Setting up Ravenshield and Athena Sword Stand-Alone Server with N4Admin

Revision history

Date/Version	Author	Comments
May 15, 2004 (v0.50)	Troels Kolding (UBI ID teko92)	Initial version written. First draft distributed.
May 16, 2004 (v0.55)	Troels Kolding (UBI ID teko92)	Second version, based on own and Jenner's review.
February 25, 2005 (v1.00)	Troels Kolding (UBI ID teko92)	First approved version. Updated after struggling with the DI-604 router.
April 24, 2005 (v1.01)	Troels Kolding (UBI ID teko92)	Further updates after long-term testing of configuration.

This is a HOWTO on setting up a Ravenshield (RVS) and Athena Sword (AS) stand-alone server. There is a lot of information out there and the stuff herein has been compiled from numerous newsgroup postings, reading FAQs/HOWTOs by others, and from the manufacturer's homepages. There exists some excellent HOWTOs out there, but none of them worked fully for my particular setup. Hence, this document was created as a supplement to the pile of information already out there. Please see the incomplete acknowledgement list in the end of the document.

<u>Being a very difficult multiplayer game, it is hard to understand why UBI does not support their software with proper documentation!</u>

Note:
If you get stuck in this HOWTO, and cannot find help elsewhere, post your questions via the server forum hosted by www.raven-shield.com and the friendly community will try to help.
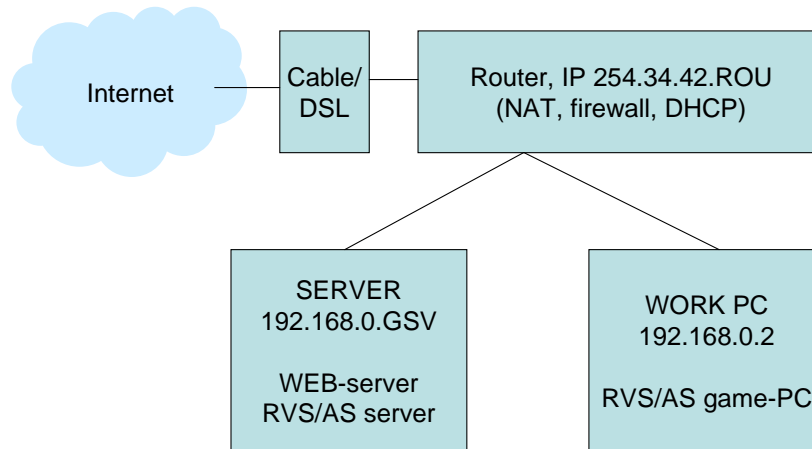
The goal:
Setting up a Ravenshield (RVS) and Athena Sword (AS) stand-alone server with logging of gamer performance and hosting a web-server with ladder information and gamer performance.

The equipment/software:
AMD XP2500+, 1GB RAM PC, D-link DWL-G520 108Mbps Wireless Netcard.
Microsoft Windows XP Professional UK
D-link DI-624 108Mbps wireless router (or DI-604)

A typical setup considered herein:

```
                  ┌──────────┐   ┌──────────────────────────┐
   ( Internet )───│ Cable/   │───│ Router, IP 254.34.42.ROU │
                  │ DSL      │   │ (NAT, firewall, DHCP)    │
                  └──────────┘   └──────────────────────────┘
                                        /            \
                        ┌───────────────────┐  ┌──────────────────┐
                        │ SERVER            │  │ WORK PC          │
                        │ 192.168.0.GSV     │  │ 192.168.0.2      │
                        │                   │  │                  │
                        │ WEB-server        │  │ RVS/AS game-PC   │
                        │ RVS/AS server     │  │                  │
                        └───────────────────┘  └──────────────────┘
```

Assumptions:
- Windows XP Pro is fully installed/ updated and network is running. I also used Linux for my own fun and had Raven-Shield configured to run with wine (out of the box using Fedora Core 3). Please consult the excellent HOWTO written by Beerkeg (rhugga@yahoo.com). However, remember to make a symbolic link afterwards to the ravenshield.mod file or you will have a "general protection fault" error (see UBI forum and search for posting by teko92).
- Router IP is either fixed or dynamic depending on your network setup. This IP will be denoted 254.34.42.ROU in the following.
- Router is setup to give the game server always a static IP (via DHCP). This static IP will be denoted 192.168.0.GSV throughout the document.

