

MITATE: Mobile Internet Testbed for Application Traffic Experimentation

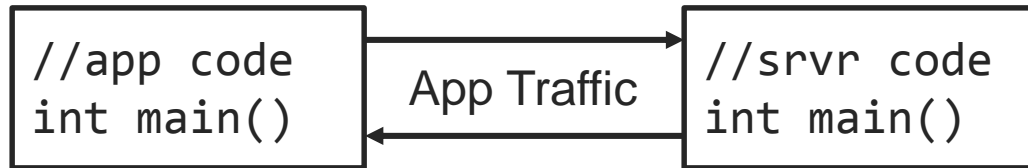
- A new platform for **mobile application prototyping** in live mobile networks.
- **Open to the public** and being deployed on M-Lab.

Why a new mobile testbed?

- **Developers** want to **evaluate mobile application performance** to provide high quality user experience.
- **Researchers** want to **evaluate new network mechanisms** in production networks to produce high quality results.
- Both developers and researchers want to **observe performance variation** that can only be seen in **large deployments**.
- Existing network testbeds **do not** provide this functionality in the **mobile space**.

Developers **without** MITATE

Application Implementation



Mobile Devices



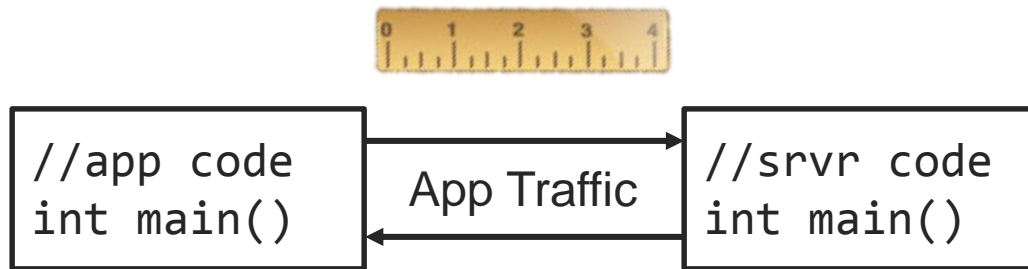
Back-end Servers



Developers **without** MITATE

Application Implementation

Want to measure traffic delays.



Mobile Devices



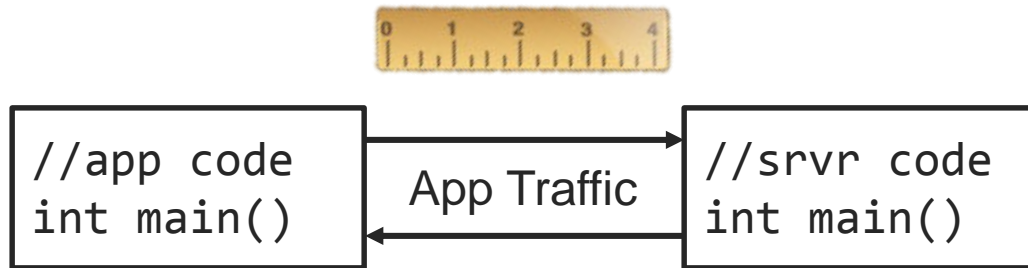
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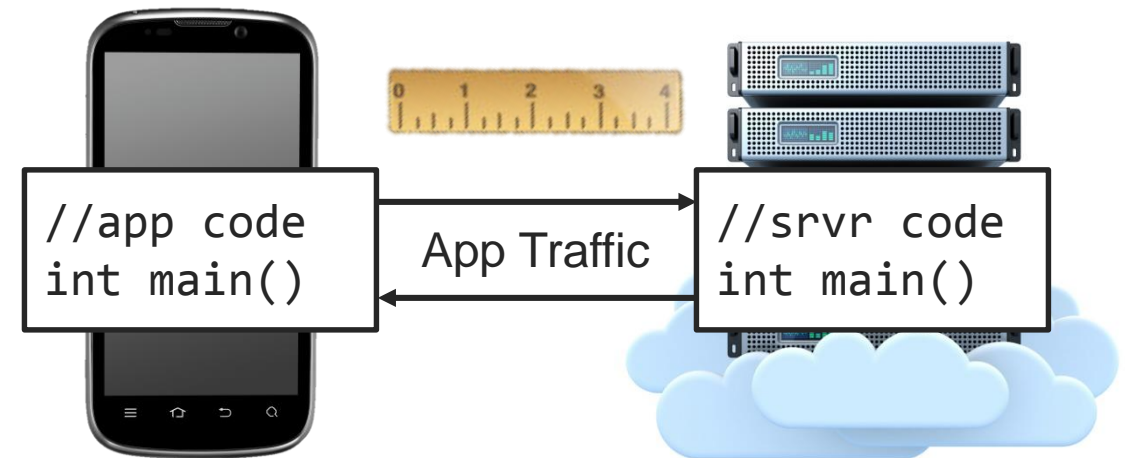
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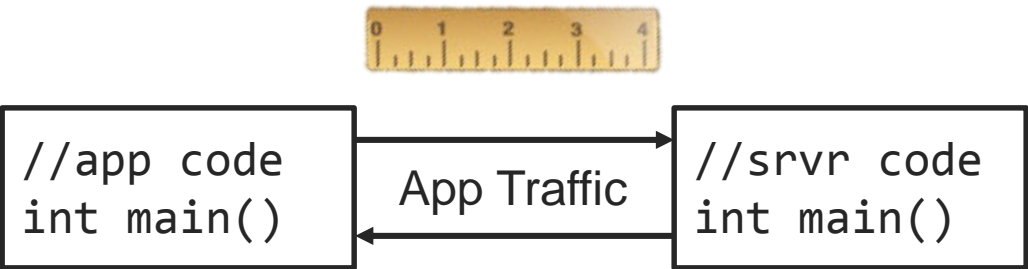
Have to deploy code to do so.



