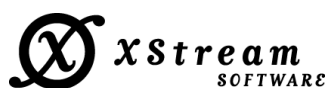


XStream RapidShareTM v1.0

Technical Brief

December 2004



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XStream RapidShare Overview

Introduction

XStream RapidShare v1.0 is XStream's secure, hosted web environment and digital workspace. This powerful web-based system provides secure, interactive shared spaces on the web for advanced communication, collaboration, resource sharing, and conferencing. XStream RapidShare focuses the power of the web to bring together information, people, and tools – regardless of time or distance.

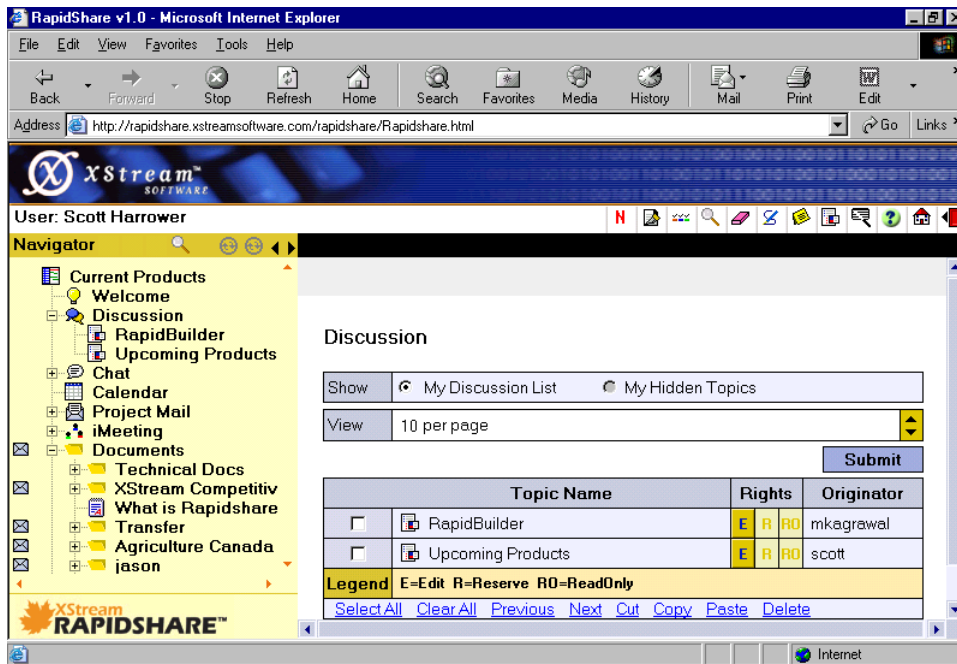


Figure 1: XStream RapidShare Interface

With this technology, companies large and small reap the rewards and benefits of connecting employees, customers, prospects and partners – anywhere, anytime – so they can work together more effectively and efficiently.

Whether the need is to collaborate and work on tasks/projects at hand, share files/documents for knowledge transfer, or conduct ad hoc meetings, demonstrations, events, training sessions or classes, seminars, support sessions or company wide-broadcasts, XStream RapidShare meets the mark by providing powerful yet easy-to-use capabilities and features.

XStream RapidShare provides access to the following modules:

- **Communication and Collaboration Module** – This module enables clients to use a project-based methodology to have distributed or global teams of people access, organize and work jointly on projects 24/7. Each project created consists of powerful capabilities that enable users to instantly share files and documents (of all types), participate in real-time discussions and chat sessions, exchange e-mail, post messages and notifications, and much more.
- **Learning Management System (LMS) Module** – This module enables management of all types of online learning content and offline scheduled events with optional capabilities for web-based

communication and collaboration as part of the LMS. For more information on the XStream RapidShare LMS technology and the specific learning management and communication/collaboration capabilities provided, consult the “**XStream RapidShare LMS v1.0 Technical Brief**” document. This document may be downloaded (in .PDF format) from XStream’s web site at <http://www.xstreamsoftware.com/downloads.htm>, or it may be acquired by contacting XStream at 613-731-9443 or by e-mail at info@xstreamsoftware.com.

