

IDN@de

- Known Facts
- Technical hurdles
- Support hurdles
- Legal issues
- IDN afterwards

- IDNA standard passed in March 2003
- IDN launch under .de took place on 1st March 2004 10:00:00 CET in coordination with NIC.AT and SWITCH.
- Huge media coverage:
  - Over 1,000 press reports
  - 20 radio interviews
  - 5 TV reports (ARD, RTL, n-tv..)

- A total of 92 new characters: Positivlist on supported characters
  - Only digits or letters from Latin-1 Supplement and Latin Extended-A satisfying character=Nameprep(character)
  - No special characters like "€"
  - <http://www.denic.de/en/domains/idns/liste.html>
- No language tags, no variants, no bundling
- Support of IDN Standards (RFC3490, 3491, 3492)
- Concepts of RFC 3743 do not apply in Germany
- Object of contract is the IDN form, not ACE (e.g. citroën.de, nestlé.de)
- First Come, First Served
- Introduction by means of Big Bang

# 92 Additional characters

Hex: 00E1 á Dez: 225	Hex: 00E0 à Dez: 224	Hex: 0103 ă Dez: 259	Hex: 00E2 â Dez: 226	Hex: 00E5 å Dez: 229	Hex: 00E4 ä Dez: 228	Hex: 00E3 ã Dez: 227	Hex: 0105 ą Dez: 261	Hex: 0101 ā Dez: 257	Hex: 00E6 æ Dez: 230	
Hex: 0107 ć Dez: 263	Hex: 0109 ĉ Dez: 265	Hex: 010D č Dez: 269	Hex: 010B ċ Dez: 267	Hex: 00E7 ç Dez: 231	Hex: 010F ď Dez: 271	Hex: 0111 đ Dez: 273				
Hex: 00E9 é Dez: 233	Hex: 00E8 è Dez: 232	Hex: 0115 ě Dez: 277	Hex: 00EA ê Dez: 234	Hex: 011B ë Dez: 283	Hex: 00EB ë Dez: 235	Hex: 0117 è Dez: 279	Hex: 0119 ę Dez: 281	Hex: 0113 ē Dez: 275		
Hex: 011F ğ Dez: 287	Hex: 011D ĝ Dez: 285	Hex: 0121 ġ Dez: 289	Hex: 0123 ġ Dez: 291	Hex: 0125 ĥ Dez: 293	Hex: 0127 ħ Dez: 295					
Hex: 00ED í Dez: 237	Hex: 00EC ì Dez: 236	Hex: 012D ĭ Dez: 301	Hex: 00EE î Dez: 238	Hex: 00EF ï Dez: 239	Hex: 0129 ĵ Dez: 297	Hex: 012F ĵ Dez: 303	Hex: 012B ī Dez: 299	Hex: 0131 ı Dez: 305	Hex: 0135 ĵ Dez: 309	
Hex: 0137 ķ Dez: 311	Hex: 013A ĺ Dez: 314	Hex: 013E ŕ Dez: 318	Hex: 013C ĵ Dez: 316	Hex: 0142 ł Dez: 322	Hex: 0144 ń Dez: 324	Hex: 0148 ň Dez: 328	Hex: 00F1 ñ Dez: 241	Hex: 0146 ŋ Dez: 326	Hex: 014B ŋ Dez: 331	
Hex: 00F3 ó Dez: 243	Hex: 00F2 ò Dez: 242	Hex: 014F õ Dez: 335	Hex: 00F4 ô Dez: 244	Hex: 00F6 ö Dez: 246	Hex: 0151 ó Dez: 337	Hex: 00F5 õ Dez: 245	Hex: 00F8 ø Dez: 248	Hex: 014D ō Dez: 333	Hex: 0153 œ Dez: 339	Hex: 0138 κ Dez: 312
Hex: 0155 ř Dez: 341	Hex: 0159 ŕ Dez: 345	Hex: 0157 ŕ Dez: 343	Hex: 015B ś Dez: 347	Hex: 015D ŝ Dez: 349	Hex: 0161 š Dez: 353	Hex: 015F ş Dez: 351	Hex: 0165 ţ Dez: 357	Hex: 0163 ţ Dez: 355	Hex: 0167 ţ Dez: 359	
Hex: 00FA ú Dez: 250	Hex: 00F9 ù Dez: 249	Hex: 016D ů Dez: 365	Hex: 00FB û Dez: 251	Hex: 016F ů Dez: 367	Hex: 00FC ü Dez: 252	Hex: 0171 ú Dez: 369	Hex: 0169 ũ Dez: 361	Hex: 0173 ų Dez: 371	Hex: 016B ū Dez: 363	
Hex: 0175 ŵ Dez: 373	Hex: 00FD ý Dez: 253	Hex: 0177 ÿ Dez: 375	Hex: 00FF ÿ Dez: 255	Hex: 017A ź Dez: 378	Hex: 017E ž Dez: 382	Hex: 017C ż Dez: 380	Hex: 00F0 ð Dez: 240	Hex: 00FE þ Dez: 254		