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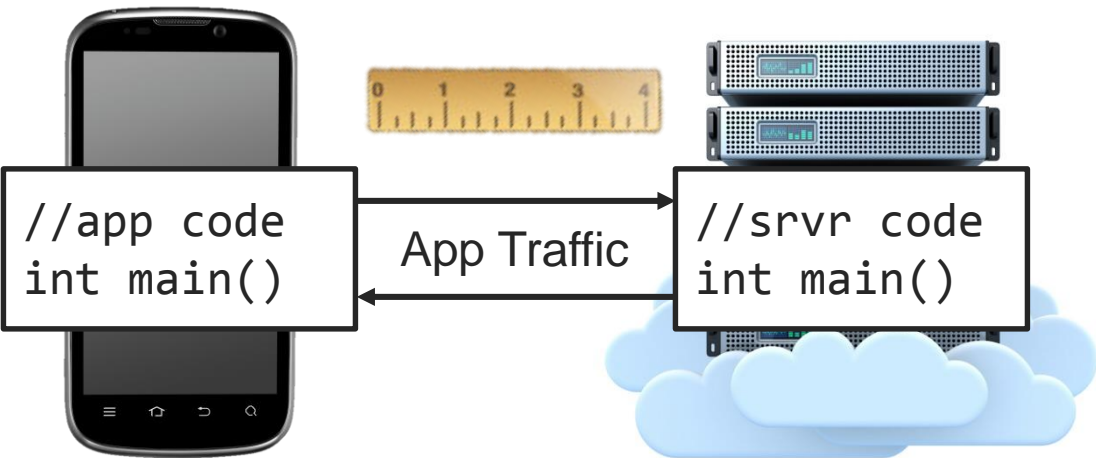
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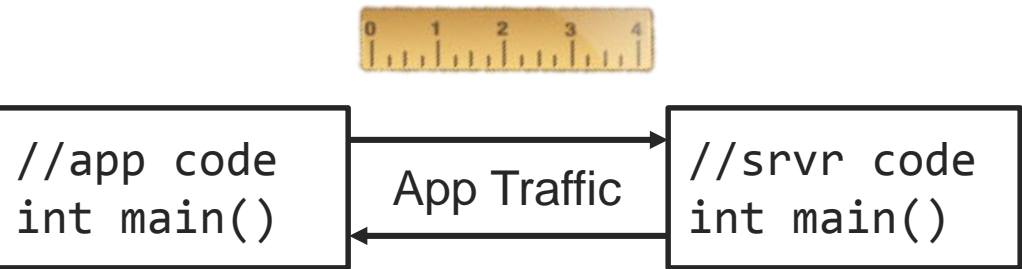


