

Masternaut (UK) LTD

Virtual Earth Configuration



masternaut
mobile resource management

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1. Introduction

This document details network changes that may be required in a highly-secured network environment to allow use of Masternaut's "advanced mapping" technologies.

2. Target audience

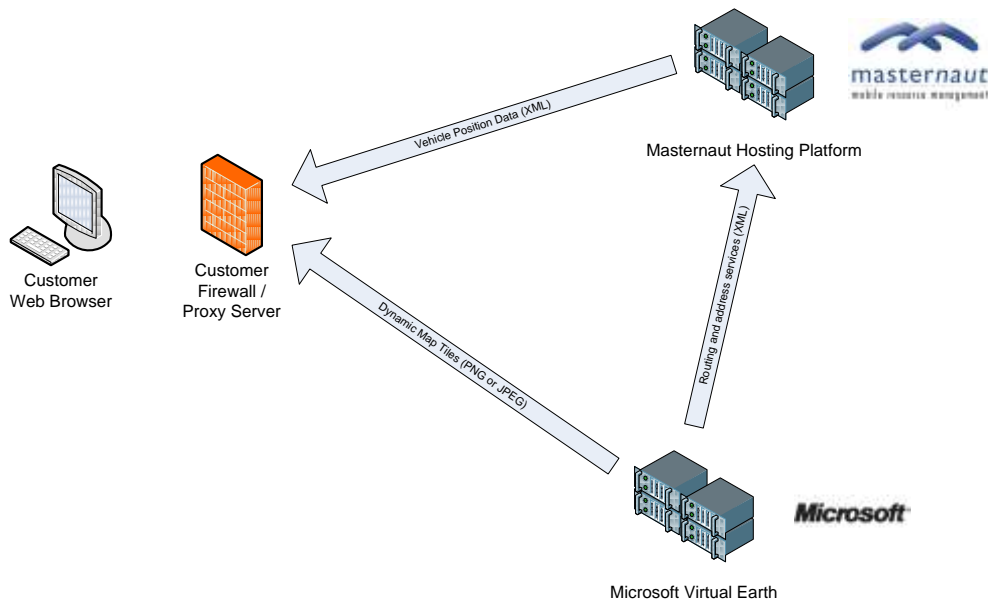
This document is targeted at IT implementers, decision makers and support staff.

3. Technical Details

Masternaut's website makes extensive use of Microsoft's Virtual Earth platform to delivery advanced mapping services to end users. This includes:

- Dynamic, real-time vehicle mapping
- Aerial mapping of vehicle locations
- Route calculation
- Location address determination

These services are split, with some being accessed directly from Masternaut's solution platform, while others are accessed directly from the client browser, as shown below:



4. Required network configuration

To access and use services hosted on Masternaut's hosting platform, it is important that firewall and/or network proxy rules are in place on the client firewall / proxy server to permit access to both Masternaut's servers and Microsoft's Virtual Earth servers.

