



Icinga @ VIX (+ ACOnet)
<http://www.vix.at>

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Icinga facts

- <http://www.icinga.org>
- Fork of nagios (version 3.1.something)
 - core developer @ VIX
 - easy transition
 - much better performance ($\sim 10^3$ to 10^4)
 - compound commands
- checks
 - ~ 100 hosts
 - ~ 6000 services



Icinga check types

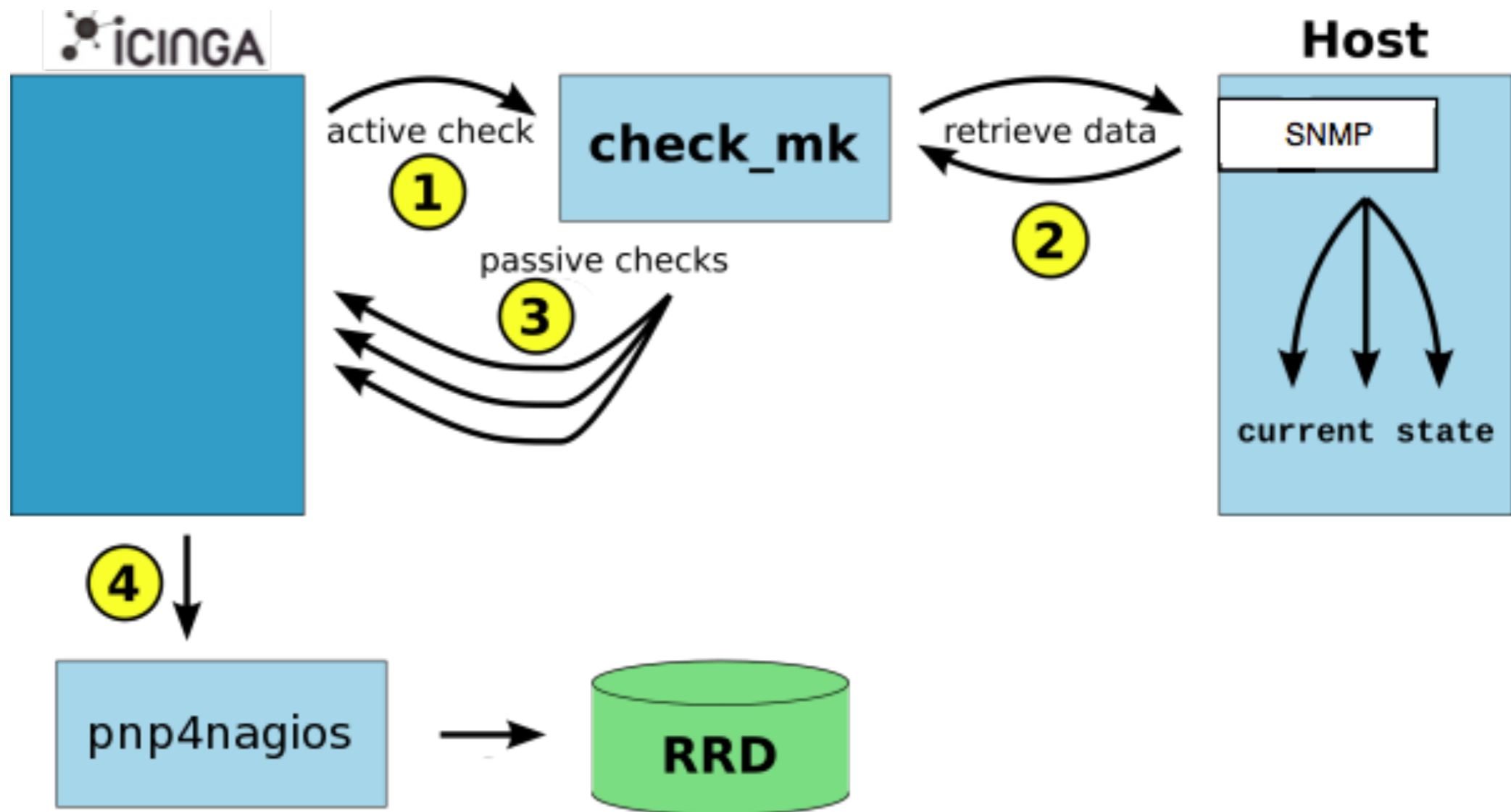
■ active

- Icinga process starts check plugin
- Icinga process parses result
- Icinga process triggers actions