This technical document focuses on the capabilities provided by the Communication and Collaboration module within XStream RapidShare.

Organization Hierarchy in XStream RapidShare

Using a Hierarchical Project-based methodology, XStream RapidShare users can easily organize and control access to their communication and information sharing sessions by defining and working with “shared resources” organized in hierarchical projects. Everyone within an organization can use the same secure system to communicate and collaborate on projects and manage/access any type of content or files that may be used within the organization. XStream RapidShare represents each Resource in a project as an Object.

XStream RapidShare is capable of hosting multiple Organizations with complete security for the data/content within each Organization. It allows each Organization to be divided into multiple Organization Units (referred to as OUs in this document), and each OU may be divided into multiple Sub-Organization Units (Sub-OUs). A Sub-OU may itself be divided into multiple Sub-OUs. XStream RapidShare supports up to 4 OU levels (i.e., OU level plus three Sub-OU levels).

XStream RapidShare allows users to create Project workspaces in all levels of the hierarchy.

XStream RapidShare hides the list of currently hosted Organizations from not only Internet users but also users of the subscribed Organizations.

Figure 2 on the following page shows the typical Organization Hierarchy of XStream RapidShare.

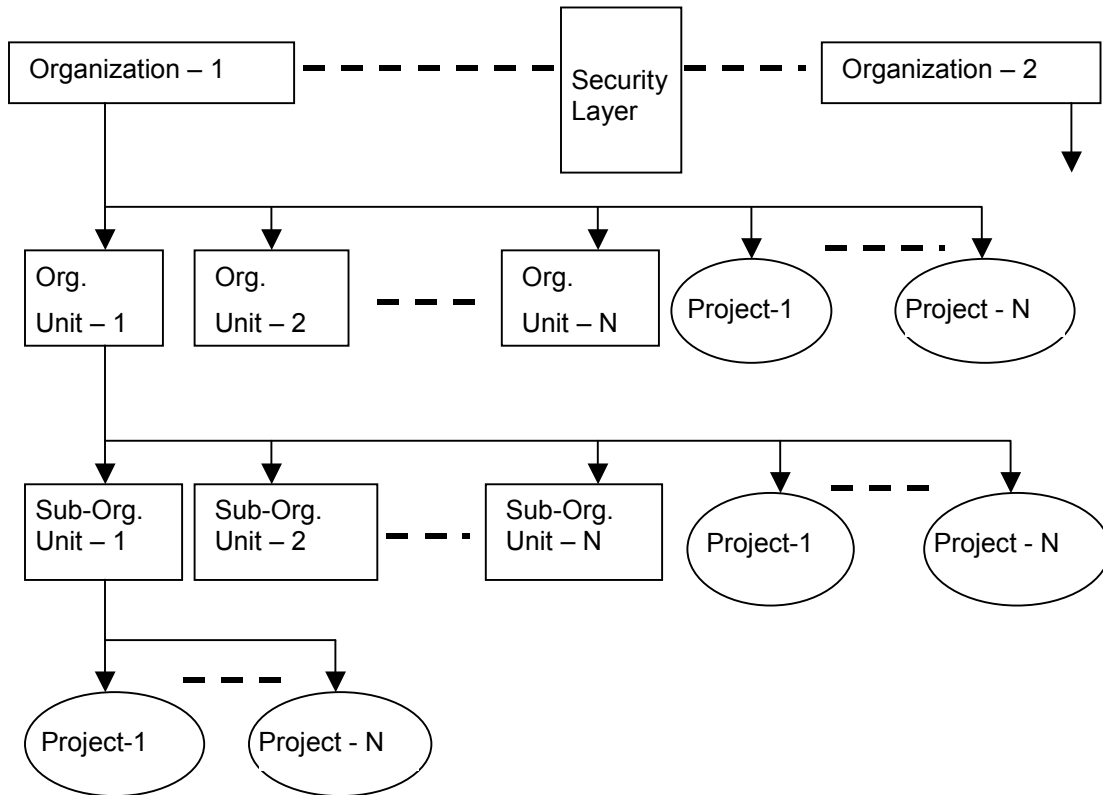


Figure 2: Organization Hierarchy of XStream RapidShare

Administration of XStream RapidShare

A single Root Administrator is responsible for managing all the Organizations that are hosted in XStream RapidShare. The Root Administrator's administrative capabilities are limited to creating Organizations and setting their licensing attributes/parameters. The data/content of the Projects within the hosted Organizations are visible/accessible to the Root Administrator. The Root Administrator can only see/manage the users and groups within the hosted Organizations, OUs, and/or Sub-OUs.

