導入テンプレートの例

この付録は、次の内容で構成されています。

（注） この付録のテンプレートは参照用のサンプルであり、実際の値は含まれていません。

VMware vCenter 用マニフェストテンプレートの例

次の例では、3 つのハイブリッドノードと 2 つのワーカーノードを含む Crosswork クラスタを展開します。

（注） リソースプールを使用している場合は、個々の ESXi ホストのターゲット設定は許可されず、vCenter がリソースプール内のホストに VM を割り当てることに注意してください。vCenter にリソースプールが設定されていない場合は、正確な ESXi ホストパスを渡す必要があります。

```
*******
vCenter Example
********

ClusterIPStack = "IPv4"
ManagementVIP = "172.25.87.94"
ManagementIPNetmask = "255.255.255.192"
ManagementIPGateway = "172.25.87.65"
DataVIP = "192.168.123.94"
DataIPNetmask = "255.255.255.0"
DataIPGateway = "0.0.0.0"
DNS = "171.70.168.183"
```

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```
DomainName = "cisco.com"
CWPassword = "****"
VMSize = "Large"
NTP = "ntp.cisco.com"
CloneTimeOut = 90
ManagerDataFsSize = 450
ThinProvisioned = true
BackupMinPercent = 50
EnableHardReservations = false
ManagerDataFsSize     = 450
WorkerDataFsSize      = 450

CwVMs = {
  "0" = {
    VMName = "vm0",
    ManagementIPAddress = "172.25.87.82",
DataIPAddress = "0.0.0.0",
    DataIPAddress = "192.168.123.82",
    NodeType = "Hybrid"
  },
  "1" = {
    VMName = "vm1",
    ManagementIPAddress = "172.25.87.83",
DataIPAddress = "0.0.0.0",
    DataIPAddress = "192.168.123.83",
    NodeType = "Hybrid"
  },
  "2" = {
    VMName = "vm2",
    ManagementIPAddress = "172.25.87.84",
DataIPAddress = "0.0.0.0",
    DataIPAddress = "192.168.123.84",
    NodeType = "Hybrid"
  },
  "3" = {

    VMName = "vmworker",
    ManagementIPAddress = "172.25.87.85",
DataIPAddress = "0.0.0.0",
    DataIPAddress = "192.168.123.84",
    NodeType = "Worker"
  },
  "4" = {

    VMName = "vmworker2",
    ManagementIPAddress = "172.25.87.86",
DataIPAddress = "0.0.0.0",
    DataIPAddress = "192.168.123.86",
    NodeType = "Worker"
  },

}


/********* vCentre Resource Data with Cw VM assignment *********/

VCentreDC = {
  VCentreAddress = "172.25.87.90",
  VCentreUser = administrator@vsphere.local,
  VCentrePassword = "******",
  DCname = "dc-cr",
  MgmtNetworkName = "VM Network",
  DataNetworkName = "DPortGroup10",
  VMs = [
```

```
    {
      HostedCwVMs = [
        "0",
        "1",
        "2",
       "3", "4"
  ],
      Host = "172.25.87.93",
      Datastore = "datastore3"
     HSDatastore = "datastore3",
    },]
}
```

シードノードの明示的な設定

クラスタインストーラツールは、デフォルトでは最初のVM（VM0）をシードノードとして選択します。シードノードの固有のキーを示す次のセクションをマニフェストテンプレート（.tfvars ファイル）に追加することで、シードノードを明示的に設定できます。

（注） シスコ カスタマー エクスペリエンス チームからの指示がない限り、デフォルトのシードノード値を変更しないことを推奨します。

```
cluster_settings = {
#Default Minimum number of nodes in inventory
    min_inventory     = 3
#Default Max number of nodes in inventory
    max_inventory     = 9
#Default Min number of manager nodes
    min_mngr_nodes    = 2
#Default Max number of manager nodes
    max_mngr_nodes    = 3
#Default seed node key name
    default_seed_node = "0"
}
```

AWS EC2 に Crosswork クラスタ VM をインストールするための CloudFormation テンプレートの例

注目 次の CF テンプレート（.yaml ファイル）には、3 つの VM で Crosswork クラスタをインストールするための詳細が含まれています。これはあくまでもサンプルであることに注意してください。運用の設定に応じて、いつでも別の CF テンプレートを作成し、このセクションで説明する手順に従って実行できます。このドキュメントは、読者が AWS と CloudFormation の概念に精通していることを前提としているため、CF テンプレートの作成はこのドキュメントの範囲外です。

導入テンプレートの例

```
Description: "Sample CF Template for deploying Cisco Crosswork cluster VMs, with single
 hybrid, on EC2"

Metadata:
  AWS::CloudFormation::Interface:
    ParameterGroups:
      -
        Label:
          default: "Cw Network Configuration"
        Parameters:
          - VpcId
          - SecGroup
          - CwSSHPassword
          - CwAmiId
          - CwMgmtSubnetId
          - CwMgmtSubnetNetmask
          - CwMgmtSubnetGateway
          - CwMgmtVIP
          - InterfaceDeploymentMode
          - CwDataSubnetId
          - CwDataSubnetNetmask
          - CwDataSubnetGateway
          - CwDataVIP
      - Label:
          default: "Cw VM customization"
        Parameters:
          - InstanceType
          - DataDiskSize
          - K8sServiceNetwork
          - K8sPodNetwork
      - Label:
          default: "OPTIONAL - VM IP addressing"
        Parameters:
          - Cw1MgmtIP
          - Cw1DataIP
          - Cw2MgmtIP
          - Cw2DataIP
          - Cw3MgmtIP
          - Cw3DataIP

Parameters:
  VpcId:
    Type: AWS::EC2::VPC::Id
    Description: VpcId of your existing Virtual Private Cloud (VPC)
    ConstraintDescription: Must be the VPC Id of an existing Virtual Private Cloud.

  SecGroup:
    Type: AWS::EC2::SecurityGroup::Id
    Description: Pre-created security group to be applied. Must allow ingress access for
 ports 22, 30160:31560

  CwMgmtSubnetId:
    Type: AWS::EC2::Subnet::Id
    Description: Select the management subnet for the Crosswork VMs

  CwMgmtSubnetNetmask:
    Type: String
    Description: Enter the management subnet netmask in dotted decimal form, eg
255.255.255.0
    Default: "255.255.255.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})

