



OPEN SOURCE™
SYSTEM
MANAGEMENT
CONFERENCE 2012

presented by **WÜRTHPHOENIX**

Systems Management with Open Source

Bernd Erk @ Würth Phoenix

Open Source Systems Management Conference 2012

10th of May - Bolzano





OPEN SOURCE™
SYSTEM
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CONFERENCE 2012

presented by  **WÜRTHPHOENIX**

Introducing NETWAYS

Friday, May 11, 12

 **NETWAYS®**



NETWAYS Expertise

OPEN SOURCE SYSTEMS MANAGEMENT

- Monitoring & Reporting
- Configuration Management
- Service Management
- Knowledge Management
- Backup & Recovery

OPEN SOURCE DATA CENTER

- High Availability & Clustering
- Cloud Computing
- Load Balancing
- Virtualization
- Database Management

MANAGED SERVICES

MONITORING HARDWARE

CONFERENCES



**OPEN SOURCE™
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NETWAYS Conferences



Open Source Monitoring Conference 17 – 18 October 2012

260 attendees (2011)

Icinga / Nagios case studies & best practices
Latest monitoring technologies & addons



Open Source Data Center Conference 17 – 18 April 2013

105 attendees (2012)

“Agile Infrastructures”

Devops & methods

Databases

Scalability & infrastructure



Community Involvement



www.netways.org

NETWAYS Addons

NETWAYS Plugins



www.icinga.org

Development

Hosting



www.monitoringexchange.org

Repository of Icinga / Nagios

addons and plugins

~2000 projects



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Systems Management

Friday, May 11, 12

 **NETWAYS®**



Systems Management

Hardware Management

User Management

Capacity Management

Security Management

Problem Management

Availability Management

Storage Management

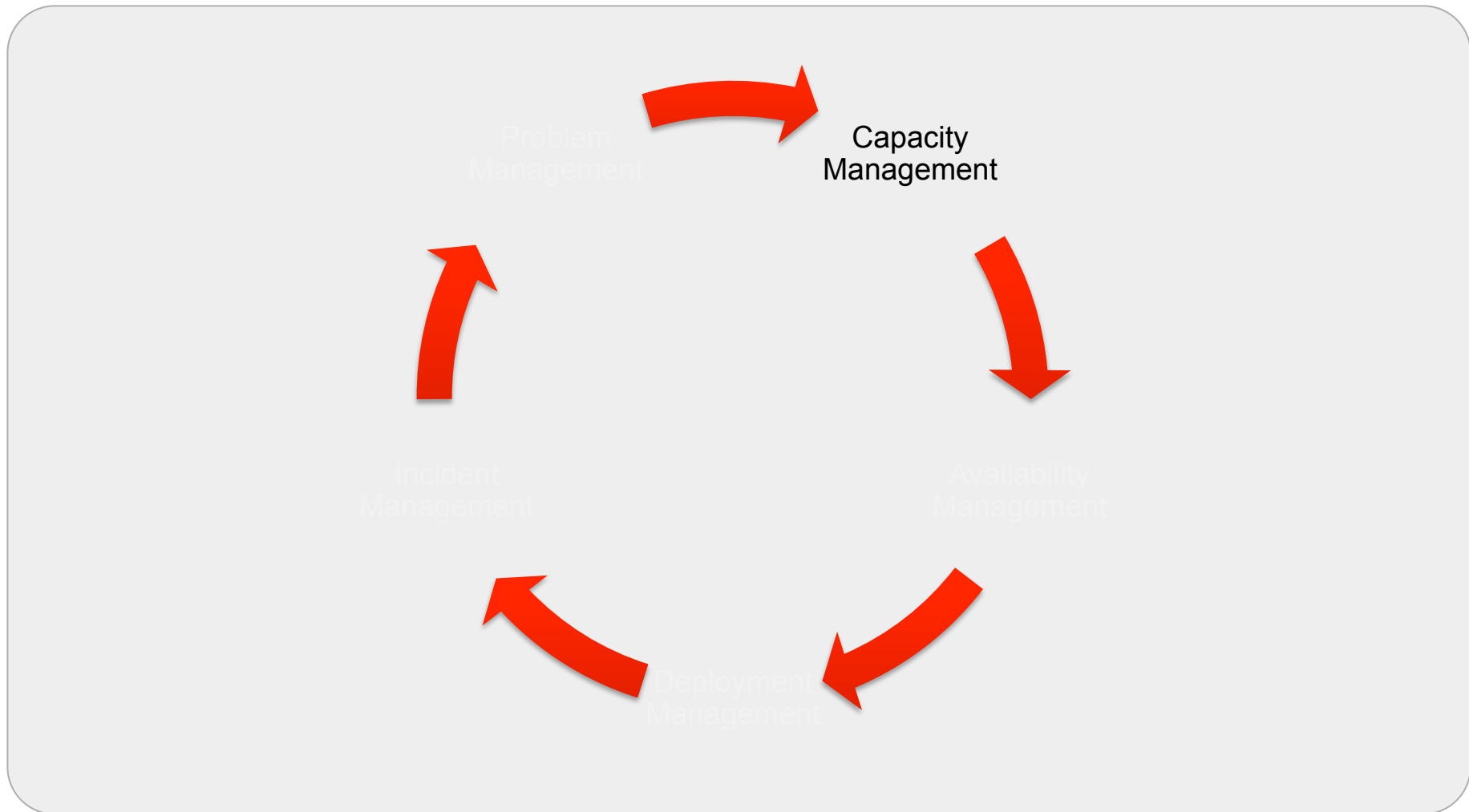
Incident Management



Tools & Processes



Capacity Management



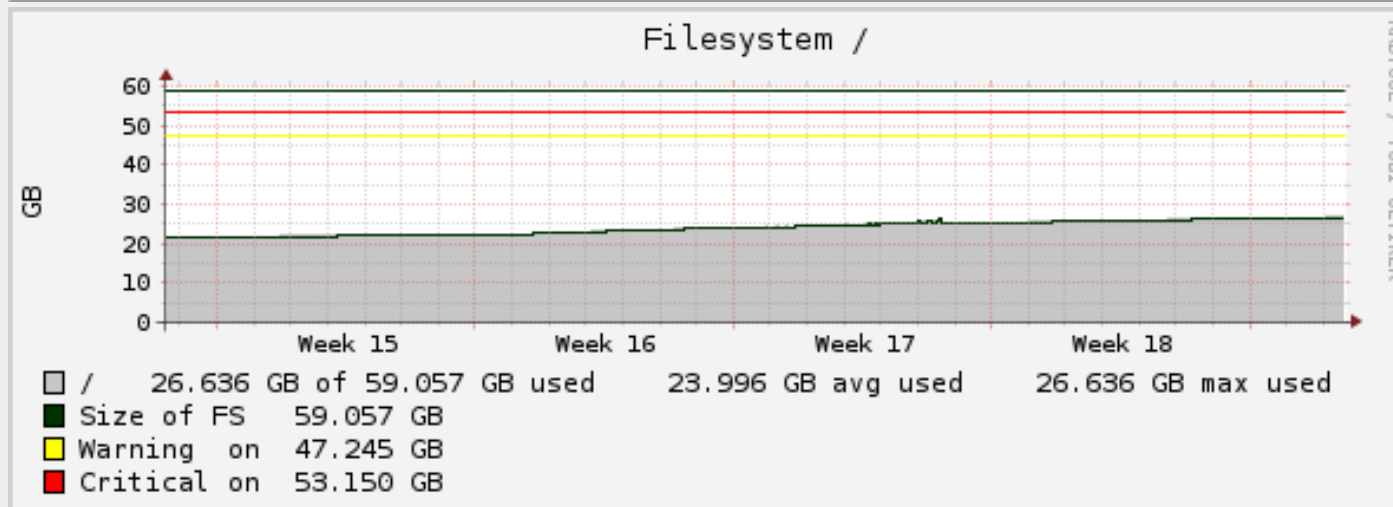
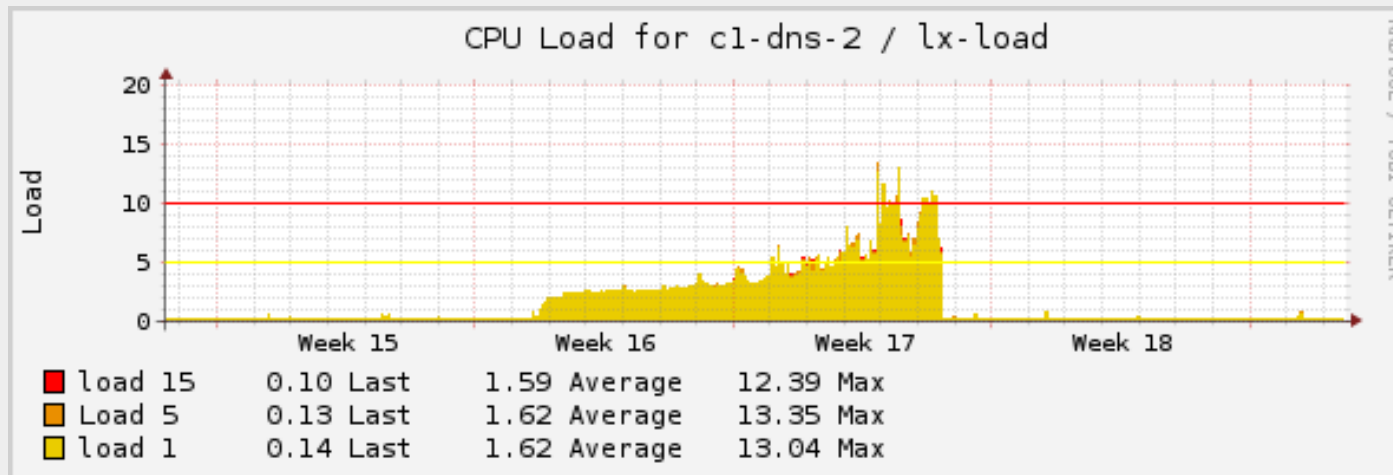


Capacity Management - Tools

- Independent Tools
 - Cacti
 - Munin
 - Graphite
- Nagios/Icinga Addons
 - **PNP4Nagios**
 - **inGraph**