STEP 1: Installing the Ravenshield and Athena Sword software.

Install the game from the CDROM on the server and apply the available updates (I assume no major guidance is needed in this respect). At the time of writing this document, the current versions were 1.60/1.10 for RVS/AS respectively. Alternatively you can download the stand-alone servers from www.raven-shield.com (provides links and also game updates). The CDROM approach is strongly recommended and is easier to maintain and upgrade with latest patches. We will assume in the following that you have installed RVS/AS in C:\Ravenshield.

STEP 2: Installing the WEB server

Here, we assume that you will use the apache server which is freely available and a great implementation in general. You can download the installation software from

httpd.apache.org. I use version 2.0.49. When you install the web server, I recommend installing it as a service such that it automatically starts with windows. There are apparently some incompatibilities between the web server and the QoS Packet Scheduler Network Driver. Hence, I disabled the latter under XP's control panel and network properties (uninstall QoS Packet Scheduler) as recommended on the apache web page. You can test your installation by uploading a sample web-page to the server directory (see documentation). I made a directory for the web-pages called C:\WWW. Under Linux, the Apache server can be selected during installation and will then likely work out of the box provided that your firewall settings are set accordingly. Under Linux, I have made a symbolic link such that my world wide web documents are located in /www.

STEP 3: Installing MySQL server

In order to log the game statistics, a database server need be running on the PC. Here, we will use the MySQL database server which is freely available from www.mysql.com. In order to make the server work with the Ravenshield logging system, you should only use version 4.x as some of the functional calls/structures have been changed as of version 5. Mysql can be selected during install under Linux.

I used C:\mysql for the installation. Other directory names can be used, but please check the warnings and documentation accompanying the setup package. Then, the following steps were conducted:

1. Create the c:\my.cnf file (I used the .cnf template from the mysql directory).
2. Run "c:\mysql\bin\mysql-nt.exe --install mysql --defaults-file=c:\my.cnf" from command prompt. In Linux I used mysql_install_db as root.
3. Run "C:\mysql\bin\mysql mysql" and exectute the following from mysql prompt:
    a. mysql> DELETE FROM user WHERE Host='localhost' AND User='';
    b. mysql> FLUSH PRIVILEGES;
    c. mysql> QUIT
4. Run "C:\mysql\bin\mysqladmin -u root password MYSQL_PASSWORD" where MYSQL_PASSWORD is your password without quotes (unlike Linux version where you need to use quotation marks 'passwd').

Finally, you need to install the Ravenshield database by running
        C:\mysql\bin\mysqladmin -u root -p create rvsdb
You can use another database name than rvsdb if you like. Finally, add "c:\mysql\bin" to the system path (via the control panel).

STEP 4: Installing PHP support

Install PHP 4 as a server module. This is done semi-manually by downloading the package from www.php.net. Again, I would stick to the older 4.3.6 version of the package rather than going for the newer releases. The install procedure I followed is as follows (I chose C:\PHP for my installation):

1. Copy/extract all files to c:\PHP directory
2. Copy all dll files in sapi directory to c:\windows\system32
3. Copy all dll files in dlls directory to c:\windows\system32
4. Copy php4ts.dll to c:\windows\system32
5. Copy the file, php.ini-dist, to c:\windows\php.ini
6. Edit php.ini:
    a. Ensure that: extension_dir = "c:\PHP"
    b. Ensure that: doc_root = "C:\WWW"
7. Edit C:\Program Files\Apache Group\Apache2\conf\httpd.conf (or other location where you installed your apache web server):
    a. Ensure that: ServerName 192.168.0.GSV:80
    b. Ensure that: DocumentRoot "C:/WWW"
    c. Ensure that: LoadModule php4_module c:/php/sapi/php4apache2.dll
    d. Ensure that: AddType application/x-httpd-php .php .php3 .phtml
    e. Ensure that: AddType application/x-httpd-php-source .phps

There are simple ways to test if the PHP has been installed correctly and I suggest that these tests be run to ensure proper operation. More detailed test descriptions are available on the numerous PHP sites on the web; see e.g. http://www.thesitewizard.com/archive/php4install.shtml.

