

# Too Many Metas

A high level look at building a metadata desktop

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**Novell.**<sup>®</sup>

# Overview

- About me
  - Dashboard
  - Beagle desktop search
- “Metadata solution” -- what's the problem?
- A few statements (facts?) about metadata
- The existing technologies related to metadata
- The problem of applications siloing their data



# No dissolving of solids in liquids here

- Solutions in search of problems
- Letting technologies dictate our behavior instead of use cases and user benefit
- Good examples of user benefit: Neil J. Patel's Nautilus metadata panels; Leafytag's tagging widgets; Deskbar's searching of tags

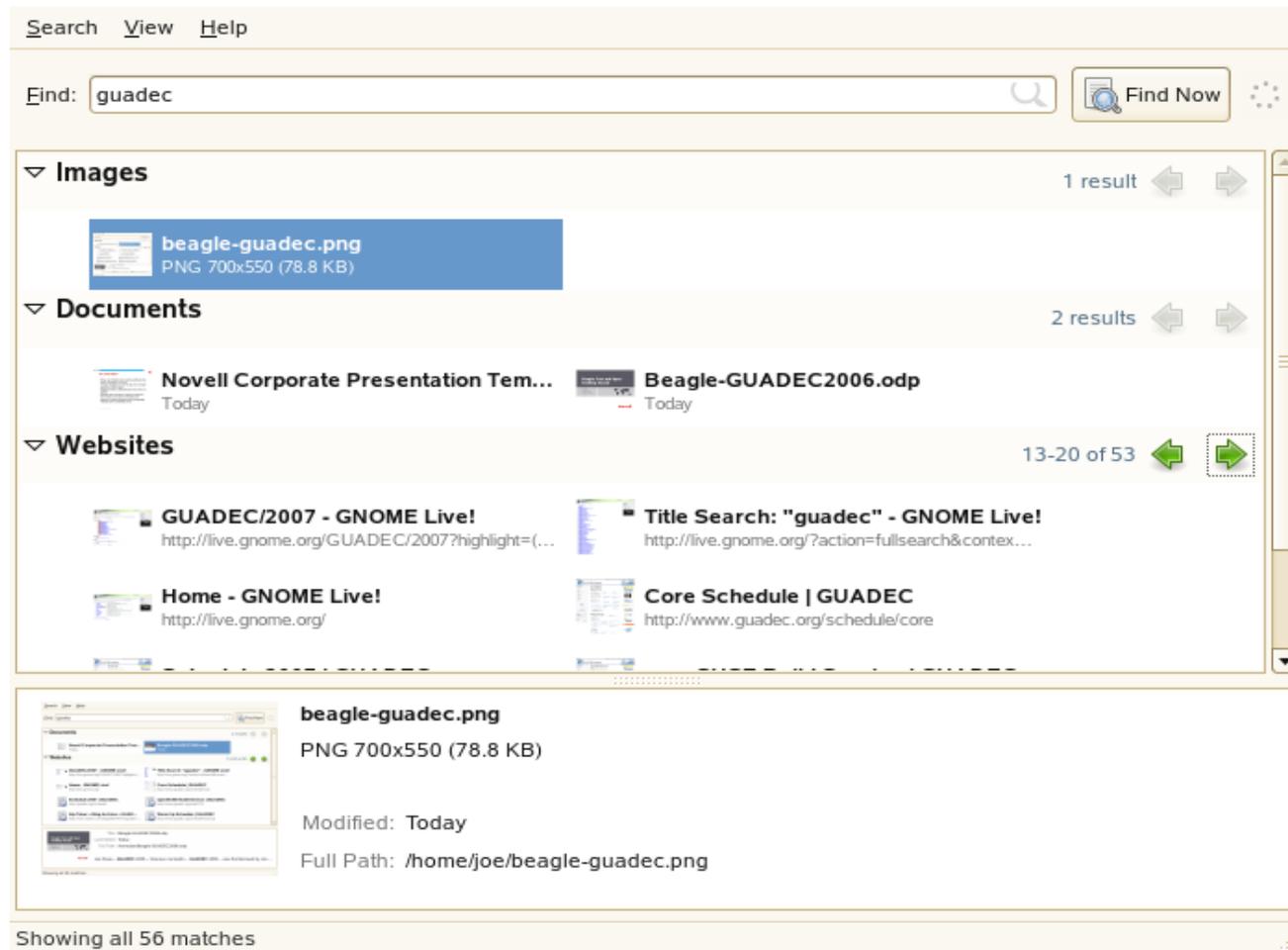
# Nautilus metadata view

	Picture 132.jpg	633.7 KB	JPEG image	Wed 08 Mar 2006 05:19:10 GMT
	Picture 133.jpg	684.6 KB	JPEG image	Wed 08 Mar 2006 05:19:12 GMT