■ passive

- check runs autonomously
- check submits results - if they are relevant
- Icinga “listens” for results and processes them

Icinga and check_mk





Icinga and check_mk

- only one active check per host
 - checks wether check_mk runs
 - small cpu load
- many passive checks per check_mk
 - report of check_mk results per passive check
 - grep data via single snmp-walk
 - also performance-data (for graphs)
 - massive reduction of snmp-queries



Icinga, pnp4nagios and rrdcached

- pnp4nagios interprets performance data
 - feeds data into rrd
 - graphs are integrated in web-portal
 - custom templates for graphs

- rrdcached
 - speed up rrd access
 - increases IO performance
 - less R/W access necessary



What do we check?

- Interfaces
 - up/down
 - errors
 - dropped packets
- BGP
 - status of sessions on routers and BIRD
- System health
 - CPU load
 - memory
 - module status
 - fan status / power supplies
 - module uptime (not yet)



What do we graph?

- Interfaces
 - traffic pps/bps
 - errors
 - dropped packets
 - DOM (digital optical monitoring)
- BGP
 - accepted prefixes
 - non-accepted prefixes (counter value)
 - update rate
- System health
 - CPU load
 - memory usage and largest continuous chunk



Checking BGP sessions of BIRD route-server

```
snmpd.conf
```

```
extend .1.3.6.1.4.1.2021.77 bgpstatus /usr/bin/perl birdwatch.pl
```

```
custom birdwatch.pl
```

```
send SOCK,"show protocols all \"R*\\\"\\n\",0;
```

```
snmpwalk -v2c -c <com> <rs> -On .1.3.6.1.4.1.2021.77  
.1.3.6.1.4.1.2021.77.4.1.2.9.98.103.112.115.116.97.116.117.115.34 =  
STRING: "R1853x1 1853 ipv4 6 260"
```

```
check_mk Plugin
```

```
name, asnum, proto, state, prefixes=line[0].split(" ")
```

```
check_mk Output state+perfdata
```

```
Peer R1853x1 ipv4 OK (prefixes=260;;;)
```



Icinga config

- database is authoritative source
 - description
 - what to check/ignore
 - alarm trigger values

