

Only an IBM Domino Server can take
this much beating and still run



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About me



- Andreas Ponte
- Entered the Lotus Notes world as a power user during a migration from cc:Mail to Lotus Notes
- Domino Administrator since 1997
Built my first infrastructure with version 4.6
- Responsible for a global Lotus Domino infrastructure at a reinsurance company until 2007
- Joined **Belsoft AG**, an IBM Premier Business partner located in Zurich, in 2007 as a consultant for Domino and mobile solutions and responsible for the “applications” team at Belsoft AG



Agenda

- What we came across when called on site for a simple infrastructure check-up
- What steps we took to get the infrastructure back to normal
- How the situation evolved and where we stand today

What you hopefully will take with you:

- Lessons learned and best practice procedures



The story behind the story

- Urgent call for help
- Not yet a customer, contact unknown
- Domino servers crashing, cluster mate not taking over
- No internal Domino know-how



The story behind the story

- Serious troubleshooting
- Got the servers back up
- Happy customer



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The dice starts to roll

- Meeting at customer's, we get some information about the overall state
- Servers in Europe and the US
- Notes Basic client on Citrix in Europe
- About 800 Users worldwide
- Environment seems OK but reports of different “small” issues
- Upgrade/consolidation project with unsatisfactory result
- Lack of knowledge seems to be the biggest issue



Let's have a look

- Overview of the infrastructure (Domino Directory)
- 11 Domino servers / one Domino domain
- Connection Docs to Domino webserver in separate Domino domain
- 3 clusters
- Domino Server version 8.5.2ish.. except Traveler
- Clients from version 6 to 8.5.3 but mostly on 8.5.2 x
- TX Log and DAOS



What to do?

- Let's get the environment to 8.5.3
- Stabilize servers and solve performance issues
- Solve performance issues on client side
- Analyze the used applications and 3rd party tools
- Clean-up the environment
- Time frame: about 3-4 months



Let's start the journey to 8.5.3

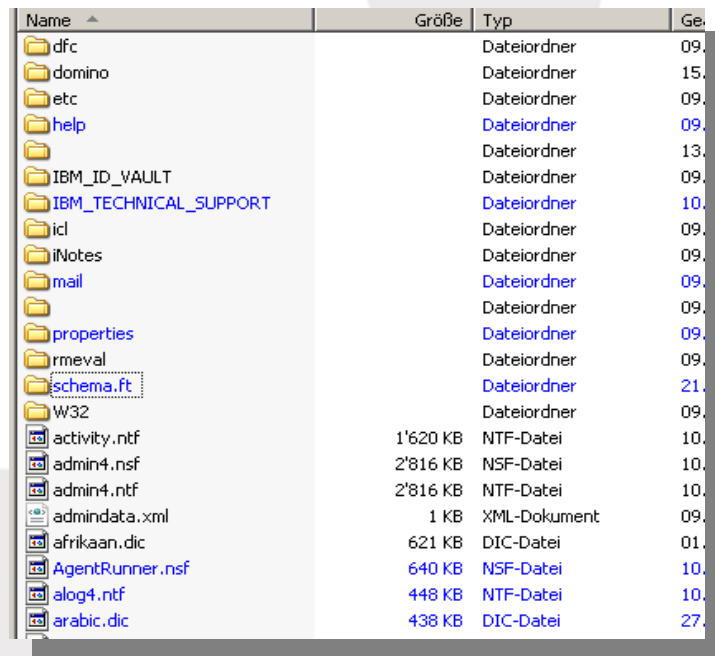
- Update Domino Directory on Administration Server
- Yeah.. but there's a problem
- Remember this? Domino Server version 8.5.2ish.. except Traveler → 8.5.3
- Modification to Domino Directory design
 - Not documented
 - Still on 8.5.2
- Shortly after the upgrade of the Directory.. Mayhem because of a 8.5.2 bug → [IBM Technote](#)



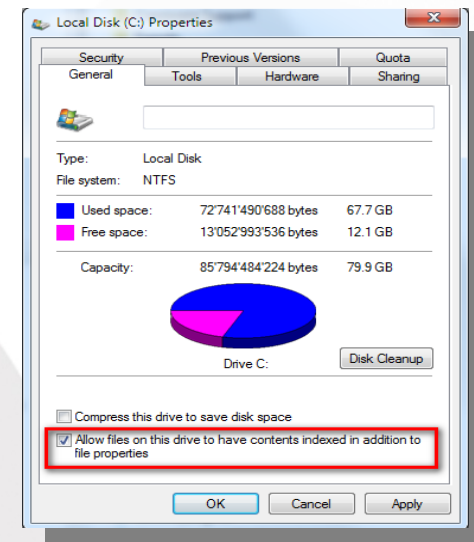
Let's start the clean-up..