Each Organization Administrator is completely responsible for managing the respective Organization's OUs and Sub-OUs, the Projects created directly under the root Organization, and the Projects created under each OU and Sub-OU.

Each Organization Unit (OU) Administrator has limited responsibility for managing the respective OU and the Projects under it. This is also the case for each Sub-Organization Unit (Sub-OU) Administrator.

Project Managers are solely responsible for all Project-related activities.

Figure 3 on the following page shows the typical Administration Topology of XStream RapidShare.

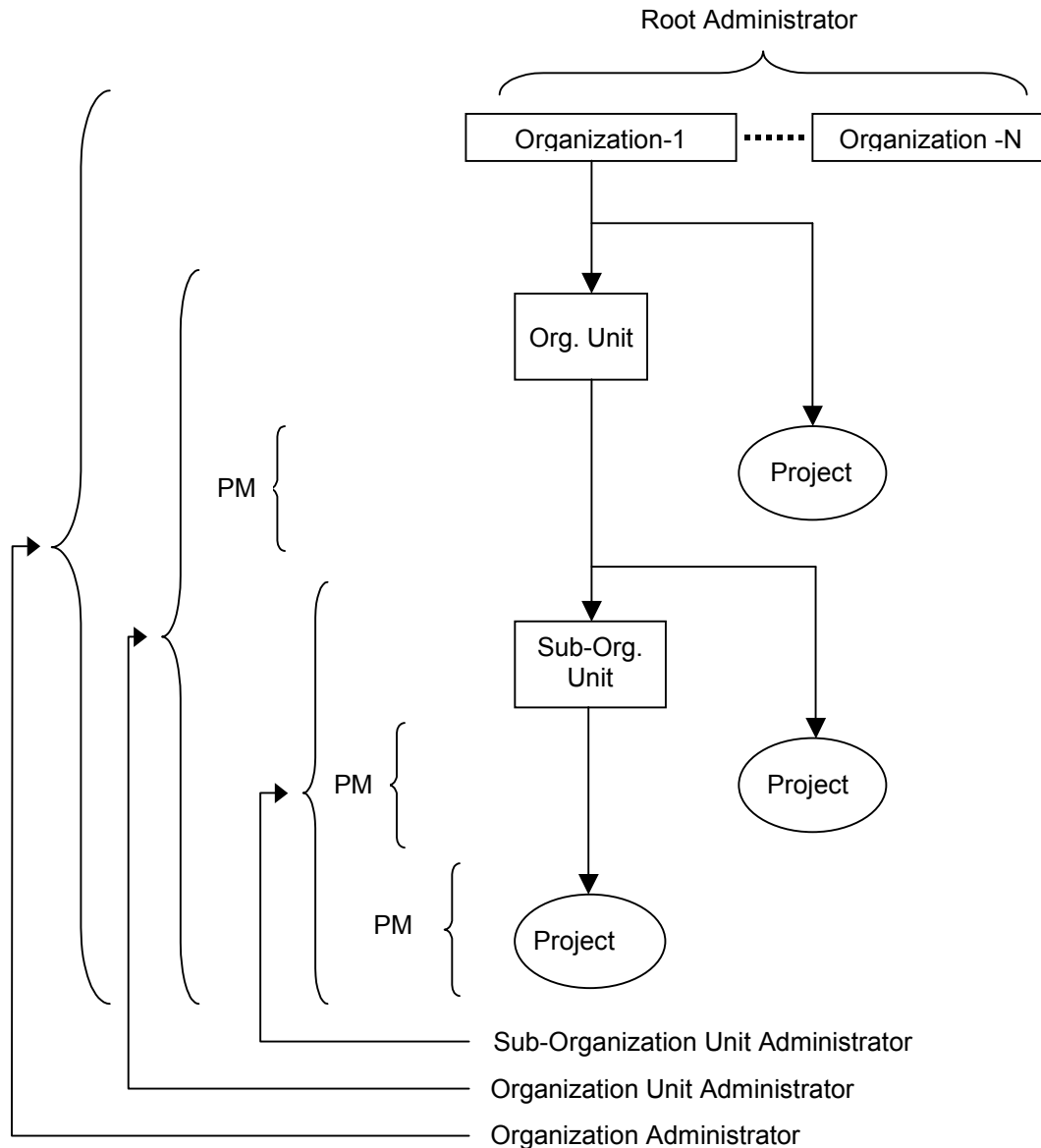


Figure 3: Administration Topology of XStream RapidShare

XStream RapidShare Project

A Project provides a shared, secure workplace on the web. It is a shared space for distributed teams to discuss ideas, share information, and make decisions. A member list is associated with each object so that access to the data may be restricted. The person who creates an object is the object's owner by default. The owner has the ability to modify the object's user list by adding or removing members and assigning privileges to those members.

Each project in XStream RapidShare can be made accessible using either the HTTP or HTTPS protocol. The HTTPS protocol provides SSL security using 128-bit encryption, providing a completely secure environment for all transactions, including file uploads/downloads.

A Project object has the following default objects associated with it:

Welcome