- crawler checks checks
 - check_mk inventory
 - daily
 - alarms if mismatch

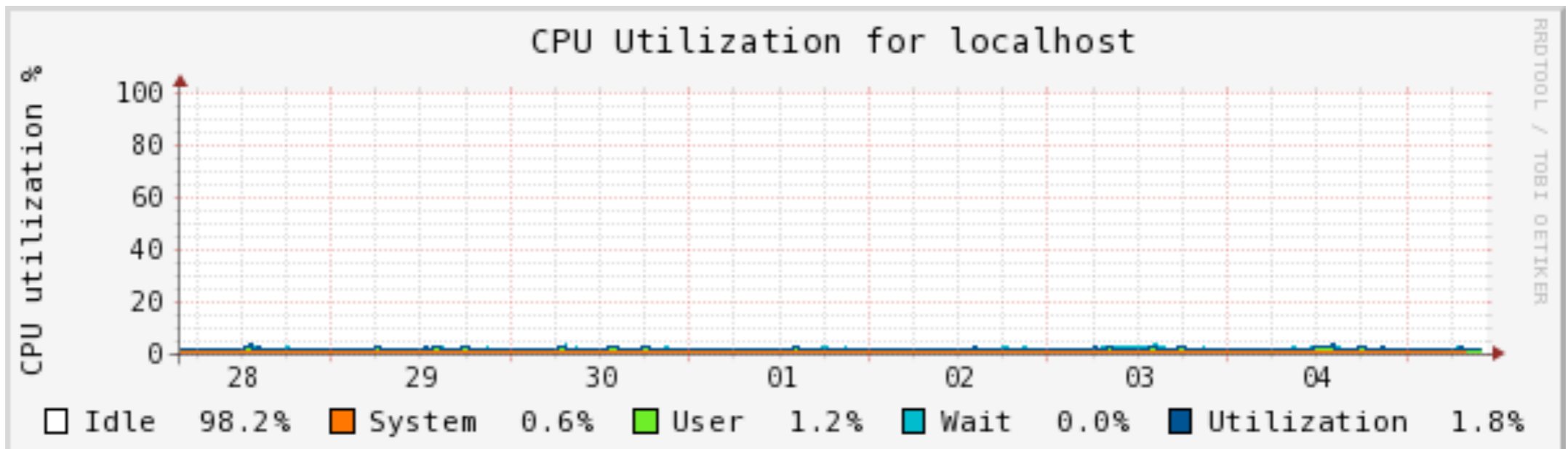
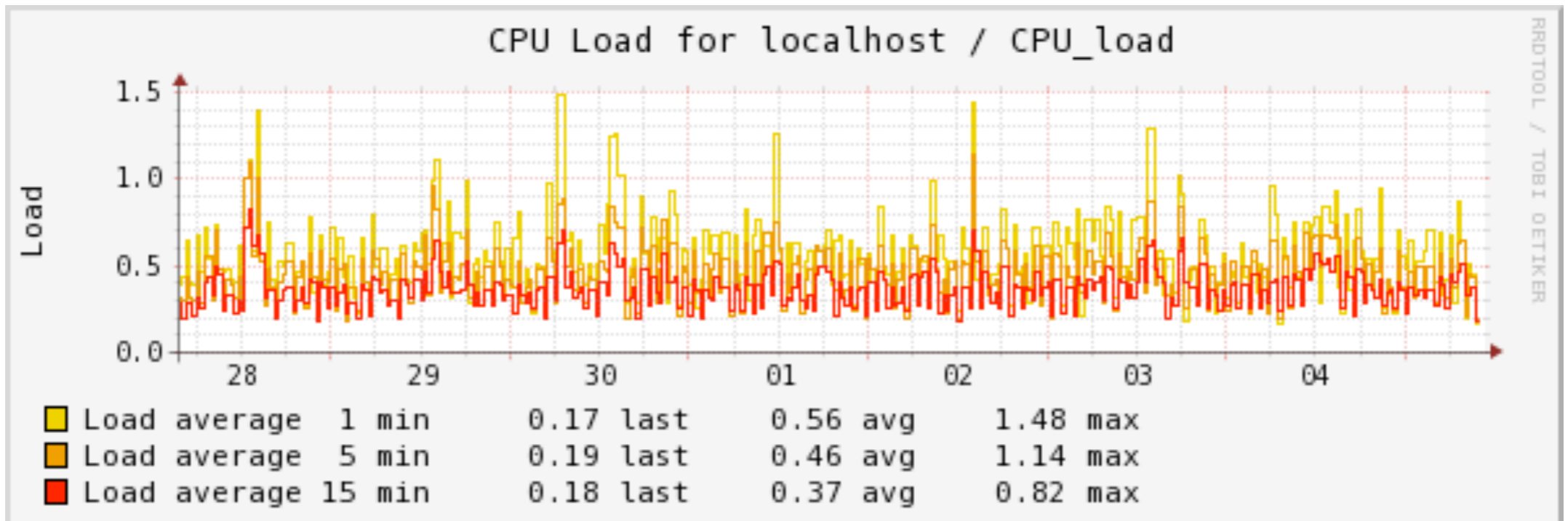


dedicated hardware

- 2 x HP DL380 G7
 - 12 cores
 - 12 GB RAM
 - 15k harddisks raid1
- 100 MB RAM-disk for status info
- Disk IO is limiting factor
- no virtualization
 - less dependencies
 - also virtualization environment is monitored
 - wouldn't make sense to virtualize monitoring system



