



# DOTLAN EveMaps

## Fanpage Report 2010

***DOTLAN Webservices***

Wollari | Daniel Hoffend

wollari@dotlan.net | <http://evemaps.dotlan.net>

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# Motto

Only when it's fun to do,  
I can create something awful.

If it's no fun anymore,  
I've already my reallife job.

# So – What's this EveMaps thing

- Maps of Eve Online for your screen or printer
- Interactive tools to overlay live informations
- Up to date sovereignty information
- Biggest public database about alliances & corps
- Biggest history database about sovereignty
- Great tools around the maps (Navigation, etc)
- Live ticker for all resources via web & rss
- 1 man show



# Statistics

Stats & Numbers | Long term stats  
World Map | Changes

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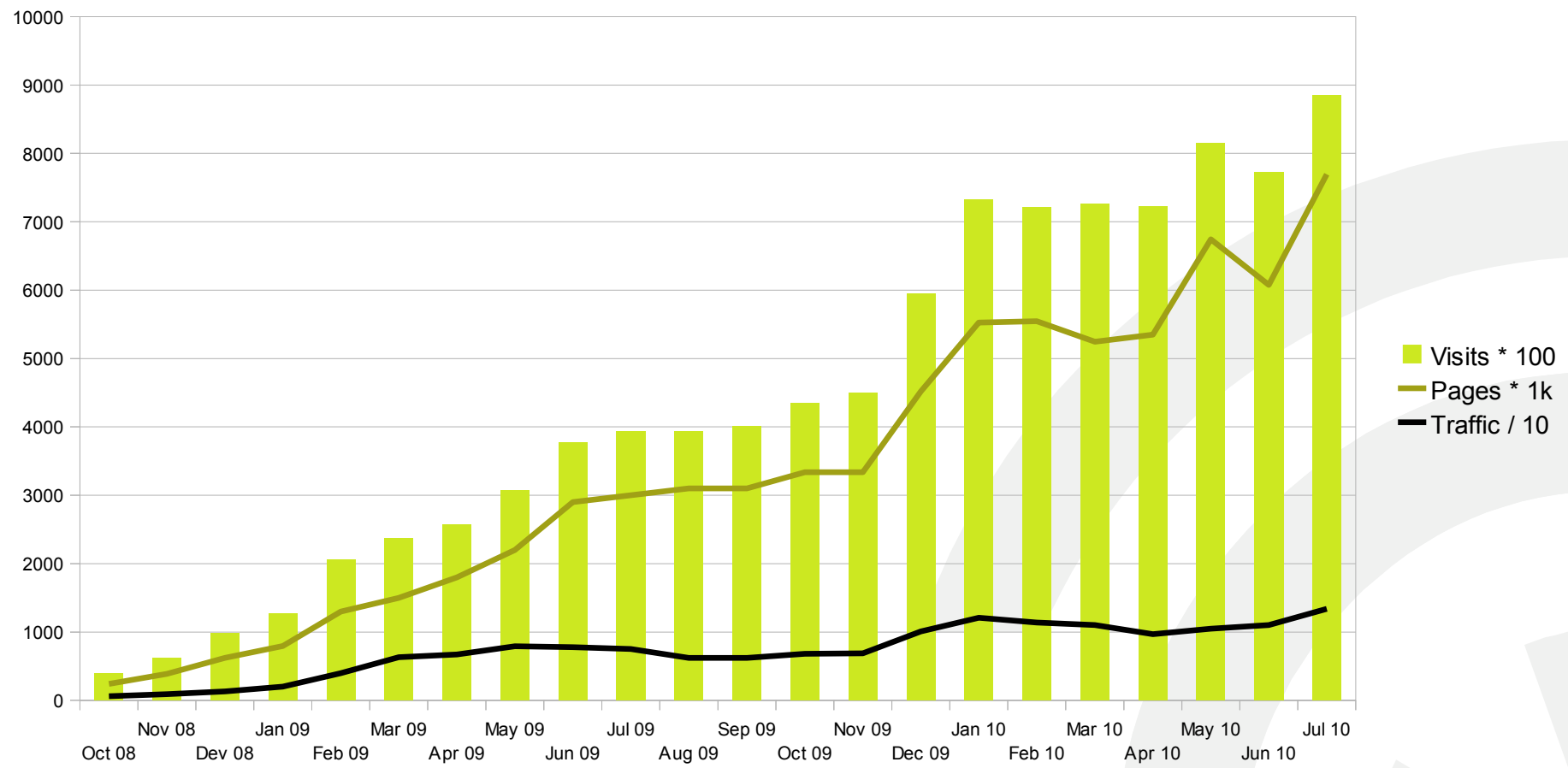
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# Stats & Numbers