Downsides of code deployment

Small number of volunteered devices

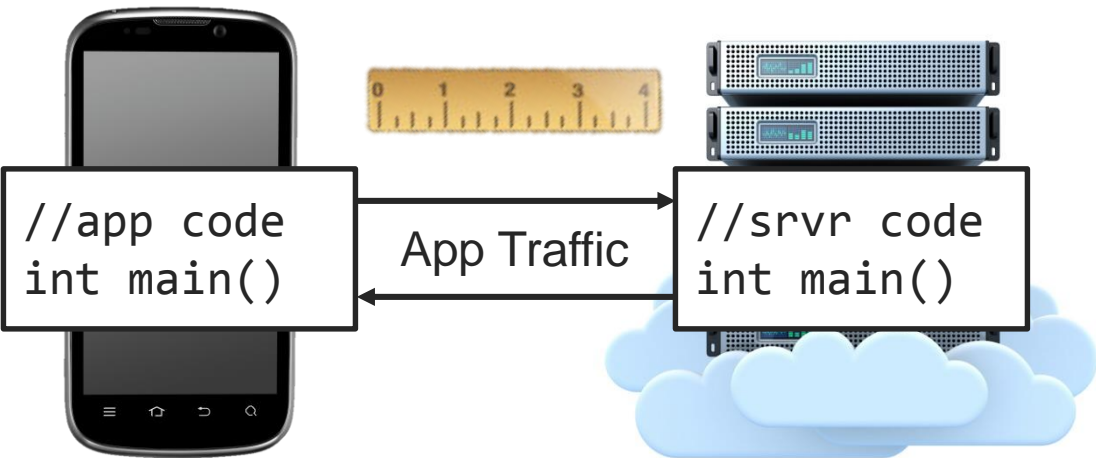
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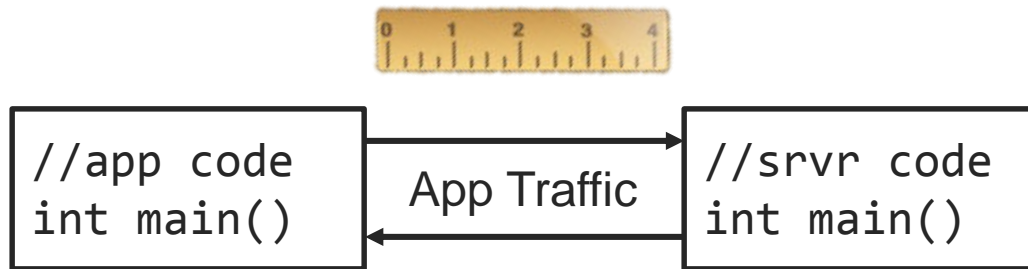
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Security concerns over mobile code

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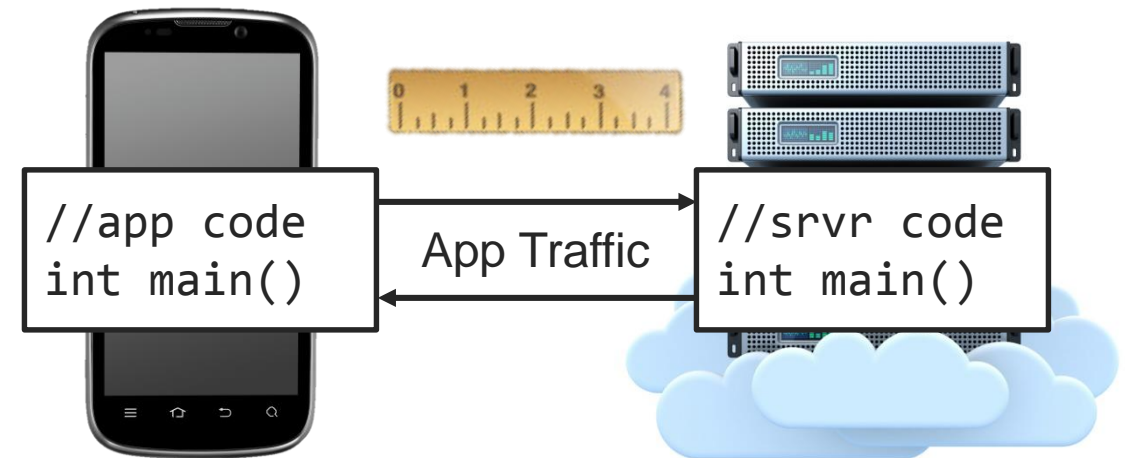
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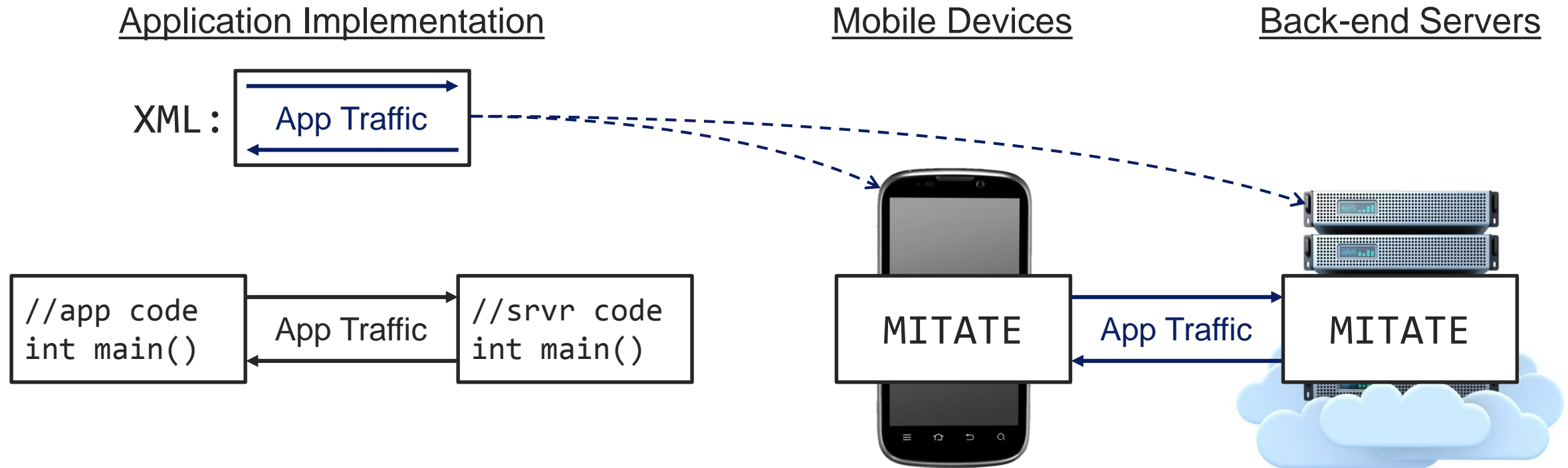
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Restrictive APIs

