

Verification of Care-of Addresses in Multiple Bindings Registration

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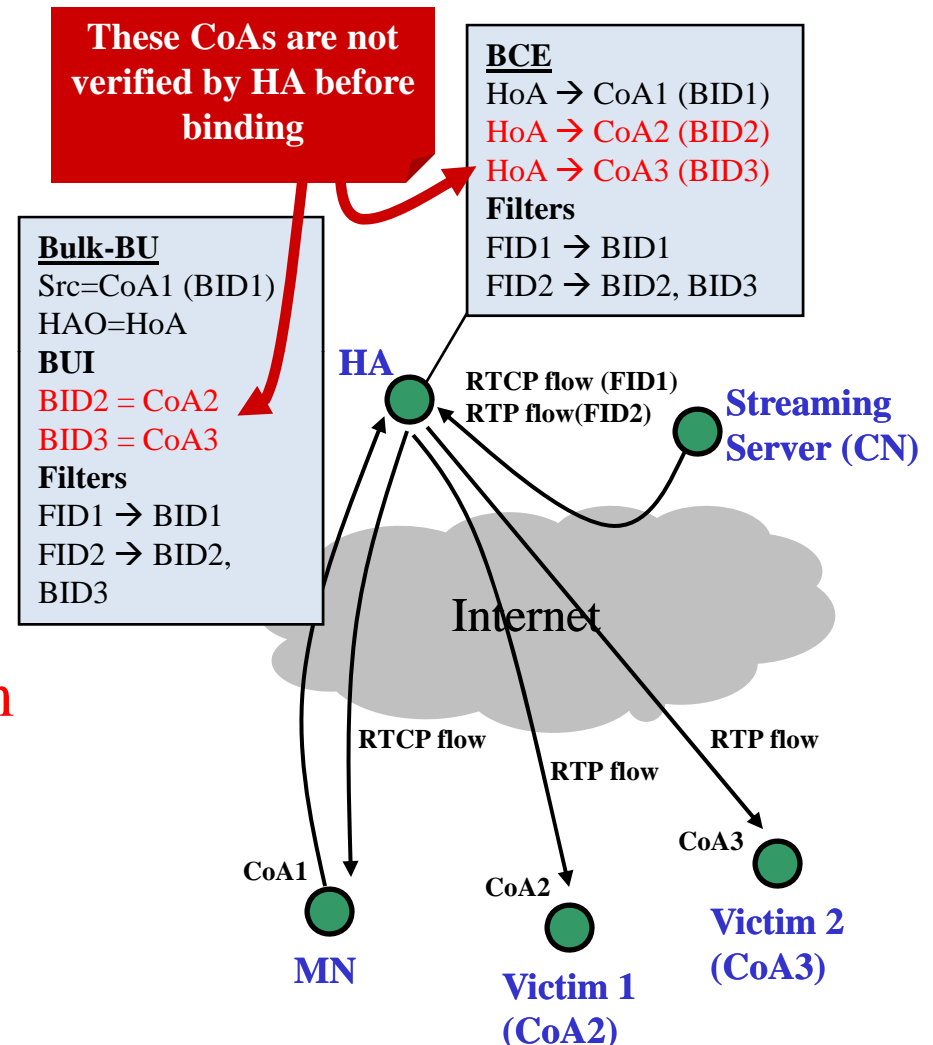
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Problem

