CNNIC Brief and Internationalized Email

Jiankang Yao

CNNIC Brief

CNNIC Brief

Operation, Management
- ccTLD Registry (CN, 中国),
- APNIC NIR

Research, Development
- DNS software & Hardware
- Technical Standards(IETF, CCSA standards)
- Security: DNS monitoring and analysis, Anti-abuse of domain names

Research and Consulting Services of Internet development
- China Internet development report
- Consultation Services

Platform for International communication and cooperation
- ISOC, ICANN
- IETF,APAC, CDNC
- Joint Project And Joint Labs

External Management Structure

National Internet Information Office

Nominated by MIIT

CNNIC Steering Committee

Ministry of Industry and Information Technology (MIIT)

Administrative governance

Business instruction

Supervision & guidance

Operational management

Information abuse management

The amount of .CN and .中国 at the end of Sep of 2012 is 5,970,234, .中国 320，000

Reliable Registration service with enhanced audit

CNNIC
中国互联网络信息中心
CHINA INTERNET NETWORK INFORMATION CENTER
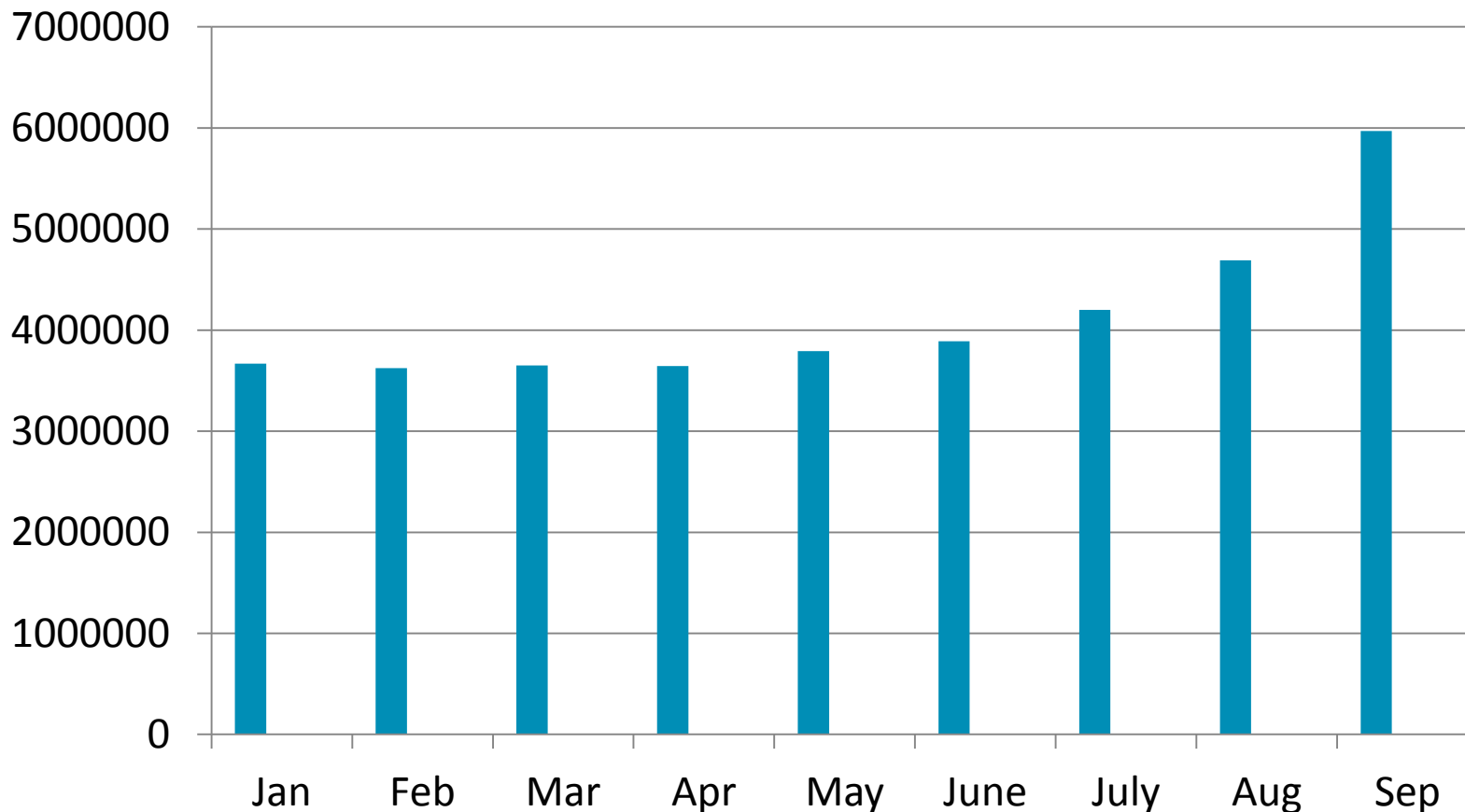
STEP1
- Customers Registry Online

STEP2
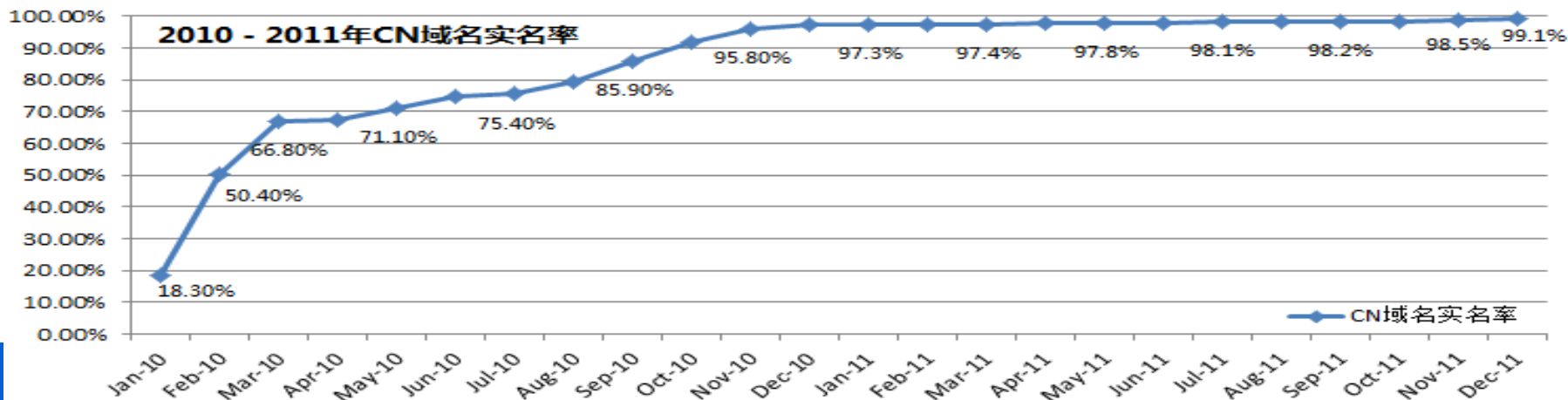- Customers Submit the data via web pages, fax, email or by post.
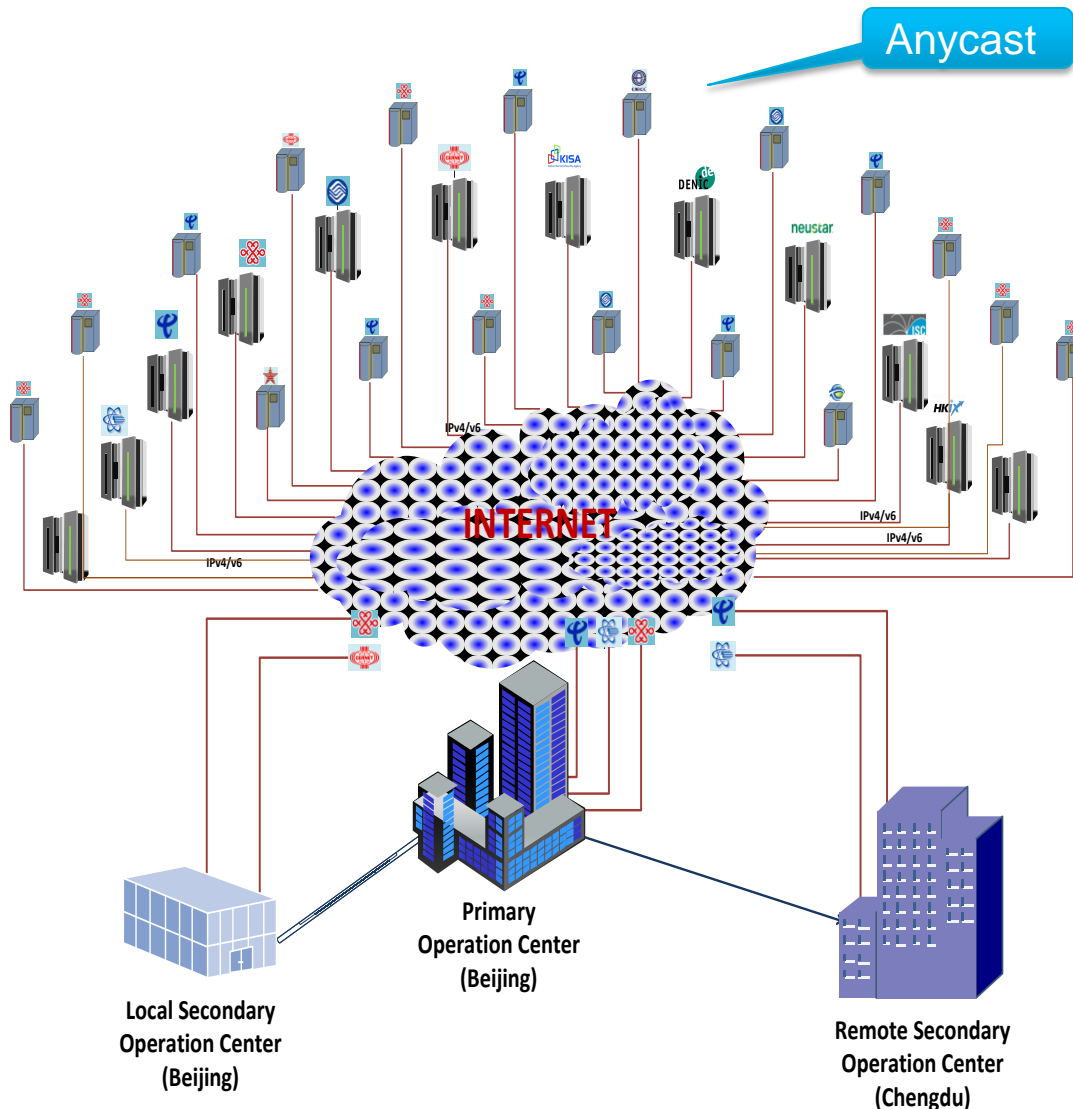
STEP3
- Registrars Audit(user-info and domain names)

