



ZABBIX Full-stack monitoring in VUCA



Shawn CAI | Technical Manager
China Merchants Bank



About ME



Xianghua CAI / SHAWN

- Zabbix Certified Professional
- Official translator of ZABBIX manual
- Official translator of EXIN Devops handbook
- DevOps Master, ITIL, MCSE, RHCE, VCP, CCNA, JNCS

8+ years experience in Consulting and Banking industry

5+ years experience with ZABBIX





CONTENT



01

the challenges
in **VUCA**

02

the **GOAL** of
Full-stack Monitoring

03

WHY
Zabbix?

04

Showcases:
Best Practice in Fintech





PART 01

the challenges
in **VUCA**





We didn't do anything wrong but somehow we've lost.

--Stephen Elop (Nokia CEO)

VUCA



Volatility

Uncertainty

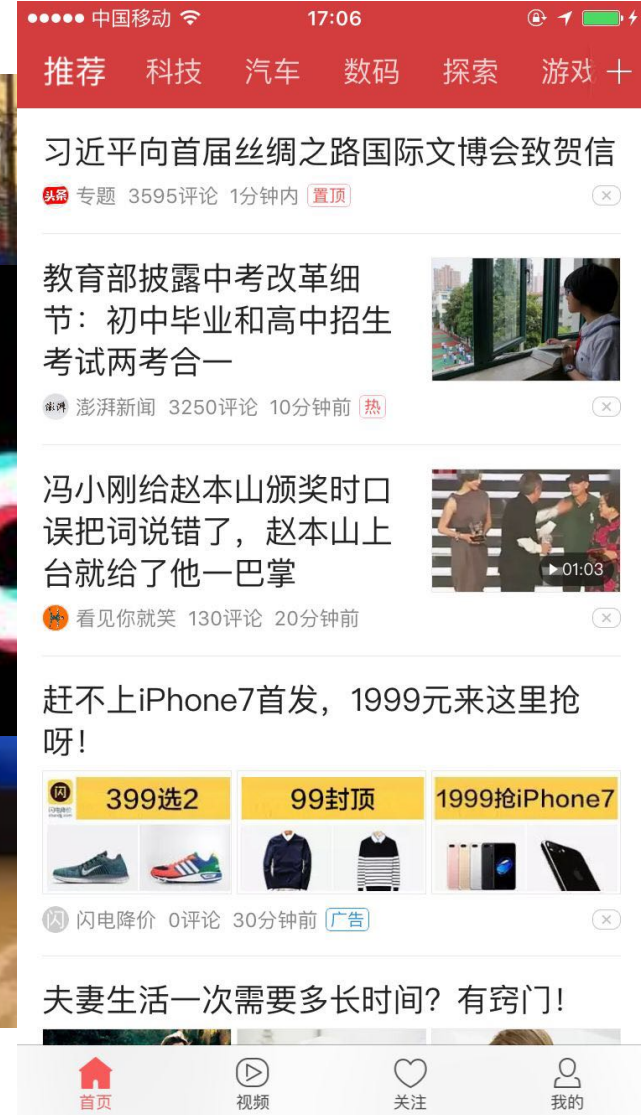
VUCA

Complexity

Ambiguity

CHANGES in last decade

	PAST	NOW
PAYMENT	Cash	APP
FOOD	Restaurant	APP
SHOPPING	Mall, Store	APP
TAXI	On street	APP
MEDIA	TV, Radio	APP
BANKING	Counter	APP
INFO	News, Magazine	APP





CHANGE
means
CHALLENGE

VUCA:
IT is changing, **DevOps** is coming!



	~5 years ago	Now
Server	~300	~5000
Application	~50	~300
Staff	~100	~500
Frame	Standalone/ Concentration	Micro-service/ Distribution
Language	C#, JAVA	C#, JAVA, Python, Go, Ruby...

It is **COMPLEX**...



