Mobility-Aware Application Scheduling in Fog Computing

Luiz F. Bittencourt Javier Diaz-Montes Rajkumar Buyya
Omer F. Rana Manish Parashar

Presenter: Maicon Ança dos Santos

September 21, 2018

Introduction

Introduction

1 Introduction

2 Fog Computing Model

3 Related Work

4 Applications

5 Allocation Policies

6 Challenges and Future Directions

7 Conclusions

Fog Computing Model

Fog Computing Model

Fog Computing Model

1 Introduction

2 Fog Computing Model

3 Related Work

4 Applications

5 Allocation Policies

6 Challenges and Future Directions

7 Conclusions

Related Work

Related Work

1 Introduction

2 Fog Computing Model

3 Related Work

4 Applications

5 Allocation Policies

6 Challenges and Future Directions

7 Conclusions

Applications

UPS

UPS

1 Introduction

2 Fog Computing Model

3 Related Work

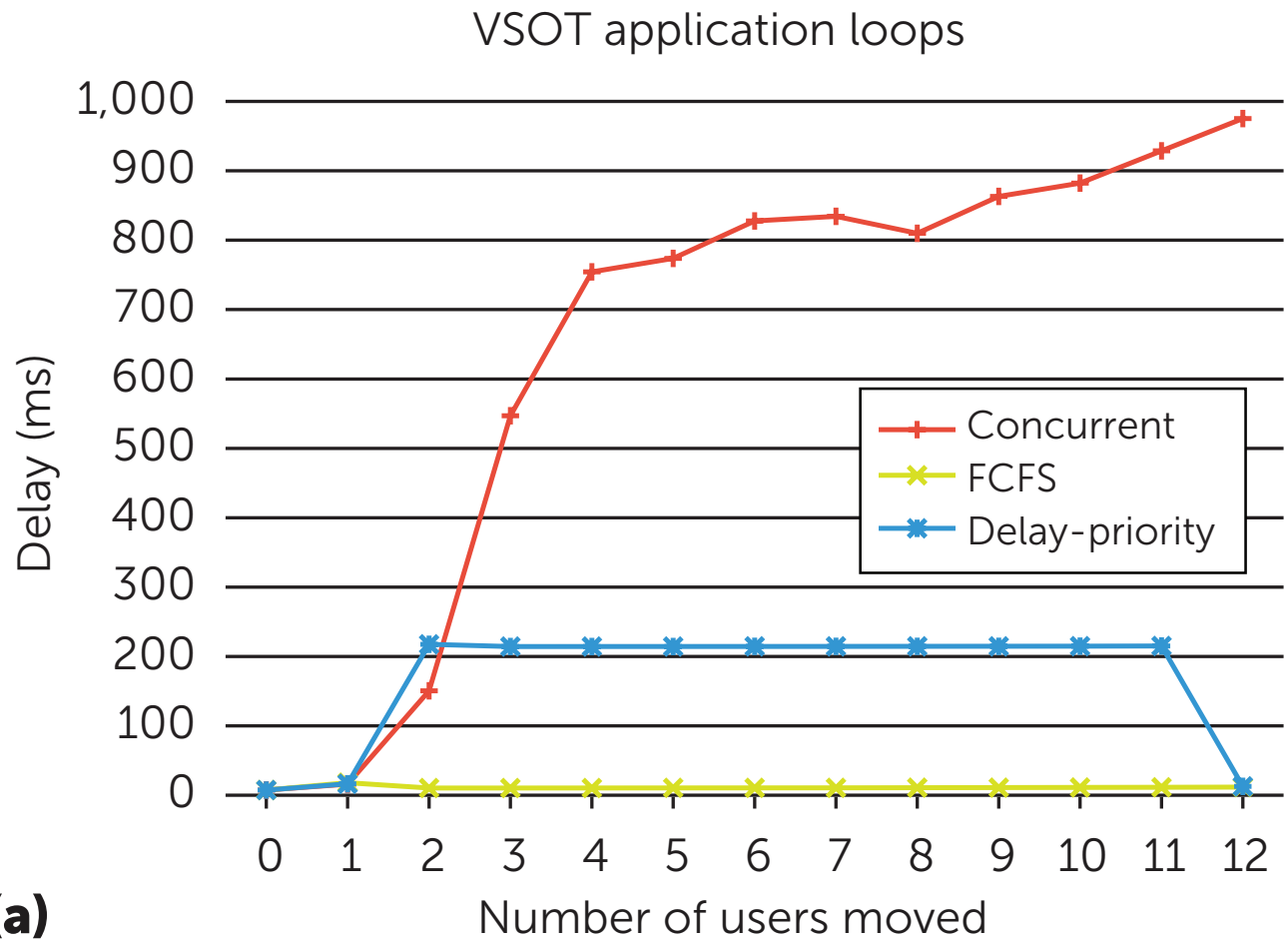
4 Applications

5 Allocation Policies

6 Challenges and Future Directions

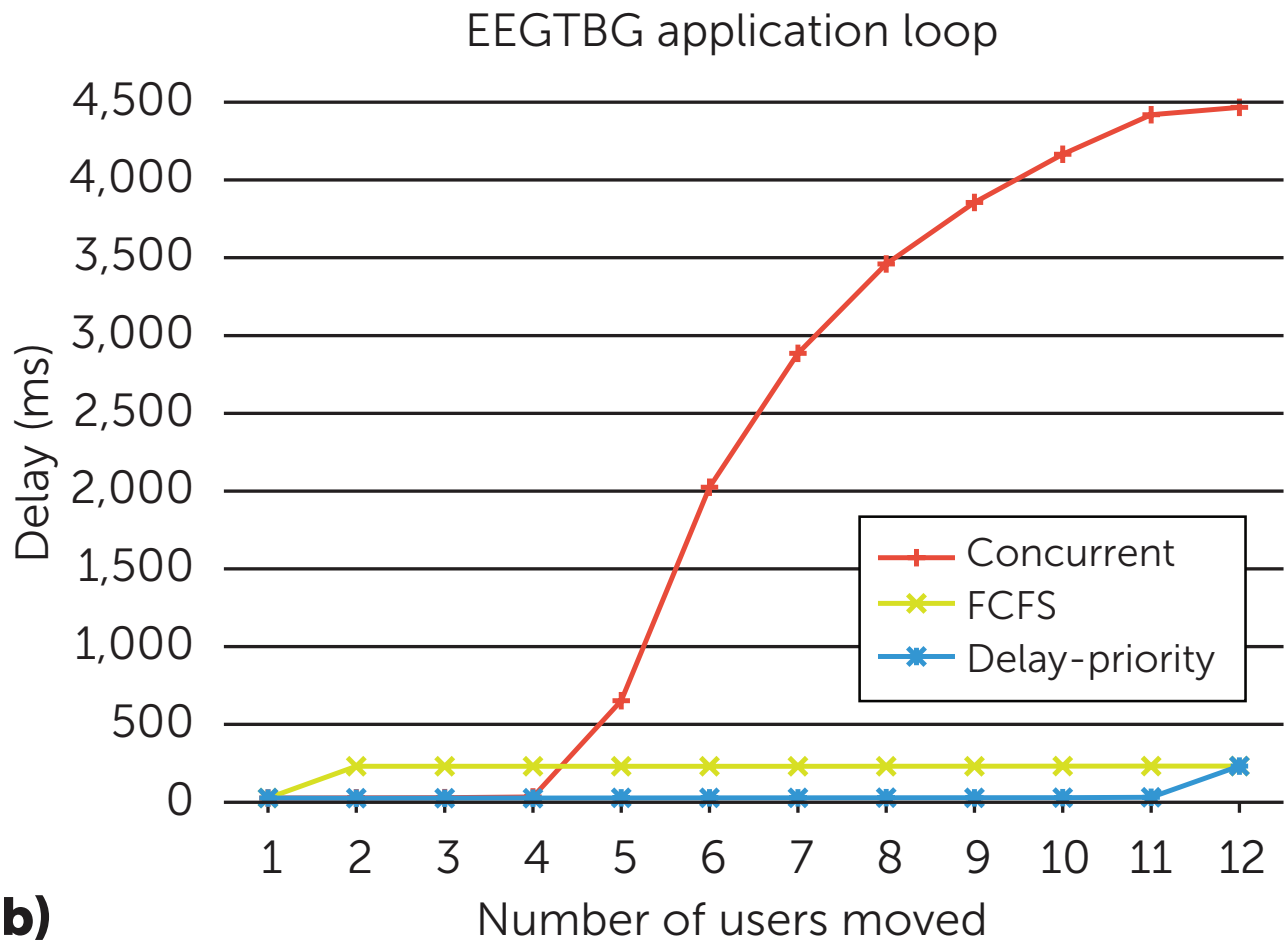
7 Conclusions

UPS


VSOT application loops
1,000
900
800
700
600
500
400
300
200
100
0
Delay (ms)
0 1 2 3 4 5 6 7 8 9 10 11 12
Number of users moved
Concurrent
FCFS
Delay-priority

