Crave Interactive

WiFi and Network Requirements

Version: 1.0
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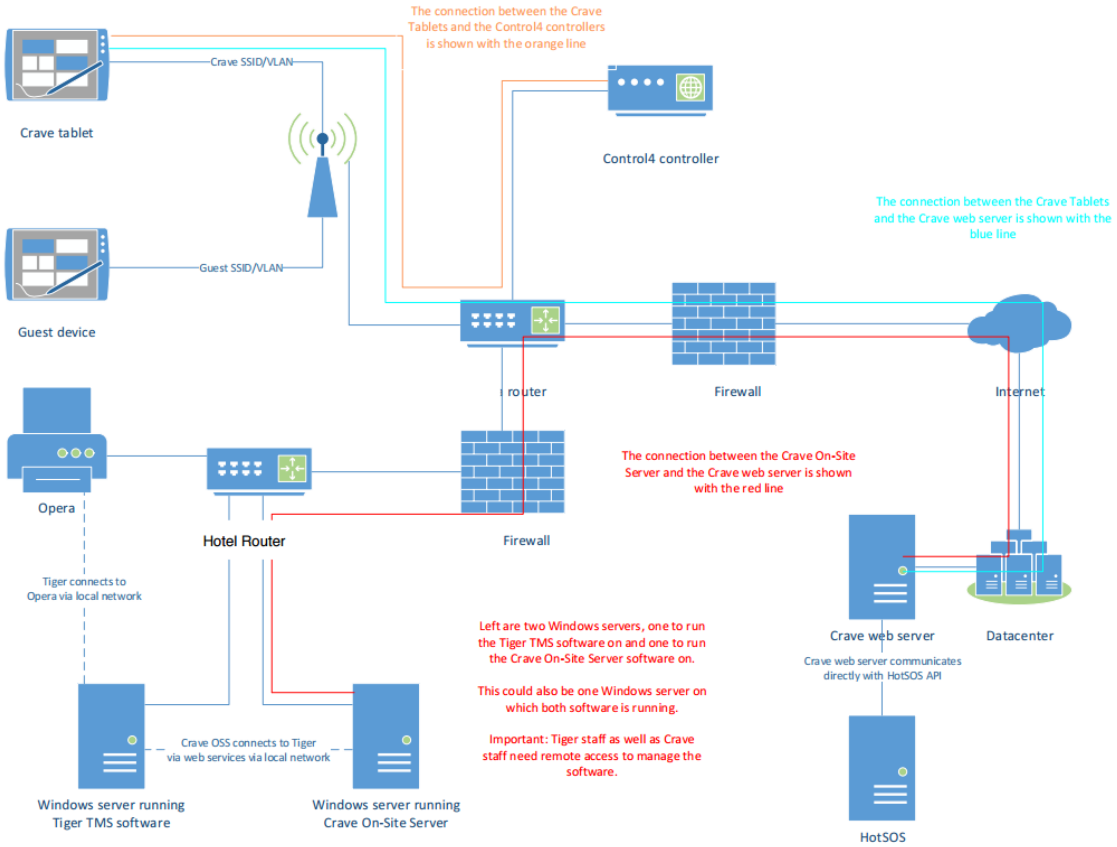
1. Purpose

This purpose of this document is to provide an overview of the Crave platform and associated requirements for all networks looking to host Crave Tablets.

2. Overview of Crave Platform

The Crave platform consist of a back end (Crave Cloud and Crave Web Server) and front end (Crave tablet). Communication between these components is handled via the internet using Http and Https protocols.

Integrations with third party solutions utilises various methods depending on the integration type and might require specific rules to be added to hotel network. Please see the image below for a typical complex installation that includes integrations.



3. Requirements Overview

Wi-Fi/Network component	Minimum Requirements	Optimal Requirements
Wi-Fi Standard	2.4Ghz (802.11b/g)	5Ghz (802.11a)
Crave Specific SSID	Yes	Yes
SSID Broadcast	Yes	No (Hidden SSID)

Network Security	WEP	WPA2/PSK
Crave SSID coverage	Whole hotel	Whole hotel
DHCP server required	Yes	Yes
Required IP addresses	1 per installed Crave device + 10% spares	1 per installed Crave device + 10% spares
Lease time	1 day	7 days
Minimum download speed*	8Mb/s	12Mb/s
Minimum upload speed*	2Mb/s	3Mb/s
Internet access	Yes (Http; Https)	Yes (Http; Https)
Data prioritization on Crave Network	No	Yes
Access to hotel internal networks	Depending on integrations	Depending on integrations

4. WiFi and Network Requirements in Detail

Every Crave device connects to a Wi-Fi network within the hotel. In order to ensure the best experience for the guests, the following settings should be applied.

5.1 WiFi Standard

There are different Wi-Fi standards in existence. One of the main differences between them is the broadcasting frequency. Standard 802.11b/g utilises 2.4 GHz and Standard 802.11a utilises 5 GHz.