Hardware

- Huawei
- DELL
- HP
- IBM



Storage

- NetApp
- EMC
- HP
- DELL



OS

- Windows
- Linux
- AIX
- ESXi



Middleware

- Tomcat
- Nginx
- WAS
- IIS



Database

- MySQL
- SQL Server
- Redis
- PostgreSQL



Application

- Infrastructure
- OA
- Micro-Service
- Mobile App



More Layers



More Platforms



More Skills

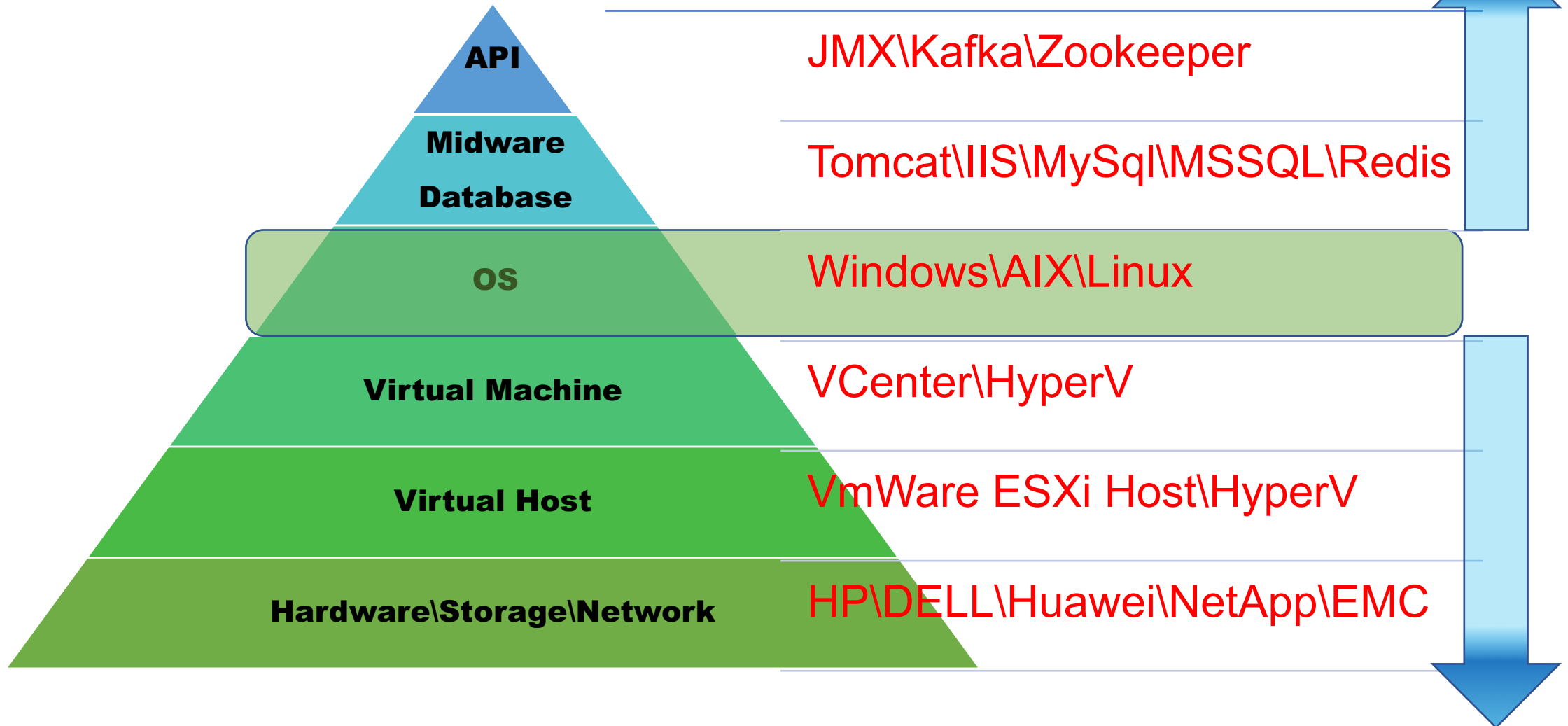


PART 02

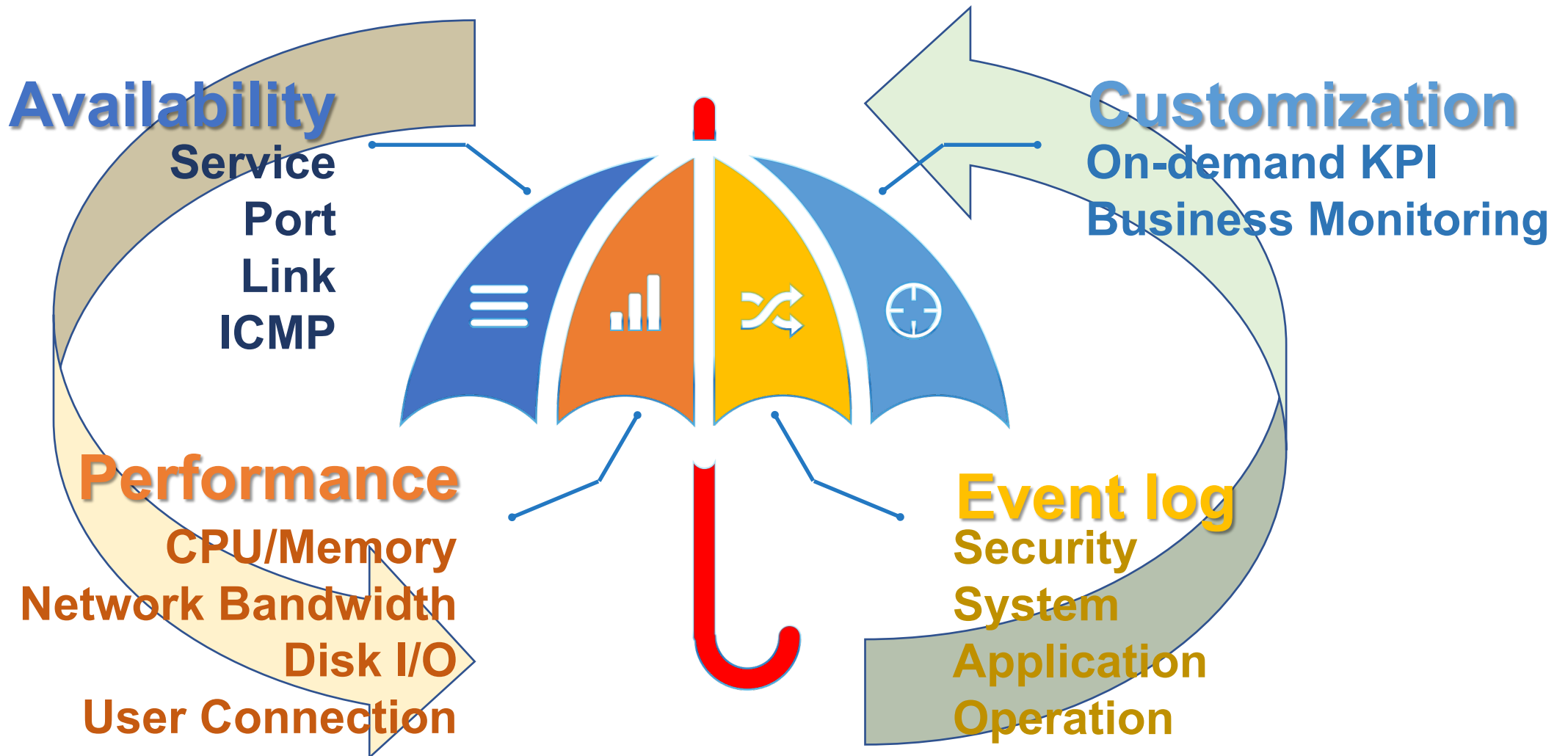
the **GOAL** of
Full-stack Monitoring



The **SCALE** of monitoring



The **DEPTH** of monitoring





The **GOAL** of Monitoring



01

Universal Monitoring

- *All-in-one*
- *High efficiency and accuracy*

02

EFFORTLESS Deployment