	Picture 134.jpg	550.1 KB	JPEG image	Wed 08 Mar 2006 05:19:14 GMT
	Picture 135.jpg	433.3 KB	JPEG image	Wed 08 Mar 2006 05:19:16 GMT
	Picture 136.jpg	676.2 KB	JPEG image	Wed 08 Mar 2006 05:19:20 GMT
	Picture 137.jpg	539.6 KB	JPEG image	Wed 08 Mar 2006 05:19:22 GMT
	Picture 138.jpg	695.4 KB	JPEG image	Wed 08 Mar 2006 05:19:24 GMT
	Picture 139.jpg	619.6 KB	JPEG image	Wed 08 Mar 2006 05:19:28 GMT
	Picture 140.jpg	518.8 KB	JPEG image	Wed 08 Mar 2006 05:19:30 GMT
	Picture 141.jpg	571.2 KB	JPEG image	Wed 08 Mar 2006 05:19:38 GMT
	Picture 142.jpg	557.8 KB	JPEG image	Wed 08 Mar 2006 05:19:34 GMT

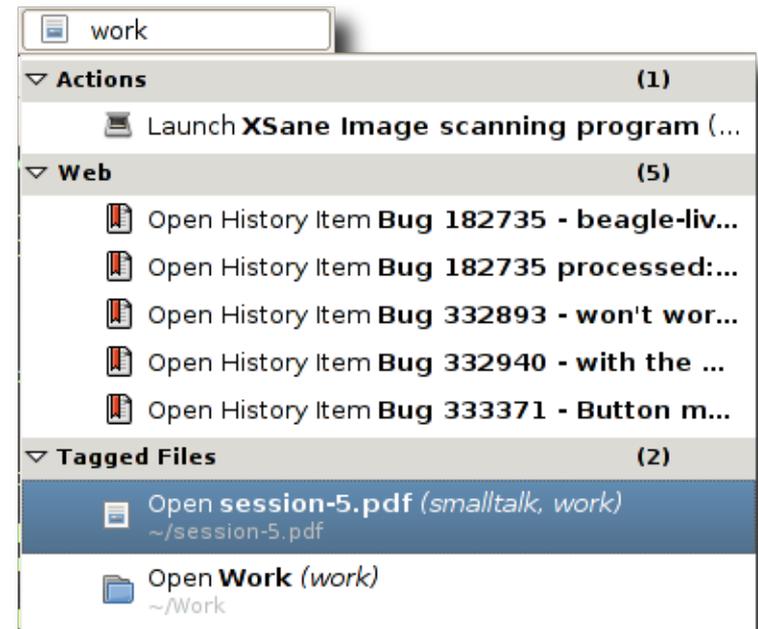
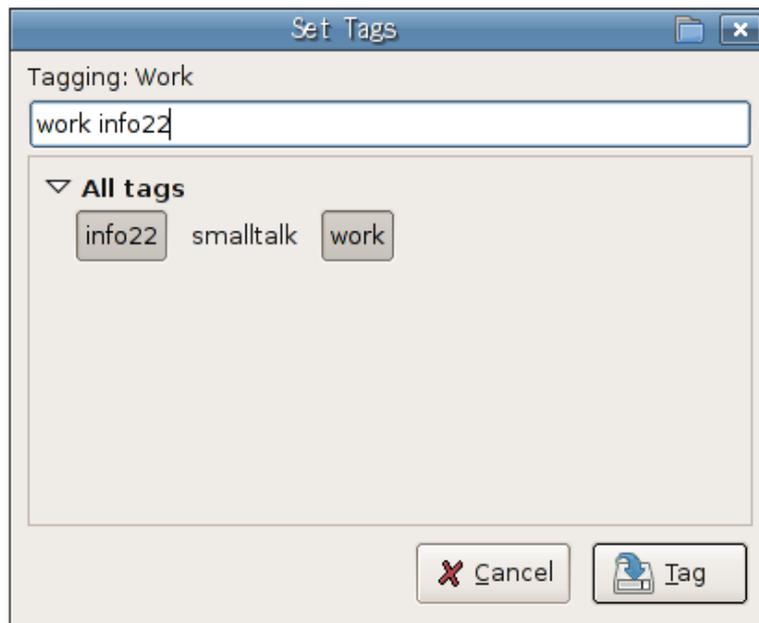
	<b>Picture 133.jpg</b> taken with a <i>Samsung Digimax 202</i>	
Dimensions : <b>1600 x 1200</b>	Orientation : <b>top - left</b>	Focal Length : <b>9.0</b>
Date Taken : <b>Mon 06 Mar 2006</b>	Flash : <b>1.0</b>	Exposure Time : <b>0.00176991150</b>
Tags : <b>Unknown</b>		

