The IDN Experience:
IDN Deployment at .CL

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The IDN Experience

- Outline
  - Who is NIC Chile
  - .CL registration briefing
  - The preparation work
  - The IDN day
  - The problems
  - The advantages
  - The lessons
  - The after world

The IDN Experience

- Who is NIC Chile
  - An organizational unit,
  - Depending on Department of Computer Science,
  - Of the University of Chile.
  - In charge of .CL registry since 1986.

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IDN - .CL registration briefing

- Rules and particularities
  - Two states for domains: assigned and "under processing"
    - The "under processing" state lasts 30 days since registration and enables the possibility of "dispute registration" to others claiming rights over the same domain.
    - This behaviour is known as "the chilean way".
    - Helps to reduce number of conflicts.
    - Several requests can be received for each domain name.
  - First paid, first activated (in DNS terms)

IDN – Preparation work

- ## To accept IDN registrations, we had to
  - ### Adapt software
    - No character encoding was originally considered
    - Define the allowed set of characters (including propose a definition for spanish language to ICANN)
  - ### Provisioning
    - Following the experience of Germany and Poland, for load patterns.
    - We generate an index based on the number of IDN request over the total number of domains, the size of the IDN charset enabled and the number of words in language using those characters.

IDN – Preparation work

– Performance Tunning

- Given the experience of other registries, we were aware about a possible high load of registrations.

– Three persons working

- One testing software and defining policy

- One adapting software

- One tunning and improving for performance

IDN – The day

- On September 21st, 2005
  - Registration opened at 11:00
  - DEFCON 3 since the previous day
  - 10 minutes before, the robots came up.
  - Status of the first two hours
    - We received the load of two weeks in a couple of hours
  - The day finished with the number of request corresponding to a month.
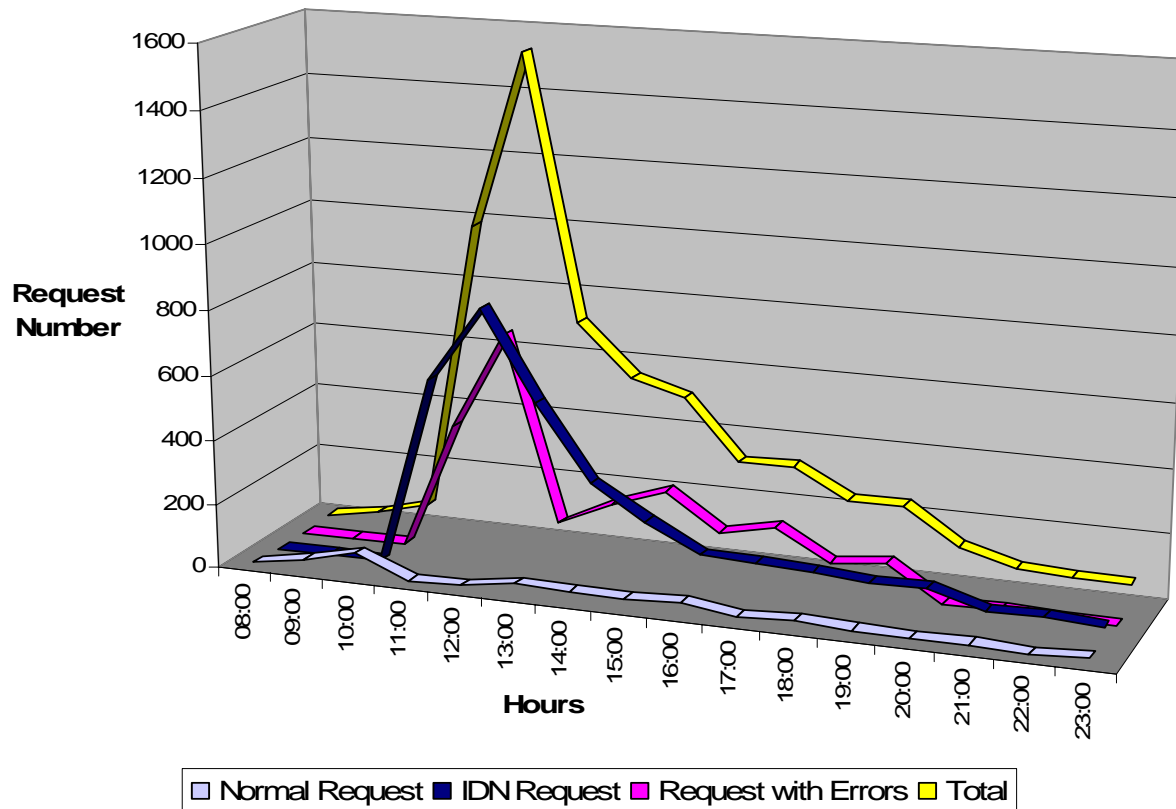
Date	Normal Request	IDN Request	Request with Error	Total Request
08:00	8	0	0	8
09:00	36	0	0	36
10:00	75	0	1	76
11:00	6	586	394	986
12:00	13	820	698	1531
13:00	38	546	125	709
14:00	33	315	203	551
15:00	31	217	259	507
16:00	38	132	151	321
17:00	17	124	184	325
18:00	25	119	92	236
19:00	18	106	112	236
20:00	15	109	6	130
21:00	17	60	6	83
22:00	9	62	0	71
23:00	18	51	0	69

