## **Chapter 52 Routing**

Packets on the Large.



DeepSec Vienna 2007
7 Layers of Insecurity

# Dee 7 La

### **Copyright Information**



- Some rights reserved / Einige Rechte vorbehalten
- Michael Kafka, René Pfeiffer, Sebastian Meier
   C.a.T. Consulting and Trainings, Vienna, Austria
- You may freely use, distribute and modify this work under following agreement:
- Diese Arbeit darf frei genutzt, verbreitet und bearbeitet werden unter folgenden Bedingungen:
  - **(1)**

Authors must be referenced (also for modification)
Autoren müssen genannt werden (auch bei Bearbeitung)



Only for non commercial use Nur für nichtkommerzielle Nutzung



Derivative work under same licence Derivative Arbeit unter selber Lizenz



http://www.creativecommons.com



- Agenda
  - Attacks on Routing Protocols
  - Attacks on forwarding





Routing is no Heaven





- Modifying routing tables
  - Simple on RIP/EIGRP
  - More Complex on OSPF
  - Unlikely on BGP
- Redirect user traffic to attacker
  - MitM
  - Stealing data





Is the way to Amarillo?





CaT

- The Path is in the Packet
  - Not disabled in most networks
  - Spoofed two way communication
  - Bypassing established Paths
- Risk high, Impact high





### Summary

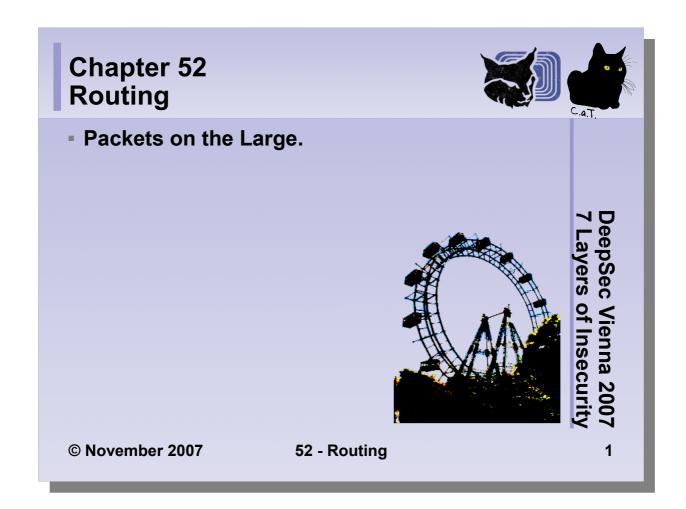
- Routing protocols can be attacked
- Use authenticated updates
- Use ingres filtering and anti spoofing



• Questions?



eepSec Vienna 2007 Layers of Insecurity



### **Copyright Information**



- Some rights reserved / Einige Rechte vorbehalten
- Michael Kafka, René Pfeiffer, Sebastian Meier C.a.T. Consulting and Trainings, Vienna, Austria
- You may freely use, distribute and modify this work under following agreement:
- Diese Arbeit darf frei genutzt, verbreitet und bearbeitet werden unter folgenden Bedingungen:

Authors must be referenced (also for modification) Autoren müssen genannt werden (auch bei Bearbeitung)



Only for non commercial use Nur für nichtkommerzielle Nutzung



Derivative work under same licence **Derivative Arbeit unter selber Lizenz** 



http://www.creativecommons.com

© November 2007

52 - Routing

2

DeepSec Vienna 200

Layers of Insecurity

This presentation is published under the CreativeCommons License which can be viewed in detail on their hompage: http://creativecommons.org/licenses/by-nc-sa/2.0/at/

Read more on http://www.creativecommons.com

### You are free:



to Share — to copy, distribute and transmit the work



to Remix — to adapt the work

### Under the following conditions:



Attribution. You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).



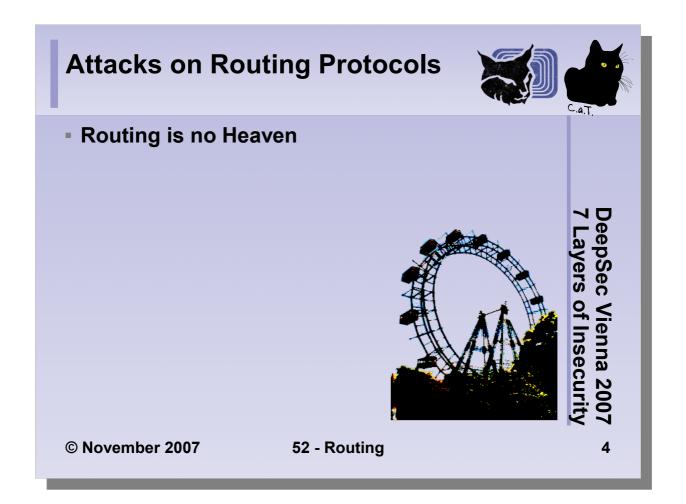
Noncommercial. You may not use this work for commercial purposes.



Share Alike. If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

- For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page.
- Any of the above conditions can be waived if you get permission from the copyright
- Nothing in this license impairs or restricts the author's moral rights.

# Chapter 51 Routing - Agenda - Attacks on Routing Protocols - Attacks on forwarding DeepSec Vienna 2007 T Layers of Insecurity November 2007 52 - Routing 3



### **Spoofed Routing Updates**



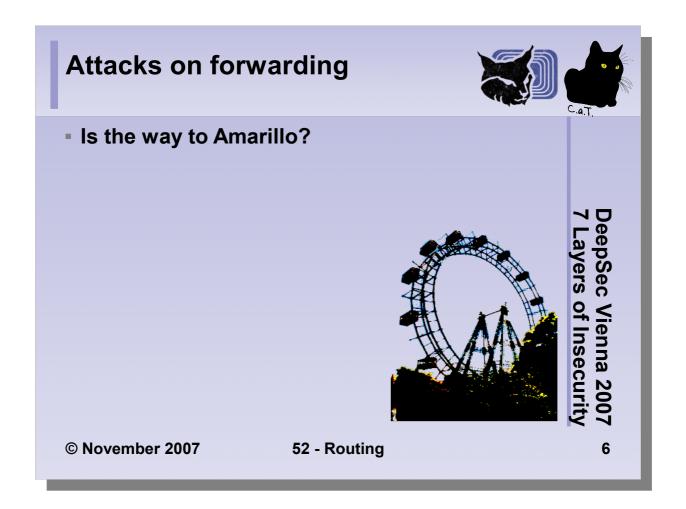
- Modifying routing tables
  - Simple on RIP/EIGRP
  - More Complex on OSPF
  - Unlikely on BGP
- Redirect user traffic to attacker
  - MitM
  - Stealing data

© November 2007

52 - Routing

DeepSec Vienna 2007 7 Layers of Insecurity

5



### **Source Routing**



- The Path is in the Packet
  - Not disabled in most networks
  - Spoofed two way communication
  - Bypassing established Paths
- Risk high, Impact high

DeepSec Vienna 2007 7 Layers of Insecurity

© November 2007

52 - Routing

7

7

# Chapter 51 TCP/IP



- Summary
  - Routing protocols can be attacked
  - Use authenticated updates
  - Use ingres filtering and anti spoofing

DeepSec Vienna 2007 7 Layers of Insecurity

© November 2007

52 - Routing

8