STEP4
- CNNIC Re-audit and confirm

- Start this process at the end of 2009
- The whole audit process is accomplished in 2 days
- 67 domestic registrars, 22 overseas Registrars, in USA, Europe, Asia, Australia, as well as local business partners of CNNIC
- CNNIC developed ROSS system as the online service interface

2010 - 2011年CN域名实名率

18.30%
50.40%
66.80%
71.10%
75.40%
85.90%
95.80%
97.3%
97.4%
97.8%
98.1%
98.2%
98.5%
99.1%

CN域名实名率

Anycast

INTERNET

IPv4/v6

Primary Operation Center (Beijing)

Local Secondary Operation Center (Beijing)

Remote Secondary Operation Center (Chengdu)

Three Datacenters

- Zhongguancun IDC, Beijing（Primary）
- Yizhuang IDC, Beijing（Local Backup)
- Chengdu IDC, Sichuan (Remote Backup)

30 Resolution Nodes

- Geographical Balance
  - Mainland China 22，Oversea 8
- ISP Balance
  - Peering with as many as ISPs
- Broadcasting Strategy
  - Global 12, Local 18
- Still in Expanding….

中国信息社会重要的基础设施建设者、运行者和管理者

Operation-SLA@CNNIC.CN

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.CN -- 2012.9	SLA Requirement	Actual Performance
Check Domain	1000 milliseconds for 95%	120.98 milliseconds
Add Domain	1500 milliseconds for 95%	194.60 milliseconds
Update Domain	1500 milliseconds for 95%	128.26milliseconds
Delete Domain	1500 milliseconds for 95%	182.90 milliseconds
DNS Update Frequency	4 hours for 95%	5 minutes
WHOIS Update Frequency	15 minutes for 95%	5 minutes

.CN	Availability		
	SRS	Whois	DNS
2012	100%	100%	100%
2011	100%	100%	100%
2010	100%	100%	100%
2009	99.997%	99.9975%	100%
2008	99.994%	99.999%	100%
Object	99.9%	99.9%	100%

● DNS peak volume achieves 6 billion QPS, average 1.6 billion QPS.
● Supporting both IPv4 and IPv6.
● SLA for registration, WHOIS and DNS keeps 100% respectively for consecutively three years.

中国信息社会重要的基础设施建设者、运行者和管理者

Plan to deploy ……
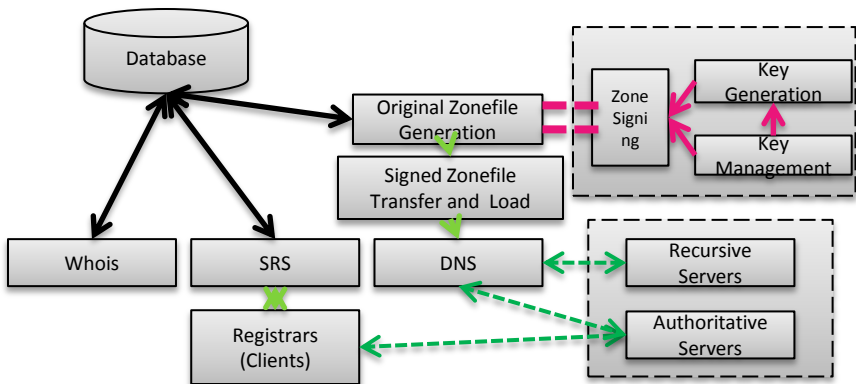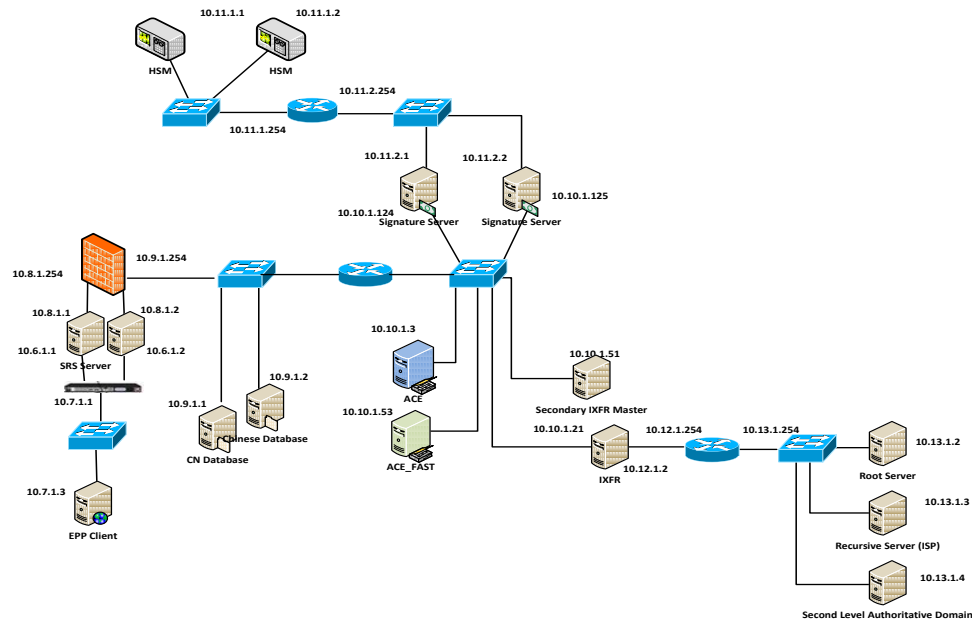
DNSSEC simulation system was built for one and half years.