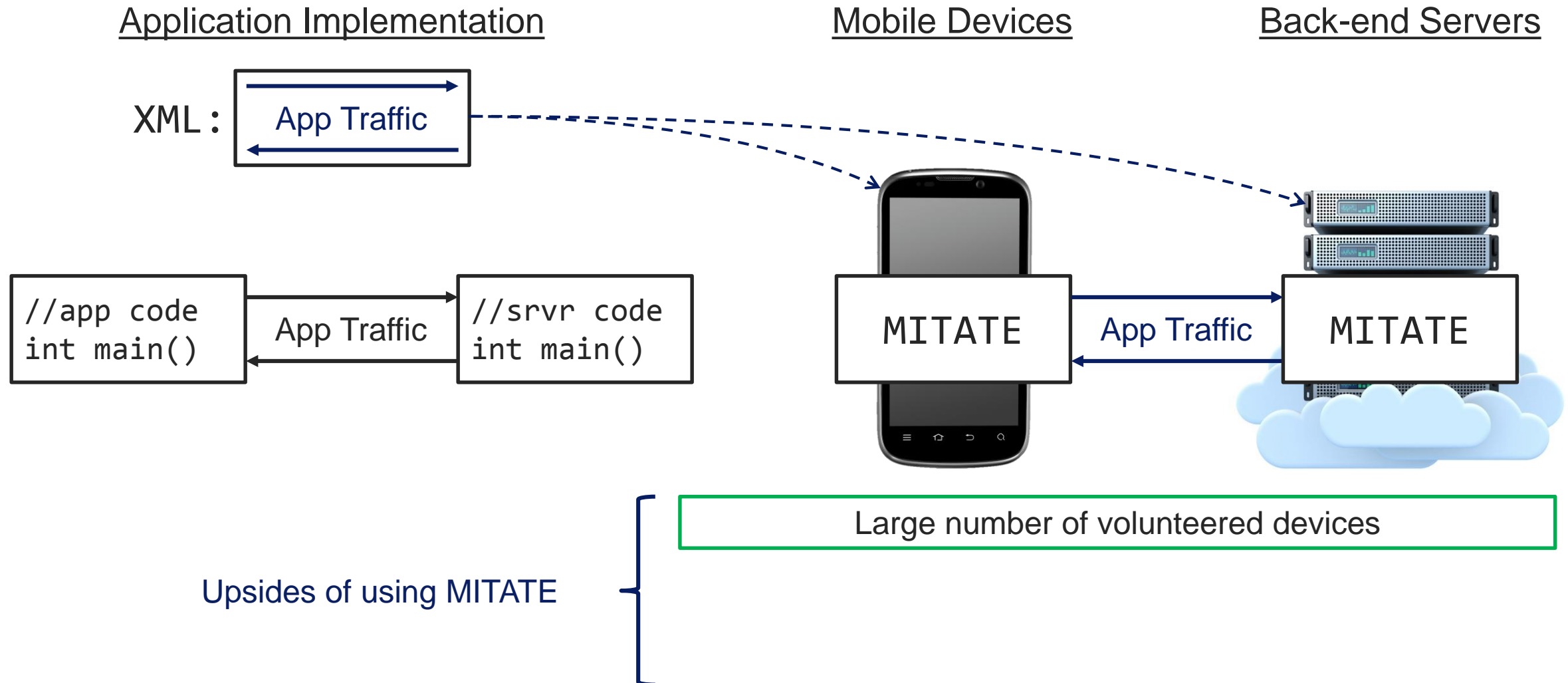
How does MITATE help developers?