- We get remote access to the servers

- Oh oh..



Name	Größe	Typ	Ge...
dfc		Dateiordner	09.
domino		Dateiordner	15.
etc		Dateiordner	09.
help		Dateiordner	09.
		Dateiordner	13.
IBM_ID_VAULT		Dateiordner	09.
IBM_TECHNICAL_SUPPORT		Dateiordner	10.
icl		Dateiordner	09.
iNotes		Dateiordner	09.
mail		Dateiordner	09.
		Dateiordner	09.
properties		Dateiordner	09.
rmeval		Dateiordner	09.
schema.ft		Dateiordner	21.
W32		Dateiordner	09.
activity.ntf	1'620 KB	NTF-Datei	10.
admin4.nsf	2'816 KB	NSF-Datei	10.
admin4.nsf	2'816 KB	NTF-Datei	10.
admindata.xml	1 KB	XML-Dokument	09.
afrikaan.dic	621 KB	DIC-Datei	01.
AgentRunner.nsf	640 KB	NSF-Datei	10.
alog4.ntf	448 KB	NTF-Datei	10.
arabic.dic	438 KB	DIC-Datei	27.



- Single databases, FTI and different other folders had been compressed with OS compression to save disk space

- OS Indexing was also enabled

Shift in priorities

- Clean-up servers first, then upgrade
- First findings (just look, don't touch):
 - Using DAOS & TX..
but not on separate drives
 - AV with some exclusions but not DAOS and
sometimes not even TX
 - Servers in cluster not on the same version
 - Cluster fail-over not working because of
missing databases
 - Heavy agents running on the mail server



Shift in priorities

- First findings (just look, don't touch): -continued-
 - BIG admin4.nsf
 - some other system db corrupt
 - DAOS Catalog out of sync
 - ... my report filled 3 pages with various issues



Cleaning up

- Scheduled weekly maintenance windows
- Defined the next steps
 - Extend disks
 - Turn off OS compression
 - Move nlo Files to separate drive
 - Optimize transaction logs and its configuration
 - Align patch level in clusters
 - Update ODS
 - Shrink disks after nlo move



Meanwhile..

- Let's have a look at the clients
- Reports of very slow clients, especially when starting
- Connection issues
- Fail-over not working
- Frequent freezes and crashes
- The client install on Citrix..



Client analysis

- Tool already in place → **MarvelClient by panagenda** which helped us pinpoint problems
- Some problems caused by misconfiguration of MarvelClient
 - Bad configuration of actions
 - Long time obsolete actions still active
- Configuration scripts created by former support team instead of MarvelClient actions
- Network issues
- AV scanning of local Notes data
- Bad performance clearly also because of server issues



Client analysis

Tool already in place → **MarvelClient by panagenda**

The screenshot displays the MarvelClient software interface. On the left is a sidebar with navigation options: Users, OS / HW, Lotus Notes, Desktops / Icons, and Local Databases. The main window shows a table titled 'Audit Selected' with columns for various performance metrics. A search bar is at the top, and a status bar at the bottom indicates 'on [Local]' and 'MarvelClient Analyze'.

