

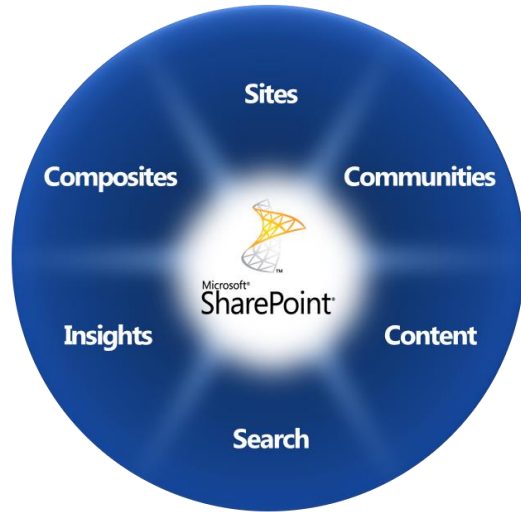
SharePoint, Exchange, Lync, OfficeMaster Gate

Fujitsu PRIMEFLEX reference architectures

Fujitsu PRIMEFLEX for SharePoint

- based on Microsoft SharePoint 2013 SP1
- on-premise solution
- designed for 250 SharePoint users

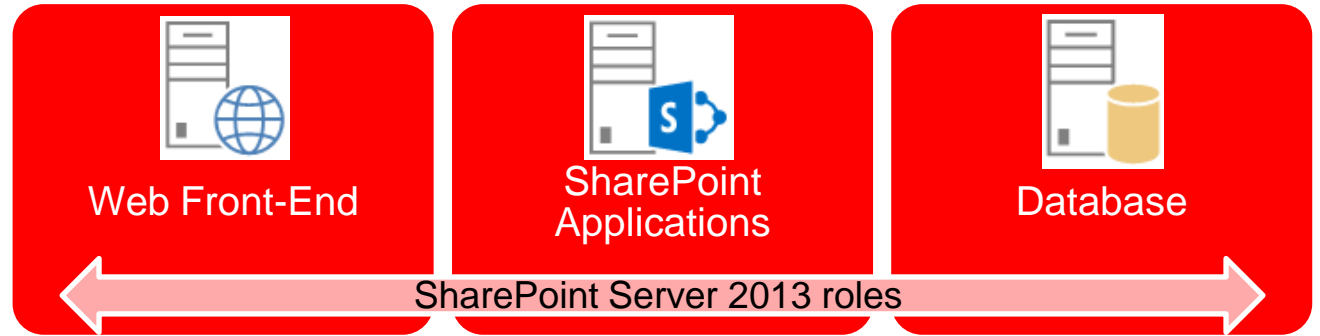
SharePoint Server 2013 features



Feature	Description
Sites	Access to information via websites. Different design options for Intranet, Extranet, and Internet.
Communities	Social networking in companies using wikis, blogs, team calendars and personal websites.
Content	Document management within defined communities
Search	Full-text search, search suggestions, automatic indexing
Insights	Preparation of SharePoint managed business information in charts and graphs
Composites	Interfaces to external data and business systems

SharePoint Server 2013 architecture

SharePoint Server 2013 roles:



SharePoint Server 2013 topologies:



PRIMEFLEX for SharePoint reference architecture

Two-tier architecture based on Hyper-V

PRIMERGY TX2540 M1

2x300 GB SAS HDD
RAID 1 - OS

4x300 GB SAS HDD
RAID 10 – SQL Datafiles

2x300 GB SAS HDD
RAID 1 – Logfiles

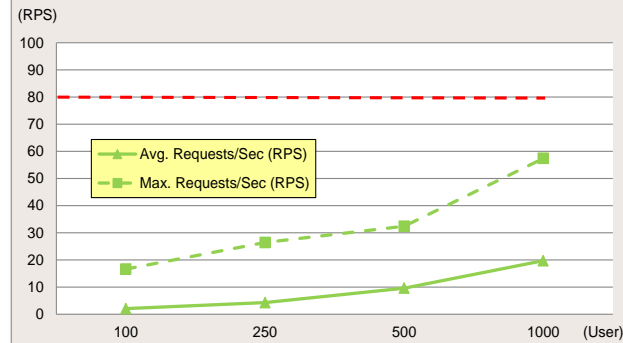
Hyper-V Host

VM 1
(SharePoint
Server)