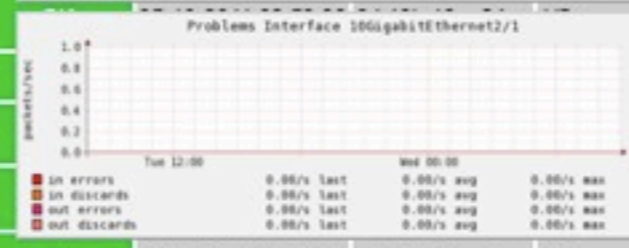
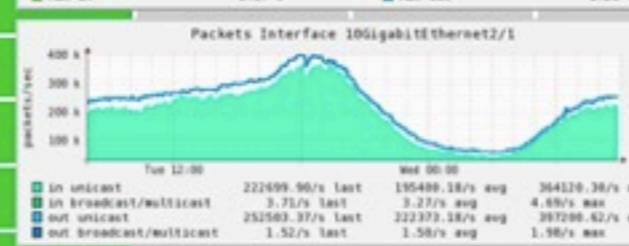
CPU load / utilization of monitoring server





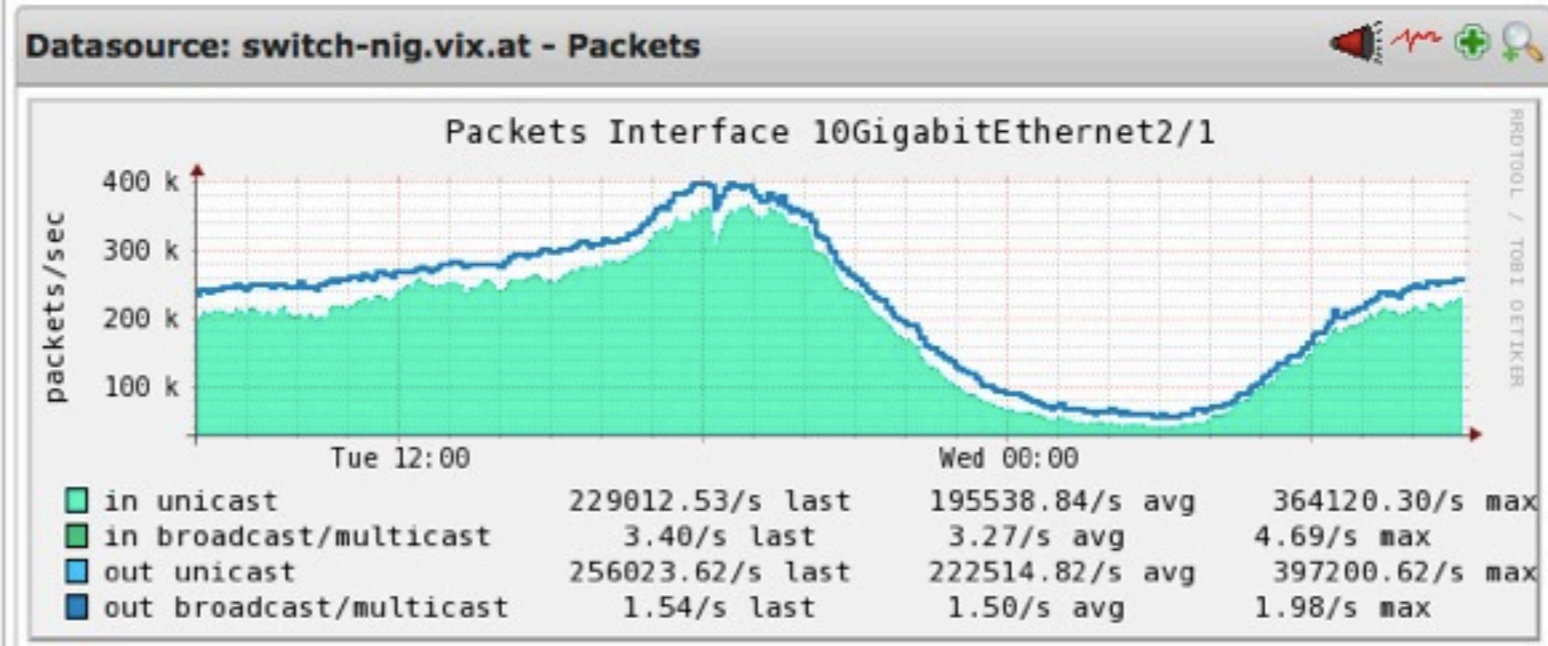
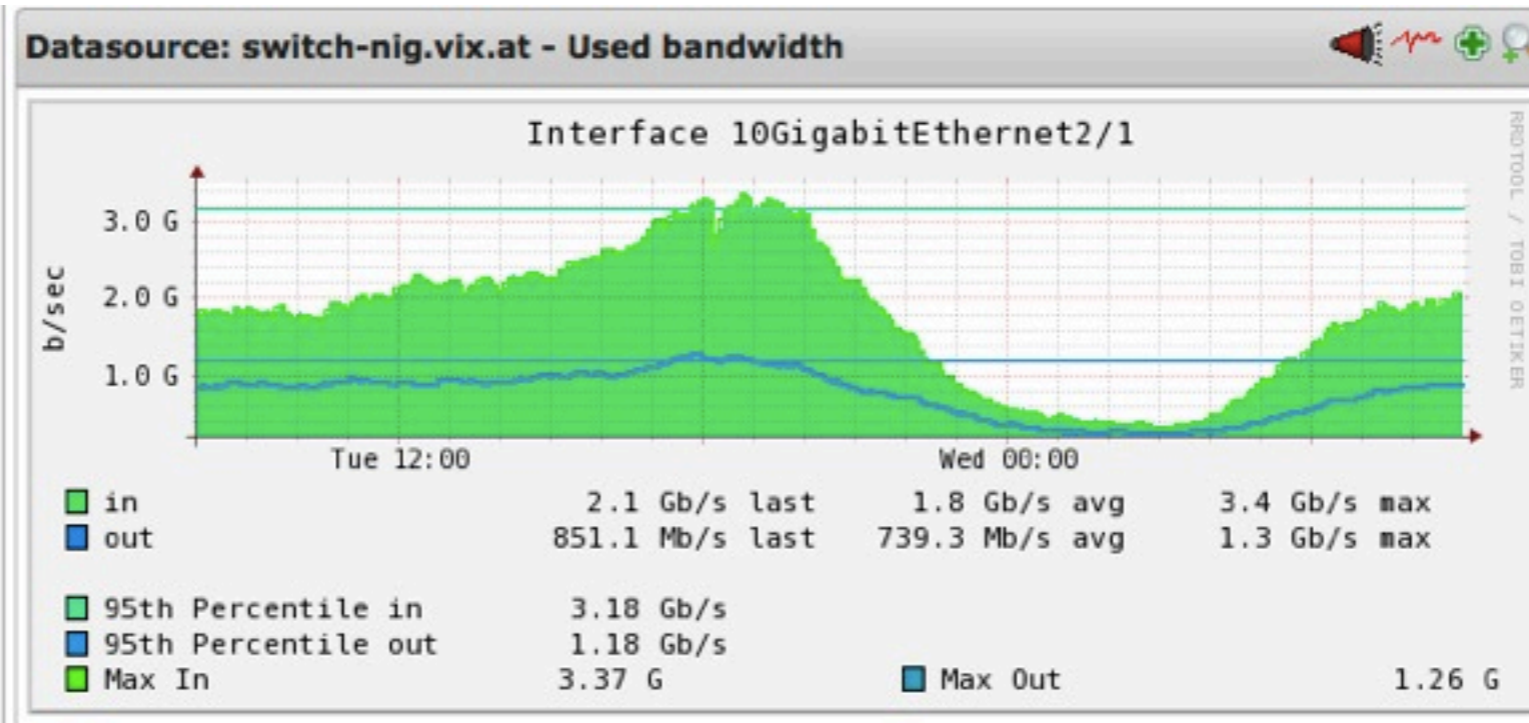
Status screen + mouse-over graphics

