Trusted Multi-Tenant Infrastructure

February 14th 2011

Trusted Multi-Tenant Infrastructure Workgroup

Market Observations:

- Multi-Tenant security is an end-to-end configuration requirement and many standards/products only solve parts of the problem.
- No comprehensive framework exists to describe the business/mission needs and validate compliance of the entire solution set against open standards.
- There is a need for solutions that address trust and security across solutions derived from combining dedicated and shared infrastructures.

Market Demand:

- Cost reduction and consolidation of IT resources and staffing
- Green initiatives to better manage power usage and waste
- To support shared infrastructure for critical infrastructure:
  - Financial (PCI), Healthcare (HIPAA), Energy (NERC/CIP)
  - Global Government and Industrial Base
  - Defense including joint service or coalition operations (HAP)
  - Shared services within public, private, community and hybrid “clouds”

Trusted Multi-Tenant Infrastructure Working Group:

- Develop Use Cases: Establish Trust, Apply Policy, Exchange Information
- Draft Reference Implementation Framework for End-to-End Trusted Multi-Tenancy
- Component requirements promoting Policy Compliance
- Identify Standards and Address Gaps
- New class of members including: CIOs, integrators, business mission owners, enterprise architects.

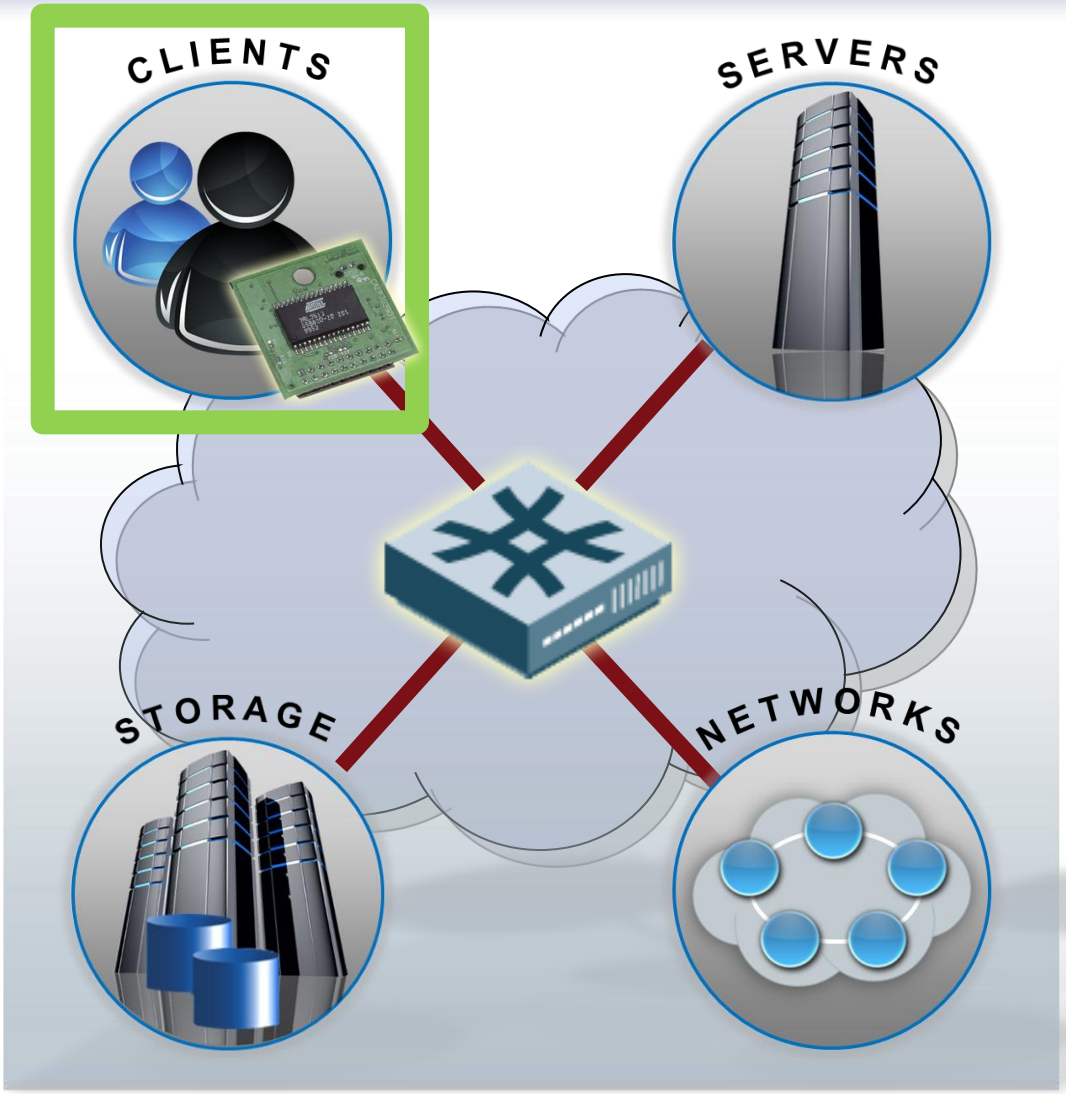
Trusted Clients

Security Built In

- Trusted Platform Module (TPM)
- Mobile Trusted Module (MTM)