- *Large-scale*
- *Customization*
- *Flexible*
- *Open Source*


03

Inventory Management

- *Collect inventory data*
- *Provide data to CMDB*
- *Automatic / Semi-automatic*

04

API

- *ITIL / Workflow*
 - *DevOps*
 - *Continuous Integration*
- 



PART 03

WHY
ZABBIX?



CHOICES : SCALE x DEPTH



DEPTH



SCALE





PART 04

Showcases:
Best Practice in Fintech





Best Practice in Fintech



01

Distributed Monitoring

02

Two-Dimension (Platform/Service-line)

03

Alerting & Notifications

04

Dashboard/Screen

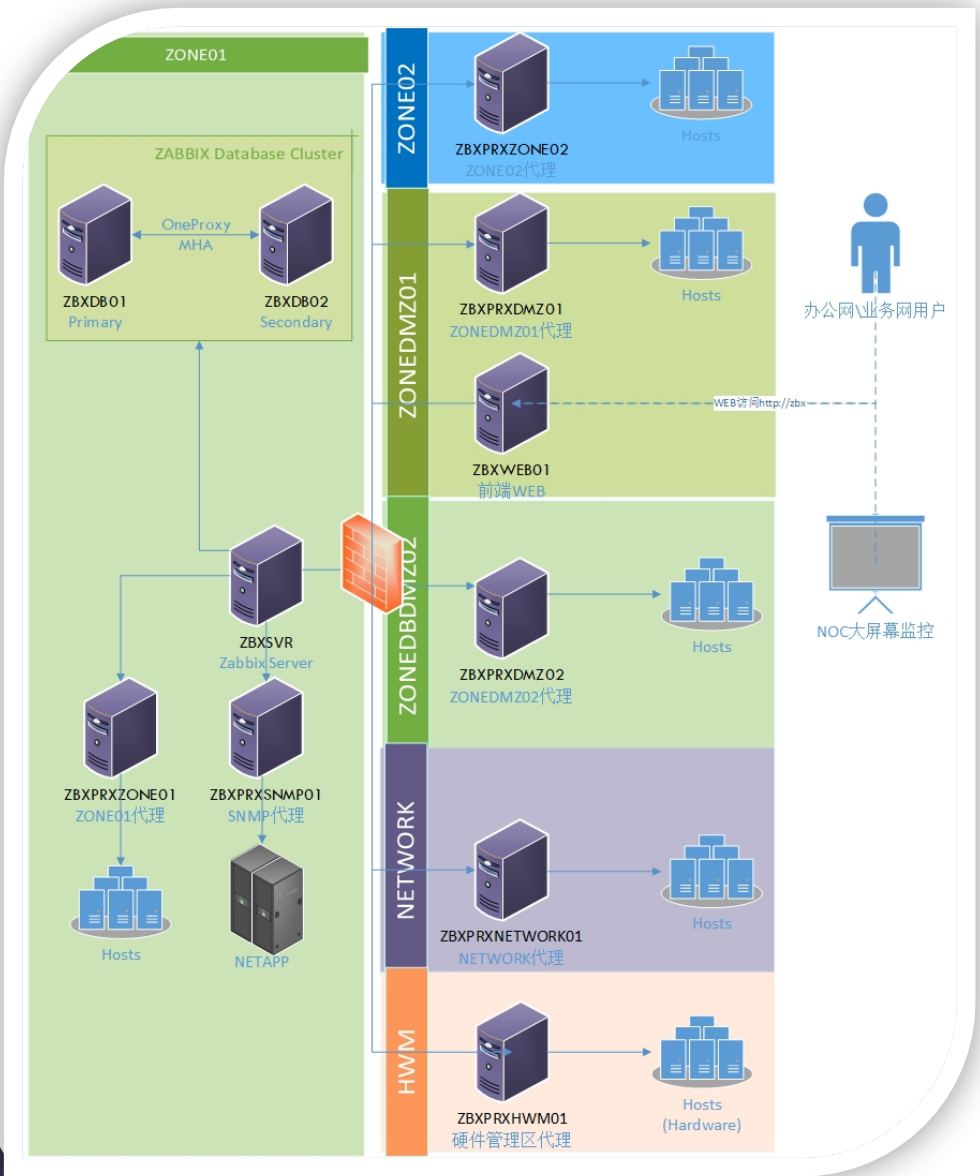
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Out-of-Band Automation