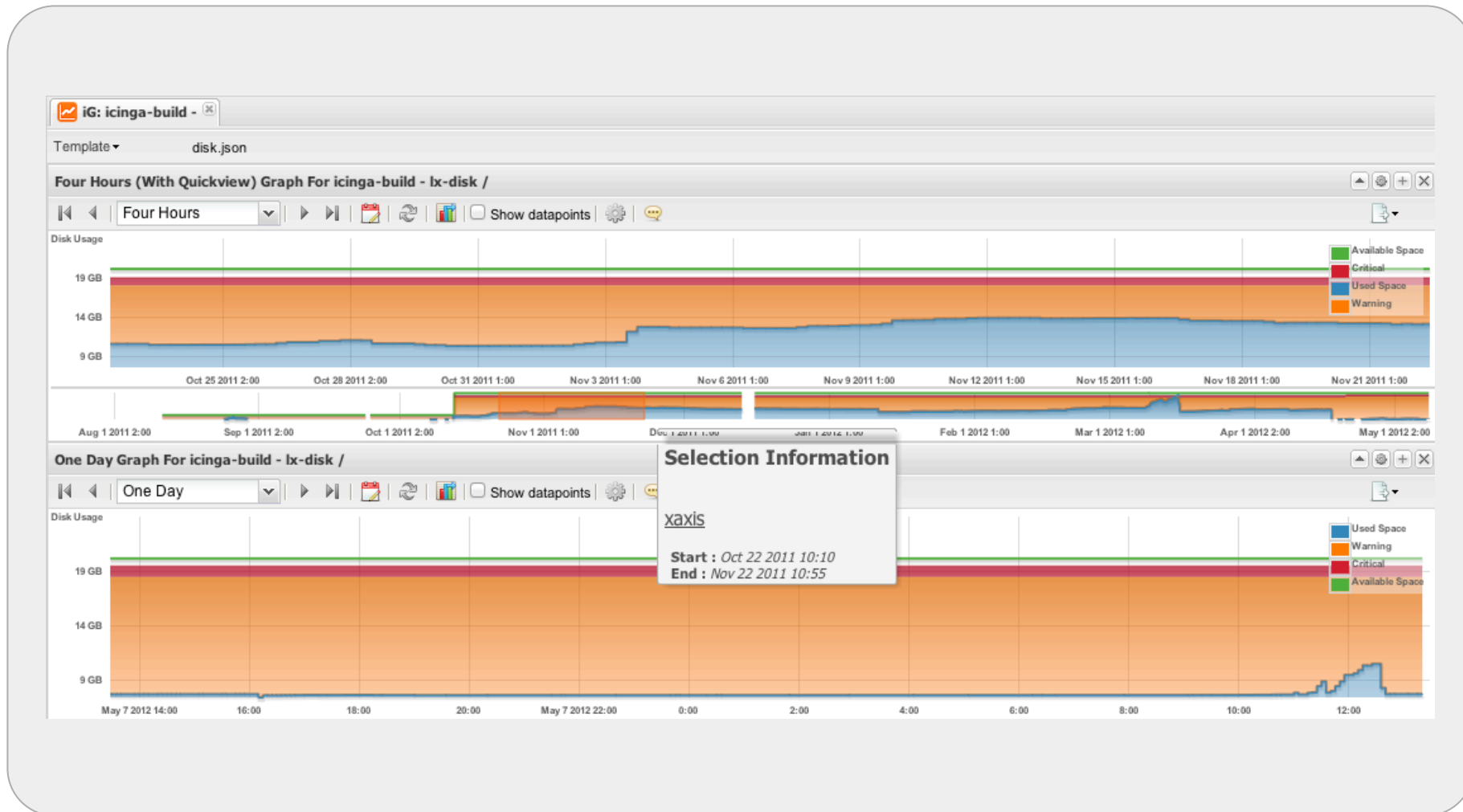


Capacity Management – PNP4Nagios



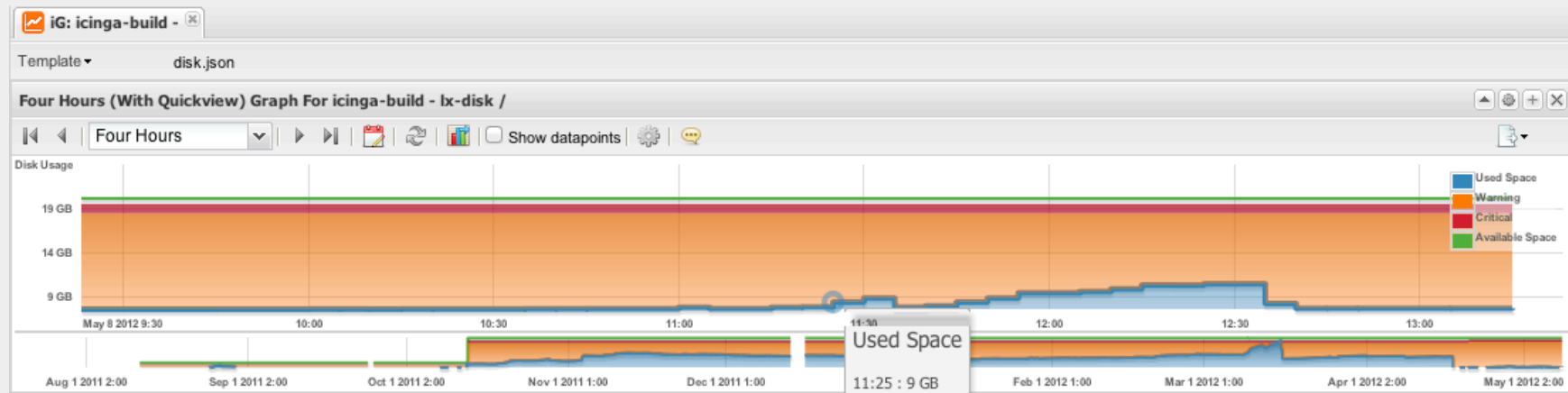


Capacity Management – inGraph





Capacity Management – inGraph



www.netways.org/projects/ingraph



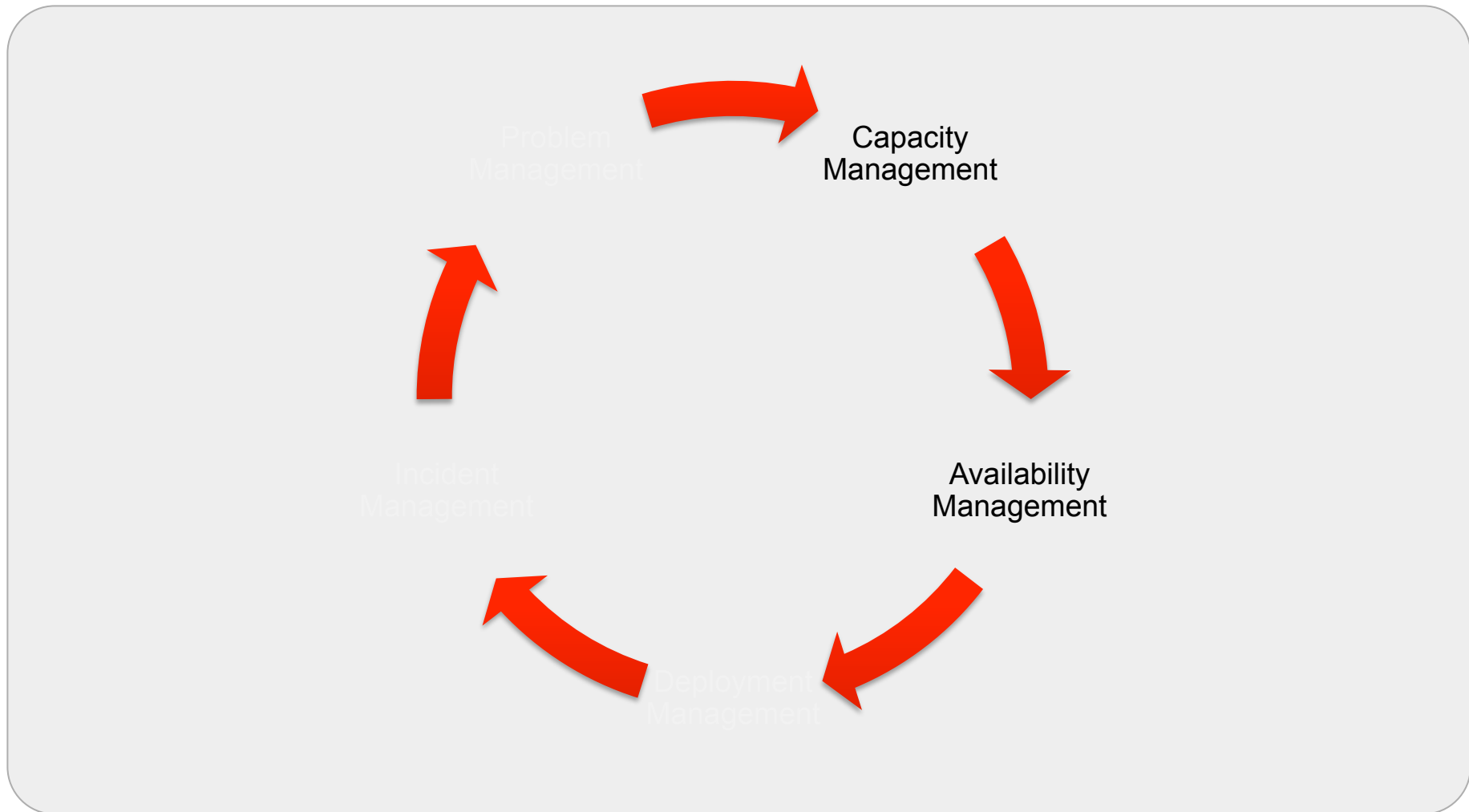
Capacity Management – inGraph

```
check_ingraph -H localhost -S "Current Load"  
-P load1 -F average -f -192 -g -168 -s -24 -t 0 -w 10 -c 20
```