Fan 5: Bottom Fan Tray		OK	05-10-2011 08:50:35	118d 0h 35m 23s	1/5	OK - Bottom Fan Tray State: normal	<input type="checkbox"/>
Fan 6: Bottom Fan Tray		OK	05-10-2011 08:50:35	118d 0h 35m 23s	1/5	OK - Bottom Fan Tray State: normal	<input type="checkbox"/>
Fan 7: Back Fan A		OK	05-10-2011 08:50:35	118d 0h 35m 23s	1/5	OK - Back Fan A State: normal	<input type="checkbox"/>
L2 AS8339 Kabelsignal ethernet10/1 - 128		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS8339 Kabelsignal] (up) 10.00Gbit/s, in: 5.89MB/s(0.5%), out: 33.65MB/s(2.8%)	<input type="checkbox"/>
L2 AS5403 APA ethernet10/2 - 124		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS5403 APA] (up) 10.00Gbit/s, in: 154.34MB/s(12.9%), out: 18.47MB/s(1.5%)	<input type="checkbox"/>
Interface 10GigabitEthernet16/1		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100core: VIX-Trunk Telekom DFP 567 CWDM 1470] (up) 10.00Gbit/s, in: 228.02MB/s(19.1%), out: 99.88MB/s(8.4%)	<input type="checkbox"/>
Interface 10GigabitEthernet16/2		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100core: VIX-Trunk Telekom DFP 567 CWDM 1490] (up) 10.00Gbit/s, in: 248.10MB/s(20.8%), out: 100.54MB/s(8.4%)	<input type="checkbox"/>
Interface 10GigabitEthernet2/1		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100core: VIX-Trunk TA FI 914098 ex eTel CWDM 1470] (up) 10.00Gbit/s, in: 235.95MB/s(19.8%), out: 100.62MB/s(8.4%)	<input type="checkbox"/>
Interface 10GigabitEthernet2/2		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100core: VIX-Trunk TA FI 914098 ex eTel CWDM 1490] (up) 10.00Gbit/s, in: 238.23MB/s(20.0%), out: 106.48MB/s(8.9%)	<input type="checkbox"/>
L2 AS8447 A1 Telekom Austria AG ethernet7/3 - 584		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS8447 A1 Telekom Austria AG] (up) 10.00Gbit/s, in: 106.26MB/s(8.9%), out: 433.00MB/s(36.3%)	<input type="checkbox"/>
L2 AS1853 AConet ethernet7/4 - 101		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS1853 AConet [Anschluss im NIG Core1]] (up) 10.00Gbit/s, in: 185.08MB/s(15.5%), out: 158.38MB/s(13.3%)	<input type="checkbox"/>
L2 AS1764 next layer ethernet9/1 - 97		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS1764 next layer] (up) 10.00Gbit/s, in: 20.29MB/s(1.7%), out: 10.63MB/s(0.9%)	<input type="checkbox"/>
L2 AS6830 UPC Austria GmbH UPC Distribution Service ethernet9/2 - 39		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS6830 UPC Austria GmbH UPC Distribution Service] (up) 10.00Gbit/s, in: 251.67MB/s(21.1%), out: 187.21MB/s(15.7%)	<input type="checkbox"/>
L2 AS8447 A1 Telekom Austria AG ethernet9/3 - 144		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS8447 A1 Telekom Austria AG] (up) 10.00Gbit/s, in: 102.43MB/s(8.6%), out: 450.05MB/s(37.8%)	<input type="checkbox"/>
Interface FastEthernetManagement1		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [2049] (up) 1Gbit/s, in: 5.24KB/s(0.0%), out: 1008.97B/s(0.0%)	<input type="checkbox"/>
L2 AS8412 T-Mobile ethernet1/1 - 95		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS8412 T-Mobile] (up) 1Gbit/s, in: 5.46MB/s(4.6%), out: 27.03MB/s(22.7%)	<input type="checkbox"/>
L2 AS3856 PCH.net ethernet1/10 - 32		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS3856 PCH.net] (up) 1Gbit/s, in: 555.33B/s(0.0%), out: 1.83KB/s(0.0%)	<input type="checkbox"/>
L2 AS39478 ASFINAG ethernet1/11 - 187		OK	05-10-2011 08:50:36	6d 19h 13m 24s	1/5	OK - [100cust: AS39478 ASFINAG] (up) 100Mbit/s, in: 1.19MB/s(10.0%), out: 1.11MB/s(9.3%)	<input type="checkbox"/>



