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A QoS-aware Mobility Management Mechanism (QMM)

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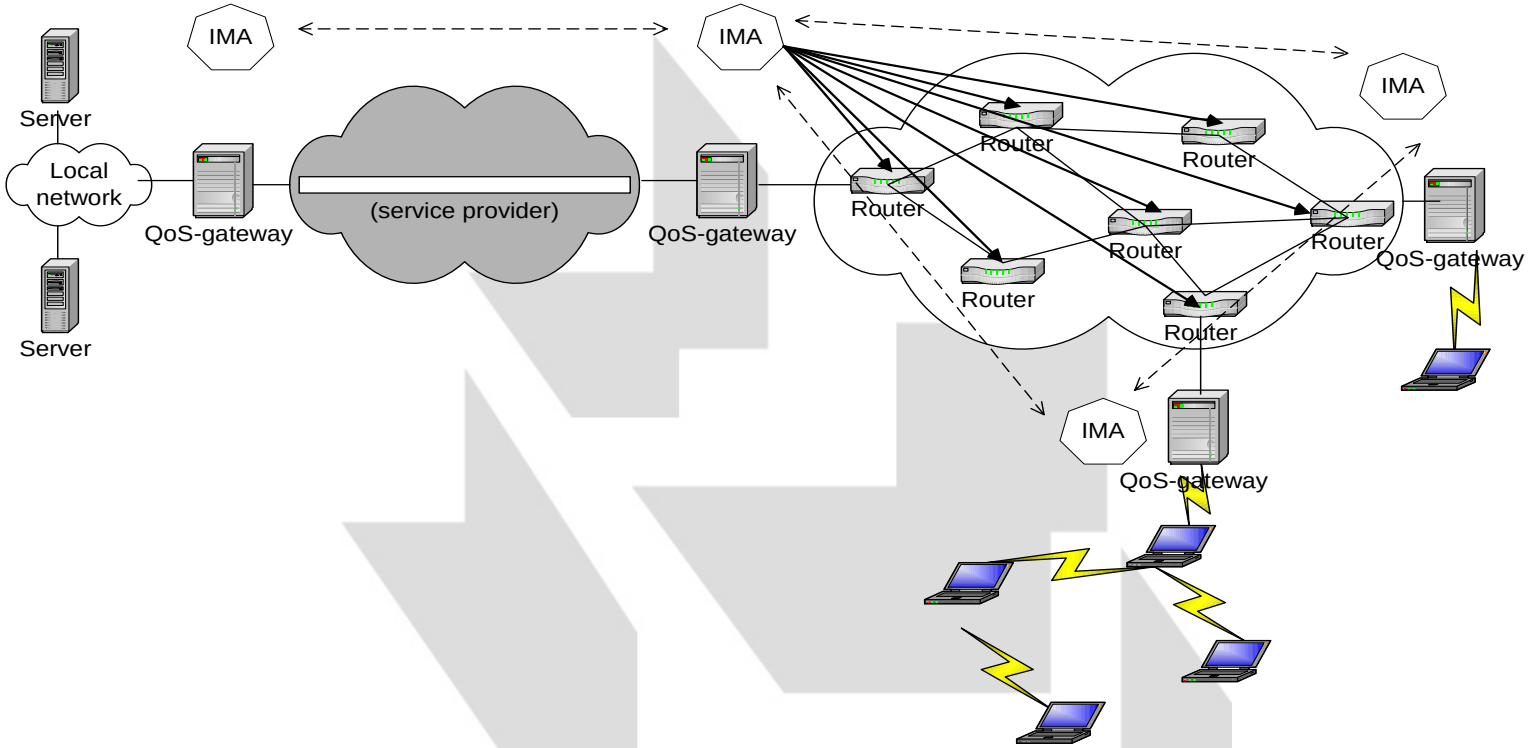
Network architecture

