工業技術研究院
Industrial Technology Research Institute

創新40·前瞻未來

Certification Process: Server and Storage

Tokyo, 2014

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Industrial Technology Research Institute

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Certifying an OCP Machine

1. An specification needs to be approved by Incubation Committee (IC)
2. Certification/C&I project develops certification spec
3. Testing tool development on target platforms
4. Certification specification becomes official
5. Vendor submits for certification
6. Certified status granted by OCP Foundation
7. Results are published

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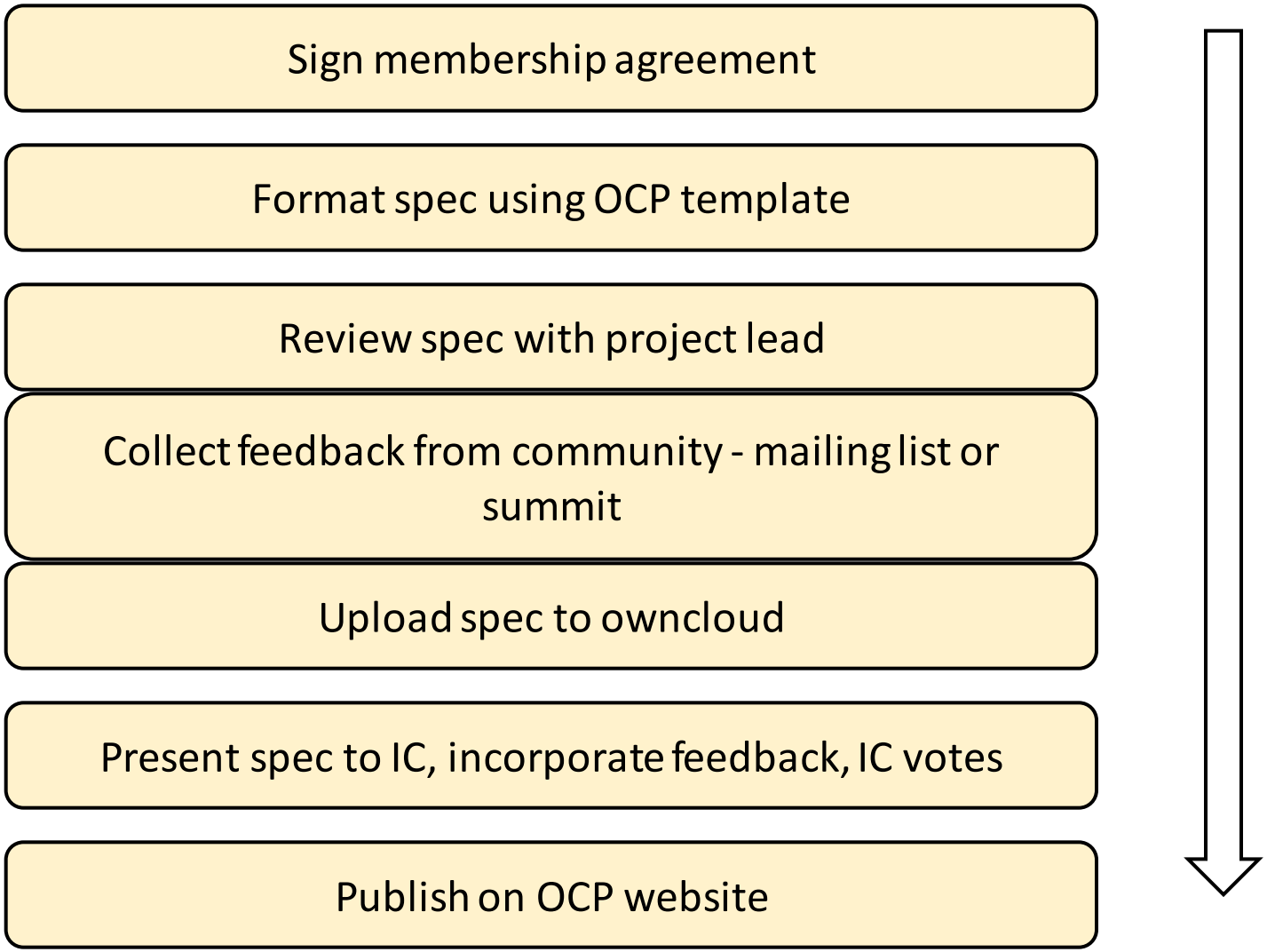
OCP Project Submission