The Welcome object enables developers to create Project Welcome Pages that can be used for a variety of purposes, such as to welcome project members to projects, provide an overview and description of the project, include project milestones and deadlines, and more.

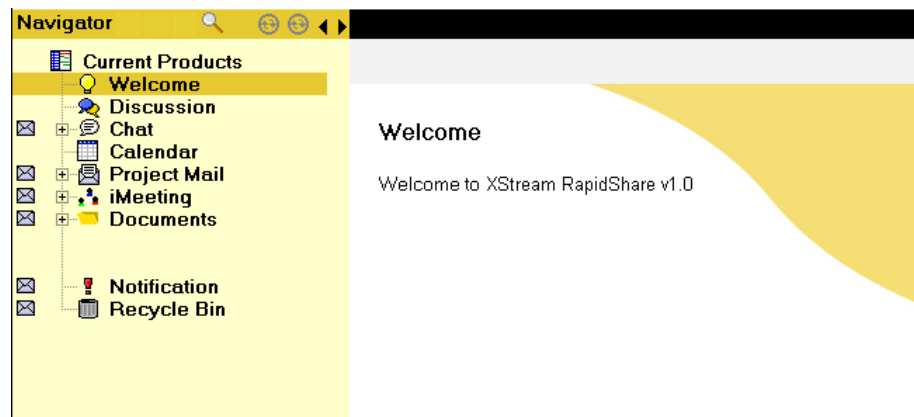


Figure 4: Project Welcome Page

Discussion

Threaded discussion forums enable any project member to initiate a one-on-one discussion with another member, multiple selected members, or all members of the project.

ID	Author	Message
1	scott	Date Posted 11/4/2003 12:21:00 PM Reply I find RapidShare very useful for collaborating with the various members of my team.
2	john	Date Posted 11/4/2003 12:24:00 PM Reply [Reply to Message # 1] I agree. The secure web-based environment is ideal for enterprise-wide projects. This is a great technology.
3	scott	Date Posted 11/4/2003 12:26:00 PM Edit Reply Anyone else have any thoughts on RapidShare?

[Post Message](#)

Figure 5: Project Discussion

Within each topic-based forum, users can post messages, view messages posted by others, and reply to posted messages. These asynchronous discussions are saved as part of the project and can be accessed by any authorized project member at any time.

Chat

Project members can initiate synchronous text-based chat sessions with other users on demand. Chat sessions are an excellent electronic medium for enabling project members to share information and ideas pertaining to subject matters that are directly or indirectly related to the project.