  CwMgmtSubnetGateway:
    Type: String
```

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```
    Description: Enter the management default gateway on the selected management subnet.
 This is typically the first address on the subnet.
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})

  CwMgmtVIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the management subnet to be used
as the VIP. If not specified an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  CwDataSubnetId:
    Type: AWS::EC2::Subnet::Id
    Description: Select the data subnet for the Crosswork VMs. In single interface
deployments select the same subnet as for the management interface.

  InterfaceDeploymentMode:
    Type: String
   Description: Select 1 (Management only) or 2 (Management + Data) interface deployment
 mode.
    AllowedValues:
      - 1
      - 2

  CwDataSubnetNetmask:
    Type: String
   Description: Enter the data subnet netmask in dotted decimal form, eg 255.255.255.0.
 Ignored when deploying in single interface mode.
    Default: "255.255.255.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})

  CwDataSubnetGateway:
    Type: String
    Description: Enter the management default gateway on the selectec data subnet. This
 is typically the first address on the subnet. Ignored when deploying in single interface
 mode.
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})
    Default: '0.0.0.0'

  CwDataVIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the data subnet to be used as the
 VIP. If not specified an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  CwAmiId:
    Type: AWS::EC2::Image::Id
    Description: Provide Crosswork AMI ID.

#  MgmntPublicIP:
#    Type: String
#    Description: Enter your public IP. Will be use to restrict CNC SSH and UI access
to this IP only
#    Default: 0.0.0.0/0

  CwSSHPassword:
    Type: String
   Description: Enter CNC SSH Password. NOTE; Use of external secret store is recommended.

    NoEcho: True

  InstanceType:
    Description: Enter EC2 instance type for the node instances.Default is m5.4xlarge.
```

導入テンプレートの例

```
    Type: String
    AllowedValues:
      - m5.4xlarge
      - m5.8xlarge
      - m5.2xlarge
      - m5.12xlarge
      - m5d.4xlarge
      - m5d.8xlarge
      - m5d.2xlarge
      - m5d.12xlarge
      - m5n.4xlarge
      - m5n.8xlarge
      - m5n.2xlarge
      - m5n.12xlarge
      - r5.4xlarge
      - r5.8xlarge
      - r5.2xlarge
      - r5.12xlarge
      - c5.4xlarge
      - c5.8xlarge
      - c5.2xlarge
      - c5.12xlarge
      - m5zn.2xlarge
      - m5zn.3xlarge
      - m5zn.4xlarge
    Default: m5.4xlarge

  DataDiskSize:
    Description: Cw data disk size.
    Type: Number
    MinValue: 450
    Default: 450

  K8sServiceNetwork:
    Type: String
    Description: "OPTIONAL - Enter the network address for the k8s service network. The
 CIDR range is fixed to '/16'."
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})
    Default: '10.96.0.0'

  K8sPodNetwork:
    Type: String
    Description: "OPTIONAL - Enter the network address for the k8s pod network. The CIDR
 range is fixed to '/16'."
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})
    Default: '10.244.0.0'

  Cw1MgmtIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the management subnet. If not
 specified an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  Cw1DataIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the data subnet. If not specified
 an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  Cw2MgmtIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the management subnet. If not
```

導入テンプレートの例

```
specified an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  Cw2DataIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the data subnet. If not specified
 an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  Cw3MgmtIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the management subnet. If not
specified an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  Cw3DataIP:
    Type: String
    Description: OPTIONAL - Specify a free address on the data subnet. If not specified
 an address will be assigned automatically.
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

  CwClusterPlacementStrategy:
    Type: String
    Description: Specify the EC2 instance placement strategy. Default 'cluster' ensures
 maximum throughput.
    Default: cluster
    AllowedValues:
      - cluster
      - partition
      - spread

Conditions:
  DeployDataInterface: !Not
    - !Equals
      - !Ref InterfaceDeploymentMode
      - "1"

  SetMgmtVIP: !Not
    - !Equals
      - !Ref CwMgmtVIP
      - ""

  SetDataVIP: !Not
    - !Equals
      - !Ref CwDataVIP
      - ""

  SetCw1IP0: !Not
    - !Equals
      - !Ref Cw1MgmtIP
      - ""

  SetCw1IP1: !Not
    - !Equals
      - !Ref Cw1DataIP
      - ""

  SetCw2IP0: !Not
    - !Equals
      - !Ref Cw2MgmtIP
```

導入テンプレートの例

```
      - ""

  SetCw2IP1: !Not
    - !Equals
      - !Ref Cw2DataIP
      - ""

  SetCw3IP0: !Not
    - !Equals
      - !Ref Cw3MgmtIP
      - ""

  SetCw3IP1: !Not
    - !Equals
      - !Ref Cw3DataIP
      - ""

Resources:
  EC2ENIRole:
    Type: AWS::IAM::Role
    Properties:
      AssumeRolePolicyDocument:
        Version: "2012-10-17"
        Statement:
          - Effect: Allow
            Principal:
              Service:
                - ec2.amazonaws.com
            Action:
              - 'sts:AssumeRole'
      Policies:
        - PolicyName: eni-modification
          PolicyDocument:
            Version: '2012-10-17'
            Statement:
              - Effect: Allow
                Action:
                  - ec2:DescribeNetworkInterfaces
                  - ec2:AssignPrivateIpAddresses
                  - ec2:UnassignPrivateIpAddresses
                Resource: "*"

  CwPlacementGroup:
    Type: AWS::EC2::PlacementGroup
    Properties:
      Strategy: !Sub ${CwClusterPlacementStrategy}

  CwEC2IamInstanceProfile:
    Type: AWS::IAM::InstanceProfile
    Properties:
      InstanceProfileName: !Sub ${AWS::StackName}-CwEC2IamInstanceProfile
      Path: "/cw/"
      Roles:
        - !Ref EC2ENIRole

  CwInstance1MgmntInterface:
    Type: AWS::EC2::NetworkInterface
    Properties:
      Description: "VM1-Mgmt-eth0"
      GroupSet:
        #- !Ref 'SSHSecurityGroup'
        - !Ref SecGroup
      PrivateIpAddresses:
        !If
```

導入テンプレートの例

```
      - SetCw1IP0
      - !If
        - SetMgmtVIP
        - - Primary: false
            PrivateIpAddress: !Ref CwMgmtVIP
          - Primary: true
            PrivateIpAddress: !Ref Cw1MgmtIP
        - - Primary: true
            PrivateIpAddress: !Ref Cw1MgmtIP
      - !If
        - SetMgmtVIP
        - - Primary: false
            PrivateIpAddress: !Ref CwMgmtVIP
        - !Ref 'AWS::NoValue'
    SecondaryPrivateIpAddressCount:
      !If
      - SetMgmtVIP
      - !Ref 'AWS::NoValue'
      - !If
        - SetCw1IP0
        - !Ref 'AWS::NoValue'
        - 1
    SubnetId: !Ref CwMgmtSubnetId
    Tags:
      - Key: Name
        Value: Cw-VM1-eth0

CwInstance1DataInterface:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "VM1-Data-eth1"
    GroupSet:
      #- !Ref 'SSHSecurityGroup'
      - !Ref SecGroup
    PrivateIpAddresses:
      !If
      - SetCw1IP1
      - !If
        - SetDataVIP
        - - Primary: false
            PrivateIpAddress: !Ref CwDataVIP
          - Primary: true
            PrivateIpAddress: !Ref Cw1DataIP
        - - Primary: true
            PrivateIpAddress: !Ref Cw1DataIP
      - !If
        - SetDataVIP
        - - Primary: false
            PrivateIpAddress: !Ref CwDataVIP
        - !Ref 'AWS::NoValue'
    SecondaryPrivateIpAddressCount:
      !If
      - SetDataVIP
      - !Ref 'AWS::NoValue'
      - !If
        - SetCw1IP1
        - !Ref 'AWS::NoValue'
        - 1
    SubnetId: !Ref CwDataSubnetId
    Tags:
      - Key: Name
        Value: Cw-VM1-eth1
  Condition: DeployDataInterface
```

