



LFN Developer & Testing Forum

Using ONAP components To Orchestrate On Azure Kubernetes Service

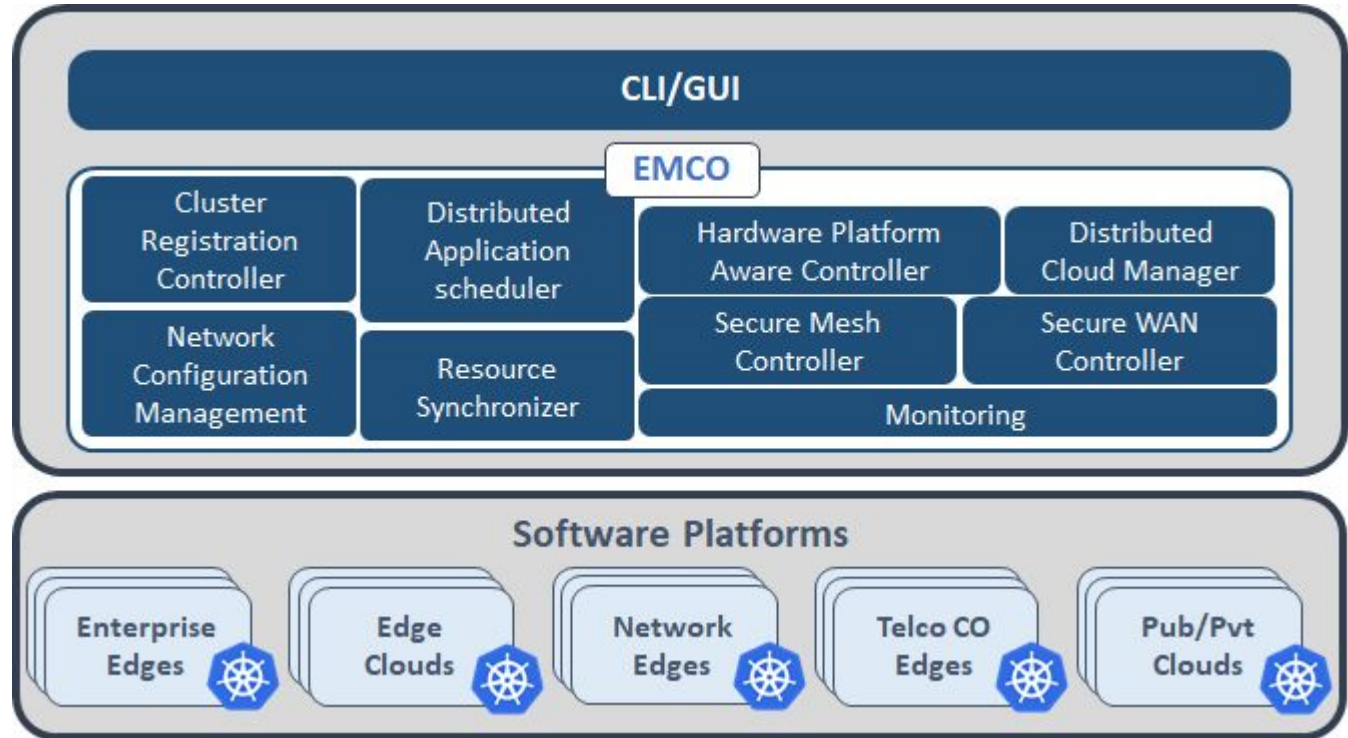
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- ONAP sub components were deployed
- Deployment done on MS Azure cloud
- Deployment using az cli
- Deployment using ARM templates
- Challenges on Public Cloud
- Demo video

Following components were deployed

- EMCO for CNF deployment
- CDS components for configuration
- EMCO UI for onboarding
- Free5g CNF components on the target cluster

EMCO (onap4k8s)



AZURE Deployment Options

- **az cli / powershell**
 - Using command line build AKS cluster
 - Using helm charts and kubectl deploy the components
- **Azure Resource Manager Templates**
 - azuredeploy.json
 - createUiDefinition.json
 - install scripts
- **Azure Marketplace**
 - We can create a zip package of the template and use it for Marketplace

