

Vertigo's Running Dedicated Server HOWTO (v1.2)

1. Overview

This document will describe the configuration details about running a megamek dedicated server in a MegaMekNET campaign setting.

This document covers version group 0.3xxx of MegaMekNET.

2. Hosting and dedicated server

Running an host and running a dedicated server are basically the same task: let MegaMekNET players fight their battles in a client/server environment. But there are practical difference between the two concepts:

- 1) "Hosting" a game means launching a game server program from within the MegaMekNET client program. Makes no difference whether you will then join your own host, load a previously saved game, or start a new game. The "hosting" happens when you create a game server from within a regular player account.
- 2) "Dedicated server" (or "ded" for short) is an ad-hoc account whose only reason to be is to host games for other players. It has its own configuration (different from regular account ones), can be controlled by the means of remote commands, and doesn't create a graphical user interface when it's launched.

3. How to start a dedicated server

A dedicated server is simply an account that doesn't create a graphical interface. So it's started exactly like you'd start your own account. I suggest you to copy the entire MegaMekNET package (or link the content of your installation – except config – if you're using a *nix operating system like Linux) in a new directory, edit the "config.txt" file, and start the ded from there, as if you're starting your normal client.

4. How to host or run a ded behind a firewall/router

The basic concept needed for running a game server (both hosting and ded) is to accept incoming TCP data streams toward your machine.

It is beyond the scope of this document to teach you the basics of TCP/IP networking. You can find a decent book describing this kind of networks in any bookstore, for any price.

If your machine has a publicly reachable address, there's no problem in hosting/running a ded. If you already run other servers (web or FTP servers, for example), then your machine is probably already configured to host your games.

If your machine is behind a firewall, a router, or other masquerading device that "hides" your real address, you need to reconfigure your device so to let incoming connections reach the "internal" machine rather than stopping at the external device.

The key for such task is "port forwarding": everytime a connection is attempted on your configured listening port, the routing device won't take that connection "for itself", but instead will forward the connection, and the data therein, to the hosting/ded machine that "hides" behind the device.

In the Appendix D, I provide a graphical description of this process.

The details on how to reconfigure your firewall, your router, your NAT/masquerade device depend heavily on the nature of the equipment you're using. In the device user manual, you should look for "port forwarding" and how to forward incoming, external connections toward an internal, otherwise unreachable machine. In the Appendix A, B and C, I provide some hints.

IMPORTANT NOTE: hosting and running a ded server is almost ALWAYS possible, no matter your network configuration. It might be complex to setup, but there are really few cases in which you're prevented from hosting at all; only when you cannot directly access and reconfigure your network devices (e.g. if you play from a campus where the network admins can't/won't help you) you're prevented from hosting your games.

5. Configuration details for dedicated servers

A ded is controlled statically by the file "config.txt", just like your normal account does. However, most of the configuration keywords are exclusive to the ded environment, and some of them might prevent it from working correctly. Here's a list of the configurable keywords, a brief description, and sensible suggested value:

Keyword	Description	Suggested
IP	The IP address of your machine	If behind a firewall, set it to "127.0.0.1"; otherwise, you can leave it commented
PORT	The listening port of your ded server. Remember that if you want to host, as well as to run ded, this value has to be different from the one of your account. In case of port forwarding, <u>this</u> is the port to forward	Any value in range 2340-2350 is ok. 2345 is sensible if you plan to run only one server, besides your own client
DEDICATED	Switch to enable dedicated mode	"YES", of course!
DEDICATEDOWNER	List of comma separated account names who can send commands to the server. If you leave it blank, anyone can send commands to your ded from the chat environment	A list of trusted accounts (remember to include your one). If not empty, it <u>MUST</u> include all mods and admins!
DEDICATEDCOMMANDPREFIX	The prefix for the commands sent to the ded	A short string, easy to remember, possibly noted in the ded comment, and unique of your ded. DO NOT LEAVE IT BLANK!
DEDICATEDRESTARTMESSAGE	A string to restart the server directly from the chat	(Deprecated - leave blank)
DEDICATEIDLE	Switch to enable the ded to print its message periodically on chat. The message is repeated approximately once every hour	"NO" to reduce noise; "YES" if you want your server to print the idle message
DEDICATEDIDLEMESSAGE	The message for the above setting	A public message (no profanity allowed!), you want broadcasted
SERVERIP	IP or host name of the master server you want to use your ded on	Any public MegaMekNET master server address. Leave default for McWizard's 3025 server. Other IP and names can be found on the site forums
SERVERPORT	Port for above server	"2347"

