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# **Universal Mobile Gateway V6**

**Quick Installation Guide** 

# Abstract

# Copyright

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### **Produkte Support**

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# **Overview**

The Product Universal Mobile Gateway, also called UMGateway, provide you a bunch of possibilities sending mobile oriented text and multimedia messages to any mobile device. The gateway support you by providing easy to use, full featured synchronous and asynchronous queued interfaces.

### **Related Documents**

- UMGateway Vx Architecture
- UMGateway Vx Interfaces
- UMGateway Vx Webservices

## **Environment**

See details UMGateway Vx - Architecture

### **System Architecture**

### **Server Placement and Connectivity**

All frontend (UMGateway) nodes must be run in a network zone allowing direct TCP access to internet based services. This connection is used to directly connect to the mobile service providers. According to the company security requirement it will be often called Yellow or DMZ zone. If a central database is used, this database should not be in the same network zone due to the frontend nodes. The database contains all the configuration, accounting and logging informations used by the frontend servers. All the interfaces should be connected by a HW or d SW load balancer. This allows the operation team to do maintenance without service disruption. The load balancer can be setup to check the system state and queues of the frontend servers and do optimized distribution logic.

### **Single Machine**

In this case no load balancer or dns round robin are required. File or Database mode possible.

### **Active / Passive Nodes**

To provide connectivity to the interfaces of the frontend servers we recommend the use of a HW or Software Load Balancer setup in failover mode. File or Database mode possible.

### **Active / Active Nodes**

To provide connectivity to the interfaces of the frontend servers we recommend the use of a HW, SW Load Balancer or a DNS round robin alias.

To use full advantage of accounting features the Database mode is required.

### **SMS, MMS and Messaging Providers**

To setup a direct connect the mobile service providers, the frontend server need to have a direct tcpsocket or http connection to the internet based server endpoint of the mobile service provider. In this installation guide we do the setup by example of a standard EMI/UCP SMS Large Account from Swisscom (Schweiz) AG.

# **Requirements**

### Server / System

UMGateway can run on almost all modern server environment provided by customers. There are no known issues by using any hardware or as well virtualized server.

Our recommendation is to set 2 (V)CPU and 4 GB Ram for each gateway frontend Server. For separation purposes we recommend the following disk setup: System (C:) 40 GB Data (D:) 20 GB

The database can run on a shared environment / existing sql cluster with no issues. The load depend on the real traffic of the frontend servers but there are cache/db offload mechanism integrated to avoid too much load on DB Server side.

## **Operating System**

UMGateway runs on almost all 32 and 64 Bit Windows Operation System and Edition. Currently we recommend to use a Windows 2008 R2 Server (any Edition!).

The Setup-Steps are written for the use of Windows Server 2008.

### **Middleware**

In file mode there are no specific requirements to Middleware. The deployment of the enhanced webservices required dotnet 4.5 to be installed on the server. In Database Mode, the correct sql server client tools have to be installed on the server.

## Database / Server

UMGateway do not deliver a binary db file. Instead we deliver zip package including standard SQL and batch files used to crate, install schema and configure the database to be used by the gateway. The SQL Scripts are compatible for MS-SQL Server starting from Version 2005. We recommend the use of MS-SQL Server 2008

### **Roles and Features**

Internet Information Server (IIS + IIS6 SMTP Server)

The UMGateway SMTP interface based on the super stable Microsoft SMTP Service provided by IIS. There are integrated get/post and soap interfaces from the product but we also provide enhanced Webservices based on IIS and written in dotnet 4. See UMGateway Vx - Webservices

# **Software Installation**

### **Server Preparation**

The server is OS-Ready, fully patched and contains virus scanner and monitoring tools.