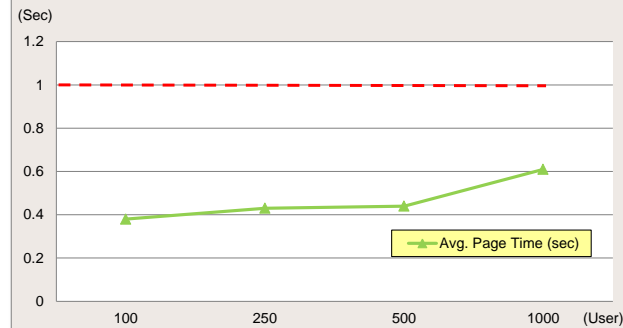
VM 2
(SQL Server
2014)

- 2 x Xeon E5-2420 v2 (6 cores, 2.20 GHz)
- 32 GB Memory
- 2 x 1Gbit LAN (onboard)
- HDDs via Cougar 3 RAID Controller:
 - 8 x 300GB (2.5" SAS 6G HDD 10k hot-plug)

RPS (Requests Per Second) on SharePoint Server



Avg. Page Time in seconds



PRIMEFLEX for SharePoint additional topics



- Sizing Guide for SharePoint Server 2013 environments
- Step-by-Step installation and configuration of...
 - SharePoint Server (application server & web server)
 - Database Server
- Monitoring and performance measurements
- Expandability
- Data security and backup

PRIMEFLEX for Exchange

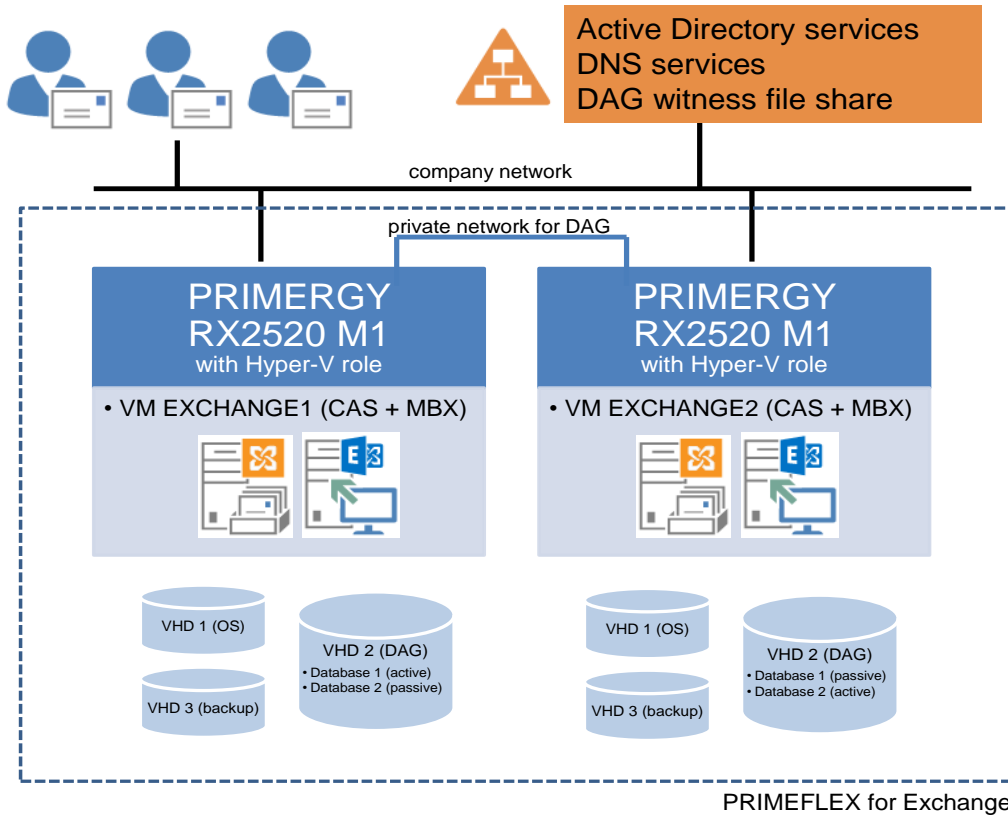
- based on Microsoft Exchange 2013
- on-premise solution
- designed for 500 Exchange users

