HPCI CA Update

32nd APGridPMA Meeting
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Colombo, Sri Lanka

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Overview

- HPCI CA issues certificates to end-entities in Japan's High Performance Computing Infrastructure (HPCI) for access to supercomputers and distributed file storage.
- The production level operation started in September 2012.
  - approved by IGTF as a MICS CA in August 2014.

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Operation System

	A	B	C	D
Security Officer	◎			
CA Operator		◎	◎	
Log Manager				◎
Helpdesk Staff	◎	◎	◎	◎

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Current Status

- Certificate statistics as of 2023/08/24
  #valid (#issued)
  - Client certificates: 183 (3,607)
  - Server certificates: 244 (2,997)
    host: 80 (1030)
    service (gfsd): 164 (1,967)

Support for OCSP and IPv6

- SHA-2 based certificates and CRLs
  - working
- OCSP support
  - working since June 22 2016
- CRL downloads over IPv6
  - working since October 18 2016
  - establishing the IPv6 connection with L2VPN in the building where the CA repository is.

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Work in Progress

- GSI support
  - Docker image for GSI-OpenSSH client.
    - An alternative to GSI-SSHTerm.
    - The license of Docker Desktop was changed.
  - macOS native binary for GSI-OpenSSH.
  - Support for WSL2 (without docker)
- NAREGI-CA development
  - minor fixes will be released.
- Post GSI
  - Token-based AA system
    - OAuth-SSH (SciTokens SSH), KeyCloak, odic-agent

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Self-audit Report

Self-audit

- HPCI CA is based on the IGTF MICS profile.
- We conducted an internal audit for FY2023 based on
  - AssuranceAssessment-v04-20190124.xlsx
  - IGTF-CAs-Auditing_v1.xlsx
  - HPCI CA CP/CPS version 9.0
- Actually, since the situation surrounding the CA is unchanged, the result of the self-audit is the same as the previous one.

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Result of Self-Audit

- Assurance assessment (AA) matrix v04

#Items	Score				
	A	B	C	D	X
48	46	0	0	0	2

The items scored X is No. 30 and 36.

- IGTF CAs auditing v1

Authority	#Items	Score				
		A	B	C	D	X
CA (IA)	50	49	0	0	0	1
RA	10	10	0	0	0	0

The item scored X is (2) in Sec. 3.1.1 CP/CPS.

The obsolete CA check items (20), (21), (26), (37), and (44) in Sec.3.1 are omitted.

The obsolete RA check items (8) and (11) in Sec. 3.2 are also omitted.

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Item that became scored A

3.1.2 CA System

(12) For CAs that issue end-entity certificates the lifetime of the CA certificate must be no less than two times of the maximum lifetime of an end-entity certificate and should not be more than 20 years.

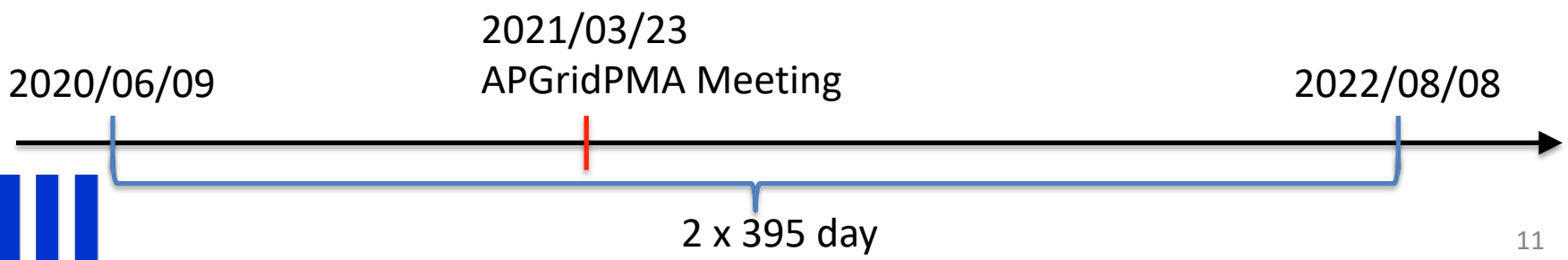
Two times of the maximum lifetime of an end-entity certificate:

2 x 395 day

Not after of HPCI CA (as of 2021/10/25) :

Not After : Aug 08 09:00:00 2022,

HPCI CA had violated PKI Tech Guideline since 2020/06/09.



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Item that became scored A (Cont'd)

Timeline

2020/06/09	HPCI CA violated PKI Tech Guideline.
2021/03/23	27th APGridPMA meeting HPCI CA did not recognize the violation.
2021/10/28	HPCI CA extended the self-signed certificate. Not after : Aug 07 2032
2022/03	The new self-signed certificate is included in the IGTF Trust Anchor Distribution v1.115.

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