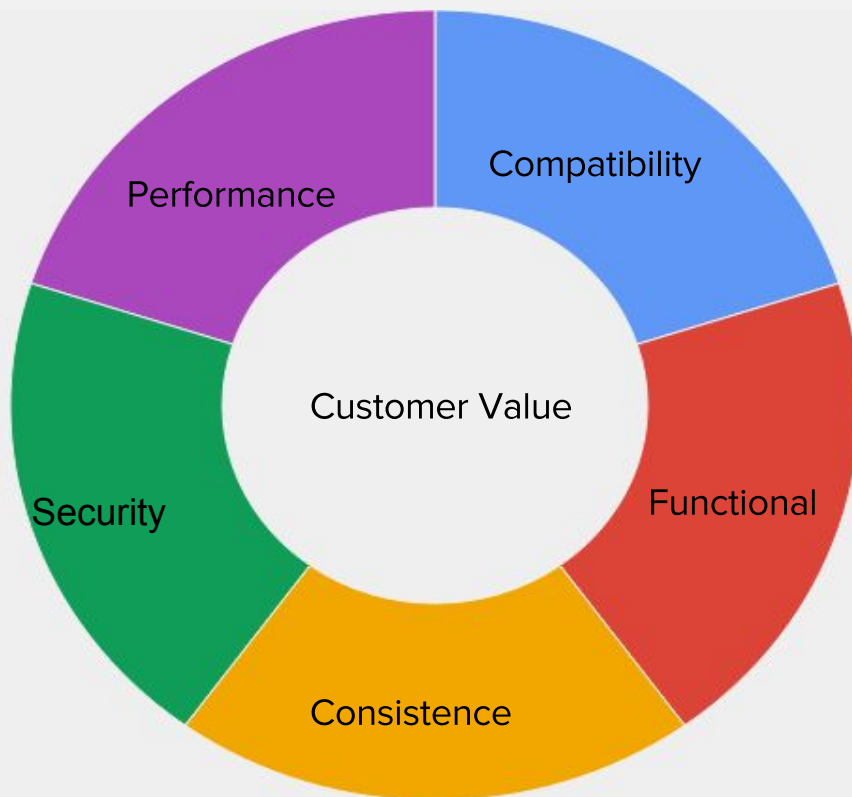




Libvirt API Certification

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Certification Key Benefits



Agenda

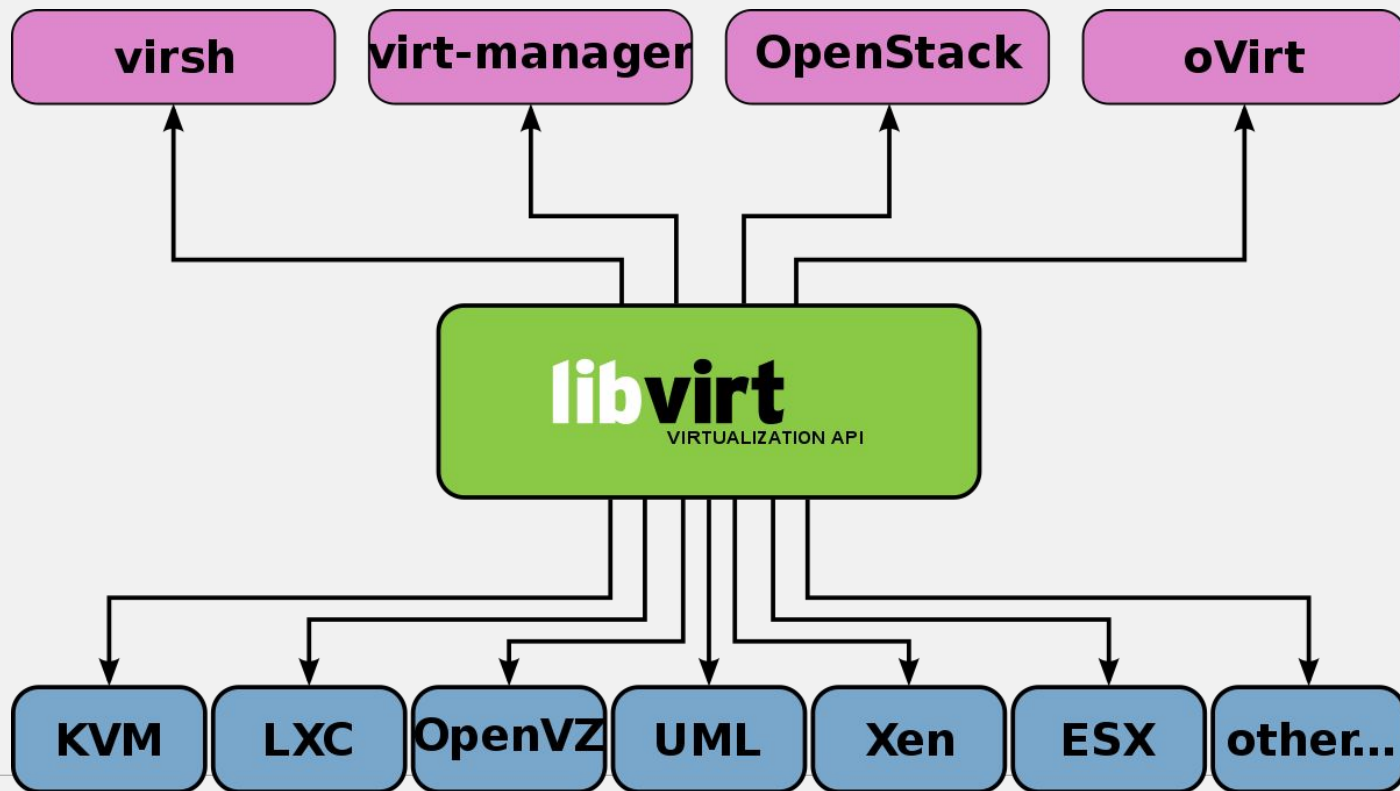
- Introduction to libvirt API
- What's libvirt API certification and its goals?
- What's current status of libvirt API certification and its challenges?
- Some proposals for libvirt API certification