Features

- Authentication
- Encryption
- Attestation



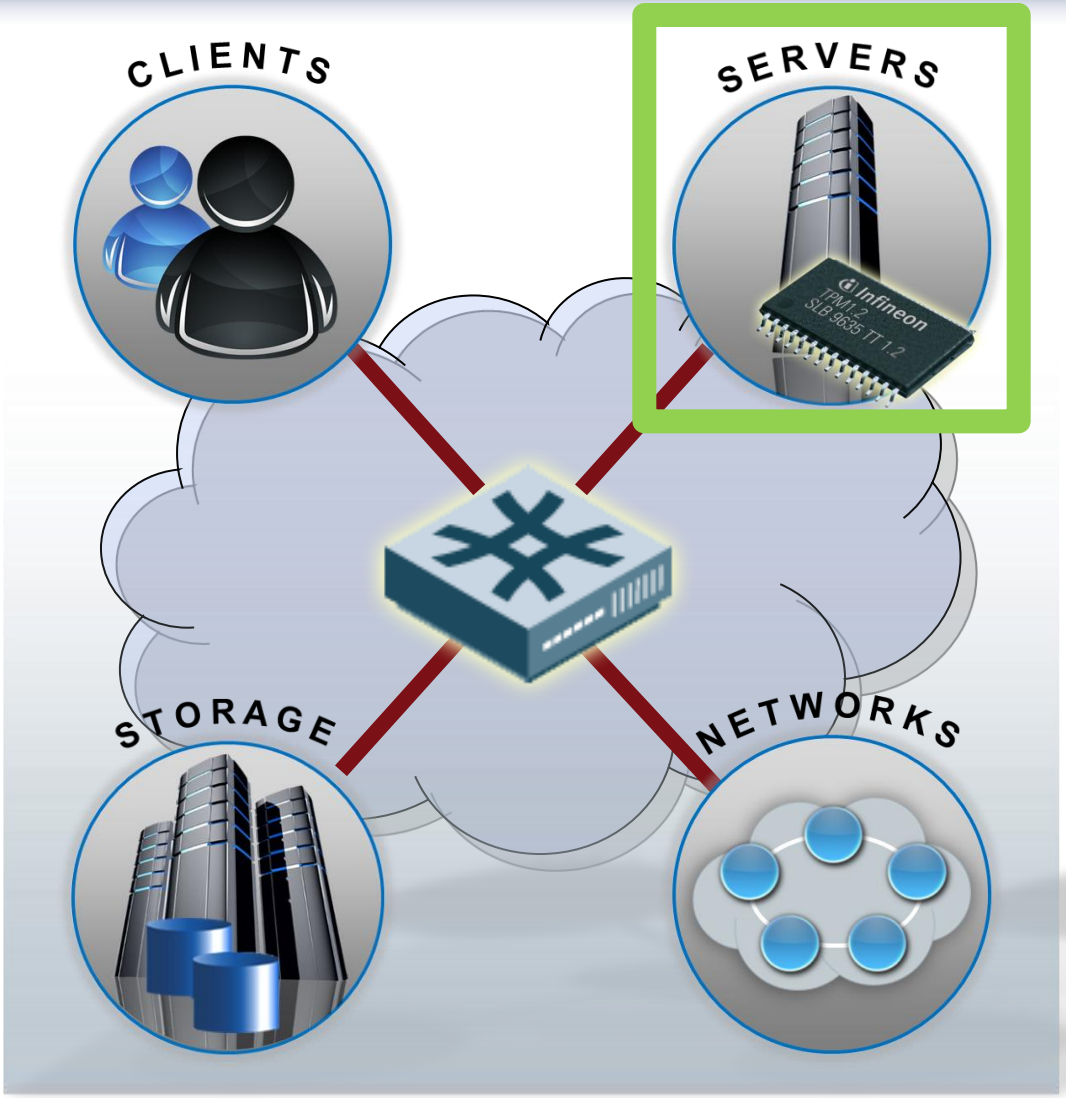
Trusted Servers

Security Built In

- Trusted Platform Module (TPM)
- Secure Virtualization