There were 5,600,000 CN domains filled, 6,900,000 domain records updated, 170,000 DS records submitted in that platform.

ZSK rotated 72 times in this platform while KSK 36

中国信息社会重要的基础设施建设者、运行者和管理者

Besides .CN…

Root Mirrors

- I-root， F-root， L-root

Other TLDs

- New Gtld application: .公司， 网络,
- .DE   Swap with DENIC
- .KR   Swap with KRNIC
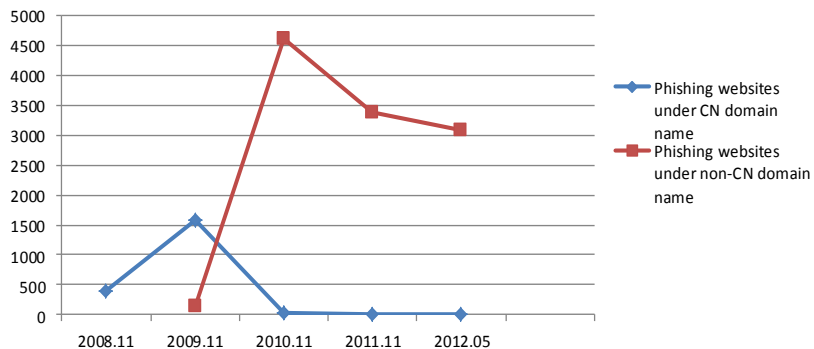
SLDs under .CN

- Public Authoritative DNS Service

Recursive Name Servers

- Public Recursive DNS Service
- 1.2.4.8   210.2.4.8

So as to a full functional DNS System

中国信息社会重要的基础设施建设者、运行者和管理者

Security-- Achievement of Anti-abuse

Quantity of phishing websites under CN domain name and non-CN domain name

Legend:
- Phishing websites under CN domain name
- Phishing websites under non-CN domain name

X-axis: 2008.11, 2009.11, 2010.11, 2011.11, 2012.05

Black /white list database construction

Phishing domain precaution system (for new registered domain name)

Phishing tracing system

Anti-phishing tools and systems development

Phishing websites detecting system

Phishing E-mail gathering and detecting system

National Domain Name Security Alliance

Anti-phishing alliance of China (Founded by CNNIC)set up the quick-settlement mechanism to address the problem of phishing websites that jeopardize the public information security. As of Sep, 2012, the phishing websites disposed totaled 55,867.

As of Sep, 2012, the self-developed phishing and monitoring system detected 1,377 Chinese phishing websites.

"National domain name security alliance", Founded on March 27, 2012
Initiated by the CNNIC，28 members
CNNIC acts as the Secretariat of the League

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Active Phishing(illegal) Attacks Detection

➢ Base on DNS logs combined with phishing URLS to detect phishing attacks actively

- ■ DNS data mining technology

- ■ Phishing Reports statistics and analysis

- ■ Phishing URL automatic generation technology

Phishing Websites Judgment Technology

■Registration Information Analysis

■The Third Party Information Analysis
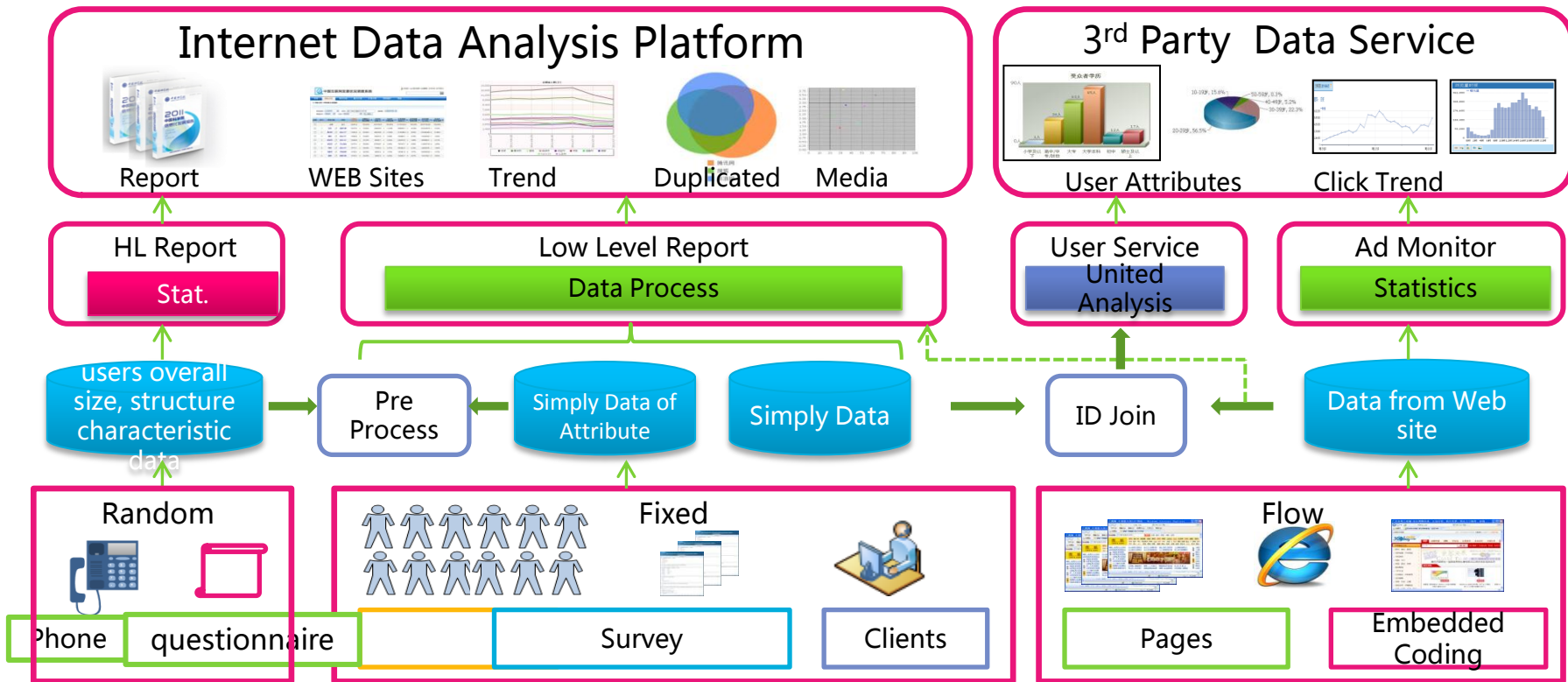
■Webpage Content Analysis

■Other characteristics Analysis

National Policy

National plan 2011-2015
➢Aiming for a High bandwidth, integrated, secure, ubiquitous next generation network
➢Deploy the next generation Internet based on IPv6(CNGI，China Next Generation Internet)

CNNIC is serving as a steering role for IP address allocation.

➢**Allocation by CNNIC**

➢**IPv4 increased 150B, IPv6 added 35 blocks of /32 in 2012.**

➢**Total Number: v4 is 74，569，216; v6 is 183 blocks of /32**

China Internet Data Platform

Internet Data Analysis Platform

Report · WEB Sites · Trend · Duplicated · Media

3rd Party Data Service

User Attributes · Click Trend

HL Report — Stat.