PRIMEFLEX for Exchange Characteristics



- Exchange 2013 solution for up to 500 mailboxes (users)
- High availability via DAG (Database Access Group)
 - Group of Exchange servers with local disks – no shared storage
 - Each server: active mailbox database + replicated database copies from other servers
- Virtualized Exchange servers for flexibility
- Mailbox assumptions:
 - mailbox size limit 2000 MB
 - up to 200 sent or received messages per user per day

PRIMEFLEX for Exchange Architecture

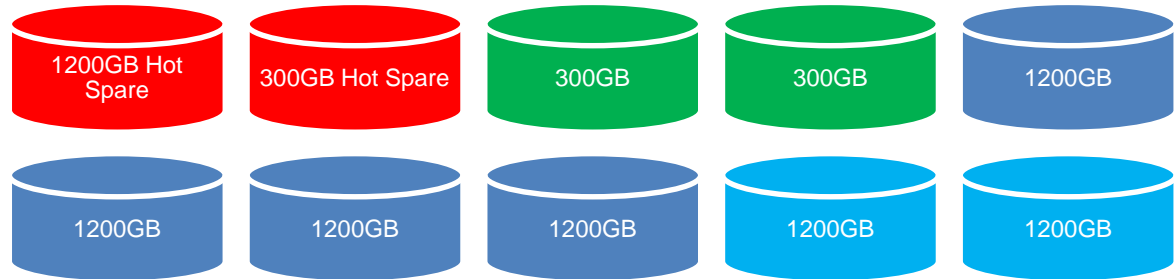


- 2 x PRIMERGY RX2520 M1
- DNS round-robin load balancing
- virtualized combined MBX and CAS server roles
- DAG based high-availability

PRIMEFLEX for Exchange Configuration

- Per PRIMERGY RX2520 M1 running Windows Server 2012 R2:
 - 1 x Xeon E5-2420 v2 (6 Cores, 2.2 GHz, 15 MB L3 Cache)
 - 36 GB Memory
 - 1 x 1Gbit LAN Controller dual-port (in addition to on-board LAN ports)
 - 10 x 2.5" SAS 6G HDD 10k Hot-Plug (via Cougar 3 RAID Controller)

10 SAS HDDs:
Hot Spares
OS RAID1
DAG Databases RAID10
Backup Space RAID1



PRIMEFLEX for Exchange Expandability



Limit	Upgrade Path
500 Users	PRIMEFLEX for Exchange as specified
1500 Users	Upgrade of both PRIMERGY RX2520 M1: <ul style="list-style-type: none">• 2 x Xeon E5-2470 v2 (10 Cores, 2.4 GHz, 25 MB L3 Cache)• 96 GB Memory in Performance Mode Installation• 1 x 1Gbit LAN Controller dual-port• 16 x 2.5" SAS HDD
2500 Users	DAG with 3 x PRIMERGY RX2520 M1 (upgraded configuration)
3000 Users	DAG with 4 x PRIMERGY RX2520 M1 (upgraded configuration)

- Step-by-step installation guide for
 - Windows server host with Hyper-V role (hypervisor)
 - Exchange server VM and Database Availability Group
- Sizing process with Exchange 2013 requirements calculator
- Stress test results and comparison to sizing assumptions
 - Jetstress 2013
 - Exchange Load Generator 2013
- Simple Exchange backups with Windows Server Backup
- Transition from previous versions to Exchange 2013

Fujitsu PRIMEFLEX for Lync

- based on Microsoft Lync Server 2013 Standard Edition
- on-premise solution
- designed for 1000 Lync users

Lync network requirements

■ QoS (Quality of Service) !

- Prioritization of Voice by all LAN endpoints (Switches w/ QoS required)
- Make use of the Lync feature: Call Admission Control (CAC)

■ Latency and bandwidth requirements !