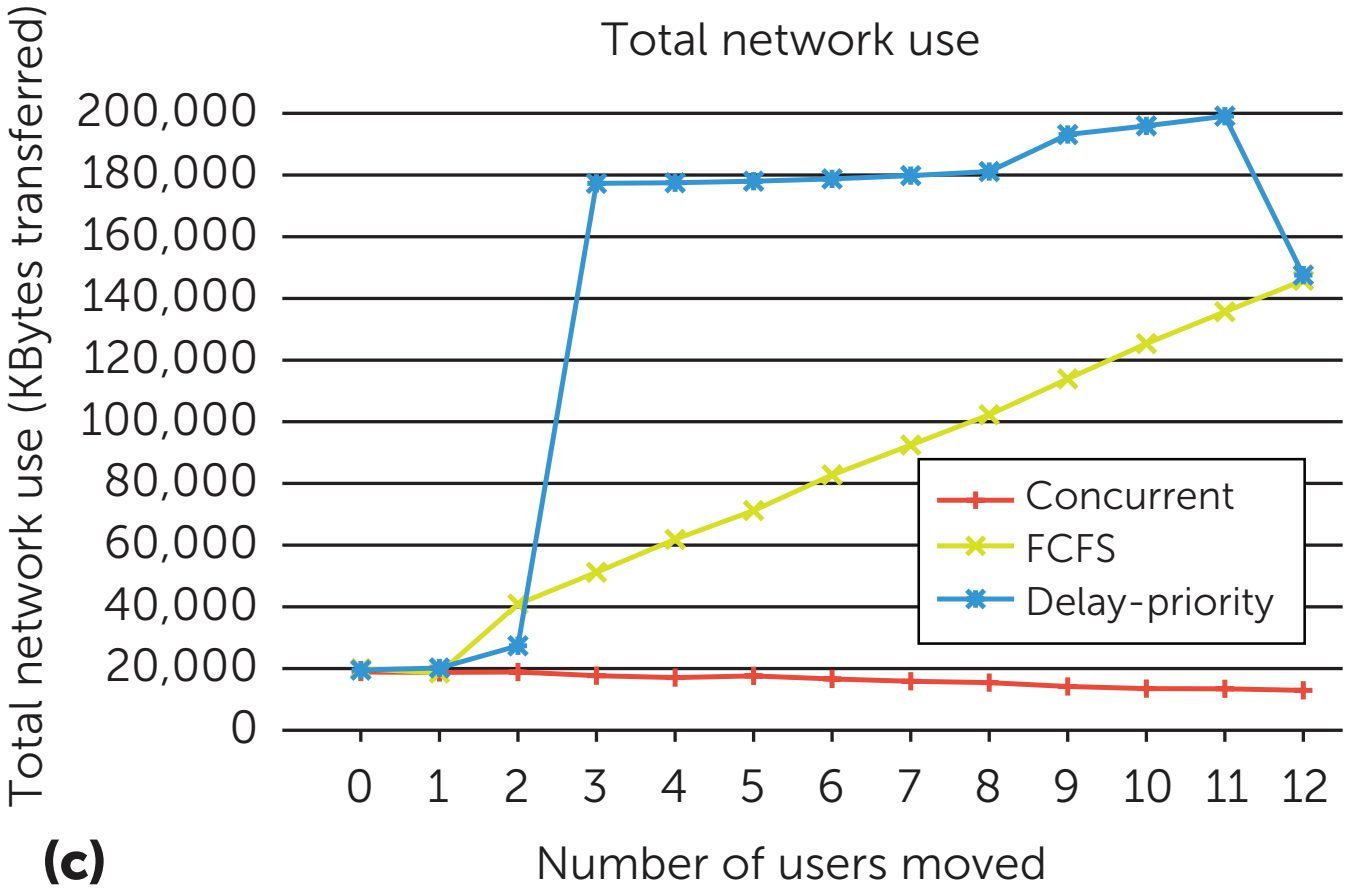
(a)