Low Level Report — Data Process

User Service — United Analysis

Ad Monitor — Statistics

users overall size, structure characteristic data

Pre Process · Simply Data of Attribute · Simply Data · ID Join · Data from Web site

Random — Phone · questionnaire

Fixed — Survey · Clients

Flow — Pages · Embedded Coding

- report of Chinese internet development. Until June 2012, 538,000,000 Internet users in China, 388,000,000 with Mobile Terminal among of them;
- Registered domain name 10,073,000(all tlds), active websites 2,600,000 , nearly 1,000,000 .CN Websites

中国信息社会重要的基础设施建设者、运行者和管理者

- IPv6 Pilot Network Services
  - Tunnel
  - Leased Line

- IPv6 Application Pilot Services
  - Testing & Staging
  - Application migration guide
  - Development & testing tools
  - IPv6 applications
    - Audio/Video
    - IPv6 enabled Webcam
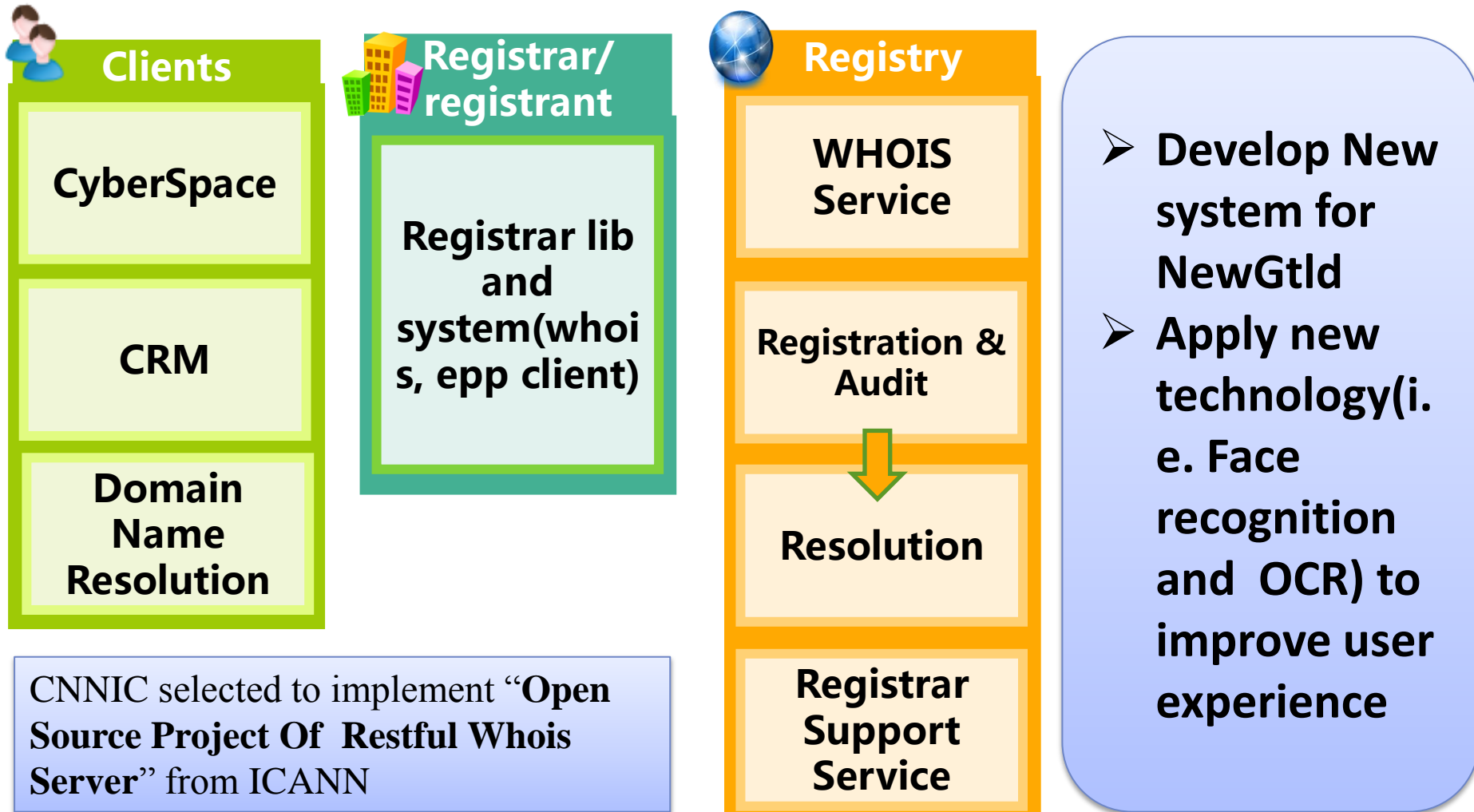   - IPv6 enabled Websites

- Promotion Activities
  - Global IPv6 Summit
  - Joint 'World IPv6 Launch'
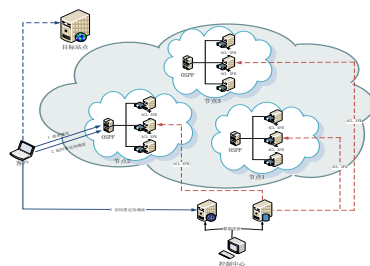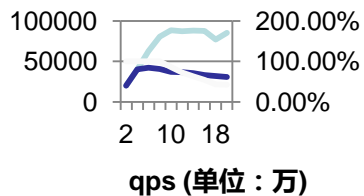 - Public Press

www.6pilot.cn

Business Operation Support System
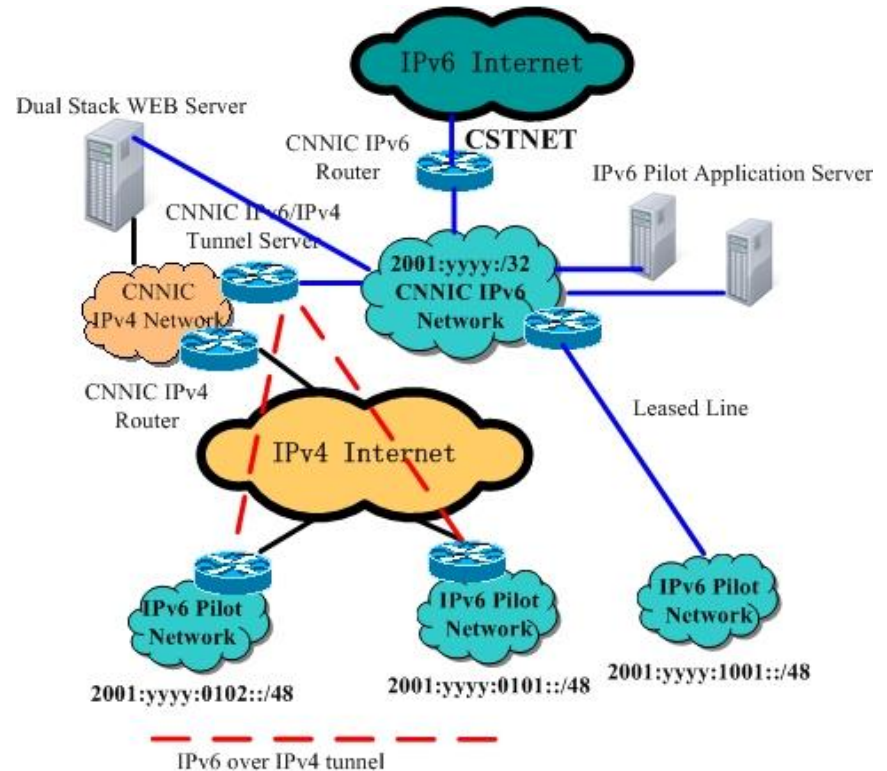
> Based on EPP registry system

Clients
- CyberSpace
- CRM
- Domain Name Resolution

Registrar/registrant
- Registrar lib and system(whois, epp client)

Registry
- WHOIS Service
- Registration & Audit
- Resolution
- Registrar Support Service

> **Develop New system for NewGtld**
> **Apply new technology(i.e. Face recognition and OCR) to improve user experience**

CNNIC selected to implement "**Open Source Project Of Restful Whois Server**" from ICANN

➢ Achievements - SDNS Series

Zebra

•High performance

•Friendly web

•High capacity

•Big resistance to pressure

qps (单位：万)