	Analytics	Server
Visitors	806k	886k
Unique	147k	-
Page Imp.	4.7m	7.7m
Traffic (GB)	-	134 / 190 (srv)
Pages per Sec.	-	3,2 p/s

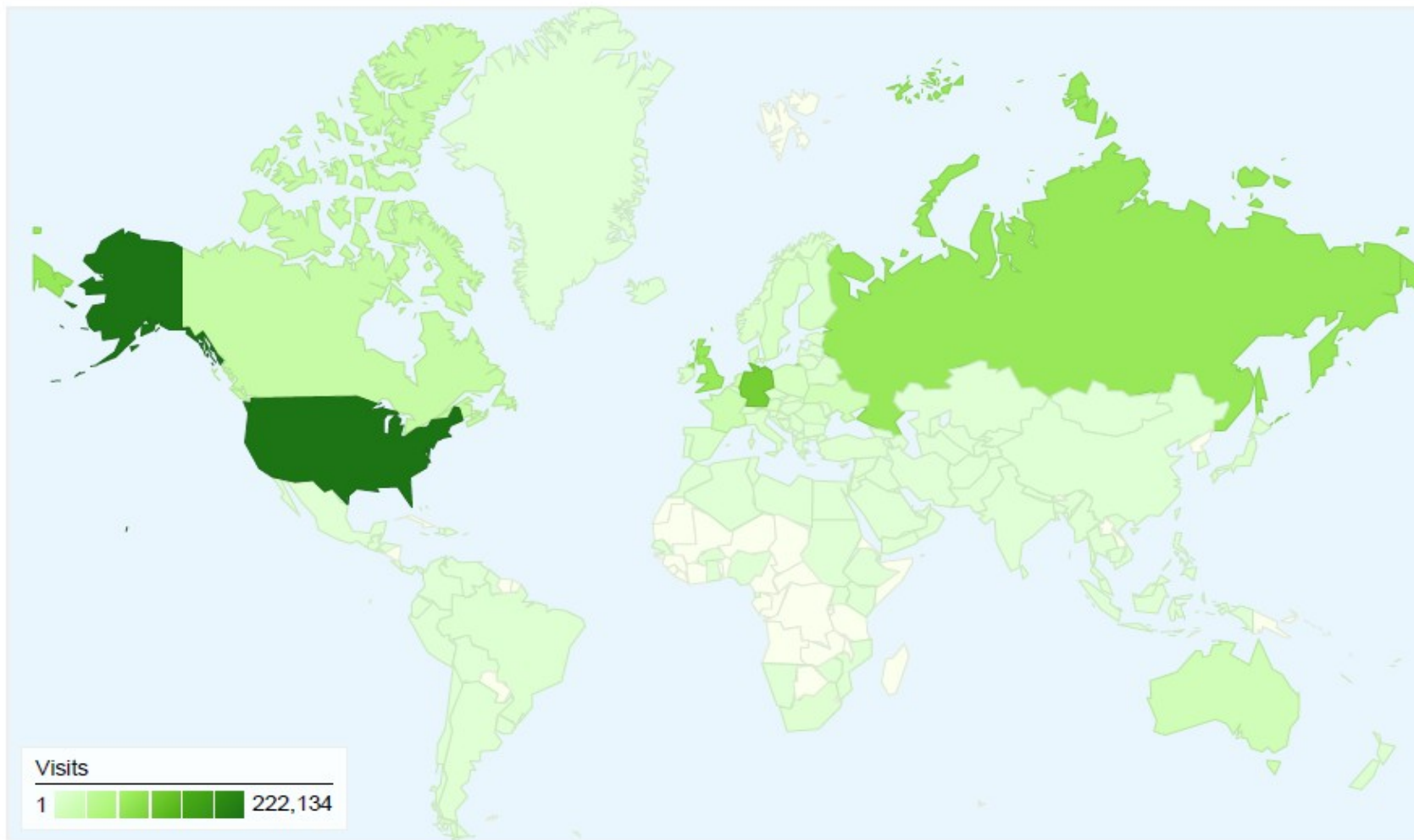
Server side stats by webalizer, vnstat, application log, July 2010

