



Leo LI

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Objective:

DevOps/ SRE /Software QA

Qualification:

- > 16+ years experience with Cisco /Huawei /H3C campus network engineering and management
- > Excellent network protocol and technology expertise with CCIE / MCSE certification
- > 15 years experience in Windows/ UNIX/Linux/MAC OSX system administration
- > 8+ years Voice experience on Cisco voice solutions
- > Proficient in developing administrative and testing scripts under Linux/UNIX
- > Organized professional with good communication skills
- > Cloud tech with alibaba cloud professional and Oracle cloud Infrastructure

Certifications and Skills:

Certification: CCIE #14577 in Routing/Switching, Security, Service provider written, voice written, MCSE2000, Alibaba Cloud Professional, OCI

Networking protocol: OSPF, ISIS, BGP, QoS, Multicast, STP, PVST, MST, IPV6, AAA, WAE, VSS, MPLS/VPN, L2 Switch technology

IP Security: ACS, IPsec VPN, Web VPN, SSL VPN, AAA, CBAC, ACL, IOS IDS, IPS, Firewall, VPN3000

Wireless: Cisco WLC 4400/5500, LAP 1130/1240/1520, SMB WAP121/321/551/561/371/131/361

Voice: Cisco Call manager, Asterisk, IP PBX, SCCP, SIP, H323, H264

Programming: Python, Bash Shell, TCL,SQL

DB: MangoDB/Mysql/MS-SQL

Automation tools: Puppet, saltstack

Applications: Wireshark, Sniffer

OS: Linux, FreeBSD, Mac OS X, Windows, Solaris

Open Source tools:Freeradius, iptables, selenium, Sipp, rabbitmq

Data Center software: Openstack, VMware

Server: Cisco UCS, IBM, HP, Dell

Testing tools: Ixia, Spirent, Cisco Pagent, Cisco Trex, Iperf

Testing experience: Solution test, Alpha network, Demo test, Feature test.

Working and Project Experience:

Alibaba Group

IDC Senior DevOps engineer 2018/6 - present

Alibaba cloud Intelligence Group - IDC network

*Alibaba self-design switch automation test project. Design and develop alibaba switch automation test framework (robotframework+netmiko+textfsm+trex) and develop automation test script . As team leader to archive automation coverage goal 90%. The automation framework increase whole team productivity near 400%, reduce the 1/3 testing duration now. The automation scripts store into git repo, using jenkins run automation nightly. Also, package all the automation script to docker, easily distribute docker image to cloud environment. Easily for test environment and speedup the environment setup time 16 times.

*Netops team tools development. Deign and develop a pypi package for all netops developer. The lib combined our daily used tools and scripts. This python lib can be installed on different OS. Previously, the tools and scripts need download from oss 1 by 1 and save to specify path. Developer need setup own dev environment on local or remote server, using this pypi package more easier and faster to bring up dev environment. And daily used tools. From the package release already have 1.5k download.

*Network automation system design and development. This system manage Alibaba group's IDC 100k network devices, such as switch/router/firewall and optical devices. Using Alibaba cloud for computing and system scale. Build several micro services to separate the larger system. Avoid when problem happened impact whole system running. We using python scripts build base device library. This is the network automation basis ops lib, all the network ops automation script base the

- *One touch device Diag tool. Gather potential risk devices time-stamp, execute pre-defined automation scripts to collect current device information. Such as traffic/maintenance record/syslog, and point to potential issue. Reduce the information collection time 300%. And ensure the information correct and definite.
- *DCN OPS portal and API. Using python flask+nginx+alibaba polarDB develop DCN Ops portal and API. Implement app with docker environment and push docker image to production DC. Modular design app architecture, each module develop by different team. And 2 people maintain the comment lib. The DingTalk robot involve API gather the OPS data then push to specific DingTalk group.
- *Develop a configuration parser to parse network device configuration. The parser can be as a command line simulator to simulate different brand devices. The parser will validate the commands before network maintenance, to check the commands work as expect. The other hand, the parser will split the device configuration as different feature set. The way will make the device configuration validation easier.
- *Data analysis project.
 - * IP conflict has occur in production network, that will impact the service. After data cleaning still 1300k row data in data set. We must find the conflict IP address, solve it and process the data consistently. Using python/pandas learning data and store to alibaba MaxCompute. At the initial data process, a round of data calculate in 8 days, After algorithm and data structure optimize, reduce to 1 day. As the first author publish a patent in alibaba group.
 - * Traffic statistics analysis. Load data set from maxcompute platform(oracle database style), using sql query and filter data to find the hot point of whole network. Observe the trident of traffic to find the potential device issue.
- *Data analysis operation platform design and implement. Focus on devices events analysis. We using snmp/grpc collect cpu/memory/interface traffic/packet lost, after data mining import to PAI machine learning platform. All the data store in Alibaba MaxCompute, using machine learning analysis data and data prediction. Using machine learning to fond potential issues and solve it. Currently, the platform can calculate memory leak, cpu/memory/device traffic prediction in how many days/hours will reach to maximum level. Now the system can found h3c devices parity error, device mis-configuration, cpu high issue and device memory leak. etc..
- *Develop device linecard automation replacement scripts. Base on SOP document, convert the manual to automatically device ops. Improve the linecard replacement productivity and efficiency. Previously, the linecard replacement will spend 4-6 hours. Now, only 30 mins - 80 mins whole process can be finished.
- *Design IDC network architecture and cooperate with implement team execute landing testing. Using Ixia/Spirent traffic generate to test network devices to meet DC high performance and higher bandwidth and redundancy requirement.
- *Alibaba self-design switch software design and development. Using docker isolate software environment, develop python scripts ensure network device can be self-restore when issue happened in 3 minutes. Using rabbitmq message queue on self-research device to implement asynchronous message process. The build-in script will analysis devices log/chip register/syslog/interface counters, then send out the information which analyzed via gRPC channel.

