Business

Business Essential.

Requirements v1.3.

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ODI-4884.16

1. Introduction.

This document describes the key network and software requirements for the ICT infrastructure of a fully functional Business Essential environment. It is intended for a scenario in which an existing Internet connection is used.

The following topics are covered:

- Network architecture.
- Requirements for landline phones.
- Applications and system requirements.
- Power over Ethernet (PoE).

Need help?

If you need help assessing whether your network meets the requirements, we'll be happy to help you. Please contact your account manager and request a network check.

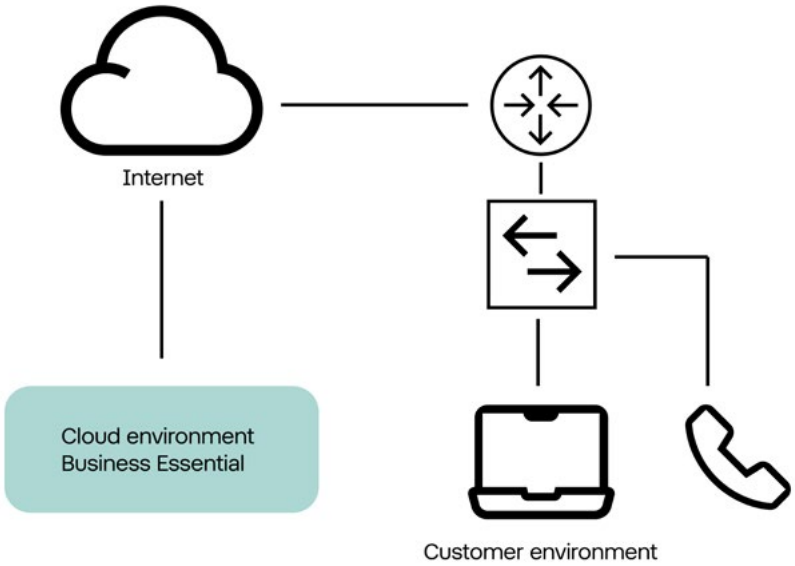
This document will help you check if your network is suitable for Odido's Business Essential. The key considerations are: sufficient bandwidth, suitable cabling, PoE for landline phones, correct firewall settings and disabling SIP ALG.



2. Architecture.

The hardware and software are accessed via your existing Internet connection. A connection to the public Internet is required.

For landline phones to function properly, certain network requirements must be met.



3. Requirements for landline phones.

For landline phones to function properly, certain network requirements must be met.

Cabling.

CAT5 cabling or better is required for Odido's Business Essential to function properly. The phones are connected using an RJ45 connector.

Power Over Ethernet (PoE).

The Mitel landline phones included in Odido's Business Essential portfolio must be powered via PoE.
Below is a table listing the phone models and their PoE requirements.

Phone type	PoE type required*
Mitel 6863 SIP Phone	IEEE 802.3af Class 1
Mitel 6865 SIP Phone	IEEE 802.3af Class 2
Mitel 6867 SIP Phone	IEEE 802.3af Class 2
Mitel 6869 SIP Phone	IEEE 802.3af Class 3
Mitel 6873 SIP Phone	IEEE 802.3af Class 3** IEEE 802.3at (recommended)

* Depending on the use of the phone. (e.g. additional modules).
** IEEE 802.3af Class 4 when using additional modules.

Mitel IP phones can optionally be supplied with a power adapter.

Network setup.

Phones must be assigned a network address via DHCP. The existing DHCP server must provide the necessary data for this:

DHCP option	Description	Example value
N/A	IPv4 IP address	For example: 192.168.22.25
Option 001	Subnet mask	For example: 255.255.255.0
Option 003	Default gateway	For example: 192.168.22.1

VLANs.

We recommend using VLANs for the phones so that voice traffic is separated from data traffic.

QoS.

Odido's Business Essential platform marks network traffic that contains voice, so that QoS can be applied in the customer's network. Please note: no QoS guarantees can be provided for using Business Essential. The default marking of voice packets is as follows:

Traffic type	L2 priority	L3 DSCP
Voice media	5	46
Voice signaling	3	26

Where possible, traffic should be prioritized based on IP address. The IP addresses used within the solution are listed in the Firewall configuration section.

Network health check.

Odido's Business Essential product specifies the following values as benchmarks.