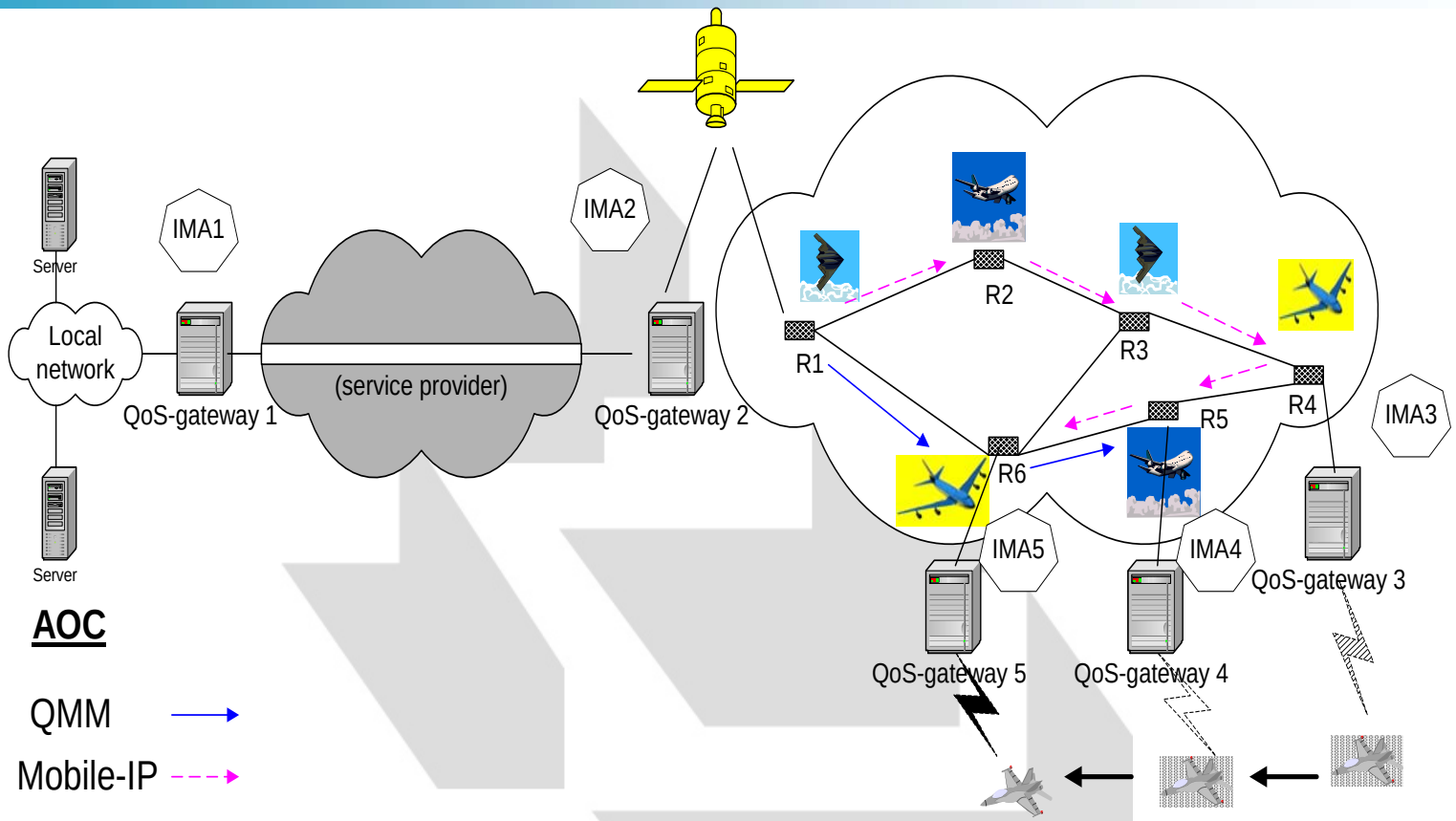


- Intelligent Management Agents (IMAs)
- QoS-aware gateways
- QoS-adaptation techniques

