80	
00:04:59:00:A4 00:04:59:00:AC 00:04:59:00:AC 00:04:59:00:A8 00:04:59:03:0E	😸 Open in WEB Browser	MAC: 00:04:59:03:0D:04	-
00:0A:59:03:00 00:0A:59:03:10	255.255.255.240	3.0.2	-
00:04:59:03:00	Gateway:	Device type:	-
	80.250.21.81	Poseidon model 3265	-
	Enable IP access filter	DHCP:	
earching modu		Not supported	
		🔲 Enable NVT	
	IP filter mask:	✓ Enable TCP setup Open	
a	0.0.0.0	Enable DHCP	-
~	Default values	Enable TEA authorisation	
	🥳 Load <u>d</u> efaults		
		Check if new IP address is empty	
		C Apply changes	
	Ready		

# **WEB** interface

# Home

3 194.108.204.164						* 1	9
	HWg	J-SMS-G	W3				Номе
	Base	Information					
SMS <b>GW</b>		Devi	ice Name: Time:	н	Wg-SMS-GW3 10:21:37		
		Network Reg	Date: gistration:	Registe	18.02.2015 ered, home network		
Home		Opera	tor Name:		Vodafone		
General Setup							
Time	SMS (	)ueue					
GSM Modem	ID	Phone Number	Туре	Retries	Message		
SNMP							
System							
Version: 1.0.16							
Version, 1.0.10							

## **Basic Information section**

- Device name User-defined name. This can be set on the General Setup tab
- *Time* Unit time settings can be changed on the *Time* tab. Correct time is usually obtained from an online server
- Date Unit date settings can be changed on the *Time* tab. Correct date is usually obtained from an online server
- Network registration Information on registration of the unit to an operator's GSM network
- Signal Quality GSM signal level. This information can be used for resolving network problems
- Operator Name Name of the operator to which the GSM modem is connected

#### **SMS Queue Info**

- Pending Message / Capacity A number of pending messages / queue capacity
- Message Sent Amount of sent messages (since the last power-up)
- Messages Dropped Amount of dropped messages (since the last power-up)

#### **SMS Queue**

An overview of messages queued for sending

# **General Setup**

194.108.204.164/general_se	tup.xml		
	HWg-SMS	-GW3	General Setup
<b>2</b>	Base		
SMS	Device Name:	HWg-SMS-GW3	0 to 16 characters
011	WWW Info Text:	HWg-SMS-GW3: For mou href="http://www.hw- group.com	re information try <a -group.com"&gt;www.hw- </a 
Home			
General Setup	Network Setu	р	
Time	DHCP	•	DHCP Enable/Disable
GSM Modem	IP Address:	194.108.204.164	A.B.C.D
CON HOUGH	Network Mask:	255.255.255.240	A.B.C.D
SNMP	Gateway:	194.108.204.161	A.B.C.D
System	DNS Primary:	193.85.1.100	A.B.C.D
	DNS Secondary:	193.85.2.100	A.B.C.D
Version: 1.0.16	HTTP Port:	80	Default 80
Apply Changes	Security: Devi	ce Admin	
	Username:		Admin username/password for device
	Password:		configuration changes [0 to 16 characters]

#### **Base section**

 Device Name – Custom-selected name (HWg-SMS-GW3) – helps to distinguish between different HWg-SMS-GW3s in one network.

Device name can be up to 16 characters long.

 WWW Info Text – text of a footer in WWW interface – useful for example for entering data centre administrator's contact details.

#### **Network section**

- DHCP enables automatic setting of an IP address by a DHCP server, if available enabling and disabling this function depends on actual requirements of the network users and administrators.
- *IP Address* IP address of the HWg-SMS-GW3 assigned by the network administrator.
- Network Mask assigned by the network administrator.
- Gateway IP address of a default gateway assigned by the network administrator.
- DNS Primary / DNS Secondary- IP address of a DNS server assigned by the network administrator.
- HTTP Port port number where the built-in WWW server listens changing the port number is necessary for example if more devices are accessible from outside the network through a router. Please consult any changes in this setting with your network administrator. Port set to 80 in default.