- Secure Cloud

Features

- Authentication
- Encryption
- Attestation



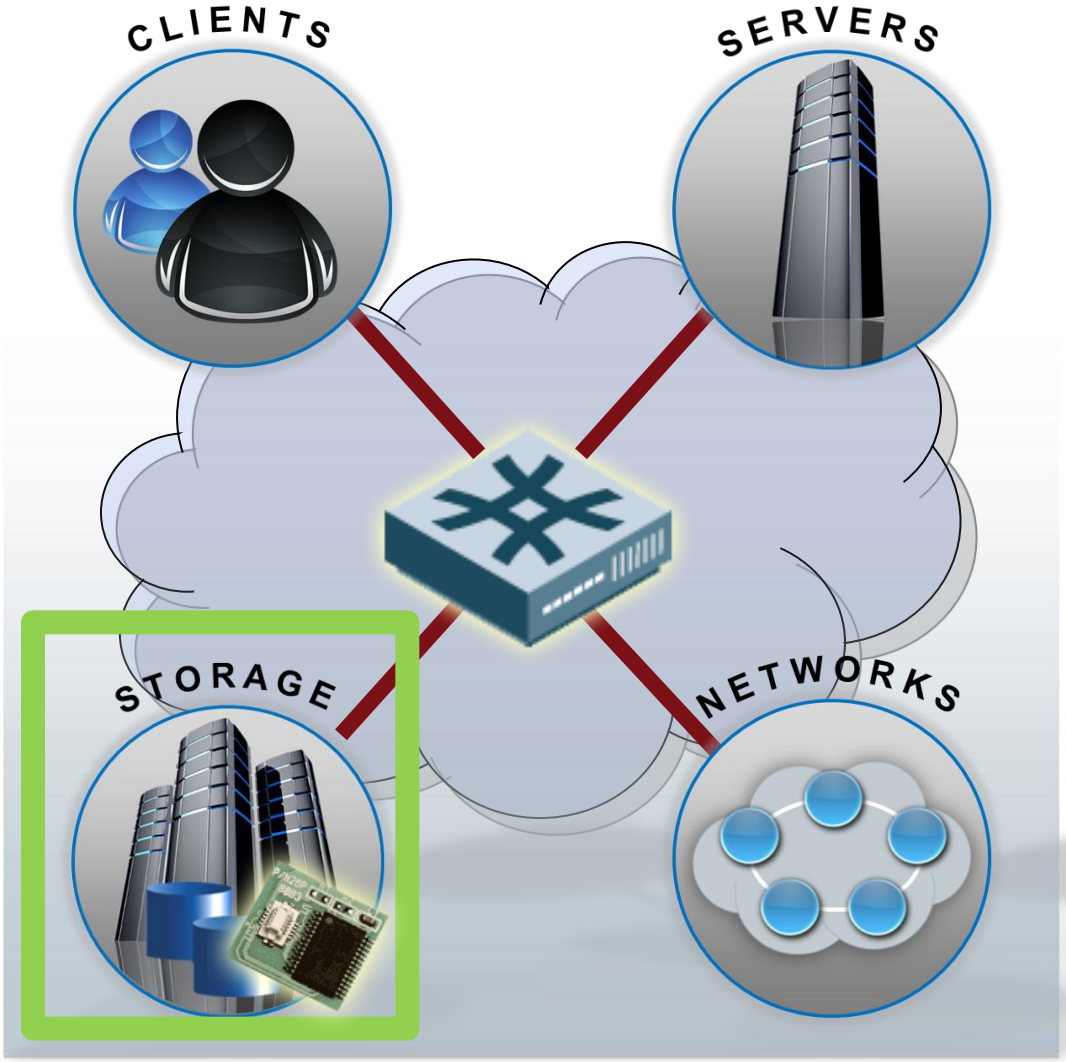
Trusted Storage

Security Built In

- Self Encrypting Drive (SED)

