

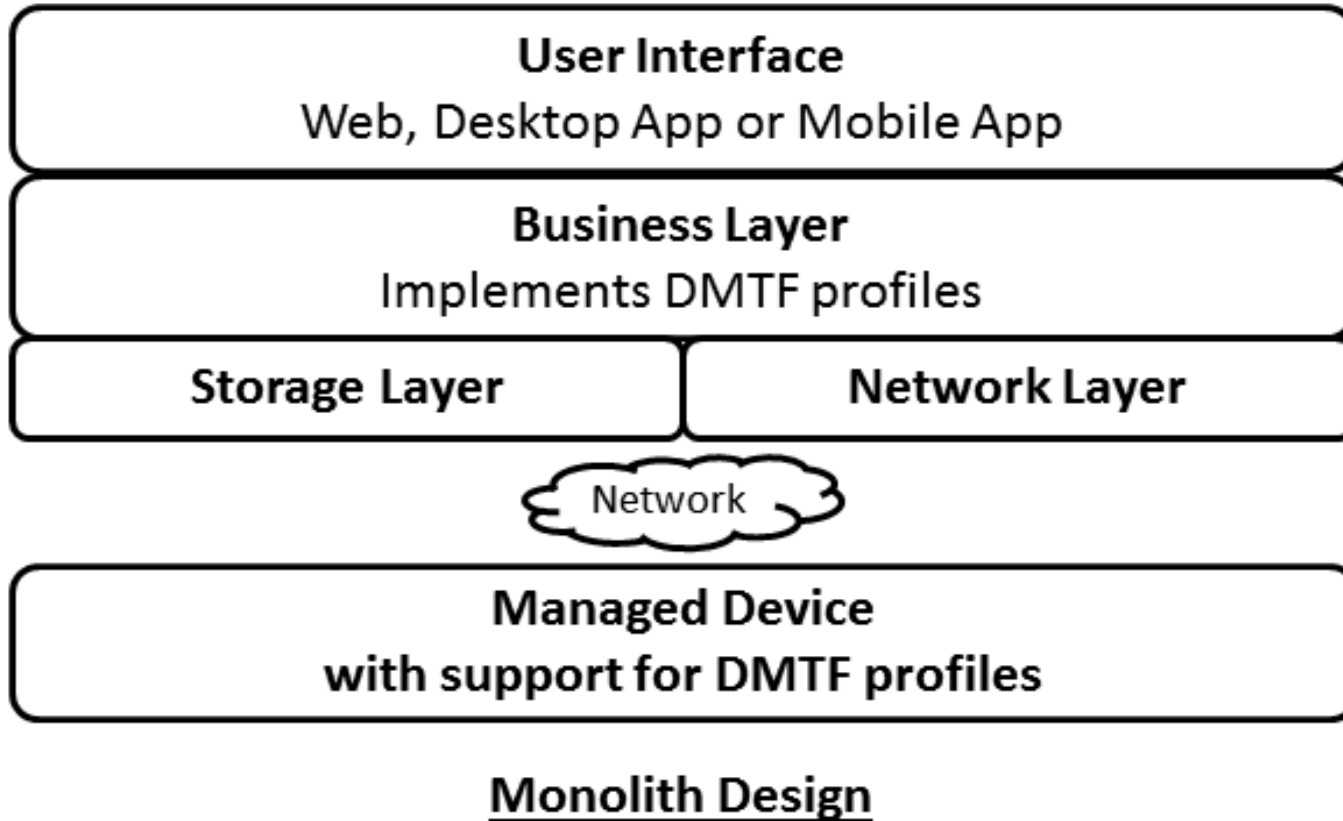
A photograph of a man in a blue and white striped shirt and glasses, looking upwards and pointing towards a server rack in a data center. The server racks are black with various ports and indicators. The image is partially obscured by a white diagonal shape in the top left and a teal diagonal shape in the bottom left.