PerfCat	Clientstart (UTC)	Init (ms)	... Init2Pre ...	BeforeLoginPre	... Pre2Bef ...	Before Login	... Bef2After ... (Fw)	After Login	Total Notes	Total MC	Notes+MC	FSAC?	FirstSrvAc
	12.03.2012 19:31:05	0		94	10'859	157	7'968		?	10'859	251	11'110	- Unkn
	15.03.2012 07:26:05	3'441	0	480	10'881	806	191'480		?	10'881	4'727	15'608	- Unkn
	28.02.2012 08:03:23	0	15	203	11'094	984	13'500		?	11'109	1'187	12'296	- Unkn
	15.03.2012 08:14:31	10	0	200	11'429	401	15'144		?	11'429	611	12'040	- Unkn
	15.03.2012 08:08:40	548	0	470	11'853	673	23'550		?	11'853	1'691	13'544	- Unkn
	14.03.2012 08:33:41	807	12%	8 - Duration Total (MarvelClient + Notes Client)						12'360	265	12'625	- Unkn
	14.03.2012 06:54:01								297	4'875	18'172	- Unkn	
	15.03.2012 06:46:41	520	64%	< 1 sec.						579	624	14'203	- Unkn
	14.03.2012 22:23:31								687	329	14'016	- Unkn	
	15.03.2012 10:24:31	209	26%	< 4 sec.						313	484	14'797	- Unkn
	15.03.2012 12:52:01								656	8'468	24'124	- Unkn	
	15.03.2012 12:21:01	40	5%	< 8 sec.						812	329	17'141	- Unkn
	14.03.2012 13:36:21	38	5%	>>> 8 sec.						780	1'467	20'247	- Unkn
	15.03.2012 07:48:31								375	329	19'704	- Unkn	
	22.02.2012 12:27:02								680	9'997	30'677	- Unkn	
	15.03.2012 12:40:46	2'500	94	625	28'249	546	318'647		?	28'343	3'671	32'014	- Unkn
	14.03.2012 03:59:15	750	0	0	28'832	47	204'651		?	28'832	797	29'629	- Unkn
	28.02.2012 09:12:39	1'531	16	406	30'312	750	35'594		?	30'328	2'687	33'015	- Unkn
	14.03.2012 17:13:54	1'953	0	547	31'891	484	21'703		?	31'891	2'984	34'875	- Unkn
	15.03.2012 08:58:02	735	0	219	33'125	564	13'415		?	33'125	1'518	34'643	- Unkn
	15.03.2012 13:01:12	2'160	63	610	34'151	2'563	12'594		?	34'214	5'333	39'547	- Unkn
	12.03.2012 06:00:07	2'531	0	1'797	37'281	1'547	294'828		?	37'281	5'875	43'156	- Unkn
	15.03.2012 07:42:30	2'644	0	871	43'723	942	30'393		?	43'723	4'457	48'180	- Unkn



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No other issues right?

- Basically no internal work-flow defined
 - Users left? No one knew.. Accounts still open
 - Large clean-up needed for person docs
- Old application, 17 GB, no optimization, no documentation, reader/author fields, functions?
- AdminP was not working right
One of their solution? To rename users manually.. additionally there was a bug from the upgrade
Quotas revert back to previous setting after server restart
- Very old group calender solution in place. Collecting agent was running for hours and grabbing most of the servers resources
- Different trial versions with running agents



No other issues right?

- Agents signed with different ID's
 - Old accounts, admin and/or normal user ID's, people who left etc.
- Design changes in Domino directory and mail templates but basically no documentation
- Obsolete databases on the server. No overview which ones were still needed or could be archived/removed. No information about the owners or the usage of the databases.



Servers had to deal with..

- Bad configuration
 - OS Compression
 - DAOS
 - Directory Assistance
 - Connection Docs (Replication)
 - Missing AV exclusions
- All kind of agents running concurrently
- Being neglected
- Large databases
- Messy client configuration



Getting the servers back on their feet

- Disks back in order
- Reorganization of DAOS needed
- Streamlined and cleaned-up connection documents
- Cleaned-up program documents
- Aligned FP versions
- Rebuild/checked Clusters
- Cleaned-up Directory Assistance
 - No local databases
 - Links to databases which were out of order



Getting the servers back on their feet

- View_Rebuild_Dir=
- FT_FLY_INDEX_OFF=1
- FTG_USE_SYS_MEMORY=1
- Update_Fulltext_Thread=1
- Create_R85_Log=1 **There are reports of problems on iSeries with this setting, use with caution. Alternative procedure after adding this setting: disable TX, shutdown server, remove logs, start server, enable TX, restart server.*
- Log_DisableTXNLogging=1
- Schedule_DisableTXNLogging=1
- DEFAULT_INDEX_LIFETIME_DAYS=nn
- Enable Transaction Logging and DAOS on mail.box



Where do we stand today?

- Mail and Application servers are on version 8.5.3 FP2
- DAOS catalog status = synchronized
- Defined AV exclusions
- Streamlined drives
- Servers with same configuration
- Solved most of the performance issues on client side



Things to take home

- Separate Administration rights from “normal” user ID
- Use a signing ID for Agents and Design elements
- Follow IBM's guidelines(*), they're not called best practice for nothing
- Please document your changes!
- Make sure you understand implications of changes to your environment
- Clean-up your environment, be it policies, server- and configuration docs, program docs, tools, databases..
- Keep your 3rd party apps up to date



Things to take home

- **Short term savings rarely pay off in long term**



More to take home

- Resources beside the notes.ini links:
- [MarvelClient Runtime Analysis Explained](#)
by panagenda
- [IBM Lotus Notes and Lotus iNotes 8.5.3 on Citrix XenApp 5.0/6.0](#)
- [Adminblast 2013](#)
Tips and Tricks by Paul Mooney and Gab Davis
- [IBM Lotus Domino Cluster Reporting tool \(IBM wiki\)](#)
and on [OpenNTF.org](#)
- [All-in-one Admin Tool for agent-based troubleshooting](#)



Thank you for your attention

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