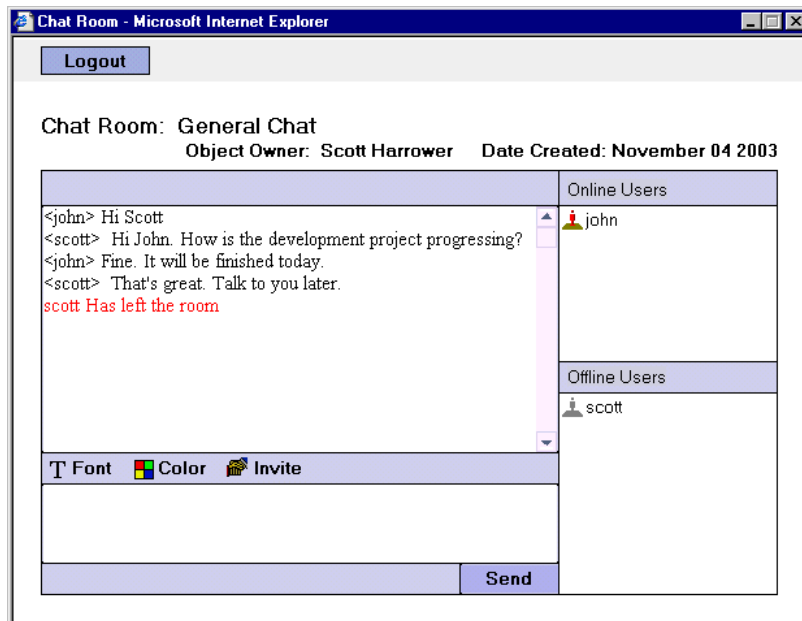


Figure 6: Chat Session

Administrators or users (with appropriate rights) have the capability to create chat rooms where one or more invited internal users or external users may join the chat. Internal users invited for a chat may be notified via animated marquee to join a chat in progress. External users (i.e., any user who is or is not a user of XStream RapidShare) may participate in chatting by receiving a URL that they can use.

Each chat session can be saved and made available to other users.

Calendar

The Calendar provides a mechanism for project members to keep track of upcoming events or activities. Events in the calendar can be organized and viewed by day, week, month, or year.

Object Owner: Chris Charette		Date Created: 21 May 2004					
<May		June 2004					July >
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
30	31	1	2	3	4	5	
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	

Figure 7: Event Calendar (by Month)

View Weekly
Object Owner: Scott Harrower Date Created: 04 November 2003

Prev Next

November 2, 2003, Sunday
November 3, 2003, Monday
November 4, 2003, Tuesday
November 5, 2003, Wednesday
November 6, 2003, Thursday Staff Meeting
November 7, 2003, Friday

View Daily
Object Owner: Scott Harrower Date Created: 04 November 2003

<<5 6 November 7>>

Event Name	Start Time	Contact	More info
Staff Meeting	09:00 AM	Scott Harrower	More info

Figure 8: Event Calendar (by Week and by Day)

Notifications

The Notifications object is used for providing important information to project members, including project changes and enhancements, upcoming meetings and chat sessions, and more.

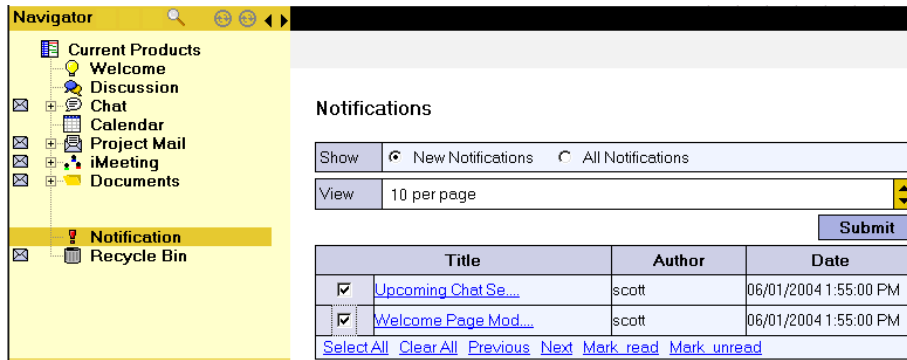


Figure 9: Project Notifications

Recycle Bin

The Recycle Bin object is a repository for files and other items that have been deleted/removed from the project by authorized members.

