



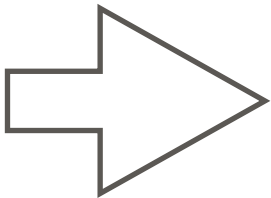


KEY DERIVATION 2:  
FROM 1 TO N

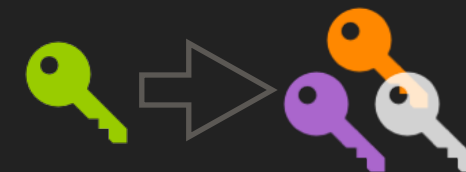
DATA CENTER NVS







## DERIVE PER RECORD KEYS



**Problem:** Use different keys for different records, only store master key.

**Solution:** Use key derivation to derive per-record keys.

 +  $r_1.id + r_1.ver$   

 +  $r_2.id + r_2.ver$   

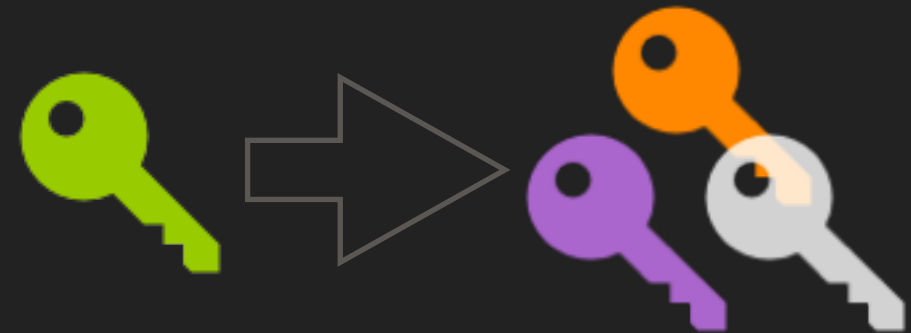
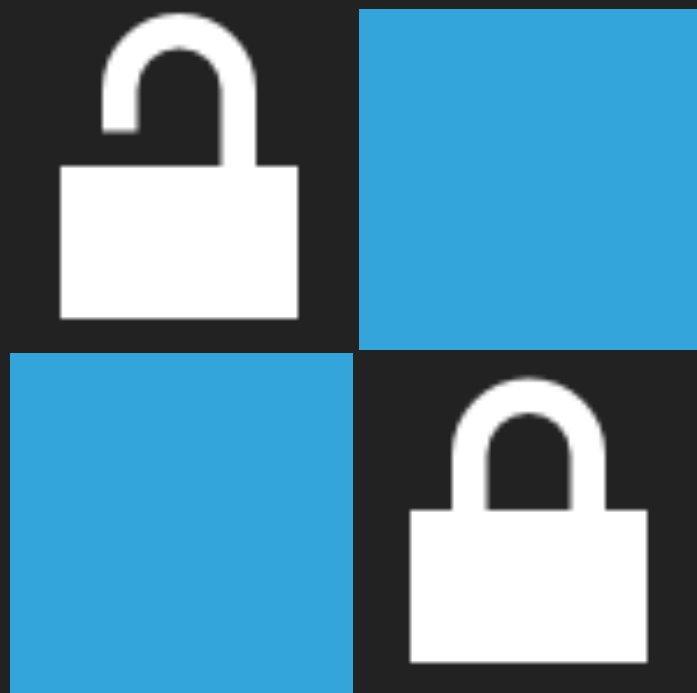
...

 +  $r_n.id + r_n.ver$   

**IMPORTANT: NEVER USE THE SAME KEY/IV TO ENCRYPT DIFFERENT DATA**

**MAKE SURE THAT THE MASTER KEY HAS ENOUGH ENTROPY FOR DERIVED KEY AND DERIVED IV**





PATTERNS

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**KEY DERIVATION 2:  
FROM 1 TO N**