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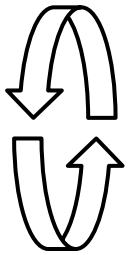
IC voting process



Spec is distributed to IC

Spec owner presents to IC (optional)

IC review and feedback (1 week)

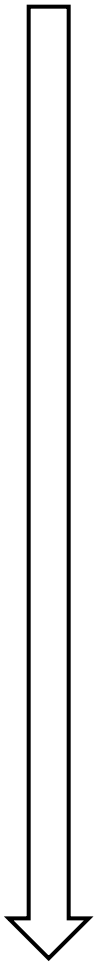
Owner revises and submits updated spec

IC votes on spec (1 week)

Results of the vote are published

Publish on OCP website

Spec revisions



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IC/Project Partnerships

Chair: Andreas Bechtolsheim - Arista Networks

Vice-Chair: Amir Michael -Coolan/OCP Co-Founder

Bob Ogrey - AMD	Server - Mark Shaw,
Chilung Wang - ITRI	Hardware Management - Rajeev Agrawala / Badriddine Khessib
Matt Corddry - Facebook	Open Rack - Steve Mills / Brian Obernesser
Aaron Sullivan - Rackspace	Certification - YF Juan
Conor Malone - Hyve Solutions	Storage - Asghar Riahi
Bill Carter - Intel	Data Center - Jason S Schafer
Kushagra Vaid - Microsoft	Networking - Omar Baldonado / Carlos Cardenas

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Certifying an OCP Server

ITRI OCP Certification Testing Center Operations:

- Workflow processes
- Results examples
- Lessons learnt

- Workflow processes
- Results examples
- Lessons learnt

Table of Content

Submission Request

OCP Certification Request (Form: OCP-CI-0004)

Contact Information

Company Name			
Address			
Business contact			
Name		email address	
mobile		office	
Technical contact			
Name		email address	
mobile		office	
Logistic/administrative contact			
Name		email address	
mobile		office	

Submission info (Please select certification category)
☐ Server
☐ Storage

SUT Spec

14OCP-CI-0005: OCP Certification SUT Specification

(工程規格表單)

Specification

Item	De
Model Name	*for example:* Windmill-EP FAB7
Physical Dimension	*for example:* Length: --; Width: --;
BIOS version	*for example:* EP_iD07
ME version	*for example:* 2.17
CPU	*for example:* Intel(R) Xeon(R) CPU E5-2660, 2.20GHz, L3 20MB

Inventory Information

Item		Description	Volume	Check?
SUT1	GUID (unique)	*for example:* 00020003-0004-0005-0600-000700		
	MAC address	*for example:* 1G LAN MAC: xx:xx:xx:xx:xx:xx, BMC MAC: xx:xx:xx:xx:xx:xx; 10G LAN MAC: xx:xx:xx:xx:xx:xx, BMC MAC: xx:xx:xx:xx:xx:xx;		
SUT2	GUID (unique)	*for example:* 00020003-0004-0005-0600-000700		
	MAC address	*for example:* 1G LAN MAC: xx:xx:xx:xx:xx:xx,		

Information prepared and material provided to Lab:

Item	Description	Volume	Check? *(Test Lab Use Only)*
SUT	Sample Sizes	3	
Sensor ID (assignment accordingly)	Outlet Temp Inlet Temp PCH Temp P0 Therm Margin P1 Therm Margin P0 DIMM Temp P1 DIMM Temp CPU0 Tjmax	N/A	