www.netways.org/projects/ingraph



Availability Management





Availability Management - SLA

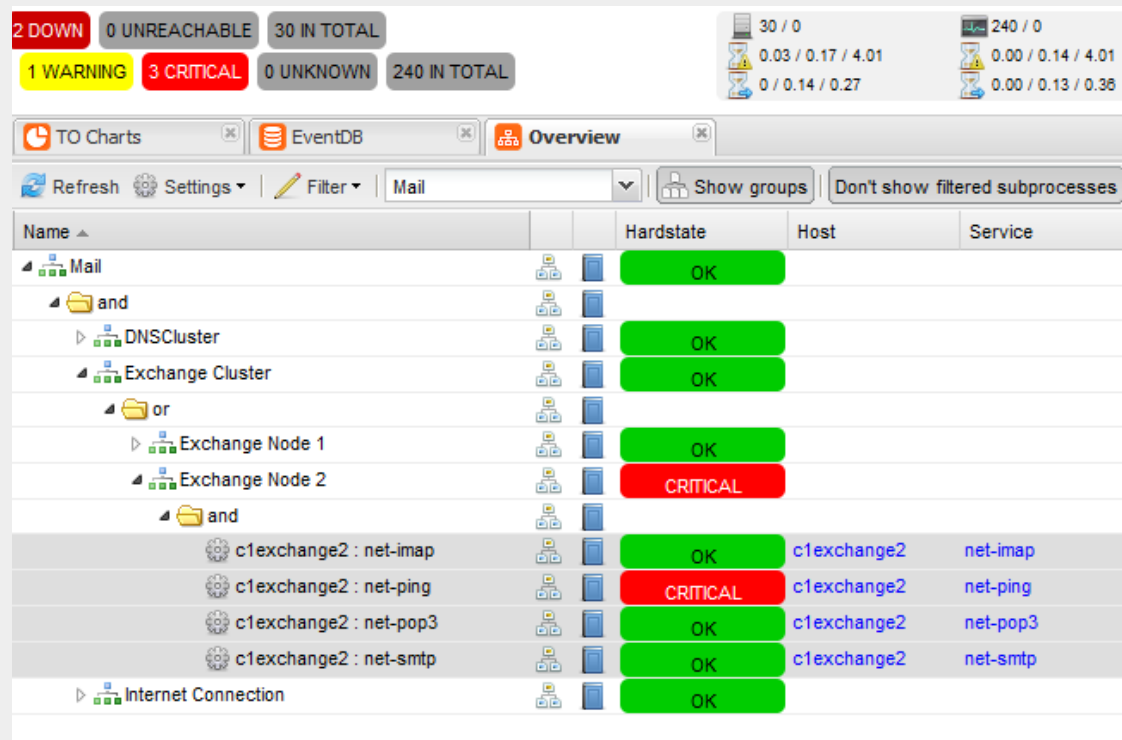
SMART – Principle

- **Specific**
- **Measurable**
- **Achievable**
- **Relevant**
- **Timely**



Availability Management - Business Process View

- Aggregation of different hosts and services
- Treeview of all important business processes
- and/or relations
- Drilldown



2 DOWN 0 UNREACHABLE 30 IN TOTAL
1 WARNING 3 CRITICAL 0 UNKNOWN 240 IN TOTAL

30 / 0 240 / 0
0.03 / 0.17 / 4.01 0.00 / 0.14 / 4.01
0 / 0.14 / 0.27 0.00 / 0.13 / 0.36