Introduction to libvirt API

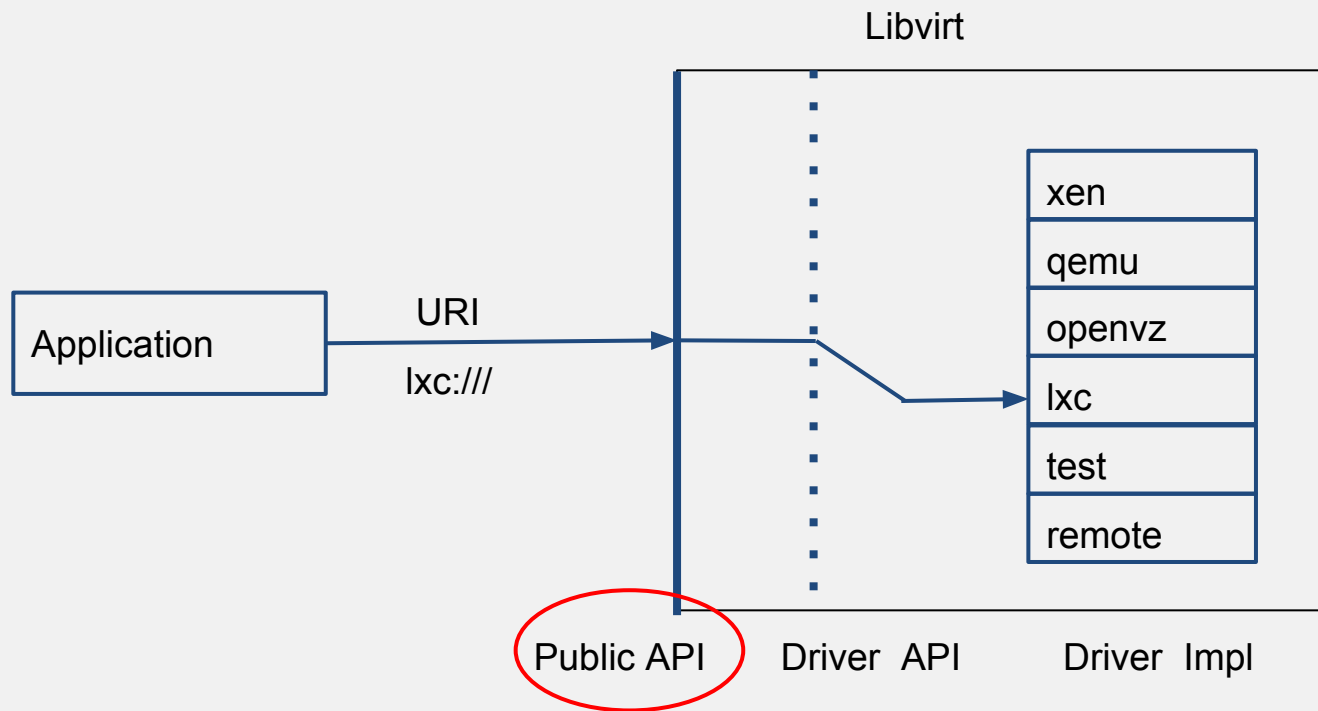


- Build cloud platform
- Open source API with industry standard to manage virtualization host on cross platforms
- Widely used in the orchestration layer of hypervisors in the development of a cloud-based solution
- Multiple languages binding including c,python,perl,java,go and more
- Stable,standard,simple,portable,secure,open

Libvirt API stack overview



Libvirt API architecture



Libvirt API: What virtualization?

- QEMU – KVM, QEMU
- VMWare – ESX, GSX Server, vCenter
- Xen – XenD, XenStored, Xen Hypervisor
- LXC – native Linux containers
- Test – 'mock' hypervisor
- Remote – RPC access to APIs
- VirtualBox, Hyper-V and more

Libvirt API: What platforms?

- Linux: RPC client+server, all hypervisor drivers
- OS-X: RPC client
- Windows: RPC client, ESX+VirtualBox (Hyper-V)
- Solaris: RPC client, Xen driver

Libvirt API : Support matrix

- Hypervisor APIs
- Host Interface APIs
- Network Filter APIs
- Virtual Network APIs
- Host Device APIs
- Secret APIs
- Storage Pool APIs

Source from :<https://libvirt.org/hvsupport.html>

What libvirt API certification is?



What libvirt API certification is?



Concept

- Run a series of tests to verify its implementation functions as per libvirt API specification
- Run tests, which interact with libvirt API, and check results
- Test covers all features defined by libvirt API specification

