Effnet IPHC™

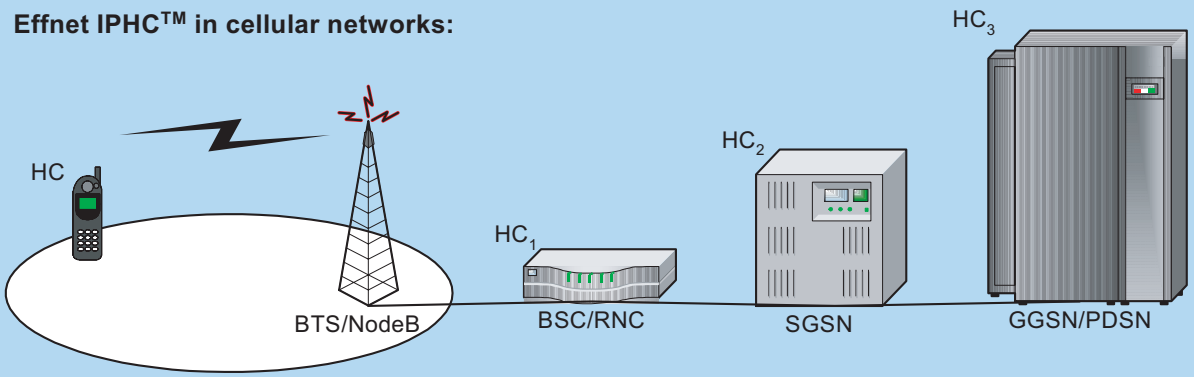
Saves bandwidth and improves QoS

EFFNET
www.effnet.com

- Software fully compliant with the IETF standard RFC 2507
- Lightweight implementation including all features suitable for low-end devices
- Highly portable product with ANSI-C implementation
- Platform, endianness and byte-order independent
- Highly configurable with compile and run-time options
- Multi-threading support
- Extensively tested, in-house as well as during interoperability and field tests

Effnet IPHC™ is targeted for web, email and file transfer traffic (mainly TCP/IP based) over medium bandwidth and low bit error rate links. The product is fully compliant with the IETF standard RFC 2507, which is recommended in the UMTS Release 99 and onwards. It has also been recommended in the CDMA2000 standards for 1xEV-DV Releases B and C. Effnet IPHC™ is very useful on low bandwidth networks such as dial-up links on PSTN networks. It is also being used in satellite networks to improve performance of the link for TCP traffic.

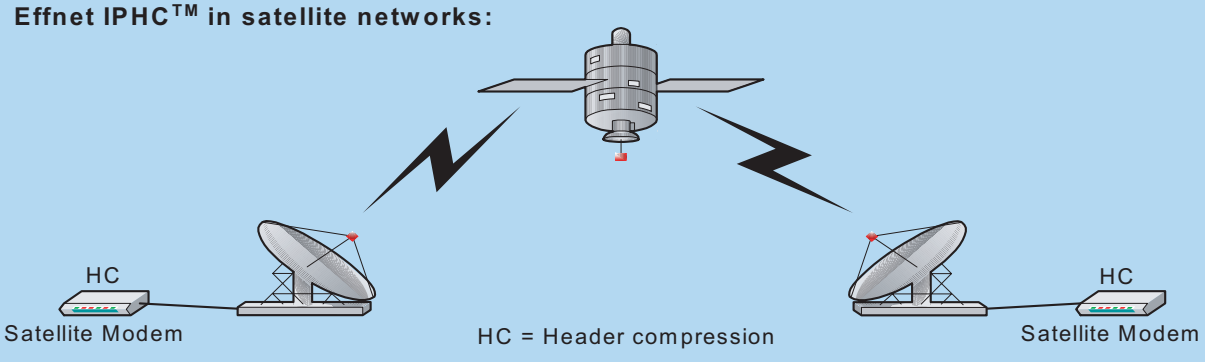
Effnet IPHC™ in cellular networks:



HC = Header compression
HC is always used in the terminal according to all the standards together with:
1. RNC as per UMTS standard, or
2. SGSN as per GPRS standard, or
3. PDSN as per CDMA2000 standard.

Effnet IPHC™ uses the differential encoding algorithm to compress header fields and error recovery mechanisms such as header requests and TWICE. These mechanisms provide much better performance and throughput efficiency compared to the VJ Compression scheme (RFC 1144). This header compression scheme compresses the UDP and TCP headers typically down to 4 bytes for TCP and to 2 bytes for non-TCP (without check-sum). It supports compression of multiple IP headers including IPv4 and IPv6, UDP, TCP and ESP headers.

Effnet IPHC™ in satellite networks:



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Effnet IPHC™ is designed to be easily adapted to a variety of operating systems and hardware platforms. The implementation is developer-friendly and available both in user space for debugging and testing (with Effnet HC-Sim™) and has been successfully integrated in link layers such as the PPP according to the standard RFC 3544. Effnet can assist in the link layer integration process as an engineering service.

An example of header compression by Effnet IPHC™ :

Effnet IPHC™ has undergone extensive testing. Effnet HC-Sim™ (Effnet Header Compression Simulator), another product from the Effnet Header Compression product family, is used to simulate traffic and link conditions to test the functionality of header compression modules. Effnet HC-Sim™ features a wide range of test cases with comprehensive logging and statistics generation capability. This ensures detailed testing of all features and functions of Effnet's header compression products. For more information about Effnet HC-Sim™, see the related data sheet at www.effnet.com

Effnet IPHC™ v3.4

The latest release, version 3.4, supports the following functions:

- *TCP, UDP, ESP, IPv4 and IPv6 header compression*
- *Compression of sub headers: IPv6 extension headers (Hop-by-Hop options header, Routing header, Destination options header, Fragment header), Authentication header and Minimal Encapsulation header*
- *Compresses IPv4 options and fragments, TCP options and tunnelled IP headers*
- *Handling of both 8 and 16 bit CIDs*
- *Incrementing generation values for non-TCP flows*
- *Recovery mechanisms: Header Request and TWICE*
- *Compression slow start*
- *Adheres to the rules for sending full headers*
- *Rate limiting of the header requests*
- *Implements F_MAX_PERIOD and F_MAX_TIME*
- *Supports Explicit Congestion Notification (ECN) bits via the R-Flag and the R-Byte*
- *Supports the 6 bits generation value and the MIN_WRAP protection mechanism*
- *Supports sending of TCP No-delta packets on links with packet losses*
- *Flow classification and context management*

Platforms

Effnet IPHC™ v3.4 has been tested on x86 and SPARC and can easily be ported to other platforms.

Support

Effnet products are offered with a full range of support services, including problem reporting, bug fixes, updates, training, consulting and integration services.

For more information about header compression and Effnet IPHC™, see our library of white papers and data sheets at www.effnet.com

About Effnet AB

Since its beginnings in 1997, Effnet has been involved in research and development of technologies that improve the performance and efficiency of IP based networks. The Effnet Header Compression product family saves bandwidth and improves quality of service. Effnet is the leading independent provider of header compression products and is committed to continue to provide leading edge IP technology.

Effnet AB

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