### **Setup IIS and SMTP Services**

- Start: Server Manager
- Roles: +Add Roles
  - Check: Web Server (IIS)
  - o [Add Requested Features]
  - Check: Application Server
  - o [Add Requested Features]
  - o [Next], [Next]
  - Check: Web Server (IIS) Support
  - o [Next], [Next]
  - Check: Application Development
  - Check: Security -> Windows Authentication
  - o Check all nodes and subnodes of: Management Tools
  - [Next], [Install]
  - Features: +Add Features
  - o Remote Server Administration Tools (Installed)
    - Feature Administration Tools
    - Check: SMTP Server Tools
  - Check: SMTP Server
  - [Next], [Install]

### Middleware

- Dotnet Runtime 3.5.1 (from features)
- Dotnet Runtime 4.5 (newest version) <u>http://www.microsoft.com/en-us/download/details.aspx?id=40779</u>
- Power Shell V2 +

### **UMGateway**

Copy the following binary to a temp directory on the server

- UMGateway5.1.8.exe
- UmgServices6.0-Update.zip
- umgRedisDeployment.zip

### Setup V5

- 1. Run (AS ADMIN) UMGateway5.1.8.exe
- 2. The setup does some system pre-check and inform if missing some components
- 3. Welcome [Next]
- 4. I accept the agreement [Next]
- 5. Enter some user informations (Informational only)
- 6. Set Program Path: D:\umgateway
- 7. Set Data Path: D:\umgateway\work
- 8. Check "Ready to Install" [Next]
- 9. Setup is installing all components
- 10. Some Version informations [Next]
- 11. Do not check start configuration [Finish]

### **Update to V6**

- 1. Open UmgServices6.0-Update.zip
- 2. Copy the content (and replace existing) to D:\umgateway\bin
- 3. Open umgRedisDeployment.zip
- 4. Copy the content to

D:\umgateway\UmgRedis

- 5. Edit install-redis.cmd
  - a. SET binpath=D:\umgateway\UmgRedis\RedisService.exe
  - b. SET configpath=D:\umgateway\UmgRedis\redis.conf
- 6. Run the install-redis.cmd

# **UMGateway Configuration**

# **Start Config Tool**

Start configuration tool: -> Start Menu



# Service State Overview

From this page you can stop, start and look at the real time trace log files. To stop and start services the configuration tool must run under administrator privileges.

<u>To stop the gateway completely</u> you <u>first have to stop the System Attendant</u>, otherwise it start depending services automatic after a view seconds.

UMGateway Configuration					
General	Services State				
Eles and Directory Management	Communication Service	RUNNING	Stop	Start	Trace
Alarming / Management	Distribution Service	RUNNING	Stop	Start	Trace
Provider	System Attendent	RUNNING	Stop	Start	Trace
SMS Badgoing	Modem Service	STOPPED	Stop	Start	Trace
Reger Outgoing	Action Service	RUNNING	Stop	Start	Trace
MMS bulgoing	Web Service	NOT INSTALLED	Stop	Start	
Interface	Telnet Service	NOT INSTALLED	Stop	Start	
	Windows Mail Service	RUNNING	Stop	Start	Trace
Advanced Options Mail <-> SMS 2 Way Config Telnet	Database Service	NOT INSTALLED	Stop	Start	
HTTP / Web     ML / SOAP     Modem     Modem     TFTP / File Share	Message Statistic Over Total Files 44602	view 8 Total Messa	ges 60	9882	
Accounting	Messages per 0	Day 0	Month 0		Year
・ Logines & Filter ・ Authentication & Filter ・ Database Configuration 都本 Action Manager ・ 新希 SMS Actions ・ 新希 SMS Subscription					
Import config from Export config to	Help	<u>0</u> K	<u>C</u> ancel		ly =>

This view is the <u>standard running state</u> for a gateway frontend server with no hardware modem and with no local MS-SQL database installed.

### For first time configuration please check all the services are stopped.

# **General Tree**

### **Files and Directory Management**

In the standard setup (IIS = default path, umgateway on D:\umgateway) -> Set as followed

Do not enable Encryption unless you really need to have it. Anyway do not enable this in first time setup because of testing and checking the services.

