Within pool migrate
Cross-pool migrate
Storage motion

Programs

Client	Client (eg XenCenter)
xapi R	Receiving XCP host
xapi T	Transmitting XCP host
SM	Storage Manager
disk copy	Disk copying utility

Phase	Action	Notes
1. Connection	1. Client -> xapi R: session.login_with_password(username, password) <- s1 2. Client -> xapi R: VM.receive(s1, SR) <- URI list 3. Client -> xapi T: session.login_with_password(username, password) <- s2 4. Client -> xapi T: VM.migrate(s2, vm, URI list, VDI to SR map) 5. xapi T -> xapi R: HTTP HEAD URI (with empty content)	URIs encode different addresses, protocols (https,http) URIs encode a capability/token Each URI is tried until one successfully returns 200/OK HTTP HEAD run every 30s as heartbeat XenAPI client can cancel either transmitter or receiver
2. Preparation	1. xapi T -> xapi R: HTTP PUT URI/metadata (with VM metadata export) 2. xapi T -> xapi R: HTTP GET URI/disk/0 3. xapi R: SMAPI VDI.get_url(0) <- iscsi://...../ 4. xapi T -> xapi R: HTTP GET URI/disk/1 5. xapi R: SMAPI VDI.get_url(1) <- iscsi://...../	RESTful API = easy to test VM created "hidden" from XenCenter Always 1-1 correspondence between domains and VMs If SRs can'be found, fresh VDIs are created VDIs are attached and registered with iSCSI target
3. Bulk disk transfer	1. xapi T: SMAPI VDI.copy(0, iscsi://....../, new_ref) 2. SM spawns a disk copy program 3. disk copy: does nothing if both arguments are the same disk 4. else disk copy: attaches iSCSI LUN 5. else disk copy: switches tapdisks into log-dirty mode 6. xapi T: SMAPI Task.get_state(new_ref) 7. xapi T: wait for all VDI.copy Tasks to enter "ready" state	new_ref allows xapi to query state of the operation copy program sets state to "ready" when it's safe to migrate (i.e. most of the disk has copied)
4. Memory transfer	1. xapi T -> xapi R: HTTP PUT URI/memory (with Vmops.suspend data) 2. xapi R: SMAPI VDI.attach 3. xapi T waits for domain to finally suspend 4. xapi T: SMAPI VDI.deactivate(0) 5. xapi T: wait for all VDI.copy Tasks to enter "finished" state	VDI.deactivate triggers disk copy to stop iterating
5. Completion	1. xapi T -> xapi R: HTTP PUT URI/control (with "done") 2. xapi R: resynchronises VM powerstate (Halted, Suspended, Running) 2. xapi T: destroy domain 3. xapi T: SMAPI VDI.detach	