- Monitoring of the LAN environment before implementing Lync

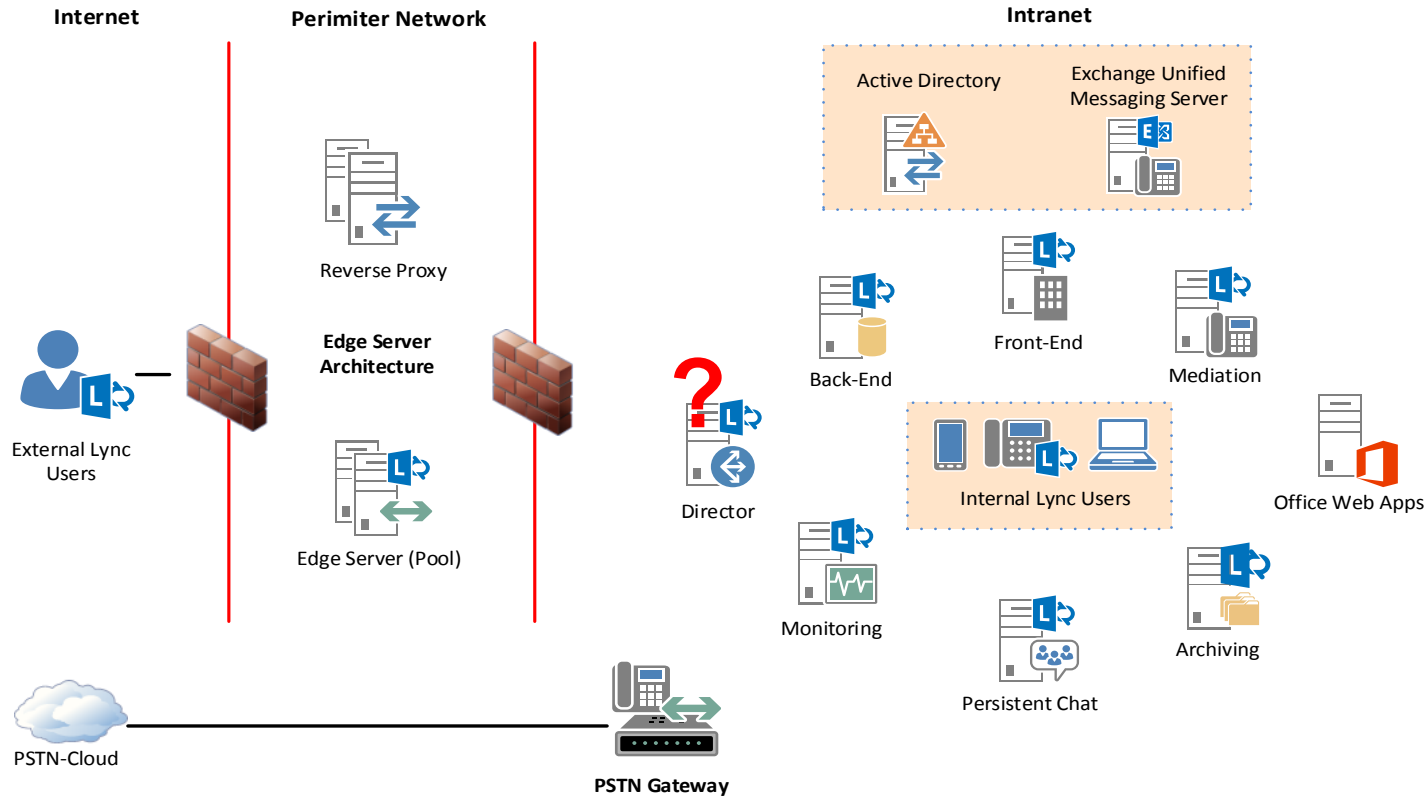
■ Perimeter network (DMZ)

- Is highly recommended when using Edge features (external Lync user)