導入テンプレートの例

```
CwInstance2MgmntInterface:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "VM2-Mgmt-eth0"
    GroupSet:
      #- !Ref 'SSHSecurityGroup'
      - !Ref SecGroup
    PrivateIpAddresses:
      !If
      - SetCw2IP0
      - - Primary: true
          PrivateIpAddress: !Ref Cw2MgmtIP
      - !Ref 'AWS::NoValue'
    SubnetId: !Ref CwMgmtSubnetId
    Tags:
      - Key: Name
        Value: Cw-VM2-eth0

CwInstance2DataInterface:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "VM2-Data-eth1"
    GroupSet:
      #- !Ref 'SSHSecurityGroup'
      - !Ref SecGroup
    PrivateIpAddresses:
      !If
      - SetCw2IP1
      - - Primary: true
          PrivateIpAddress: !Ref Cw2DataIP
      - !Ref 'AWS::NoValue'
    SubnetId:  !Ref CwDataSubnetId
    Tags:
      - Key: Name
        Value: VM2-eth1
  Condition: DeployDataInterface

CwInstance3MgmntInterface:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "VM3-Mgmt-eth0"
    GroupSet:
      #- !Ref 'SSHSecurityGroup'
      - !Ref SecGroup
    PrivateIpAddresses:
      !If
      - SetCw3IP0
      - - Primary: true
          PrivateIpAddress: !Ref Cw3MgmtIP
      - !Ref 'AWS::NoValue'
    SubnetId: !Ref CwMgmtSubnetId
    Tags:
      - Key: Name
        Value: VM3-eth0

CwInstance3DataInterface:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "VM3-Data-eth1"
    GroupSet:
      #- !Ref 'SSHSecurityGroup'
      - !Ref SecGroup
    PrivateIpAddresses:
      !If
```

導入テンプレートの例

```
        - SetCw3IP1
        - - Primary: true
            PrivateIpAddress: !Ref Cw3DataIP
        - !Ref 'AWS::NoValue'
      SubnetId: !Ref CwDataSubnetId
      Tags:
        - Key: Name
          Value: VM3-eth1
    Condition: DeployDataInterface

#  SSHSecurityGroup:
#    #
http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-ec2-security-group.html
#    Type: AWS::EC2::SecurityGroup
#    Properties:
#      VpcId: !Ref "VpcId"
#      GroupDescription: Enable access to CNC VMs
#      Tags:
#        - Key: Name
#          Value: "Cw-SG-1"
#      SecurityGroupIngress:
#        # Must allow 22 and all of the service port range 30160:31560
#        #       - CidrIp: !Ref CwMgmtSubnetId
#        #         FromPort: 22
#        #         IpProtocol: tcp
#        #         ToPort: 22
#        #       - CidrIp: !Ref CwMgmtSubnetId
#        #         FromPort: 30603
#        #         IpProtocol: tcp
#        #         ToPort: 30603
#        - CidrIp: 10.0.0.0/8
#          FromPort: -1
#          IpProtocol: -1
#          ToPort: -1

  #EC2 Launch Template Creation
  CommonCwLaunchTemplate:
    Type: AWS::EC2::LaunchTemplate
    Properties:
      LaunchTemplateName:  !Sub CommonCwLaunchTemplate-${AWS::StackName}
      LaunchTemplateData:
        InstanceType: !Ref 'InstanceType'
        ImageId: !Ref 'CwAmiId'
        IamInstanceProfile:
          Name: !Ref CwEC2IamInstanceProfile
        EbsOptimized: True
#        InstanceMarketOptions:
#          MarketType: spot
        Placement:
          GroupName: !Ref CwPlacementGroup
        BlockDeviceMappings:
          - Ebs:
              VolumeSize: 50
              VolumeType: standard
              DeleteOnTermination: True
              Encrypted: False
              #Iops: 1000
            DeviceName: /dev/sda1
          - Ebs:
              VolumeSize: 10
              DeleteOnTermination: True
              VolumeType: gp3
            DeviceName: /dev/sdc
          - Ebs:
```

導入テンプレートの例

```
            VolumeSize: !Ref DataDiskSize
            DeleteOnTermination: True
            VolumeType: gp3
            Iops: 6000
          DeviceName: /dev/sdd
        - Ebs:
            VolumeSize: 10
            VolumeType: gp3
            DeleteOnTermination: True
            #Iops: 6000
          DeviceName: /dev/sdm
        - Ebs:
            VolumeSize: 156
            DeleteOnTermination: True
            VolumeType: gp3
            Iops: 6000
          DeviceName: /dev/sdf
        - Ebs:
            VolumeSize: 250
            DeleteOnTermination: True
            VolumeType: gp3
          DeviceName: /dev/sdg
      MetadataOptions:
        HttpPutResponseHopLimit: 2
      PrivateDnsNameOptions:
        EnableResourceNameDnsARecord: True
      TagSpecifications:
        - ResourceType: instance
          Tags:
            - Key: cisco-bu-group
              Value: "spnaa"
            - Key: cisco-bu-owner
              Value: ""
            - Key: cisco-bu-project-name
              Value: "Crosswork"
            - Key: cisco-bu-release
              Value: "440"
            - Key: cisco-bu-role
              Value: "test"
            - Key: cisco-ops-runtime-optin
              Value: "in"
            - Key: cisco-ops-runtime-policy
              Value: "mon-fri"
            - Key: cisco-ops-timezone
              Value: "PST"
            - Key: cisco-sec-internetfacing
              Value: "false"

  CwInstance1:
   #
http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-ec2-instance.html

    Type: AWS::EC2::Instance
    DependsOn:
      - CommonCwLaunchTemplate
    Properties:
      LaunchTemplate:
        Version: 1
        LaunchTemplateId: !Ref CommonCwLaunchTemplate
      NetworkInterfaces:  !If
        - DeployDataInterface
        - - NetworkInterfaceId: !Ref CwInstance1MgmntInterface
            DeviceIndex: "0"
          - NetworkInterfaceId: !Ref CwInstance1DataInterface
```

