# netkit-lab

**bgp: small-internet**

<table>
<thead>
<tr>
<th>Version</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Author(s)</strong></td>
<td>G. Di Battista, M. Patrignani, M. Pizzonia, F. Ricci, M. Rimondini</td>
</tr>
<tr>
<td><strong>E-mail</strong></td>
<td><a href="mailto:contact@netkit.org">contact@netkit.org</a></td>
</tr>
<tr>
<td><strong>Web</strong></td>
<td><a href="http://www.netkit.org/">http://www.netkit.org/</a></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>emulation of a small internet</td>
</tr>
</tbody>
</table>
copyright notice

- All the pages/slides in this presentation, including but not limited to, images, photos, animations, videos, sounds, music, and text (hereby referred to as “material”) are protected by copyright.
- This material, with the exception of some multimedia elements licensed by other organizations, is property of the authors and/or organizations appearing in the first slide.
- This material, or its parts, can be reproduced and used for didactical purposes within universities and schools, provided that this happens for non-profit purposes.
- Information contained in this material cannot be used within network design projects or other products of any kind.
- Any other use is prohibited, unless explicitly authorized by the authors on the basis of an explicit agreement.
- The authors assume no responsibility about this material and provide this material “as is”, with no implicit or explicit warranty about the correctness and completeness of its contents, which may be subject to changes.
- This copyright notice must always be redistributed together with the material, or its portions.
this lab is obtained by combining some of the bgp labs together
router as20r1 configuration

```
router bgp 20
network 20.1.1.0/24
network 11.0.0.4/30
network 11.0.0.16/30
network 11.0.0.32/30
!
neighbor 11.0.0.33 remote-as 200
neighbor 11.0.0.33 description Router as200r1
neighbor 11.0.0.33 default-originate
neighbor 11.0.0.33 prefix-list as200In in
neighbor 11.0.0.33 prefix-list defaultOut out
!
... next slide
```
router as20r1 configuration

```
neighbor 11.0.0.5 remote-as 100
neighbor 11.0.0.5 description Router as100r1
neighbor 11.0.0.5 default-originate
neighbor 11.0.0.5 prefix-list as100In in
neighbor 11.0.0.5 prefix-list defaultOut out
neighbor 20.1.1.2 remote-as 20
neighbor 20.1.1.2 description Router as20r2 (iBGP)
neighbor 20.1.1.3 remote-as 20
neighbor 20.1.1.3 description Router as20r3 (iBGP)
```

... next slide
router as20r1 configuration

--- zebra bgp configuration file ---

neighbor 11.0.0.18 remote-as 30
neighbor 11.0.0.18 description Router as30r1 (eBGP)
neighbor 11.0.0.18 default-originate route-map dontUseMe
neighbor 11.0.0.18 route-map dontUseMe out
neighbor 11.0.0.18 prefix-list defaultOut out

!ip prefix-list as200In permit 200.2.0.0/16
ip prefix-list as100In permit 100.1.0.0/16
ip prefix-list defaultOut permit 0.0.0.0/0
!
route-map dontUseMe permit 10
set as-path prepend 20 20 20
policy tools

- local preference
  - tunes outbound traffic flows
- metric (med)
  - tunes inbound traffic flows (local scope)
- as-path prepending
  - tunes inbound traffic flows (Internet scope)