Email Notification

From: ITRI OCP Lab
To:
Cc: CCMA-ZGP31 (OCP Team)
Subject: 設備收受確認

您好，
工服單No.66-OCP-2013-005-A
本實驗室已於2013年12月27日17時收取，
比對確認貴公司提供之設備清單型號及數量無誤，
特此告知，將如期展開測試，如有任何問題敬請來信洽詢。
謝謝您!
OCP Lab ITRI

Jira Tracking

- Workflow processes
- Results examples (Wiwynn submission)
- Lessons learnt

P. 7: CPU

SUT1 Test Result

Test Case No.	Description	Result
TC-001-0001-001	1. Gathering CPU information by using lshw command. 2. Output CPU model and L1, L2, L3 cache size. 3. Criteria: CPU model should belong to Intel® Xeon® processor E5-2600 product family and L3 Cache should be larger than 20MB	Intel(R) Xeon(R) CPU E5-2660 v2 @ 2.20GHz CPU Internal L1 640 KB CPU Internal L2 2 MB CPU Internal L3 25 MB Intel(R) Xeon(R) CPU E5-2660 v2 @ 2.20GHz CPU Internal L1 640 KB CPU Internal L2 2 MB CPU Internal L3 25 MB
TC-001-0001-002	1. Gathering CPU information by using lscpu command. 2. Output the total number of CPU, the number of Thread per core, the number of Core per Socket, and the number of Socket. 3. Criteria: It should be 8-12 cores per CPU and 2 Threads per core.	CPU(s): 40 Thread(s) per core: 2 Core(s) per socket: 10 Socket(s): 2

P. 9-10: Temperature

TC-001-0006-001	1. Retrieving CPU, DIMM, chipset, inlet, outlet temperature via DCMI in-band access using dcmitool. 2. The motherboard has five thermal sensors: Two for CPU0 and CPU1	Outlet Temp: 25 degrees C Inlet Temp: 20 degrees C PCH Temp: 48 degrees C P0 DIMM Temp: 29 degrees C P1 DIMM Temp: 30 degrees C

	temperatures, Two for CPU0 DIMM group and CPU1 DIMM group temperatures, one for PCH temperature, one for inlet temperature, one for outlet temperature. 3. Criteria: These five temperatures should be able to be retrieved via DCMI in-band access.	CPU0 Temp: 31 degrees C CPU1 Temp: 32 degrees C