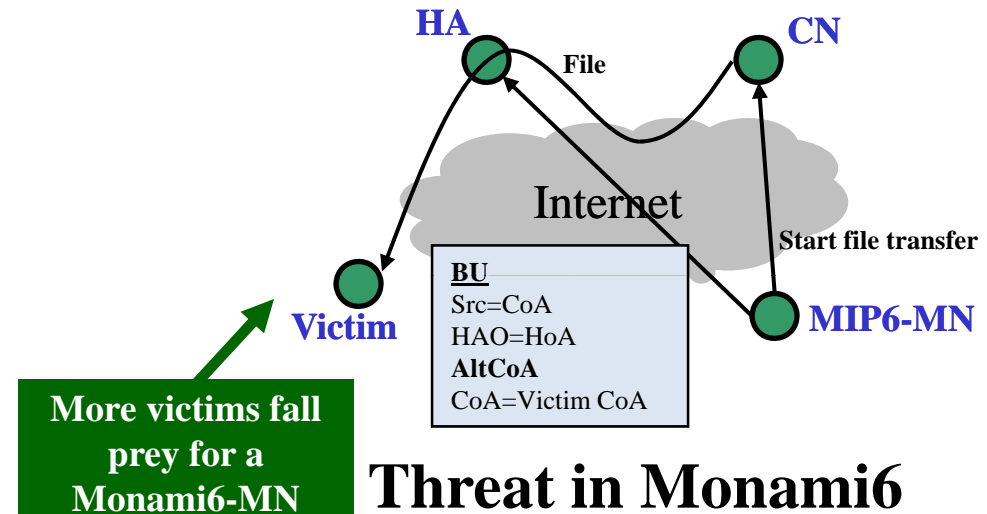
- MN uses bulk registration to **bind victims CoA** & also set filters at HA
 - HA **trust MN**, thus binds all CoAs in BU
- MN starts streaming large file from CN
 - HA **re-direct file to victim** according to filters.
- Mentioned in draft-ietf-monami6-mipv6-analysis-04
 - Section 6.2.1



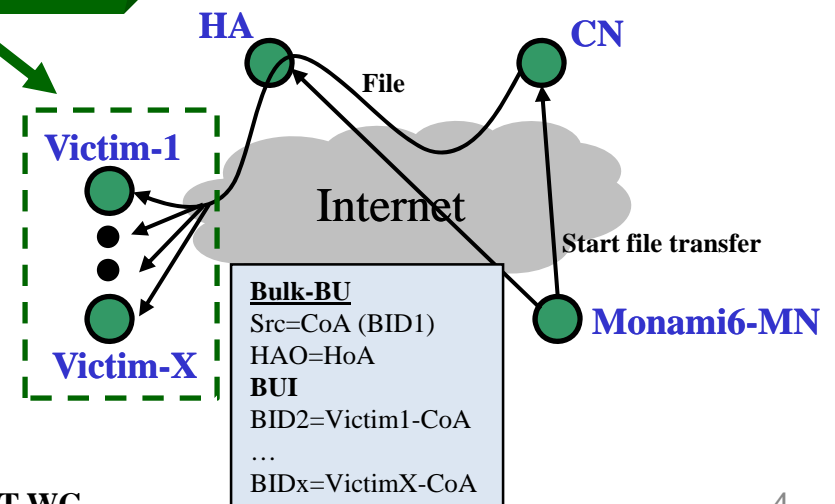
MIP6 vs. Monami6

- Problem is common to MIP6
 - MN starts large file transfer
 - MN send BU with AltCoA to HA specifying victim CoA
- Degree of threat
 - Monami6-MN can attack more victims with 1 HoA