Features

- Encryption
- Authentication



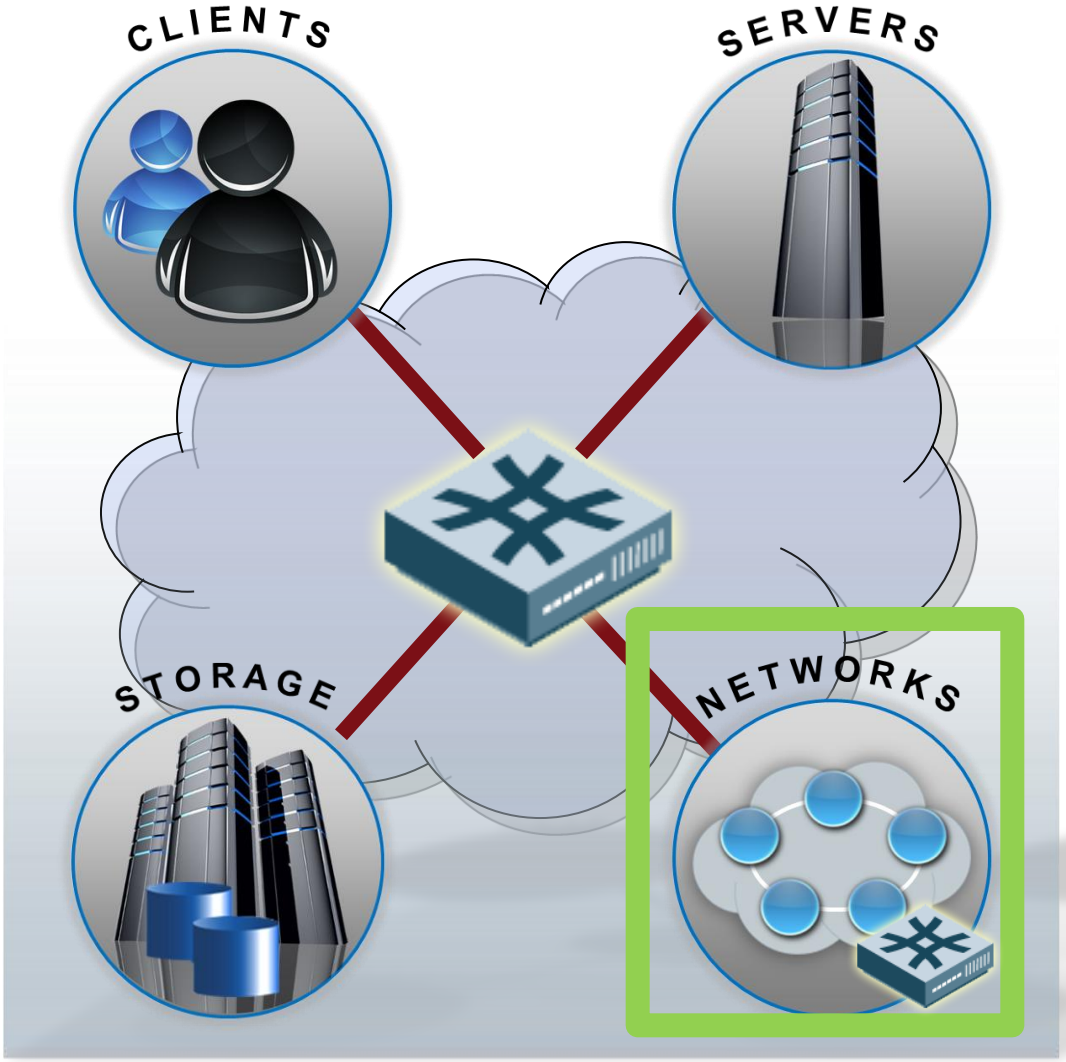
Trusted Networks

Security Built In & Coordinated

- Trusted Network Connect (TNC)