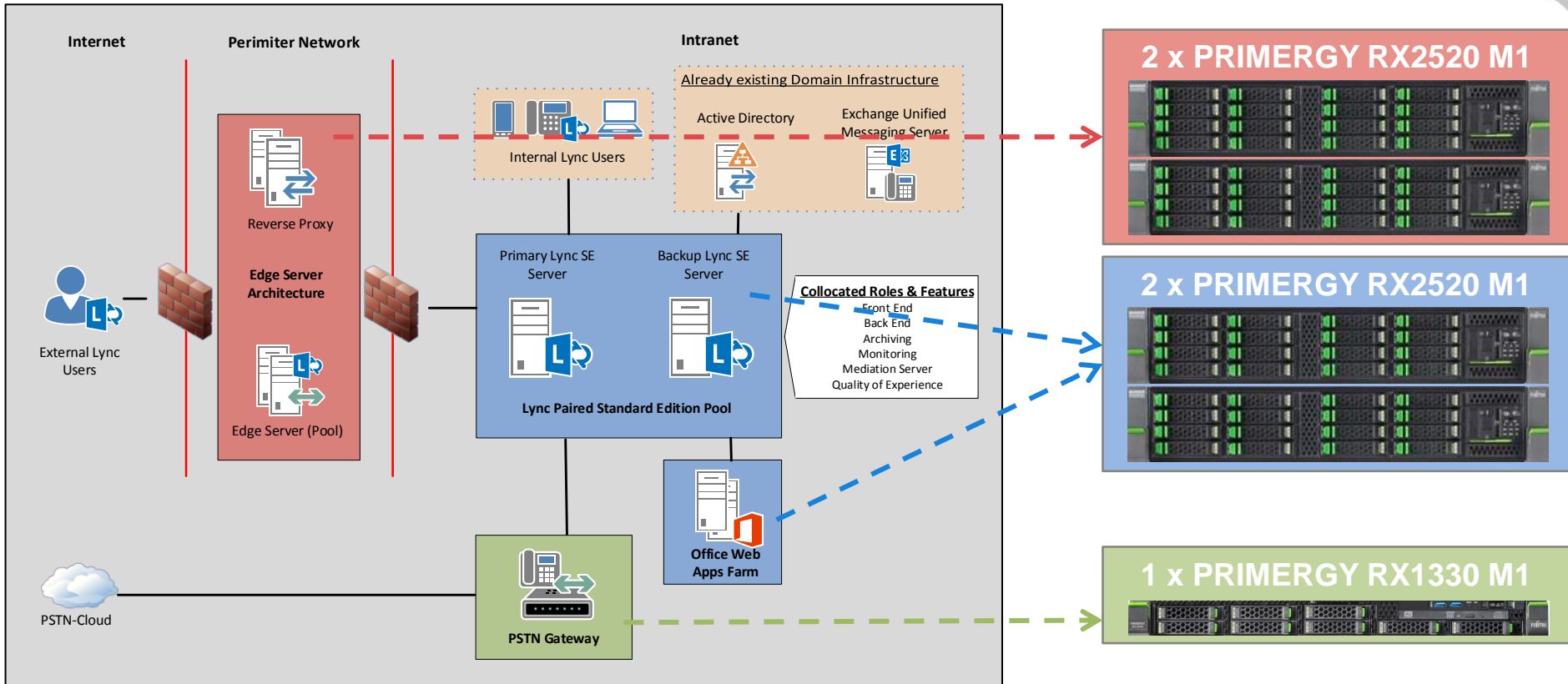
■ Active Directory

- Domain and forest functional level must be at least Windows Server 2003

Lync Server 2013 topology

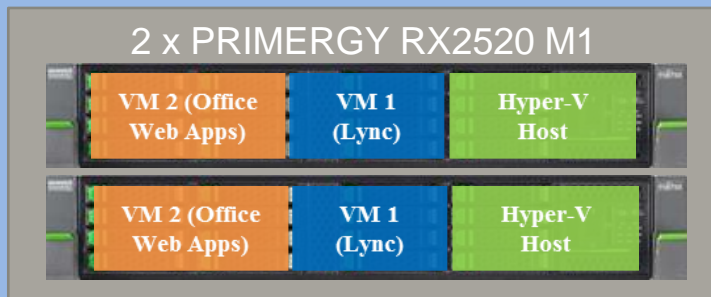


PRIMEFLEX for Lync reference architecture



Hardware configuration overview

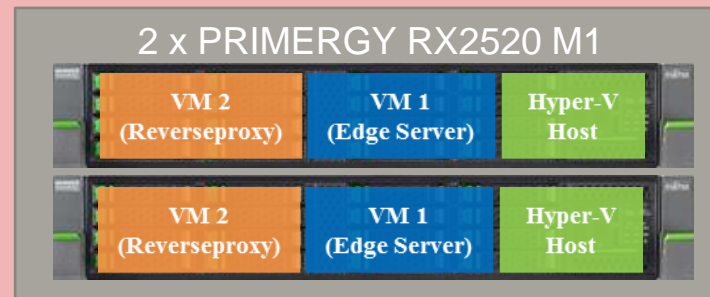
Lync SE Pool with OWA



Each:

- 2 x Xeon E5-2450 v2 (8 cores, 2.50 GHz)
- 48 GB Memory
- 2 x 1Gbit LAN (onboard) configured for NIC teaming
- HDDs via Cougar 3 RAID Controller:
 - 5 x 300GB (2.5" SAS 6G HDD 10k hot-plug)
 - 3 x 100GB (2.5" SATA 6G SSD hot-plug)

Edge Server architecture



Each:

- 2 x Xeon E5-2420 v2 (6 cores, 2.20 GHz)
- 24 GB Memory
- 2 x 1Gbit (onboard) + 2 x 1Gbit (PCIe adapter card) respectively configured for NIC teaming
- HDDs via Cougar 3 RAID Controller:
 - 7 x 300GB (2.5" SAS 6G HDD 10k hot-plug)

- Step-by-Step installation and configuration of...
 - Lync Paired Standard Edition Pool
 - Edge Server and Reverse Proxy
 - PSTN gateway (PRIMEFLEX for OfficeMaster Gate)
 - Enterprise Voice
 - Lync archiving and monitoring function
- Backup of Lync Server 2013
- HA and site resilience
- Expandability (more users or a branch office)

FUJITSU Integrated System PRIMEFLEX for OfficeMaster Gate

Four steps to connect Lync/Skype for Business with public switched telephone network



Step 1: Unwrap, connect, power on



Step 2: Insert license keys and let Lync/Skype for Business know the availability of PRIMEFLEX for OfficeMaster Gate



Use your unified communication!



FUJITSU

Ferrari
electronic

Appliance is deployed ex-factory

```
OMG boot menu

Default kernel
Previous kernel
Single user mode
Rescue system

Press [Tab] to edit options

Automatic boot in 3 seconds...
```

```
CentOS 6.6
```

```
Restarting..Shutting down [ OK ]emon:
Stopping atd: [ OK ]
Stopping httpd: [ OK ]
Stopping sshd: [ OK ]
Shutting down postfix: [ OK ]
```

```
OfficeMaster Gate

i) info
s) system commands
f) firmware update
c) change password
n) set temporary network address
d) disable firewall
m) switch expert mode on
r) Reboot
p) Poweroff
input:
```

- Box „ready to run“
- Software already deployed to disks
- 1. Power on
- 2. Booting
- 3. Restarting
- 4. Booting again
- 5. Ready

Check Network Configuration

```
OfficeMaster Gate

Status information for OPL400407
IP Address
IPv4-Address: 169.254.8.131
IPv6-Address:

resolv.conf
options attempts:1
options timeout:3

hosts
# automatically generated file
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
169.254.8.131 OPL400407 omcard

press any key to continue:
```

```
OfficeMaster Gate

Status information for OPL400407
IP Address
IPv4-Address: 169.254.8.131
IPv6-Address:

resolv.conf
options attempts:1
options timeout:3
; generated by /sbin/dhclient-script
search example.com
nameserver 192.17.1.2
nameserver 192.17.1.3

hosts
# automatically generated file
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
169.254.8.131 OPL400407 omcard

press any key to continue:
```

■ Check for network configuration

1. Select „i“ for info

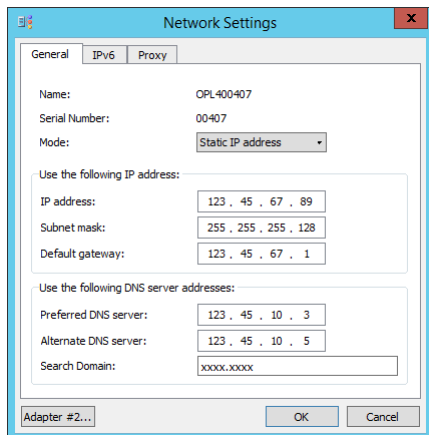
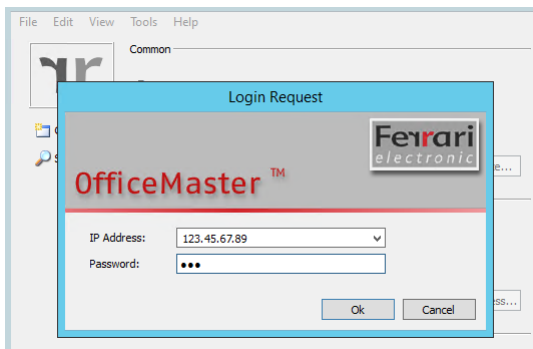
a) No DHCP address provided