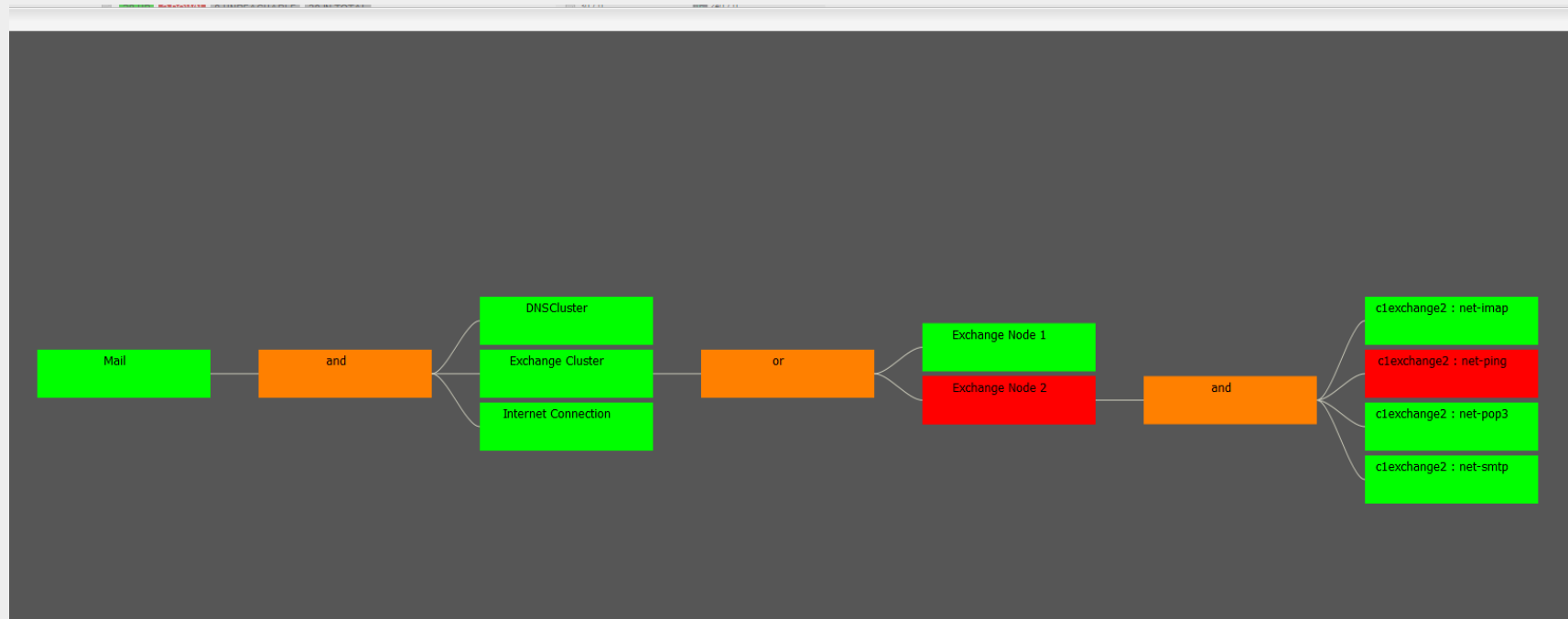
TO Charts EventDB Overview

Refresh Settings Filter Mail Show groups Don't show filtered subprocesses

Name	Hardstate	Host	Service
Mail	OK		
and			
DNSCluster	OK		
Exchange Cluster	OK		
or			
Exchange Node 1	OK		
Exchange Node 2	CRITICAL		
and			
c1exchange2 : net-imap	OK	c1exchange2	net-imap
c1exchange2 : net-ping	CRITICAL	c1exchange2	net-ping
c1exchange2 : net-pop3	OK	c1exchange2	net-pop3
c1exchange2 : net-smtp	OK	c1exchange2	net-smtp
Internet Connection	OK		



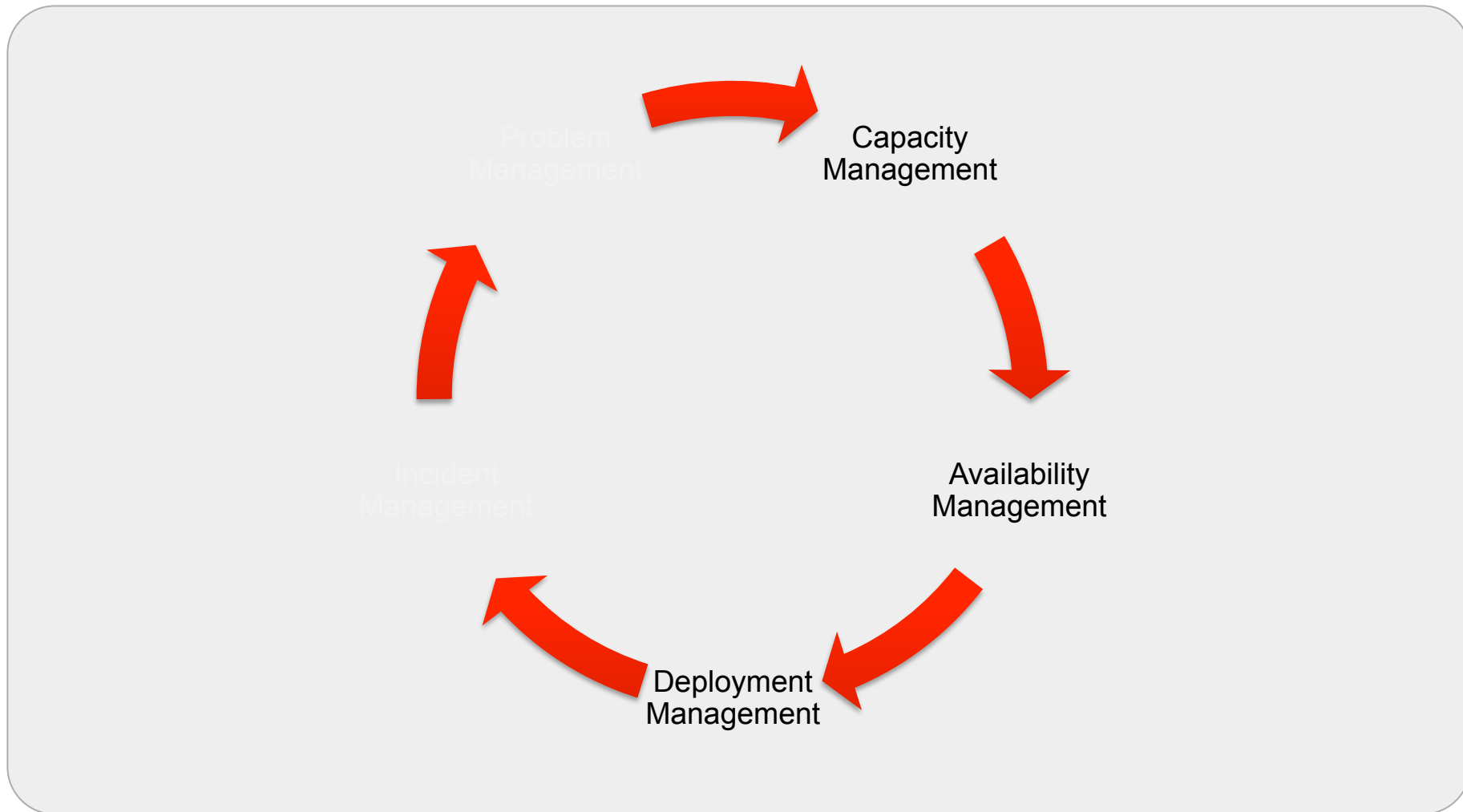
Availability Management – Process Overview