UMGateway Configuration	
General	Files and Directory Management
Registration / Information     Files and Directory Management     Alarming / Management     SMS Outgoing     SMS Incoming     Pager Outgoing     MMS Outgoing     MMS Outgoing	Services Work Directory (Data) D:\umgateway\work Files Pickup Directory (File Interface) D:\umgateway\work\monitor Windows SMTP Service drop directory c:\inetpub\mailroot\drop
MMS incoming  Therface  Mail / SMTP  Configuration and Handling  Advanced Options  Mail <> SMS 2 Way Config	Enhanced Windows SMTP Service Log Directory D:\umgateway\logs TFTP Work Path D:\umgateway\work\apimon Encrypt all content relevant datas in store
HTTP / Web HTTP / Web XML / SOAP Modem TFTP / File Share Logfiles & Privacy Authentication & Filter Database Configuration Action Manager SMS Actions SMS Subscription	Files and Storage Maintenance         Image: Archive SMTP Messages       [days]: 7         Image: Delete files in the ARCHIVE directory after [days]         Image: Delete files in OK directory after [days]         Image: Delete files in ERROR directory after [days]         Image: Delete files in INVALID directory after [days]         Image: Delete files in SPAM directory after [days]         Image: Delete files in ATTACH directory after [days]

### **Alarming / Management**

Set a valid mail address receiving system alarms and service notifications.

The Test-Mail Function runs after setting up the smtp interface (setting the outbound mailserver)

UMGateway Configuration	
General General Registration / Information Files and Directory Management Files and Directory Management Alarming / Management Provider SMS Dutgoing MMS Dutgoing MMS Dutgoing MMS Incoming MMS Incoming MMS Incoming MMS Incoming	Service Management / Alarming Configuration         ✓ Enable Service Management (Autostart)         ✓ Send Alert and Service Report Mails         Alert and report messages to - e-mail addresses (separated by , )         pg@pve.ch         Execute Alert Command
<ul> <li>Mail / SMTP</li> <li>Configuration and Handling</li> <li>Advanced Options</li> <li>Mail &lt;&gt; SMS 2 Way Config</li> <li>Telnet</li> <li>HTTP / Web</li> <li>XML / SOAP</li> <li>Modem</li> </ul>	Maintenance Start Time 2

### Interfaces

#### Mail / SMTP

Please set and test the mail relay server (usually the same as other application uses).

UMGateway Configuration	
General Services & Statistics Begistration / Information Files and Directory Management Alarming / Management	SMTP Configuration and Handling       SMTP Smart-Host or Mail Server (IP / ALIAS)     Port     SMTP Timeout (ms)       127.0.0.1     2525     500
Provider     SMS Outgoing     SMS Incoming     SMS Incoming     Reger Outgoing     MMS Outgoing	System messages - e-mail address (sms@domain.int) no-teply@pve.ch System messages - display name (SMS Administrator) pve sm\$ Support
MMS Incoming Interface Mail / SMTP Configuration and Handling Advanced Options Mail <-> SMS 2 Way Config Telnet HTTP / Web	□ Use SMTP Server Authentication       Send Test-Mail         SMTP Username       Password         □       □         Max. Recipient Per Mail       Max. Message Size (kb)         10000       €         Receiving mail domains to be accepted

### Message Convert

Here you can set the message conversation and formatting options. How the sms or mms will look like.

Please set the configuration as followed. This gives you a good starting point to use the Gateway. This configuration does split long mail text up to max. 5 sms messages and create long concatenated sms on target mobile phone. 1 SMS = 153 Characters in concatenated mode.

Also the gateway detect the amount non Default GSM Alphabeth characters per message. If the content use more than 50% of Unicode characters the gateway switch to the Unicode mode (80 Characters per SMS). So you can easily send foreign characters to international mobile phones.