導入テンプレートの例

```
            DeviceIndex: "1"
          - - NetworkInterfaceId: !Ref CwInstance1MgmntInterface
            DeviceIndex: "0"
      Tags:
        - Key: Name
          Value: Cw-EC2-VM1
      UserData:  !Base64
        Fn::Join:
          - ''
          - - !Sub |
              <?xml version="1.0" encoding="UTF-8"?>
              <Environment
                <PlatformSection>
                  <Kind>EC2</Kind>
                </PlatformSection>
                <PropertySection>
                  <Property oe:key="CWPassword" oe:value="${CwSSHPassword}"/>
                  <Property oe:key="CWUsername" oe:value="cw-admin"/>
            - Fn::Join:
                - ""
                - - '<Property oe:key="AwsIamRole" oe:value="'
                  - !Ref EC2ENIRole
                  - '"/>'
                  - "\n"
            - !Sub |
                  <Property oe:key="IsSeed" oe:value="True"/>
                  <Property oe:key="VMType" oe:value="Hybrid"/>
                  <Property oe:key="ManagementIPv4Address"
oe:value="${CwInstance1MgmntInterface.PrimaryPrivateIpAddress}"/>
                  <Property oe:key="ManagementIPv4Gateway"
oe:value="${CwMgmtSubnetGateway}"/>
                  <Property oe:key="ManagementIPv4Netmask"
oe:value="${CwMgmtSubnetNetmask}"/>
                  <Property oe:key="ManagementIPv6Address" oe:value="::0"/>
                  <Property oe:key="ManagementIPv6Gateway" oe:value="::1"/>
                  <Property oe:key="ManagementIPv6Netmask" oe:value="64"/>
                  <Property oe:key="ManagerPeerIPs"
oe:value="${CwInstance1MgmntInterface.PrimaryPrivateIpAddress}
${CwInstance2MgmntInterface.PrimaryPrivateIpAddress}
${CwInstance3MgmntInterface.PrimaryPrivateIpAddress}"/>
            - Fn::Join:
                - ""
                - - '<Property oe:key="ManagementVIP" oe:value="'
                  - Fn::Select: [0, Fn::GetAtt: [CwInstance1MgmntInterface,
SecondaryPrivateIpAddresses]]
                  - '"/>'
                  - "\n"
            - !If
              - DeployDataInterface
              # Join statement to construct the Data Interface configs
              - Fn::Join:
                - "\n"
                - - Fn::Sub: |
                      <Property oe:key="DataIPv4Address"
oe:value="${CwInstance1DataInterface.PrimaryPrivateIpAddress}"/>
                      <Property oe:key="DataIPv4Netmask"
oe:value="${CwDataSubnetNetmask}"/>
                      <Property oe:key="DataIPv4Gateway"
oe:value="${CwDataSubnetGateway}"/>
                      <Property oe:key="DataPeerIPs"
oe:value="${CwInstance1DataInterface.PrimaryPrivateIpAddress}
${CwInstance2DataInterface.PrimaryPrivateIpAddress}
${CwInstance3DataInterface.PrimaryPrivateIpAddress}"/>
                  - Fn::Join:
```

導入テンプレートの例

```
                      - ""
                      - - '<Property oe:key="DataVIP" oe\:value="'
                        - Fn::Select: [0, Fn::GetAtt: [CwInstance1DataInterface,
SecondaryPrivateIpAddresses]]
                        - '"/>'
                        - "\n"
              # Default settings when no data interface is present
              - |
                  <Property oe:key="DataIPv4Address" oe:value="0.0.0.0"/>
                  <Property oe:key="DataIPv4Netmask" oe:value="255.255.255.0"/>
                  <Property oe:key="DataIPv4Gateway" oe:value="0.0.0.0"/>
                  <Property oe:key="DataVIP" oe:value="0.0.0.0"/>
                  <Property oe:key="DataPeerIPs" oe:value=""/>
            - !Sub |
                <Property oe:key="NTP" oe:value="169.254.169.123"/>
                <Property oe:key="DNSv4" oe:value="169.254.169.253"/>
                <Property oe:key="DNSv6" oe:value="::0"/>
                <Property oe:key="Domain" oe:value=""/>
                <Property oe:key="InitMasterCount" oe:value="3"/>
                <Property oe:key="InitNodeCount" oe:value="3"/>
                <Property oe:key="VMLocation" oe:value="AWS"/>
                <Property oe:key="DataIPv6Address" oe:value="::0"/>
                <Property oe:key="DataIPv6Gateway" oe:value="::1"/>
                <Property oe:key="DataIPv6Netmask" oe:value="64"/>
                <Property oe:key="Deployment" oe:value="cw_ipv4"/>
                <Property oe:key="Disclaimer" oe:value="Cisco Crosswork"/>
                <Property oe:key="K8Orch" oe:value=""/>
                <Property oe:key="CwInstaller" oe:value="False"/>
                <Property oe:key="corefs" oe:value="20"/>
                <Property oe:key="ddatafs" oe:value="${DataDiskSize}"/>
                <Property oe:key="logfs" oe:value="10"/>
                <Property oe:key="ramdisk" oe:value="0"/>
                <Property oe:key="ssd" oe:value="50"/>
               <Property oe:key="K8sServiceNetworkV4" oe:value="${K8sServiceNetwork}"/>

                <Property oe:key="K8sPodNetworkV4" oe:value="${K8sPodNetwork}"/>
                </PropertySection>
                </Environment>

  CwInstance2:
    #
http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-ec2-instance.html

    Type: AWS::EC2::Instance
    DependsOn:
      - CommonCwLaunchTemplate
    Properties:
      LaunchTemplate:
        Version: 1
        LaunchTemplateId: !Ref CommonCwLaunchTemplate
      NetworkInterfaces:  !If
        - DeployDataInterface
        - - NetworkInterfaceId: !Ref CwInstance2MgmntInterface
            DeviceIndex: "0"
          - NetworkInterfaceId: !Ref CwInstance2DataInterface
            DeviceIndex: "1"
        - - NetworkInterfaceId: !Ref CwInstance2MgmntInterface
            DeviceIndex: "0"
      Tags:
        - Key: Name
          Value: Cw-EC2-VM2
      UserData:  !Base64
        'Fn::Join':
          - ''
```