06

Continuous Integration / Continuous Delivery

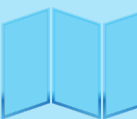
Distributed Monitoring



Database improvement:
MHA + One-Proxy ; MySQL Partition



Distributed structure:
1-2 proxies per area



Web access:
Admins / helpdesks operate via Web



Security:
Just open limited ports on Firewall

Two-Dimension (Platform/Service-line)



Platform

- P-DB-SQL
- P-App-Tomcat
- P-OS-Windows
- P-HW-NetApp

Service-line

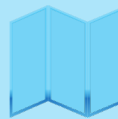
- S-DevOps-APP1
- S-Infra-APP2
- S-HelpDesk-APP1
- S-Data-App4



**Two views:
System + Business**



**Every host has to belong
at least one P group and one S group**

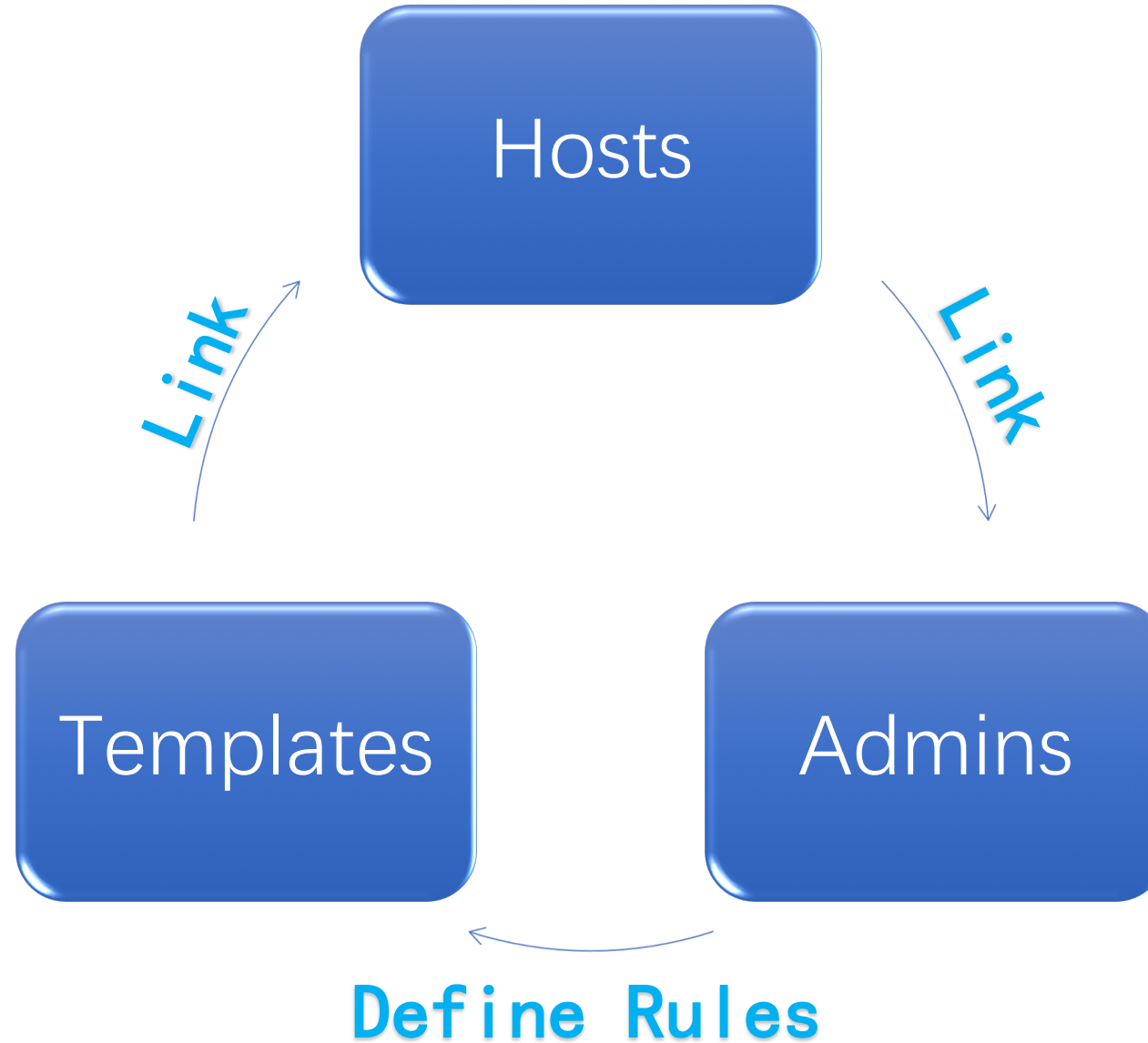


**P group -> Host Template
S group -> User group**



**Reduce monitoring noise
Keep monitoring accuracy**

Two-Dimension (Platform/Service-line)