#### **Security section Device Admin**

• Username / Password – login details used for accessing HWg-SMS-GW3 settings.

## Time

👹 HWg-SMS-GW3 🛛 🗙 🕇	-	
S ( 194.108.204.164/sntp.xml		= 💟
	HWg-SMS-GW3	
	Current Time	
SMSGW	Time:     10:22:27       Date:     18.02.2015	
	SNTP Setup	
General Setup	SNTP server address: europe.pool.ntp.org A.B.C.D or Address Name Interval: 1h v Sync period: Off/1h/24h	
→ Time	Summertime: ✓ last Sun Mar 2:00 - last Sun Oct 2:00 Time Zone: 1 Number - 12 +13	
GSM Modem SNMP	Synchronize Time	
System	Time Setup	
Version: 1.0.16	Time:         10:22:26         hh:mm:ss           Date:         18.02:2015         DD:MM:YYYY	
	Set Time Manualy	
	HWg-SMS-GW3: For more information try www.hw-group.com	

#### **SNTP Setup section**

- SNTP Server IP address or a domain address of a time server in default time.nist.gov.
- *Interval* interval of a time synchronisation with a server.
- Summertime allows DST switching required for correct logging of the measured values and events.

Necessary for correct data logging.

- *Time Zone* sets the time zone where the HWg-SMS-GW3 is located used for setting the correct system time. Necessary for correct data logging.
- Synchronise Time is used for an immediate synchronisation with a time server. Can be also used to test the entered settings.

#### **Time Setup section**

**GSM Modem** 

*Time Setup* section allows you to enter actual time and date manually, in case you cannot use the synchronisation with a time server. This information is erased after loosing the power supply.

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	HWg-SMS-	GW3	3						GSM	Mode	M	
<b>2</b>	Information											
SMS <b>GW</b>	Network Registrat Signal Qual Operator Na	ion: lity: me:	Registered, ho -61 dBm (83 % Vodafone	me networl	¢							
Home	Configuration											
General Setup	SIM	Pin:										
Time ▶ GSM Modem	Test SMS											
SNMP	Tel Numl	ber: <mark>1</mark>										
System Version: 1.0.16	. т	HWg- ext:	-SMS-GW3: SMS	test mess	age.				Send S	MS Test		
Apply Changes											_	

#### Information section

- *Network registration* Information on registration of the unit to an operator's GSM network
- Signal Quality GSM signal level. This information can be used for resolving network problems
- Operator Name Name of the operator to which the GSM modem is connected
- SMS Center Number information obtained from the SIM card. Used for verifying the communication with the SMS centre

#### **Configuration section**

• SIM PIN - In case the SIM card is protected by a PIN code, enter the code here

#### **Test SMS section**

- Tel Number recipients phone number for test SMS sending
- Text content of the test SMS
- Send SMS Test Verifies the functionality and sends a test SMS to the selected phone number.

# **SNMP**

🔠 HWg-	SMS-GW3 × +						- □
<b>S</b>	194.108.204.164/snmp.xml		▼ C Q Hledat	☆ 自 ↓	n 1 #	• • •	= 💟
		HWg-SMS-G	W3			SNMP	,
		General SNMP Set	ttings				
S	<sup>MS</sup> GW	System Name:		0 to 16 characters			
		System Location:		0 to 16 characters			
		System Contact: SNMP port:		Default 161			
Н	lome	· ·					
G	General Setup	SNMP Access					
Т	ime	Community		Read	Write	Enable	
G	SM Modem						
→ SI	NMP	SNMP Trap Destin	ations				
S	ystem	Destination Community	IF	P Address	Port	Enable	
	Version: 1.0.16		Show O	<u>D keys table</u>			
	Apply Changes						
		HWa-SMS-GW	/3: For more information t	ry www.bw-group.com			
		Thing SHS-OW		group com			

#### **General SNMP Settings**

- System Name Device name, corresponds with the device name set on the General setup tab
- System Location System location, for instance "IT room, 2nd floor."
- System Contact System administrator contact details, for instance his Email address
- SNMP port Port settings for communication with SNMP protocol [161].