P. 12: Power Reset

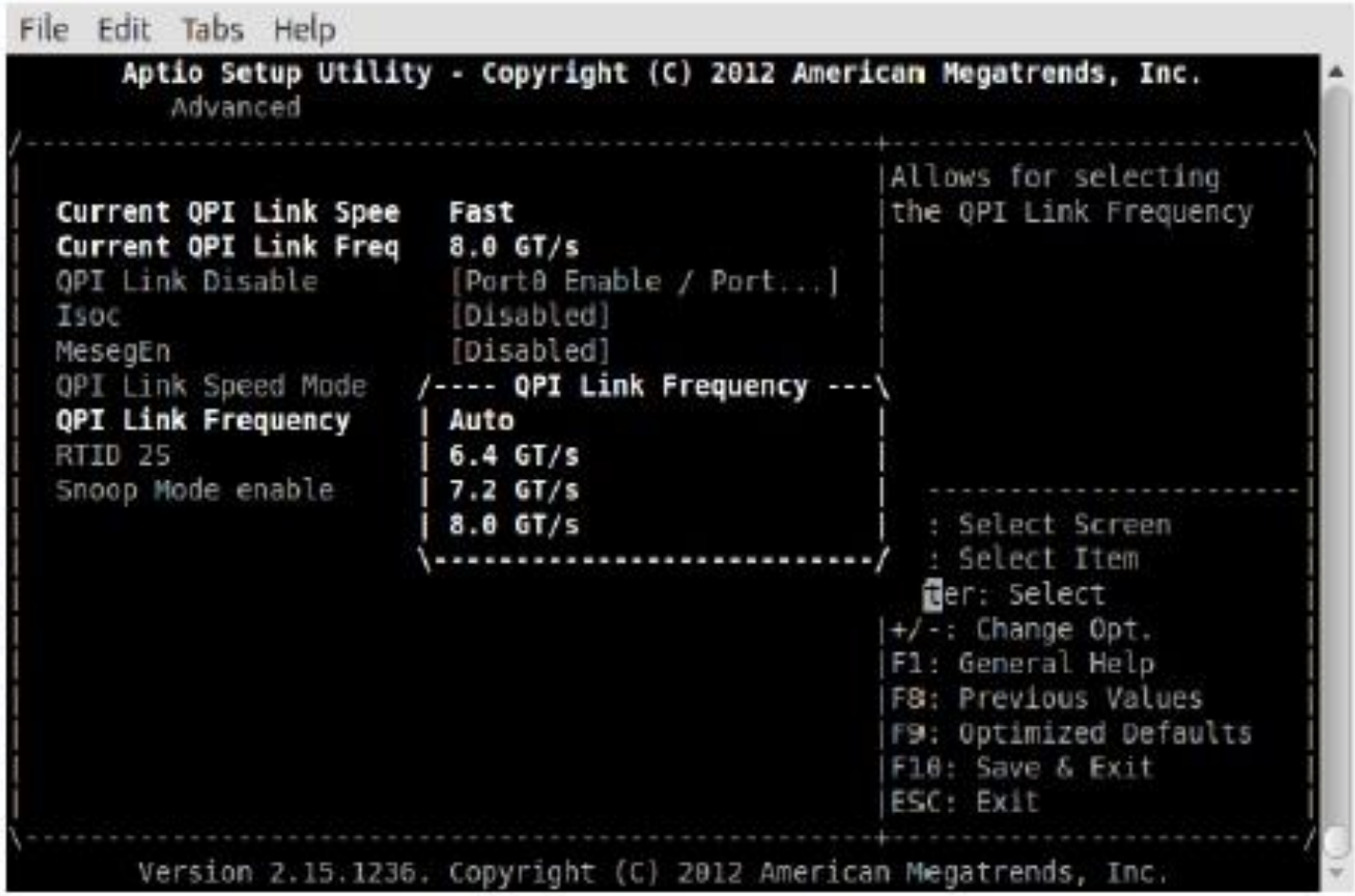
TC-002-0006-002	1. Power reset the SUT using dcmitool through out-of-band access 20 times. 2. Criteria: The SUT should be successfully powered reset 20 times by dcmitool out-of-band access.	10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset 10.2.103.5 Chassis Power Control: Reset

P. 13-14: ID Check

TC-002-0010-001	1. Retrieving inventory information via dcmitool. 2. Asset Tag can be set. 3. Retrieving inventory information which contains Device ID, System GUI,	Asset Tag: 66-OCP-2013-005-A-SUT1 System GUID: c6d65b07-535e-e311-7ba7-b2d71e3a3201 Get Management Controller Identifier String: DCMI0002C9B29A6C Device ID: 80