Figure

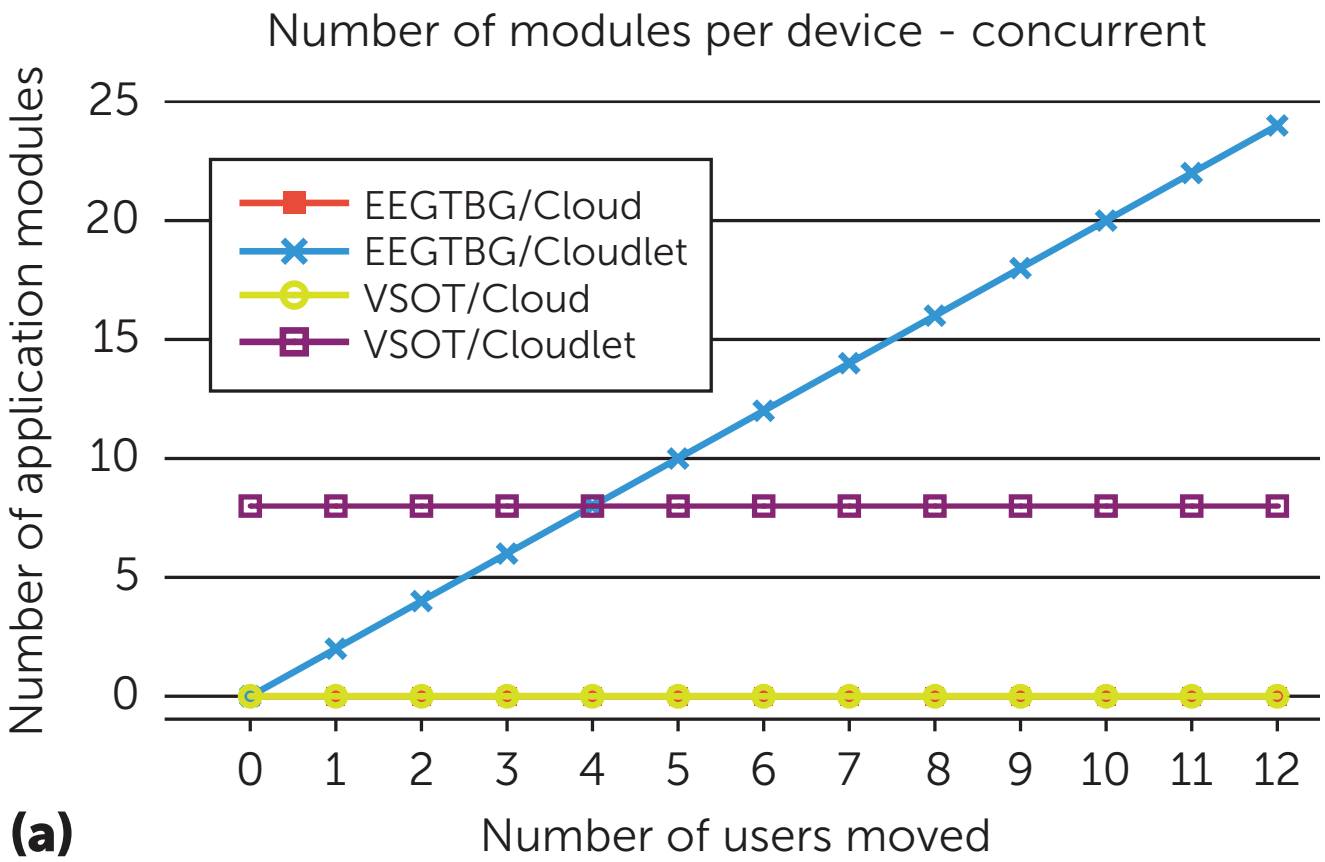

EEGTBG application loop
Delay (ms)
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1
2
3
4
5
6
7
8
9
10
11
12
Number of users moved
Concurrent
FCFS
Delay-priority

(b)