ZLOPE

•Black/White list

•Redirection

•Access control

•DNSSEC & DNS64

SmartDnssec

•Data integrity and verification
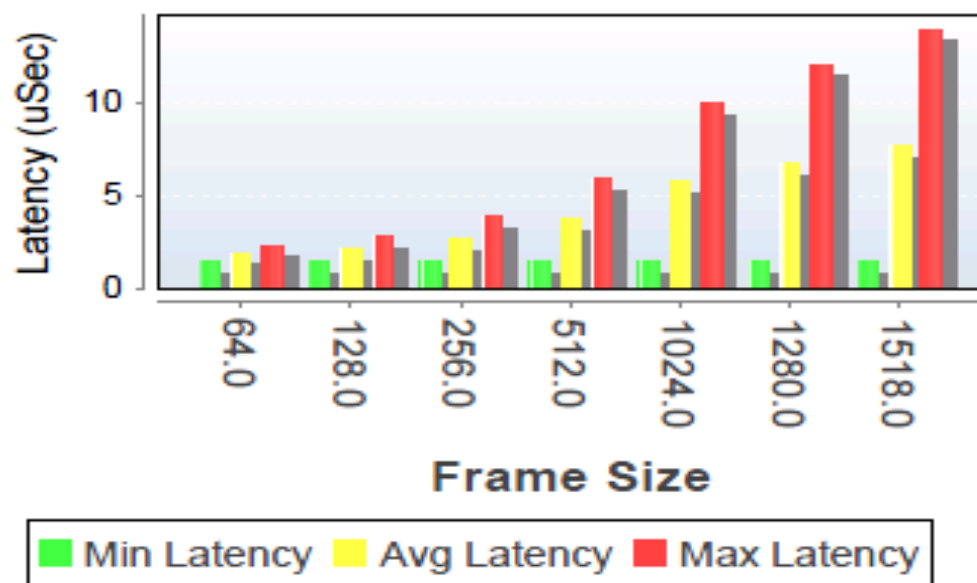
•Key rolling

•Disaster Recovery and Backup

BIND10

ISC Internet Systems Consortium
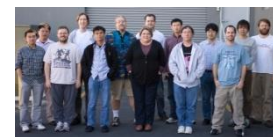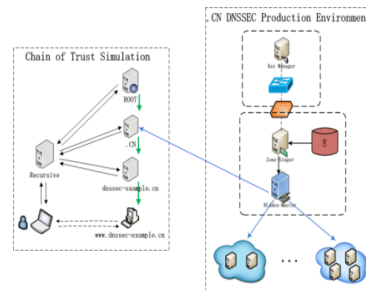
•Participate in BIND10 Development

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➤ Hardware technology for DNS: FPGA-based,

　　➤ Udp flood, tcp syn flood,

■ latency：<5us

■ capacity：1300K QPS/1G

■ B/W list size：1000K

■ Domain names in hot Cache:4096

Latency by Frame size at Throughput

Latency (uSec)

Frame Size: 64.0, 128.0, 256.0, 512.0, 1024.0, 1280.0, 1518.0

■ Min Latency ■ Avg Latency ■ Max Latency

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永久免费

1.2.4.8
210.2.4.8

Fast, Smart and High-Speed

Public Recursive DNS Service Core Tech

Anti-DDOS   High Availability

Anti-phishing

White/Black
List

Porn Content
Filtering

Website
Monitoring

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High Security

- Anti-DDOS

High Availability

- Several DNS Node located in the world's different locations
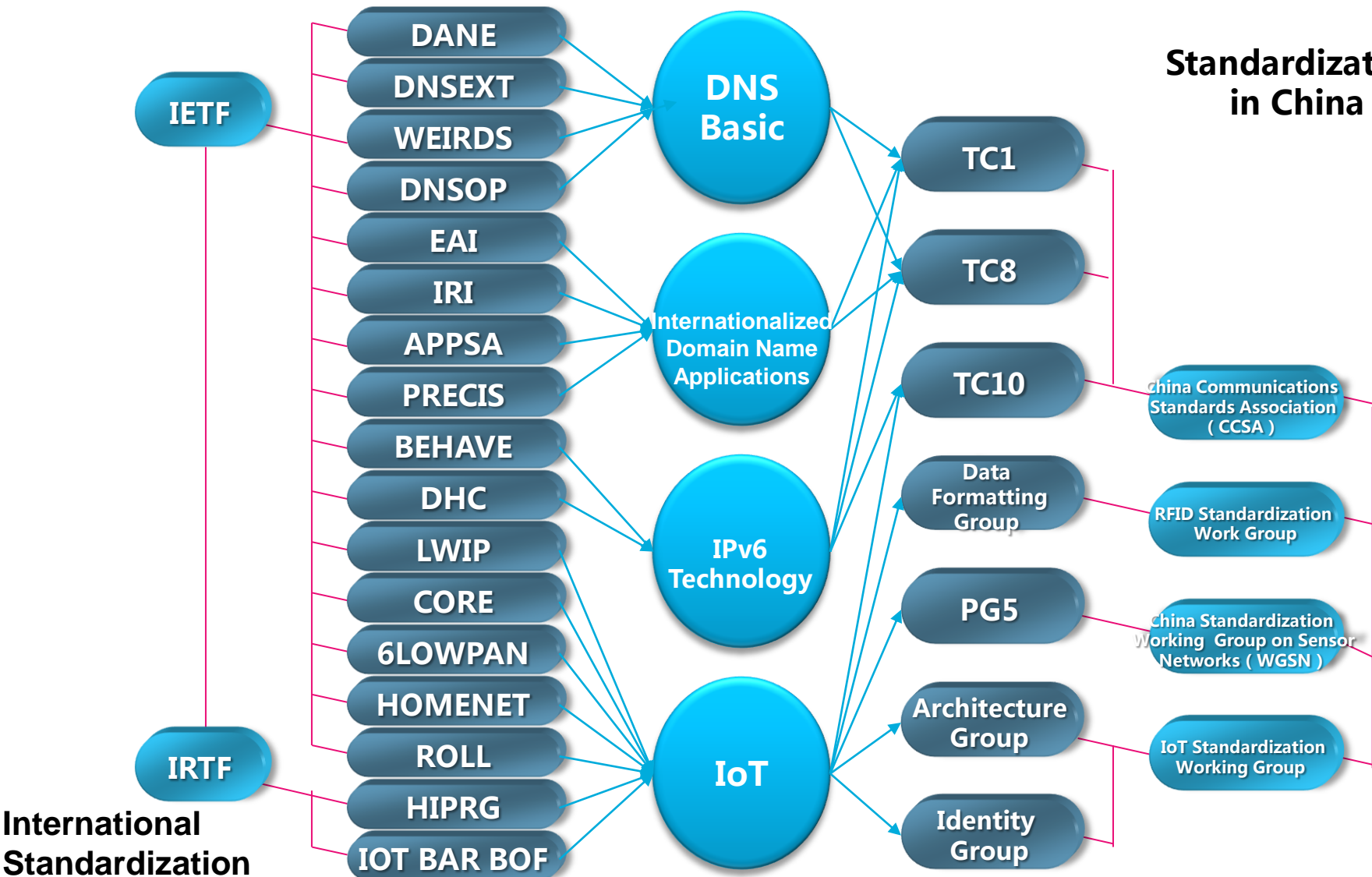
High Performance

- DNS Dynamic Update
- DNS Operation API
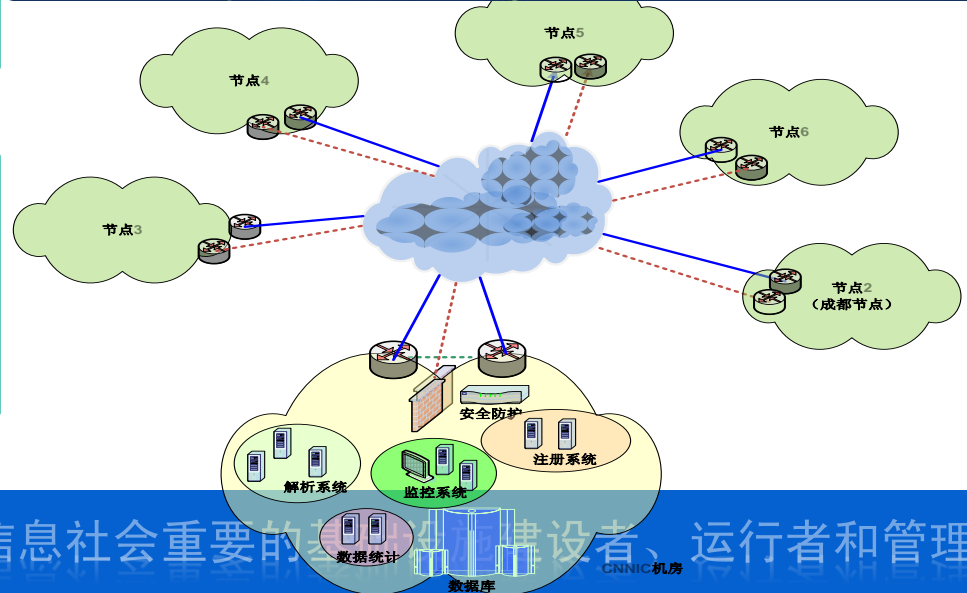
DNS Analysis & Monitor Service Platform