<http://bp-addon.monitoringexchange.org/>



Deployment Management





Current State of IT Automation

Manually Configure



All-or-nothing Software Packages



Golden Images

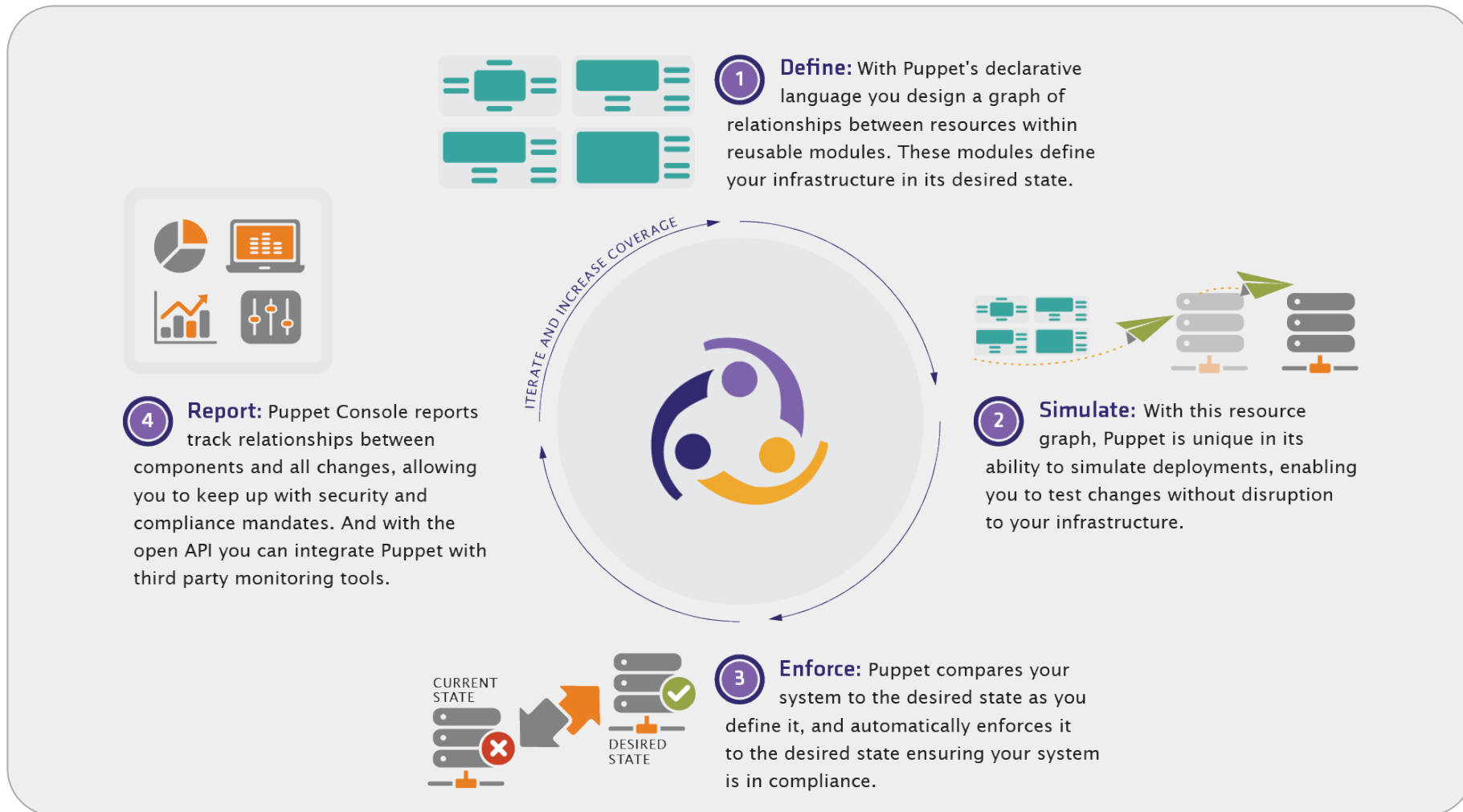


Custom One-off Scripts

```
for i in $(cat host.cfg)
do
    ssh user@$i uname -a
done
```