Although Crave's tablets can operate on both frequencies the preference is to use the 5 GHz Wi-Fi broadcast as it provides higher stability to the connection.

2.4 GHz networks are often very congested by data traffic since every Wi-Fi device can utilise this frequency and because there are fewer available channels that can be used. Use of combined 2.4 GHz and 5 GHz network is not recommended as this practise can cause communication instability.

5.2 Crave Specific SSID

Creating a specific Crave SSID on the hotel network is best practise and has many benefits:

- Security and guest privacy and data protection is enhanced.
- Hotel network maintenance and necessary changes can be done centrally and propagated easily.
- Network speed and data priority can be adjusted to provide best experience.
- Setting up new devices or replacing broken devices is easy for hotel staff since the configuration is the same throughout the hotel.

- When setting up the Crave SSID, weaknesses are often found in the current setup such as a rogue AP that would normally not be recognized.

5.2 Hidden SSID

Using a Hidden SSID is preferred practise. We believe that hiding the network from the guest removes any frustration relating to the fact that they cannot use it with their own devices. It also prevents most guests from attempting to connect to the network and cause unnecessary traffic.

5.3 Network Security

The Crave system can utilise any of the standard security methods, however the preferred method is WPA2/PSK for the security level it provides.

Other compatible security methods are:

- None (open network) - this can work with MAC authentication
- WEP
- 802.1x EAP

5.4 Crave SSID Coverage

The Crave SSID should cover all guest rooms with sufficient signal quality for stable a connection (-80db minimum). In addition, the Crave SSID should be available in all areas of the hotel, including back of house locations where the Crave Consoles might be installed such as the Spa or In Room Dining area.

5.5 DHCP Server Requirement and Setup

The Crave network requires a DHCP server. Crave Tablets are set to obtain IP address and related settings from the DHCP server, which should be setup as follows:

- IP Addresses: Enough addresses needs to be procured. The total amount of necessary IP addresses is determined by the amount of installed Crave Tablets (Number of Crave In room Tablets + Number of Staff Consoles) + 10% for replacements.
- Lease Time: Optimal setting is 7 days. Minimum 1 day.
- Client Isolation is a preferred setting to enhance security.
- MAC authentication / IP reservation is not required by Crave. Some hotels prefer this method to add another layer of security .

5.6 Internet Access

Internet access needs to be allowed for any device on the Crave network. Crave uses Http and Https as methods of communication.

If the internet connection is lost, Crave devices will remain running in “kiosk” mode. This mode enables guests to browse the content but guests will not be able to place orders or receive messages.

5.7 Minimum Network and Internet Speeds

Usual communication such as sending orders and messages between Crave Tablets and the Crave Cloud does not use too much data. However there are maintenance tasks such as updating content and software that require a larger volume of data to be received in short period of time.

The optimum speeds of the network varies depending on the size of the hotel but generally, we consider 8 Mb/s as the minimum speed for Crave network. Optimum is 12 Mb/s and higher.

Minimum download speed on start per newly installed device is 240KB/s.

Minimum download speed on start for previously prepared device where data is already stored is 200KB/s per device.

NOTE: These speeds are required for limited time only while the device is being loaded. Once the device is running it only creates a small amount of traffic.

Idle usage requires a stable upload as well as download speed. Required speed is 1KB/s per device with a maximum of 60KB/s per whole installation.

NOTE: The Crave system is created in such a way that all bandwidth heavy actions are carried out in a staggered way to minimise the impact on hotel network.

Connection speed	240KB/s	500KB/s	1MB/s	2MB/s
Crave Emenu	55 s	26 s	13 s	9 s
Crave Support Tools	17 s	10 s	7 s	5 s
Crave Agent	13 s	9 s	6 s	4 s
Crave OS	25 m	12 m	6 m	180 s
Media Download	125 s	65 s	32 s	17 s
Menu Download	50 s	25 s	13 s	9 s
All data Download	180 s	90 s	45 s	23 s

5.8 Data Prioritization for the Crave Network

Data priority can be utilised on the Crave network. This is not a requirement but providing priority for communication with the Crave Cloud can enhance the stability and guest experience. This is especially useful if the available bandwidth is very limited.

5.9 Integrations

Crave can integrate with many 3rd party systems like PMS, POS or Room automation. Depending on the integration, certain network rules must exist to allow communication between the systems. Usually this means that the Crave network needs to have access to the 3rd party system server and that certain ports have to be opened for the communication.

5. Conclusion

Requirements mentioned above should be achievable for most hotels with their current Wi-Fi and network infrastructure. These changes are in the majority of cases easy to implement. Your Crave Project Manager and Crave Engineer will work together with hotel IT on implementation of the requirements.

If you have any questions or require further advice, please contact the Crave Customer Support team.

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