facebook
Focal Impact
The Service Pyramid

Mike Elkin
Production Engineer @ Facebook
Journey Guide

• Buildings-as-a-Service
• Hierarchy of Needs
• Service Pyramid
• Case Study: Datacenters @ Facebook
Datacenter Scale @ FB

• Prineville, Oregon
• Forest City, North Carolina
• Luleå, Sweden
• Altoona, Iowa
• Fort Worth, Texas
• Clonee, Ireland
• Los Lunas, New Mexico
• Odense, Denmark
DC == ???

Source: Facebook – Tony Quinn & Mike Elkin
Maslow & HisHierarchy
The Service Pyramid
Hardware & Provisioning
Hardware & Provisioning

Server Monitoring & Lifecycle

Server Monitoring & Lifecycle

Server Monitoring & Lifecycle

Order → Deploy → Provision → Repair → Decom → Order

Service Monitoring & Deployment

Source: https://www.flickr.com/photos/steevithak/
Scaling, DR, Advanced Monitoring

Source: https://www.flickr.com/photos/fischler/ || vmauge@fb
Performance Tuning & Capacity

1% stuff

WEIRD STUFF

P99
P99.9
P99.999999

Source: https://www.flickr.com/photos/travelwayoflife/
Risk: Premature Custom Tooling
Hardware & Provisioning

Server Monitoring / Lifecycle

Service Monitoring
Deployment

Server Monitoring / Lifecycle

Hardware & Provisioning

Scaling / DR

Perf Tuning

1% stuff

Custom Tooling, Maybe.

Shared Tooling
Case Study: Datacenters @ FB
Hardware & Provisioning

Server Monitoring / Lifecycle

Service Monitoring

Deployment

Scaling / DR

Perf Tuning

1% stuff

Less Mature

More Mature
Remote Monitoring

Data Processing

Asset Tracking

Production

BMS

Electrical Equipment

Mechanical Equipment

Facilities

Source: I made this
Guidance, Not Prescription
Hardware & Provisioning

Server Monitoring / Lifecycle

Service Monitoring / Deployment

Scaling / DR

Perf Tuning

1% stuff

We are the 99%

Doesn’t exist

meh

Real bad

What’s perf tuning?

bad
Deliver Impact Quickly
Speak The Same Language
“Despite being built for a different engagement than what we have, it adapted to help us have focal impact. A++++ would use again.”

— mikeelkin2, right now
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