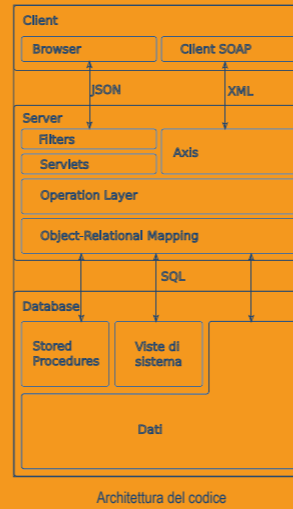## : : Technology

CMDBuild is a technologically advanced web application for managing IT infrastructure, designed in accordance with the SOA (Service Oriented Architecture) guidelines, implemented with server components written in Java and Ajax user interface.

An organized architecture by components and services is the best solution for achieving scalable and maintainable applications, as well as interoperable.

Through a SOAP webservice CMDBuild makes available the data stored in CMDB and their operation methods; using the standard portlet JRS guarantees interoperability with applications such as "Portal.".

CMDBuild includes an administration module dedicated to data model configuration and definition of users and permissions, and a management module dedicated to updating and querying of data, to the execution of processes and reporting

Software components integrated or interoperable with CMDBuild and industry standard used include:

- Ext JS library for client components based on Ajax technology
- PostgreSQL database with OO and PostGIS extensions
- Jasper Report reporting engine and iReport editor
- Enhydra workflow engine and editor JPEd
- Prefuse library for relation graphs (Flash technology)
- Open Office and MystiqueXML for mail merge
- Alfresco for document management
- OCS Inventory for automatic inventory asset
- OpenLDAP to access external authentication systems
- Geoserver and OpenLayers functionality for GIS
- Apache AXIS for webservice implementation
- Liferay Portal to publish portlets JSR

- XML schemas for report design
- XPDL for the description of workflow processes
- XML schemas and XSLT to synchronize OCS Inventory
- XML schemas for mail merge with Open Office
- JSON for data interchange between client and server
- SOAP protocol for webservice implementation
- WS-Security protocol for webservice authentication
- JSR 168 and 286 for portlet publication
- WMS for maps handling
- WFS to manage change feature vector
- POP3 and IMAP to access the mail server

Client — Browser, Client SOAP
JSON — XML
Server — Filters, Servlets, Axis
Operation Layer
Object-Relational Mapping
SQL
Database — Stored Procedures, Viste di sistema
Dati

Architettura del codice

CMDBuild
www.cmdbuild.org

The most flexible software to configure custom database of asset informations and to design management processes with their mutual correlations

All trademarks belong to their respective owners

: : Dissemination

CMDBuild was chosen by many public and private entities, including:
- State Advocacy
- Regional Council of Tuscany
- Municipality of Udine, Bologna, Pordenone, Vigevano
- Province of Agrigento
- CartaSI
- ABI
- Corepla
- AscoTLC
- Bologna Airport

The project has hit for its technological connotations. We have been favorably impressed to ITIL compliance and the extreme flexibility and customization of the system.

Antonella Consiglio – State Advocacy

It seems very interesting the way this Open Source project directly supports the ITIL methodology.

Carlo Cammelli – Regional Council of Tuscany

: : Support

- Installation and remote verification of system
- Data structure analysis and modeling
- Import of existing initial data
- Custom process modeling
- Custom reports design
- Automatic Inventory configuration
- Integration with intranet portals
- Basic and advanced education
- Maintenance and service

: : Organizational ITIL ® support

- Existing situation analysis (assessment)
- Processes reorganization using ITIL
- Internal staff education on ITIL
- Internal staff certification on ITIL
- Detailed process analysis
- Periodic testing of the system
- Definition of service catalog
- KPIs and SLAs identification
- Continuous improvement of the sistem

: : Third-party certification

- Technical staff education
- Examinations and certification
- Use of certified supplier logo
- Technical assistance in various ways
- Business support
- Sharing of strategies and roadmaps
- Publication list on the project website
- Access to marketing materials
- Participation in joint events