MITATE separates **traffic generation** from **application logic**



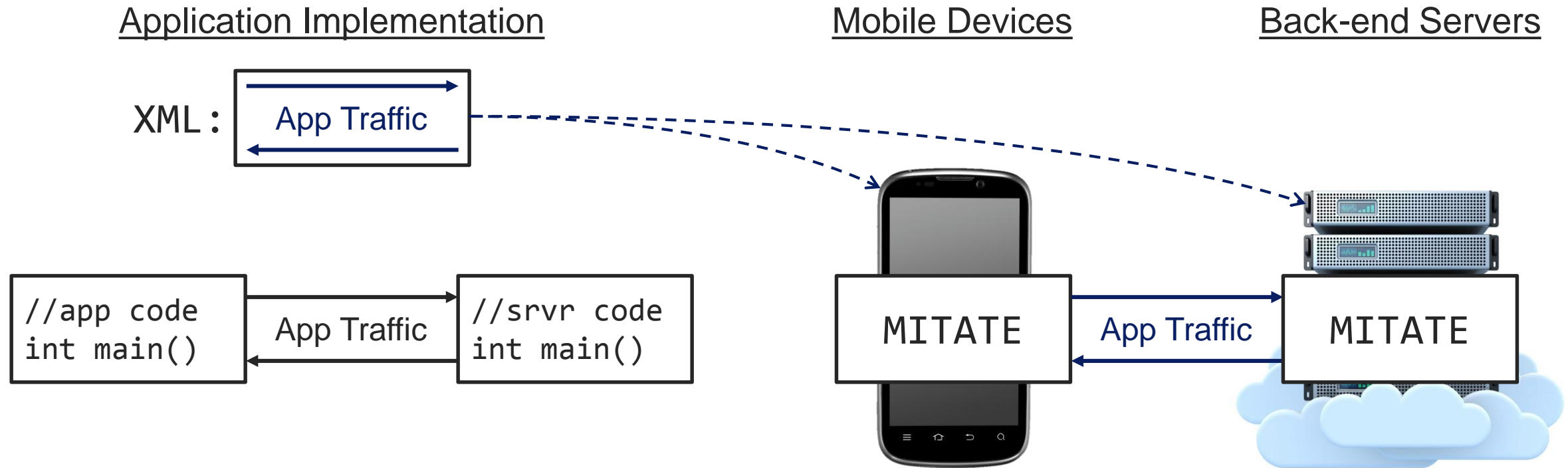
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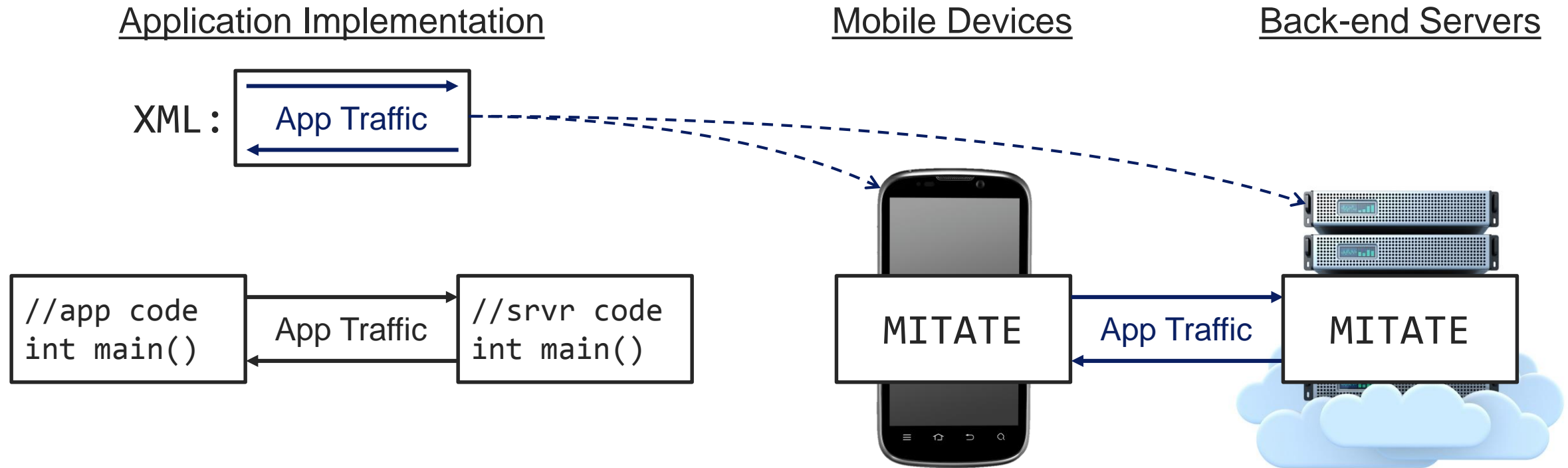