UMGateway Configuration	
General Services & Statistics Registration / Information Registration / Information SMS Dutgoing SMS Dutgoing SMS Incoming MMS Outgoing MMS Outgoing MMS Outgoing MMS Incoming MMS Subgrig MMS Subgrig Advanced Options Mail <> SMS 2 Way Config Telnet HTP / Web XML / SOAP Modem TFTP / File Share Accounting Logfiles & Privacy Authentication & Filter Action Manager SMS Actions MS Subscription	Mail Interface Message Conversion         Image: Split long messages to multiple SMS (for separate or concatenated mode)         Limit the maximum SMS splits per message to 5 ≤ SMS         Image: Use SMS 'concatenate mode' (long SMS) as default         Image: Automatic detect and switch to Unicode SMS mode         if the number of ascii characters is < 50 ≤ % of complete message text

### **Advanced Options**

Please set as you see below

UMGateway Configuration	
UMGateway Configuration General General Registration / Information General Registration / Information	SMTP Advanced Options         SMTP Special Options         Check for valid mail from field       Ignore BCC         Check for valid mail sender field         Extract and log remote IP address from mail       Use X Sender as From         Ø Do not send mail reply to blacklisted users         Delivery Notification Configuration         Use Gateway Delivery Notifications Only (ignore SMSC)         Request SMSC Delivery Notifications         [ND] Non Delivery         SMTP Rules Management         Enable Special Mail Processing Rules         SMTP Rules File
Accounting Logfiles & Privacy Authentication & Filter Configuration Action Manager Ma Action Manager Ma SMS Actions Ma SMS Subscription	Integrated SMTP Service Configuration (do not use by default) Do not use windows SMTP service (use integrated smtp listener) Bind smtp listener to ip (empty = any) Listener Port 25

### SMS Reply / Mail <-> SMS

If you like to have this feature you can order at least 2 global reply numbers to your SMS Large Account, set the number in the modem config and enable this feature.



### Logfiles and Privacy

Set you logfile directory all the accounting and tracing logfiles will be stored in. In this directory a subdirectory will contain the trace logs from the services. This traces will be automatically removed after a definition time (see **Files and Directory Management**)

For first time setup please set the Communication Trace Detail to Verbose. In regular mode set it to Full.

For privacy reasons you can mask the destination phone numbers in the log and accounting files with trailing numbers of X. -> Set it to 4 if needed to hide the last 4 digits of the phone number.

After first time setup you should Enable the Hide Message In The Logfiles

UMGateway Configuration	
General Services & Statistics Pegistration / Information Files and Directory Management Alarming / Management SMS Dutgoing SMS Dutgoing MMS Dutgoing MMS Dutgoing MMS Incoming Chiterface Mail / SMTP Configuration and Handling Message Convert Advanced Dptions Mail <> SMS 2 Way Config	Logfiles / Privacy Configuration         Logfiles Directory         D:\umgateway\logs         Max. Loglines Buffer         Communication Trace Detail         250         Coffile creation period         New file every day         SMTP Service Logfile Config         SMTP Service Log Message Subject         SMTP Service Log Message File Size
Telnet HTTP / Web Modem TFTP / File Share Accounting Logfiles & Privacy Authentication & Filter	Privacy Protection ☐ Hide Message Text In The Logfiles Maskade Destination Numbers With x (077123xxxx) 0

### Authentication and Filter

Here you can define the complete accounting and user or domain specific configuration of the gateway. In filemode there is a unix style demo configuration file in the configuration folder you can adapt to the needs you have. See as well the document *Accounting, Filter and SMTP Rules* 

First time setup should be set to All Filters Off

General Services & Statistics Registration / Information Files and Directory Management Alarming / Management SMS Outgoing SMS Dutgoing SMS Incoming Payee Outgoing MMS Outgoing MMS Outgoing	Authentication, Accounting, Exception Handling Filter and Accounting Mode © All Filters Off C File Filter Mode C Database Filter Mode Configuration for File Filter Mode
Mail / SMTP Configuration and Handling Configuration and Handling Advanced Options Mail <> SMS 2 Way Config Telnet HTTP / Web	Configuration for Database Filter Mode

### SMS Interface Outgoing

Here you have to enter the information for the mobile service provider.
In the configuration below we set a new Swisscom Large Account.
You will get:

a Protocol Identifier (must be EMI / UCP not Premium)
a ShortID (normally 5 Digits)
a UCP Password (some combination of characters and digits)

One or two IP Adresses and Ports of the SMSC Inbound Proxy. If you get only one IP, please set the same ip and port ot both textboxes.