- Select „n“ to set a temporary network address, netmask and gateway (**attention:** this settings are only valid until the next reboot!)
- Configure the network permanently (see next slide)

b) DHCP address provided

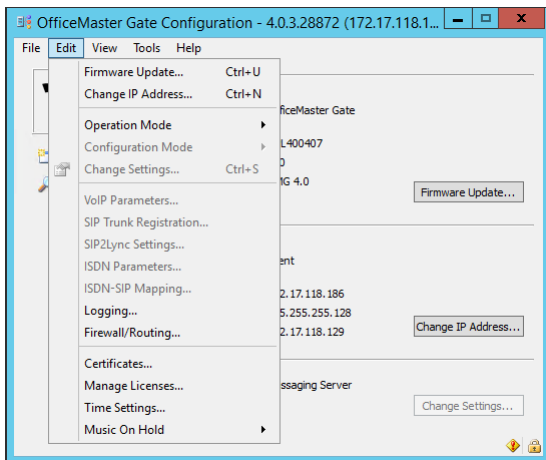
- Note the address for further use

Adapt Network to your environment



- If not already installed, download and install configuration tool from http://www.ferrari-electronic.de/fileadmin/download_center_org/OfficeMasterHardware/Setup-OfficeMaster-Gate-Config.exe (Make sure to use the configuration tool for changes!)
- Connect to the gateway using the IP address noted before (password is „omc“)
- Select „Change IP Address“
- Enter the correct IP configuration
- Press <OK> to save the settings

Complete SNMP settings



■ Fujitsu ServerView components e.g. SNMP are preinstalled

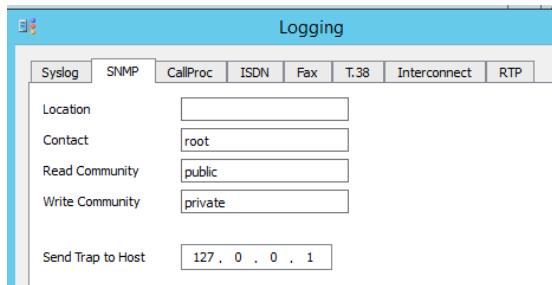
■ To receive SNMP traps, the configuration needs to be adjusted to your need

■ This is done by the configuration tool

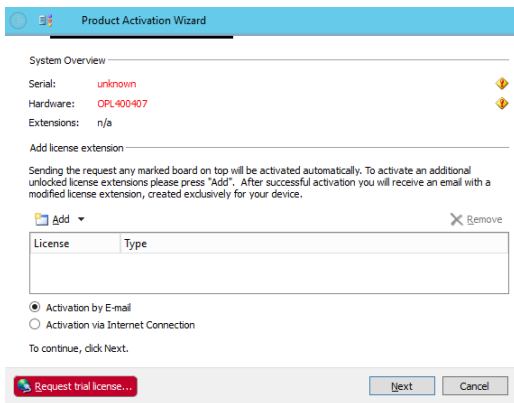
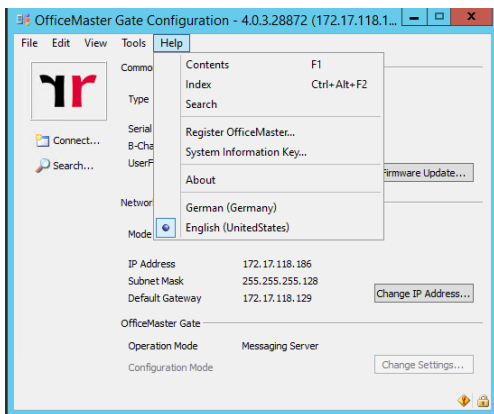
➤ Edit

➤ Logging

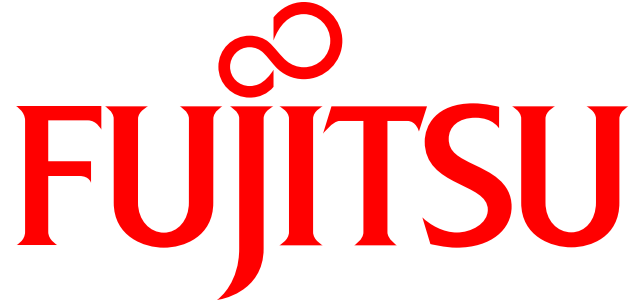
- enter the address of the management machine receiving the traps
- Enter other information as it is needed
- Press <OK> to save the changes



Activate/register and install your License



- OfficeMaster Gate needs to be registered
- This can be done with the configuration tool
 - Help
 - Register Office Master
 - In the „Product Activation Wizzard“ select the preferred method for your environment (by Email or by Internet Connection), press <Next> and complete the following forms
- Once you received the license file, it has to be installed with the configuration tool
 - Edit
 - Manage Licenses
 - Install



shaping tomorrow with you