導入テンプレートの例

```
          - - !Sub |
              <?xml version="1.0" encoding="UTF-8"?>
              <Environment
                <PlatformSection>
                  <Kind>EC2</Kind>
                </PlatformSection>
                <PropertySection>
                  <Property oe:key="CWPassword" oe:value="${CwSSHPassword}"/>
                  <Property oe:key="CWUsername" oe:value="cw-admin"/>
            - Fn::Join:
                - ""
                - - '<Property oe:key="AwsIamRole" oe:value="'
                  - !Ref EC2ENIRole
                  - '"/>'
                  - "\n"
            - !Sub |
                  <Property oe:key="IsSeed" oe:value="False"/>
                  <Property oe:key="VMType" oe:value="Hybrid"/>
                  <Property oe:key="ManagementIPv4Address"
oe:value="${CwInstance2MgmntInterface.PrimaryPrivateIpAddress}"/>
                  <Property oe:key="ManagementIPv4Gateway"
oe:value="${CwMgmtSubnetGateway}"/>
                  <Property oe:key="ManagementIPv4Netmask"
oe:value="${CwMgmtSubnetNetmask}"/>
                  <Property oe:key="ManagementIPv6Address" oe:value="::0"/>
                  <Property oe:key="ManagementIPv6Gateway" oe:value="::1"/>
                  <Property oe:key="ManagementIPv6Netmask" oe:value="64"/>
                  <Property oe:key="ManagerPeerIPs"
oe:value="${CwInstance1MgmntInterface.PrimaryPrivateIpAddress}
${CwInstance2MgmntInterface.PrimaryPrivateIpAddress}
${CwInstance3MgmntInterface.PrimaryPrivateIpAddress}"/>
            - Fn::Join:
                - ""
                - - '<Property oe:key="ManagementVIP" oe:value="'
                  - Fn::Select: [0, Fn::GetAtt: [CwInstance1MgmntInterface,
SecondaryPrivateIpAddresses]]
                  - '"/>'
                  - "\n"
            - !If
              - DeployDataInterface
              # Join statement to construct the Data Interface configs
              - Fn::Join:
                  - "\n"
                  - - Fn::Sub: |
                        <Property oe:key="DataIPv4Address"
oe:value="${CwInstance2DataInterface.PrimaryPrivateIpAddress}"/>
                        <Property oe:key="DataIPv4Netmask"
oe:value="${CwDataSubnetNetmask}"/>
                        <Property oe:key="DataIPv4Gateway"
oe:value="${CwDataSubnetGateway}"/>
                        <Property oe:key="DataPeerIPs"
oe:value="${CwInstance1DataInterface.PrimaryPrivateIpAddress}
${CwInstance2DataInterface.PrimaryPrivateIpAddress}
${CwInstance3DataInterface.PrimaryPrivateIpAddress}"/>
                    - Fn::Join:
                        - ""
                        - - '<Property oe:key="DataVIP" oe\:value="'
                          - Fn::Select: [0, Fn::GetAtt: [CwInstance1DataInterface,
SecondaryPrivateIpAddresses]]
                          - '"/>'
                          - "\n"
              # Default settings when no data interface is present
              - |
                <Property oe:key="DataIPv4Address" oe:value="0.0.0.0"/>
```

導入テンプレートの例

```
                    <Property oe:key="DataIPv4Netmask" oe:value="255.255.255.0"/>
                    <Property oe:key="DataIPv4Gateway" oe:value="0.0.0.0"/>
                    <Property oe:key="DataVIP" oe:value="0.0.0.0"/>
                    <Property oe:key="DataPeerIPs" oe:value=""/>
                - !Sub |
                  <Property oe:key="NTP" oe:value="169.254.169.123"/>
                  <Property oe:key="DNSv4" oe:value="169.254.169.253"/>
                  <Property oe:key="DNSv6" oe:value="::0"/>
                  <Property oe:key="Domain" oe:value=""/>
                  <Property oe:key="InitMasterCount" oe:value="3"/>
                  <Property oe:key="InitNodeCount" oe:value="3"/>
                  <Property oe:key="VMLocation" oe:value="AWS"/>
                  <Property oe:key="DataIPv6Address" oe:value="::0"/>
                  <Property oe:key="DataIPv6Gateway" oe:value="::1"/>
                  <Property oe:key="DataIPv6Netmask" oe:value="64"/>
                  <Property oe:key="Deployment" oe:value="cw_ipv4"/>
                  <Property oe:key="Disclaimer" oe:value="Cisco Crosswork"/>
                  <Property oe:key="K8Orch" oe:value=""/>
                  <Property oe:key="CwInstaller" oe:value="False"/>
                  <Property oe:key="corefs" oe:value="20"/>
                  <Property oe:key="ddatafs" oe:value="${DataDiskSize}"/>
                  <Property oe:key="logfs" oe:value="10"/>
                  <Property oe:key="ramdisk" oe:value="0"/>
                  <Property oe:key="ssd" oe:value="50"/>
                  <Property oe:key="K8sServiceNetworkV4" oe:value="${K8sServiceNetwork}"/>
                  <Property oe:key="K8sPodNetworkV4" oe:value="${K8sPodNetwork}"/>
                  </PropertySection>
                  </Environment>

  CwInstance3:
    #
http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-ec2-instance.html

    Type: AWS::EC2::Instance
    Properties:
      LaunchTemplate:
        Version: 1
        LaunchTemplateId: !Ref CommonCwLaunchTemplate
      NetworkInterfaces:  !If
        - DeployDataInterface
        - - NetworkInterfaceId: !Ref CwInstance3MgmntInterface
            DeviceIndex: "0"
          - NetworkInterfaceId: !Ref CwInstance3DataInterface
            DeviceIndex: "1"
        - - NetworkInterfaceId: !Ref CwInstance3MgmntInterface
            DeviceIndex: "0"
      Tags:
        - Key: Name
          Value: Cw-EC2-VM3
      UserData:  !Base64
        'Fn::Join':
          - ''
          - - !Sub |
              <?xml version="1.0" encoding="UTF-8"?>
              <Environment
                <PlatformSection>
                  <Kind>EC2</Kind>
                </PlatformSection>
                <PropertySection>
                  <Property oe:key="CWPassword" oe:value="${CwSSHPassword}"/>
                  <Property oe:key="CWUsername" oe:value="cw-admin"/>
            - Fn::Join:
                - ""
                - - '<Property oe:key="AwsIamRole" oe:value="'
```

