DCOS
面向数据中心的运营操作系统

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What is DCOS

**Data Center Operating System** = Management engine for private cloud over critical IT resource

<table>
<thead>
<tr>
<th>Full Features</th>
<th>Born Out Of</th>
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<tbody>
<tr>
<td>► Server management</td>
<td>► Tencent million server operation</td>
</tr>
<tr>
<td>► Network device management</td>
<td>► Tencent's complex business scenario</td>
</tr>
<tr>
<td>► Configuration management</td>
<td>► Tencent hardware device diversity</td>
</tr>
<tr>
<td>► Alarm management</td>
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<table>
<thead>
<tr>
<th>Modular &amp; Hierarchical Design</th>
<th>Availability &amp; Scalability</th>
</tr>
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<tbody>
<tr>
<td>► Modular by feature</td>
<td>► Rich open API to support customized service development</td>
</tr>
<tr>
<td>► Module based installation</td>
<td>► Disaster recovery oriented for data and service with 2A</td>
</tr>
<tr>
<td>► Support distributed and central deployment</td>
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</tbody>
</table>
DCOS Functional Block Diagram

Operation Access (VPN)

Customized Cloud Management Portal

DCOS
- BME
  - Remote control
  - Deployment
  - OOB Mgmt
- OneMonitor
  - NET QoS
  - NET xflow
  - NET SNMP
  - Customized
  - Server Hardware
  - Server Others
- OneAlert
  - Customized Alert
  - Network Alert
  - Server Alert

Cloud OS
- Cloud Mgmt System
  - Vstation OSS
  - TGW OSS
  - TDSQL OSS
  - Other

Server Hosting
- Public Cloud Service

API

CMDB
- Data Collection and Audit (ADS)
  - Rack
  - Slot
  - Server
  - TOR/Port
  - IP
  - DDC
  - VPN

Server Systems
Network Systems
DCOS Function List

BME
- Cfg Mgmt (CMDB)
  - IDC/Server/Net Device
  - Export/Lines
  - IP Resource
  - Server Parts
  - TOR Ports
- OOB & Deployment
  - Power Operation
  - PXE Install
  - Quick Reinstall
  - Oob Passwd Management
- Server Control
  - Command Execution
  - File Transfer
  - Reset OS Passwd
  - Work Platform

OneMonitor
- Server Monitor
  - OS Performance
  - OS Status
  - Process/Port
  - Hardware
  - Custom
- Network Monitor
  - SNMP
  - Syslog
  - Xflow
  - Quality Detection
  - Connectivity Detection
  - Custom

OneAlert
- Alarm Mgmt
  - Alarm Strategy
  - Alarm Deduplication
  - Alarm Judgement
  - Alarm Masking
  - Alarm Notification
  - Alarm Recovery
DCOS Modules - CMDB

- Based on Tencent's years of experience in IDC operations.
- It covers lifecycle management of physical information such as servers, network devices and so on.
DCOS Modules - Server Management

- Based on Tencent's deployment experience of hundreds of models, and management experience for massive servers.
- Responsible for the management of physical servers, including automatic resource discovery, out-of-band management, OS deployment, and remote control.
**DCOS Modules - Server Monitor**

- Software and hardware information collection and alarm, while providing middleware monitoring and custom data reporting.

<table>
<thead>
<tr>
<th>OS Basic Monitoring</th>
<th>Hardware Monitoring</th>
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<tbody>
<tr>
<td>► CPU/Memory</td>
<td>► Power&amp;Fans</td>
</tr>
<tr>
<td>► Disk/I/O</td>
<td>► Network Card&amp;Memory</td>
</tr>
<tr>
<td>► TCP/UDP/Network Card</td>
<td>► HardDisk&amp;Raid</td>
</tr>
<tr>
<td>► ...</td>
<td>► Temperature</td>
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<th>APP&amp;Middleware Monitoring</th>
<th>Custom Monitoring</th>
</tr>
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<tr>
<td>► Process&amp;Port.</td>
<td>► Provide reporting tools to support business custom report data.</td>
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<tr>
<td>► Custom configuration for middleware monitoring, such as mysql and so on.</td>
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DCOS Modules - Network Monitor

- Responsible for collecting port configuration, port traffic information, device logs, session traffic, and network quality detection.

**SNMP** - Custom configuration acquisition template
Port configuration, in/out traffic, device status; abnormal discovery, etc.

**Device Logs** - Custom alert keyword template
Syslog collection, port-level log alarms.

**Network quality detection** - Custom probe task
Network anomaly, network packet loss & delay.

**Session traffic** - (src_ip, dst_ip, src_port, dst_port, protocol, direction)
Support sflow/netflow/netstream protocol, collect traffic and summarize storage.
DCOS Modules - Alarm Mgmt

- Provides alarm strategy configuration, alarm judgment, alarm deduplication, alarm masking, alarm notification, and alarm recovery.
DCOS Project Landed & Openess

CMDB
- IDC
- Server
- Network Device
- IP Resource
- IDC line
- IDC Export

Server Related
- File transfer
- Command execution
- OS deployment
- OOB mgmt
- Server monitor

Alarm Related
- Custom alarm management
- Server alarm management
- Network alarm management

To Be Continue
- Network quality
- Session traffic
- SNMP
- SYSLOG
- Hardware monitor

- More than 15 cloud customers landed.
- Server size ranges from a few hundred to tens of thousands.
- Customer types include banks, exchanges, internet companies, etc.

- Multiple domestic and international patents.
- CMDB has internal open source, other modules are being carried out one after another.
THANKS