GNU Palmtop Environment

GPE Structural Guide

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1 Introduction

1.1 This Document

This is a draft structure definition for the GNU Palmtop Environment.

The document is far from complete and open to discussion. The aim of this document is to get some ideas down on paper and investigate how such ideas should work.

I try to give a simple overview of the GNU Palmtop Environment. As at the time of writing this document, the GPE standard was still being developed. This overview is based entirely on my personnel observations and understanding of the requirements. Hopefully by placing this overview here others will be encouraged to help create a formal document defining the GPE standards.

I am more than happy to keep this document updated as the requirements and structure of the GPE. Feel free to post any opinions and suggestions to the GPE mailing list. gpe@handhelds.org including the title of this document in the subject line.

This is considered a living document and open to review and changes as the subject it describes changes. Once we have an understanding of exactly what is required for this environment this document will start to define versions. Until that stage please consider the information here cursory and subject to change.

1.2 Copyright

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2 The GNU Palmtop Environment

The aim of the GPE (GNU Palmtop Environment) project is to provide a Free Software GUI environment for Palmtop/Hand held computers running the Linux operating system.

Quoted from the GPE Web Page.

> *GPE is not about a single piece of software, but about building an entire environment consisisting of a number of components which make it both possible to use your Linux Handheld for standard tasks such as PIM (Personal Information Management) and to make it easy for developers to create powerful programs, by providing the necessary infrastructure.*
>
> *Part of the GPE environment is about core software such as the GUI toolkit, and necesary libraries which largely already exist. The other, perhaps more important part is fixing standards for program interaction, such as SQL, XML and other data schemas.*
>
> (Owen Cliffe GPE: A GNU Palmtop Environment
> http://gpe.handhelds.org/
> Wednesday, 29-May-2002)

The GPE attempts to use a collection of standards that developers should follow to create a unified environment for Linux/PDA.

A collection of core modules will be developed to provide uniform features and allow application developers to easily access these features.

Much of the library and software required to provide this environment already exist. The main task for GPE is to pull them together in a unified manner and provide a collection of standards and software to allow developers to take advantage of them.

2.1 Gimp Tool Kit

GPE applications will use GTK[1] (Gimp Tool Kit) to provide GUI services.

GTK is a very advanced toolkit providing a rich collection of widgets and event handlers suitable for the needs of most application developers.

2.2 SQL

A relational database engine based on the SQL standard will be used for environment wide data. This should include PIM data, user preferences and other such data that could be useful to different modules/applications within the GPE Environment.

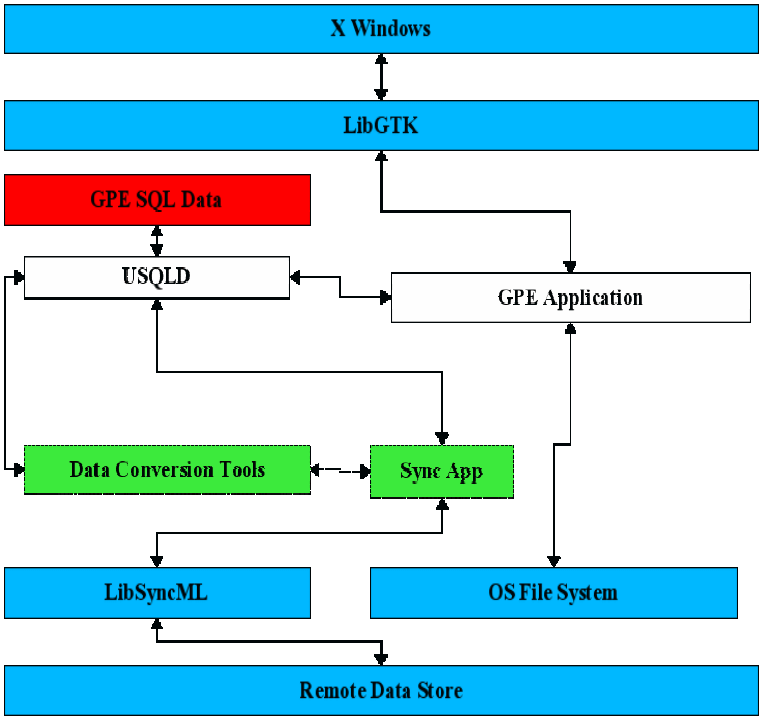
The SQLite[2] database engine is proposed as the core environment for storing this data.

The program uSQLd[3] will be used as a network wrapper for the SQLite engine.

1 GTK is a toolkit for creating GUI Services. The homepage for GTK can be found at http://www.gtk.org/
2 SQLite: An SQL Database Engine In A C Library is written by D. Richard Hipp the homepage can be found at http://www.hwaci.com/sw/sqlite/
3 uSQLd: an sql server which uses SQLite is written by Owen Cliffe his homepage can be found at http://www.zoot.org.uk/

2.3 GPE Structure

The following diagram defines a proposed structure for the GNU Palmtop Environment



The elements of this diagram are as follows:

2.3.1 X Windows

The X Windows system provides all the low level display and input hardware support.

2.3.2 LibGTK

LibGTK provides an advanced widget and event toolkit linking the X Windows interface to the GPE applications.

2.3.3 USQLD

The USQLD program provides an interface API for GPE applications to access the GPE SQL Data store.

2.3.4 Data Conversion Tools

This is a collection of command like applications used to convert incoming and outgoing data formats. This allows applications to store data in the GPE Database using a specified standard. In the event that the application needs to sync with a program or device that does not support the chosen GPE standard,

simple command line applications should be provided to convert to the required format.

2.3.5 Sync App

The Sync Application needs to provide a simple interface to syncing with a selected data server. This application should interrogate the GPE SQL Database for a list of servers and data elements that need syncing.

All handshaking data required by the Sync App should be available within the GPE SQL Database.

2.3.6 LibSyncML

LibSyncML[4] provides an API of the SyncML[5] protocol. This will provide a platform and format independent method of synchronizing data between GPE applications and other platform databases.

4 LibSyncML is a Open Source project to develop a library compatible with the SyncML[5] protocol.
5 SyncML is the leading open industry standard for universal synchronization of remote data and personal information across multiple networks, platforms and devices. The SyncML web site can be found at http://www.syncml.org/