The Default originator often is set to the ShortID or a main phone number of the company. For example Swissom use: +41800800900

Please check the connections!

If the outgoing firewall, public ip and Provider inbound firewall are set correctly, you can send your first test sms from here.

UMGateway Configuration	
🚱 General	
Services & Statistics	SMS Protocol Outgoing Configuration
- 8 Registration / Information	Select SMS protocoll for mobile service provider
Files and Directory Management	SMS EMI UCP0x, UCP3x, UCP5x, UCP6x  Check SMS connections
Provider	Default originator display (24 digits / 11 alpha chars)
SMS Outgoing	98765 Send test sms (file queue)
SMS Incoming	
🔜 🔜 Pager Outgoing	EMI/UCP 50 Series Configuration
MMS Outgoing	SMS sending IP / host 1 (Main) port
MMS Incoming	91.220.77.212 7550
	SMS sending IP / host 2 (Failover) port
Configuration and Handling	91.220.77.111 7550
Message Convert	ShortID / Adoc
- 💼 Advanced Options	98765 EX Set SMS valid for 240 A Minutes (4 Hours
📲 Mail <-> SMS 2 Way Config	
	Advanced UCP Configuration
HTTP / Web	✓ Use UCP session Prot. (UCP-60) UCP60 password cust12345
XML / SUAP	
TETP / File Share	
Accounting	✓ Keep connection to SMSC always open
Logfiles & Privacy	✓ Use UCP30 session "keep alive" for keep open
Authentication & Filter	
🚆 📆 Database Configuration	Reply same TBN as received from the SMSC (for MD and delivery msg.)
🍕 Action Manager	Lise Node for outgoing Outgide managed IP (NAT)
Ma SMS Actions	

### MMS Interface (Incoming or Outgoing)

Here you have to enter MMS configuration the information for the mobile service provider. Same as for the SMS part.

If you enable the MMS Part you should use a separate maildomain for sending mms to the gateway. Example mail address: <number>@mms.you-company-mail-domain.local in this config page you only have to enter the domain prefix (mms.

UMGateway Configuration	
UMGateway Configuration General Services & Statistics Registration / Information Files and Directory Management Alarming / Management Provider SMS Dutgoing SMS Incoming MMS Dutgoing MMS Dutgoing MMS Dutgoing MMS Incoming MMS Incoming MMS Incoming MMS Incoming MMS Incoming MMS Incoming MMS Incoming MMS Configuration and Handling Mail / SMTP Mail / SMTP Mail / SMS P Mail / SMS P M M M M M M	MMS Outgoing and Incoming Configuration         Enable MMS Functions         MMS Service Provider Protocol Type         HTTP - MM7 Soap         MMS Provider Configuration         Destination Web URL / Pott (http://mms.host.int/sendmms:1234         http://bulk.mobile-gw.com:9990         Account Number (Orig.)         Account Login       Account Password         98765       customer         Use Web Proxy       Host proxy.domain.int
Telnet	MMS Processing Email Domain
	mms.
Modem	Process e-mail attachments and convert to MMS
Accounting     Logfiles & Privacy     Authentication & Filter     Detabase Configuration	Send MMS as normal sms if message text fit (Automatic switch to SMS mode)
I Database Congulation I Action Manager II SMS Actions II SMS Subscription	

## Windows specific Configuration

### Windows SMTP Mail Service

This component is the essential part that allows you to send and receive mails and sms to and from the gateway. This service must be proper configured to work without issues.

