

1, Configure networks table for all the examples:

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]# lsdef -t network
10_0_0_0-255_0_0_0 (network)
20_0_0_0-255_0_0_0 (network)
30_0_0_0-255_0_0_0 (network)
40_0_0_0-255_0_0_0 (network)
60_0_0_0-255_0_0_0 (network)
70_0_0_0-255_0_0_0 (network)
```

2, Design confignetwork usage to compare with confignics, I assume after confignetwork integrate configeth, it can realize functions in the confignetwork column as this table. Functions in blue are new functions for confignetwork, we should add new functions in blue into confignetwork; Current confignetwork support redhat.

Usercase and Functions	Configure DB tables	Confignics usage	Confignetwork usage	output
<p>Scenario 1:            CN has 1 Ethernet interface as provision NIC. Use configure network to configure this installnic as static ip 10.5.106.9</p>	<p>1,Networks table configuration:            ~]# lsdef -t network            10_0_0_0-255_0_0_0            Object name:            10_0_0_0-255_0_0_0                gateway=10.0.0.103                mask=255.0.0.0                net=10.0.0.0                tftpserver=10.5.106.1</p> <p>2, Node definition:</p>	<p>updatenode bybc0609 ” confignics -s”</p>	<p>updatenode by bc0609 ”confignetwork -s”</p>	<p>Configure installnic static ip,rewrite ifcfg-eth0 file,configure default gateway</p>

	<pre>]# lsdef bybc0609 -i ip Object name: bybc0609 ip=10.5.106.9</pre>			
<p>Scenario2: CN has a nic, it is not the provision nic, user want to configure this nic with static ip 10.4.41.5. He can use configure secondary nics function</p>	<pre>1,Networks      table configuration: ~]#  lsdef  -t  network 10_0_0_0-255_0_0_0 Object          name: 10_0_0_0-255_0_0_0 gateway=10.0.0.103 mask=255.0.0.0 net=10.0.0.0 tftpserver=10.5.106.1  2,Nics table configuration: ]# lsdef bytest15  sed 's/ //g' grep '^nic' nicips.eth1=10.4.41.15 nicnetworks.eth1=10_0_0_ 0-255_0_0_0 nictypes.eth1=Ethernet</pre>	<pre>updatenode bytest15 co nfignics</pre>	<a href="#">updatenode by test15 config network</a>	<p>Configure secondary nics static ip, rewrite ifcfg-* files; It also should support multiple ips for nics.</p>
<p>Scenario3: CN has 2 nics, eth0 is installnic, eth1 is secondary nic. User can use `confignetwork -s` to configure both installnic and secondary</p>	<pre>1,Networks      table configuration: ~]#  lsdef  -t  network</pre>	<pre>updatenode bytest15 co nfignics -s</pre>	<a href="#">updatenode by test15 config network -s</a>	

<p>nic</p>	<pre> 10_0_0_0-255_0_0_0 Object          name: 10_0_0_0-255_0_0_0     gateway=10.0.0.103     mask=255.0.0.0     net=10.0.0.0     tftpserver=10.5.106.1 Object          name: 20_0_0_0-255_0_0_0     mask=255.0.0.0     mgtifname=br-eno1.1     net=20.0.0.0     tftpserver=20.5.106.1  2,nics table configuration: ]# lsdef bytest15  sed 's/ //g' grep '^nic' nicips.eth1=20.4.41.15 nicnetworks.eth1=20_0_0_ 0-255_0_0_0 nictypes.eth1=Ethernet </pre>	<p>updatenode bytest15 co nfignics</p>		
