

Ergon Messaging Framework



Version 2.3
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1. Introduction

1.1 Simplicity and flexibility...

The Ergon Messaging Framework EMF is an integrated Solution for Instant Messaging applications. Based on a lightweight network protocol, desktop and mobile clients can communicate with low latency and network bandwidth.

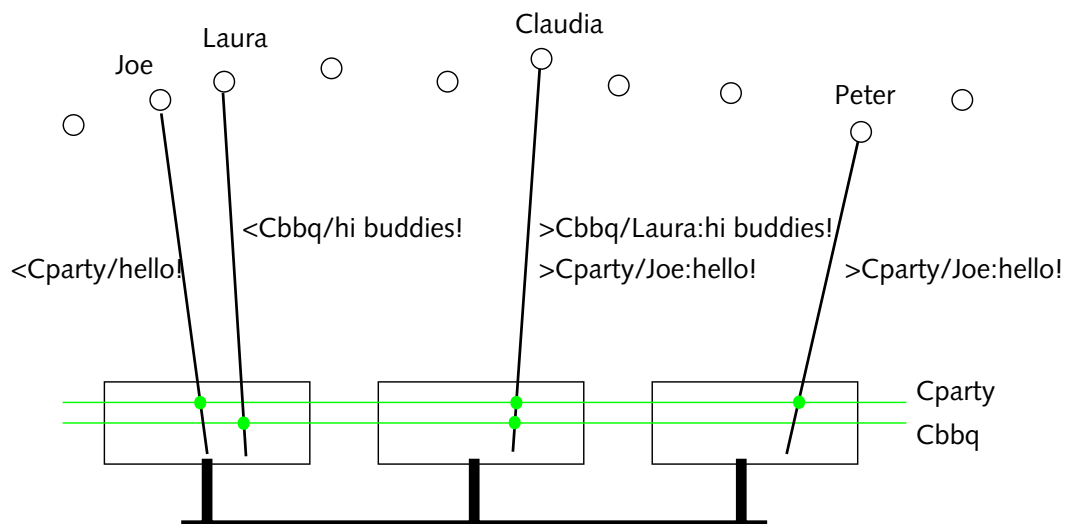
The framework is built to support TCP based connection oriented and UDP based connectionless sessions. Connection oriented sessions can be tunnelled through firewalls via HTTPS allowing desktop clients to function without special network setup. Connectionless sessions can be used to further reduce network latency and required data rate for mobile clients.

1.2 ... for real world applications.

The framework has evolved from several large scale projects for BlueWin and Credit Suisse. EMF is at the core of BlueMessenger, a cutting edge desktop messenger with thousands of users, SecorMonitor, a mission critical controlling and alerting application for TIBCOs trading platform, and a number of technology demonstrations for next generation cell phones, like Ergons streaming quotes client and the 'Differenzler' a cell phone based version of Switzerland's favourite cards game.

2. Server architecture

The Ergon Pushserver builds the core of the communication infrastructure. It is implemented as a self configuring, highly scalable, distributed server based on the Java2 platform. It runs on a wide range of hardware. From a cluster of inexpensive machines - starting at a single Sun Ultra 5 - to high availability multiprocessor servers.



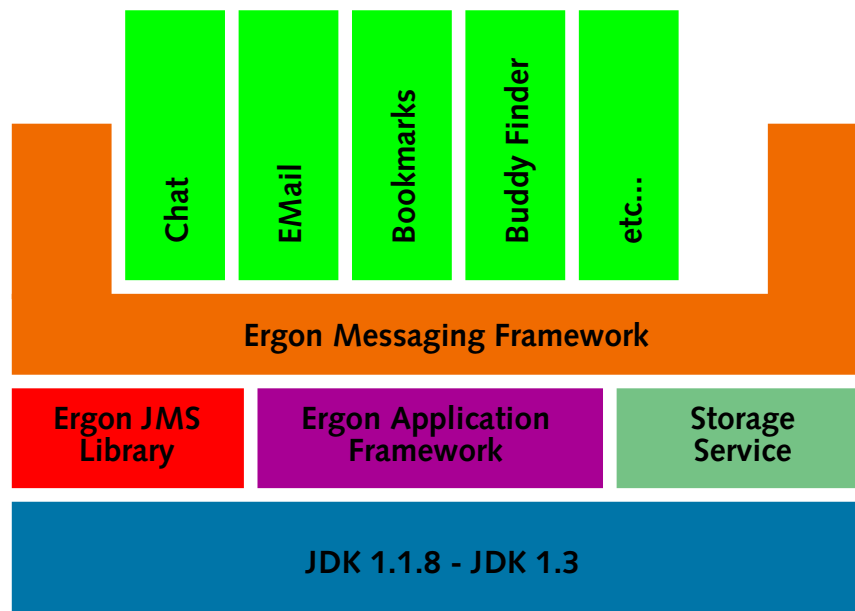
The servers maintain a dynamic distributed channel directory. A channel is the counterpart of a chat room or conference call number. A channel can be joined by an unlimited number of users and the number of concurrent channels is only limited by server memory - even the smallest servers can support ten thousand channels and more.

Each client can freely choose which server to connect, i.e. the closest one from a set of worldwide servers. Communication with users connected to other servers is fully transparent. The servers selectively propagate the users messages across the server cluster minimizing backbone traffic.

The total data throughput of the servers depends on the average message size and number of local subscribers for each channel. In a typical setup a low end server can serve between several hundred and a few thousand users. Except for very small message sizes servers are usually IO bound delivering more than 5 Megabyte per second sustained throughput each.