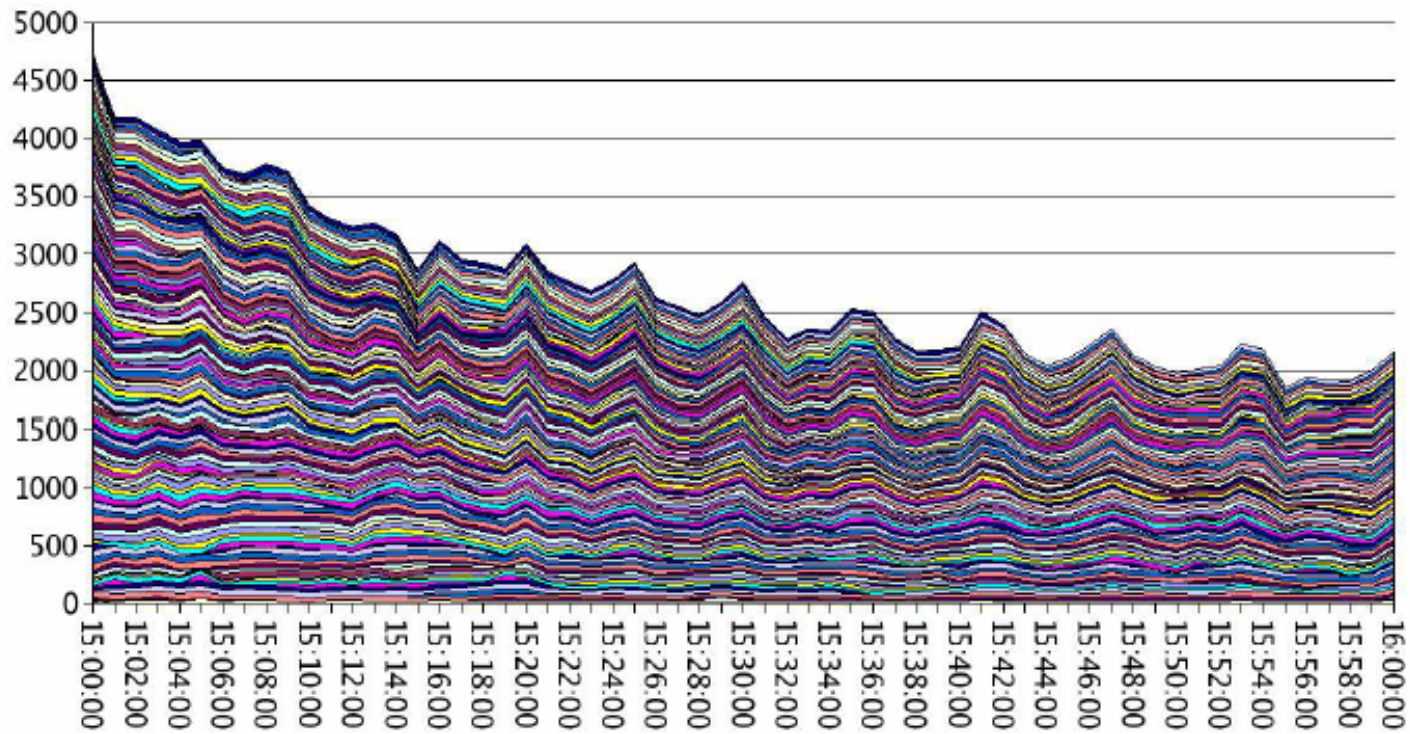
- It was *not* the IDNA standard, but:
- Big bang setup: Only one TCP connection to DENIC mailer per registrar allowed.
  - There was no realtime registration interface back then
- Internationalization of domain name slots in our database, website, DMS..
- Upgrades to software: drivers, fonts, text editors, terminals, browsers, mail clients..
- Updates drive to bugs, bugs drive to more updates
- Reliable testing of the whole testbed