Cisco System Research & Development (China) Center
Senior Q/A Engineer 2012/10 - 2018/6
ENG Small business

- *Solution test team leader, build up CRDC solution test team and transfer E2E test projects from US to CRDC. And implement SMB lab environment, build up a DC area using virtualization tech (open stack and vmware) for all test bed. Use puppet to manage all of the servers. Several open source software involved in lab and test bed.
- *Lead automation test team. Define the automation infrastructure with Python. Make sure the automation tools can be used on every product easily. Define the devices library, every command line implement by a class/function. Merge SVN to GIT server for version

management easily. The test script will checkin to GIT server when it debug finished.

- *Design and implement SG500/300/200 serial switches in alpha network. Every college has an alpha port to do daily work. The primary goal of alpha network is simulating real customer network. Turn on some features on alpha network, such as syslog/snmp which can make network management easily, DHCP snooping/arp inspection and IP source guard are for LAN security, DHCP/voice vlan/Qos are for IP phones and use web authentication if a guest need to access network.
- *Design solution test. Solution test covers all the small business products. The purpose is simulating all costumer real network environment. Much more application traffic will run on it (Voice, ftp, e-mail, multicast, http and bit torrent traffic will be from wired and wireless side to WAN). The router connects to DMZ area via PPPoE/Static IP/DHCP/IPv6. SG500/300 connect all the end users (simulated by Ixia, Pagent or real PC clients), all the wireless clients connect to WAP 321/551/561/371/581/361/125. And execute switch POE capacity test. Run some automation test on it, and the scripts write by perl/python/shell/iTest.
- *Design IOT test. This phase will test SMB products interoperate with Cisco Catalyst switch, ASR1k, ASA, Cisco Unified Call Manger, Cisco ACS/ ISE and so on. Ensure the device compatible with these devices. There are some applications and servers on this test. More server running on linux. All the server can be manage by puppet, that easy for server management ,issue debugging and automation test.

Test Engineer 2007/06 – 2012/10

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- *Design and implement testing network architecture for NG switch test. Test plan planing and discuss with DE how to execute the test. On the project doing wired and wireless integration part (Layer 2 and Layer 3). Design and setup DHCP/FTP/DNS/TFTP Servers (Base on linux, windows and Unix.) during IPv4/IPv6 environment.
- *Design and implement alpha network to test latest products and provide technical support. The alpha networks that simulating customer real network used by Cisco internal. The feature involved: IP telephony, QOS, security and IP protocols (OSPF/BGP/ WCCP /GRE tunnel/ dot1x/radius. etc.). Using VPN technology connects 3 branch sites to center office. (Remote VPN).
- *Design and implement solution test (covered L2/L3) on C2k/C3k/C6k switches, ASA, IPS and wireless technology. Covered all of the security and voice features on switch side.
- *Using Linux, solaris and FreeBSD as Solution test servers. Such as syslog, SNMP, FTP, TFTP. DHCP and NTP servers, capture syslog of switches and analyze the syslog find out where have some issues and discuss with developer.
- *Test all of IOS features on whole of Catalyst 2k/3k platform. Such as IPv4/IPv6 DHCP server, WCCP, Dot1x, NAC, voice vlan, http/https more than 70+ features. Write test plan, discuss feature function with developer and maintain 60+ switches.

ShangHai YinJi technology Ltd.

System Engineer 2005/05-2007/03

Xi'an civil aviation Kai Ya Ltd

System Engineer 2003/09-2005/01

Education:

2000/09--2004/06 | Xi'an Physical education college | Bachelor | English/French

Hobby:

Marathon,Triathlon, Soccer