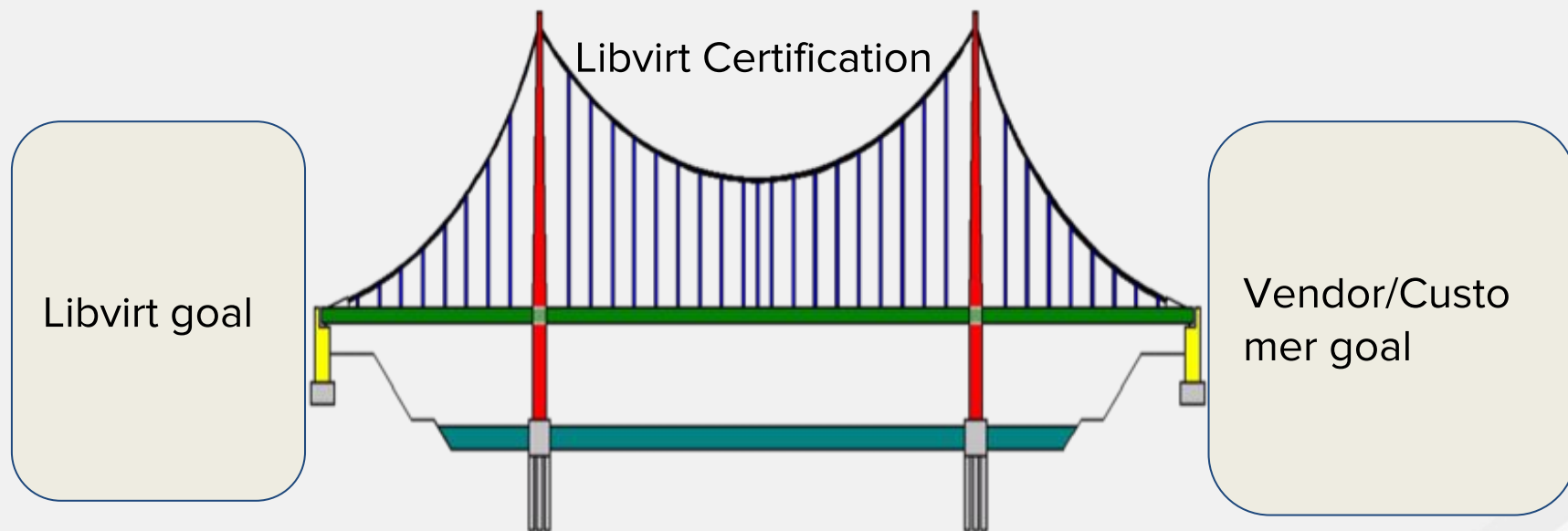


PROCESS

- Provide policy guides to cover the procedural operations, technical and non-technical requirements
- Certification visibility: publish result in a catalog to honor merit

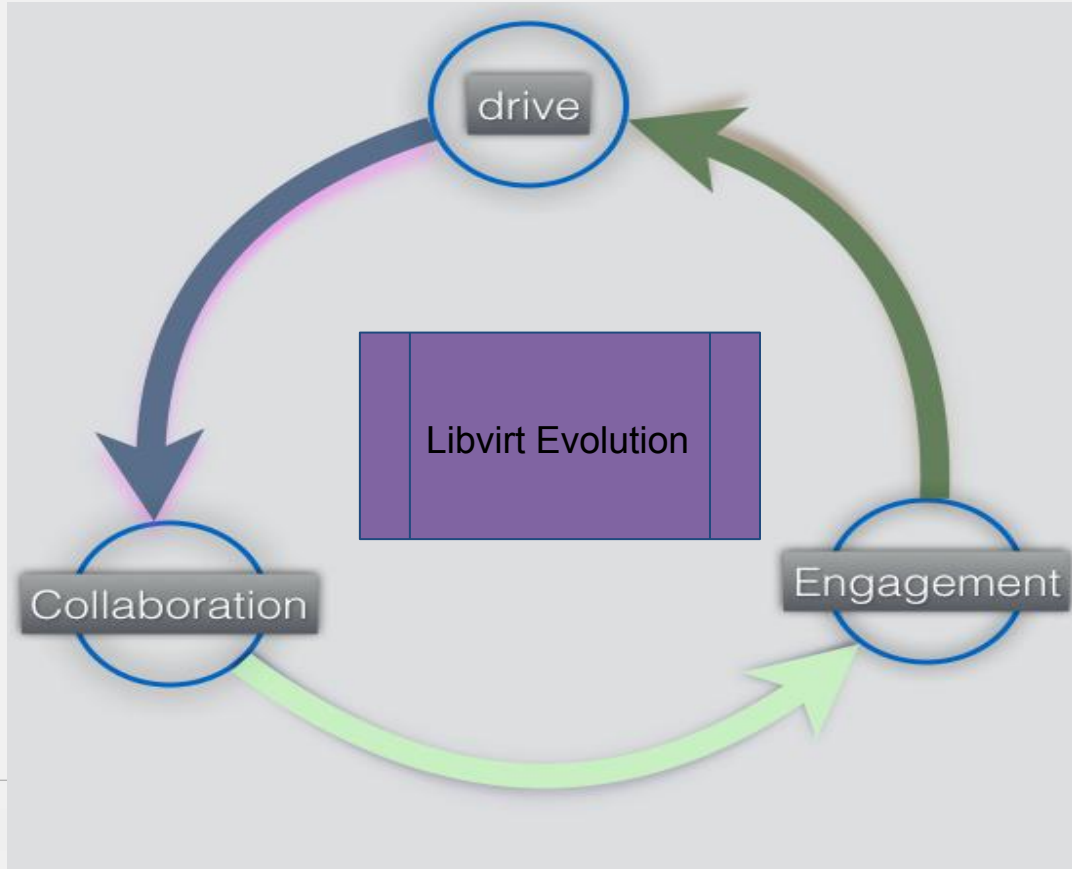
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Libvirt API certification goals



See libvirt goals: <http://libvirt.org/goals.html>

Libvirt API certification goals(contd.)



Libvirt API certification goals(contd.)