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Chinese Email Address (Internationalized Email Address) Technology Progress

中国信息社会重要的基础设施建设者、运行者和管理者

yaojk@cnnic.cn

姚健康@网络中心.中国

healthyao@sina.cn

姚健康

姚健康@新浪.中国

名字 @ 中文域名 = Chinese Email Addresses

Email address is an essential element of business card; CEA makes the information exchange smoothly between Chinese without barriers

中国信息社会重要的基础设施建设者、运行者和管理者

اختبار@اختبار.eg

परीक्षा@उदाहरण.in

例え@例え.jp

실례@실례.kr

用户@中文.cn

été@Économie.fr

teuer@Schön.de

EAI (CEA) —— International Standard

In Feb. 2012，core RFCs for EAI were published

In 2006, EAI WG was built in IETF

In 2005，CNNIC plans to push Email address Internationalization (EAI）WG in IETF

IETF RFC6530   RFC6855
IETF RFC6531 RFC6856
IETF RFC6532 RFC6857
IETF RFC6533 RFC6858
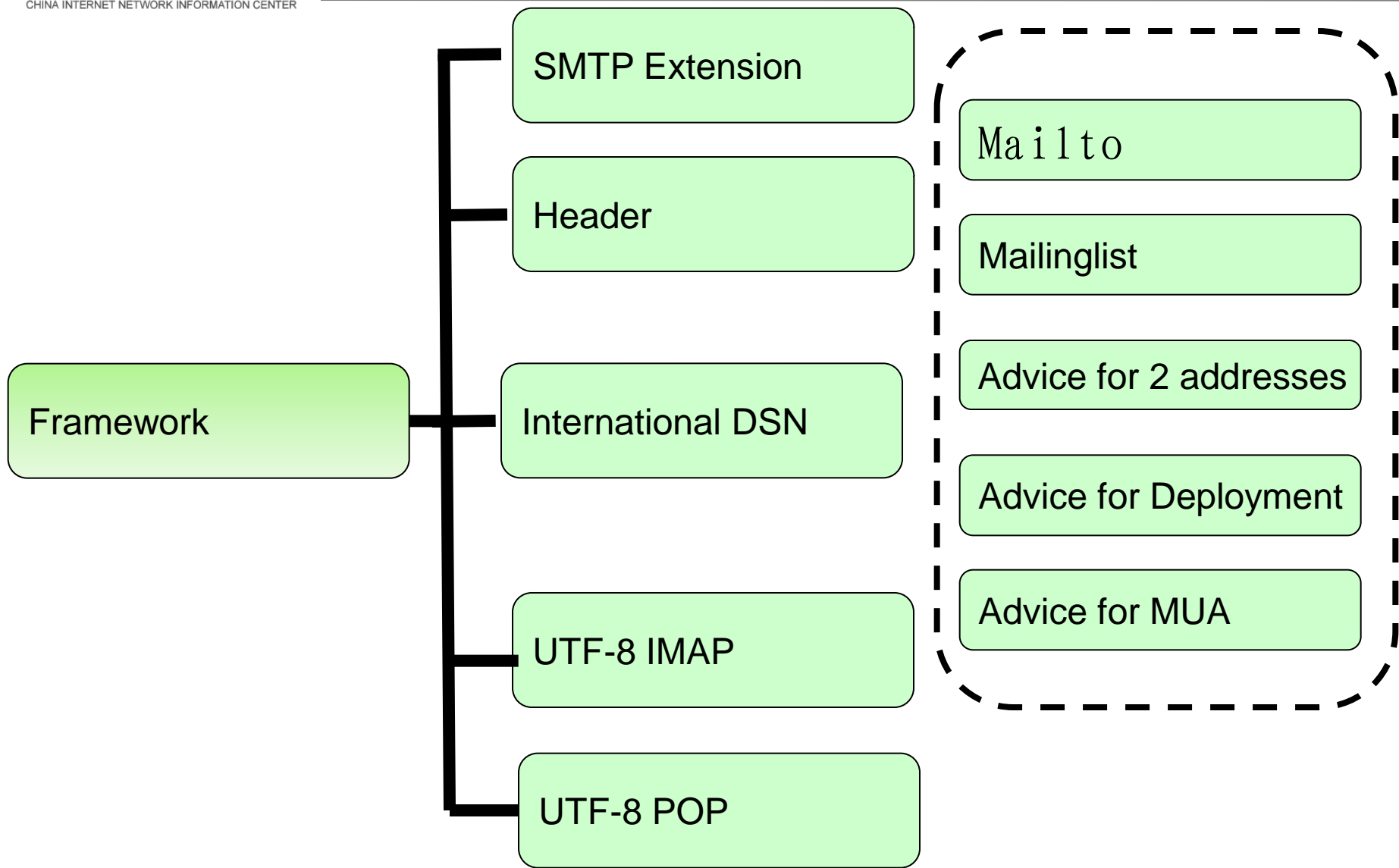
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IETF EAI core document plan

Framework

- SMTP Extension
- Header
- International DSN
- UTF-8 IMAP
- UTF-8 POP

- Mailto
- Mailinglist
- Advice for 2 addresses
- Advice for Deployment
- Advice for MUA

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.中国
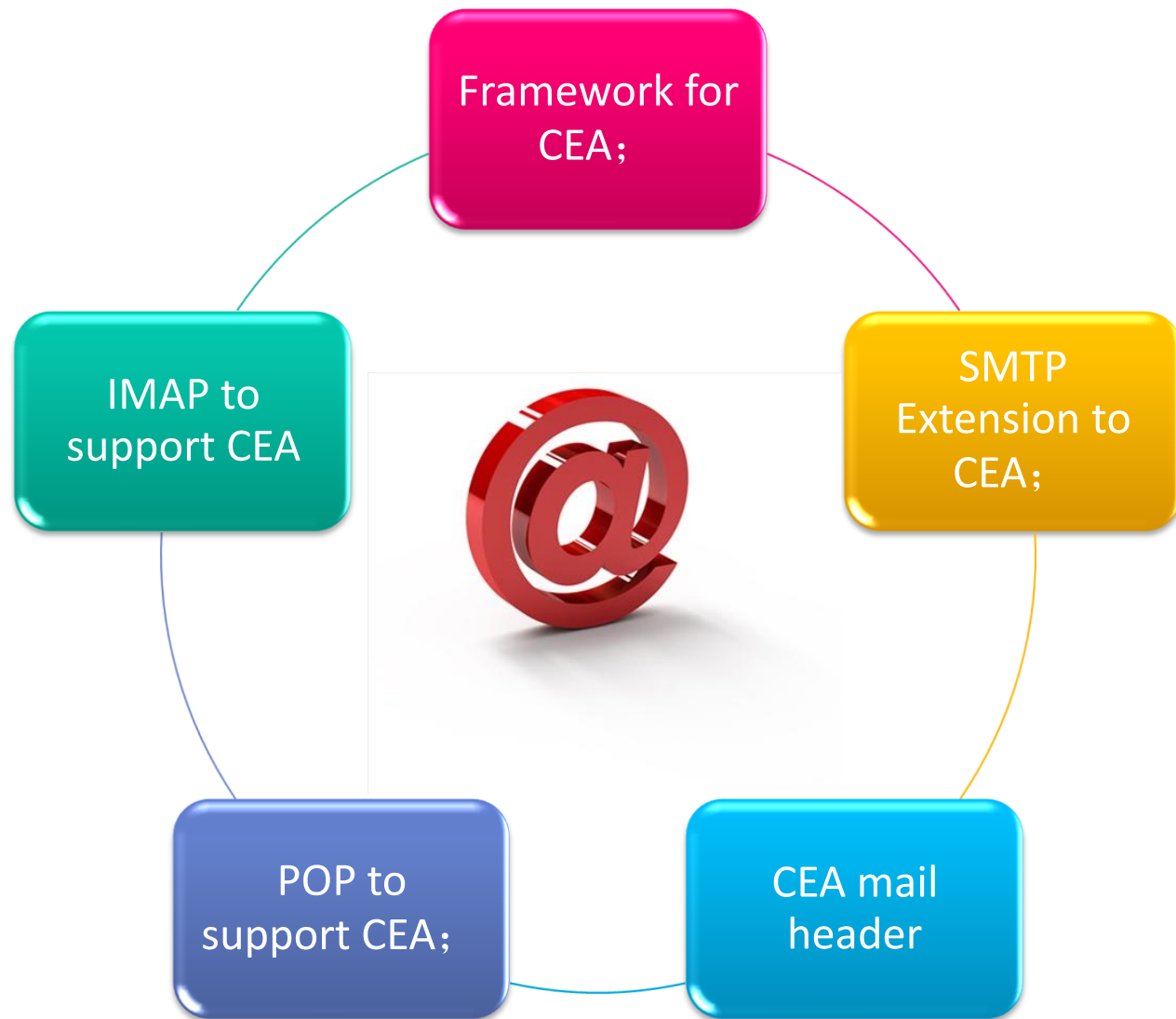
IDN ccTLds were deployed