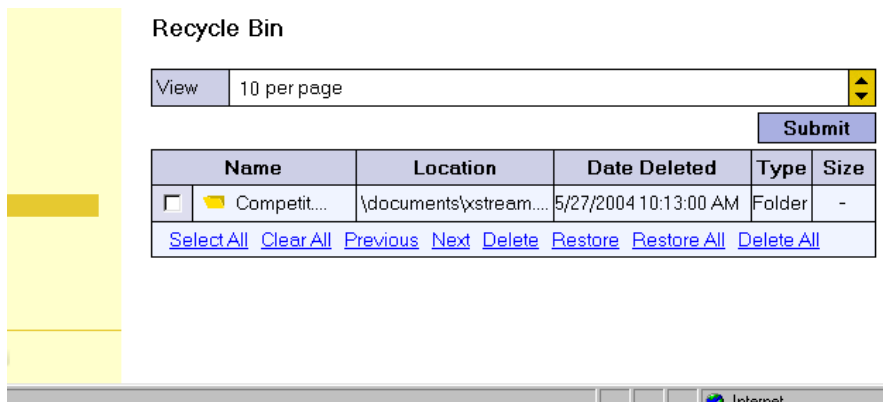


Figure 10: Recycle Bin

Items stored in the Recycle Bin may be deleted permanently or restored to their previous locations within the project.

XStream RapidShare Objects

In addition to the default Project Objects (described above), there are several other objects that may be optionally added to a project. These objects include the following:

Electronic Mail Facility

Users may compose, send, receive, and store e-mail messages. Since anyone can send e-mail to the project mailbox, it is particularly useful for receiving e-mail from people outside of the project or organization.

The project mailbox can also be used to create an archive of a project's correspondence by sending copies of all e-mails to this mailbox. This mailbox maintains read/unread status for individual users of the project.

Folders

Project members can organize documents and files that are part of a project in folders and sub-folders. Project members can control access to each folder that they have created.

Files/Documents

Files and documents (created using any application) can be easily uploaded to the project and then shared with project members to facilitate transfer of knowledge, sharing of training content, and exchange of ideas, best practices, methodologies, and other types of information.

A project member may upload files/documents to the project (or a folder that is part of the project) using either of the following methods:

- **Normal Method** – The file is uploaded from a local or LAN/WAN drive using a standard “Choose File” dialog box.
- **ActiveX Method** – The file or folder is uploaded over the web using the ActiveX component. Using this method, the user may upload a single file or a folder containing multiple files and subfolders.

The files/documents that are added to a project have built-in capabilities for File Locking and Version Tracking. This makes it easier for participants to work on and access the latest versions of files or documents that are part of the project.

There are a number of unique features and capabilities provided for File objects:

1. Ownership

The file is by default owned by the person who initially created it. This means that only the owner can edit this file by default. However, the owner can assign rights (read and/or modify) to other project members as required.

2. Version Tracking

Project Members can keep track of the different versions of the files that are created.

3. File Read Access

When a project member views a file (i.e. reads a file), other project members can still access it. Reading a file does not prevent the file from being accessed by others for reading or editing purposes.

4. File Edit Access

When a project member edits a file, they reserve the file, which prevents other project members from editing the same file. However, it does not prevent project members from accessing the file for reading/viewing purposes. The “automatic” reservation placed on the file (when a project member opens the file for editing) is released when the file is replaced or the changes are abandoned. Once the file has been updated, an unread mark is placed on the file as a visual indicator letting others know that the file has been modified.

NOTE: If necessary, the Project Manager can release a reservation on any file in the Project so that others can edit it.

5. Manual Reservation

If a project member wishes to hold a file for future editing, a manual reservation can be placed on the file. This prevents other members from editing the file until the Project Member has finished editing the file and released the reservation.

Notes

Project members can post general notes pertaining to the project.

Links

Project members can create shared links or shortcuts to Web URLs.

A link is a shortcut to a Web site. It allows you to specify whether a web page referred to by the link should be opened in a new window or not.

