



RDAP: Security and Sustainability

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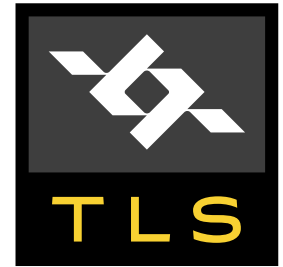
TE WHANGANUI A TARA
WELLINGTON,
AOTEAROA NEW ZEALAND

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What is RDAP?



- **Registration Data Access Protocol**
- Replacement for Whois (RFC 3912)
- Highly extensible
- Originally defined in RFCs 7480-7484



{JSON}



What are the problems with Whois?

- Inconsistent formats, encodings, transports
- Difficult to extend
- (Some NIR data available at whois.apnic.net, as ASCII)



**Port 43 + Web
ASCII**

```
inet6num: 2001:dd8:8::/45
netname:  APNIC-SERVICES-AU
descr:   APNIC
...
```

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**Web
UTF-8**

```
Chinese Name 台灣固網股...
Netname      TFN-NET
Country Code TW
...
```




**Port 43 + Web
UTF-8 (< EUC-KR)**

```
IPv6 주소 : 2001:0C98::/32
기관명   : 한국인터넷진흥원
서비스명 : KRNIC-NET
```



**Port 43 + Web
JIS**

```
[IP ネット...] 2001:0dc2::/32
[ネットワーク名] JPNIC-NET
[組織名] 要約
```



**Port 43 + Web
ASCII**

```
inet6num: 2406:6cc0::/32
netname:  IDNIC-ID
descr:   IDNIC
...
```

How does RDAP fix these problems?

- **Security**

- Single format/
encoding/transport
- TLS

- **Sustainability**

- Redirects
- Extensibility
- Common protocol
for INR/DNR

```
...  
"vcardArray": [  
  "vcard",  
  [  
    [ "version", {}, "text", "4.0" ],  
    [ "fn", { "altid": "1", "language": "zh-Hant-TW" },  
      "text", " 台灣固網股份有限公司 " ],  
    [ "fn", { "altid": "1", "language": "en" },  
      "text", "Taiwan Fixed Network CO.,LTD." ],  
    [ "kind", {}, "text", "individual" ],  
    [ "adr", { "label": "8F., No.172-1, Sec.2, Ji-Lung Rd," },  
      "text", [ "", "", "", "", "", "", "" ] ],  
    [ "email", {}, "text", "test@example.net" ]  
  ]  
]  
...
```



How does RDAP help today?

- Current RDAP service (`ldap.apnic.net`) covers APNIC-source data, plus ASCII-mapped NIR-source data
 - TLS, redirects, extensibility, common protocol
 - Particularly with extensibility, RDAP sees lots of work in the standards space
 - Redaction, reverse search, RIR search
 - APNIC looking at implementations of some of these for next year



What are the areas for improvement?

- Lack of multilingual data, particularly for the NIRs
- NIRs unable to provide certain PII data to APNIC
 - Requires continued use of NIR Whois services
 - JPNIC working on own RDAP server to address this problem for their data: APNIC will eventually redirect to that server
- APNIC and the NIRs are looking into options here



RDAP is here for the long haul

- Each RIR has deployed this service
- ICANN mandates its use by gTLDs
 - <https://www.icann.org/rdap>
- Not all ccTLDs support RDAP: but, if unlisted ccTLD RDAP servers are taken into account, 82% of DUMs are covered by RDAP
 - <https://regiops.net/sites/default/files/documents/10-ROW13-Gavin%20Brown-Stealth%20RDAP.pdf>
- So although there is more work to do, RDAP is a strong base for that work that will be around for a long time





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