Threat in MIP6



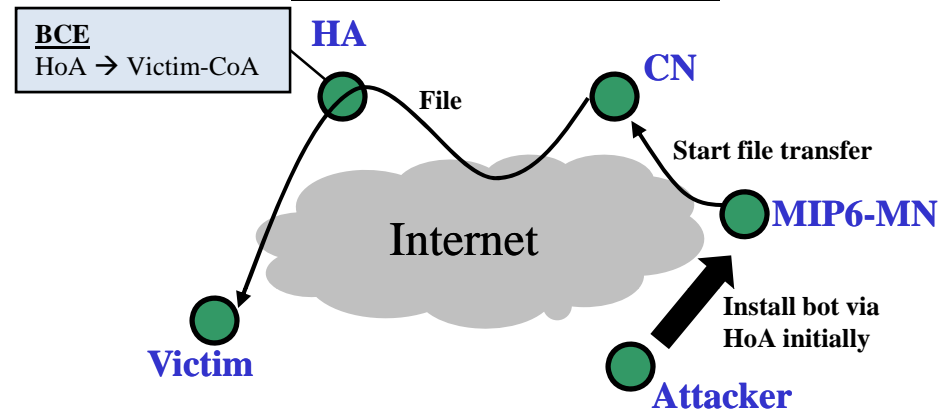
Threat in Monami6



MIP6 vs. Monami6

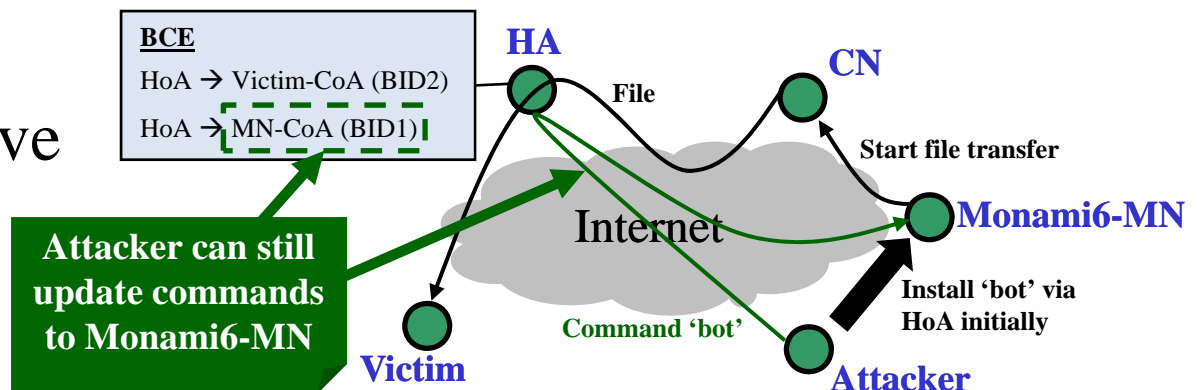
- Knowing MN's identity
 - Attacker uses 'legitimate' MN
 - One time use account