Keyword	Description	Suggested
NAME	The name of your server. It doesn't need to be registered. It will have "[Dedicated]" automatically prepended, so don't add such a prefix	Anything not already registered
NAMEPASSWORD	The password for your ded. Since you won't register its name, anything goes	Anything; avoid to use the same password as your main account
COLOR	The color of the ded name in chat	Anything. Avoid bright colors like "yellow"
MAXPLAYERS	The max number of players you allow on your server	"4" or more. You must always keep a free spot for mods/admins to check your games
TIMESTAMP	Switch to add timestamps to chat messages	"NO"
COMMENT	The comment string as it will appear in the "Battles" tab	Up to you, but should contain the prefix, and possibly the owners list

6. Chat commands

At any time, you can send a public message in chat or a private message to any ded, and if:

- you prefix the command with that ded's prefix,
 - you are on that ded's owner list, or that ded has a blank owner list,
- you will be able to give commands to the ded itself.

If you don't know the prefix of a ded, you can type "prefix" (single word, all lowercase) in the chat:

[11:20] Vertigo [M]: prefix

and all those ded's that have your account in their owner list, or have a blank owner list, will send you (in private) their configured prefix:

[11:21] Private Mail: [Dedicated] DedSrv: My command prefix: "XYZ"

Here follows the list of commands you can then send to ded's (taken from <http://www.megamek.com/mmnet/CampaignCommands.txt>):

Open commands (needing no prefix):

prefix	If you send this in a private mail to a Dedicated it will tell you its prefix
<restartmsg>	Restarts the dedicated. <u>Deprecated!</u>

Prefixed commands (needing the prefix):

restart	Restarts the dedicated (like closing the server and reopening it)
reset	Resets the game server (like entering "/reset" directly inside the game server)
die	Kills the dedicated: it quits the chat environment
start	Re-enables connections on a stopped server
stop	Stops a dedicated from accepting connections
restartmsg	Returns (via PM) the actual restartmsg
owners	Returns (via PM) the actual owner list, if any
owner <name>	Temporarily adds a new owner to the owner list
restartmsg <newmsg>	Temporarily sets a new restartmsg
prefix <newprefix>	Temporarily sets a new prefix
port	Returns (via PM) the actual listening port
port <newport>	Temporarily sets a new listening port
ping	Returns (via PM) the actual Idle Message
loadgame	Loads "autosave.sav" from ded's disk
loadgame <filename>	Loads "filename" from ded's disk

For example, let's imagine you were fighting on a ded, but your opponent had to leave and you agreed to continue the game later. In the game server you issued the command:

/save myfight.sav

so to save your game on ded's disk. You can use any name you want, in this case "mygame.sav". Be sure not to use "autosave.sav", because it will be overwritten by anyone else playing on same server. Let's imagine the ded you were playing on has "PREFIX" as its prefix, and its name is "MyDedSrv". You will give this command to reload your game:

/mail [Dedicated] MyDedSrv,PREFIXloadgame myfight.sav

(Notice there's no blank space between the prefix and the command.) The server will load your saved game, and will send you a private confirmation message:

[11:30] Private Mail: [Dedicated] MyDedSrv: Saved game loaded.

You can then resume your game on “MyDedSrv”, by joining that ded.

Note: the EXACT players (also observers!) connected to the server at the time of saving the game have to reconnect to the ded server. For this reason, be sure to save your game when there are only the two fighting players connected.

Furthermore, if you don't have permissions to issue commands to a ded, ask the owner, or any available mod online. Usually they can load your game for you.