Deployment Management - How Puppet Works



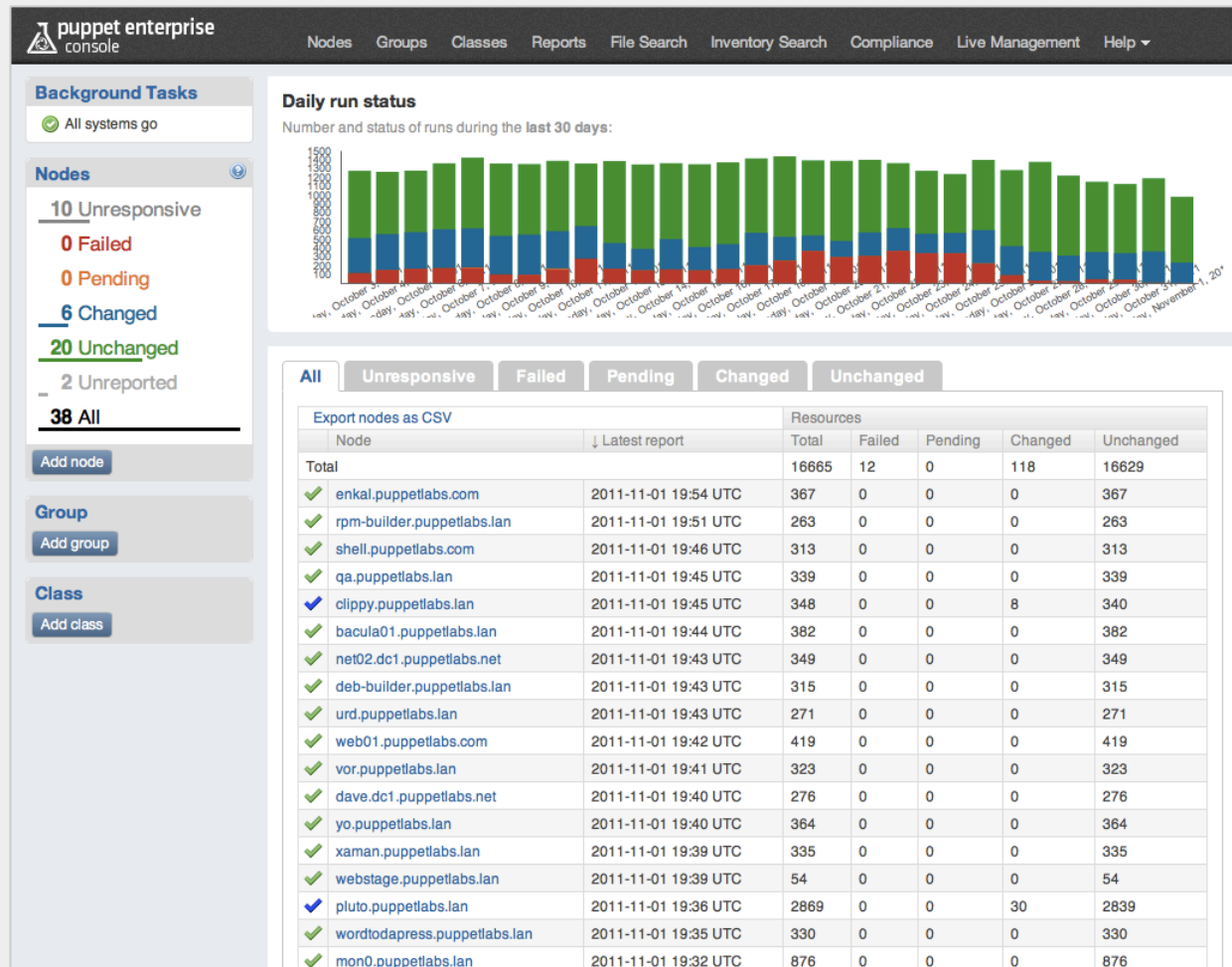


Deployment Management – Puppet Example

```
package { 'sshd':  
  ensure => installed,  
}  
  
service { 'sshd':  
  ensure => running,  
  enable => true,  
}  
  
file { '/etc/ssh/sshd_config':  
  ensure  => file,  
  owner   => root,  
  group   => root,  
  mode    => 0644,  
  source  => 'puppet:///ssh/sshd_config',  
  notify  => Service['sshd'],  
  require => Package['sshd'],  
}
```



Graphical User Interface



puppet enterprise console

Nodes Groups Classes Reports File Search Inventory Search Compliance Live Management Help

Background Tasks
All systems go

Nodes

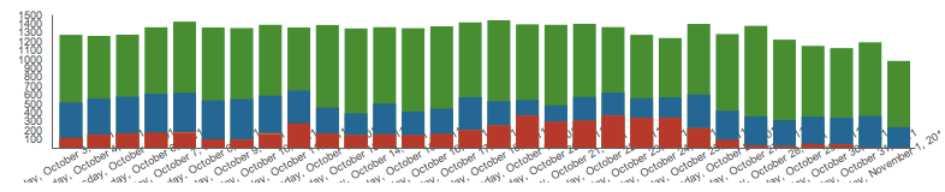
- 10 Unresponsive
- 0 Failed
- 0 Pending
- 6 Changed
- 20 Unchanged
- 2 Unreported
- 38 All**

Add node

Group
Add group

Class
Add class

Daily run status
Number and status of runs during the last 30 days:



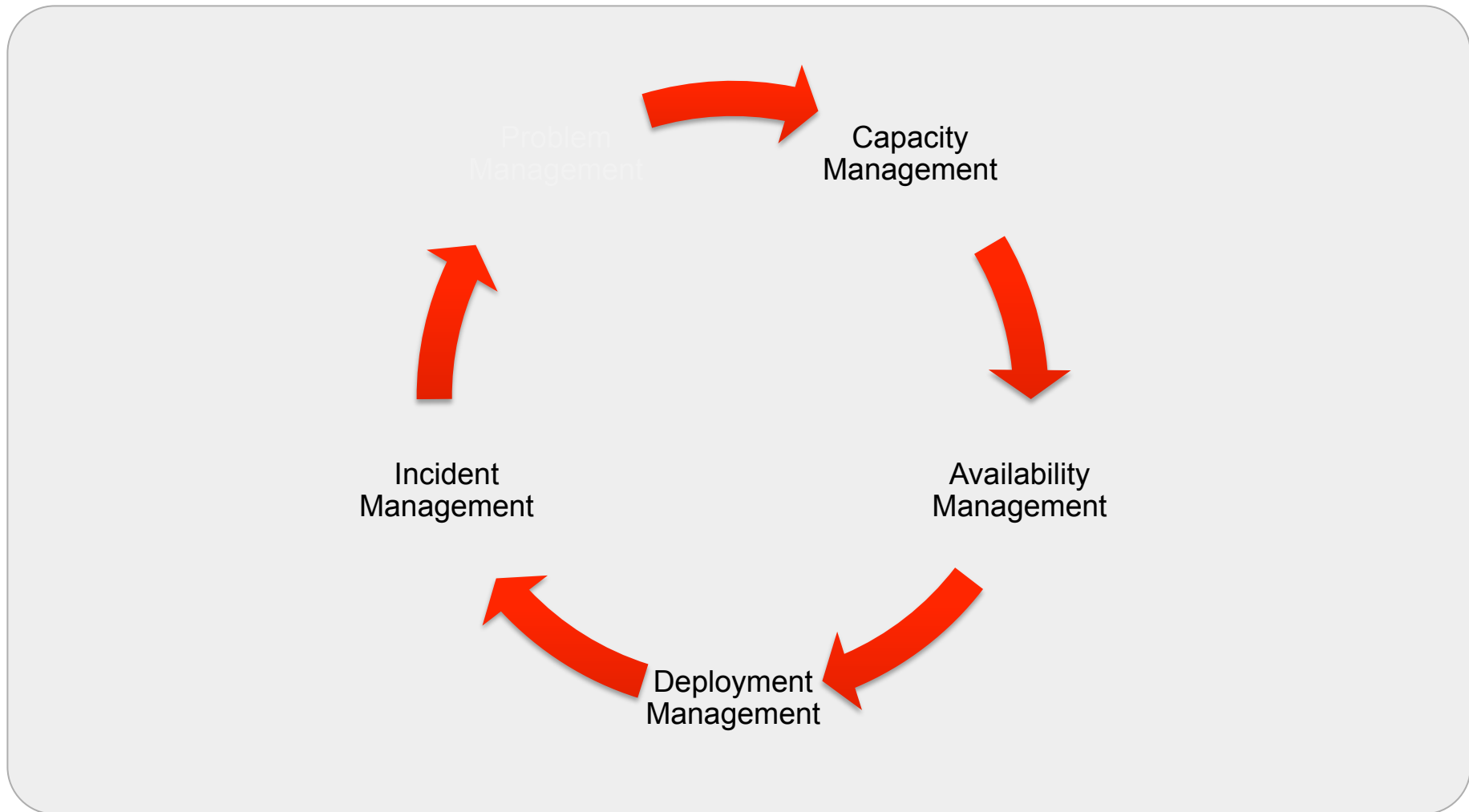
All Unresponsive Failed Pending Changed Unchanged

