

.नेपाल Domain



Unlocking Local Identity with Secure DNS

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“ Working towards an inclusive, secure, and multilingual Internet for Nepal and beyond.

THE CHALLENGE

Internet & Identity



ASCII Foundation

The Internet was built in **ASCII**.

A-Z | 0-9

Limited character set



नेपाली भाषा

But Nepal speaks **Devanagari**.

क ख ग घ ङ

Native script system

⚠ Language Affects



Access

Barriers to entry



Trust

Cultural connection



Inclusion

Digital participation

THE SOLUTION

Internationalized Domain Names (IDNs)



From ASCII → Unicode

IDNs allow domains in **native scripts**, breaking the ASCII barrier and enabling true multilingual Internet.

Before

example.com.np

After

उदाहरण.नेपाल



Universal Acceptance (UA)

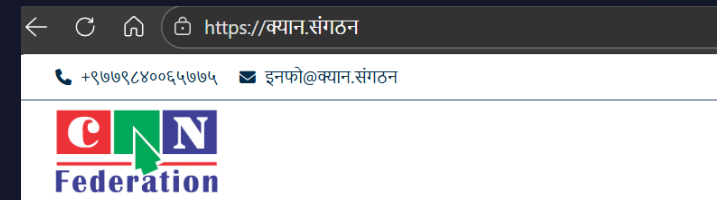
UA ensures IDNs work across all applications, browsers, and email systems making multilingual domains truly functional.

EXAMPLE IN NEPAL

Real IDN Implementation - 17th May 2025

Devanagari Domain

क्यान.संगठन



✓ Fully functional IDN in production

THE PROPOSAL

What is **.नेपाल**?

PROPOSED IDN ccTLD

.नेपाल

Dot Nepal in Devanagari



Cultural Identity



Digital Sovereignty



Global Interoperability

Key Authorities

National Level

Policy



Regulation



Technical Ops



International Level

Approval



Root Delegation

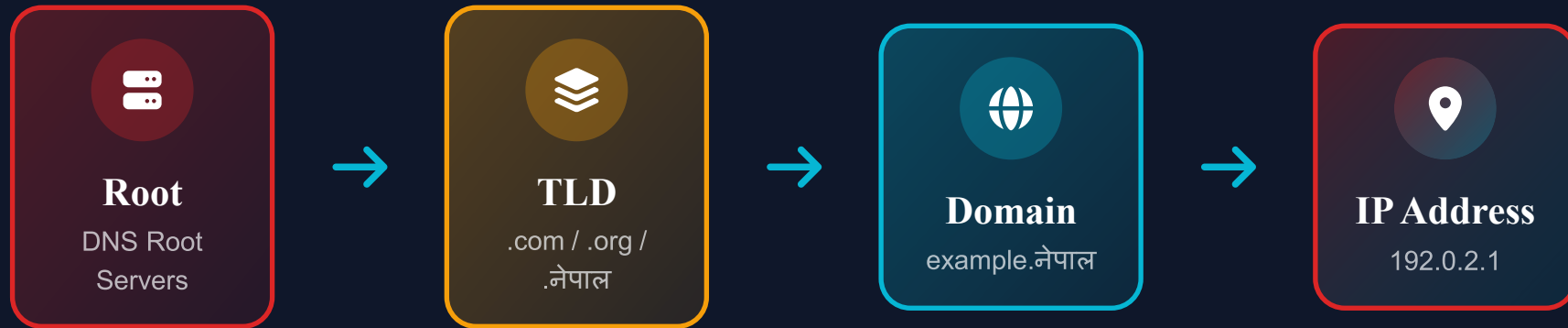


Standards



i Mandatory Coordination with ICANN— For Internationally Standardized IDN ccTLD Implementation

How DNS Works



- ✔ **Global**
- ✔ **Unified**
- ✔ **Unique**

The DNS hierarchy ensures every domain name maps to a unique IP address, creating a **single, coherent global Internet** that works seamlessly across borders and languages.

Securing Trust: DNSSEC

⚠️ Problem

DNS was **not built for security**. The original design prioritized functionality over protection.

No built-in authentication mechanism for DNS responses

☠️ Risk

- Spoofing
- Redirection
- Fake banking sites

Attackers can redirect users to malicious sites

🛡️ Solution

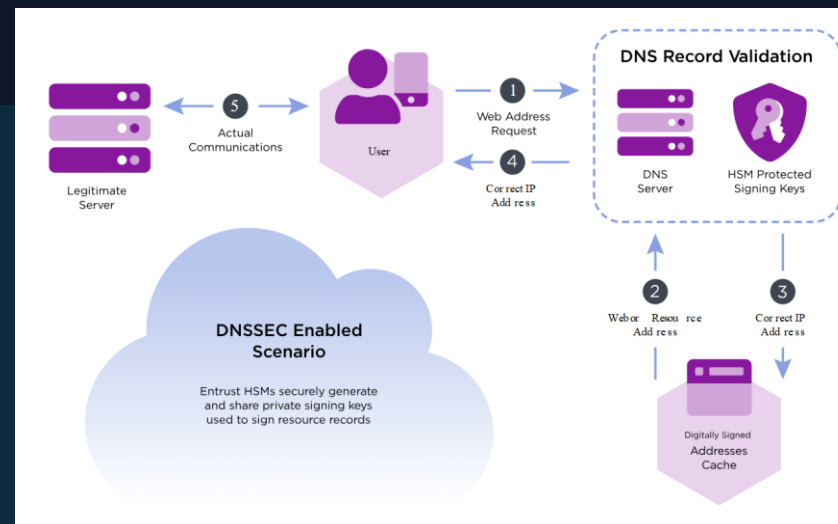
- ✓ DNSSEC
- ✓ Digital signatures
- ✓ Chain of trust

Cryptographic verification at infrastructure level



How DNSSEC Works

- Digital Signature Verification
- Trust at Infrastructure Level



Universal Acceptance (UA)

CORE PRINCIPLE

IDNs Must Work Everywhere

Universal Acceptance ensures that **all domain names** work across all applications, systems, and services.

❗ Without UA → Inclusion Fails



Browsers Resolve IDNs

Web browsers must correctly interpret and display IDNs in the address bar.



Emails in Nepali Script

user@डोमेन.नेपाल must be valid and deliverable across all email systems.



Platforms Accept New TLDs

All systems must recognize and support new TLDs, including IDN ccTLDs like .नेपाल.

National Impact of .नेपाल



Inclusion

- ✓ Services in native script
- ✓ Lower language barriers
- ✓ Broader digital access

More Nepalis online



Economy

- ✓ Trusted local brands
- ✓ E-commerce growth
- ✓ Digital entrepreneurship

Stronger digital economy



Governance

- ✓ Secure e-government
- ✓ Official services in Nepali
- ✓ Citizen trust & engagement

Digital sovereignty

Language Inclusion = Digital Participation

Scaling & Global Context



New gTLD Round

ICANN's expansion program

The **next round of new gTLDs** presents opportunities for communities worldwide to apply for their own domain extensions.

➔ **Multilingual Internet Future:** More IDNs, more languages, more inclusion.



Regional Example

India's success story

NIXI →

.भारत

India's IDN ccTLD



India's **.भारत** demonstrates successful IDN ccTLD implementation at scale.



Critical Questions for Nepal

1 Community Access

Can **underserved communities** apply for their own domains?

2 GAC Engagement

Is Nepal actively participating in ICANN's **Governmental Advisory Committee**?

3 UA Readiness

Is Nepal's digital ecosystem ready for **Universal Acceptance**?

CONCLUSION

.नेपाल is:



Identity

Cultural representation



Security

DNSSEC protection




Inclusion

Universal access




Sovereignty

Digital independence

 DNS = Accessibility

 DNSSEC = Trust

 UA = Usability

Nepal exists securely in the **global digital space.**

Thank You!