Features

- Authenticate
- Health Check
- Behavior Monitor
- Enforce



CSA Guidelines and TCG

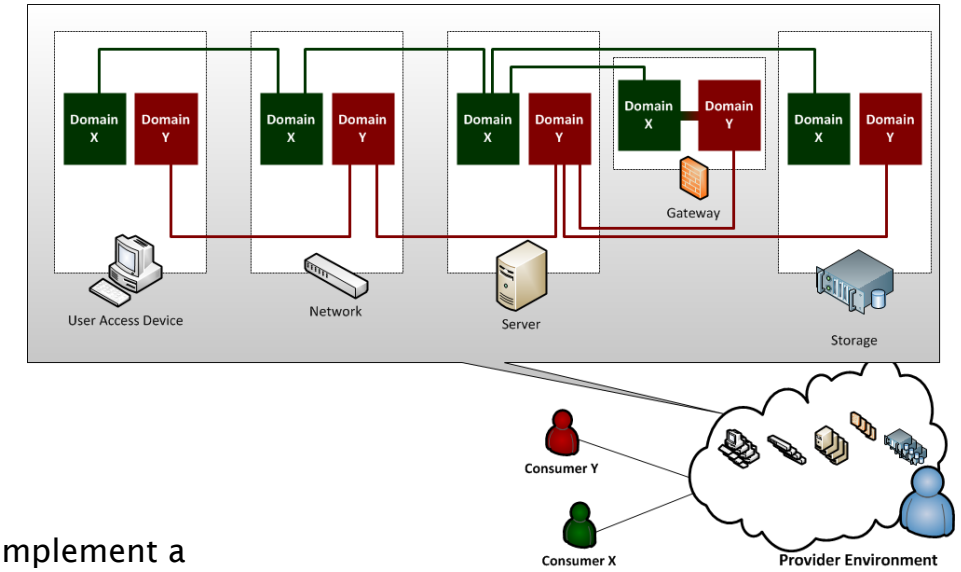
CSA Domain (Number) Type					Examples
(2) Governance/Risk Management	●	●	●	●	Decrease risk exposure
(3) Legal and Electronic Discovery	●				Data Recovery and Encryption
(4) Compliance and Audit		●			Server Attestation
(5) Information Lifecycle Management	●				Safe Data Retirement
(6) Portability and Interoperability			●		Metadata Access Policy
(7) Traditional Security			●		Network Access Control
(8) Incident Response			●	●	Coordinated Security
(11) Encryption / Key Management	●				SED, Hardware Key storage
(12) Identity/ Access Management				●	Hardware Token Authentication
(13) Virtualization		●			Trusted Multi-tenancy

TMI Use Cases

Description: developed to define the components, identify component activities, and describe the interfaces between those components in order to provide guidance to integrator, broker, provider, or consumer organizations to implement a Trusted Multitenant Infrastructure.

Use Cases core functions:

- **Establish trust** (aligned to PKIv3 and TPM/vTPM)
- **Exchange information** (aligned to attestation)
- **Apply policy** (aligned to XACML)



Use Cases categories:

- **Generic**
- **Provider Management**
- **Consumer Management**

Benefits:

- Explains the roles and key interactions necessary to implement a Trusted Multi-Tenant Infrastructure.
- In-depth depiction of Provider and Consumer roles in a multi-tenant, multi-provider ecosystem
- Defines the foundational relationships between trusted components in a multi-tenant infrastructure
- Use Cases lay the groundwork to define implementation patterns.

Next Steps

TMI Reference Framework

- Description: Describes a broad set of foundational principles and requirements as well as a library of re-usable patterns where technologies and standards are applied between components in an enterprise context.
- Provides guidance and implementation patterns for cloud providers and consumers to implement a trusted computing based using shared multi-tenant infrastructure.
- TMI Use Cases are directly mapped to each pattern within the TMI Reference Framework.
- Projected completion by: Q2 2011

Questions:

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