My Linux Fedora Core 3 installation worked out of the box once I selected the correct components during the installation process. Again, the above site cab be used to test the functionality including the integration with the web-server.

STEP 5: Configuring the router to support RVS/AS

Now, this is a very important step to success. And it is not straight-forward at all! UBI decided to make their game the most annoying and demanding game in world history it seems. However, as the game is so !"#%&¤ brilliant, it is worth a bit of fight! Armed with numerous solutions available in the Raven-shield user-forums, I thought it would be easy but it seems as if each router has its own ways in this respect. I will give some general pointers to what is needed (for those with a different router than mine) and then give the solution that worked for my own router. I have tried other port combinations as suggested in the forums as well as UBI's support site -> however, the information was not consistent since the game would not work. Argh!

General pointers for the router

There are two aspects for the router: First, of all there is the port forwarding aspect and then there is the firewall security aspect. When the game server is located behind a router it has a LAN IP address which is useless on the Internet (e.g. for other UBI gamers). The IP address of the router is the one that others can see but the router does not run the game itself.

When the game server connects to the Internet (e.g. UBI) there is no problem as the Internet will think the request comes from the IP of the router (e.g. a specific address on the wide Internet). When the connection is initiated by the game server on a certain port (ports are numbered communication channels that can run a certain protocol, e.g. UDP or TCP) the router understands the situation and knows that returned packets and communications on this particular port should be directed onwards to the game server when they are received from the Internet. However, when someone from the Internet tries to initiate communications to the server (e.g. a gamer trying to join the server), the router has to be instructed what to do with packets on certain ports. Otherwise, the router has a very laid-back philosophy: It basically deletes packages if it does not know what to do with it!

The whole issue is referred to as *network address translation* or NAT in short. The ports where UBI and players may try to communicate with the game-server must be registered in the router and proper actions given. This is called port forwarding.

Raven-shield requires the following ports in the incoming direction (e.g. these ports need be forwarded to the router):

- Ports 7777-7787 and 8777-8787, both UDP protocol, incoming.
- Ports 80, 6667, and 40000-42000, TCP and UDP (I could not find more detailed information that worked for me so I assume that both protocols need be allowed).
- Further, we need to allow also

Port forwarding is one issue, but you also have to check that the firewalls (the one inside the router **and** the one on your game server, e.g. the built-in XP firewall) will allow communication from the WAN (Internet) to the LAN on the above ports and visa versa (the latter is usually default since LAN is usually a trusted source in the default router configuration).

Now, some of you guys are sooooo lucky to have one of those great routers where you can do multi-port forwarding with the blink of the eye. Lucky you! Most of the great tutorials on the net consider such routers (e.g. the Linksys solution considered in the tutorial by =§ËÄ£§=3®Ð°ßÛ®Ñ of the http://www.sealsclan.com/). Some router companies prefer "port triggering" since it only opens up to ports when they are needed. Knowing the number of ports required for RVS/AS this is understandable. Port triggering is as such not that complicated IF AND ONLY IF the complete protocol for communicating between the RVS/AS client and the server (and visa versa) was documented by UBI! Now, the way I understand the port triggering (applications settings) is as follows. Whatever running program that communicates through the router on one of the trigger ports will make the router automatically forward the public ports to this application (and thus this server). Somewhere on the Internet I saw that the forwarding is then only granted a period of time until another triggering happens. This is theoretically very nice since the router then opens up its ports when it is needed (improved security). Maybe someone out there will confirm I am completely wrong in this respect, but if so … please enlighten me! Below, you find the story of setting up my

D-Link routers (actually struggled with two different ones). Hopefully, others may benefit from this.