Threat in MIP6



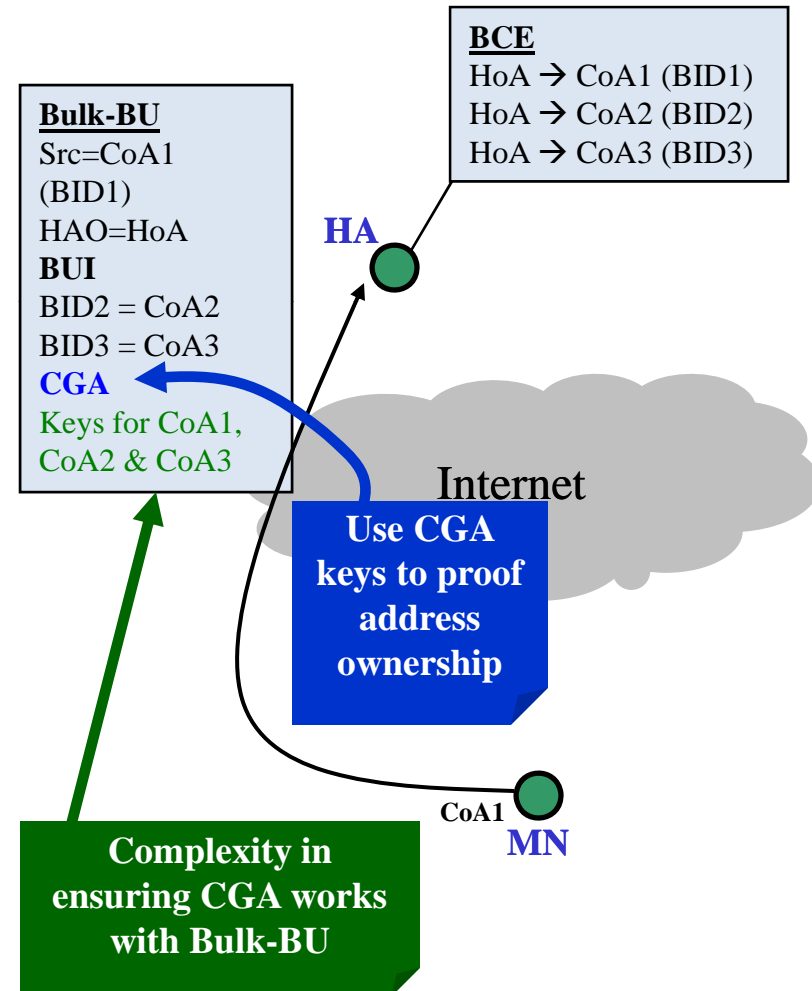
Threat in Monami6

- Form of threat
 - Maintain 1 active connection to further control attack



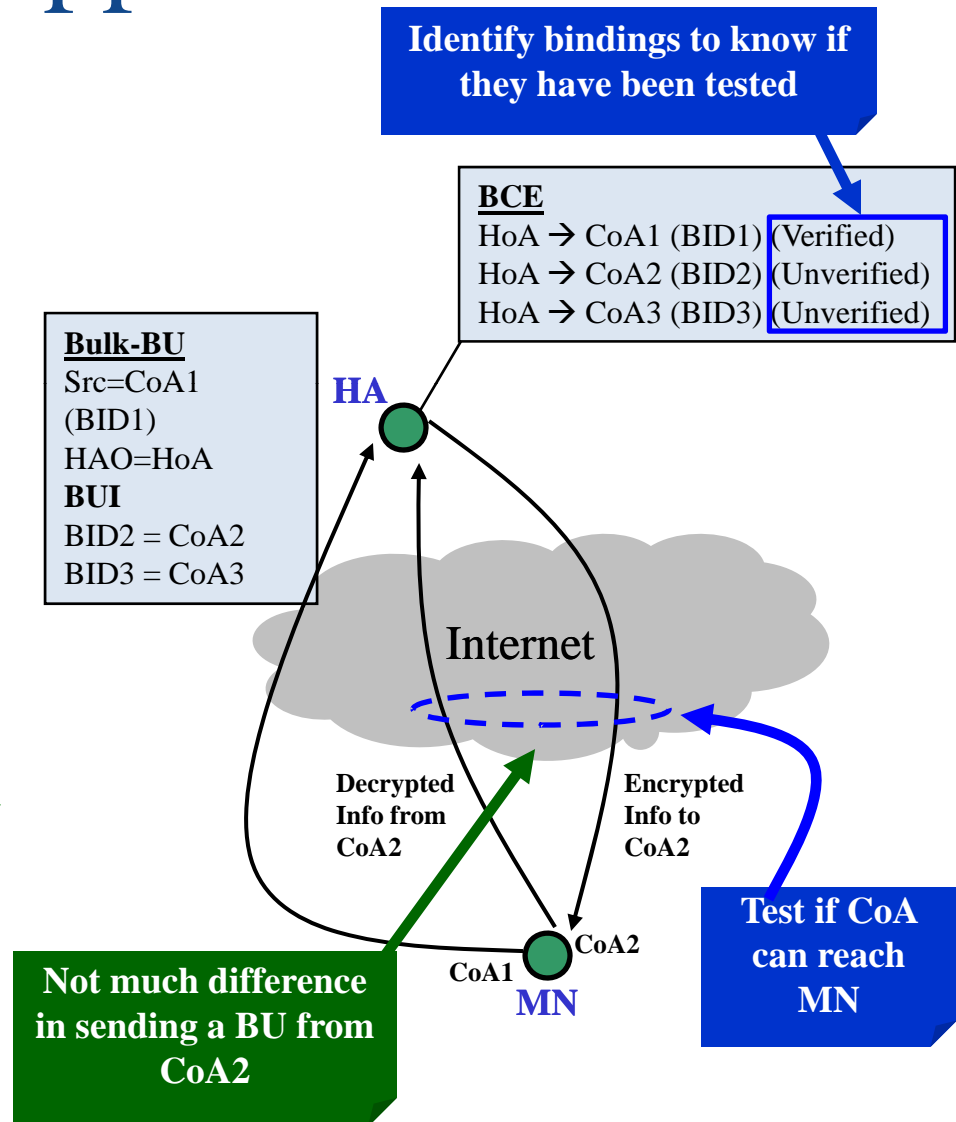
Solution Approaches

- Solution 1
 - Use CGA for proving CoAs are assigned to MN
- Complexity incur
 - Signing Bulk-BU with multiple keys
 - How to reflect these signatures?
 - Integration of CGA with MCoA
 - Will it significantly increase packet size of Bulk-BU?