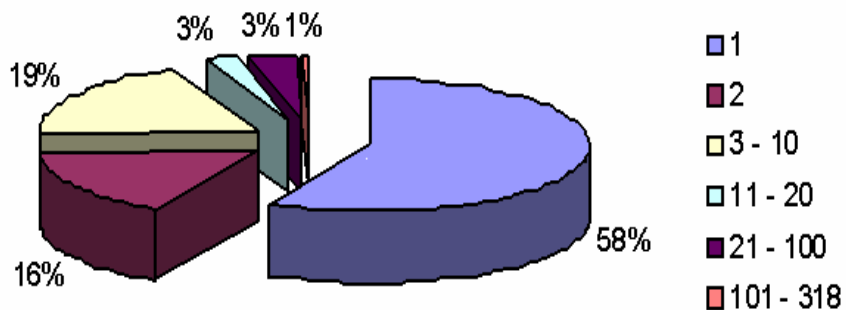
- Before launch:
  - How to register IDNs
  - Which characters are allowed
  - Chances for an IDN if transliterated domain exists
- After launch:
  - How to type characters which aren't located at the keyboard
  - IDNs don't work as expected, though we tried to circulate information as much as possible:  
<http://www.denic.de/en/domains/idns/browser.html>
  - A technical newsletter reporting on 1st April that all IDNs were going to be reassigned: <http://tinyurl.com/2gna2>

- Before launch:
  - Registrants systematically threatening DENIC members to protect their alleged trade mark rights. They were ignored.
  - One registrant filed for an injunction against DENIC because of 2 domains, which “would lose their economical value after IDN launch”. Injunction got rejected.
- After launch:
  - Increase of dispute resolution forms

- Between 1. March 10:00:00 Uhr and 3. March 24:00:00 Uhr we received and processed 625.374 jobs
- 24% were successful
- 69 % were doublets
- 7% were failures

### Mails/Min. 15:00 - 16:00 Uhr





Domain	Number of requests
möbel.de	318
glückwunsch.de	303
bücher.de	302
börse.de	284
küche.de	282
büro.de	282
flüge.de	263
küchen.de	257
ärzte.de	253
reisebüro.de	240



## Experiences since then

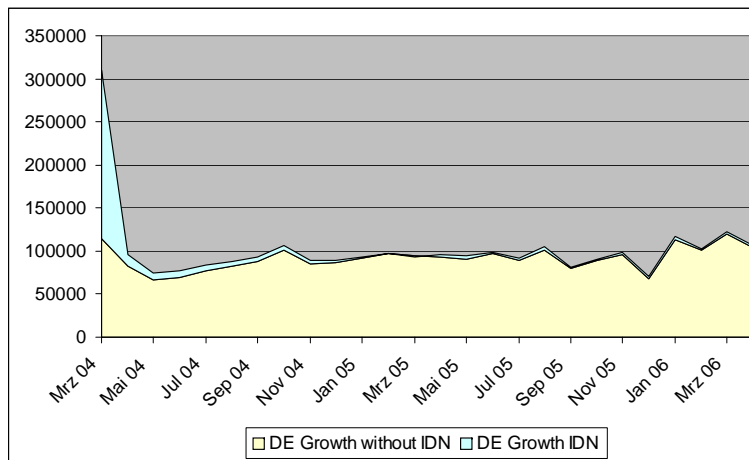
- Until now 250.000+ registered IDN-domains (+80%)
- Despite intensive warnings – there were infringements of name- and trademarkrights
- But many disputes already resolved in the first weeks
- Press results were mainly positiv (besides missing IE support for IDNs (Over 1,000 press reports, 20 radio interviews, 5 TV reports)