Figure

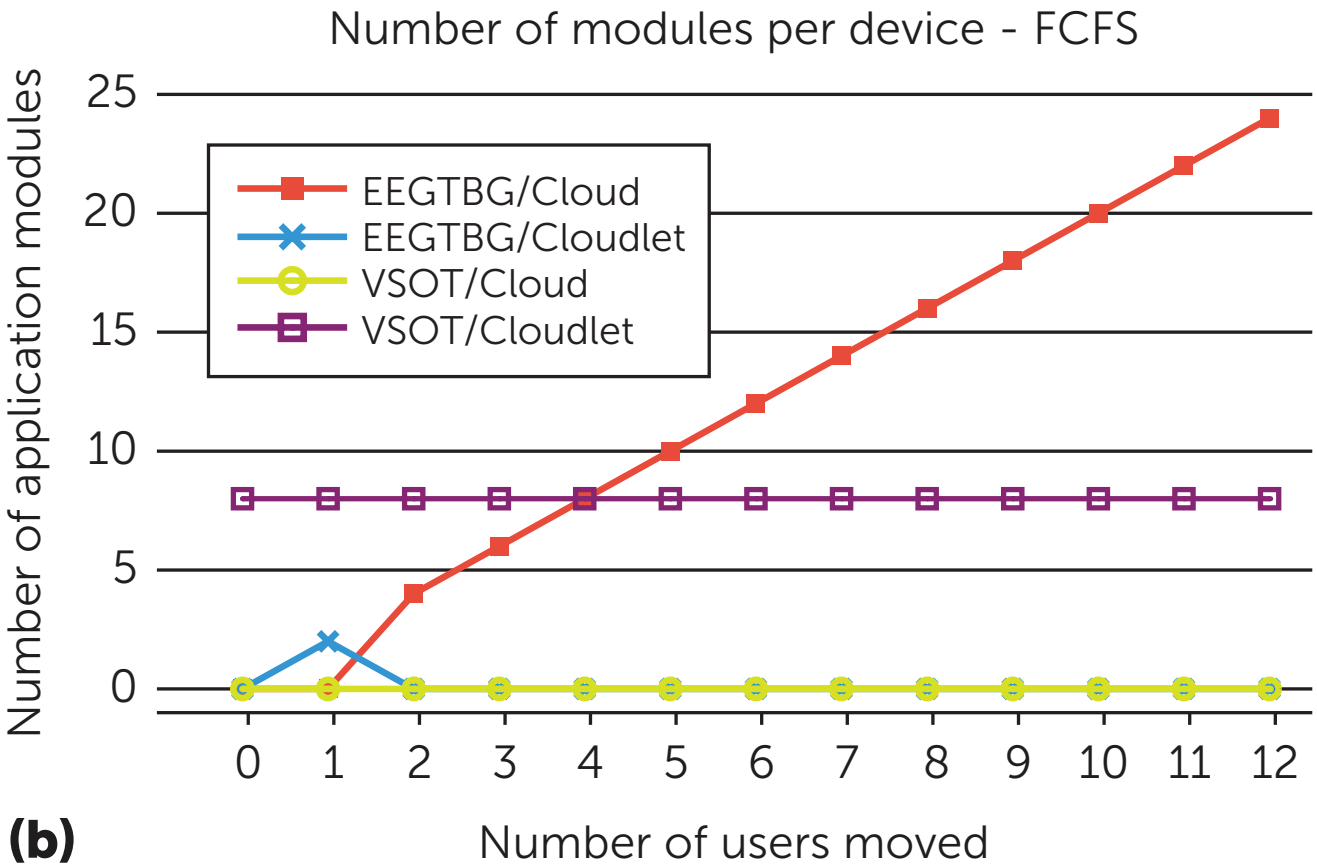

Total network use
Total network use (KBytes transferred)
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
0 1 2 3 4 5 6 7 8 9 10 11 12
Number of users moved
Concurrent
FCFS
Delay-priority
(c)

Figure


Number of modules per device - concurrent
Number of application modules
25
20
15
10
5
0
EEGTBG/Cloud
EEGTBG/Cloudlet
VSOT/Cloud
VSOT/Cloudlet
0 1 2 3 4 5 6 7 8 9 10 11 12
Number of users moved

