

# Whitepaper

for                    Website Download  
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## 1. Overview

System One is a platform that bundles enabling technologies from the areas of Social Software, Semantic Web and Information Retrieval.

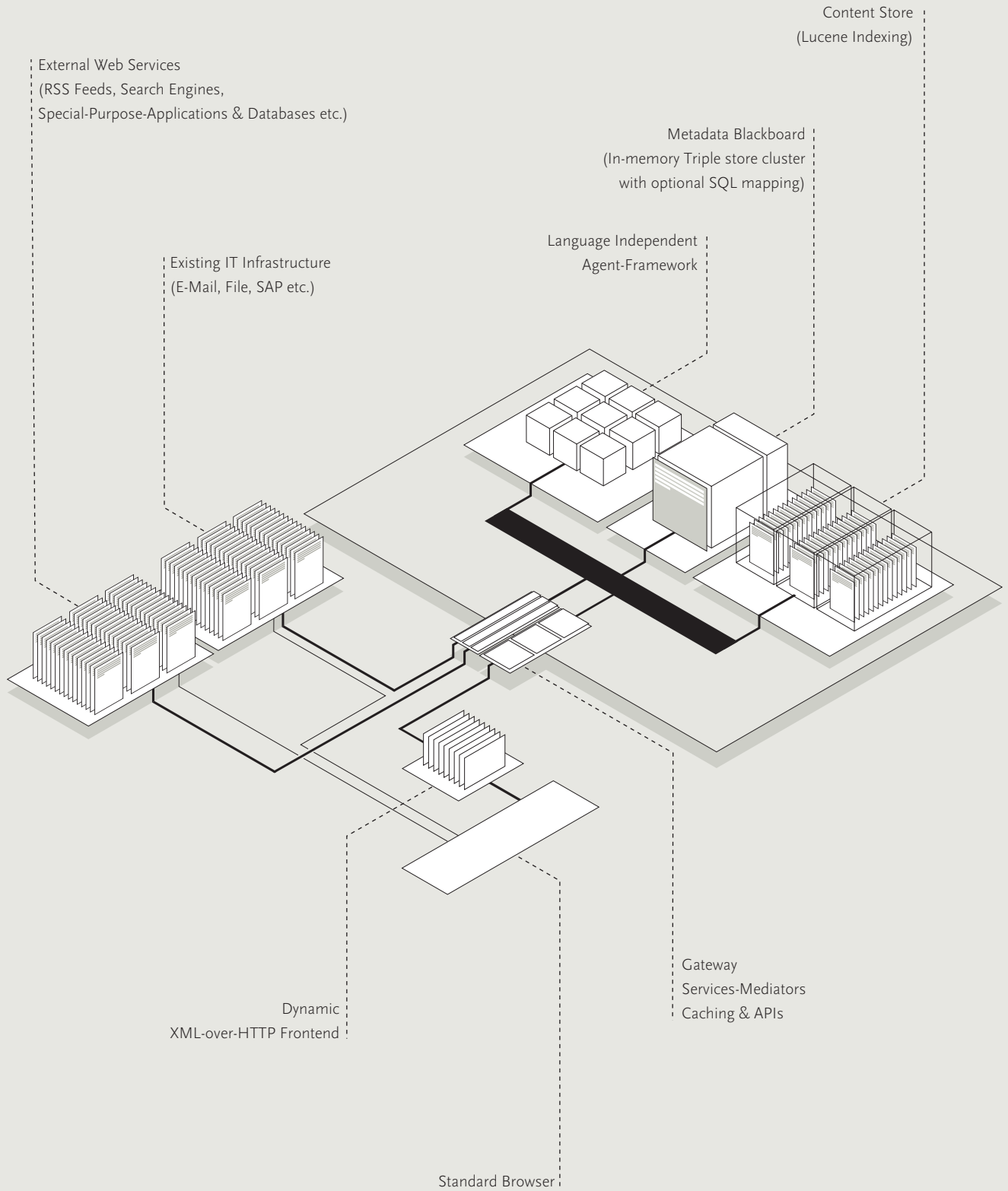
The platform is designed as an application service and requires neither client nor server-side installations.

### 1.1 Requirements

Modern standard web browser, Java and Flash clients for visualization (optional)

Standards-based interfaces to existing infrastructure, such as email or file servers

## 2 Architecture



### System One

## Back End

System One is built on top of a multi-level application service. We provide the hardware and software required for running System One as part of our services. System One can optionally run as a hosted service at data centers (distributed over the two Silver Server centers in Vienna for Austrian customers) or as a managed service running within the client's intranet.

### Features

**Foundation:** 64bit x86 commodity hardware cluster (dual 1U nodes, Sun or HP at the time of writing), up to 16GB 400Mhz ECC DDRAM per HyperTransport node, min. 74GB hardware RAID 1, permanent, proactive iLO monitoring of all components, Debian 3.1 Sarge Linux OS.