- Engagement:

- Align integration and roadmap with libvirt community
- Libvirt implement is validated on the target commercial platform
- Compatibility, functional, consistency, security and performance are ensured
- Certified products are published in the catalog



- Drive:

- Promote their products
- Ensure best practices on target platform



- Collaboration:

- Collaboration support agreement in place
- Collaboration work out joint solution to isolate an issue



Current Status

- No technical and operational certification process available today
 - Some kinds of test suites are provided
 - Libvirt-test-API: Python, from Red Hat QE, libvir-list@
 - TCK: Perl framework, libvirt upstream, libvir-list@
 - Avocado-Vt:Python,libvirt functional test
- Community has no hardware and infrastructure setup
 - Have tests done by vendors offline
 - Gather and display results determined by vendors
 - No analysis to results

Challenges we face

Challenges

Certification Process

- Standardize process, need community agreements
- Rule roles that each initiative contributor plays in the completion of certification

HW & SW Test Environments

- Need hardware and infrastructure facilities: server, network, storage, etc, where budget is from?
- Libvirt API support multiple HW arch and operating systems, how to cover supported matrix?

Challenges we face(contd.)

Challenges

Test limitation

- Libvirt API cover a bundle of features, need efforts to develop and maintain test suites to validate those features
- Standardize success criterias

Auto Test Framework & Tool

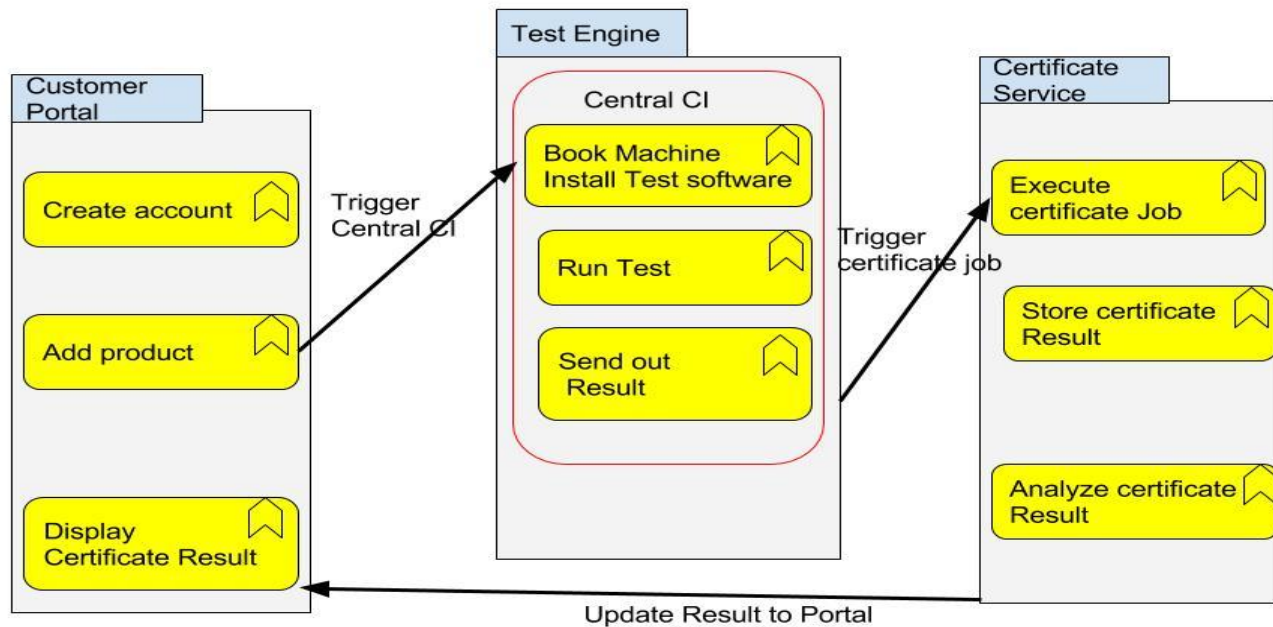
- Need re-assembled to be adapted CI/CD pipeline
- Scale to absorb new types of cases