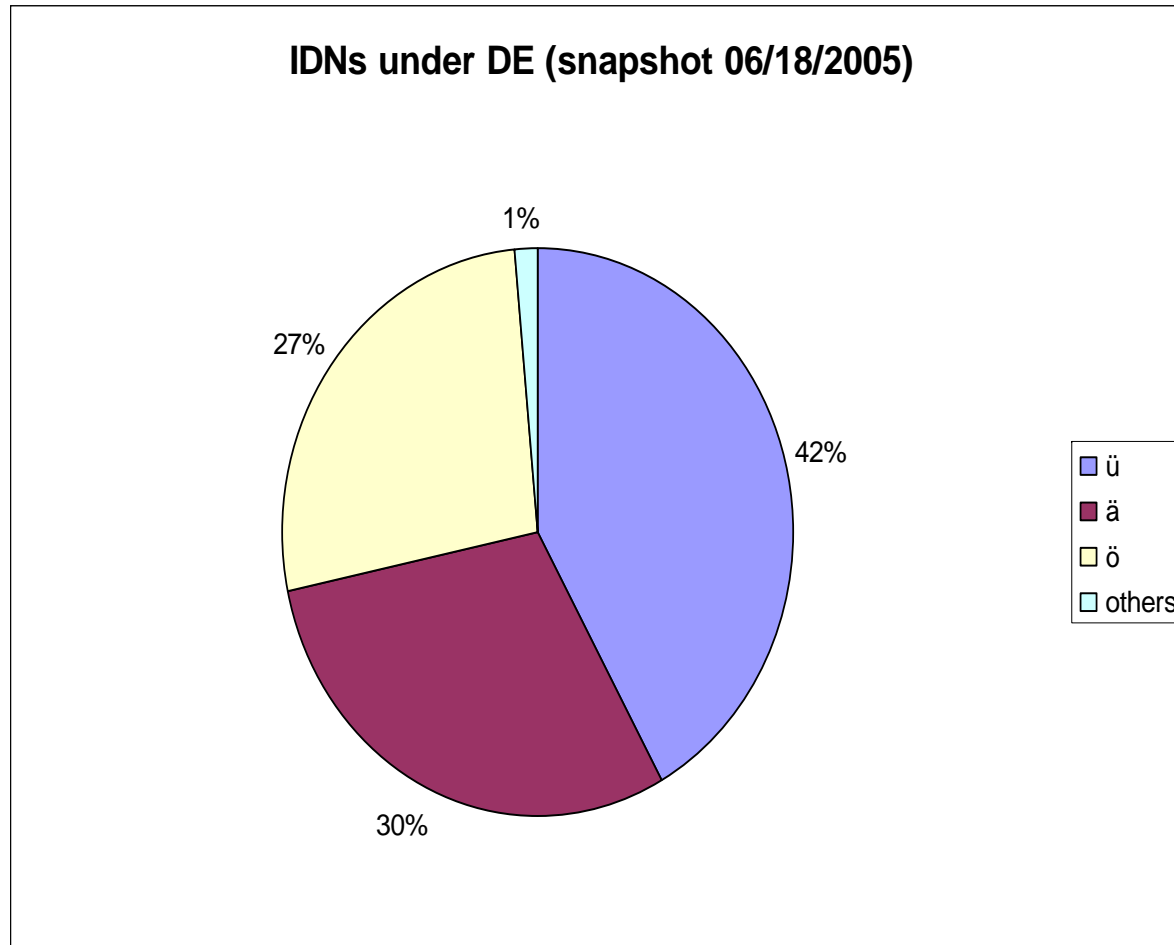
IDN@DE is now on the way to become a common standard

Total: 9.826.171

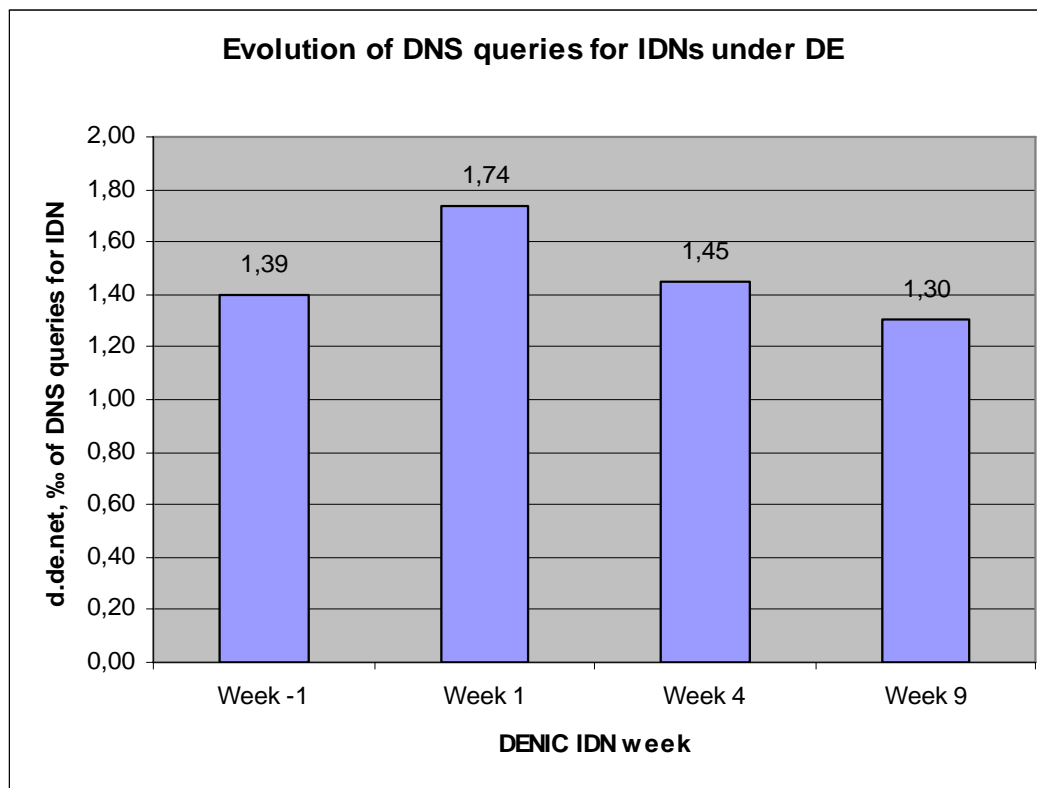
ASCII: 9.533.861 (97,03 %)