Installation for DI-624/DI-604 router (routers with port triggering)

Now, first show-stopper I experienced was that port forwarding could only be done one port at a time on my D-Link router. This is not feasible considering that RVS/AS operates on potentially thousands of different ports!!! Is this really necessary, UBI? Anyway, here is the setup that was finally found to be successful (thanks for input on port triggering from mattstar65). Pay attention to even the slightest details. I tried many different combinations and naming conventions that did not work.

Virtual Server (corresponding to single port forwarding):
- Setup "HTTP": Forward TCP traffic on port 80 to port 80 on private game server also containing the web server (to run n4admin effectively).
- Setup "Ravenshield": Forward both UDP and TCP traffic on port 6667 to port 6667 on private game server.
- Setup "Ravenshield2": Forward UDP traffic on port 7777 to port 7777 on private game server.
- Setup "Ravenshield3": Forward UDP traffic on port 8777 to port 8777 on private game server.
- Setup "Ravenshield5": Forward UDP traffic on port 5777 to port 5777 on private game server.
- Setup "Ravenshield6": Forward UDP traffic on port 10777 to port 10777 on private game server.

Applications (corresponding to multi-port forwarding using triggering):
- Setup "RVS": Trigger ports are 5777-10787 (UDP). Public ports are 7778-7787, 8778-8787, 6667, 40000-42000 (both UDP and TCP).

   NOTE. Maybe less of the trigger combinations would work but this didn't seem to work for me.

Firewall setup:
- Allow all above ports (TCP/UDP) from the complete WAN (*) to the game server with IP 192.168.0.GSV. This step seems easy with all routers.

Well, I will cross my fingers for you too! Above setup worked for me.

Some last-resort issues

If the above procedure does not work, you have the option to try DMZ. However, this should be the last alternative. First, please do the following.
- Test that your software firewall on the server is not creating issues (well, disable it to be safe). Under Linux (FC3) you run the system-config-securitylevel command and under Windows this is of course more user-friendly.

- Update your firmware in your router (check the manufacturers support section on the home page).

Otherwise, post your questions on www.raven-shield.com or www.theplatoon.com. People out there are soooo nice, just wait and see ;-)

Alternative router installation with DMZ

Most routers has a DMZ option that you can set up for your server IP. This means that all packets on all ports are automatically transferred to your game server when they arrive at the router. This is a good starting point when you are trying to debug and install your server, but generally it is better to program the port forwarding into your router and to let the router's firewall work in general over the whole LAN. If using this option permanently, you should install a separate software firewall on your game server. For some routers, it seems as if DMZ is the only viable solution to get Raven-shield to work.

STEP 6: Configuring RVS/AS for NAT

In order to get the correct RVS/AS behavior when the server is located behind a NAT device (e.g. a router), one needs to add the following line to the server.ini file used to launch the server (RVS/AS):
- In server.ini, add the line "ServerBehindNAT=True" to the end of the "[Engine.R6ServerInfo]" section.

Remember that the AS server per default uses another server configuration file and that this file would also need to have the above line added.

STEP 7: Setting up n4admin and urlPost

Now, in order to locally store the gamer statistics on your server (e.g. how many kills per person, accuracy, etc.), you need to install a beacon which will automatically communicate via PHP scripts to your MySQL database. This calls for downloading some software as well as editing the RVS/AS configuration files. Again, this process goes easily wrong if just smaller issues are left out! So pay attention again to the details.

In order to get this to work you need **two** different packages:

- **n4admin and Serverlist** authored by =TSAF=, Neo4E656F, SMAK_Wizard, Munkey. You will need the most recent version for it to work with AS also; e.g. at least version 1.60 including the AS update. Previously, the files have been available via e.g. http://ravenshield.theplatoon.com/mod.asp?file=227.
- **urlPost** authored by =TSAF=. This one can be a bit harder to find on the web, but is available from e.g. http://ravenshield.clanltk.net/download/index.php?subcat=14&sort=dateD.

To install, extract the who n4admin/serverlist package to a subdirectory on your web server; e.g. C:\WWW\rvsslwebphp (/www/rvsslwebphp on Linux). Next thing you need

to edit is the config.inc.php file located inside the rvsslwebphp directory. You need to update the following according to your MySQL database settings:

```
//Database config
$dbHost     =     "localhost";        // Hostname of the MySQL-Database
$dbUser     =     "root";             // MySQL Username
$dbPass     =     "MYSQL_PASSWORD";        // MySQL Password
$dbDatabase =     "rvsdb";     // MySQL Database Name
```

If you have used other settings (see installation of MySQL above) then you need to use your local settings in the above.