CMDBuild
Open Source configuration and management database
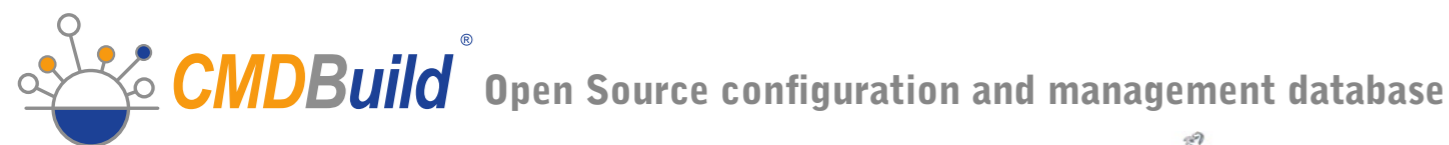
CMDBuild is a Trade Mark by Tecnoteca srl, project maintainer.
ITIL ® is Registered Trade Mark, and a Registered Community Trade Mark of the Office of Government Commerce, and is Registered in the U.S. Patent and Trademark Office

TECNOTECA   Comune di Udine   Cogitek

CMDBuild is a web application completely configurable by the user to shape and manage the asset information database (CMDB stands for "Configuration and Data Base Management ") and to support workflow management.

Objective of the system is to facilitate the operators to maintain full control under the situation of the assets used, knowing at all times the composition, location, functional relations and the rules for updating over time.

CMDBuild is a central management module, interoperable with databases and external applications dedicated: automatic inventory, document management, word processing, directory services, e-mail, monitoring systems, intranet portals and other information systems.

CMDBuild is flexible and expandable gradually and by self, oriented to the use of best practices ITIL (IT Information Library) and released with GPL open source license.

CMDBuild is released under GPL open source license and uses only open source components selected for validity and technological diffusion

CMDBuild inspires and compliant to "best practice" ITIL (Information Technology Infrastructure Library), now a standard for the management of information systems

: : Questions answered

- how many and what resources I have
- where is an asset, who uses it and how
- what is and what is made
- what are the guarantees or contracts expiring
- have I all the necessary software license
- what happened during the asset's life
- which are the assets that requested more support ticket
- what are network devices are connected assets
- what other impacts an asset's change
- what activities are waiting for me
- who has done work on a resource, when, with what outcome, and who authorized it
- what SLA should I ensure
- where there are contracts and manuals

: : Download

Free download from the project's site for source code, manuals, brochures, slides and other documentation:

< www.cmdbuild.org >

CMDBuild

Open Source configuration and management database

: : CMDBuild is

- CONFIGURATION
- CORRELATION
- PROCESSES
- INTEROPERABILITY
- INVENTORY
- DOCUMENTS
- REPORTS
- GEOREFERENCES

CMDBuild was promoted by the Municipality of Udine and was designed and developed by Tecnoteca with the advice of ITIL Cogitek

TECNOTECA   Comune di Udine   Cogitek

: : Data model configuration

Each user can self define the optimal data model for its operational needs in terms of:
• entities to be addressed in the information system ("classes")
• descriptive information ("attributes")
• types of relationships ("domains")
• Lists of values ("lookup")
• user groups and access permissions
• possible criteria for relating georeferences
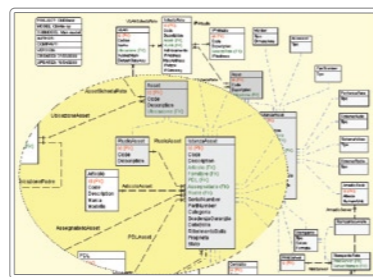
The logical model defined by a diagram editor Entity - Relationship is then configured into CMDBuild through the Administration Module.
Each model could provide data between "classes" of various assets including software and services, suppliers, customers, contracts, network elements, locations, ticket, change requests, etc.

: : Correlation reference

Through the "domains" configured in data model are defined and updated correlations between the cards, including for example:
• item with other item (functional and hierarchical dependencies)
• item with assignees, vendors and contracts
• item and assignees with locations
• item with network devices, cabling, network points and VLANs
• item, assignees and operators with ticketing or configuration change processes
• item, users, operators and suppliers with external SLA and catalog services.
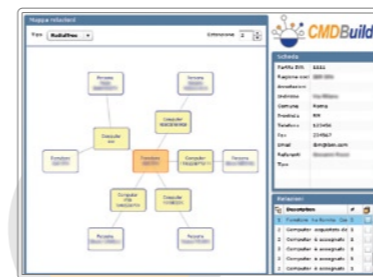
: : Custom Processes