# Beagle search tool

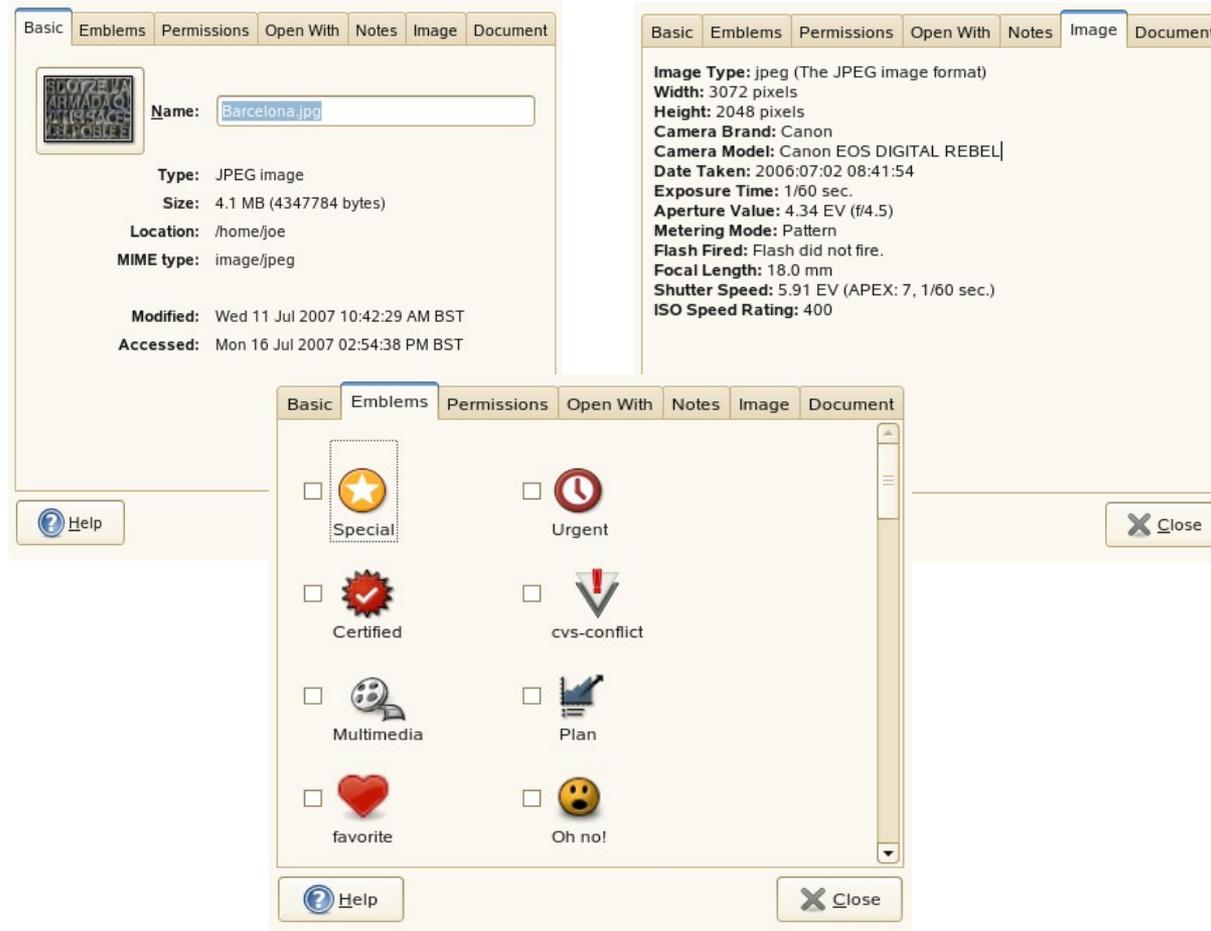


# Leaftag and Deskbar

From <http://raphael.slinckx.net/blog/2006-03-06/deskbar-and-leaf-tag-last-exit>



# Nautilus today



**1. “Metadata” is a generic term that covers a vast spectrum of information.**

# Much meta makes me mad

- File size
- MIME type
- Custom icons
- Shutter speed
- Genre
- Subject
- Start time
- Provides
- File name
- Language
- Tags
- Bitrate
- Page number
- License
- URLs
- Extended attributes
- Layout information
- Phone number
- Location
- Links to other documents