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IDN – The day

**IDN Request on first day
(21/09/2005)**

http://www.nic.cl

IDN – The days after

Creation Request

Legend: Normal Request, IDN Request, Request with Errors, Total
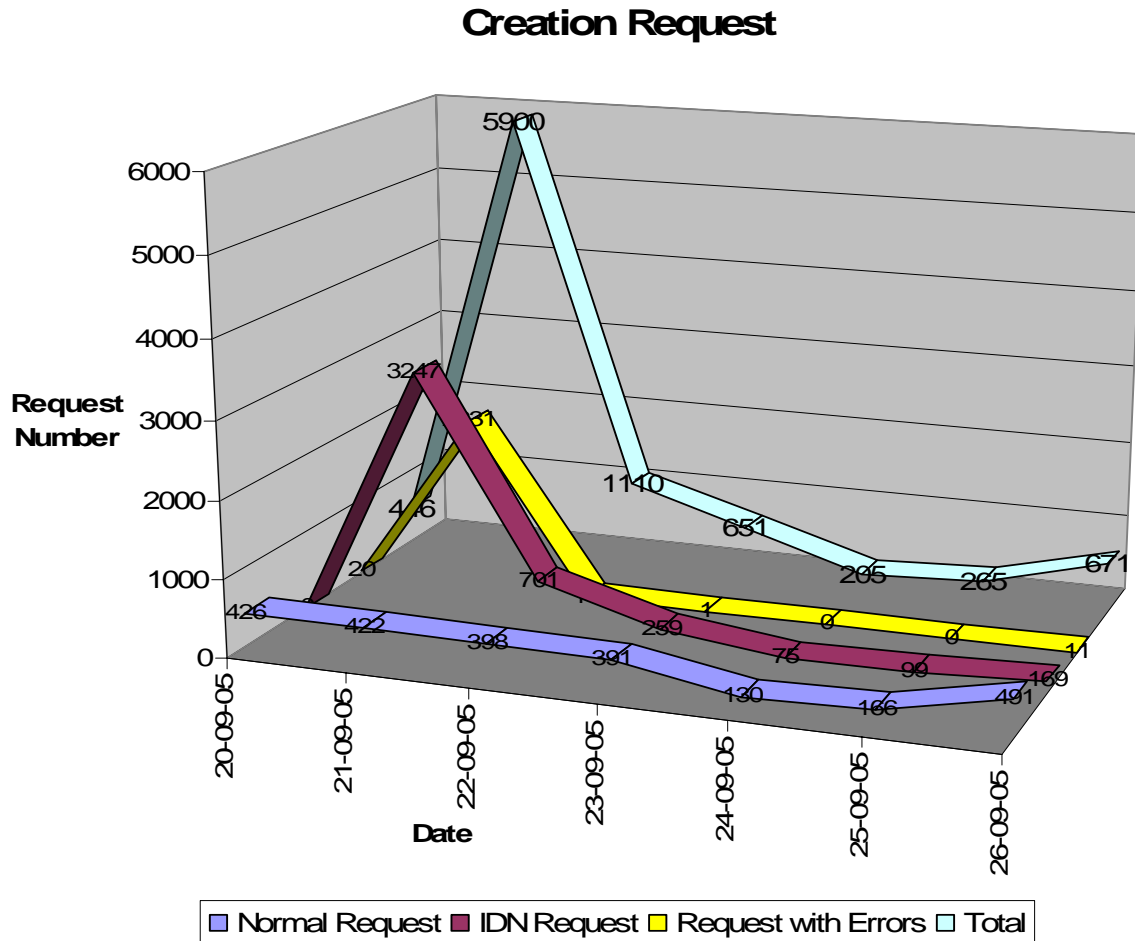
IDN – The problems