ARM Template

- .
- ├── createUiDefinition.json
- ├── mainTemplate.json
- ├── README.md
- └── script
 - ├── amcopinstall.zip
 - └── install.sh

```
{
  "type": "Microsoft.ContainerService/managedClusters",
  "apiVersion": "2020-03-01",
  "name": "[parameters('clusterName')]",
  "location": "[parameters('location')]",
  "properties": {
    "dnsPrefix": "[variables('clusterdnsPrefix')]",
    "agentPoolProfiles": [
      {
        "name": "agentpool",
        "osDiskSizeGB": "[parameters('osDiskSizeGB')]",
        "count": "[parameters('agentCount')]",
        "vmSize": "[parameters('agentVMSize')]",
        "osType": "[parameters('osType')]",
        "storageProfile": "ManagedDisks"
      }
    ],
    "linuxProfile": {
      "adminUsername": "[parameters('linuxAdminUsername')]",
      "ssh": {
        "publicKeys": [
          {
            "keyData": "[parameters('sshRSAPublicKey')]"
          }
        ]
      }
    }
  },
  "identity": {
    "type": "SystemAssigned"
  }
},
```

Deployment Flow on Azure

- create a k8 cluster
- create a VM
- add VM extension
- prepare the VM for deployment
- run custom script from the extension
- install the onap4k8s pods (EMCO + GUI + CDS)

The screenshot displays the Microsoft Azure portal interface. At the top, the navigation bar shows 'Microsoft Azure' and a search bar. The main content area is titled 'aarnanetworksinc1595980852623.amcop001-preview-20210203122746 | Overview'. Below the title, there are options to 'Delete', 'Cancel', 'Redeploy', and 'Refresh'. A green checkmark indicates 'Your deployment is complete'. The deployment details are as follows:

- Deployment name: aarnanetworksinc1595980852623.amcop001-p...
- Subscription: Microsoft Azure Sponsorship
- Resource group: rppreview
- Start time: 2/3/2021, 12:28:34 PM
- Correlation ID: 3682a5f3-986e-4fac-908f-124f5c52807c

The 'Deployment details' section contains a table with the following data:

Resource	Type	Status	Operation details
131568be-8fc9-50a4-8f9f-f3cd3	Microsoft.Authorization/roleAssignments	Created	Operation details
rpclus-vm/rpclus-ini	Microsoft.Compute/virtualMachines/extensions	OK	Operation details
rpclus-vm	Microsoft.Compute/virtualMachines	OK	Operation details
rpclus-vm	Microsoft.Compute/virtualMachines	OK	Operation details
rpclus-nic	Microsoft.Network/networkInterfaces	Created	Operation details
rpclus	Microsoft.ContainerService/managedClusters	OK	Operation details
rpclus-ip	Microsoft.Network/publicIPAddresses	OK	Operation details
virtual-network	Microsoft.Network/virtualNetworks	OK	Operation details
rpclus-nsg	Microsoft.Network/networkSecurityGroups	OK	Operation details
pid-62d2136c-3976-4dc4-a7db	Microsoft.Resources/deployments	OK	Operation details

Below the table, the 'Next steps' section includes a button labeled 'Go to resource group'. On the right side of the page, there are sections for 'Security Center', 'Free Microsoft tutorials', and 'Work with an expert'.

Kubernetes Pods

```
rp@rp-VirtualBox:~$ kubectl get pod --all-namespaces
```

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
kube-system	coredns-748cdb7bf4-6qhc7	1/1	Running	0	3h21m
kube-system	coredns-748cdb7bf4-zh6f2	1/1	Running	0	3h21m
kube-system	coredns-autoscaler-868b684fd4-xq2hw	1/1	Running	0	3h21m
kube-system	kube-proxy-fspw6	1/1	Running	0	3h21m
kube-system	kube-proxy-pztpz	1/1	Running	0	3h21m
kube-system	kube-proxy-vvf2h	1/1	Running	0	3h21m
kube-system	metrics-server-58fdc875d5-rv4z7	1/1	Running	2	3h21m
kube-system	tunnelfront-65d8cc8547-kffvm	1/1	Running	0	3h21m
onap4k8s	clm-79767f88b5-4zpwq	1/1	Running	0	3h17m
onap4k8s	emcoui-68cd878dfd-fxv7k	1/1	Running	0	3h17m
onap4k8s	etcd-5fdc76b468-wgqk4	1/1	Running	0	3h17m
onap4k8s	middleend-7d85d479d7-xv8xp	1/1	Running	0	3h17m
onap4k8s	mongo-ccbdc879c-lgtb7	1/1	Running	0	3h17m
onap4k8s	ncm-59b8cbf6c6-kvljr	1/1	Running	0	3h17m
onap4k8s	orchestrator-7c67945c84-ffwn8	1/1	Running	0	3h17m
onap4k8s	ovnaction-bf984b49-blwsw	1/1	Running	0	3h17m
onap4k8s	rsync-c7f5cb76c-6zdxp	1/1	Running	0	3h17m

Demo Video



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Thank You !