4.1. Network Ranges required

| Service | Networks | IP Range | Owner |
|---|------------------------|--------------------------------------|------------|
| Masternaut website | 62.25.126.32/27 | 62.25.126.33 - 62.25.126.62 | Masternaut |
| | 94.247.152.0/21 | 94.247.152.1 - 94.247.159.254 | |
| | 195.200.139.208/28 | 195.200.139.209 - 195.200.139.222 | |
| Microsoft Bing As previously called Microsoft Virtual Earth | 64.4.18.0/24 | 64.4.18.1 - 64.4.18.254 | Microsoft |
| | 65.54.66.0/24 | 65.54.66.1 - 65.54.66.254 | |
| | 65.54.68.0/24 | 65.54.68.1 - 65.54.68.254 | |
| | 65.54.71.0/24 | 65.54.71.1 - 65.54.71.254 | |
| | 65.54.72.0/23 | 65.54.72.1 - 65.54.73.254 | |
| | 65.54.74.0/23 | 65.54.74.1 - 65.54.75.254 | |
| | 65.54.77.64/27 | 65.54.77.65 - 65.54.77.94 | |
| | 65.54.78.0/23 | 65.54.78.1 - 65.54.79.254 | |
| | 65.54.80.0/20 | 65.54.80.129 - 65.54.95.254 | |
| | 65.55.82.0/23 | 65.55.82.1 - 65.55.83.254 | |
| | 65.55.84.0/24 | 65.55.84.1 - 65.55.84.254 | |
| | 65.55.86.0/23 | 65.55.86.1 - 65.55.87.126 | |
| | 65.55.119.0/24 | 65.55.119.1 - 65.55.119.254 | |
| | 65.55.150.0/23 | 65.55.150.1 - 65.55.151.254 | |
| | 65.55.168.0/23 | 65.55.168.1 - 65.55.169.254 | |
| | 65.55.241.0/24 | 65.55.241.1 - 65.55.241.254 | |
| | 65.55.242.0/25 | 65.55.242.1 - 65.55.242.126 | |
| | 70.37.128.0/21 | 70.37.128.1 - 70.37.135.254 | |
| | 70.37.131.0/24 | 70.37.131.1 - 70.37.131.254 | |
| | 70.37.132.0/23 | 70.37.132.1 - 70.37.133.254 | |
| | 70.37.142.0/23 | 70.37.142.1 - 70.37.143.254 | |
| | 70.37.147.0/24 | 70.37.147.1 - 70.37.147.254 | |
| | 70.37.148.0/24 | 70.37.148.1 - 70.37.148.254 | |
| | 70.37.159.0/24 | 70.37.159.1 - 70.37.159.254 | |
| | 94.245.65.0/24 | 94.245.65.1 - 94.245.65.254 | |
| | 94.245.66.0/23 | 94.245.66.1 - 94.245.67.254 | |
| | 94.245.68.0/22 | 94.245.68.1 - 94.245.71.254 | |
| | 94.245.75.0/24 | 94.245.75.1 - 94.245.75.254 | |
| | 94.245.76.0/24 | 94.245.76.1 - 94.245.76.254 | |
| | 94.245.78.0/24 | 94.245.78.1 - 94.245.78.254 | |
| | 94.245.80.0/24 | 94.245.80.1 - 94.245.80.254 | |
| | 202.89.228.0/23 | 202.89.228.1 - 202.89.229.254 | |
| | 202.89.231.0/24 | 202.89.231.1 - 202.89.231.254 | |
| | 202.89.233.0/24 | 202.89.233.1 - 202.89.233.254 | |
| | 207.46.56.0/23 | 207.46.56.1 - 207.46.57.254 | |
| | 207.46.61.0/24 | 207.46.61.1 - 207.46.61.254 | |
| | 207.46.68.0/24 | 207.46.68.1 - 207.46.68.254 | |
| | 207.46.70.0/24 | 207.46.70.1 - 207.46.70.254 | |
| | 207.46.71.0/24 | 207.46.71.1 - 207.46.71.254 | |
| | 207.46.136.0/23 | 207.46.136.1 - 207.46.137.254 | |
| | 207.46.140.0/24 | 207.46.140.1 - 207.46.140.254 | |

| | |
|-------------------------------|--|
| 207.46.28.128/25 | 207.46.28.129 - 207.46.28.254 |
| 207.46.159.128/25 | 207.46.159.129 - 207.46.159.254 |
| 207.46.164.128/25 | 207.46.164.129 - 207.46.164.254 |
| 213.199.148.0/23 | 213.199.148.1 - 213.199.149.254 |
| 213.199.156.0/23 | 213.199.156.1 - 213.199.157.254 |
| 213.199.158.0/24 | 213.199.158.1 - 213.199.158.254 |
| 213.199.172.0/23 | 213.199.172.1 - 213.199.173.254 |
| 213.199.178.0/23 | 213.199.178.1 - 213.199.179.254 |
| 213.199.181.0/24 | 213.199.181.1 - 213.199.181.254 |
| 213.199.185.0/24 | 213.199.185.1 - 213.199.185.254 |
| xxx.xxx.xxx.xxx/xx | Valid before and after 09/11/2009 |
| xxx.xxx.xxx.xxx/xx | Valid only after 09/11/2009 |
| xxx.xxx.xxx.xxx/xx | Valid only before 09/11/2009 |

4.2. Required Services

Because Masternaut's solutions use industry standard protocols and services, the only services required are:

| Service | Protocol / Port | Usage |
|---------|-----------------|-------------------|
| HTTP | TCP:80 | Web access |
| HTTPS | TCP:443 | Secure web access |

4.3. Required Hosts

If your proxy server requires configuration of hostnames, use the following wildcarded list:

| Service | Hostname | Owner |
|---------------|--|------------|
| Masternaut | *.masternaut.co.uk *.greenerfleet.co.uk | Masternaut |
| Virtual Earth | *.virtualearth.net | Microsoft |