Rating	End-to-end delay	Ping delay	Packet loss	Jitter
Good	< 50 ms	< 100 ms	< 0.5%	< 20 ms
Borderline	< 80 ms	< 160 ms	< 2%	< 60 ms
Unacceptable	> 80 ms	> 160 ms	> 2%	> 60 ms

Figure 1 - Source: Mitel Voice Quality Troubleshooting Guide.

Explanation.

- **End-to-end delay**: the delay between the landline phones.
- **Ping delay:** the delay in ping between two points. Because the traffic travels back and forth, this value is double the end-to-end delay.
- **Packet loss:** the maximum percentage of packets that may be dropped.
- **Jitter:** the difference in delay between different packets. This value describes the consistency of the data stream. The higher the value, the less consistent the delay. This can lead to jitter buffer underflow, causing calls to stutter.

Bandwidth.

In Odido's Business Essential VoIP solution, the G.711A codec is used for external calls. G.711A uses approximately 80 kbit/s of bandwidth. Since traffic, the network, and the WAN connection can vary in bandwidth due to overhead and other factors, we recommend allowing for 100 kbit/s per call.

Firewall configuration.

For landline phones and softphones to function properly, the following ports and IP addresses must be open.

IP port number	Transport	Function
53	UDP	DNS
80	TCP	HTTP
123	UDP	NTP
443	TCP	HTTPS
9443	TCP	HTTPS
5061	TCP	SIP/TLS
5060	TCP	SIP/TCP
5060	UDP	SIP/UDP
5060	UDP	STUN
49152–65535	UDP Range	RTP/RTCP

IP addresses.

The phones and applications connect to the following addresses:

Destination	Address
Telepo telephony servers	essential.odido.nl 195.54.39.17 – 195.54.39.65 83.143.190.34 – 83.143.190.39 81.85.61.0 – 81.85.61.24
Mitel-Aastra RCS for provisioning landline phones	rcs.aastra.com
Mitel-Aastra NTP server	1.aastra.pool.ntp.org

SIP ALG.

SIP ALG must be disabled on the router and/or firewall. SIP ALG and similar protocols manipulate the SIP signaling used by Odido's Business Essential. This can cause voice issues.

4. Applications.

Odido's Business Essential offers applications for smartphones and PCs. Please take account of the requirements for the operating system on which the applications are installed.

Telepo client.

System requirements.

Functionality	Windows	Apple macOS	VDI, for example Citrix	Android	iOS
Desktop client	Windows 8, 8.1, 10	Sierra, High Sierra	No	N/A	N/A
Web client	Windows 7 or later	OS X 10.11 El Capitan	No	N/A	N/A
Mobile client	N/A	N/A	N/A	Android 5.0, 6.0, 7.0, 8.0	iOS 10, 11, 12

Browser requirements.

Functionality	Google Chrome	Firefox	Chromium-based, e.g. Brave	Microsoft Edge	Internet Explorer
Desktop client	90.0.4430	Firefox 74	Yes	No	No

Firewall configuration for the web client.

For the web client to work properly, the following IP addresses must be open.

Destination address	Service	Range
185.39.124.98	HTTP	80
185.39.124.98	HTTPS	443
185.39.124.98	UDP, RTP	10000–64919
185.39.125.98	HTTP	80
185.39.125.98	HTTPS	443
185.39.125.98	UDP, RTP	10000–64919

81.85.61.0 – 81.85.61.24

5. Checklist.

Checkpoint	Required or recommended	Complete
Internet connection available	Required	☐
CAT5 cabling or better	Required	☐
PoE available for landline phones	Required / depending on phone	☐
DHCP available	Required	☐
SIP ALG disabled	Required	☐
Firewall ports open	Required	☐
100 kbit/s available per concurrent call	Recommended value	☐
VLAN configured for telephony	Recommended	☐

Questions? We're here to help.

Odido Service: Odido.nl/zakelijk/service

Chatbot Izzi: Odido.nl/zakelijk/service

Our chatbot Izzi will answer your questions right away. If you can't work it out together, an Odido employee will take over.

Mijn Odido: Odido.nl/zakelijk/login

Looking for your login details or want to view your details? You can do it all in Mijn Odido.

Call us:

Questions? Ask away! Your Odido contact is more than happy to help.