# Long term statistics Oct 08 → Jul 10



July 2010

# 800k+ visits from over 150 countrys

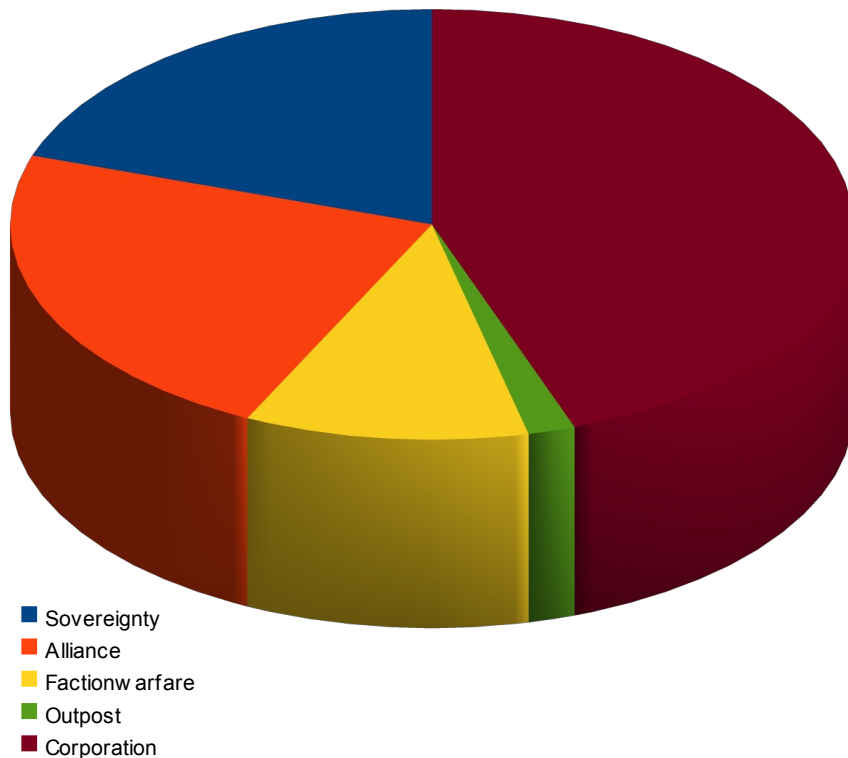


1. US
2. DE
3. RU
4. UK
5. CA
6. FR
7. AU
8. NL
9. UA
10. PL

© Google Analytics

July 2010

# Live Ticker / Changes



- 340k recorded changes
  - 67226 Sovereignty
  - 77922 Alliance
  - 36955 Faction warfare
  - 6141 Outpost
  - 150929 Corporation
- around 530 changes/day

July 2010



# The database

- **3152 Alliances**
  - 1706 Active alliances (> 0 Member)
  - 496 Alliances > 100 Member
- **26022 corporations**
  - 21386 Active corporations (> 0 Member)
  - 9626 are part of an alliance
  - 16 Dead corporations are part of an alliance

July 2010



# Features

Universe | Maps | Sovereignty | Outposts  
Alliances | Corporations | Navigation | Misc

