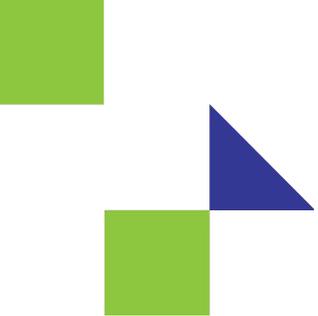




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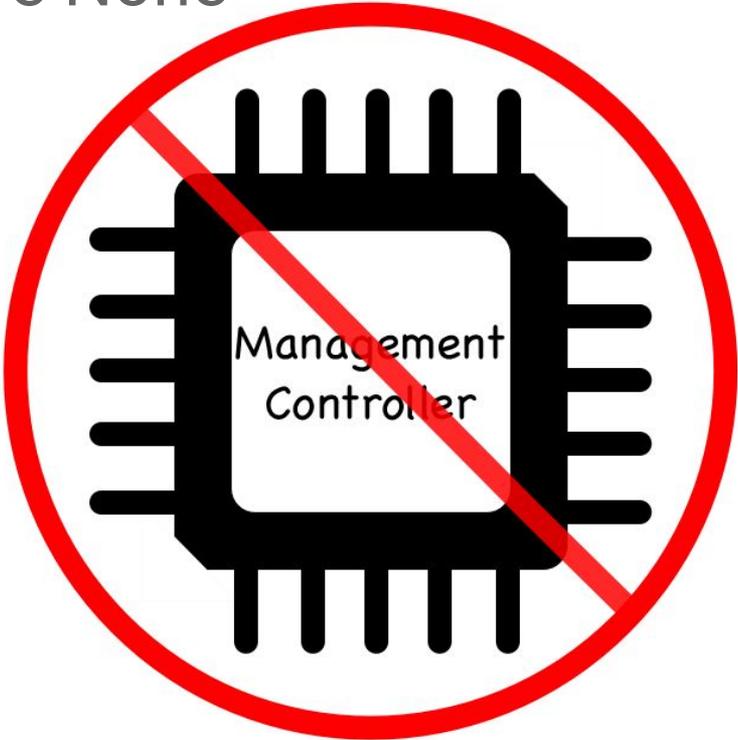
OpenBMC in Google Platforms

Nancy Yuen
Software Engineer
Google

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At First There were None



Early MCs at Google

Move some management functions off to a small microcontroller:

- in-band telemetry: thermal, power
- In-band debug functions
- Limited out-of-band remote debug functions
- Security features
- Closed thermal control loop

At Scale, Automated, In-Band Management System

Anomaly Detection

Smarter Diagnosing

Machine Management

Data Collection Part Health

Monitoring & Diagnosis

BMCs at Google

- Initially driven by Google/Rackspace OCP server, Zaius
- Support BMCs for future server deployments
- Challenge: meet feature parity with microcontroller solution

Future of BMCs at Google: Agentless Management

- Virtual management network, MCTP
- BMC manages all components of a machine
- BMC can disable host access if there's a threat
- Improve security model both between host-BMC and BMC-network

Focus For 2018

Reliability: Bugs and regressions are missed early on

- Unit tests, functional tests, integrations tests
- Merge, build, test, release automation

Security: OpenBMC source out of date with security patches

- Security audit
- Automate identifying and applying security fixes

Focus For 2018

Core Features

- Exporting event and error info
- IPMI improvements
- Firmware updates
- Run time platform configuration

Future Roadmap

- MCTP
- Improve BMC-NC-SI security model
- Provide additional remote debugging feature

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