Other XStream RapidShare Features

XStream RapidShare also includes the following features and capabilities:

Self-Registration Capabilities

Users without accounts are able to self-register in the system by creating their own accounts online. An account creation confirmation e-mail (containing login credentials) is automatically sent to a user after he/she registers.

Reporting Capabilities

XStream RapidShare enables administrators and users (with appropriate rights) to generate various types of project reports (for tracking account usage, traffic summary, etc.). Reports may be viewed online, printed, and exported to other formats (including Excel).

Customize User Interface Elements

Customized welcome pages and banner images may be specified for the organization and each individual organization unit and project within the organization. A welcome page can be used for a variety of purposes, such as welcoming members to the organization/project, providing an overview and description of the organization/project, specifying milestones and deadlines, and more. A banner image may be used to show the organization's logo, a website advertisement, a headline, a combination of a logo and other text (e.g., guidelines), etc.

Other interface elements (such as fonts, colors, etc.) may also be customized via Cascading Style Sheets (CSS).

Notify Me

XStream RapidShare's "**Notify Me**" feature enables project members to be kept informed about changes made within the project. Each user is given the capability and the rights to enable "**Notify Me**" at the

project level or at any node level. A project member may choose to be automatically notified (by e-mail) as soon as a change occurs in a selected project component, or he/she may choose to receive a regular nightly summary of all changes made to a selected project component or all changes made to the complete project.

Read/Unread Status

XStream RapidShare automatically displays an unread mark (an envelope symbol) next to each item that has been added, changed or modified since the user last visited or worked with that item. The item can represent an object that doesn't contain any other items under it (such as a file, a link, a note, etc.) or a folder that contains at least one item that has been added, changed or modified.

As soon as the user has visited the unread item, the system automatically removes the unread mark and displays the item with Read Status. In order for the system to remove the Unread Mark next to a folder, there should be no items with Unread Status in that folder.

Comments

Project members may add comments to any project object. Comments are user-defined annotations or notes that provide extra details, recommendations, hints, tips, or other general information to any user accessing the project object.

Change Icon

XStream RapidShare enables project members to customize the icons that are displayed in the Navigation Tree. Members may import custom icon images to replace the default icons used for different project objects in the tree.

Cut/Copy/Paste Objects

XStream RapidShare includes facilities for cutting/copying and pasting files and other objects between folders and between projects.

Search Capabilities

Project members may use the built-in search engines to search for and locate specific objects/items within the project, including files, folders, calendar events, discussions, e-mails, notifications, etc.

Archiving Capabilities

The system can automatically store deleted project objects and associated data in an archived location. The archived content may be subsequently restored to the project or permanently removed.

Project Backup Capability

In XStream RapidShare, an administrator can export the contents of a project for storage in another location. Exporting capability enables the administrator to generate and store a backup copy of the project while the original project still remains in XStream RapidShare and can be accessed and edited as normal.

At any time, the exported project can be imported back into XStream RapidShare (either to its original organization or to a different organization).

Section 508 Compliance

XStream RapidShare includes full support for the accessibility requirements specified in Section 508 of the U.S Rehabilitation Act. XStream RapidShare is a 508-compliant technology that may be fully accessed by users with physical disabilities or limited mobility.

Unicode Support

XStream RapidShare includes support for the Unicode character set (for encoding multiple written languages).

Multi-Language Support

XStream RapidShare supports English, French, Danish, and Norwegian (with upcoming support for additional languages).

XStream RapidShare Technical Overview

XStream RapidShare Client Requirements

The following are the minimum system requirements for a client using XStream RapidShare:

- Windows 98, 2000, ME, XP, or NT (with Service Pack 6 or higher)
- Microsoft Internet Explorer 6 Service Pack 1
- Minimum 64 MB RAM (128 MB is recommended)
- Minimum 100 MB of free hard disk space

Components of XStream RapidShare

XStream RapidShare consists of objects, properties, and values.

Objects

XStream RapidShare represents each shared resource as an object. Hence, an object is a unit of information about a resource (comparable to a record in a conventional database).

Properties and Values

Each object in XStream RapidShare consists of categories of information (known as properties) that can be recorded about a resource. The same type of object has the same properties; different types of objects may or may not have the same properties. A value is the data within a property.