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# Features (1): Universe / Regions

- List of regions / systems / true security
- System details: Sovereignty, Outposts, Celestials, Agents, Statistics, Kills (eve-kill.net), Events
- Moon mineral database (based on user reports)
- Recently build outposts
- Planet distribution
- Wormhole Informations

## Features (2): Maps

- Online Maps for all regions (SVG, VML, PDF, Image)
- Always updated info on Sovereignty, Outposts
- Live overlay for
  - System informations, Sovereignty, Outposts, Sites
  - Ressources (Moons, Planets)
  - Live Statistics (Jumps, Kills)
- Historical Maps (scroll back in time)
- Zoomable/Flatten Universe Map

## Features (3): Sovereignty / Outposts

- Largest public sovereignty history database
- Keeping track of all ownership related changes: gain, lost, upgrade, downgrade, rename, transfer (corp)
- Sovereignty history for each system
- Ownership & name history for each outpost
- History of sovereignty changes per day
- Live ticker of recent changes

## Features (4): Alliances / Corps

- History statistics for each alliance/corp (graphs)
- List of current and past member corporations/alliances
- Keeping track of all changes:  
join/left .... corporation description changed.
- List of current changes, who joined/who left
- History of alliance changes per day

# Features (5): Navigation Tools

- Capital Jump Planner
  - including bridge fuel calculator for titans, bridges and black ops
  - many options like avoid \$space
- Jumpe Range
- Route Planner
- Moons in Range (jump skills/gates)
- Planets in Range (jump skills/gates)

## Features (6): Misc

- Faction Warfare section
- Customizable Live Ticker Interface for all changes  
Alliances, Outposts, Corps, Sov, FactionWarfare
- All Live Ticker options are available through RSS
- NPC Corporations / Factions / Agents
- Most violant systems
- Search





# Technology

Resources | API | Hardware

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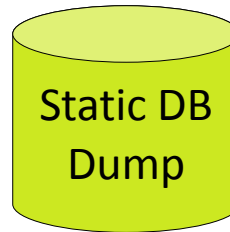
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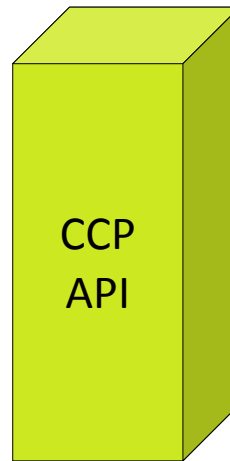
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# Resources

Systems, Constellations, Regions,  
Celestials, NPC Stations,  
NPC Corporations, Wormholes

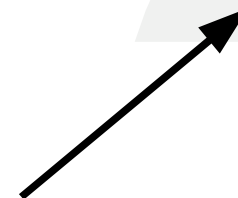
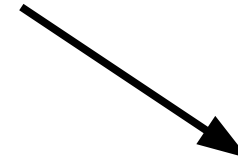
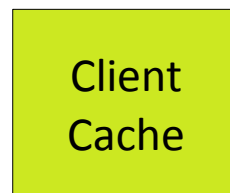


Sovereignty, Outposts,  
Alliances, Corporations,  
Faction Warfare,  
Jumps, Kills



Wallet / EveMails  
(private notify daemon)

Agents in Space, COSMOS Sites,  
Landmarks, Static Complexes



# Technology

- Server colocated in a datacenter in Cologne
  - AMD Opteron 1216 (2.4GHz), 8GB RAM
  - privately owned hardware
- Linux virtualized with XEN
  - EveMaps host runs with 4GB and only 1 Core due to recent XEN problems.
- Debian, Apache, Mysql, PHP (daemons aswell), SVN
- 50k+ lines of code (PHP, HTML, SQL)