### **SMTP Configuration**

Start the IIS 6 Console



If it is not available please check the iis role services



Rename the Default smtp service to UMGateway



Properties -> Enable IIS LOG, select all properties and select place for the logfiles (Do not use the default place stored in Windows directory -> set to drive D:\)

Active log format:	
W3C Extended Log File Format	Properties

Set the <u>Messages</u> and <u>Delivery</u> as followed.

This is a proven good configuration for most situations. (You can also point the badmail directory to somewhere on d:\)



IMGatewa	y Prope	rties				? >		
General	Access	Messages	Delivery	LDAP Routin	ig ∫ Security	d i		
Outbound								
First re	etry interv	al (minutes):	E					
Secor	nd retry in	terval (minute	5					
Third	retry inter	val (minutes):	5		2			
Subse	equent rel	ry interval (m	5					
Delay	notificati	on:	1	Hours	•			
Expira	ition timed	out:	2	Hours	•			
Local								
Delay	Delay notification:				Hours	•		
Expira	ation timed	out:	2	Days	•			
Outbou	und Secu	rity	itbound co	nnections	Advan	ced		

### **Mail Routing Configuration**

Your applications can send directly to the gateway frontends (standard port 25).

To route mails from users to the gateway you can normally use mailserver internal functions (like smtp connector in exchange) or you can define an internal mail domain in dns (mx record pointing to the gateway).

On the gateway we have to setup the mail acceptance so the gateway receive and store the mails on the server.

Here you set the mail domains the gateway have to listen and process the messages for.

#### **Example Configuration**

The company internal mail domain is: SMS mails are routed to the gateway as: Priorized SMS mails are routed to the gateway as: MMS mails are routed to the gateway as: @company-mail.local
<number>@sms.company-mail.local
<number>@prio.company-mail.local
<number>@mms.company-mail.local

#### **Setup in SMTP Service**

Select the Domains node in the SMTP Service Configuration



→ Menu -> Action -> New -> Domain...

### Domain Type = Alias



#### Enter the process mail domain



Repeat for prio.company-mail.local, mms.company-mail.local

### **Firewall + Ports Overview**

To allow Load Balancer to access the gateway service ports for checking the internal state you have to allow the port 8000 to the load balancer.

If Windows firewall must be activated, please check the following ports are allowed for incoming and outgoing communications.

Port	Inbound / Outbound	Description
TCP 25	Inbound	Reveiving emails direct from application or via load balancer. This is the main message processing interface.
TCP 25	Outbound	Sending emails to mail relay or corporate mail server. Send content of received sms/mms, delivery-, state- and error-and alert-messages.
TCP 80 TCP 443	Inbound	Web service interface port. Asynchronous and synchronous processing of messages. SOAP, Generic, POST, GET
TCP <individual></individual>	Outbound	Service provider assigned ip/port for connecting messaging backend services (SMS, MMS, iO). The connection to this ip/port is restricted by the mobile service provider and only accept connections from contract defined source ip's.
TCP 8000	Inbound	Server service and statistics port. Can be used by the load balancer for optimizing message distribution and also by alert and monitoring tools.
TCP 1433	Outbound	Only for database mode installation. SQL Server Access.( DB server can be installed local on same server)

### SMS Adapter / GSM Modems

For legacy and classic 2-way-sms or sms-failback modes you can still use our SMS GSM Adapters. This Adapters are produced by the company iTegno, Siemens or Fasttrack and can be orders together with the gateway software. This Adapters are using SIM – Cards for sending and receiving sms.

To be more secure we removed the calling and data functions from the drivers of this products. This devices are no longer RAS or MODEM devices – it is now an gsm based sms receiving and sending adapter. The recommend hardware product is the iTegno USB SMS Adapter. It does provide a built in standard USB connector and does not require any external power supplies or antennas. If the iTegno device should be places in a server room, there is an easy way extending the USB cable up to 5m to reach a good position of the adapter outside the cabinet.