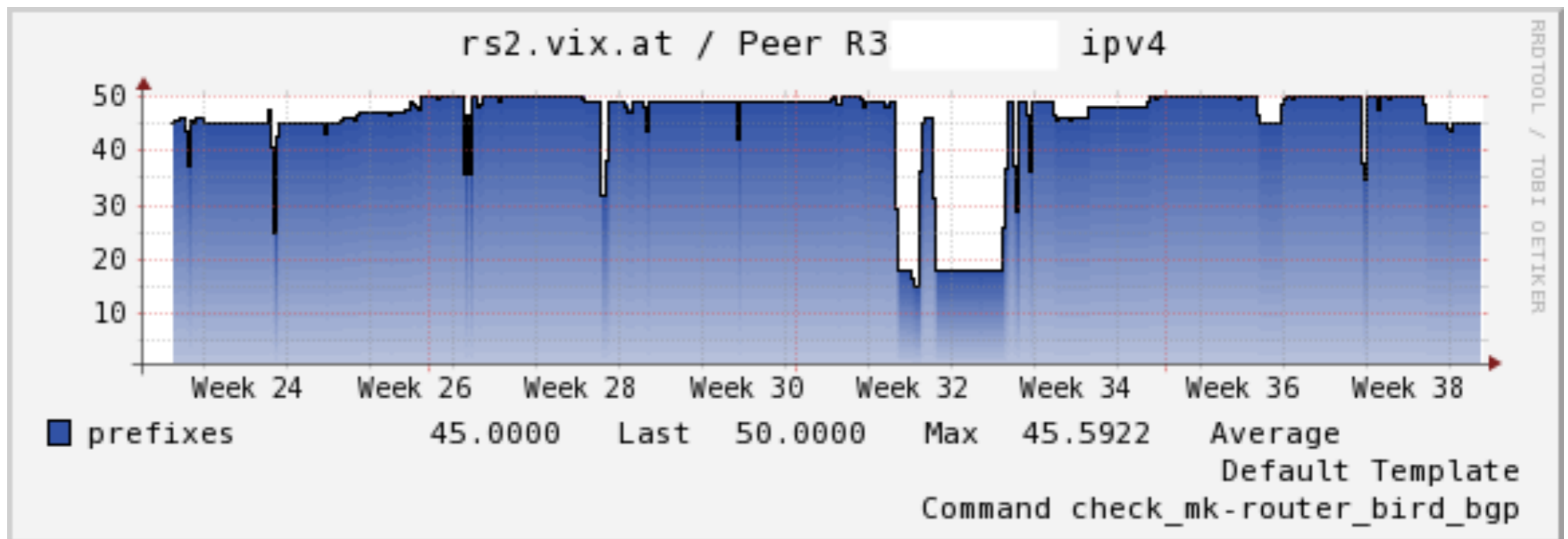


interface graph details



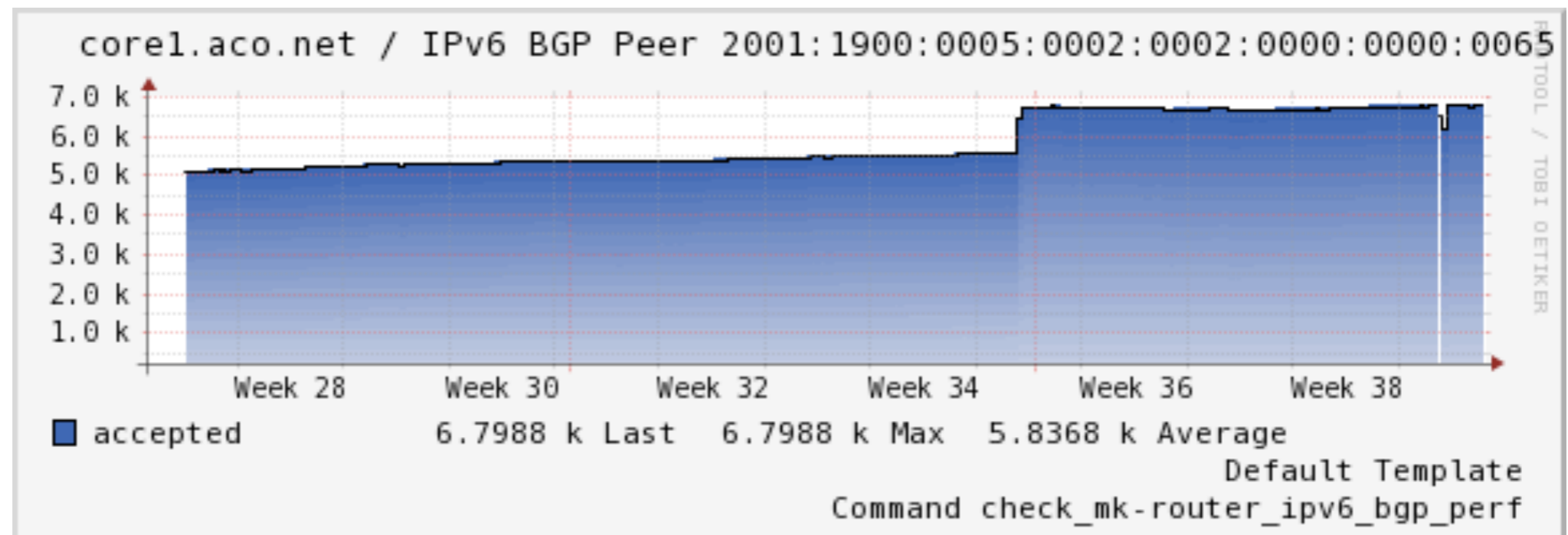
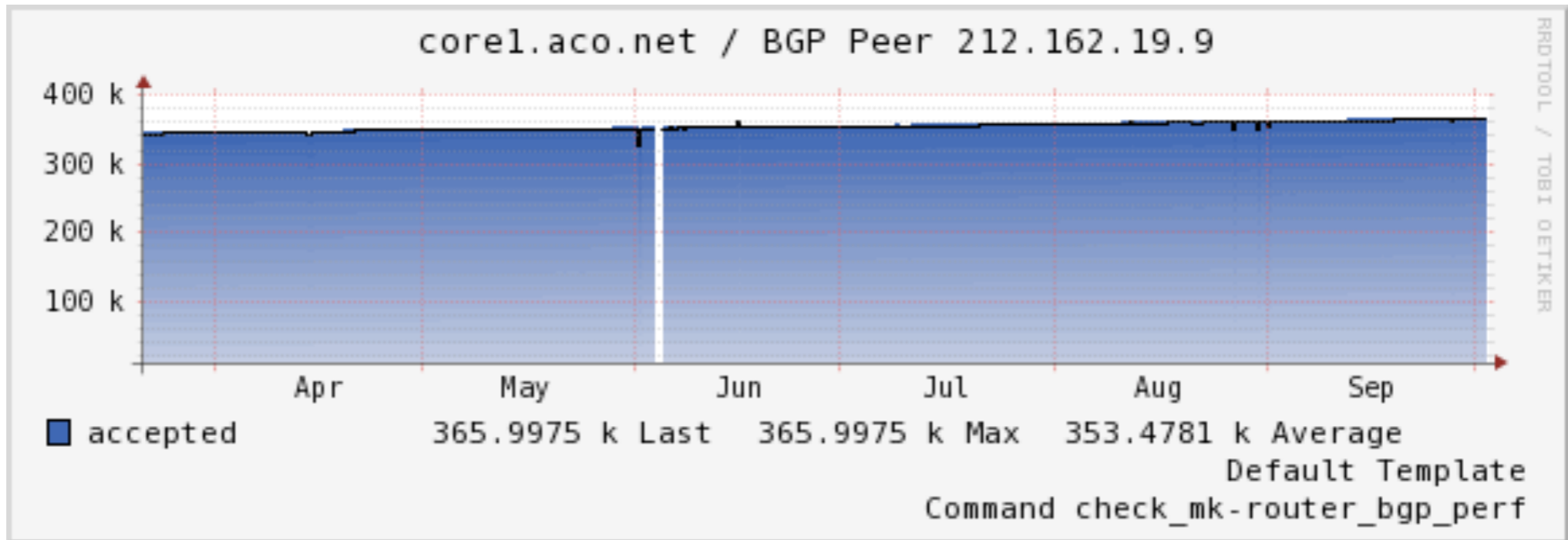


Accepted BGP prefixes of a BGP session





Accepted BGP prefixes of a BGP session





Vienna Internet eXchange

Questions?

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Further information

- <http://www.icinga.org>
- http://mathias-kettner.de/check_mk.html
- <http://bird.network.cz/>
- <http://www.pnp4nagios.org/>