# Impacts

InGame ← → Fanpages

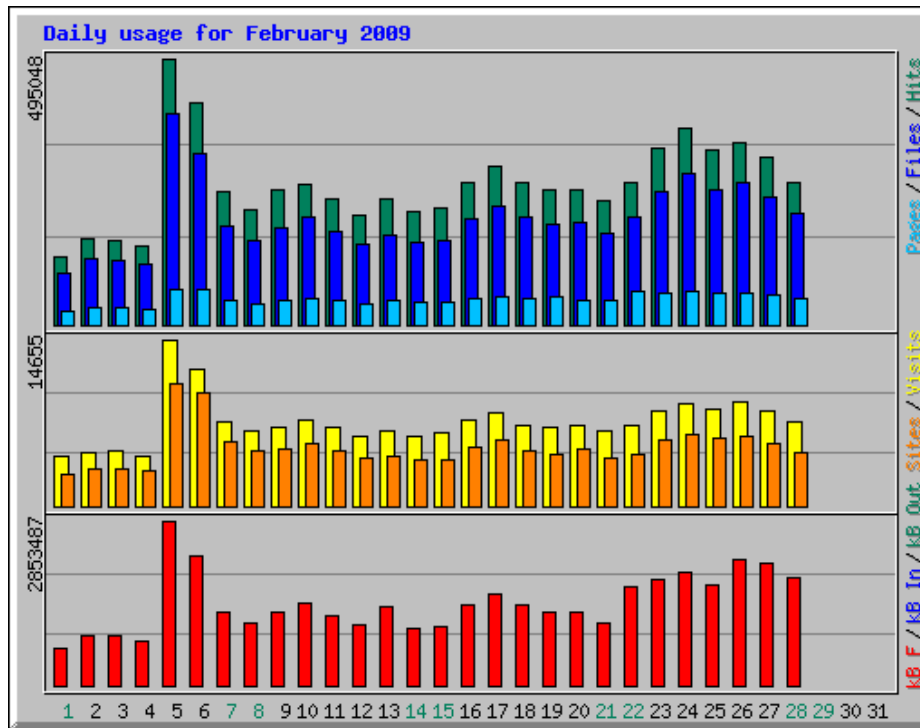
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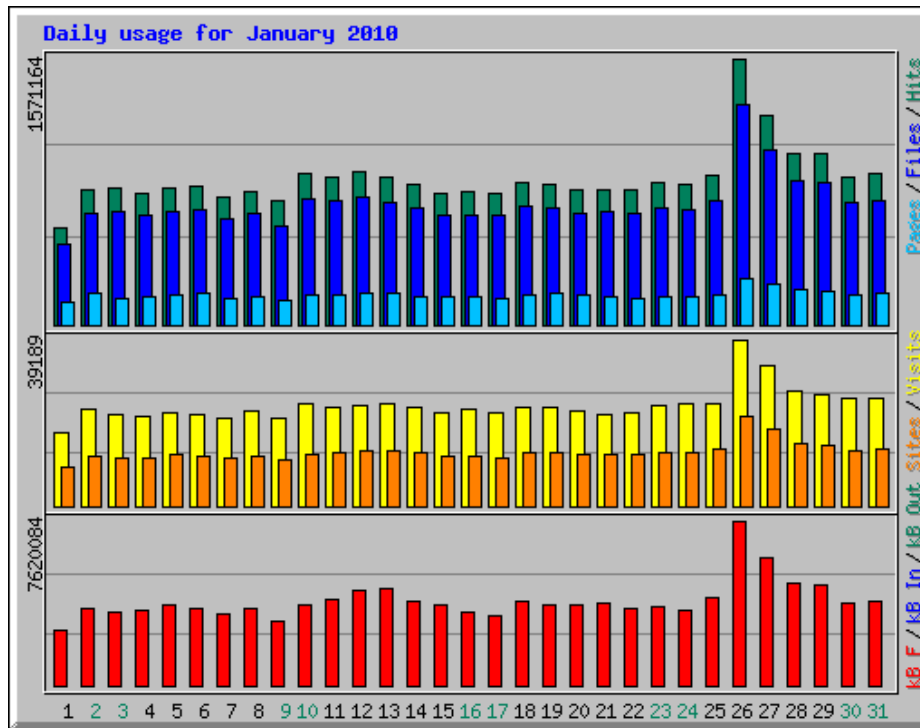
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# Impacts (1): Band of Brothers