<p>Scenario 4: User wants to configure nics and customize some parameters in ifcfg-* file, for example, he wants to customize MTU and IPV6INIT value for nic eth1, he can use nicextraparams in nics</p>	<pre> 1,Networks      table configuration: ~]# lsdef  -t  network 10_0_0_0-255_0_0_0 </pre>	<p>updatenode bytest15 co nfignics</p>	<p><a href="#">updatenode by test15 confign etwork</a></p>	<p>Write nicextrapara ms into ifcfg-* files,</p>

<p>table</p>	<pre>Object name: 10_0_0_0-255_0_0_0 gateway=10.0.0.103 mask=255.0.0.0 net=10.0.0.0 tftpserver=10.5.106.1  2,Nics table configuration: ]# lsdef bytest15  sed 's/ //g' grep '^nic' nicextraparams.eth1=MTU =1460 IPV6INIT=no nicips.eth1=10.4.41.15 nicnetworks.eth1=10_0_0_ 0-255_0_0_0 nictypes.eth1=Ethernet</pre>			<p>it also take effect live.</p>
<p>Scenario 5: Run customized scrpits, there are 2 ways to run customized scripts: 1, using `confignics --script &lt;myscript&gt;`, confignetwork will take over cofignics --script function specified in this line. 2, define niccustomscripts in nics table, you can find the usage by `tabdump -d nics`, using niccustomscripts do not affect confignetwork code change.</p>	<p>If customized scripts use xCAT db data, should configure DB according to scripts requirements</p>	<p>Confignics --script &lt;myscript&gt;</p>	<p>Confignetwork --script &lt;myscript&gt;</p>	<p>Run myscript</p>

<p>Scenario 6(low priority):  CN has IB adapter. Confignetwork call configib directly to realize  configure IB adapter, here just give one example</p>	<pre>1, networks table: chdef -t network -o ib0ipv41 net=20.0.0.0 mask=255.255.255.0 mgtifname=ib0 chdef -t network -o ib0ipv42 net=30.0.0.0 mask=255.255.255.0 mgtifname=ib0 chdef -t network -o ib0ipv61 net=1:2::/64 mask=/64 mgtifname=ib0 gateway=1:2::2 chdef -t network -o ib0ipv62 net=2:2::/64 mask=/64 mgtifname=ib0 gateway=  2,nics table: chdef &lt;node&gt; nicips.ib0="20.0.0.3 30.0.0 .3 1:2::3 2:2::3" nicnetworks.ib0="ib0ipv41  ib0ipv42 ib0ipv61 ib0ipv6 2" nictypes.ib0="Infiniband"</pre>	<pre>updatenode &lt;node&gt; -P "confignics --ibaports=2 "</pre>	<pre>updatenode &lt;node&gt; -P "confignetwor k --ibaports=2"</pre>	
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<p>Scenario 7:  CN has Ethernet nic eth0, user wants to configure 2 vlans,  Configure vlan eth0.6 60.5.106.9 and eth0.7 70.5.106.9 based on  ethernet nic eth0:</p> <pre>{eth0.6}  &lt;-(vlan)- {eth0} {eth0.7} </pre>	<pre>1,Networks      table configuration: ]# lsdef -t network 60_0_0_0-255_0_0_0,70_ 0_0_0-255_0_0_0 Object          name: 60_0_0_0-255_0_0_0 mask=255.0.0.0 net=60.0.0.0 tftpserver=60.5.106.1 Object          name: 70_0_0_0-255_0_0_0 mask=255.0.0.0 net=70.0.0.0 tftpserver=70.5.106.1  2,Configure nics table for node: ]# lsdef bybc0609 sed 's/ //g' grep '^nic' nictypes.eth0=ethernet nicnetworks.eth0.6="60_0 _0_0-255_0_0_0" nicnetworks.eth0.7="70_0 _0_0-255_0_0_0" nictypes.eth0.6=vlan</pre>	<p>NA</p>	<p>update node by  bc0609 config  network</p>	
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	<pre>nictypes.eth0.7=vlan nicips.eth0.6=60.5.106.9 nicips.eth0.7=70.5.106.9 nicdevice.eth0.6=eth0 nicdevice.eth0.7=eth0</pre>			