**Blackboard:** in-memory triple store, persistent JCR (JSR-170), optional SQL mapping

**Versioning:** page-based consistency of all texts, structural elements and attachments, storage of all previous versions.

**Indexing:** Lucene 1.4 index of all internal and aggregated text content.

**Agent framework:** language-independent, event- and schedule triggered, automatic resource allocation.

**Communication:** service-oriented architecture based on asynchronous Java Messaging technology internally, and on standard protocols externally (see section Mediators).

**Data export:** XML, N3, RDF & RDFS, SQL (optional), in predefined schemata.

**Similarity Engine:** adaptive just-in-time information retrieval based on Lucene, harvesting of structural elements for ontology-based extraction, combination of social network and vector space modeling, concept and key-phrase extraction, and weighted term frequency and user profile analyses.

**Client access:** SSL HTTPS.

**User management:** from within Blackboard; optional integration of existing LDAP and AD directories and synchronization via SAML.

**Security:** access control on blackboard and application levels, highly granular user-group access rights management for content and mediators, daily off-site backup of all data (redundant architecture including client's infrastructure available if desired), 24/7 monitoring and support.

### Requirements

Customer-side hardware requirements for running System One in your own network:

**Application:** 2U rackspace, 2 RJ45 ports (min. 10/100 Ethernet), min. 1 UPS-protected PDU port, 1 internal IP address and DNS record.

**iLO management:** 2 RJ45 ports (min. 10/100 Ethernet), 2 internal IP addresses, VPN-accessible ports for our own operations team.

## Front End

System One interacts with end users directly through standards-compliant web browsers. No client-side installations or updates are required.

### Features

User interface: adaptive XHTML and CSS with JavaScript, e.g. toggled views of elements, extreme reduction of user interface metaphors and menu items while ensuring quick access to important elements.

Data interface: data transfer based primarily on AJAX (asynchronous, bi-directional XML over HTTP).

WYSIWYG editor: cross-browser safe formatting and linking of pages.

Language support: wide range of languages (user interface available in German and English at the time of writing).

Structuring: easy composition linking and publishing of text pages.

Versioning: full preservation of page-level consistency, allows diffing and roll backs.

Ontologies: point-and-click creation of structured elements from within the browser (optional properties: text, link, date, number, checkbox, drop-down), easy assignment to individual pages, easy editing.

File upload: file and image management including versioning.

Security: highly granular element-level access rights management (personal and group, groups can be defined in buddy lists); flexible differentiation between text elements, files and images on one and the same page.

Context information: aggregated display of the most relevant resources in real time.

Wikilog: integration of wiki and weblog functionality, resulting in both chronologically and associatively structured views.

Weblog: on a per-user basis, flexible aggregation (based on people, teams, locations, etc.), comments, trackbacks, RSS.

Overview: visualizations of ongoing changes in various areas (e.g. based on individuals, key words, activities), extended full text search.

### Requirements

Operating systems: Windows (98, NT 4.0, 2000, XP, Server 2003), Mac OS X, Linux.

Browser: MS Internet Explorer 5.5+ (6+ recommended), Mozilla Firefox 1+, Safari 1.1+, all with JavaScript enabled (XML-over-HTTP requests, works in trusted zones).

Connection speed: min. 10Kbits per concurrent user recommended.

Plug-Ins: JRE 1.3+ (for graph-structure visualizations), Flash 6+ (for timeline visualization).

Recommended minimum configuration: Intel Pentium or Power G4, 256MB RAM, 1024x768 screen.

## Mediators

Mediators let System One plug into a wide range of data sources. The information extracted from these sources can then be indexed and displayed in context by System One in an easy-to-understand way. System One contains a number of such standard connectors. The details of the implementation depend on the make-up of the infrastructure to be embedded.

## Search Engines

Services: agents-based queries to Google, Yahoo and MSN Search via the respective APIs and ongoing ranking of results.

Requirement: API key or direct connection to an existing appliance.

## Weblogs

Services: company-wide, both user- and team-specific RSS aggregation (RSS 0.91 – 2.0, Atom, OPML import).

## Email

Services: account-based or server-based (depends on mail server in use) fetching and indexing via POP3 or IMAP, ongoing or configurable (e.g. at nighttime).

Requirements: bandwidth appropriate for typical email traffic volume.

## File

Services: mounting, monitoring and indexing of SMB, NFS or WebDAV shares, adoption of access rights.

Requirements: bandwidth appropriate for typical file traffic volume.

## Databases

Services: access to database content via JDBC, identification of relevant information, query design and scheduling included in implementation services.

Requirements: bandwidth appropriate for expected transaction volume.

## SAP

Services: embedding of SAP systems via NetWeaver/SOAP-WSDL in XMLS, identification of relevant information, messaging and scheduling included in implementation services.

Requirements: vary (depending on project)

## Generic XML

Services: integration of various services via XML or XML derivatives, making it possible to embed legacy systems, special-purpose applications and a wide range of external services (including, for instance, special-purpose databases, media management systems, press clipping services, etc.). Flexible, project-specific implementation.