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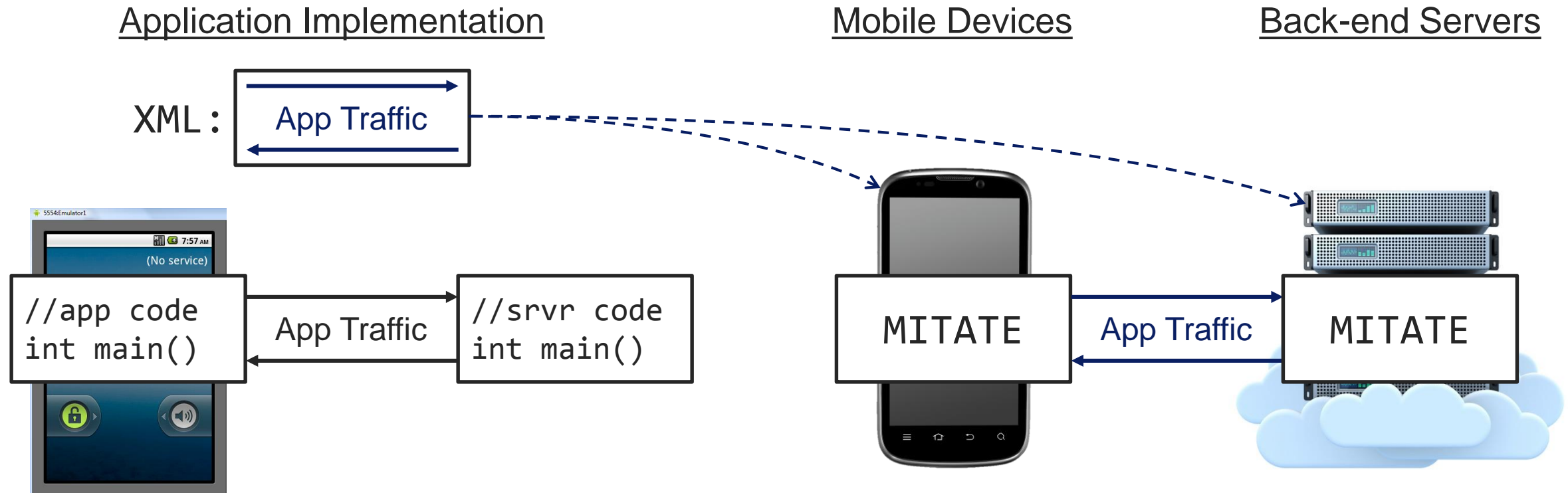
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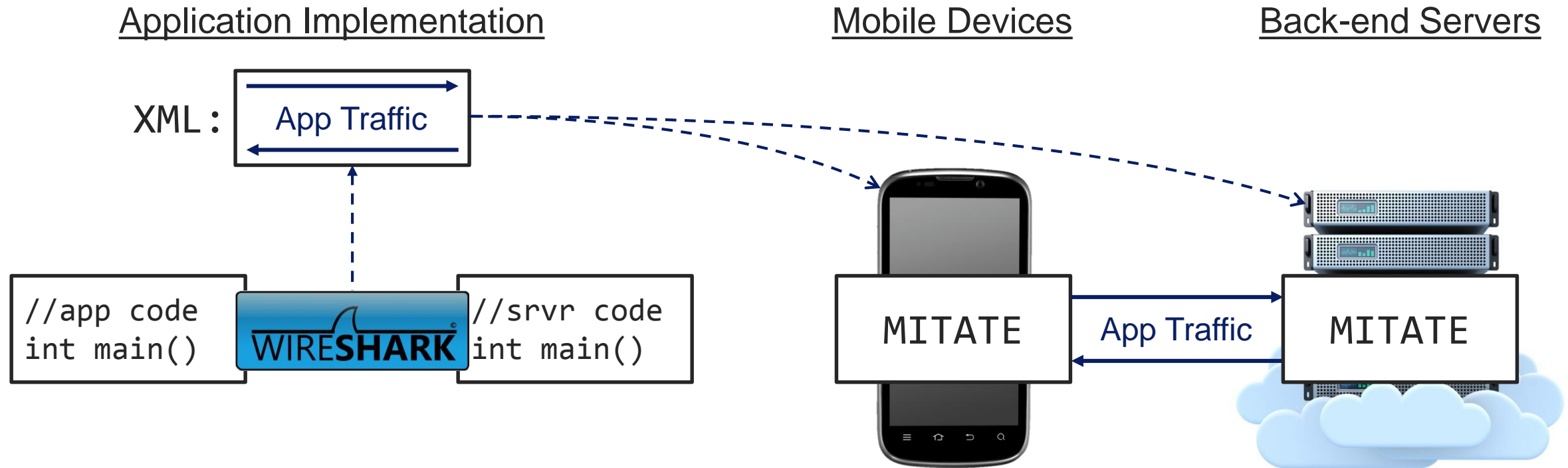