<p>Scenario 8: CN has 2 Ethernet nics, eth2 and eth3, user configures bond bond0 using ethernet nic eth2 and eth3</p> <p><b>{bond0} &lt;-(bond)- {eth2+eth3}</b></p>	<pre>1,Networks table: ]# lsdef -t network 30_0_0_0-255_0_0_0 Object          name: 30_0_0_0-255_0_0_0   mask=255.0.0.0   net=30.0.0.0   tftpserver=30.5.106.1  2,Configure nics table for node:  ]# ]# lsdef bybc0609  sed 's / //g' grep '^nic' nicnetworks.bond0=30_0_ 0_0-255_0_0_0 nictypes.eth2=ethernet nictypes.eth3=ethernet nictypes.bond0=bond nicips.bond0=30.5.106.9</pre>	NA	<p>updatenode by bc0609 config network</p>	

	nicdevice.bond0="eth2 eth3"			
<p>Scenario 9:  CN has 2 Ethernet nic eth2 and eth3, user wants to bond them to bond0, then make 2 vlan bond0.2 and bond0.3 for data network. Use confignetwork to configure bond bond0 using eth2 and eth3,configure vlan bond0.2 and bond0.3:</p> <pre><b>{bond0.2}  &lt;-(vlan)- {bond0} &lt;-(bond)- {eth2+eth3}</b> <b>{bond0.3} </b></pre>	<pre>1,Configure networks table: ]# lsdef -t network 30_0_0_0-255_0_0_0,40_0_0_0-255_0_0_0 Object name: 30_0_0_0-255_0_0_0 mask=255.0.0.0 net=30.0.0.0 tftpserver=30.5.106.1 Object name: 40_0_0_0-255_0_0_0  gateway=&lt;xcatmaster&gt; mask=255.0.0.0 net=40.0.0.0 tftpserver=40.5.106.1  2,Configure nics table for node bybc0609:  ]# lsdef bybc0609  sed 's//g' grep '^nic'</pre>	NA	updatenode by bc0609 config network	



	<pre> nicdevice.bond0.2=bond0 nicdevice.bond0.3=bond0 nicips.bond0.2=30.5.106.8 nicips.bond0.3=40.5.106.8 nicnetworks.bond0.2=30_0_0_0-255_0_0_0 nicnetworks.bond0.3="40_0_0_0-255_0_0_0" nictypes.bond0.2=vlan nictypes.bond0.3=vlan nictypes.bond0=bond nictypes.eth2=ethernet nictypes.eth3=ethernet nicdevice.bond0="eth2 eth3" </pre>			
<p>Scenario 10:  CN has 2 Ethernet nics eth2 and eth3, user want to configure bond bond0 using eth2 and eth3, creates bridge br0 based on bond0, br0 ip is 30.5.106.9</p> <pre><b>{br0} &lt;- &lt;-(bridge)- {bond0} &lt;-(bond)- {eth2+eth3}</b></pre>	<pre> 1,Configure networks table: ]# lsdef -t network 30_0_0_0-255_0_0_0 Object name: 30_0_0_0-255_0_0_0  gateway=&lt;xcatmaster&gt; mask=255.0.0.0 mgtifname=br-eno1.2 </pre>	NA	updatenode by bc0609 config network	

	<pre> net=30.0.0.0 tftpserver=30.5.106.1  2,Configure nics table for node bybc0609: ]# lsdef bybc0609  sed 's/ //g' grep '^nic' nictypes.eth2=ethernet nictypes.eth3=ethernet nictypes.bond0=bond nicips.br0=30.5.106.9 nicdevice.bond0="eth2 eth 3" nicdevice.br0=bond0 nictypes.br0=bridge nicnetworks.br0=30_0_0_0 -255_0_0_0 </pre>			
<p>Scenario 11:  CN has 2 Ethernet nics eth2 and eth3, user wants to bond them as bond0, then make vlan bond0.2 and bond0.3, using bond0.2 create bridge br22,using bond0.3 create bridge br33. Use confignetwork to configure bond bond0, create vlan bond0.2 and bond0.3, create bridge br22 and br33  :</p>	<pre> 1,Configure networks table: ]# lsdef -t network 30_0_0_0-255_0_0_0,40_ 0_0_0-255_0_0_0 Object name: 30_0_0_0-255_0_0_0 mask=255.0.0.0 </pre>	NA	update node by bc0609 config network	