- Due to the deployment and the troubles faced, we detected
  - Incorrect load pattern tested
  - All the services concentrated in one server (web, database, mail relay)
  - Long registration process
  - Heavy CGI processes
  - The processing time of registration request received during the first two hours was about 5 hours!

IDN – The advantages

- Decisions that made this work
  - Adequate bandwidth provisioning
  - Careful tunning process (if not, things might be worse)
  - Request queing
    - Receive the registration request, doing some lightweight checking.
    - Put it on a queue.
    - Process it on a FIFO basis, as soon as possible.

http://www.nic.cl

IDN – The lessons

- After the internal discussions, we've learnt
  - The need of a more robust service architecture
    - Load balancing
    - Better software
    - More machines, specialized on different tasks.
  - More auditing in testing process
    - The load pattern wasn't very realistic, more "eyes" were needed.
  - At least we didn't need to shut down services for lack of resources.
    - As seen recently in other registries.

IDN – The after world

- After deployment, the market has the pressure
  - Many local providers claimed:
    - "Those names are wrong and they couldn't be used"
    - Our software doesn't support them.
    - We provided a configuration guide for IDN names, only for BIND9.
  - Enough support on browsers, bad support on mail client and servers.

IDN – The after world

- The customers feel tricked
  - "You sold me this but I can't use it"
    - A disclaimer was included in the registration process, to notify the difficulties about this new technology
  - "Give me my money back"
    - In some very justified cases, the money was refund.
  - Lack of technical and policy knowledge.

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IDN – at DNS Level

- Very low usage of IDN domain names
  - 2,592 registered domains, over 151,265
  - 1,507 present on .CL zone
    - Only 66 domain names publish a record for "www".
    - The others have different errors (starting with lame delegations)
  - 2,293 queries on a 24-hour sample
    - Over 30 millions "normal" queries captures
    - One IDN each 10.000 "normal" query.

IDN – More numbers

- **The most wanted names were:**
  - *Viñadelmar* and *viña* refer to a very well know turistic city
  - *Sebastianpiñera* and *Piñera* refers to the name of a president candidate
  - *Diseño* is design in spanish.
  - *Ñuñoa* refers to a political division (comuna) in capital city.
  - *Viñas* refers to vineyard.

Domain Name	Request Number
Viñadelmar	497
Diseño	479
Ñuñoa	398
Viña	244
Sebastianpiñera	154
Piñera	140
Ñ	140
Ñandu	106
Niños	104
Viñas	94

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IDN …

- T h a n k s   f o r   y o u r   a t t e n t i o n

    - Your questions are welcomed