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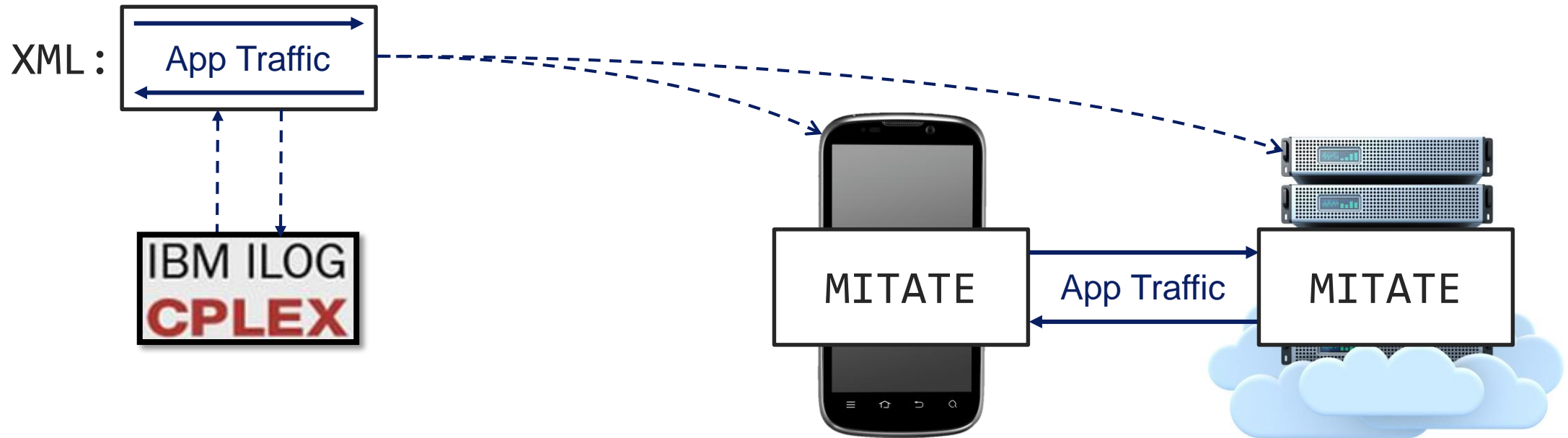
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Researchers **without** MITATE

Call your friends...



... line up a few volunteered devices



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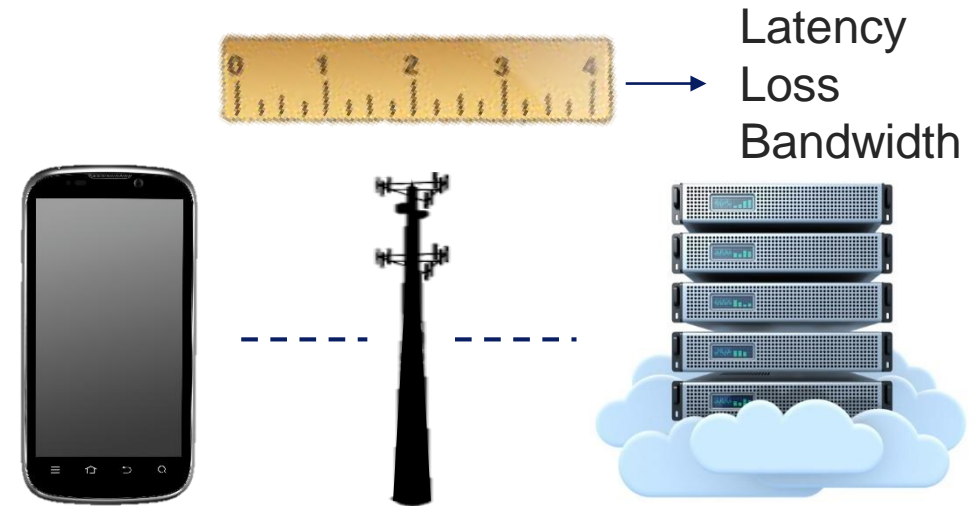
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Measure network performance...