Existing solutions

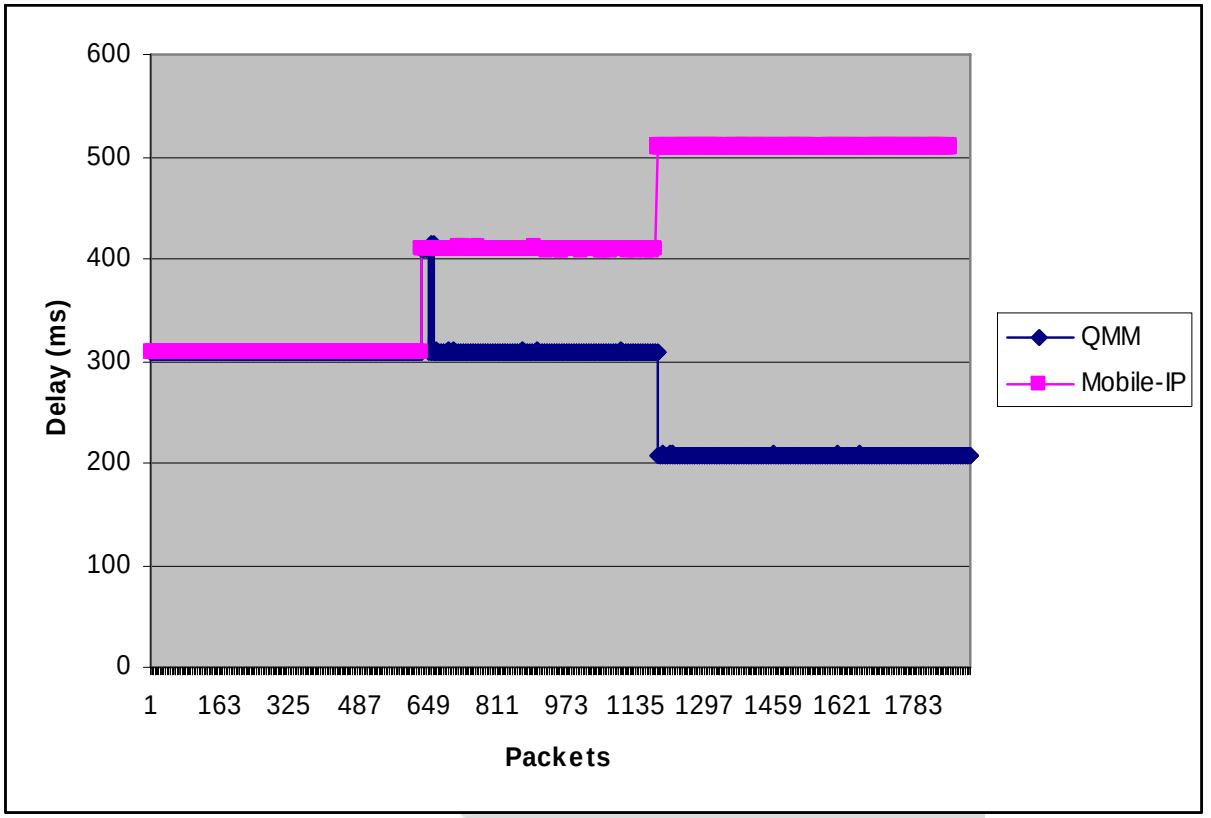
	QMM	Mobile-IP	SIP-mobility
Maintain flows QoS requirements	Yes	No	No
Call disruption	No	No	Yes
Large amount of handoff delay	No	No	Yes
New end-to-end QoS reservation is needed for Intra-domain mobility	No	No	Yes
Support all type of traffic	Yes	Yes	No