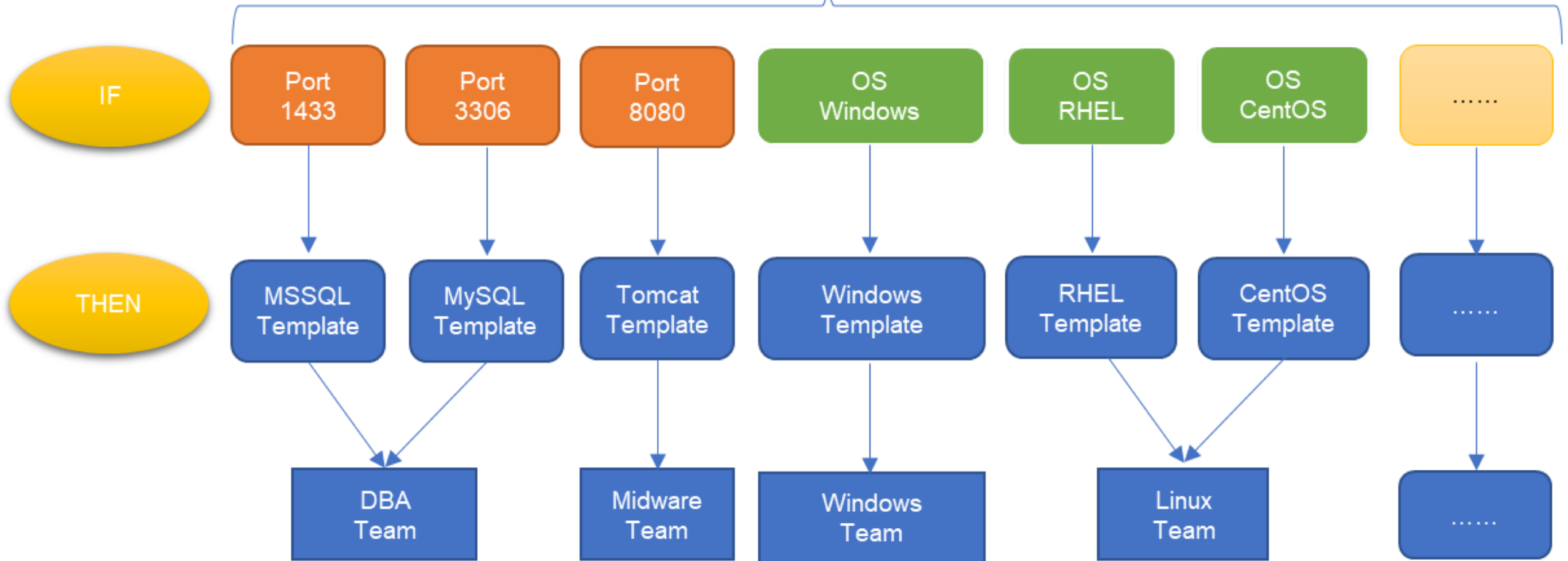


Two-Dimension (Platform/Service-line)



ZABBIX

SCAN
192.168.0.0/16
123.1.0.0/24



Alerting & Notifications



HOST GROUP ISSUES [17:37:42]

Host	Issue
03	Port 80 Unavailable for 2 minutes on [redacted]
02	Port 80 Unavailable for 2 minutes on [redacted]
01	Port 80 Unavailable for 2 minutes on [redacted]
02	Free disk space is less than 20G on volume D: on [redacted]
101	Free disk space is less than 20% on volume C: [redacted]
1	DB MIS FreeSpace<50G on [redacted]
03	Free disk space is less than 20% on volume D: on [redacted]
102	Free disk space is less than 20% on volume O: on [redacted]

用户系统
1 Problem


核心交易系统
OK

登陆系统
OK


网络核心设备
OK

问卷系统

硬件监控



Trigger severity:
Disaster, Warning, Info



Escalation:
Warning->Admins
Disaster->Team leader



Multi-notify:
Sound, SMS, Email, Screen...

