Encryption Parameters

Understanding them in relation to SCOPE and multiple I_T nexuses
Encryption Parameters in a device server

I_T Nexus

LOCAL
LOCK
Key Instance Counter at Lock
Key Instance cntr @ LOCAL
Registered for UA

I_T Nexus

LOCAL
LOCK
Key Instance Cntr @ LOCK
Key Instance Cntr @ LOCAL
Registered for UA

PUBLIC
LOCK
Key Instance Cntr @ LOCK
Key Instance Cntr @ LOCAL
Registered for UA

PUBLIC
LOCK
Key Instance Cntr @ LOCK
Key Instance Cntr @ LOCAL
Registered for UA

I_T Nexus

ALL I_T NEXUS
LOCK
Key Instance Cntr @ LOCK
Key Instance Cntr @ LOCAL
Registered for UA

Data Encryption Parameters
Key Scope = LOCAL
Key Instance Counter
CKORL
CKORP
...

Data Encryption Parameters
Key Scope = LOCAL
Key Instance Counter
CKORL
CKORP
...

Data Encryption Parameters
Key Scope = ALL I_T NEXUS
Key Instance Counter
CKORL
CKORP
...
Q1: Which Key Instance Counter?

Data Encryption Parameters
Key Scope = LOCAL
Key Instance Counter
CKORL
CKORP
...

Data Encryption Parameters
Key Scope = LOCAL
Key Instance Counter
CKORL
CKORP
...

Data Encryption Parameters
Key Scope = ALL I_T NEXUS
Key Instance Counter
CKORL
CKORP
...
Encryption Parameters in a device server

Q2: How does CKORL apply to LOCAL vs. ALL I_T NEXUS?

- **LOCAL**
  - Key Scope = LOCAL
  - Key Instance Counter
  - CKORL
  - CKORP

- **PUBLIC**
  - Key Scope = LOCAL
  - Key Instance Counter
  - CKORL
  - CKORP

- **ALL I_T NEXUS**
  - Key Scope = ALL I_T NEXUS
  - Key Instance Counter
  - CKORL
  - CKORP

Data Encryption Parameters
- Key Scope = LOCAL
- Key Instance Counter
- CKORL
- CKORP
- ...
Q3: How does CKORP apply to LOCAL vs. ALL I_T NEXUS?

Data Encryption Parameters
Key Scope = LOCAL
Key Instance Counter
CKORL
CKORP
...

Data Encryption Parameters
Key Scope = LOCAL
Key Instance Counter
CKORL
CKORP
...

Data Encryption Parameters
Key Scope = ALL I_T NEXUS
Key Instance Counter
CKORL
CKORP
...

Encryption Parameters in a device server

LOCAL
LOCK
Key Instance Counter at Lock
Key Instance cntr @ LOCAL
Registered for UA

PUBLIC
LOCK
Key Instance Cntr @ LOCK
Key Instance Cntr @ LOCAL
Registered for UA

ALL I_T NEXUS
LOCK
Key Instance Cntr @ LOCK
Key Instance Cntr @ LOCAL
Registered for UA
Q4: Assume CKORL is set to zero but CKORP is set to one. A reservation loss occurs. Data Encryption Parameters still exist but no reservation CKORP is still set to one – but CKORP is not allowed to be set to one unless a persistent reservation exists. How do we resolve this inconsistency?
What is needed?

- Interactions between reservations and encryption parameters
  - All types of persistent reservation
  - All sets of encryption parameters
- CKORP specifies actions required on a preempt
  - Preempt can remove a reservation; or
  - Preempt can move a reservation
- CKORL specifies actions required on reservation loss
  - This is when there is no longer a reservation holder
    - This causes an event for a specific I_T nexus as well as a check for all I_T nexus afterward
How to clearly specify

• Since this drives actions on specific persistent reservation events, those actions need specified (or pointed to) in the appropriate persistent reservation event description

• Create a model section in SSC listing all data encryption related actions that result from persistent reservation events and point to it from persistent reservation description