- More IDN are registered in the world
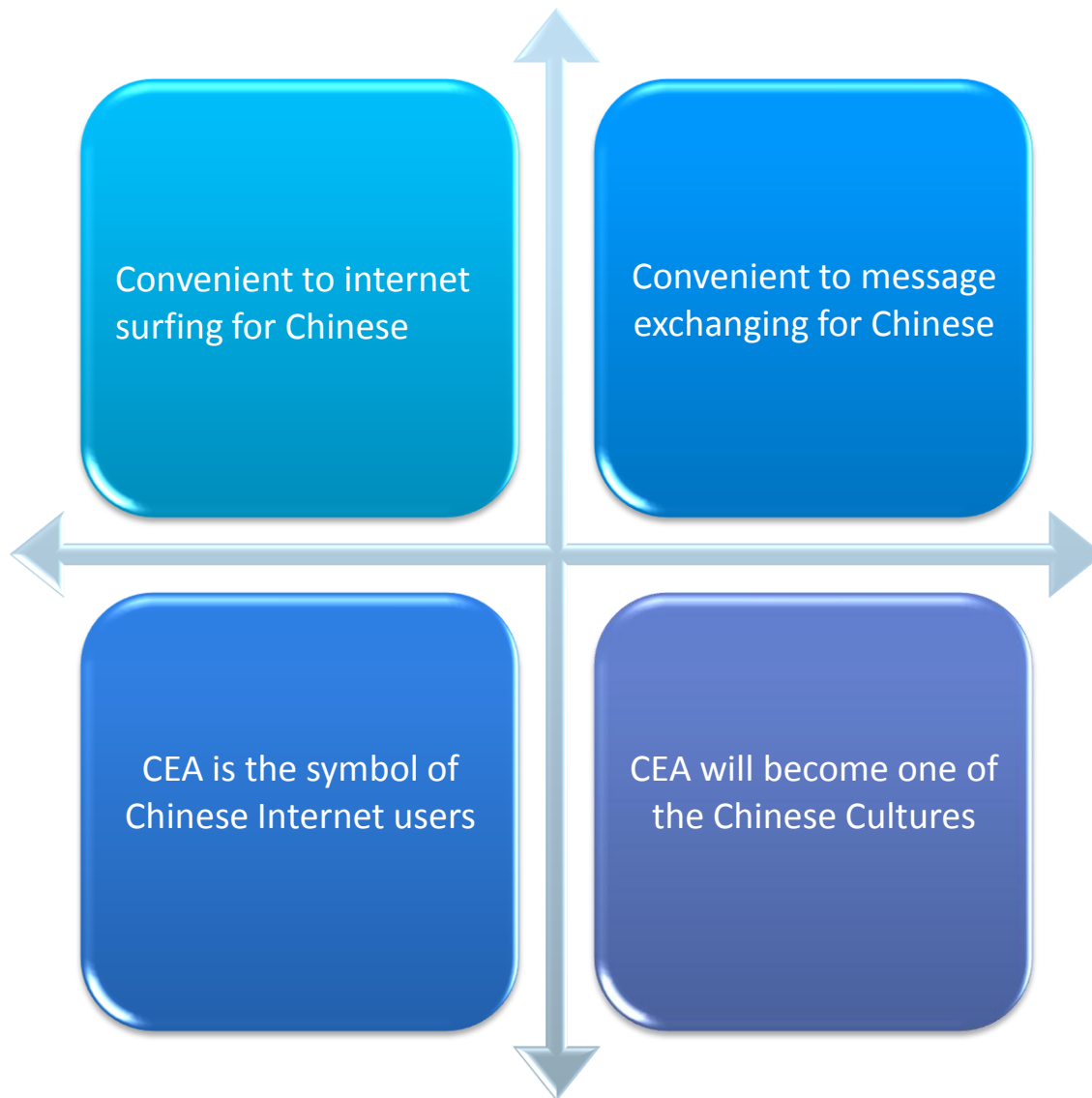- .中国 domain name registrations increase rapidly

ICANN approves the IDN TLD plan
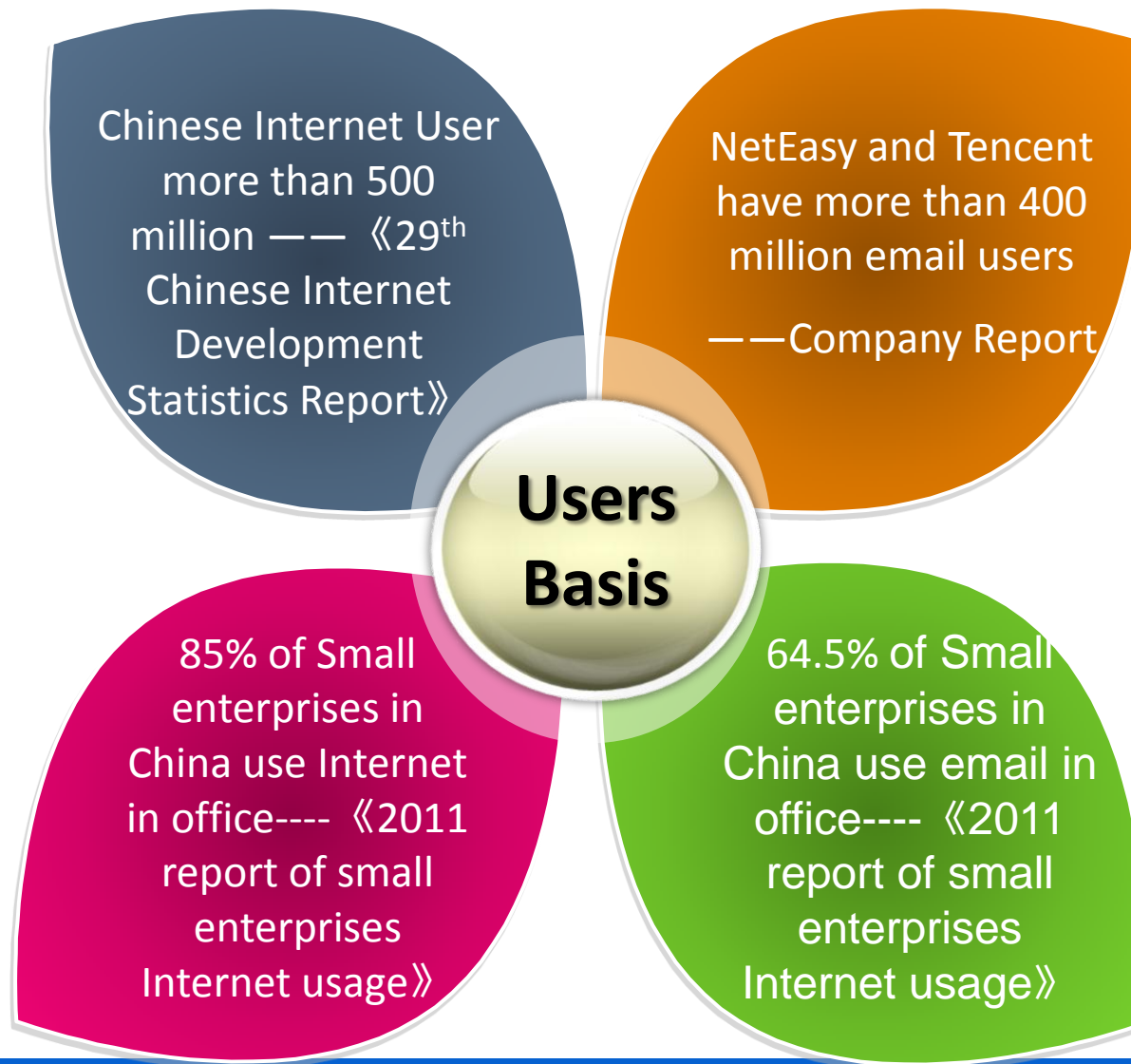
- New IDN TLD will emerge