- On 5 february the alliance Band of Brothers got disbanded.
- 400% increase in visits
- DOTLAN is the first choice, people use to verify sovereignty changes out-of-game

# Impacts (2): Goonswarm



- Goonswarm was next when they forgot to pay their bills.
- Guess when did it happend



# Impacts (2)

DOMINION

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# Dominion Release

- Biggest expansion related update
- Completely based on speculations (NULL API infos)
- Complete overhaul of the heart of DOTLAN  
EveMaps was needed (the database)
- Switch from Cronjobs → Background Daemons
- Switch from Date → DateTime
- Preperation, Coding, Testing, Upgrades  
→ started 5 month prior to the release!





# Happy Birthday

DOTLAN EveMaps gets 2 years

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# Milestones (1)

- **2008.07.22:** Initial release
- **2008.09.04:** Region/System listing, Alliance Ranking, Sov History, System Details, Outposts, Search
- **2008.10.24:** Jumps/Kills. Alliance/Corp History, Alliance changes
- **2009.02.02:** Initial release of the moon mineral DB
- **2009.02.13:** BoB disbanded 400%+ in visitors.
- **2009.02.17:** Historical sovereignty maps

## Milestones (2)

- **2009.02.23:** Cooperation with EVSCO (Kills)
- **2009.03.28:** Intel manager for the old sov system
- **2009.06.12:** Navigation tools, Universe Map
- **2009.07.28:** Colorized Map Overlay
- **2009.12.01:** DOTLAN Dominion Edition: Live updates (Sov, Ally, FW, Outposts), new IGB, new Database/Daemons
- **2009.12.07:** CCP disables the sovereigntyStatus API

## Milestones (3)

- **2010.01.26:** Jump Portal/Black Ops Fuel Calculator
- **2010.06.05:** Summer Update: Live Ticker, RSS Feed Support, Full alliance/corporation changes down to ceo/description level, Planet stuff, and more
- **2010.07.12:** Switching to CCP's image server

# Feedback (1)

- **Chribba, Eve-Files.com:**

DOTLAN EveMaps have always been my #1 stop to watch keep an eye on the potential locations [...]

- **Winterblink, Warp Drive Active Podcast:**

DOTLAN EveMaps is one of those shining examples of one person in the EVE community using both time and brain to create something awesome. [...]

- **Vuk Lau, Leader of Morsus Mihi, CSM Member:**

DOTLAN is indispensable part of my daily EVE routine. [...]

## Feedback (2)

- **The Mittani, Goonswarm, Spy Master:**

DOTLAN is an invaluable strategic resource, I use it on a daily basis. Whether it's plotting jump routes or finding an enemy's achilles heel, this site does it all.

- **Verone, Veto Corp, CEO & Executor:**

DOTLAN EveMaps has become the number one stop for our corporation to keep up to date with sovereignty changes and track hostile alliances, their development and their influence. [...]

## Feedback (3)

- **Tomcat, Leader of Wildy Inappropriate.:**  
[...] Simply put, When WI needed to know where to go to fail, we used DOTLAN EveMaps.
- **Verite Rendition, Influcence Map**  
To me DOTLAN has become the defacto system and alliance tracker. It does something that wasn't easy to do before. [...]
- **More** in my blog <http://evemaps.dotlan.net/blog/>



# Recent Problems

Google | Virtualization | SQL | Other issues

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# Google is your friend ... sometimes

Pages crawled per day



Kilobytes downloaded per day



- History DB + Route planer = 1m+ pages
- Up to 55k pages / 240mb per day!
- 20/110 GB in June came from Google
- Every second one request from google
- Solution: robots.txt ...

