Provides Encryption on OpenStack Block Storage Resources

**Goal:** Automatically encrypt VM volume. Encryption is transparent to VM, and is a similar concept to self-encrypting drives.

**Steps for block encryption:**
- Preparatory Step: Cinder creates data volume
  1) Nova API call
  2) iSCSI volume appears as block device in compute host
  3) Retrieve volume’s encryption key
  4) `dm-crypt` maps decrypted version of iSCSI volume
  5) Decrypted iSCSI device passed to VM

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**Diagram:**
- **Nova** calls for volume mount.
- **User VM** requests volume.
- **Virtualization Host** provides encryption key.
- **Hypervisor** manages encryption processes.
- **Cinder** provides initial unencrypted storage.
- **Network** facilitates communication.
- **Key Management Appliance** manages encryption keys, using SSL/TLS connections (KMIP).