3. Desktop Architecture

Desktop Clients are supported with a multilayer framework based on Ergons lightweight implementation of the Java Message Service API (JMS). An optional ticket based authorization and encryption mechanism allows messaging applications in security critical environments.



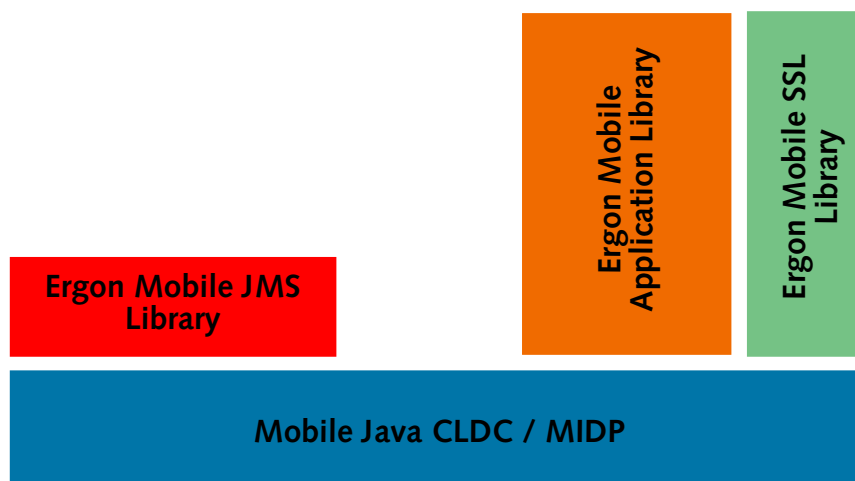
The Ergon Messaging Framework allows rapid development of messaging based applications via its plugin mechanism. While the framework provides directory, storage and communication services, the plugins define the user accessible functionality - chat, email, bookmarks, buddy finder and other provider specific functions.

Ergon's JMS implementation is fully independent of the higher layers of the Ergon Messaging Framework. Existing Java applications can therefore utilize the JMS layer to add messaging, alerting or other realtime communication methods without requiring the full EMF.

The desktop framework implementation can tunnel JMS connections through firewalls via HTTPS or SOCKS and features full proxy autoconfig support (.pac) optionally retrieving proxy settings from the Windows Registry for setup free network access.

4. Mobile Architecture

Current mobile devices limit the feasibility of application frameworks because of code size, memory demand and performance implications. The Ergon Messaging Framework for mobile devices addresses these issues by providing a lightweight communication layer with minimal memory impact.



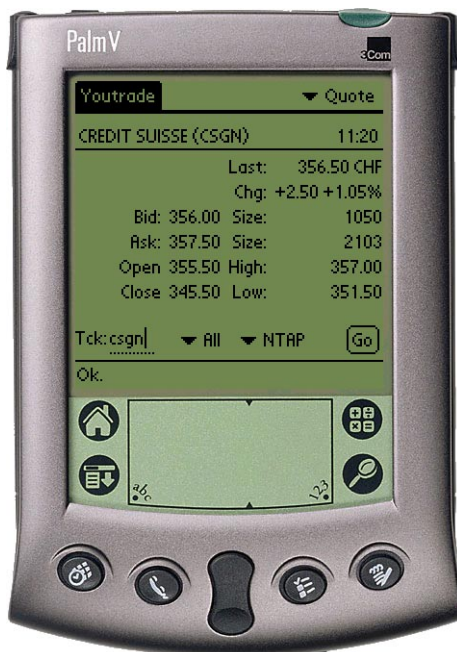
Ergon has developed and utilized an EMF independent set of libraries for the CLDC and MIDP platforms which can be combined with the mobile EMF for sophisticated and powerful mobile applications.

5. Sample Applications

The images on the right show two prototypes implemented and demonstrated by Ergon for Orbit/Comdex Europe 2001. Both applications are based on Ergons mobile JMS library.

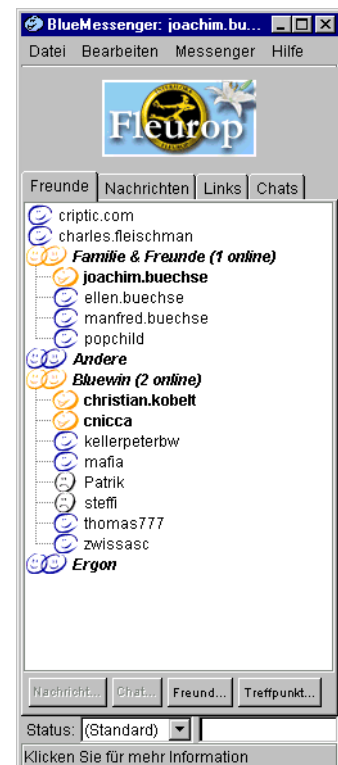
The streaming quotes application connects to a realtime quotes server and features a portfolio like view as well as realtime charting.

The differenzler is an implementation of Switzerland's favourite card game Jazz. Four players can play using a network server.



Youtrade on Palm (left side) was introduced by CREDIT SUISSE in December 2000 as the first Java based Online Broker for mobile devices.

The application was developed by Ergon based on Ergon mobile application framework and mobile SSL library.



bluewin AG is Switzerland's leading Internet Provider. In 1999 they introduced the BlueMessenger (on the right) which was co-developed with Ergon and is based on the Ergon Messaging Framework and Ergons Application Libraries.

Its range of outstanding features is fully supported across all platforms including Windows, MacOS, Linux and Solaris. It also supports an Open-Source plugin mechanism for user extensions.