IDN: 292.310 ( 2,97 %)

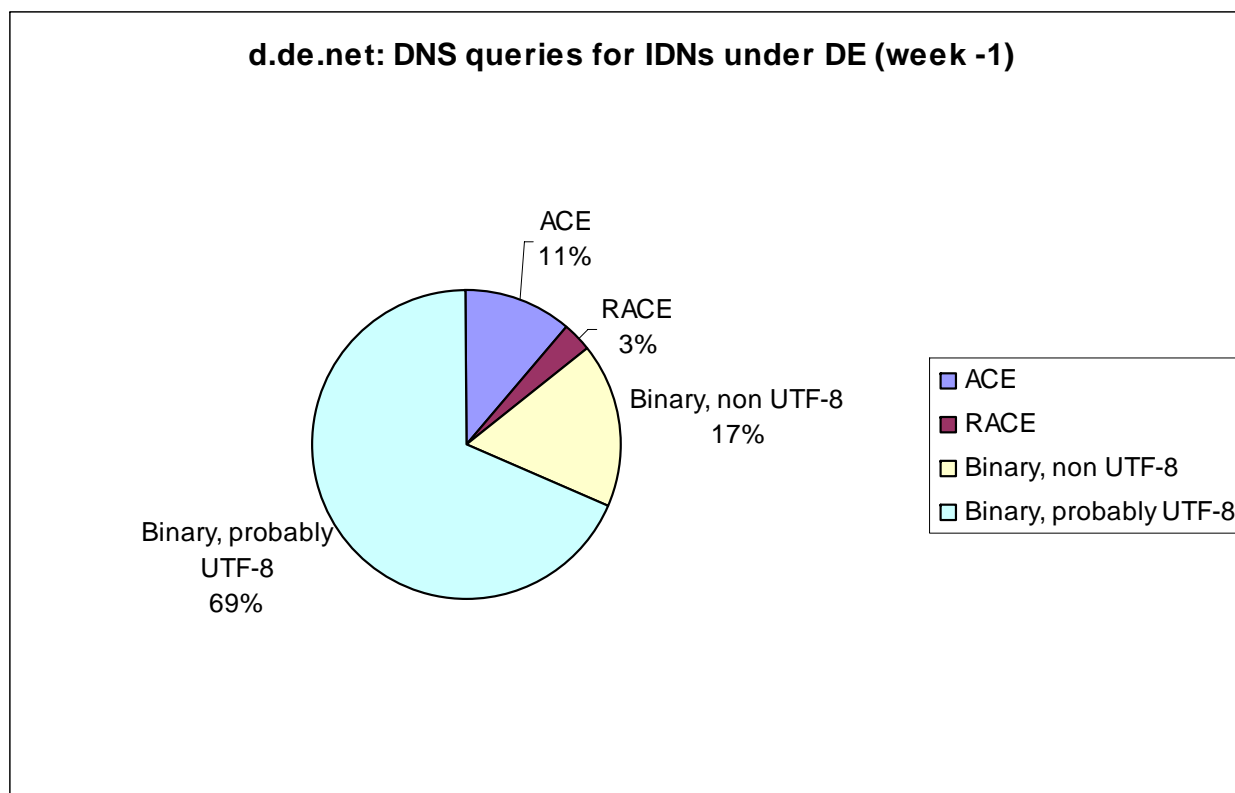




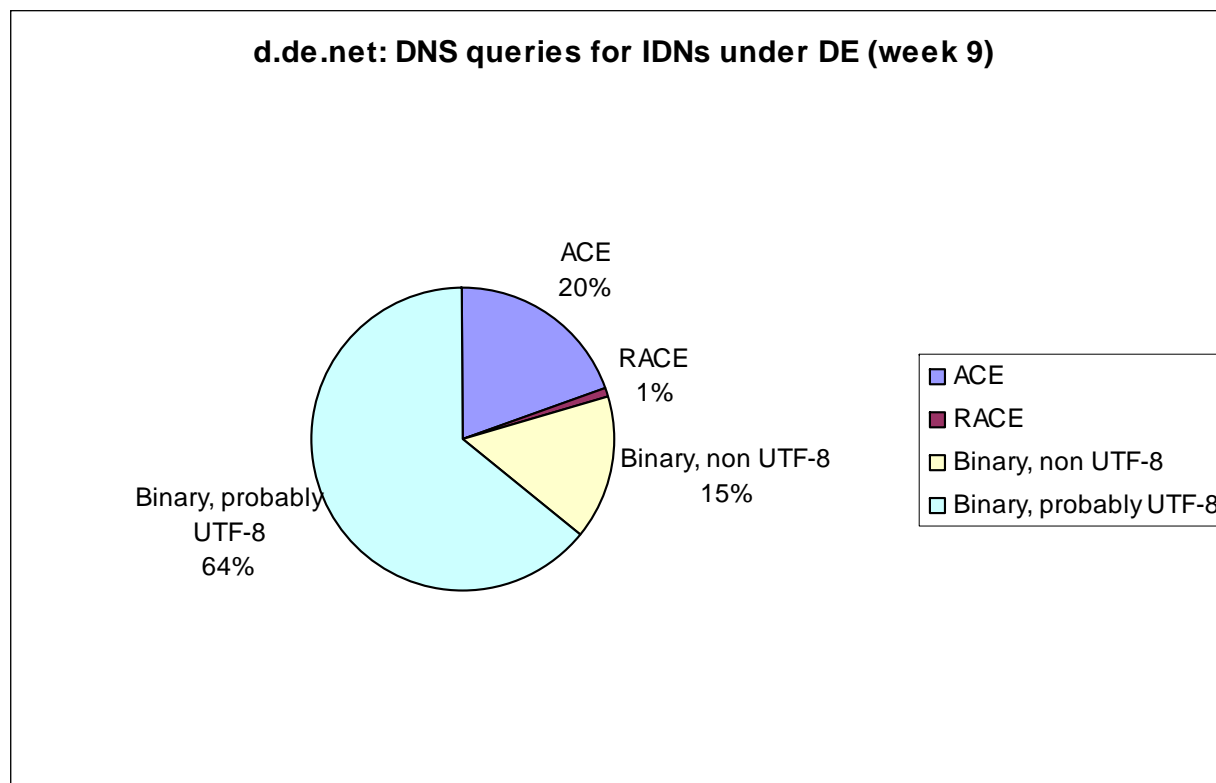




Only from one primary, week mean values, discontinuous periodical samples, not cleaned statistically



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Only from one primary, week mean value, discontinuous periodical samples, not cleaned statistically



## Homograph attack

- In February 2005 Shmoo publishes their IDN spoofing proof-of-concept
  - <http://www.shmoo.com/idn/homograph.txt>
- CENTR and DENIC statements on IDN homograph attacks:
  - <http://www.centri.org/docs/2005/02/homographs.html>
  - <http://www.denic.de/en/domains/idns/homograph.html>
- DENIC IDN character subset does not contain homographs.
- DENIC works together with the expert community (e.g. Unicode Consortium) to look for solutions and raise awareness of the real problem.

- More than two years after launch
- No danger for the IDN market in Germany, but still growth potential
- Still looking forward more IDNA support in applications
  - Cannot send e-mails to my own private IDN with most mail clients yet
  - Internationalized e-mail addresses
- After the IRI standardization (RFC 3987), IE7 will support IDNs
  - Beta available

谢谢.de

Any questions?