<pre>{br22} &lt;-(bridge)- {bond0.2}  &lt;-(vlan)- {bond0} &lt;-(bond)- {eth2+eth3} {br33} &lt;-(bridge)- {bond0.3} </pre>	<pre>net=30.0.0.0 tftpserver=30.5.106.1 Object name: 40_0_0_0-255_0_0_0 mask=255.0.0.0 net=40.0.0.0 tftpserver=40.5.106.1  2,Configure nics table for node bybc0609:  ]# lsdef bybc0609 sed 's/ //g' grep '^nic' nicdevice.br22=bond0.2 nicdevice.br33=bond0.3 nictypes.br22=bridge nictypes.br33=bridge nicnetworks.br22=30_0_0_ 0-255_0_0_0 nicnetworks.br33=40_0_0_ 0-255_0_0_0 nicips.br22=30.5.106.8 nicips.br33=40.5.106.8 nicdevice.bond0.2=bond0 nicdevice.bond0.3=bond0 nictypes.bond0.2=vlan</pre>			
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	<pre> nictypes.bond0.3=vlan nictypes.bond0=bond nictypes.eth2=ethernet nictypes.eth3=ethernet nicdevice.bond0="eth2 eth 3" </pre>			
<p>Scenario 12:  CN has 3 Ethernet nics. User wants to use one Ethernet nic eth0 as management network for xCAT, user wants to use the other 2 nics to create 3 vlan, then create 3 bridge based on these vlan as data network. So he can use `confignetwork -s` to configure all nics, create bond bond0 with eth2 and eth3, create vlan bond0.1 bond0.2 bond0.3, create bridge br1 based on bond0.1, create bridge br2 based on bond0.2, create br3 based on bond0.3</p> <pre> {eth0} {br1} &lt;-(bridge)- {bond0.1}  {br2} &lt;-(bridge)- {bond0.2}  &lt;-(vlan)- {bond0} &lt;-(bond)- {eth2+eth3} {br3} &lt;-(bridge)- {bond0.3}  </pre>	<pre> 1, configure network tables The xcat management network: ~]# lsdef -t network 10_0_0_0-255_0_0_0 Object          name: 10_0_0_0-255_0_0_0 gateway=10.0.0.103 mask=255.0.0.0 net=10.0.0.0 tftpserver=10.5.106.1  The data network for 3 bridges: ]# lsdef -t network 30_0_0_0-255_0_0_0,40_ 0_0_0-255_0_0_0 Object          name: 30_0_0_0-255_0_0_0 </pre>	NA	<pre> updatenode &lt;cn&gt; "confignetwork -s" </pre>	<p>The eth0 is configure static ip 10.5.106.9</p> <p>There are bond0, bond0.1, bond0.2, bond0.3, br1, br2, br3</p> <p>br1 has static ip 60.5.106.9, br2 has static ip 30.5.106.9, br3 has static ip 40.5.106.9</p>

	<pre> mask=255.0.0.0 net=30.0.0.0 tftpserver=30.5.106.1 Object name: 40_0_0_0-255_0_0_0 mask=255.0.0.0 net=40.0.0.0 tftpserver=40.5.106.1 Object name: 60_0_0_0-255_0_0_0 mask=255.0.0.0 net=60.0.0.0 tftpserver=60.5.106.1  2, installnic eth0 ip: ]# lsdef bybc0609 -i ip Object name: bybc0609 ip=10.5.106.9  3, configure nics table for: Bond: Chdef bybc0609 nictypes.bond0=bond nictypes.eth2=ethernet nictypes.eth3=ethernet nicdevice.bond0="eth2 eth </pre>			<p>Create all ifcfg-* files.</p>
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	<p>3"</p> <p>VLAN:</p> <pre>chdef bybc0609 nicdevice.bond0.1=bond0 nicdevice.bond0.2=bond0 nicdevice.bond0.3=bond0 nictypes.bond0.1=vlan nictypes.bond0.2=vlan nictypes.bond0.3=vlan</pre> <p>Bridge:</p> <pre>chdef bybc0609 nicdevice.br1=bond0.1 nicdevice.br2=bond0.2 nicdevice.br3=bond0.3 nictypes.br1=bridge nictypes.br2=bridge nictypes.br3=bridge nicnetworks.br1=60_0_0_0 -255_0_0_0 nicnetworks.br2=30_0_0_0 -255_0_0_0 nicnetworks.br3=40_0_0_0 -255_0_0_0 nicips.br1=60.5.106.9</pre>			
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	<pre> nicips.br2=30.5.106.9 nicips.br3=40.5.106.9 </pre>			