#### **SNMP Access**

Defines authorisation and user group names for work with a Poseidon device.

- Community Text name of the group, to which the rights are assigned to (**Public** and **Private** in default)
- Read assigns to a community the rights to read the variables over SNMP
- Write assigns to a community the rights to write into the variables over SNMP
- Enable enables or disables a certain group

## **SNMP Trap Destination**

Defines target destinations for SNMP Traps.

- Community Text name of a group of the sent SNMP Trap
- IP address Target address for SNMP Traps.
- Port Target port for SNMP Traps.
- Enable Enables SNMP Trap sending to this destination.

# System

*System* tab offers access to main system details such as uptime and firmware version. It also offers restart options or tools for firmware update.

194.108.204.164/system.xml		☆自◆合	A # - 0 9	∍≡
	HWg-SMS-GW3		Svsi	FEM
	Download			
SMS GW	Backup bin configuration: <u>IPWDT Config</u>	<u>g.bin</u>		
	Backup xmi configuration: <u>setup.xmi</u> Online values in XML: <u>values.xml</u>			
	SNMP MIB Table: IPWDT.mib			
Home	List of common SNMP OIDs: <u>snmp_oid.xml</u> Data Log in XML: <u>log.xml</u>			
General Setup				
Time	Syslog			
GSM Modem	Syslog server IP Address: A.	B.C.D, 0.0.0.0 = Syslog	disabled	
SNMP				
System	System			
	Version: 1.0.16			
Version: 1.0.16	Build: 700	15.10.04		
Annhy Changes	Complie time: Jan 27 2015, UnTime: 180034 [s]	15:18:04		
Apply changes	Demo Mode: Demo Mode			
	Upload Firmware or Configuration: Procházet.	Soubor nevybrán.	Upload	
	Factory Default	System	Restart	
	Default	Res	tart	

# **Download section**

- *Backup configuration* by clicking the link you can save the actual HWg-SMS-GW3 configuration and later restore this configuration.
- *Backup XML configuration* by clicking the link you can save the actual HWg-SMS-GW3 configuration and later restore this configuration.
- Online values in XML Current SMS queue in XML format

- SNMP MIB Table SNMP MIB file address of a MIB file, containing definition of SNMP variables.
- List of common SNMP OIDs a list of the most frequently used OIDs from the MIB chart.
- Data Log in XML A list of the most recently sent messages in XML format

## **Syslog section**

• Syslog server IP Address – Address of the Syslog server

#### System section

- Version Firmware version. Diagnostic information for troubleshooting.
- Compile time Firmware compilation time. Diagnostic information for troubleshooting.
- Build assembly Diagnostic information for troubleshooting.
- UpTime Uptime since last power-on or reset of the device. Diagnostic information for troubleshooting.
- Demo mode activated demo mode disables changes in configuration of your device. Visitors can freely browse all pages of the WWW interface in this mode but they cannot make any changes. The device can be then made available on a public network without any risk of problems with settings.
- Upload Firmware or Configuration allows users to upload new firmware or a configuration file. Uploaded configuration may not be compatible in case the difference between firmware releases is too large.

#### **Factory Default section**

Restores the factory default settings. The default IP address is 192.168.10.20 and both login and password are not set.

## System Restart section

Resets the device.

# Using SensDesk.com service

SensDesk.com service is an online portal for HW group IP sensors monitoring. SensDesk.com can send Email notifications in case an alarm is detected. HWg-SMS-GW can be used for sending SMS notifications.