## **2. Metadata is decentralized and can be categorized many different ways.**

# The Life and Times of an MP3

- Example: No Cars Go.mp3
  - > File size: 8250875
  - > MIME type: audio/mpeg
  - > Artist: Arcade Fire
  - > Album: Neon Bible
  - > Title: No Cars Go
  - > Track Number: 10
  - > Duration: 5 minutes, 43 seconds
  - > Year: 2007
  - > Bitrate: 192
  - > Tags: Favorite
  - > Download URL: <http://joeshaw.org/banshee-web/No%20Cars%20Go.mp3>

# The Life and Times of an MP3

- Example: No Cars Go.mp3

> File size: 8250875

Intrinsic to the data

> MIME type: audio/mpeg

> Artist: Arcade Fire

> Album: Neon Bible

> Title: No Cars Go

Specific to MP3

> Track Number: 10

> Duration: 5 minutes, 43 seconds

> Year: 2007

> Bitrate: 192

> Tags: Favorite

Externally Stored

> Download URL: <http://joeshaw.org/banshee-web/No%20Cars%20Go.mp3>

# Different Scopes for Different Folks

- Describing the data
  - File sizes; MIME types
- Internal to the data type
  - ID3 in MP3; EXIF in JPEG; Subject lines in emails
- External user-created metadata
  - Tags, emblems, annotations
- Application-specific
  - Line numbers in Gedit
- Implicit metadata
  - Implicitly linking related data together

**3. Metadata of all types already exists and we need to work with it.**

# TANSTAAFL

(There Ain't No Such Thing As A Free Lunch)

- There is no single solution to dealing with metadata.
- You will always need to retrieve and set metadata from different sources.
  - If I change an artist field inside an MP3, it should be written back to the file
- Existing metadata sources already exist today
- Example: tags
  - Nautilus (emblems)
  - F-Spot
- Interoperable with existing software and hardware
- Exchangeable between devices

# Beagle

- Focus has been on desktop search; desktop search ≠ metadata store
- Stores metadata, but largely extracted from the data itself or where it is stored.
- Searchable metadata
- Supports many file formats (60+) and data stores (20+)
- Kick ass design for multiple data sources (files, web pages, emails, chats, etc.)
- Uses inotify to deal with filesystem changes
- Not a generic metadata store
- Presently (pre-0.3.0) weak external metadata story

# Tracker

- Primarily a metadata store; desktop search secondary
- Fast, low memory
- Also uses inotify
- D-Bus notification of changes to metadata
- Lacks focus of purpose
  - Basic external metadata like tags
  - Shared data stores for music libraries
  - Epiphany bookmarks with D-Bus notification
  - Small application-specific metadata (line numbers in gedit)

# Leaftag

- Tagging library, including widgets
- Good first pass at the problem
- Lacks a daemon, making tracking of file changes difficult
- No desktop-wide notification
- Querying for changes by external applications is very difficult
- Abandoned

# Nautilus

- Very basic external metadata
- Emblems (tags with images), notes, icon positions
- Stored in XML files in `~/.nautilus/metafiles`
- Only deals with files; no emails, web pages, etc.
- Does not notice external changes, like moving a file outside of Nautilus
- No APIs for emblems or notes
- Data is effectively siloed