Proposals

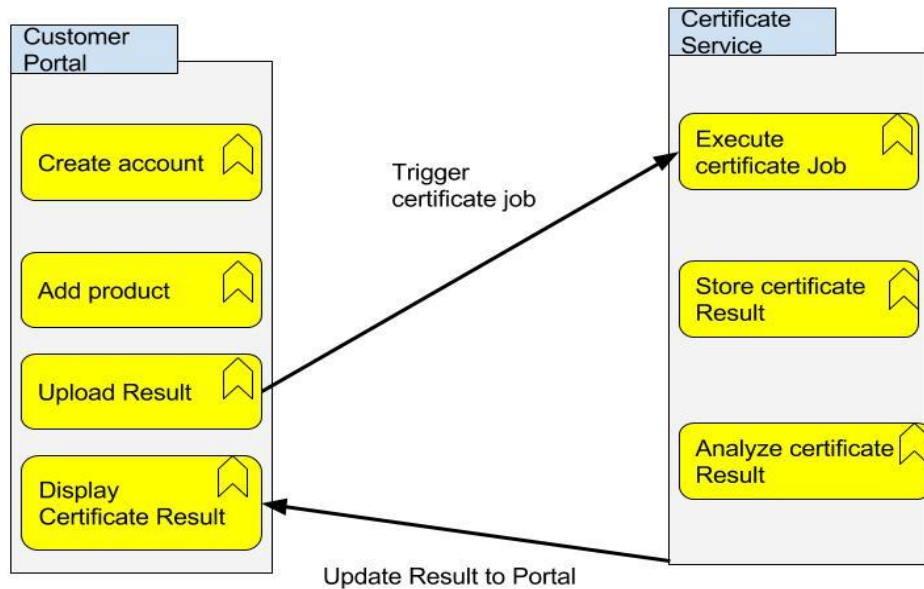
To address those challenges and ensure fairness,two certificate modes are suggested:

- Centralized mode:community provides test register, test suites,auto test framework,test hardware environment ,config management,test results analysis
- Offline mode:apply no suitable test environment only,download auto test suites from community,run testing and upload test results to community

Centralized mode workflow

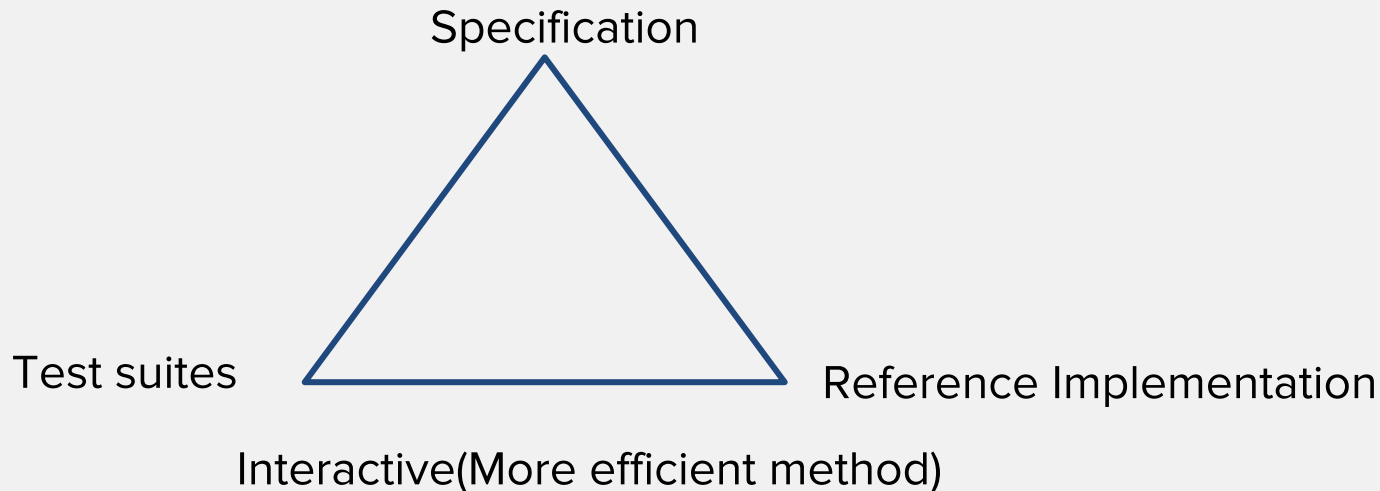


Offline mode workflow



Proposals(contd.)

- Who provides test suite that certification requires:
 - For old features: reuse current test suites
 - For new features: owner submitting new public API



Call for actions

- Community need volunteers to develop and maintain test cases
- Community need volunteers to maintain test facilities including hardware and software
- Contact channel:<http://libvirt.org/contribute.html>





THANK YOU

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