7. Rule extension on dedicated servers

It is forbidden to tinker in any way (by resetting, killing, loading savegames, etc.) with a ded server that's actually hosting a match, even if the owner list is empty or if you are in the owner list of that ded.

Unless players fighting on the server give you explicit permission to fiddle with their hosting server, any interference with running dedes will result in harsh punishment by mods.

Appendix A – how to host behind a Linux-based iptables firewall

Here are described the needed commands to let a connection from outside be forwarded on an hidden machine when the firewall is a Linux box with iptables and kernel supporting packet forward:

For example, to allow external connections on port “2346” from interface “eth0” toward internal host “10.1.2.3”, you would give these commands (as root) on the Linux firewall:

```
echo 1 >/proc/sys/net/ip_forward
```

(Activate kernel packet forwarding – kernel must support already it)

```
iptables -t nat -A POSTROUTING -s 10.1.2.3 -j MASQUERADE
    (Activate NAT/masquerading for hosting machine)
iptables -A FORWARD -s 10.1.2.3 -j ACCEPT
    (Accept forwarding from/to the machine)
iptables -A FORWARD -p tcp -i eth0 --dport 2346 -j ACCEPT
    (Accept data streams on appropriate port – port has to match the one
    configured in your “config.txt” file)
iptables -t nat -A PREROUTING -p tcp -i eth0 --dport 2346 -j DNAT
    --to-destination 10.1.2.3
    (Port forward the connection to the ded machine)
iptables -t nat -A PREROUTING -p tcp -s 10.1.2.3 --dport 2346 -j DNAT
    --to-destination 10.1.2.3
    (Let clients join from same machine, so you can play on your own ded)
```

Appendix B – how to host behind a router/other firewall

Read the router/other firewall manual.

Look specifically for “port forwarding” or “virtual server” or “connection forwarding” features. You have to reconfigure your device so to have it forward your PORT from outside to the hosting/ded machine, as described in paragraph 4.

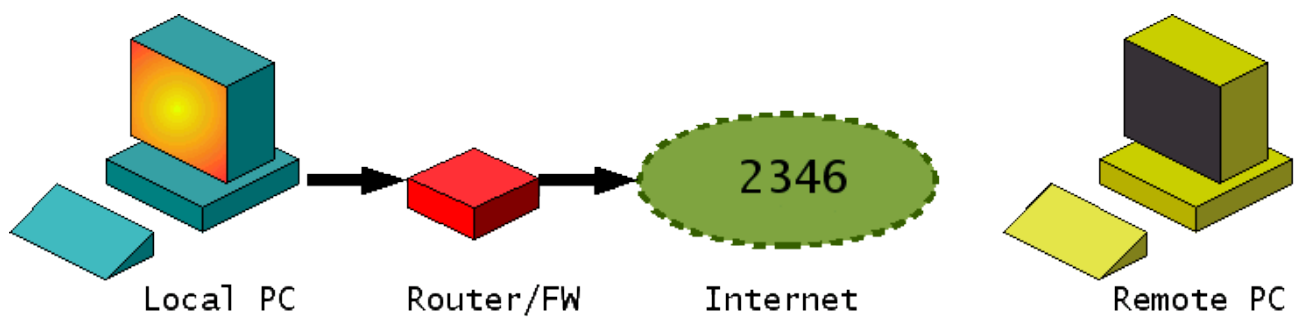
Appendix C – how to host behind a Windows-based firewall

Format the disk, install Linux, follow guidelines in Appendix A. :)