Consider the following example:

Object: USER
Property: Login Name
Value: John

XStream RapidShare Objects

XStream RapidShare objects can be divided into three (3) types: **Root**, **Container**, and **Leaf**.

Root Object

The Root object represents the highest level in the XStream RapidShare Tree. It provides access to different Organization objects.

The XStream RapidShare Administrator can grant rights to the entire XStream RapidShare Tree from the Root. Each RS System can have only one Root.

NOTE: The Root object is a placeholder. It cannot be deleted or moved.

Container Objects

Container objects hold (or contain) leaf objects or other container objects. They logically group and organize the objects within the XStream RapidShare Tree. Containers can be used to represent companies, departments, workgroups, and shared resources.

The following types of container objects are available:

- Organization
- Organization Unit
- Project
- Threaded Discussion Forums
- Calendar
- Folder
- Group
- Project Mailbox
- Chat Rooms
- Recycle Bin

Leaf Objects

Leaf objects represent shared resources, such as users, files, notes, etc.

The following types of leaf objects are available:

- A. Users
- B. Notes
- C. Files/Documents
- D. Links

XStream RapidShare Tree Structure

The XStream RapidShare Tree is a hierarchical structure that stores and organizes objects. It is similar to the structure found in the DOS file system.

The top of the tree is called the Root. Container objects (analogous to directories) are placed in the Root or within other containers. Leaf objects (analogous to files) are placed within containers.

NOTE: There is an important difference between the XStream RapidShare Tree structure and the DOS file system structure. In the XStream RapidShare Tree, different container objects have restrictions on where they can be placed and what can be placed in them.

The Role of the XStream RapidShare Tree

To access an XStream RapidShare resource (such as a USER object), a user requests the object by name. XStream RapidShare then locates the resource in the database and verifies that the user is a valid user and that he/she has rights to use the object.

NOTE: Because objects are not stored in a single container, XStream RapidShare does not have to search the entire tree to find an object.

XStream RapidShare Object Rights

Object rights, which are assigned to an object in the XStream RapidShare Tree, control the operations that can be performed on the object as a whole. The various object rights are listed and described below.

Supervisor Object Right

The **Supervisor** object right grants all possible rights to the user object. An object with Supervisor rights has full access to the information inside the object, and it also has the capability to define the list of users who have access to this object and the rights assigned to the users on the objects.

Browse Object Right

The **Browse** object right grants the right to view objects in the XStream RapidShare Tree.

Create Object Right

The **Create** object right grants the right to create a new object below the current object in the XStream RapidShare Tree. Note that this right is only available for container objects.

Delete Object Right

The **Delete** object right grants the right to delete the current object from the XStream RapidShare Tree.

Modify Rights

The **Modify** object rights grant the rights to read, add, change, or remove information contained in the current object.

XStream RapidShare Tree Right Inheritance

XStream RapidShare Tree rights flow downward from a container to sub-containers. In other words, object rights can be inherited. However, a user may block the inheritance of rights by making new assignments at a lower level in the XStream RapidShare Tree.

Summary

XStream RapidShare is a web-based collaboration tool used to provide intelligent, effective, and personalized interactions with customers on any touch point. The XStream RapidShare technology allows distributed teams to access and organize information, manage documents, and collaborate more effectively on various types of projects, including the following:

- New product development and delivery
- Client engagements
- Program management
- Supplier and channel management
- Global sales and marketing campaigns
- E-learning

XStream RapidShare's web architecture can be easily customized to meet specific project demands.

Contact Information

For more information on **XStream RapidShare v1.0**, please contact our sales team either by phone at (613) 731-9443 or by e-mail at salesupport@xstreamsoftware.com.

XStream Software Inc.

2280 St. Laurent Blvd., Suite 200

Ottawa, Ontario, CANADA

K1G 4K1

www.xstreamsoftware.com

info@xstreamsoftware.com (Information)

salesupport@xstreamsoftware.com (Sales)

techsupport@xstreamsoftware.com (Support)

Telephone: (613) 731-9443

Fax: (613) 731-9615