導入テンプレートの例

```
                  - !Ref EC2ENIRole
                  - '"/>'
                  - "\n"
            - !Sub |
                  <Property oe:key="IsSeed" oe:value="False"/>
                  <Property oe:key="VMType" oe:value="Hybrid"/>
                  <Property oe:key="ManagementIPv4Address"
oe:value="${CwInstance3MgmntInterface.PrimaryPrivateIpAddress}"/>
                  <Property oe:key="ManagementIPv4Gateway"
oe:value="${CwMgmtSubnetGateway}"/>
                  <Property oe:key="ManagementIPv4Netmask"
oe:value="${CwMgmtSubnetNetmask}"/>
                  <Property oe:key="ManagementIPv6Address" oe:value="::0"/>
                  <Property oe:key="ManagementIPv6Gateway" oe:value="::1"/>
                  <Property oe:key="ManagementIPv6Netmask" oe:value="64"/>
                  <Property oe:key="ManagerPeerIPs"
oe:value="${CwInstance1MgmntInterface.PrimaryPrivateIpAddress}
${CwInstance2MgmntInterface.PrimaryPrivateIpAddress}
${CwInstance3MgmntInterface.PrimaryPrivateIpAddress}"/>
            - Fn::Join:
                - ""
                - - '<Property oe:key="ManagementVIP" oe:value="'
                  - Fn::Select: [0, Fn::GetAtt: [CwInstance1MgmntInterface,
SecondaryPrivateIpAddresses]]
                  - '"/>'
                  - "\n"
            - !If
              - DeployDataInterface
              # Join statement to construct the Data Interface configs
              - Fn::Join:
                  - "\n"
                  - - Fn::Sub: |
                        <Property oe:key="DataIPv4Address"
oe:value="${CwInstance3DataInterface.PrimaryPrivateIpAddress}"/>
                        <Property oe:key="DataIPv4Netmask"
oe:value="${CwDataSubnetNetmask}"/>
                        <Property oe:key="DataIPv4Gateway"
oe:value="${CwDataSubnetGateway}"/>
                        <Property oe:key="DataPeerIPs"
oe:value="${CwInstance1DataInterface.PrimaryPrivateIpAddress}
${CwInstance2DataInterface.PrimaryPrivateIpAddress}
${CwInstance3DataInterface.PrimaryPrivateIpAddress}"/>
                    - Fn::Join:
                        - ""
                        - - '<Property oe:key="DataVIP" oe\:value="'
                          - Fn::Select: [0, Fn::GetAtt: [CwInstance1DataInterface,
SecondaryPrivateIpAddresses]]
                          - '"/>'
                          - "\n"
              # Default settings when no data interface is present
              - |
                <Property oe:key="DataIPv4Address" oe:value="0.0.0.0"/>
                <Property oe:key="DataIPv4Netmask" oe:value="255.255.255.0"/>
                <Property oe:key="DataIPv4Gateway" oe:value="0.0.0.0"/>
                <Property oe:key="DataVIP" oe:value="0.0.0.0"/>
                <Property oe:key="DataPeerIPs" oe:value=""/>
            - !Sub |
              <Property oe:key="NTP" oe:value="169.254.169.123"/>
              <Property oe:key="DNSv4" oe:value="169.254.169.253"/>
              <Property oe:key="DNSv6" oe:value="::0"/>
              <Property oe:key="Domain" oe:value=""/>
              <Property oe:key="InitMasterCount" oe:value="3"/>
              <Property oe:key="InitNodeCount" oe:value="3"/>
              <Property oe:key="VMLocation" oe:value="AWS"/>
```

導入テンプレートの例

```
                    <Property oe:key="DataIPv6Address" oe:value="::0"/>
                    <Property oe:key="DataIPv6Gateway" oe:value="::1"/>
                    <Property oe:key="DataIPv6Netmask" oe:value="64"/>
                    <Property oe:key="Deployment" oe:value="cw_ipv4"/>
                    <Property oe:key="Disclaimer" oe:value="Cisco Crosswork"/>
                    <Property oe:key="K8Orch" oe:value=""/>
                    <Property oe:key="CwInstaller" oe:value="False"/>
                    <Property oe:key="corefs" oe:value="20"/>
                    <Property oe:key="ddatafs" oe:value="${DataDiskSize}"/>
                    <Property oe:key="logfs" oe:value="10"/>
                    <Property oe:key="ramdisk" oe:value="0"/>
                    <Property oe:key="ssd" oe:value="50"/>
                    <Property oe:key="K8sServiceNetworkV4" oe:value="${K8sServiceNetwork}"/>
                    <Property oe:key="K8sPodNetworkV4" oe:value="${K8sPodNetwork}"/>
                    </PropertySection>
                    </Environment>

Outputs:
  CrossworkClusterStack:
    Description: The Name of the Cw cluster stack
    Value: !Sub ${AWS::StackName}
  CrossworkManagementVIP:
    Value:
     Fn::Select: [0, Fn::GetAtt: [CwInstance1MgmntInterface, SecondaryPrivateIpAddresses]]

    Export:
      Name: !Sub ${AWS::StackName}-Cw-MgmntVIP
  CrossworkManagementIP1:
    Value: !Sub ${CwInstance1MgmntInterface.PrimaryPrivateIpAddress}
  CrossworkManagementIP2:
    Value: !Sub ${CwInstance2MgmntInterface.PrimaryPrivateIpAddress}
  CrossworkManagementIP3:
    Value: !Sub ${CwInstance3MgmntInterface.PrimaryPrivateIpAddress}
  CrossworkDataVIP:
    Value:
     Fn::Select: [0, Fn::GetAtt: [CwInstance1DataInterface, SecondaryPrivateIpAddresses]]

    Export:
      Name: !Sub ${AWS::StackName}-Cw-DataVIP
    Condition: DeployDataInterface
  CrossworkDataIP1:
    Value: !Sub ${CwInstance1DataInterface.PrimaryPrivateIpAddress}
    Condition: DeployDataInterface
  CrossworkDataIP2:
    Value: !Sub ${CwInstance2DataInterface.PrimaryPrivateIpAddress}
    Condition: DeployDataInterface
  CrossworkDataIP3:
    Value: !Sub ${CwInstance3DataInterface.PrimaryPrivateIpAddress}
    Condition: DeployDataInterface
```

EC2 に Crosswork Data Gateway をインストールするための CloudFormation テンプレートの例

注目 このセクションに表示される CF テンプレート（.yaml ファイル）には、単一のインターフェイスを持つ Standard Crosswork Data Gateway をインストールするための詳細が含まれています。これはあくまでもサンプルであることに注意してください。運用の設定に応じて、いつでも別の CF テンプレートを作成し、このセクションで説明する手順に従って実行できます。このドキュメントは、この手順のユーザーが AWS と CloudFormation の概念に精通していることを前提としているため、CF テンプレートの作成はこのドキュメントの範囲外です。

```
Description: "Sample template for deploying CDG4.1 VMs - v4.4"

Metadata:
  AWS::CloudFormation::Interface:
    ParameterGroups:
      -
        Label:
          default: "Cw Network Configuration"
        Parameters:
          - VpcId
          - SecGroup
          - CDGSSHPassword
          - CDGAmiId
          - CNCControllerIP
          - CNCControllerPassword
          - InterfaceDeploymentMode
          - CDGInterface0SubnetId
          - CDGInterface0Gateway
          - CDGInterface0SubnetNetmask
          - CDGInterface1SubnetId
          - CDGInterface1Gateway
          - CDGInterface1SubnetNetmask
          - CDGInterface2SubnetId
          - CDGInterface2Gateway
          - CDGInterface2SubnetNetmask

Parameters:
  VpcId:
    Type: AWS::EC2::VPC::Id
    Description: VpcId of your existing Virtual Private Cloud (VPC)
    ConstraintDescription: Must be the VPC Id of an existing Virtual Private Cloud.

  CDGAmiId:
    Type: AWS::EC2::Image::Id
    Description: Provide CDG AMI ID

  CDGSSHPassword:
    Type: String
    NoEcho: True
    Description: Enter the SSH password to be configured on the CDG

  SecGroup:
    Type: AWS::EC2::SecurityGroup::Id
```