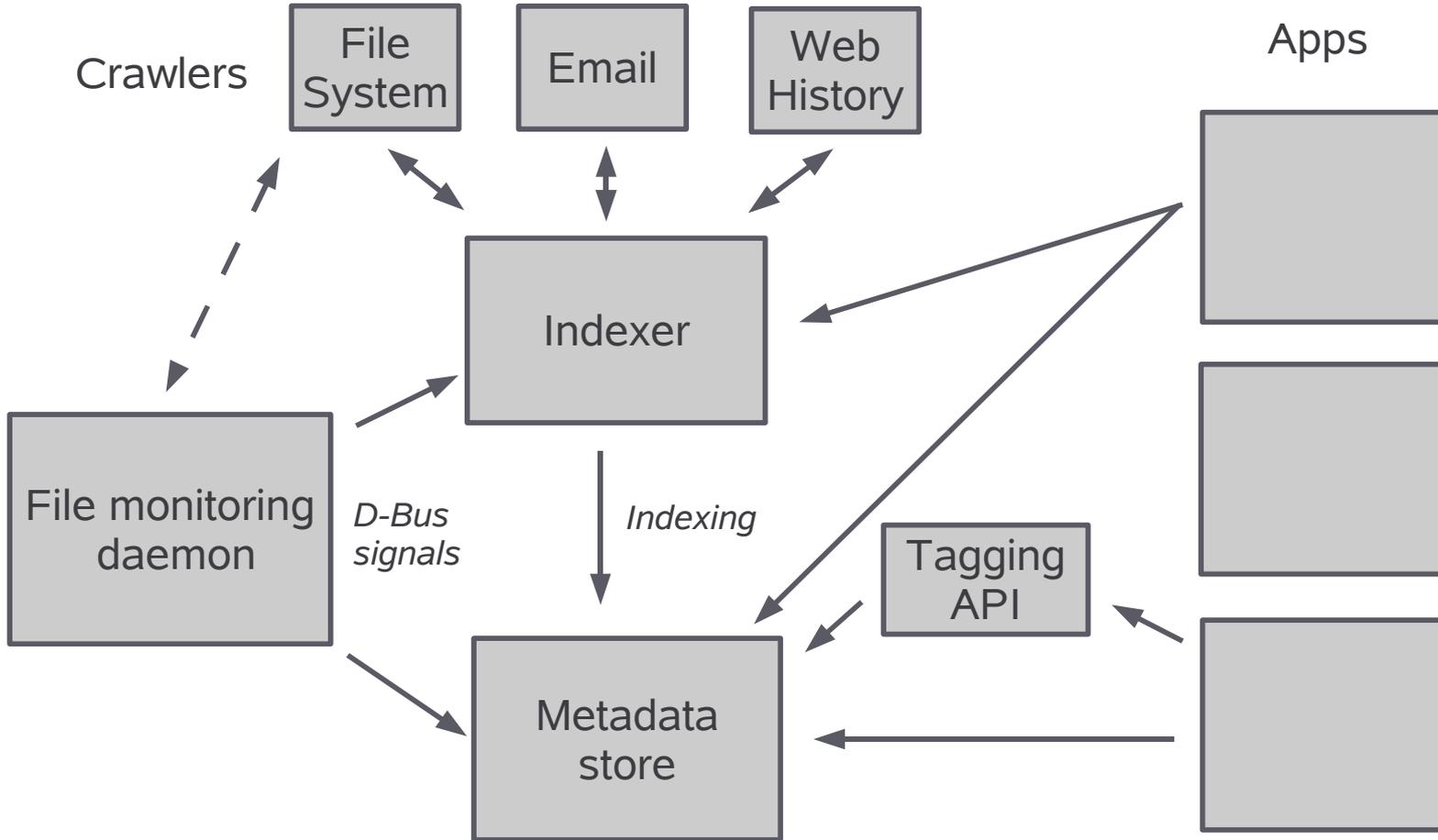
# Aside: Data Siloing Sucks

- Data is being kept private to individual apps
  - No (public, supported) way to access Evolution email
    - > Incredibly evil hacks in Beagle to get at this data, and still incredibly inefficient
  - No way to access or add Epiphany or Firefox bookmarks
  - No access to Nautilus metadata in other applications
  - No notification of relevant changes
- Crucial metadata is locked up.
- Relationships between data are dropped on the floor
  - Email attachments
  - Website downloads
- APIs to access application data desperately needed

# Ok, now what?

- D-Bus APIs to break open the silos
- Richer UIs for metadata presentation
- Simple metadata store API for apps; get/set, similar to gconf
- Tagging should be a dedicated, first-order API in our platform
- Desktop search should be a separate component which indexes and searches metadata store
- Daemon for tracking changes to files and signaling metadata store and desktop search

# Brave New World



# Questions

- Bueller?