<p>Scenario 13</p> <p>CN has 3 Ethernet nics, and one IB adapter with 2 ports. User wants to use one Ethernet nic eth0 as management network for xCAT, user wants to use the other 2 nics to create 3 vlan, then create 3 bridge based on these vlan as data network. So he can use `confignetwork -s --ibaports=2` to configure installnic eth0 using static ip like scenario 1, to configure IB adapter with 2 ports, create bond bond0 with eth2 and eth3, create vlan bond0.1 bond0.2 bond0.3, create bridge br1 based on bond0.1, create bridge br2 based on bond0.2, create br3 based on bond0.3</p> <pre> {eth0} {Ib0} {br1} &lt;-(bridge)- {bond0.1}  {br2} &lt;-(bridge)- {bond0.2}  &lt;-(vlan)- {bond0} &lt;-(bond)- {eth2+eth3} {br3} &lt;-(bridge)- {bond0.3}  </pre>	<pre> 1, configure network tables The xcat management network: ~ # lsdef -t network 10_0_0_0-255_0_0_0 Object name: 10_0_0_0-255_0_0_0 gateway=10.0.0.103 mask=255.0.0.0 net=10.0.0.0 tftpserver=10.5.106.1  The IB adapter network: ]#lsdef -t network ib0ipv41,ib0ipv42,ib0ipv61,ib0ipv62 Object name:ib0ipv41 net=20.0.0.0 mask=255.255.255.0 mgtifname=ib0 Object name: ib0ipv42 net=30.0.0.0 </pre>	NA	<pre> updatenode &lt;cn&gt; "confignetwork -s --ibaports=2" </pre>	<p>The eth0 is configure static ip 10.5.106.9</p> <p>The IB adapter is ib0</p> <p>There are bond0, bond0.1,bond 0.2.bond0.3,br1,br2,br3</p> <p>br1 has static ip 60.5.106.9,br 2 has static ip 30.5.106.9,br 3 has static ip 40.5.106.9</p> <p>Create all</p>

	<pre> mask=255.255.255.0 mgtifname=ib0 Object name: ib0ipv61 net=1:2::/64 mask=/64 mgtifname=ib0 gateway=1:2::2 Object name: ib0ipv62 net=2:2::/64 mask=/64 mgtifname=ib0  The data network for 3 bridges: ]# lsdef -t network 30_0_0_0-255_0_0_0,40_ 0_0_0-255_0_0_0 Object          name: 30_0_0_0-255_0_0_0 mask=255.0.0.0 net=30.0.0.0 tftpserver=30.5.106.1 Object          name: 40_0_0_0-255_0_0_0 mask=255.0.0.0 net=40.0.0.0 </pre>			ifcfg-* files.
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	<pre> tftpserver=40.5.106.1 Object name: 60_0_0_0-255_0_0_0 mask=255.0.0.0 net=60.0.0.0 tftpserver=60.5.106.1  2, configure installnic eth0 ip: ]# lsdef bybc0609 -i ip Object name: bybc0609 ip=10.5.106.9  3, configure nics table for IB and all bridges: IB: chdef bybc0609 nicips.ib0="20.0.0.3 30.0.0 .3 1:2::3 2:2::3" nicnetworks.ib0="ib0ipv41  ib0ipv42 ib0ipv61 ib0ipv6 2" nictypes.ib0="Infiniband"  Bond: Chdef bybc0609 </pre>			
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	<pre>nictypes.bond0=bond nictypes.eth2=ethernet nictypes.eth3=ethernet nicdevice.bond0="eth2 eth 3"  VLAN: chdef bybc0609 nicdevice.bond0.1=bond0 nicdevice.bond0.2=bond0 nicdevice.bond0.3=bond0 nictypes.bond0.1=vlan nictypes.bond0.2=vlan nictypes.bond0.3=vlan  Bridge: chdef bybc0609 nicdevice.br1=bond0.1 nicdevice.br2=bond0.2 nicdevice.br3=bond0.3 nictypes.br1=bridge nictypes.br2=bridge nictypes.br3=bridge nicnetworks.br1=60_0_0_0 -255_0_0_0 nicnetworks.br2=30_0_0_0</pre>			
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	<pre> -255_0_0_0 nicnetworks.br3=40_0_0_0 -255_0_0_0 nicips.br1=60.5.106.9 nicips.br2=30.5.106.9 nicips.br3=40.5.106.9 </pre>			
Print usage	NA	NA	Confignetwork [-h --help]	
<p>Low priority scenario:</p> <p>1,confignetwork -i &lt;nic&gt;: configure specified nic</p> <p>2,Confignetwork -r &lt;nic&gt;: remove the specified nic except installnic</p> <p>3, integrate configib</p>				