導入テンプレートの例

```
    Description: Pre-created security group to be applied. Must allow ingress access for
 ports 22, 30160:31560

  CNCControllerPassword:
    Type: String
    NoEcho: True
    Description: Enter the cw-admin user password used to access CNC/Cw Controller

  DataDiskSize:
    Description: Cw data disk size.
    Type: Number
    MinValue: 20
    Default: 50

  CDGProfile:
    Type: String
    Description: Deployment profile of the CDG
    AllowedValues:
      - Standard
      - Extended
    Default: Standard

  InstanceType:
    Description: Enter EC2 instance type for the node instances. Default is m5zn.3xlarge.

    Type: String
    AllowedValues:
      - m5.4xlarge
      - m5.8xlarge
      - m5.12xlarge
      - m5d.4xlarge
      - m5d.8xlarge
      - m5d.12xlarge
      - r5.4xlarge
      - r5.8xlarge
      - r5.12xlarge
      - c5.4xlarge
      - c5.8xlarge
      - c5.12xlarge
      - m5zn.3xlarge
    Default: m5zn.3xlarge

  InterfaceDeploymentMode:
    Type: String
    Description: Select the single (all traffic), dual (Management + Data) or triple
 (Management + Data + Control) interface deployment mode.
    AllowedValues:
      - 1
      - 2
      - 3

  CDGInterface0SubnetId:
    Type: AWS::EC2::Subnet::Id
    Description: Select the first interface subnet for the CDG VM.

  CDGInterface0Gateway:
    Type: String
    Description: Enter the  default gateway on the selected subnet. This is typically
 the first address on the subnet.
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})

  CDGInterface1SubnetId:
    Type: AWS::EC2::Subnet::Id
    Description: Select the first interface subnet for the CDG VM. Ignored if not using
```

導入テンプレートの例

```
 dual interface mode.

  CDGInterface1Gateway:
    Type: String
    Description: Enter the  default gateway on the selected  subnet. This is typically
the first address on the subnet.
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})
    Default: "0.0.0.1"

  CDGInterface2SubnetId:
    Type: AWS::EC2::Subnet::Id
    Description: Select the first interface subnet for the CDG VM. Ignored if not using
 triple interface mode.

  CDGInterface2Gateway:
    Type: String
    Description: Enter the  default gateway on the selected  subnet. This is typically
the first address on the subnet.
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})
    Default: "0.0.0.1"

  CDGInterface0IPAddress:
    Type: String
    Description: OPTIONAL - Enter a *free* IP address on the 1st subnet. If set to
"0.0.0.0", an IP address will be allocated automatically .
    Default: "0.0.0.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})|^$

  CDGInterface0SubnetNetmask:
    Type: String
    Description: Enter the subnet netmask in dotted decimal form, eg 255.255.255.0.
    Default: "255.255.255.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})

  CDGInterface1IPAddress:
    Type: String
    Description: OPTIONAL - Enter a *free* IP address on the 2nd subnet. If set to
0.0.0.0, an IP address will be allocated automatically.
    Default: "0.0.0.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})|^$

  CDGInterface1SubnetNetmask:
    Type: String
    Description: Enter the subnet netmask in dotted decimal form, eg 255.255.255.0.
Ignored if not using dual interface mode.
    Default: "255.255.255.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})

  CDGInterface2IPAddress:
    Type: String
    Description: OPTIONAL - Enter a *free* IP address on the 3rd subnet. If set to
0.0.0.0, an IP address will be allocated automatically.
    Default: "0.0.0.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})|^$

  CDGInterface2SubnetNetmask:
    Type: String
    Description: Enter the subnet netmask in dotted decimal form, eg 255.255.255.0.
Ignored if not using triple interface mode.
    Default: "255.255.255.0"
    AllowedPattern: (\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})

  CNCControllerIP:
    Type: String
```

導入テンプレートの例

```
    Description: Specify the address of the Crosswork CDG controller
    AllowedPattern: ((\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3}))|^$
    Default: ""

Conditions:
  DeployInterface0: !Equals
    - !Ref InterfaceDeploymentMode
    - "1"

  DeployInterface1: !Or
    - Fn::Equals:
      - !Ref InterfaceDeploymentMode
      - "2"
    - Fn::Equals:
      - !Ref InterfaceDeploymentMode
      - "3"

  DeployInterface2: !Equals
    - !Ref InterfaceDeploymentMode
    - "3"

  Setif0IP: !Not
    - !Equals
      - !Ref CDGInterface0IPAddress
      - "0.0.0.0"

  Setif1IP: !And
    - !Not
      - !Equals
        - !Ref CDGInterface1IPAddress
        - "0.0.0.0"
    - !Not
      - !Condition DeployInterface0

  Setif2IP: !And
    - !Not
      - !Equals
        - !Ref CDGInterface2IPAddress
        - "0.0.0.0"
    - !Not
      - !Condition DeployInterface0
    - !Not
      - !Condition DeployInterface1

Resources:
  EC2ENIRole:
    Type: AWS::IAM::Role
    Properties:
      AssumeRolePolicyDocument:
        Version: "2012-10-17"
        Statement:
          - Effect: Allow
            Principal:
              Service:
                - ec2.amazonaws.com
            Action:
              - 'sts:AssumeRole'
      Policies:
        - PolicyName: eni-modification
          PolicyDocument:
            Version: '2012-10-17'
            Statement:
              - Effect: Allow
                Action:
```

導入テンプレートの例

```
                - ec2:DescribeNetworkInterfaces
                - ec2:AssignPrivateIpAddresses
                - ec2:UnassignPrivateIpAddresses
              Resource: "*"

CDGEC2IamInstanceProfile:
  Type: AWS::IAM::InstanceProfile
  Properties:
    InstanceProfileName: !Sub ${AWS::StackName}-CDG-EC2IamInstanceProfile
    Path: "/cdg/"
    Roles:
      - !Ref EC2ENIRole

CDG1VNIC0:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "CDG1-VNIC0"
    GroupSet:
      - !Ref SecGroup
    PrivateIpAddresses: !If
      - Setif0IP
      - - Primary: true
          PrivateIpAddress: !Ref CDGInterface0IPAddress
      - !Ref 'AWS::NoValue'
    SubnetId: !Ref CDGInterface0SubnetId
    Tags:
      - Key: Name
        Value: !Sub ${AWS::StackName}-CDG1-VNIC0

CDG1VNIC1:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "CDG1-VNIC1"
    GroupSet:
      - !Ref SecGroup
    PrivateIpAddresses: !If
      - Setif1IP
      - - Primary: true
          PrivateIpAddress: !Ref CDGInterface1IPAddress
      - !Ref 'AWS::NoValue'
    SubnetId: !Ref CDGInterface1SubnetId
    Tags:
      - Key: Name
        Value: !Sub ${AWS::StackName}-CDG1-VNIC1
  Condition: DeployInterface1

CDG1VNIC2:
  Type: AWS::EC2::NetworkInterface
  Properties:
    Description: "CDG1-VNIC2"
    GroupSet:
      - !Ref SecGroup
    PrivateIpAddresses: !If
      - Setif2IP
      - - Primary: true
          PrivateIpAddress: !Ref CDGInterface2IPAddress
      - !Ref 'AWS::NoValue'
    SubnetId: !Ref CDGInterface2SubnetId
    Tags:
      - Key: Name
        Value: !Sub ${AWS::StackName}-CDG1-VNIC2
  Condition: DeployInterface2
```