Intra-domain mobility



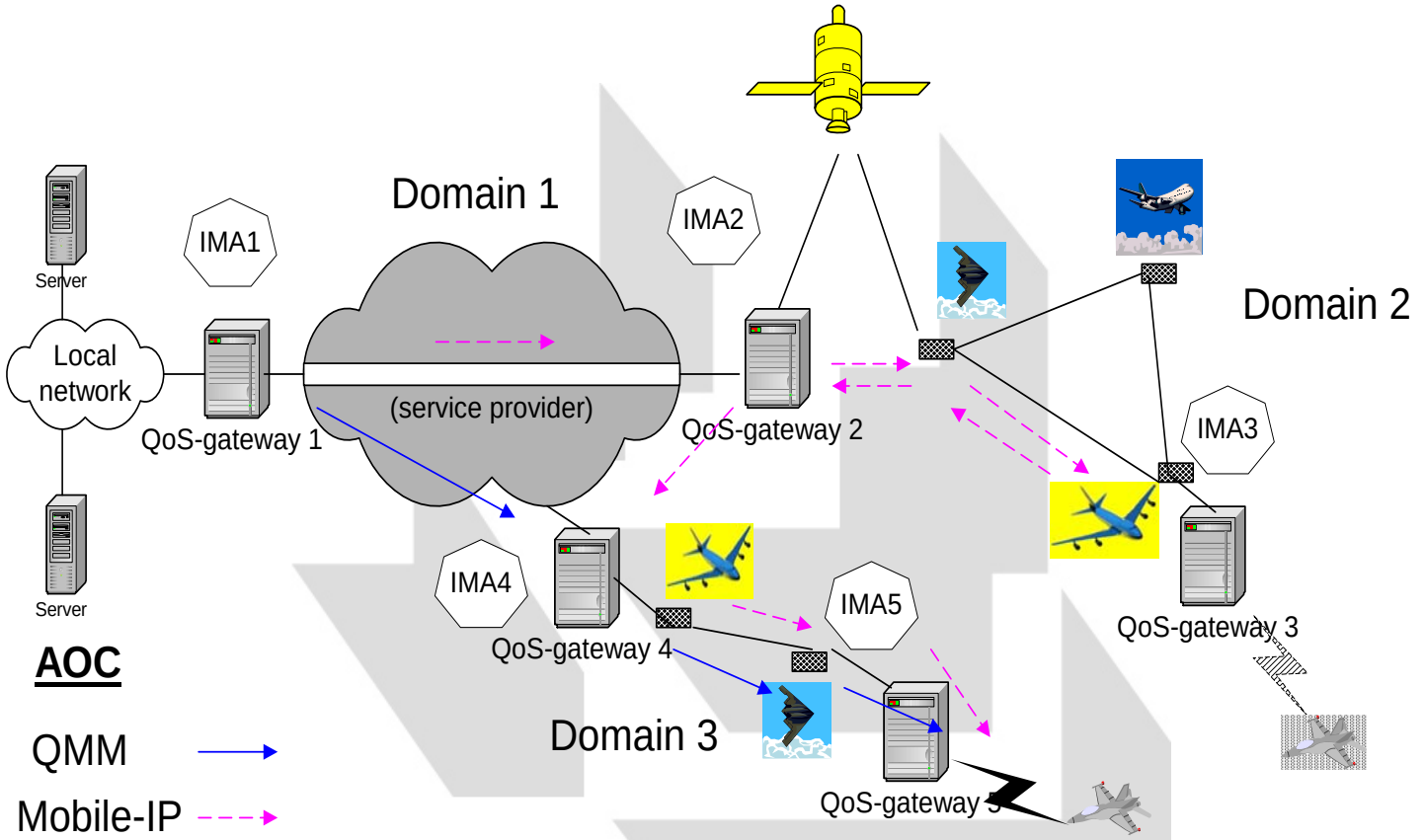
QMM Provides an efficient Intra-domain mobility management mechanism than existing solutions