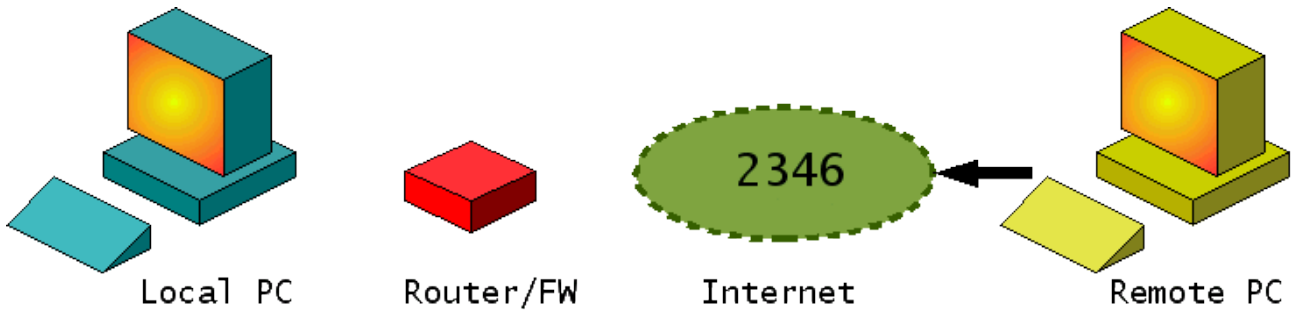
This appendix welcomes contributors familiar with the Windows environment, and with firewall configs for that operating system.

Appendix D – a graphical description of port forwarding

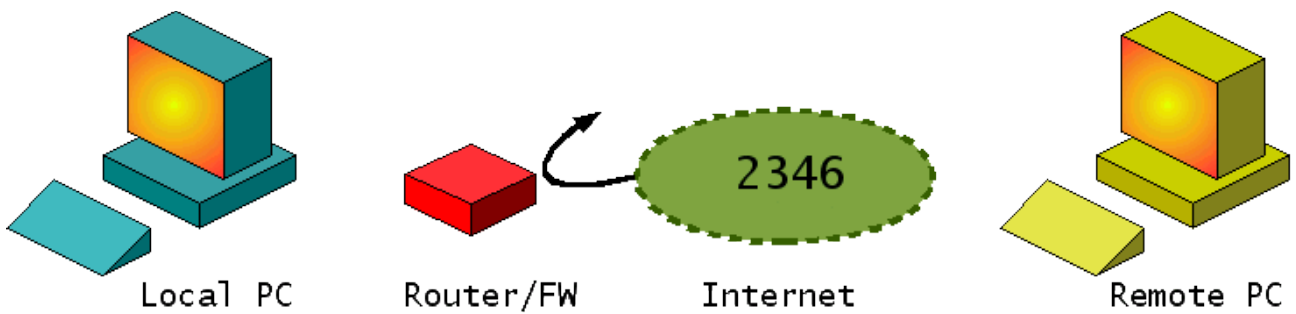
Step 1: your machine “announces” the port to the game environment:



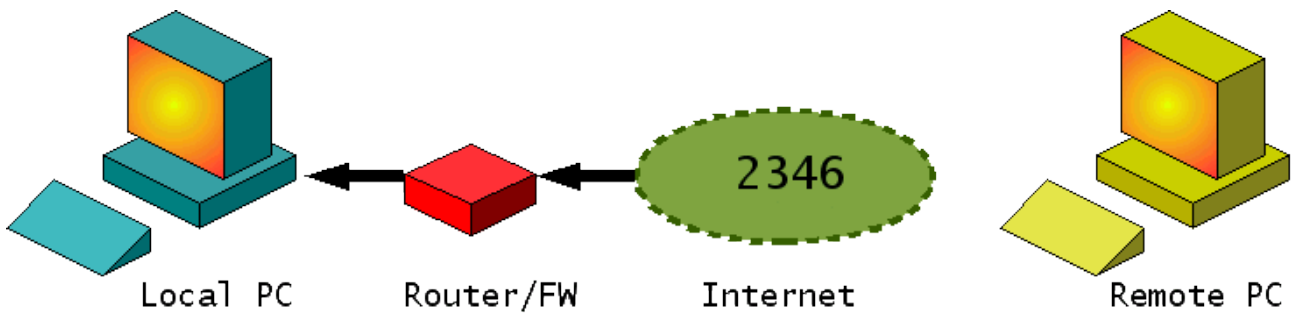
Step 2: when it's time to play, a remote host requests connection to that port:



Step 3: a normal, blocking router/firewall will just drop the request:



Step 4: a well-configured router/firewall will let pass the request, and forward it to the machine it is protecting:



Step 5: the connection is established, game can start:

