Resource Certificate Provisioning Protocol

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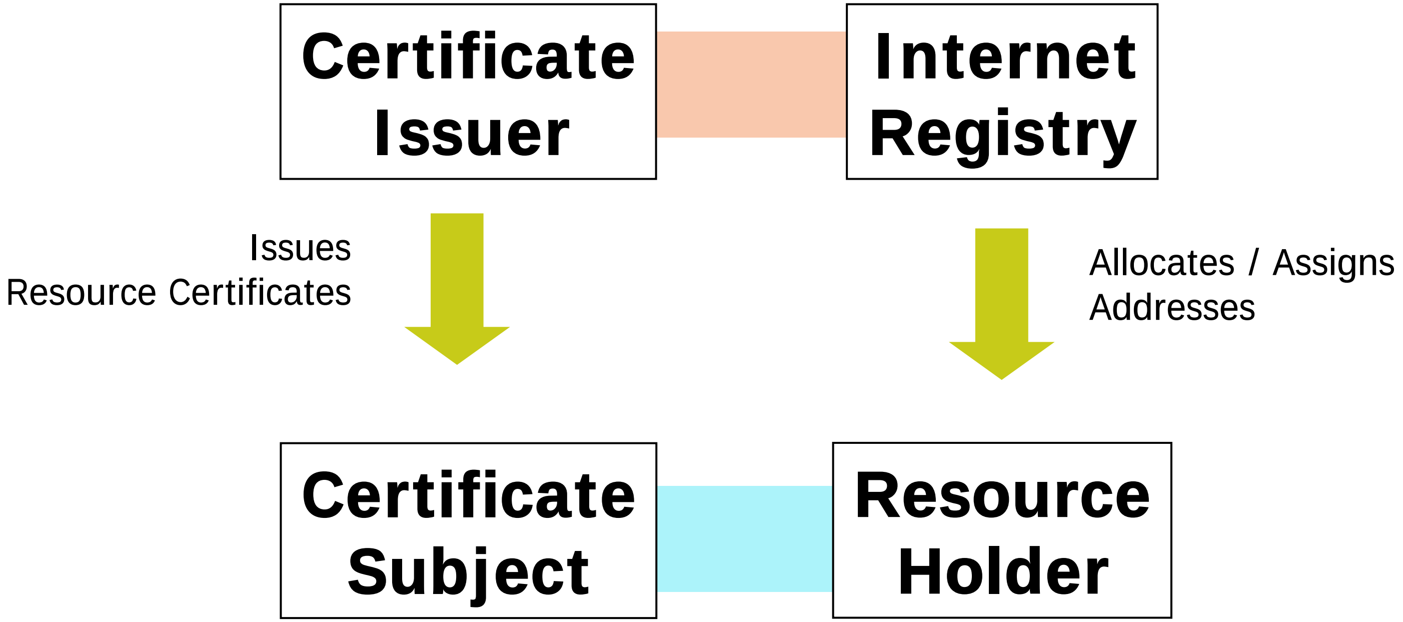
IETF 70

December 2007

Problem Statement

- How to automate the process of certificate issuance such that the issued certificate accurately tracks the current resource allocation status
  - Avoid situations where
    - the issued certificate “overclaims” resources
    - The issued certificate “underclaims” resources

Scenario



Certificate Issuer

Internet Registry

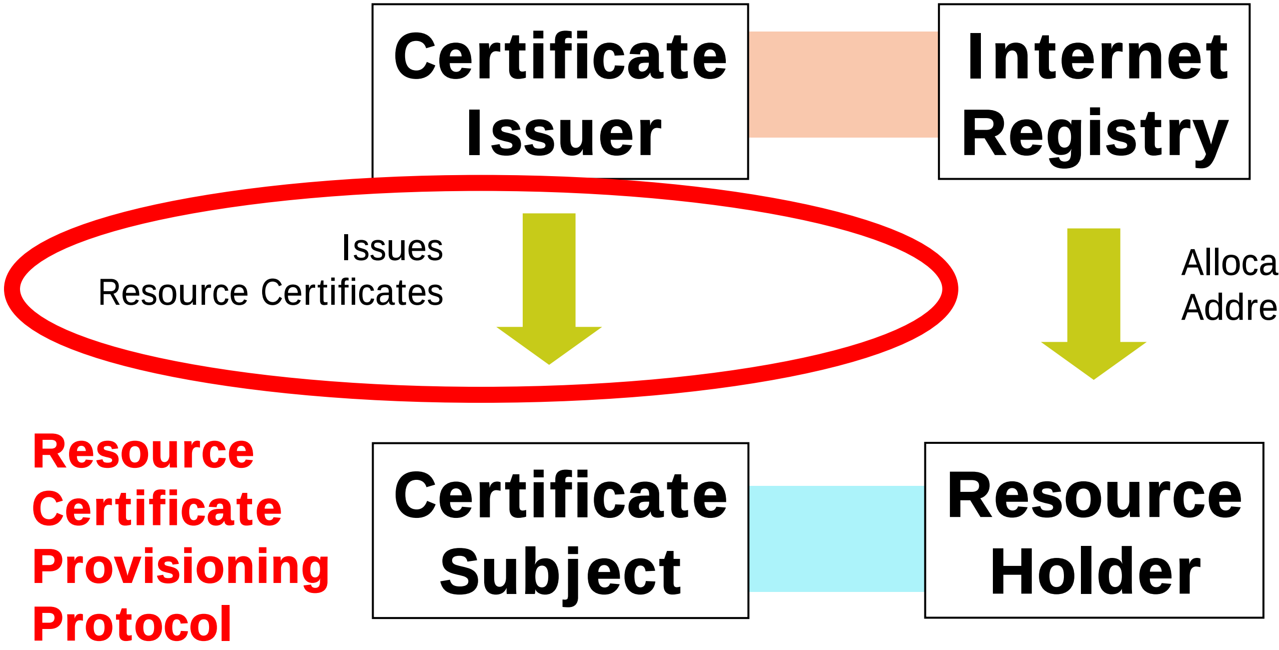
Issues
Resource Certificates

Allocates / Assigns
Addresses

Certificate Subject

Resource Holder

Scenario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Resource Certificate Provisioning Protocol

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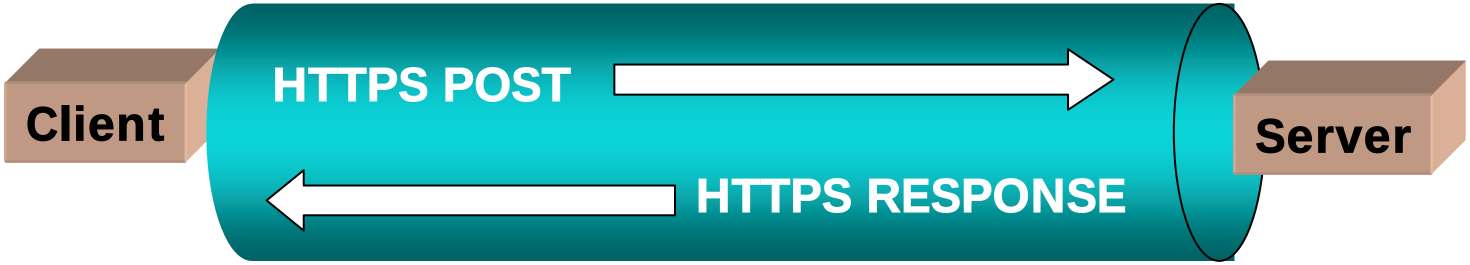
Protocol Characteristics

- Simple Client / Server protocol using a request / response interaction over a secure reliable channel



Protocol Payload

- Cryptographic Message Syntax (CMS)
  - SignedData object type
    - Include Signing Time in the CMS wrapper
    - Include CMS signing cert in the CMS wrapper

- XML Data Objects
  - Carried as CMS payload

XML Message Structure

```
<?xml version="1.0" encoding="UTF-8"?>
<message xmlns="http://www.apnic.net/specs/rescerts/up-down/"
               version="1"
               sender="sender name"
               recipient = "recipient name"
               type="message type">
       [payload]
</message>
```

Messages

- Query
- Issue
- Revoke

Query Message

- Request: type=“list”

- Response:
  - List of Resource “classes”
    - List of allocated / assigned Number Resources within this class
    - Issued certificate(s) for this class

Issue Message

- Request: type=“issue”
  - Payload: Resource “class” name

    PKCS#10 Certificate Request

- Response:
  - Payload: Issued certificate

Revoke Message

- Request: type=“revoke”
  - Payload: Resource “class” name

    Subject’s public key

- Response:
  - Payload: confirmation of revocation

Error Responses

- Error status returned when the request could not be performed

Protocol Specification

- Current (unsubmitted) draft is:

http://www.potaroo.net/drafts/draft-ietf-sidr-rescerts-provisioning-00.html

Next Steps

- Adoption of the specification of this provisioning protocol as a SIDR WG Document?