Each workflow is described in terms of:
• sequence of operations, with possibly conditional flows
• informations to be displayed and prompt the user every step
• automatical execution (launch dependent processes, updating the DB, e-mail sending, etc.)
• user roles authorized to perform each step of the workflow.
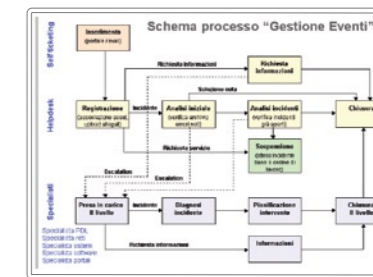
The workflows are designed using the external open source visual editor JPEd and then imported into CMDBuild and interpreted by the internal engine Enhydra Shark.
Thanks to these basic mechanisms all the ITIL processes could be configured, including those of Event Management (accidents or "ticket", service requests and information), Change Management (standard and non standard), Configuration Management, etc.
More useful workflow in IT management may relate, in general, the IMAC activities and handling of the assets.

CMDBuild®

Software
Postazioni Client
Ubicazioni
Server e rete
Fornitori
Licenze
Archivio documenti
Workflow

: : Reporting

Once the data model is defined it is populated by importing initial data already available and then updating the system from continuing operations over time.
Effective management of data requires the availability of reports on various kinds of data: summary, analysis, statistics with graphs.
Simple tabular report can be generated by a wizard inside the system; for more sophisticated reports the external visual editor iReport, based on open source JasperReports, is used.
Those reports are then imported into CMDBuild and made available to different types of users.

: :Document management

The documents constitute an important information component to ITIL related to item addressed in the CMDB: manuals and technical documents, contracts, forms, screenshot error, technical drawings, images of objects and locations, etc.
CMDBuild uses Alfresco as embedded documental repository system , a market leader in open source solutions and more.
The system allows you to associate a card with a one or more documents, classifing them into categories, indexing in "full text" mode, searching into CMDBuild by category and by text content.

: : Automatic Inventory

With criteria defined in wizard mode can be configured the updating of the CMDB from external systems.
By interfacing with a system of Automatic Inventory (such as the open source product OCS Inventory) technical data of the managed computer (either directly or with a specific workflow for approval by the Change Manager) are updated periodically.
The interface with a monitoring system can import into the system alarms detected on the item (server, network equipments, environmental control equipments such as fire detector or cooling device) and make them available for cross-analysis on the data.
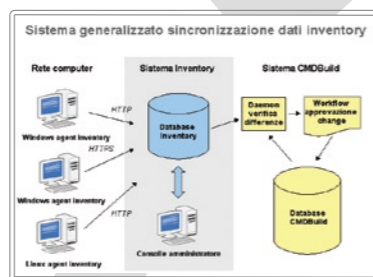
: : Georeferences

During operations management can be particularly useful to know the exact location of item and query in graphical form this particular type of correlations.
Are managed local views (CAD maps) and those views reported to a wider territory (GIS).
In the first case views of single compartment can be modeled in detail and possibly the location of assets in offices or facilities in common rooms.
In the second case can be viewed information entities distributed on the territory, such as asset corporate offices located in different locations of suppliers, etc.
Several services maps are usable (OpenStreetMap, GoogleMaps, etc.) and raster or vector drawings can be loaded as background..

: : Interoperability

IITIL v.3 expands the concept of single, monolithic CMDB, including situations where there are some interoperable CMDBs.
CMDBuild implements several solutions for interoperability:
• SOAP webservice which exposes all the methods for primitive data management, documental annexes and processes
• export functionality in the form of JSR portlet to integrate into external collaborative portals (including open source Liferay) features reserved to non skilled users interested in running reports, initiate processes or browse their progress, check information of its own relevance (asset allocated, etc)
• syncronization system with generic databases, through mechanisms such as ETL and loading driven by workflow
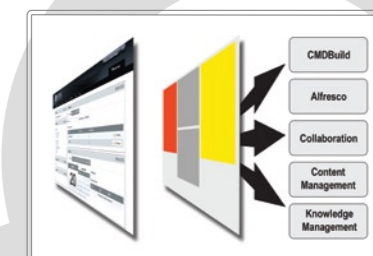
CMDBuild® is a 360 degrees system: data model, process, reports, links to external systems