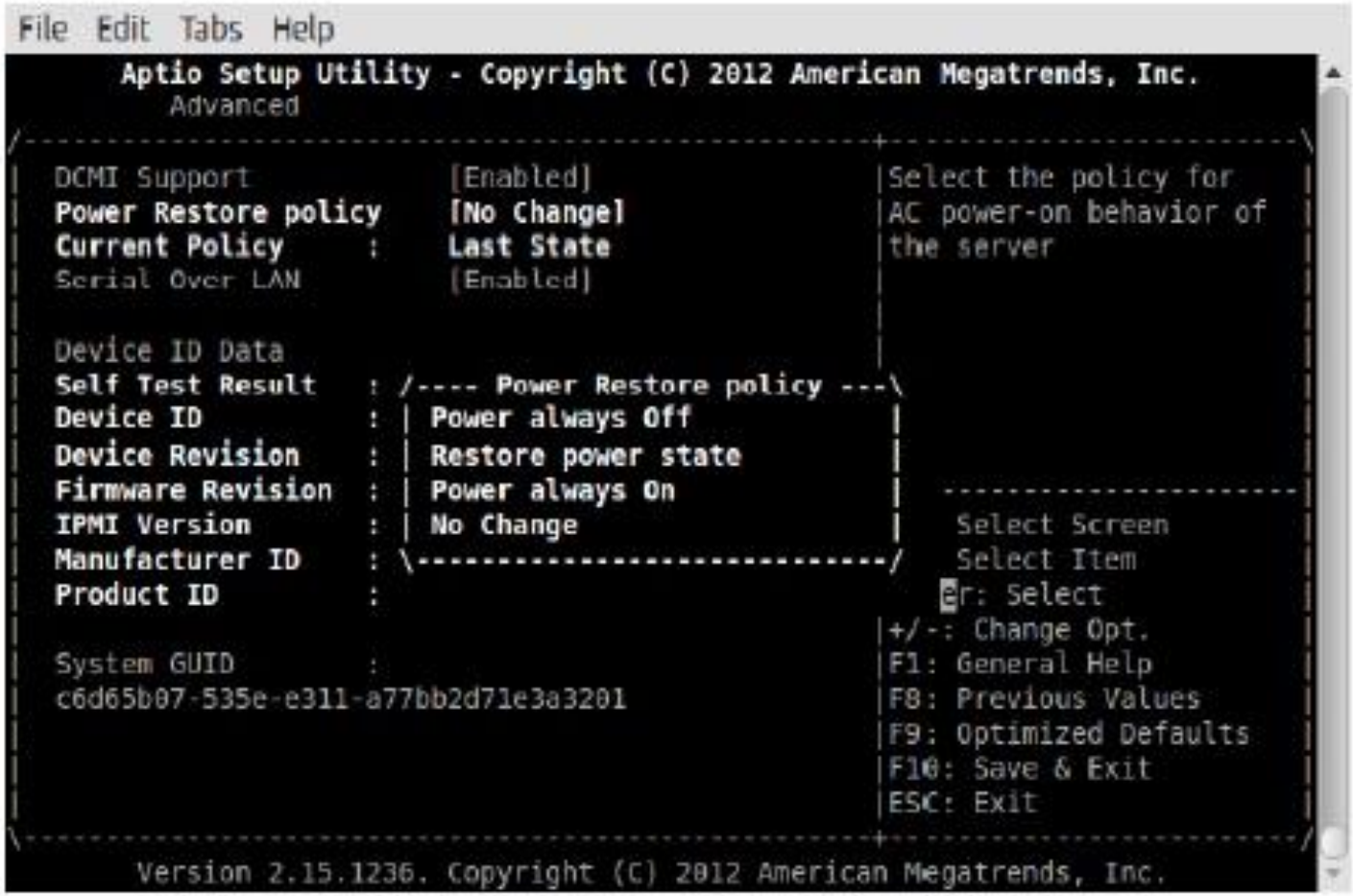
	Firmware/Software Information, Management Controller ID. 4. Criteria: All information mentioned above should not be null.	Manufacturer Name: Intel Corporation Firmware Revision: 2.17

P. 40: BIOS

Figure Name	QPI speed
Figure	

P. 42: Power Restore

Figure



Report Statistics

- Page Count: 81

- Page 1: Cover Page
- Page 2: Certification Results Source
- Page 3-6: Test/Sample Description
- Page 7-39: Test Results (Text-based)
- Page 40-81: Appendix (screen shots)

Agenda

- Workflow processes
- Results examples
- Lessons learnt

Information Collection

- SUT Spec: configurations for all systems MUST be identical
  - For example, if each machine uses different DIMM, it will be sent back
- PXE Boot: must have MAC address

Vendor Settings

- Sensor ID naming conventions
  - Each vendor is different, ITRI had to ask/confirm individually
  - Current process is liable to human errors

- BIOS default settings
  - Each vendor is different, ITRI had to ask/confirm individually
  - Current process is liable to human errors