SCALABLE MICROSERVICE BASED ARCHITECTURE FOR ENABLING DMTF PROFILES

DIVYANAND MALAVALLI
SIVAKUMAR SATHAPPAN
DCM 2015 WORKSHOP, 2015-11-09

- ▲ Traditional approach to architecting manageability application
 - Benefits & drawbacks
- ▲ Approach to architecting management application with microservices
 - Architecture benefits & drawbacks
 - Guidelines implementing DMTF profiles
 - Benefits to management application

TRADITIONAL MANAGEMENT APPLICATION ARCHITECTURE



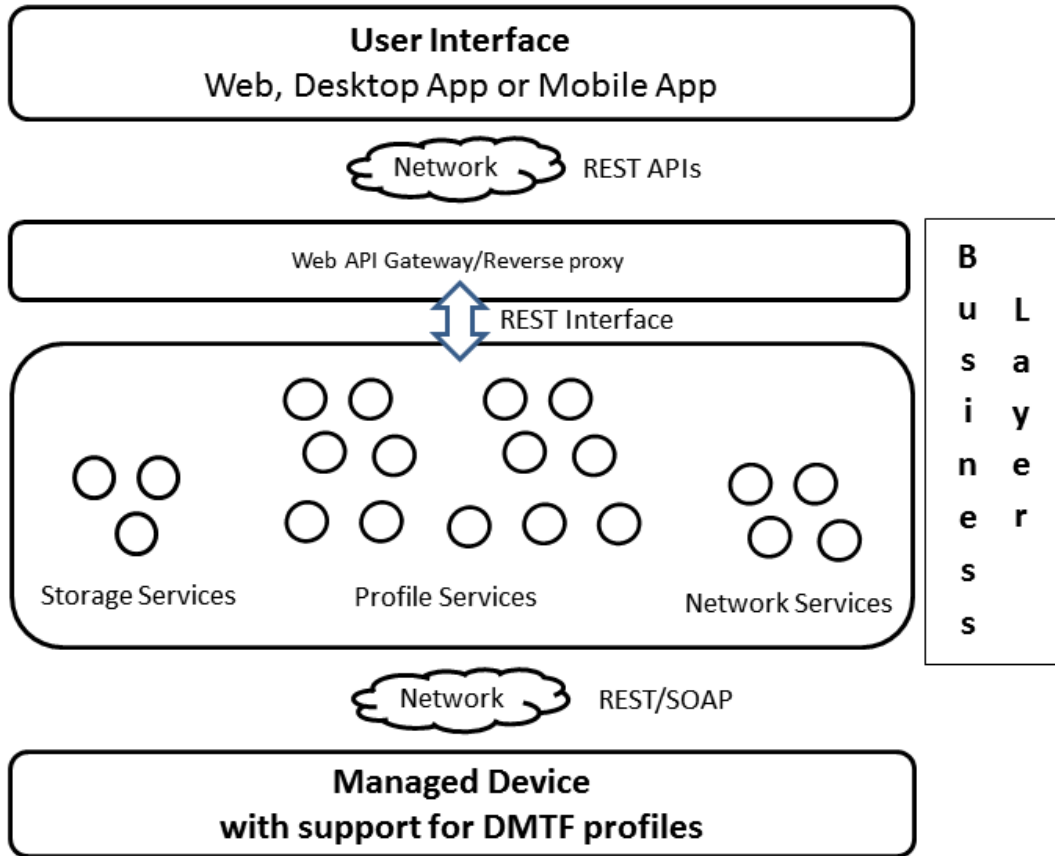
▲ Benefits

- Simplicity
- Single process
- Easy to build, test
- Open to refactoring

▲ Drawbacks

- Update is difficult
- Code complexity
- Not open to scaling
- Application failure
- Partial feature

MICROSERVICES PROPOSAL FOR MANAGEMENT APPLICATION



Proposed design for enabling DMTF profiles

▲ Benefits

- Update any profile
- Withstand failure
- Scale based on demand
- Low cognitive load