Intra-domain Simulation Results



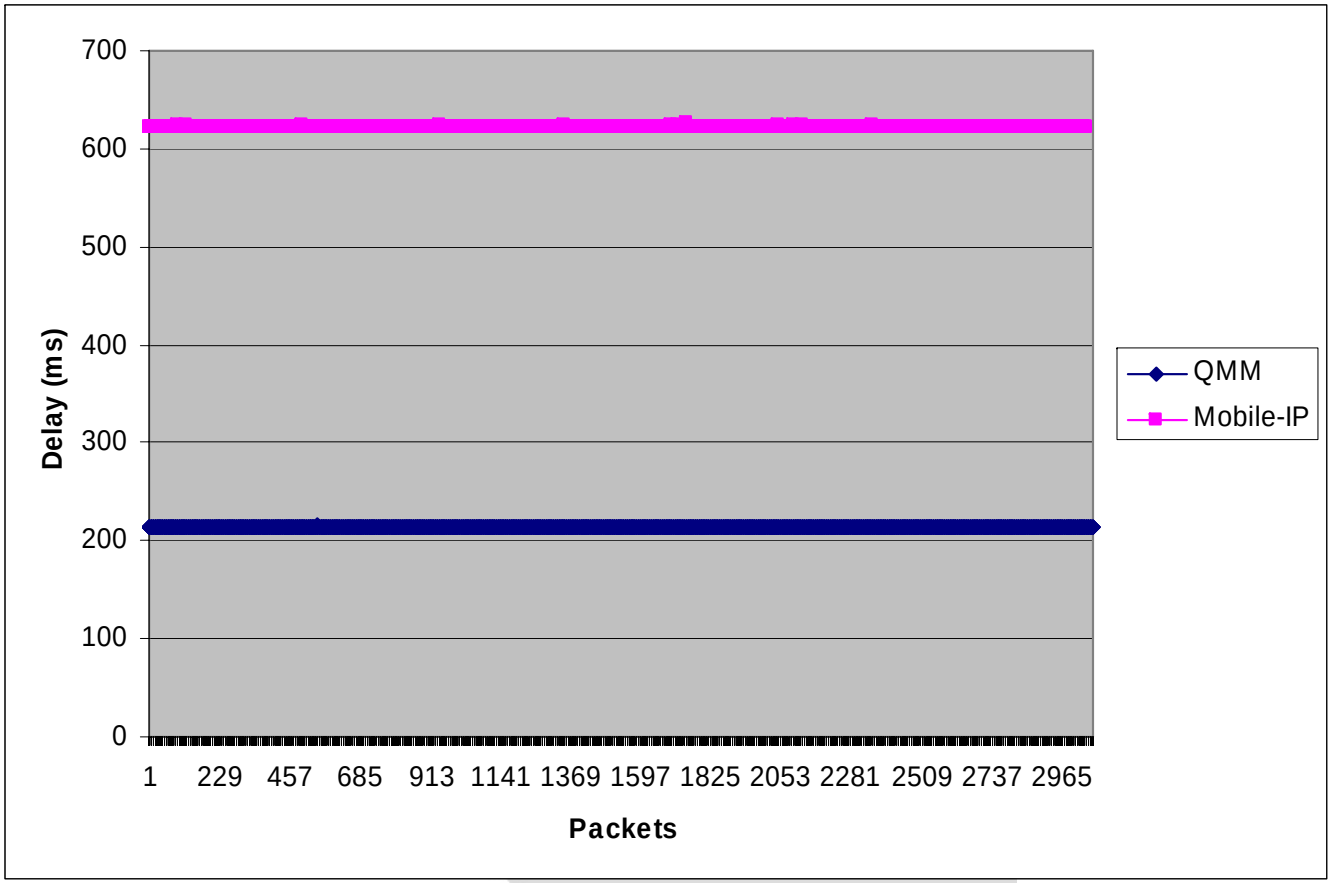
QMM greatly improves flows end-to-end Delays

Inter-domain mobility



QMM Provides an efficient Inter-domain mobility management mechanism than existing solutions

Inter-domain Simulation Results



QMM greatly improves flows end-to-end Delays

Conclusion

We presented a new QoS-aware mobility management mechanism. The new mechanism supports both intra-domain and inter-domain mobility and it co-exists with Mobile-IP and NEMO.

Using NS2 simulations, we demonstrated that QMM is significantly superior to Mobile-IP in managing intra-domain node mobility and inter-domain node mobility when guaranteed QoS is required.