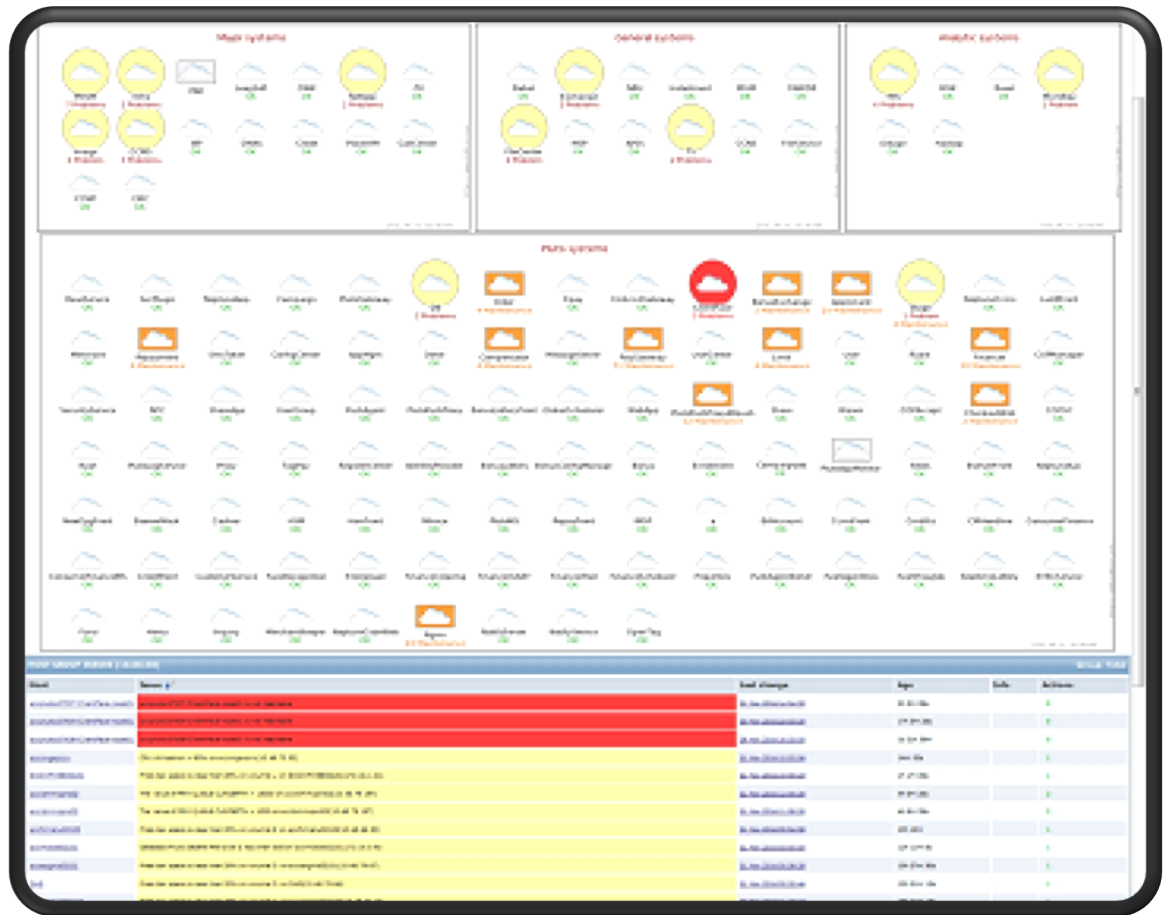


Detailed alert contents:
Hostname, value, poc...

[ZBX] *PROBLEM*--Free disk space is less than 20% on volume C: on [redacted] [redacted] ([redacted])--
Current value: 17.98 %. Please call Cai Xianghua (1850166 [redacted]) immediately.