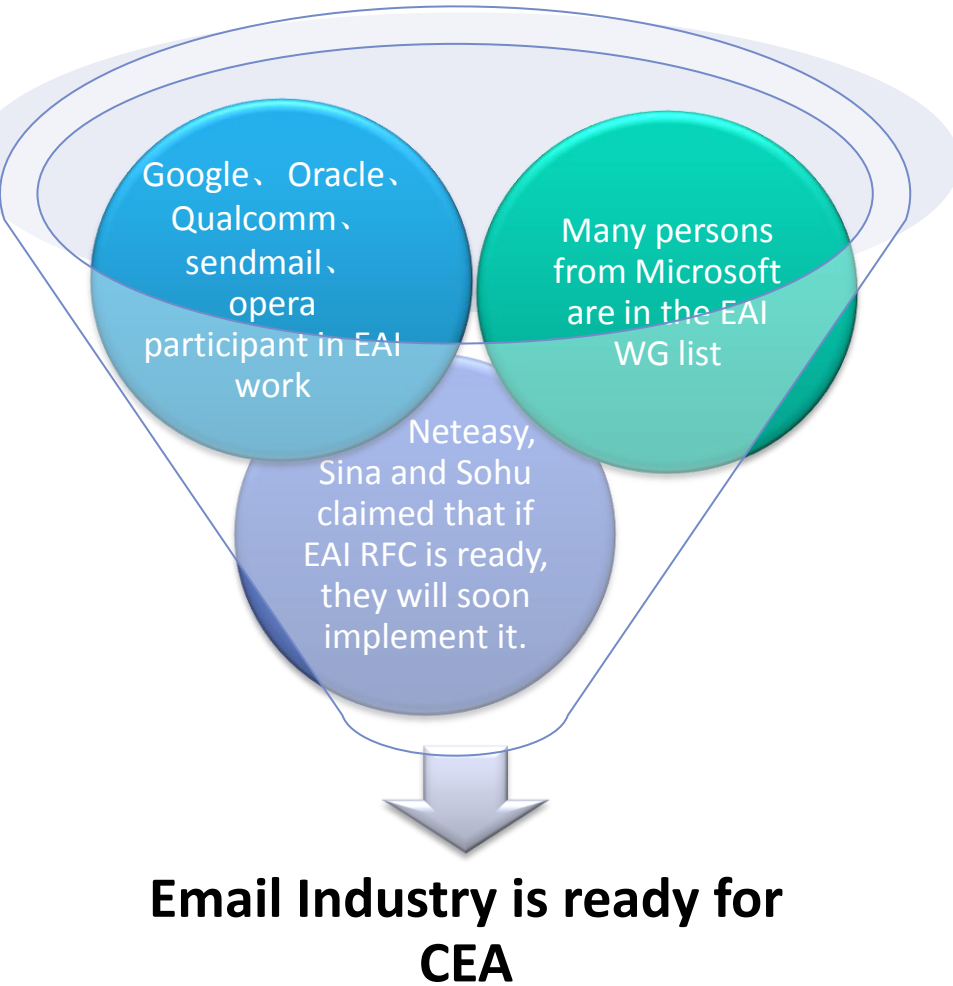More than 1900 new GTLD applications

- Chinese IDN TLD is the hot topic

New Chinese IDN TLDs eager for CEA

ICANN

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Chinese Internet User more than 500 million —— 《29th Chinese Internet Development Statistics Report》

NetEasy and Tencent have more than 400 million email users

——Company Report

Users Basis

85% of Small enterprises in China use Internet in office---- 《2011 report of small enterprises Internet usage》

64.5% of Small enterprises in China use email in office---- 《2011 report of small enterprises Internet usage》

Google、Oracle、Qualcomm、sendmail、opera participant in EAI work

Many persons from Microsoft are in the EAI WG list

Neteasy, Sina and Sohu claimed that if EAI RFC is ready, they will soon implement it.

Email Industry is ready for CEA

Email market is full of competition; CEA is a new feature for success.

CEA competitions is a hot war！！

Trigger new application

New business opportunity

Push GDP Growth

CEA Deployment Principles

CNNIC position
- CNNIC, the state network information center of China, was founded to help to manage and run the basic internet resources, pushing the development of internet
- CNNIC, the writer of CEA, pushes Chinese application for Chinese

Supporting Service
- Help to analysis the CEA standard
- Participate in the technical solution for CEA
- Provide the consultancy for CEA

Cooperation Principles
- Top email service or software or solution providers in China and oversea
- First come first served
- Have a future possible cooperation to push CEA and other business

choose 2-3 partners to help CEA deployment

- Coremail has implemented RFC6531 and RFC6532
- CNNIC TWNIC HKIRC SGNIC dotASIA MONIC AFILIAS and VERISIGN join together to have the demo of sending EAI address

无痕　　　http://中科院.中国/coremail/XJS/index.jsp?sid=BAxIHpmmtdNeEosTtLmmiRcENyPufnPJ　　　　　谷歌

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全球首封"国际化多语种邮箱电子邮件" 🏷▾ ⬈ 🖨 ⌃

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时　间：2012年06月19日 09:53:29 (星期二)

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joe.waldron@verisigneai.com <joe.waldron@verisigneai.com>，晖.格里菲斯@verisigneai.com <晖.格里菲斯@verisigneai.com>[↑隐藏信息]

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国>，戴博伟@中科院.中国 <戴博伟@中科院.中国>，谭铁牛@中科院.中国 <谭铁牛@中科院.中国>，廖方宇@中科院.中国 <廖方宇@中科院.中国>，阎保平@中科院.中国 <阎保平@中科院.中国>，刘冰@互联
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息]

✉ 状态：发送成功　[查看详情]

尊敬的先生/女士：

　　　很荣幸从北京向多个国家和地区发出全球首封 "多语种邮箱电子邮件" ----邮通多语，惠及全球。感谢所有投身此项工作的同仁们！

中国科学院　　钱华林

　　　　　　　　　　　　　　　　2012.06.19

		戴博伟@中科院.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		陈明奇@中科院.中国	**Re: Re: 全球首封"国际化多语种邮箱电子邮件"**
		阎保平@中科院.中国	**Re: Re: 全球首封"国际化多语种邮箱电子邮件"**
		谭铁牛@中科院.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		cdnc@多语种邮件.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		孙永革@ 多语种邮件.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		Aaron Lee	**Re: 全球首封"国际化多语种邮箱电子邮件"**
		曾宪雄	Re: 全球首封"国际化多语种邮箱电子邮件"
		胡启恒@ 多语种邮件.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		edmon	Re: Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		高新民@ 多语种邮件.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		廖方宇@中科院.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		Jeremy Ebbels	**Re: 全球首封"国际化多语种邮箱电子邮件"**
		李汉川	**Re: 全球首封"国际化多语种邮箱电子邮件"**
		戴晓慧@多语种邮件.中国	Re: Re: 全球首封"国际化多语种邮箱电子邮件"
		Leona Chen-Birkner	Re: 全球首封"国际化多语种邮箱电子邮件"

选择： 全部 - 未读 - 已读 - 反选 - 不选

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