... configure network simulators



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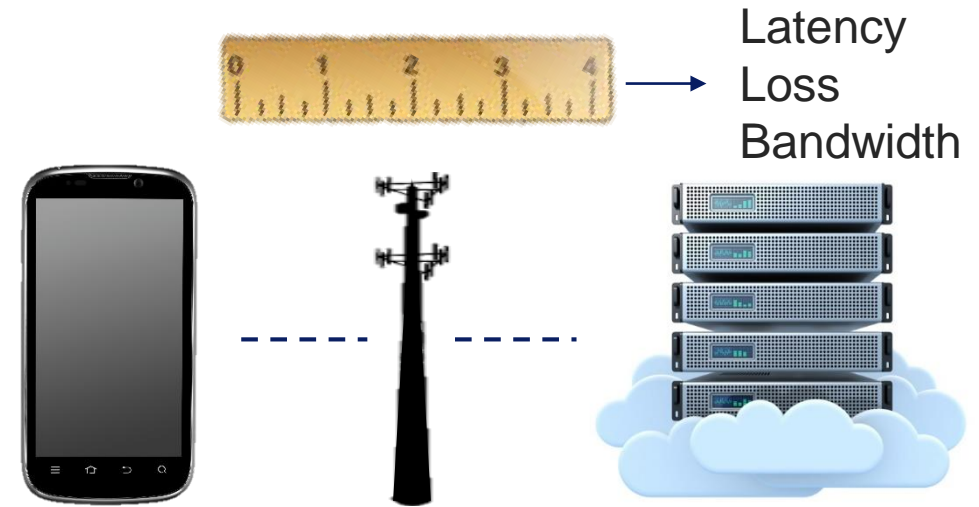


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Low device and setting diversity

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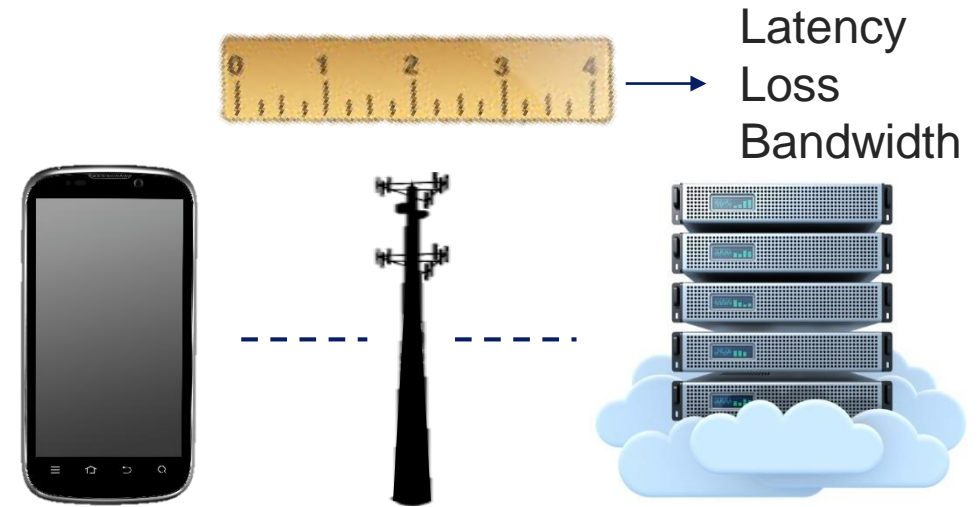


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Configured simulations do not
reflect traffic shaping mechanisms

How does MITATE help Researchers ?



- MITATE relies on an **incentive model** to motivate participation
- Mechanisms similar to BitTorrent's **tit-for-tat** ensure **sustained system capacity** to execute network experiments in real networks
- We hope to recruit **large numbers of volunteered devices** to be **shared between experiments**

Where can you find MITATE



- Paper describing the design of MITATE **will appear** in Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services, **Mobiquitous'13**

Getting involved



- **Beta testers** and **collaborators** within the mobile development and research communities to test MITATE
- **Suggest extensions** to its feature set before making the **tool public on M-Lab**.

Contact us at: **mitate@cs.montana.edu**

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