- Set IP address of your HWg-SMS-GW in the account settings. SensDesk.com: <u>My Account</u> >> <u>Edit</u>
- Set the recipient phone number for each single sensor, for sending alarm SMS messages from SensDesk.com. SensDesk.com: <u>Sensors</u> >> <u>Edit</u>

I www.sensdesk.com/cs/sensdesk/sensor/196/edit		☆ マ C 🛛 🗧 Google	٩	•
Sens Desk IP sensors portal		Login: rehak2	My account Messages	Log out
Dashboard Groups Devices Sensor	5			
nsDesk » Sensors » <i>Edit Sensor</i> Outdoor T (in Se	nsDesk)			
dit Sensor Outdoor T (in Sens <sup>View</sup> Charts Edit	Desk)			
SensDesk unique sensor ID 196	SensDesk Min. * 10	Description		
Sensor status Enabled ▼	SensDesk Max. * 60			
Local sensor name (in the device) Sensor 215	Shift * 0			
Sensors name (in SensDesk) * Outdoor T	Hysteresis * 0			
Chart type Percentage ▼	Logging period [s] * 60 Takes affect only with HTTPM XML device V Show on dashboard			
Alarms				
Simple e-mail alarm				
Simple SMS GW alarm				
			_	

Note:

HWg-SMS-GW must be accessible on a public IP address in order to send SMS alarms from your SensDesk.com account.

# **Using SMS gateway with Nagios**

Sending notifications from Nagios using SMS gateway HWg-SMS-GW.

A plug-in for HWg-SMS-GW, created in cooperation with Netways, allows sendong SMS messages from Nagios system.

![](_page_15_Picture_5.jpeg)

Nagios plug-in notify-poseidon-sms.pl takes notifications about changes on the monitored devices and transfers them via HTTP protocol to HWg-SMS-GW, which then sends an SMS message.

# Installation

The following steps are based on standard Ubuntu server installation process Some folders or commands can vary due to different Linux distribution used.

**2.1)** Download the notify-poseidon-sms.pl plug-in from https://www.netways.org/projects/plugins/files do adresáře /usr/lib/nagios and set the setup rights.

```
nagios-server:~# cd /usr/lib/nagios
nagios-server:~# wget https://www.netways.org/attachments/download/262/notify-poseidon-sms.pl
nagios-server:~# chmod a+x notify-poseidon-sms.pl
```

**2.2)** Send a test SMS to verify the functions of the plug-in and HWg-SMS-GW. Parametr -H specifies an IP addresus of the HWg-SMS-GW device designated for sending the SMS messages. Enter the recipients phone number for receiving the message using the -D parameter.

```
nagios-server:~# cd /usr/lib/nagios
nagios-server:~# ./notify-poseidon-sms.pl -M "Test message" -H 192.168.1.1 -D +420777888999
```

In case the plug-in start fails and an error message shows Can't locate LWP.pm, it is necessary to install a Perl module LWP for HTTP protocol support. This can be done on Ubuntu or Debian by a command:

nagios-server:~# apt-get install libio-all-lwp-perl

# **Nagios settings**

Document recommended for basic Nagios setup: http://www.hw-group.com/support/an38/index\_cz.html

**3.1)** A support for sending SMS messages with the notify-poseidon-sms.pl plug-in can be added by creating a file **/etc/nagios3/notify-poseidon-sms.cfg**:

```
define command {
   command_name notify-host-by-sms
   command_line /usr/bin/perl /usr/lib/nagios/notify-poseidon-sms.pl -H 192.168.1.1 -D
$CONTACTPAGER$ -M "$HOSTALIAS$ $HOSTOUTPUT$"
}
define command {
   command_name notify-service-by-sms
   command_line /usr/bin/perl /usr/lib/nagios/notify-poseidon-sms.pl -H 192.168.1.1 -D
$CONTACTPAGER$ -M "$HOSTALIAS$ $SERVICEOUTPUT$"
}
```

Note: The whole command\_line definition text has to be in one line in order to work correctly.

# Note, do not forget to change the -H parameter to an actual IP address (eventually to a DNS name) of your HWg-SMS-GW device.

