Kannan Vanniarajan

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SENIOR MANAGER (R&D) – CLOUD DEVELOPMENT

* 17 years of experience on Cloud Paas development and Telecom-Network Nodes
* Individual contributor and Quick learner of any new technical areas. Passionate to learn new technologies and coding the algorithm
* Organiser for the Kubernetes community Days at Chennai and delivered the presentation about **“Dualstack DSR with kubernetes”**
* Working on fast paced development environment with tight deadline for the cloud technology development projects for izo private cloud and cloudlyte projects at Tatacommunication
* Designed and developed many features in **kubernetes cluster** and Good understanding on the container networking, storage.
* Developed an linux image to bring up Kubernetes during the bootup
* Designed and Developed the product for Backup and Restore application for taking the backup of entire cluster application backup and restore
* Extended the kube-router CNI to support for dualstack
* Developed the 2 master node HA setup by removing the etcd and added the equivalent component.
* Modified the kube-ovn networking layer to support for 2 node
* Designed and Developed the application to create the instance of the VM dynamically, install the cluster for Huawei Public cloud
* Designed and developed the CRI layer between kubelet and the light weighted container based on lxc solution
* Designed and Developed the applications like Cadvisor Client, Application orchestration service for Cloud Platform
* Integrated kubernetes cluster with canal network, Cadvisor, Heapster.Developing the Secure container,Hot patch and Dynamic Local volume provisioner on kubernetes
* Worked on Multi threaded and IPC environment.

Recent Awards and Presentation

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| *Delivered Presentation about Dualstack Kubernetes with Direct Server Return on Kuberenetes community Days , Chennai*  *Youtube Link:* [*https://www.youtube.com/watch?v=f1MUg3C3oGo&t=22s*](https://www.youtube.com/watch?v=f1MUg3C3oGo&t=22s)  *Got Execution Excellence award from WIPRO Technologies*  *Got Best Individual ODC Team member from Huawei . Also Got spot award from Huawei customer*  *Got Achiever of the Quarter award for the Customer satisfaction in* Sasken communications.  Got many Spot award, Star Of the Month for technical contributions in Sasken communications.  *Recognized for Problem solving skill in ARICENT technologies.* |

Professional Experience

Tata Communications Ltd.,– Chennai, T

Senior Lead Engineer - Software,10/2018 to TillNow

WiPRO Technologies .,– Bangalore, KA

Lead Engineer – Software, 10/2015 to 10/2018

Sasken Communication Technologies Ltd.,– Bangalore, KA

Telecommunication Software Service Organization

Senior/Lead Engineer - Software,02/2011 to 10/2015

Aricent Technologies Ltd

Telecommunication Software Service Organization

Engineer - Software,02/2008 to 02/2011.

Technology

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| --- | --- |
| Languages | C, Go language, python ,basics in C++ |
| Platform | Linux, VxWorks, Aix |
| Tools | Prometheus, Grafana, Loki, elasticsearch, fluentd, keycloak, xdp, Clearcase, Wireshark, RTRT, Purify, purecov, AttolCov, Workshop, Nethawk, Gdb, Klockwork, Cscope, GNU make,Ginkgo,git, docker,docker compose ,docker machine and container,golint,SQL data base, |
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Education

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| Degree and Date | University | Percentage |
| Bachelor of Engineering, 2007 | Anna University | 75% |
| Higher Secondary,2003 | S.N.Hr.Sec school, Mamsapuram | 85.33% |
| 10th standard,2001 | S.N.Hr.Sec school, Mamsapuram | 82.4% |

Project Details

PRIVATE AND PUBLIC CLOUD DEVELOPMENT

We are enabling the cloud services for tata private cloud.

1. Developing 2 node HA master node for a specific business use case by replacing the etcd with databases. Took care of failover mechanism for HA by developing a controller.
2. Analyzed and modified the code of the kubeOVN network plugin and made the OVN DB as active backup to support 2 node HA master node
3. Developed an linux image(iso) for bringing up the Kubernetes without internet during the boot up
4. Implemented the monitoring and logging components for the cloud. Implemented the Prometheus, Grafana, alerting, elasticsearch, fluentd,Loki, Victoria metrics and Mimir. Also developed the Kubernetes controller to configure the monitoring and logging
5. Worked on keycloak and customized it to provide SSO for the customer
6. Worked on cluster-api components and wrote the Kubernetes controller to get minimal input from user to bring the Kubernetes cluster. I have worked on VMWARE,KUBEVIRT and OPENSTACK environment clusterapis and developed the controller to support all the options.
7. Designed the developed the algorithm for managing the datastore on Vcenter for PVC and VM based on the tags
8. Designed and developed the controller for maintain the storage quota on the cluster
9. Completely automated the cert renewel activity for Kubernetes
10. Developing the controller for Backup and Restore application for taking the backup of entire application which runs on cloud and restore on Incluster and DR cluster on top of velero
11. Designed and developed to extended the existing kube-router CNI to support the direct server return on dual stack
12. Created the setup for central monitoring and central logging for multiple setup
13. Removing docker interface from kubelet and added the proprietary light weight container interface with kubelet
14. Added the Heapster component, HA proxy and keep-alived component on the Huawei Public cloud
15. Designed and developed monitor and logger component for edge cloudcomputing for Huawei cloud
16. Removing docker interface from kubelet and added the light weight container with kubelet

**Telecom Development**

Packet Unit Support Node (PCUSN), main task is enabling GPRS and EDGE services in a GSM network and in a GSM-R network

Worked on Flexible GSM A interface feature on GSM to enable one BSC to connect with 16 MSC. The GSM Base Station controller is divided in to two major nodes the Control Node which performs the OAM and Traffic Management. Had designed and developed several features on the applications that involved in the Radio Resource Management, traffic provisioning and supervision.

* Had designed and developed the Call processing application for flexible A-interface in which BSC communicates with 16 MSC
* Designed and developed the Packet flow control , USF Granularity-4 , Extended Dynamic allocation features
* Designed and developed the multiple system optimization.
* Designed and Developed the SGSN,GGSN simulator for testing the PCUSN.
* Had designed and developed the PFC feature and RIM feature and developed the BSSGP,LLC protocol layers.
* Integrated SNDCP, LLC protocol layers and developing GMM and SM protocol layers to simulate the SGSN for verifying the end-to-end network behavior.

Designed and develop the mobile stack to support Extended dynamic allocation, USF-Granularity-4, extended UL TBF.

***Responsibilities:***

* High level design, Low level design for PCUSN feature like EDA, Extended Uplink feature, PFC and simulated SGSN
* RLC/MAC protocol design for the feature EDA, Extended Uplink feature and PFC.
* Designing the scheduler, Timeslot allocator part for the feature EDA
* Coding from LLD and fixing the Bug.
* Interacting with customer to resolve the blocking issues on the real network.
* Resolved many system crash issue from the field.
* Guiding the Team members.

Personal Details

* Date of Birth: 17/05/1986
* Nationality : Indian
* Languages Known : English, Tamil

***KannanVanniarajan***