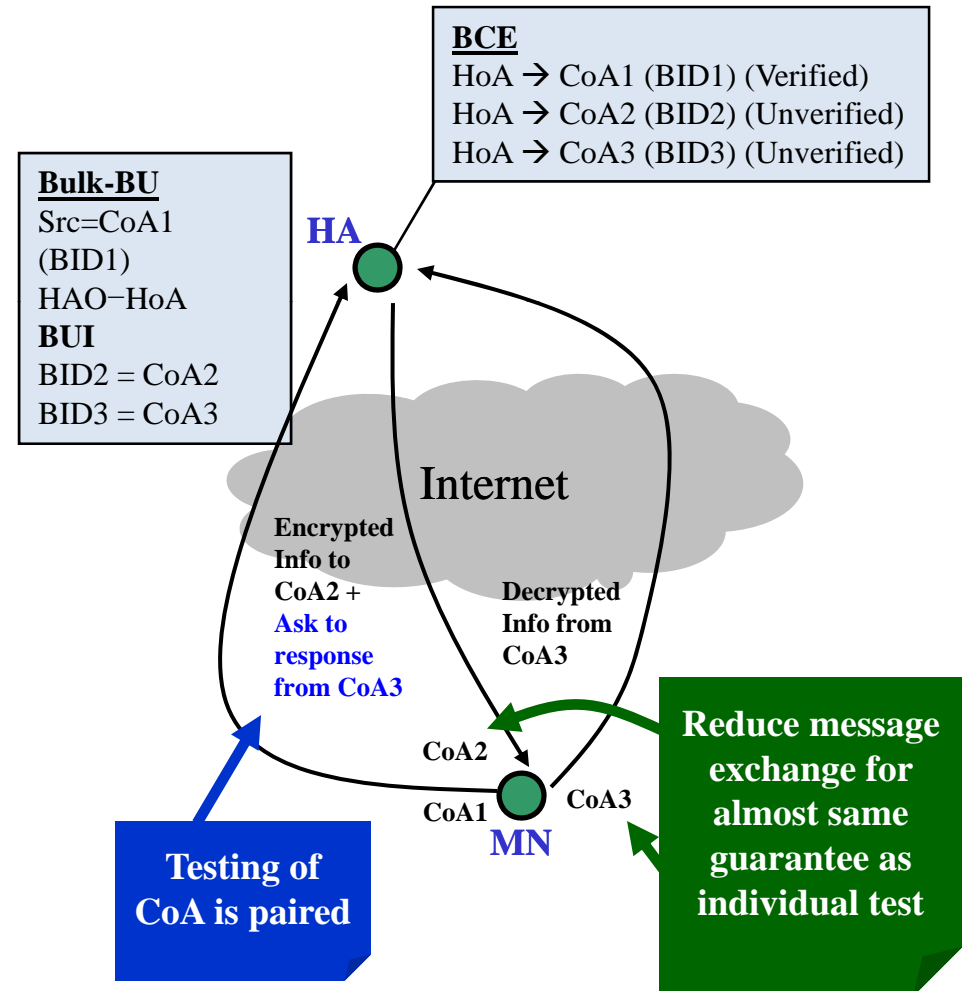
Solution Approaches

- Solution 2
 - State management at HA for bindings (e.g. CBA)
 - Individual CoA testing (e.g. cookie, BRR)
- Testing each CoA individually removes benefit of bulk registration
 - Might as well send separate BU from each CoA



Solution Approaches

- Optimization to Solution 2
 - State management at HA for bindings (e.g. CBA)
 - **Pairing CoA testing** (e.g. cookie, BRR)
- Optimization Benefits
 - Maintain benefits of bulk registration
 - With ingress filtering, as secure as testing each CoA.



Considerations / Next Steps

- Draft also considered the following
 - When should HA start to test
 - Immediately
 - Wait for that CoA to be used.
 - Using verified CoA to test unverified CoA path
 - When policy restricts unverified CoA path to be used.
- Next Steps
 - Welcome comments on anything missed
 - **WG consideration**
 - Problem implication
 - Adding text in MCoA draft to advice on how to reduce such problem