Now, inside the package you will also find some files that you need to put on the game server. You need to copy N4Admin.u and N4AdminMessenger.ini to your Ravenshield system directory; e.g. C:\Ravenshield\system (or alternative path under Linux). You can edit N4AdminMessenger.ini for a custom message if you like (remember to keep the three lines).

From the urlPost package, you need to extract the urlPost.u file and place it in the RVS/AS system directory; e.g. C:\Ravenshield\system.

To get this package to work you now need to install it on your RVS/AS game server. This calls for the following editing:

In Ravenshield.ini file (system directory of Ravenshield), ensure the following additions have been made:

```
[IpDrv.UdpBeacon]
DoBeacon=True
ServerBeaconPort=8777
BeaconPort=9777
BeaconTimeout=10.000000

[N4Admin.UDPBeaconEx]
AdminPassword=YOUR_ADMIN_PASSWORD

[urlPost.urlPost]
postHost=localhost
postURL=/rvsslwebphp/post.php
postPort=80
postIdent=MYSERVERIDENT
```

You should keep a close eye on the MYSERVERIDENT because this is something you need to choose and also configure your web-server to use. You have to also choose your own n4admin password.

In Ravenshield.mod file (In Mods directory of Ravenshield), ensure the following corrections/additions have been made:

```
[Engine.GameEngine]
```

```
CacheSizeMegs=32
UseSound=True
;ServerActors=IpDrv.UdpBeacon
ServerActors=N4Admin.UdpBeaconEx
ServerActors=urlPost.urlPost
ServerPackages=GamePlay
```

You should now be set to go in terms of Ravenshield! As a last step we need to configure also the web server part. This is done through the web-interface. If you start your web-browser on the game server machine you should open the

> http://localhost/rvsslwebphp/install.php

file. This is a three-step configuration rocket that prepares your RVS/AS database and the interfacing functions. You need to go through all three steps and once successfully accomplished you should delete the install.php file!!!! Under Linux you can simply change the permissions.

Now it is time to configure the server. Open http://localhost/rvsslwebphp/main.php and go to administration. Log-in with "admin" and "admin" as a first login. Once logged in, you should immediately change your login password via the Config-Login link. Then you need to go through the following update steps by clicking the appropriate links.

1. Via "Serverlist IP Config", add your server. Server IP can be 127.0.0.1 and Server beacon port should be 8777 (you can change this but then you need to update the configuration files above).
2. Via "Stats Serverindent-config", add the indent code you gave above (MYSERVERIDENT) and link it to Localhost.

You should now be set to go. Start you RVS/AS server and see if the n4admin/urlPost tools are properly loaded and if the server registers itself with UBI. If so, you should be set to go. You can track the ladders and even configure your server via the mail interface; e.g. via http://localhost/rvsslwebphp/main.php.

Useful HTTP links:

General help on RVS/SA server setup
1. http://ubbxforums.ubi.com/6/ubb.x?a=frm&s=400102&f=671103901
2. http://support.ubi.com
3. http://forums.theplatoon.com/forum.asp?FORUM_ID=53

N4admin and urlPost:
1. http://ravenshield.theplatoon.com/mod.asp?file=227
2. http://ravenshield.clanltk.net/download/index.php?subcat=14&sort=dateD
3. http://forums.theplatoon.com/topic.asp?TOPIC_ID=24965&whichpage=3

Webserver, PHP, MySQL:

1. http://httpd.apache.org
2. http://www.php.net
3. http://www.mysql.com
4. http://www.thesitewizard.com/archive/php4install.shtml

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- =TSAF=, Neo4E656F, SMAK_Wizard, Munkey for making such a fantastic tool for the RVS/AS server and releasing in under the GNU-GPL. That is the spirit!
- Mattstar65 for giving information on the router configuration for D-Link routers.