SMS text is assembled by the -M parameter. A list of supported variables (macros) can be found on <a href="http://nagios.sourceforge.net/docs/3\_0/macrolist.html">http://nagios.sourceforge.net/docs/3\_0/macrolist.html</a>

# **3.2)** Define contacts and contact groups for SMS messaging in a file */etc/nagios3/conf.d/contacts\_nagios.cfg*.

define	contact {		
	contact_name		peter-gsm
	alias		Peters GSM phone
	service_notification_pe	riod	24x7
	host_notification_perio	d	24x7
	service_notification_op	tions	w,u,c,r
	host_notification_option	ns	d,r
	service_notification_co	mmands	notify-service-by-sms
	host_notification_comma	nds	notify-host-by-sms
	pager		+420777888999
}			
define	contactgroup {		
	contactgroup_name	sms	
	alias	Notific	ations via SMS
	members	peter-g	sm
}			

Note: In case you want to send notifications to multiple phone numbers, create a contact for every phone number and enter each contact into a memebers parameters in a contactgroup (divided with , ).

In case you are using a standard Nagios configuration and want to add SMS sending for all devices and services, do not create a contactgroup and add only *peter-gsm* to the *admins* group. The setup is then complete and the notifications will be sent also via SMS after restarting the Nagios service (points 3 and 4).

define contactgroup {	
contactgroup_name	admins
alias	Nagios Administrators
members	root, <b>peter-gsm</b>
}	

**3.3)** Adding SMS notification options to selected sevices and services can be done in their definition, by adding a contact\_groups parameter, for example:

define host {		
use		generic-host
host_n	name	localhost
alias		localhost
addres	S	127.0.0.1
contac	t_groups	admins, sms
}		
define service	e {	
use		generic-service
host_n	name	localhost
servio	e_description	Disk Space
check_	_command	check_all_disks!20%!10%
contac	t_groups	admins, sms
}		

Note: Contacts are usually defined in the device's or service's templates, adding contact\_groups parameters will rewrite the pre-set template. This example is based in a standard settings of an admins contact group, which uses e-mails for sending notifications. Only SMS messages will be sent after adding "contact\_groups sms" parameter.

3.4) A restart of Nagios needed to activate the changes.

nagios-server:~# service nagios3 restart

# Using the product with your application

HWg-SMS-GW communicates over LAN via a **netGSM** protocol built on HTTP.

In case you want to use this product with your application, use the **HWg-SDK** (Software Development Kit). The SDK kit cotnains commented examples of the source codes for various programming languages.

Eventually please contact HW group regarding the netGSM protocol documentation.

#### EX131: SMS GW Client (Borland C++ Builder)

- Supported devices: Poseidon 2250, Poseidon 4002, SMS-GW-GW
- Project file: <u>sms\_gw.bpr</u>
- Win EXE version: <u>sms\_gw.exe</u>
- Screenshot: <u>EX31\_screen.png</u>
- Used: TSession class of library C++ SDK Classes

Some HWg devices can send SMS via a connected GSM modem. In this case, the device works as a SOAP Web Service and this example demonstrates how to make a simple client with a graphical user interface. Written in Borland C++ Builder using the HWg SDK.

- Easy to use with simply GUI
- Sends SMS via remote GSM modem

# EX232: SMS GW Client CMD (Microsoft Visual C++)

- Supported devices: Poseidon 2250, Poseidon 4002, HWg-SMS-GW
- Project file: <u>sms\_gw\_cmd.bpr</u>
- Win EXE version: <u>sms\_gw.exe</u>
- Screenshot: <u>EX32\_screen.png</u>
- Used: TSession class of library C++ SDK Classes

Some HWg devices can send SMS via a connected GSM modem. In this case, the device works as a SOAP Web Service and this example demonstrates how to make simple client with a command-line user interface. Written in Borland C++ Builder using the HWg SDK.

- Sends SMS via remote GSM modem
- This is a command-line tool, it can be used in BAT scripts
- Message text is entered as a command-line parameter or read from the standard input

I A IF	ctivity Log: Resolvina poseidan hwa cz	
0	Connecting - 193.179.198.212:80	
	connection established sending data and waiting for answer Finished message was added into queue with ID 14	

🗱 EX131: SMS GW Client

Target Number (e.g. +420777123456):

SMS GW Hostname

poseidon.hwg.cz

+420777123456

Hello world

Texh

![](_page_18_Picture_27.jpeg)

![](_page_18_Picture_29.jpeg)

www.HW-group.com

: 80

🛕 <u>S</u>end