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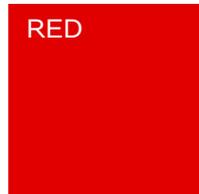


# Color Palette



BLUE

RGB  
0 166 238



RED

RGB  
224 0 0



ORANGE

RGB  
230 120 20



TEAL

RGB  
50 118 109



GREEN

RGB  
98 158 31



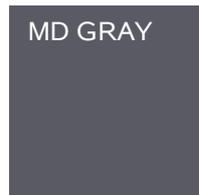
YELLOW

RGB  
255 221 0



DK GRAY

RGB  
60 60 65



MD GRAY

RGB  
90 90 100



LT GRAY

RGB  
204 204 205

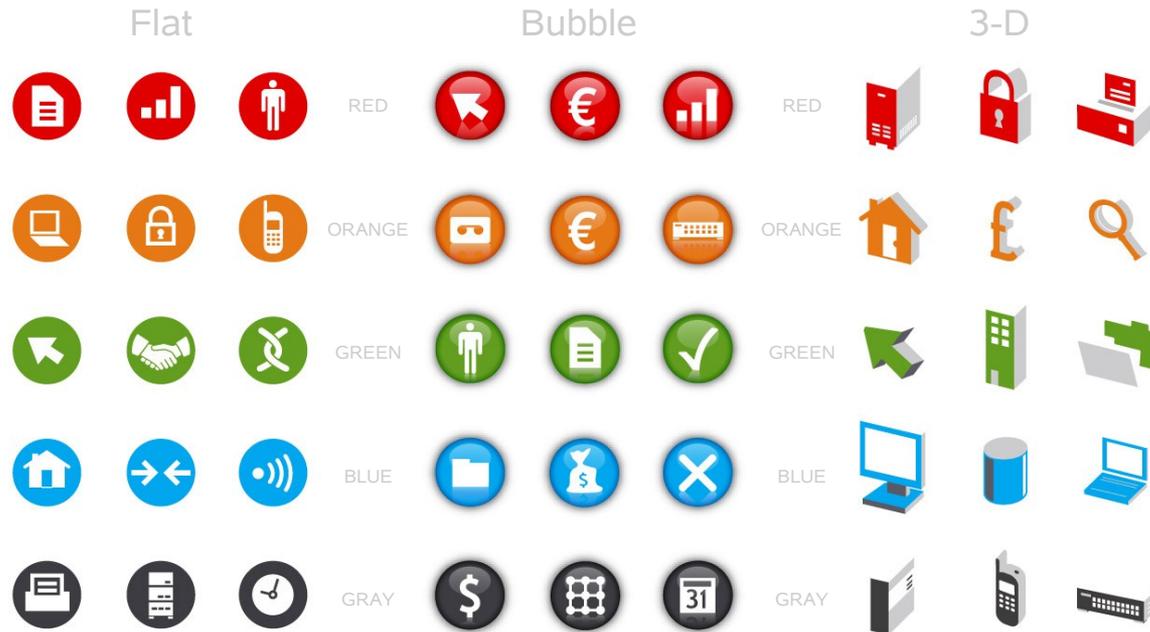
## Note:

The gray dotted-line box represents the margins or “working area” into which all text and most graphics and diagrams should conform.

## How to Add Novell Colors to Your OpenOffice Color Palette:

1. Go to the “**Tools**” menu
2. Select “**Options**”
3. Expand “**OpenOffice.org**”
4. Select “**Colors**”
5. Delete existing colors (one-by-one)
6. Add Novell Colors by giving them a name and entering RGB values
7. Click “**OK**”

# Graphics & Typeface



Download Icon Library at: <http://innerweb.novell.com/brandguide>

## How to Add Novell Icons to OpenOffice Gallery:

1. Go to the "Tools" menu
2. Select "Gallery"
3. In the Gallery window select "New Theme..."
4. With the "General" tab active name your new theme (ie.Red flat)
5. Select the "Files" tab.
6. Select "Find Files..."
7. Find the downloaded folder containing the icons named and click "Select"
8. Select "Add All" and then "OK"
9. Repeat for all icon groups

## Note:

**Icons/Lines:** This presentation refresh simplifies the current template and pushes focus on the content being presented. The icon library will continue to be utilized, but a refresh will be noticeable with the addition of the "Bubble" set of icons, and a subtle color shift. These icons are created to provide a professional, consistent look. When these icons are used sparingly, and in direct relation to the content on the slides, our presentations will communicate and work more effectively.

**Typeface:** Arial has been selected as the new typeface for all Novell communications. The following were considered.

1. Our typeface needs to be designed to carry information quickly to the reader.
2. It needs to be usable for Novell employees in company correspondence and presentations, as well as for outside vendors for marketing and promotion.
3. It needs to easily function on the Linux, Windows and Macintosh platforms.
4. And finally, Arial was created for these exact purposes.