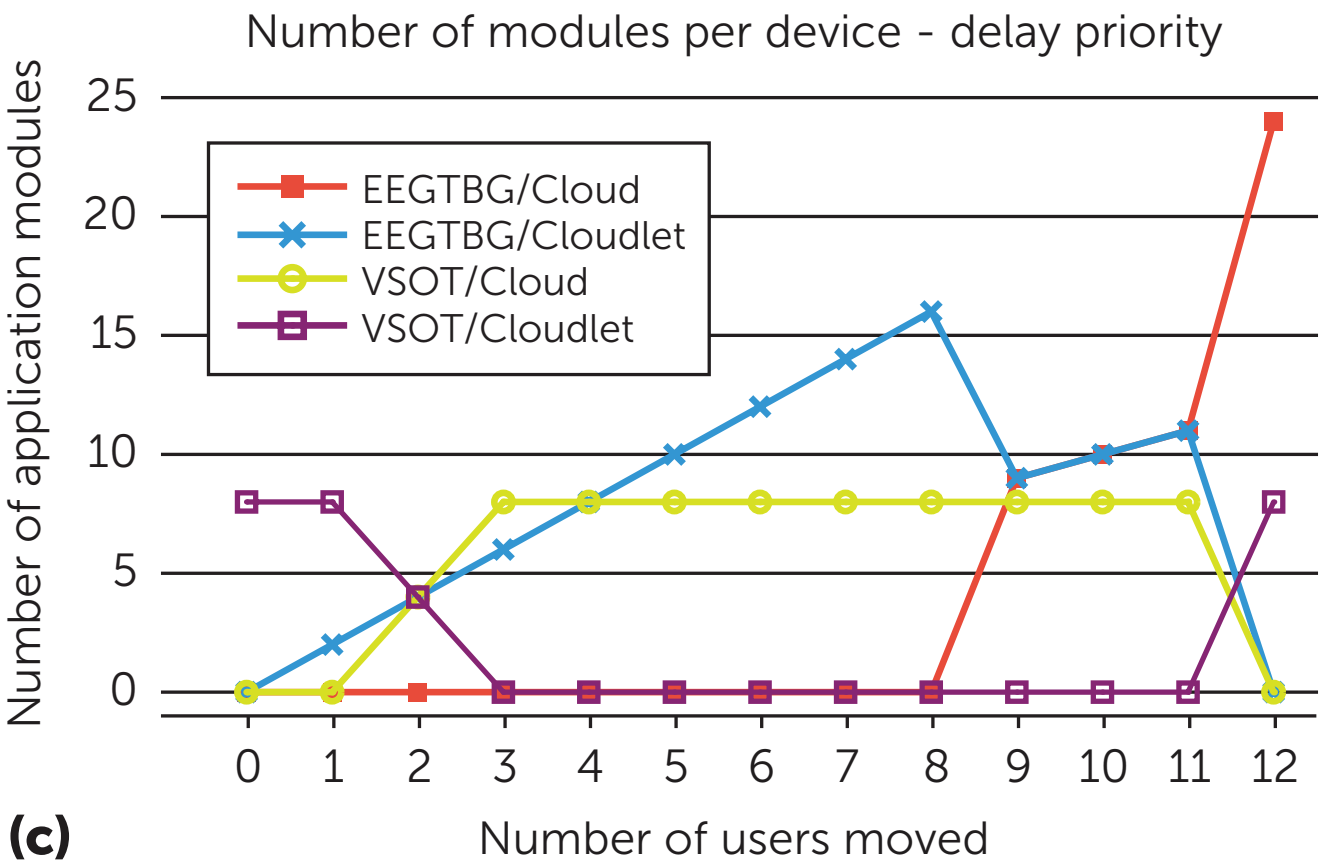
(a)

Figure


Number of modules per device - FCFS
Number of application modules
25
20
15
10
5
0
EEGTBG/Cloud
EEGTBG/Cloudlet
VSOT/Cloud
VSOT/Cloudlet
0 1 2 3 4 5 6 7 8 9 10 11 12
Number of users moved

(b)

Figure


Number of modules per device - delay priority
Number of application modules
25
20
15
10
5
0
EEGTBG/Cloud
EEGTBG/Cloudlet
VSOT/Cloud
VSOT/Cloudlet
0 1 2 3 4 5 6 7 8 9 10 11 12
Number of users moved

(c)

Figure

1 Introduction

2 Fog Computing Model

3 Related Work

4 Applications

5 Allocation Policies

6 Challenges and Future Directions

7 Conclusions

Challenges and Future Directions

1 Introduction

2 Fog Computing Model

3 Related Work

4 Applications

5 Allocation Policies

6 Challenges and Future Directions

7 Conclusions

Conclusions

Summary and Conclusions

Mobility-Aware Application Scheduling in Fog Computing

Luiz F. Bittencourt Javier Diaz-Montes Rajkumar Buyya
Omer F. Rana Manish Parashar

Presenter: Maicon Ança dos Santos

September 21, 2018