# Virtualisation, Xen, Kernel, Crashes

```

Eeek! page_mapcount(page) went negative! (-1)
[...]
kernel BUG at mm/rmap.c:673!
invalid opcode: 0000 [1] SMP
CPU 0
Modules linked in: [...]
Pid: 27064, comm: apache2 Not tainted 2.6.26-2-xen-amd64 #1
RIP: e030:[<ffffffff8027c68d>] [<ffffffff8027c68d>] page_remove_rma
RSP: e02b:ffff88006855bd38 EFLAGS: 00010292
RAX: 000000000000004a RBX: ffff880002be6000 RCX: 0000b3b3000421a3
RDX: ffffffff5f7000 RSI: 0000000000000001 RDI: ffffffff805aaab0
RBP: ffff88007105c330 R08: 0000000000000000 R09: ffff880004931d01
R10: 0000000000000048 R11: 0000010000000047 R12: ffff880002be6000
R13: ffff880085ecf090 R14: ffff8800ff1101c0 R15: ffff880004931d58
FS: 00007f499342a750(0000) GS:ffffffffff8053a000(0000) knlGS:00000000
CS: e033 DS: 0000 ES: 0000
DR0: 0000000000000000 DR1: 0000000000000000 DR2: 0000000000000000
DR3: 0000000000000000 DR6: 00000000ffff0fff DR7: 0000000000000040
Process apache2 (pid: 27064, threadinfo ffff88006855a000, task ffff8
Stack: 00000000000000c8 0000000000000000 00007f498e612000 ffffffff8
ffff8800ff088000 0000000000000000 ffff88006855be38 ffffffff8
0000000000000000 ffff88007105c330 ffff88006855be40 0000000000162539
Call Trace:
[<ffffffff8027332f>] ? unmap_vmas+0x741/0xa46
[<ffffffff8027864d>] ? exit_mmap+0x7b/0xf7
[<ffffffff8022a67d>] ? mmput+0x2c/0xc0
[<ffffffff8022fe9c>] ? do_exit+0x25a/0x6c0
[<ffffffff802303a8>] ? do_group_exit+0xa6/0xdc
[<ffffffff80218520>] ? do_page_fault+0xed2/0xf46
[<ffffffff80436d27>] ? error_exit+0x0/0x69

Code: 80 e8 1b 0b fd ff 48 8b 85 90 00 00 00 48 [...]
RIP [<ffffffff8027c68d>] page_remove_rmap+0xfb/0x117
RSP <ffff88006855bd38>
---[ end trace bd87bd4c81265cb9 ]---
Fixing recursive fault but reboot is needed!

```

- XEN Kernel related bugs
- OpenNMS used for monitoring (SMS)
- Solutions?
  - Upgrade XEN/Kernel
  - Distribution change?
- Switch XEN → KVM?
- Live environment!

# Other Issues

- EveOnline isn't the only application fighting lag
- Unoptimized SQL Queries combined with high Server Load (hello google) resulted in database lockups, swapping and crashing the server.
- Optimizing SQL updates and background jobs etc.
- Tweaking HTTP Cache Timer with mod\_expires
- Tweaking Apache, MySQL, Linux settings
- Speeding up PHP with Zend Optimizer, eAccelerator



# Future

Wishlist | Upcoming Features | Ideas

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# API Wishlist (for CCP)

- Corporation / Alliance CONCORD Wars
- More Details via API for Alliances / Outposts  
example: description
- Strategic / Military / Industry Indexes via API
- More Map Overlay data (Pilots in space, etc)
- More Sovereignty/Outpost Infos  
example: System/Outpost contested by alliance X
- OpenID / Oauth Service Provider (authentication)

# Future problems

- More virtualisation fun until I fixed it
- Either fixing performance (xen/kvm/whatever) or hardware upgrade in 2011
- Maybe traffic (in the datacenter)
- Still the big question: Do I really want annoying Ads on my page to finance the server? Likely no.

# Possible Upcoming Features?

- Check the API Wishlist / All public, universe/map related APIs are already being used and tracked.
- Maybe userinteraction? Login and do something?
- Customization?
- A lot of time is needed to create the background for this.
- (\* more secret stuff \*)

# Thank you

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Fly safe :-)