Trigger Status
Trigger Name
Host Name/IP
Value
PoC
Phone

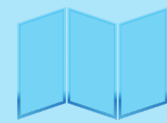
Dashboard/Screen



Show in Business view



Show the issues directly



Customized Dashboard

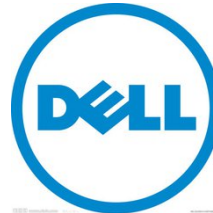
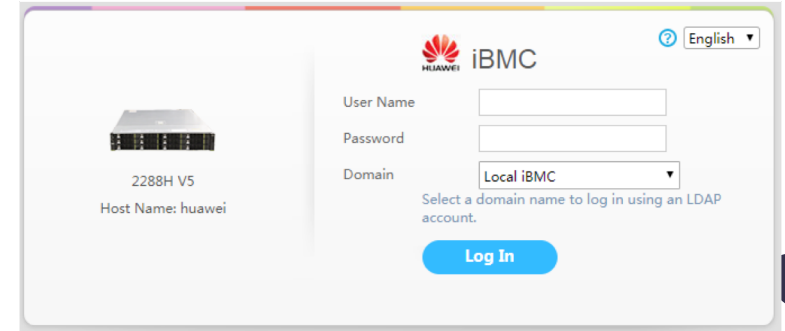
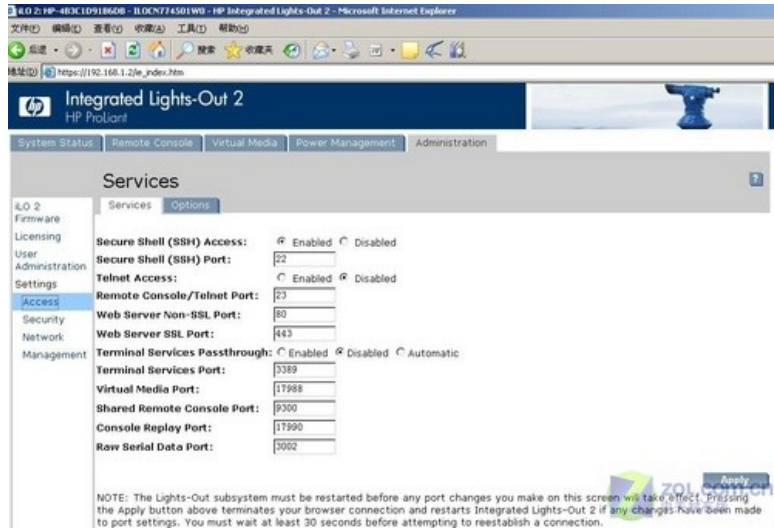


