The background of the slide is a light gray gradient. It is decorated with several realistic water droplets of various sizes. Some droplets are at the top left, some are in the middle left, and a cluster of larger droplets is on the right side. The droplets have highlights and shadows, giving them a 3D appearance.

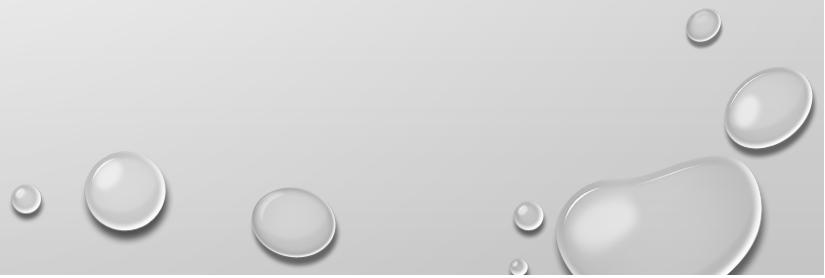
DYNAMICALLY AGGREGATING SMART COMMUNITY SENSORS, EDGE AND CLOUD RESOURCES WITH OVERLAY VPNS

PRAGMA-33 LIGHTNING TALK

KEN SUBRATIE

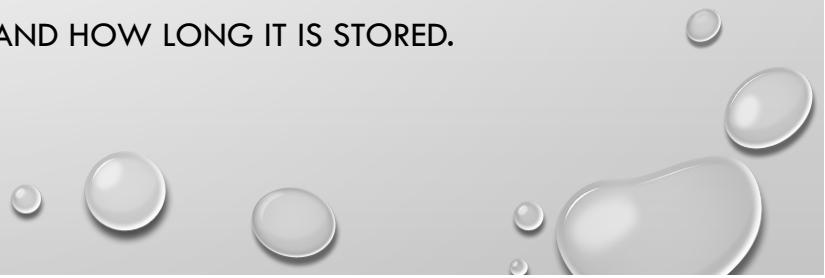


WELCOME

- THIS PROJECT IS A CENTRA/PRAGMA COLLABORATION, AND IT FOCUSES ON NETWORK VIRTUALIZATION MIDDLEWARE THAT ALLOWS EDGE AND CLOUD RESOURCES TO BE LOGICALLY CONNECTED, ON-DEMAND, INTO COMMUNITY VIRTUAL PRIVATE NETWORKS (VPNS).
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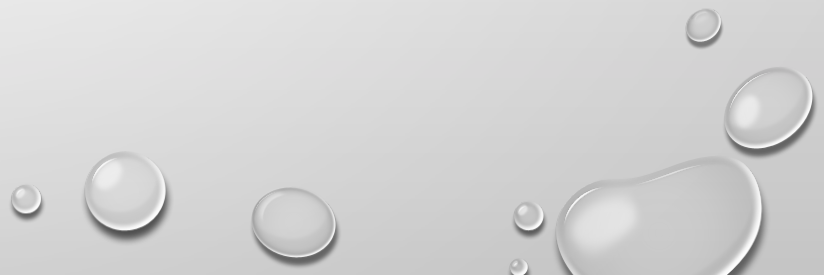


MOTIVATION

- SEVERAL FACTORS WHY IT IS NOT FEASIBLE TO ALWAYS MOVE FROM EDGE TO CLOUD.
 - THE BANDWIDTH DESIRED MAY NOT BE AVAILABLE
 - THERE IS A COST ASSOCIATED WITH BANDWIDTH
 - CLOUD DATA CENTERS ARE ONLY COARSELY DISTRIBUTED
 - MOST SENSOR NETWORKS WOULD BE GEOGRAPHICALLY DISTANT FROM AVAILABLE CLOUD.
 - APPLICATION LATENCY REQUIREMENTS WOULD BE DIFFICULT TO MEET
 - THE NUMBER OF ROUTING HOPS TYPICALLY INCREASE WITH DISTANCE BETWEEN ENDPOINTS.
 - CONTROLLING WHERE DATA IS SENT, HOW IT IS USED AND HOW LONG IT IS STORED.
- 

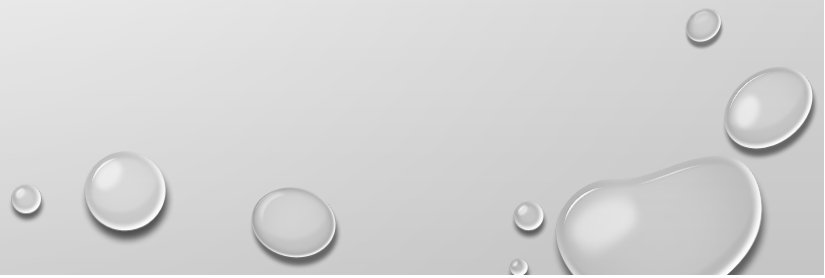


USE CASE

- CONSIDER HYPOTHETICAL SCENARIO
 - A CROWD-SOURCED EVENT OCCURRING AT THE NETWORKS EDGE BUT FINAL DECISIONS/
ACTIONS ARE MADE IN THE CLOUD
 - IDENTIFY A SPECIFIC AUTOMOBILE LICENSE PLATE WITHIN AN APPROXIMATE REGION
 - DETERMINE ITS DIRECTION OF TRAVEL
 - REPORT THE FINDINGS TO CENTRAL MONITORING APPLICATION.
- 



GOALS

- RESEARCH AND DEVELOP THE INFRASTRUCTURE AND PLATFORM THAT ENABLES THESE APPLICATIONS
 - SIMPLIFY ADDRESSING AND CONNECTING NODES IN A WORK GROUP
 - FLATTENING THE ADDRESS NAMESPACE
 - FACILITATING MULTIPLE DIFFERENT, CONCURRENT OVERLAYS
 - SUPPORT PRIVATE COMMUNICATIONS BETWEEN PARTICIPANTS
 - ENCRYPTED TUNNELS
 - BUILD SCALABLE OVERLAY NETWORKS
 - PEER-TO-PEER LINKS
 - STRUCTURE OVERLAY TOPOLOGIES
 - PROVIDING APIS
 - PROGRAMMATIC USE BY THIRD PARTY APPLICATIONS.
- 



THANK YOU

- CONTRIBUTORS:

- RENATO FIGUEIREDO, KEN SUBRATIE, SAUMITRA ADITYA, VAHID DANESHMAND (UNIVERSITY OF FLORIDA, USA);
 - EIJI KAWAI, HIROAKI YAMANAKA, NAOMI TERADA (NICT, JAPAN);
 - RYOUSEI TAKANO (AIST, JAPAN);
 - SUSUMO DATE, YAMADA TAKUYA (OSAKA UNIVERSITY, JAPAN);
 - PONGSAKORN U-CHUPALA (NAIST, JAPAN);
 - HYUK-JAE LEE (SEOUL NATIONAL U., SOUTH KOREA)
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