NAME

Dynamics - HUT Mobile IP

A dynamic hierarchical Mobile IP system that uses IP within IP encapsulation.

SYNOPSIS

dynfad dynhad dynmnd dynfa_tool dynmn_tool dynha_tool tkagent_tool rsakeygen

DESCRIPTION

Dynamics system is a dynamic hierarchical IP tunneling system for Mobile IP using IPv4 and IP-within-IP encapsulation. The system consists of three independent software elements:

Home Agent (HA)

Foreign Agent (FA)

Foreign Agents form hierarchical structures (non-cyclic trees) for tunneling hierarchy

Mobile Node (MN)

The system supports **bidirectional** (reverse, full) and **triangle** tunneling modes and direct tunneling from MN to HA as well as Mobile Node's attachment to its Home Network without tunneling.

MANAGEMENT INTERFACES

The system elements may be controlled via API interface. Example tools, **dynfa_tool**(8), **dynha_tool**(8), and **dynmn_tool**(8) are provided with the package. Own tools may be created using **libdynfa**(3), **libdynha**(3), or **libdynmn**(3).

OPERATING REQUIREMENTS

The specific requirements are listed in the Dynamics source code distribution's README file. In general, the hardware requirements are low: a PC with Intel 486-120 and 16MB of RAM is very capable of acting as a Home Agent, Foreign Agent, or a Mobile Node. The more Mobile Nodes and traffic there is the higher the requirements.

Running a Mobile IP Foreign Network service with Dynamics requires only one official IP address that is unique in the Internet. This IP address is for the Highest Foreign Agent. The rest of the Foreign Agents and the co-located care-of addresses used by Mobile Nodes may be from any private address space and thus need to be unique only within the Foreign Network itself - not in the entire Internet.

The most common way to utilize Home Network services requires one Internet-wide unique IP address for the Home Agent and a set of Internet-wide unique home addresses for the Mobile Nodes.

SECURITY

Dynamics system is able to use the following methods for ensuring secure signaling:

Timestamps

Nonces

RSA

MD5

Shared secrets

Session Keys

The required RSA keys (secret and public) can be generated by using **rsakeygen**(8).

For more information about the security, see: **dynfad**(8), **dynhad**(8), **dynfad.conf**(5), **dynhad.conf**(5).

INSTALLATION

Dynamics supports binary packets in Red Hat Linux RPM and Debian Linux deb formats. You can also compile the software from the source code distribution. Check for the latest software release from *http://www.cs.hut.fi/Research/Dynamics.* Make sure your Linux kernel fulfills the requirements listed in the README document.

Detailed installation instructions are in README and INSTALL files with the source code distribution. The files are also available at the Dynamics group web site pages.

RUNNING DYNAMICS

First, make sure you have sufficient privileges to do all the required operations. The detailed instructions are in the README and INSTALL files of the source code distribution and in the software element manual pages.

BUGS

Notice that this is a prototype version of Dynamics - HUT Mobile IP software. This software has not yet been thoroughly tested and may contain some bugs. If you find a bug from this software, please contact the authors.

AUTHOR AND COPYRIGHT

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SEE ALSO

dynhad(8), **dynfad**(8), **dynmnd**(8), **dynhad.conf**(5), **dynfad.conf**(5), **dynmnd.conf**(5), **libdynfa**(3), **libdynha**(3), **dynha_tool**(8), **dynfa_tool**(8), **dynmn_tool**(8), **rsakeygen**(8)

The Dynamics group WWW site:

http://www.cs.hut.fi/Research/Dynamics/