Different notification methods

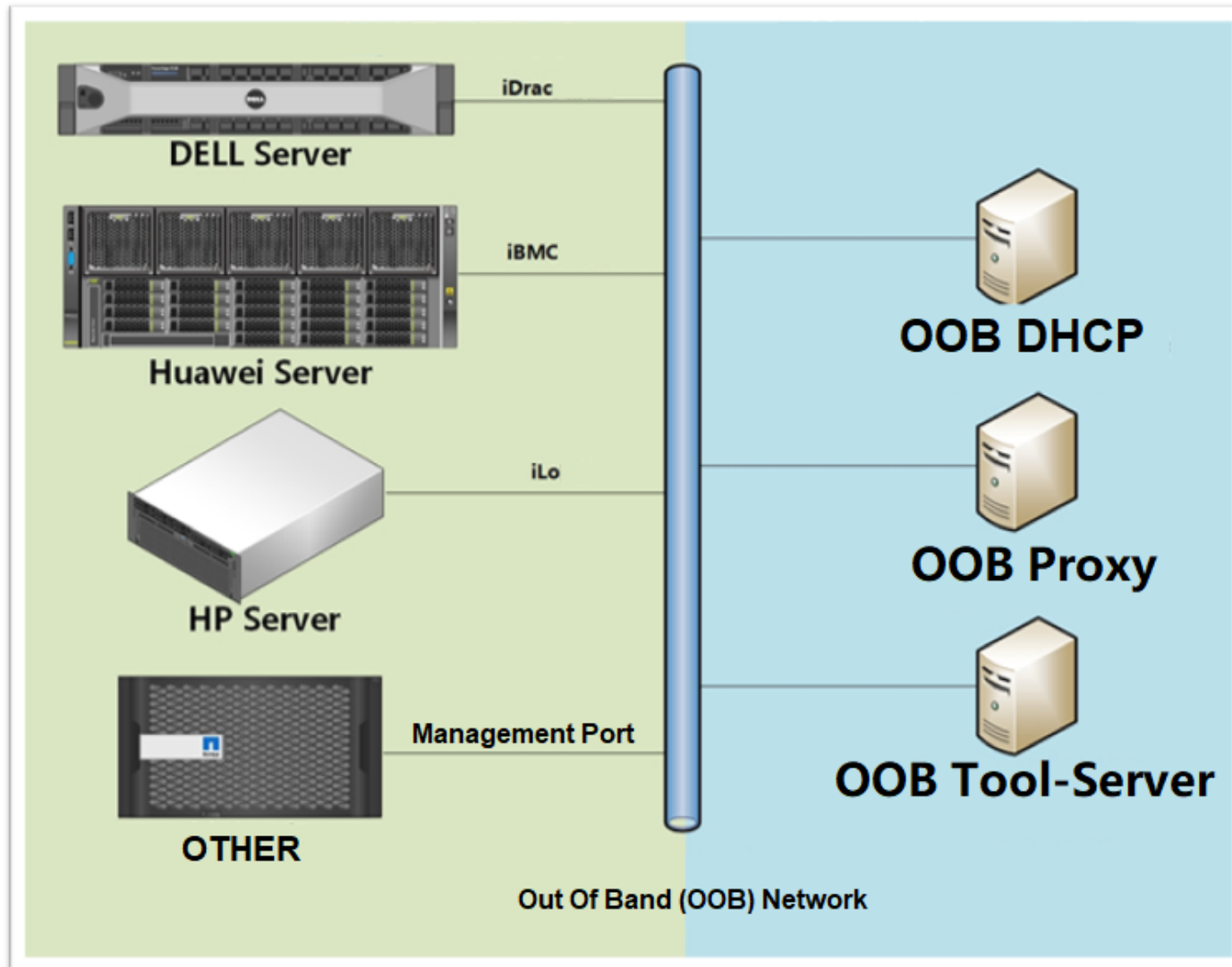
Dashboard/Screen



Out-of-Band Automation

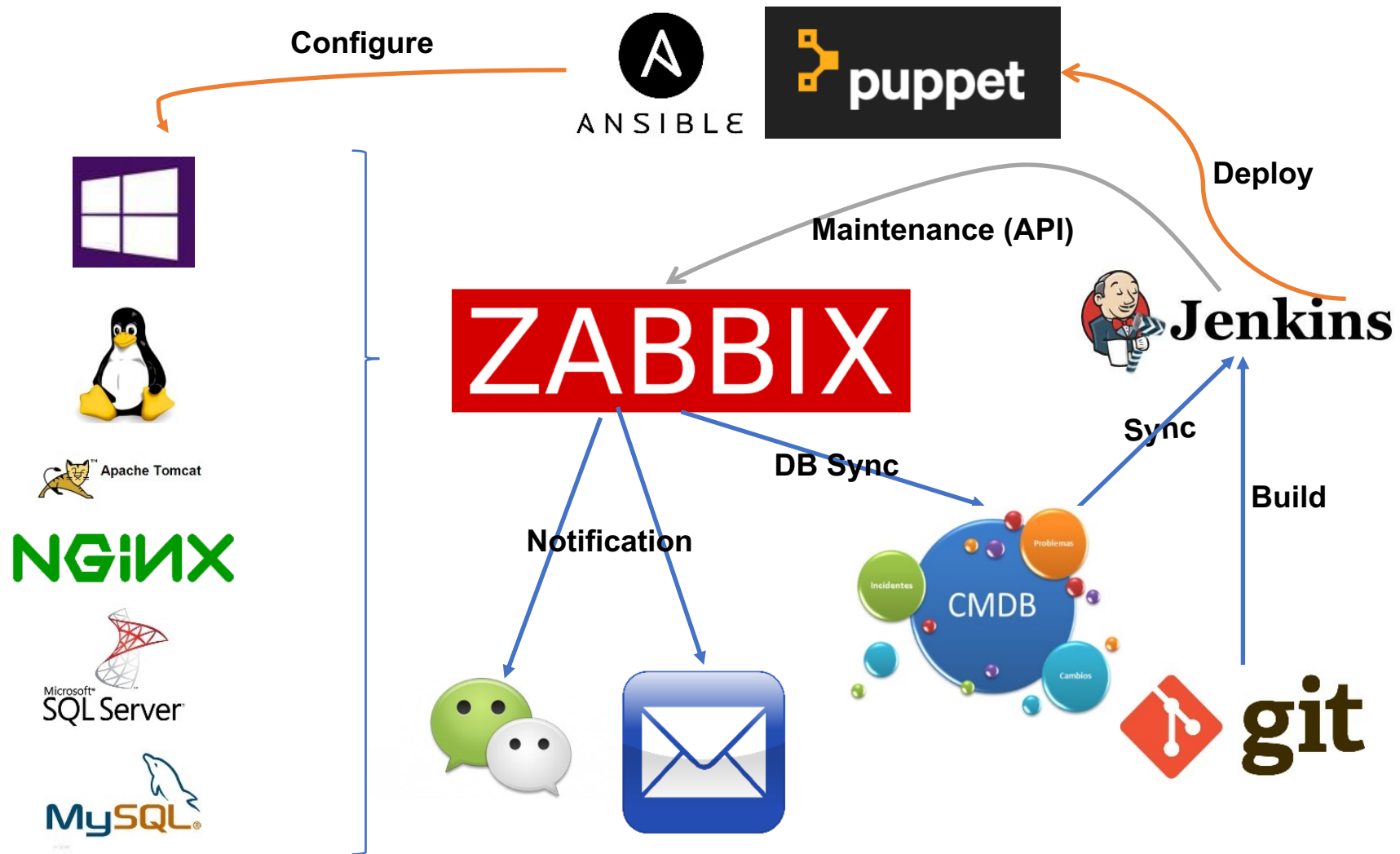


Out-of-Band Automation



1. The remote control/management ports of all devices connected to OOB network.
2. DHCP provides the IP address for all devices.
3. Use network discovery to add these devices as HOSTs.
4. Use IPMI template to collect hardware data for CMDB.

Continuous Integration / Continuous Delivery





Q & A





THANKS