導入テンプレートの例

```
  CommonLaunchTemplateCDG4:
    Type: AWS::EC2::LaunchTemplate
    Properties:
      LaunchTemplateName: !Sub ${AWS::StackName}-CommonLaunchTemplateCDG4
      LaunchTemplateData:
        InstanceType: !Ref InstanceType
        ImageId: !Ref "CDGAmiId"
        BlockDeviceMappings:
          - Ebs:
              VolumeSize: !Ref DataDiskSize
              DeleteOnTermination: True
              VolumeType: standard
            DeviceName: /dev/sdb
        MetadataOptions:
          HttpPutResponseHopLimit: 2
        IamInstanceProfile:
          Arn: !GetAtt
            - CDGEC2IamInstanceProfile
            - Arn

  CDGInstance:
    Type: AWS::EC2::Instance
    Properties:
      LaunchTemplate:
        Version: 1
        LaunchTemplateId: !Ref CommonLaunchTemplateCDG4
      NetworkInterfaces: !If
        - DeployInterface2
        - - NetworkInterfaceId: !Ref CDG1VNIC0
            DeviceIndex: "0"
          - NetworkInterfaceId: !Ref CDG1VNIC1
            DeviceIndex: "1"
          - NetworkInterfaceId: !Ref CDG1VNIC2
            DeviceIndex: "2"
        - !If
          - DeployInterface1
          - - NetworkInterfaceId: !Ref CDG1VNIC0
              DeviceIndex: "0"
            - NetworkInterfaceId: !Ref CDG1VNIC1
              DeviceIndex: "1"
          - - NetworkInterfaceId: !Ref CDG1VNIC0
              DeviceIndex: "0"
      Tags:
        - Key: Name
          Value: !Sub ${AWS::StackName}-CDG4.0
      UserData: !Base64
        Fn::Join:
          - ''
          - - !Sub |
                AwsIamRole=${EC2ENIRole}
                ActiveVnics=${InterfaceDeploymentMode}
                AllowRFC8190=Yes
                AuditdAddress=
                AuditdPort=60
                ControllerCertChainPwd=${CNCControllerPassword}
                ControllerIP=${CNCControllerIP}
                ControllerPort=30607

ControllerSignCertChain=cw-admin@${CNCControllerIP}:/home/cw-admin/controller.pem
                ControllerTlsCertChain=
                Deployment=Crosswork On-Premise
                Description=${AWS::StackName}-CDG4.1-1
                DGAppdataDisk=5
                DGCertChain=
```

導入テンプレートの例

```
    DGCertChainPwd=
    DGCertKey=
    DNS=169.254.169.253
    DNSSEC=False
    DNSTLS=False
    Domain=
    EnrollmentPassphrase=
    EnrollmentURI=
    Hostname=${AWS::StackName}-CDG4.1
    Label=
    LLMNR=False
    mDNS-False
    NTP=169.254.169.123
    NTPAuth=False
    NTPKey=
    NTPKeyFile=
    NTPKeyFilePwd=
    PortSNMPTrap=1062
    PortSyslogUDP=9514
    PortSyslogTCP=9898
    PortSyslogTLS=6514
    Profile=${CDGProfile}
    ProxyBypass=
    ProxyCertChain=
    ProxyCertChainPwd=
    ProxyPassphrase=
    ProxyURL=
    ProxyUsername=
    SyslogAddress=
    SyslogCertChain=
    SyslogCertChainPwd=
    SyslogPeerName=
    SyslogPort=514
    SyslogProtocol=UDP
    SyslogTLS=False
    UseRemoteAuditd=False
    UseRemoteSyslog=False
    Vnic0IPv4Address=${CDG1VNIC0.PrimaryPrivateIpAddress}
    Vnic0IPv4Gateway=${CDGInterface0Gateway}
    Vnic0IPv4Method=Static
    Vnic0IPv4Netmask=${CDGInterface0SubnetNetmask}
    Vnic0IPv4SkipGateway=False
    Vnic0IPv6Address=::0
    Vnic0IPv6Gateway=::1
    Vnic0IPv6Method=None
    Vnic0IPv6Netmask=64
    Vnic0IPv6SkipGateway=False
- !If
  - DeployInterface1
  - !Sub |
      Vnic1IPv4Address=${CDG1VNIC1.PrimaryPrivateIpAddress}
      Vnic1IPv4Gateway=${CDGInterface1Gateway}
  - |
      Vnic1IPv4Address=0.0.0.0
      Vnic1IPv4Gateway=0.0.0.1
- !Sub |
    Vnic1IPv4Method=Static
    Vnic1IPv4Netmask=${CDGInterface1SubnetNetmask}
    Vnic1IPv4SkipGateway=False
    Vnic1IPv6Address=::0
    Vnic1IPv6Gateway=::1
    Vnic1IPv6Method=None
    Vnic1IPv6Netmask=64
    Vnic1IPv6SkipGateway=False
```

導入テンプレートの例

```
            - !If
              - DeployInterface2
              - !Sub |
                  Vnic2IPv4Address=${CDG1VNIC2.PrimaryPrivateIpAddress}
                  Vnic2IPv4Gateway=${CDGInterface2Gateway}
              - |
                  Vnic2IPv4Address=0.0.0.0
                  Vnic2IPv4Gateway=0.0.0.1
            - !Sub |
                Vnic2IPv4Method=None
                Vnic2IPv4Netmask=${CDGInterface2SubnetNetmask}
                Vnic2IPv4SkipGateway=False
                Vnic2IPv6Address=::0
                Vnic2IPv6Gateway=::1
                Vnic2IPv6Method=None
                Vnic2IPv6Netmask=64
                Vnic2IPv6SkipGateway=False
                dg-adminPassword=${CDGSSHPassword}
                dg-operPassword=${CDGSSHPassword}

Outputs:
  CDGCStack:
    Description: The Name of the CDG cluster stack
    Value: !Sub ${AWS::StackName}
  CDGInterface0IPAddress:
    Value: !Sub ${CDG1VNIC0.PrimaryPrivateIpAddress}
  CDGInterface1IPAddress:
    Value: !Sub ${CDG1VNIC1.PrimaryPrivateIpAddress}
    Condition: DeployInterface1
  CDGInterface2IPAddress:
    Value: !Sub ${CDG1VNIC2.PrimaryPrivateIpAddress}
    Condition: DeployInterface2
```

翻訳について
このドキュメントは、米国シスコ発行ドキュメントの参考和訳です。リンク情報につきましては、日本語版掲載時点で、英語版にアップデートがあり、リンク先のページが移動/変更されている場合がありますことをご了承ください。あくまでも参考和訳となりますので、正式な内容については米国サイトのドキュメントを参照ください。