Logs Issues

```
ccma@winterfell:~$ dcmitool -H 10.2.103.5 -U USERID -P PASSWORD sel list
   1 | 12/12/2013 | 05:35:23 | OEM |0x5f |  | Asserted
   2 | 02/07/2106 | 06:28:15 | OEM |0x70 |  | Asserted
   3 | 01/01/2011 | 00:00:03 | System Firmware Error |0x2b | Unknown Error | Asserted
   4 | 01/01/2011 | 00:01:10 | System Firmware Error |0x2b | Unknown Error | Asserted
   5 | 01/01/2011 | 00:02:22 | Battery |0x45 | Low | Asserted
```

- "System Firmware Error"
  - Message lacks granularity
  - ITRI had to call and confirm this is the expected behavior (when battery is unplugged)
  - Suggest that vendor provide more granular information

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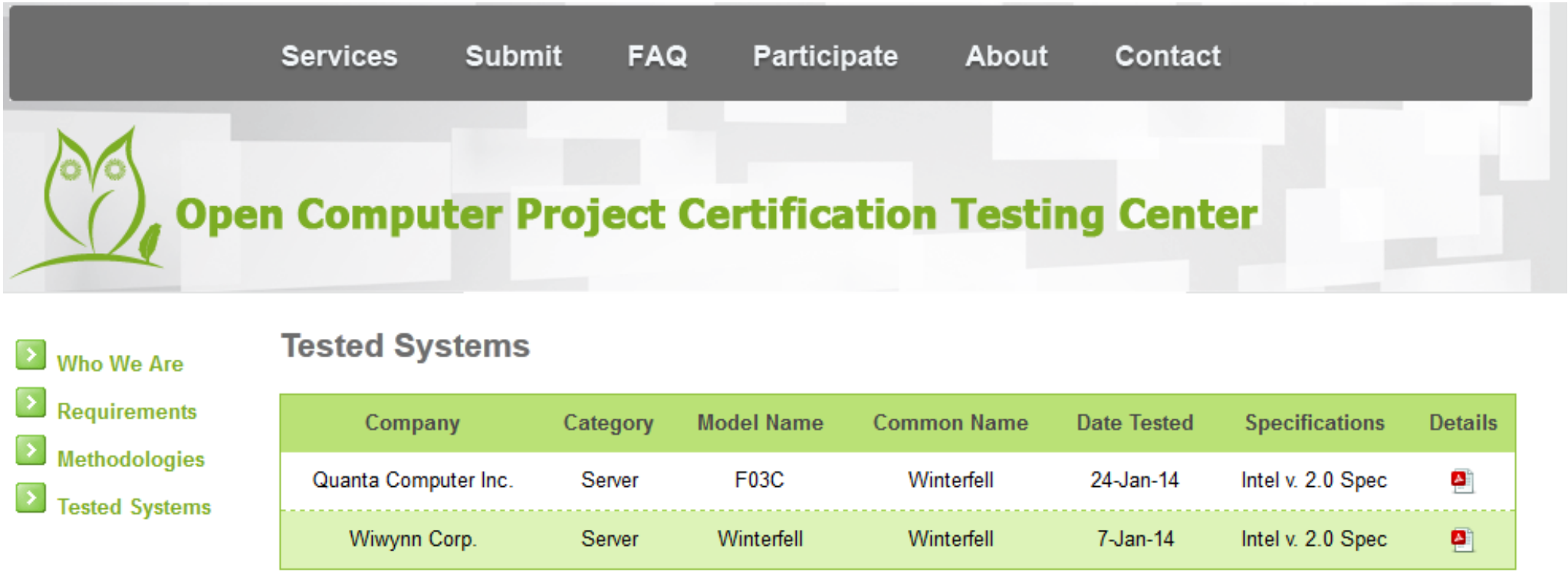
Certified Systems



URL: www. OCP Certification Center .org

Certify Knox/Cold Storage

1. Spec: Knox/OpenVault v0.8+
2. Partners: Seagate, UTSA, ITRI, Canonical
3. Certification spec: v0.13
4. Certification Package: please join us
5. Target platform: TBD

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Q&A

Thank You

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