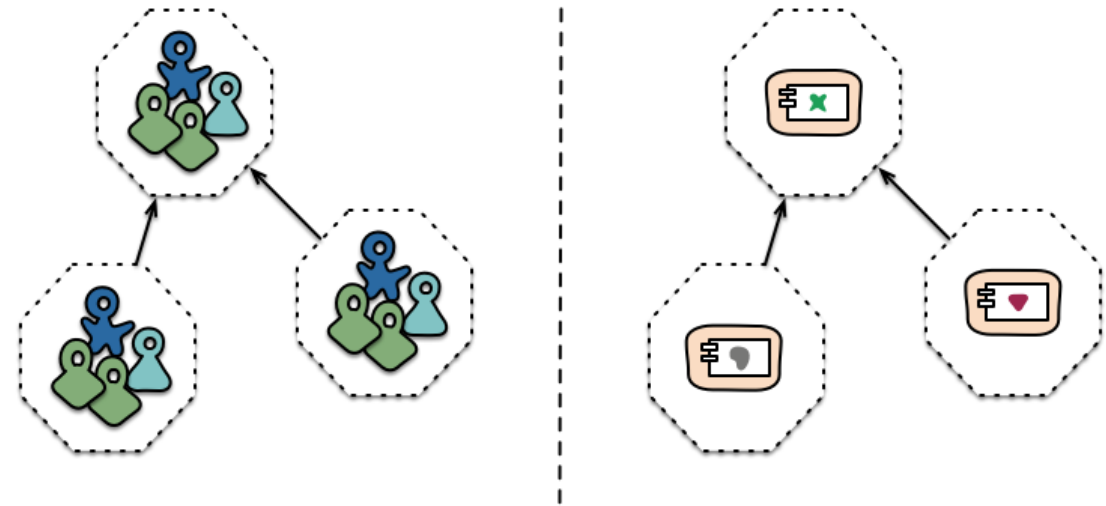
▲ Drawbacks

- Network reliability, latency
- Design, setup complexity
- Operation automation

SUGGESTED MICROSERVICES GUIDELINES FOR DMTF PROFILES



- ▲ Each DMTF profile is service
- ▲ Each service is self-contained & decentralized
- ▲ Each service is smart, inter-connected via HTTP API calls
- ▲ Service deployment & monitoring is automated
- ▲ Services support semantic versioning
- ▲ Organization structure, culture shift



Cross-functional teams...

... organised around capabilities
Because Conway's Law

▲ SOAP protocol

- Security, messaging

▲ REST style

- Client-Server
- Stateless
- Cacheable
- Uniform Interface
- Layered System

▲ Microservice architecture

- Support SOAP & REST together

BENEFITS OF MICROSERVICES FOR MANAGEMENT APPLICATION



- ▲ Each profile can be released independently
- ▲ Scaling based on demand for a profile
- ▲ Lower cognitive load on developers
- ▲ Practice of continuous delivery (observe, orient, decide, act)
- ▲ Large team management is easy
- ▲ Solution is language agnostic
- ▲ Embrace change faster

DISCLAIMER & ATTRIBUTION



The information presented in this document is for informational purposes only and may contain technical inaccuracies, omissions and typographical errors.

The information contained herein is subject to change and may be rendered inaccurate for many reasons, including but not limited to product and roadmap changes, component and motherboard version changes, new model and/or product releases, product differences between differing manufacturers, software changes, BIOS flashes, firmware upgrades, or the like. AMD assumes no obligation to update or otherwise correct or revise this information. However, AMD reserves the right to revise this information and to make changes from time to time to the content hereof without obligation of AMD to notify any person of such revisions or changes.

AMD MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE CONTENTS HEREOF AND ASSUMES NO RESPONSIBILITY FOR ANY INACCURACIES, ERRORS OR OMISSIONS THAT MAY APPEAR IN THIS INFORMATION.

AMD SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT WILL AMD BE LIABLE TO ANY PERSON FOR ANY DIRECT, INDIRECT, SPECIAL OR OTHER CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF ANY INFORMATION CONTAINED HEREIN, EVEN IF AMD IS EXPRESSLY ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

ATTRIBUTION

© 2015 Advanced Micro Devices, Inc. All rights reserved. AMD, the AMD Arrow logo and combinations thereof are trademarks of Advanced Micro Devices, Inc. in the United States and/or other jurisdictions. Other names are for informational purposes only and may be trademarks of their respective owners.