Export nodes as CSV

Node	Latest report	Resources				
		Total	Failed	Pending	Changed	Unchanged
Total		16665	12	0	118	16629
enkal.puppetlabs.com	2011-11-01 19:54 UTC	367	0	0	0	367
rpm-builder.puppetlabs.lan	2011-11-01 19:51 UTC	263	0	0	0	263
shell.puppetlabs.com	2011-11-01 19:46 UTC	313	0	0	0	313
qa.puppetlabs.lan	2011-11-01 19:45 UTC	339	0	0	0	339
clippy.puppetlabs.lan	2011-11-01 19:45 UTC	348	0	0	8	340
bacula01.puppetlabs.lan	2011-11-01 19:44 UTC	382	0	0	0	382
net02.dc1.puppetlabs.net	2011-11-01 19:43 UTC	349	0	0	0	349
deb-builder.puppetlabs.lan	2011-11-01 19:43 UTC	315	0	0	0	315
urd.puppetlabs.lan	2011-11-01 19:43 UTC	271	0	0	0	271
web01.puppetlabs.com	2011-11-01 19:42 UTC	419	0	0	0	419
vor.puppetlabs.lan	2011-11-01 19:41 UTC	323	0	0	0	323
dave.dc1.puppetlabs.net	2011-11-01 19:40 UTC	276	0	0	0	276
yo.puppetlabs.lan	2011-11-01 19:40 UTC	364	0	0	0	364
xaman.puppetlabs.lan	2011-11-01 19:39 UTC	335	0	0	0	335
webstage.puppetlabs.lan	2011-11-01 19:39 UTC	54	0	0	0	54
pluto.puppetlabs.lan	2011-11-01 19:36 UTC	2869	0	0	30	2839
wordtodapress.puppetlabs.lan	2011-11-01 19:35 UTC	330	0	0	0	330
mon0.puppetlabs.lan	2011-11-01 19:32 UTC	876	0	0	0	876



Incident Management





Incident Management - Tools

- Implement the most important ITIL processes
 - Request Fulfillment
 - Incident Management
 - Problem Management
 - Change Management
- Main features
 - Assign ticket id no.
 - Store history and comm.
 - Assign to owner
 - Track progress
 - Priorisation & classification
 - Resolve tickets
 - Statistics & reporting

#	Client	Subject	Priority	Queue	Owner	Status
51052	PARI GmbH (10504)	Par: PHP-Sicherheitsupdate	Medium(20)	MS Kundensupport	berk	new
50518	NMS (20022)	Umstellung windid auf pam_karabas	Medium(20)	MS Aufgaben intern	gmimietz	open
38952	(no value)	Nagios-Graher Speicher-Probleme seit Lenny-Upgrade	Medium(20)	DEV Aufgaben intern	mheIn	stalled
50460	NET (10533)	NET: Monthly Newsletter (monthly)	High(30)	Marketing Aufgaben	mpimer	open

Queue	new	open	stalled	total
1. Inboxes:				
Inbox Automails	0	0	0	0
Inbox Allgemein	0	0	0	0
Inbox Einkauf	0	0	0	0
Inbox Sales	0	0	0	0
Inbox Support	0	0	0	0
2. Finance & Administration:				
FA Aufgaben	11	23	1	35
FA Rechnungseingang	2	0	0	2
NETWAYS Billing	13	8	27	48
FA Beschaffung	3	3	0	6
3. Management:				
MA Aufgaben	4	3	8	15
MA Ideensammlung	17	2	1	20
MA Partner	0	0	0	0
4. Managed Services:				
MS Aufgaben intern	4	5	8	17
MS Kundensupport	7	6	5	18
MS Changes	113	3	0	116
5. Consulting Services:				
CS Aufgaben intern	3	2	1	6
CS Aufgaben extern	2	26	7	35
CS Aufgaben stalled	1	1	3	5
6. Development:				
DEV Aufgaben intern	1	1	1	3
DEV Aufgaben extern	0	1	0	1
7. Sales & Marketing:				
Sales Aufgaben intern	0	1	1	2
Sales Aufgaben extern	6	14	5	25
Marketing Aufgaben	5	8	2	15
Community	3	4	0	7
8. Shop:				

<http://bestpractical.com/rt/>

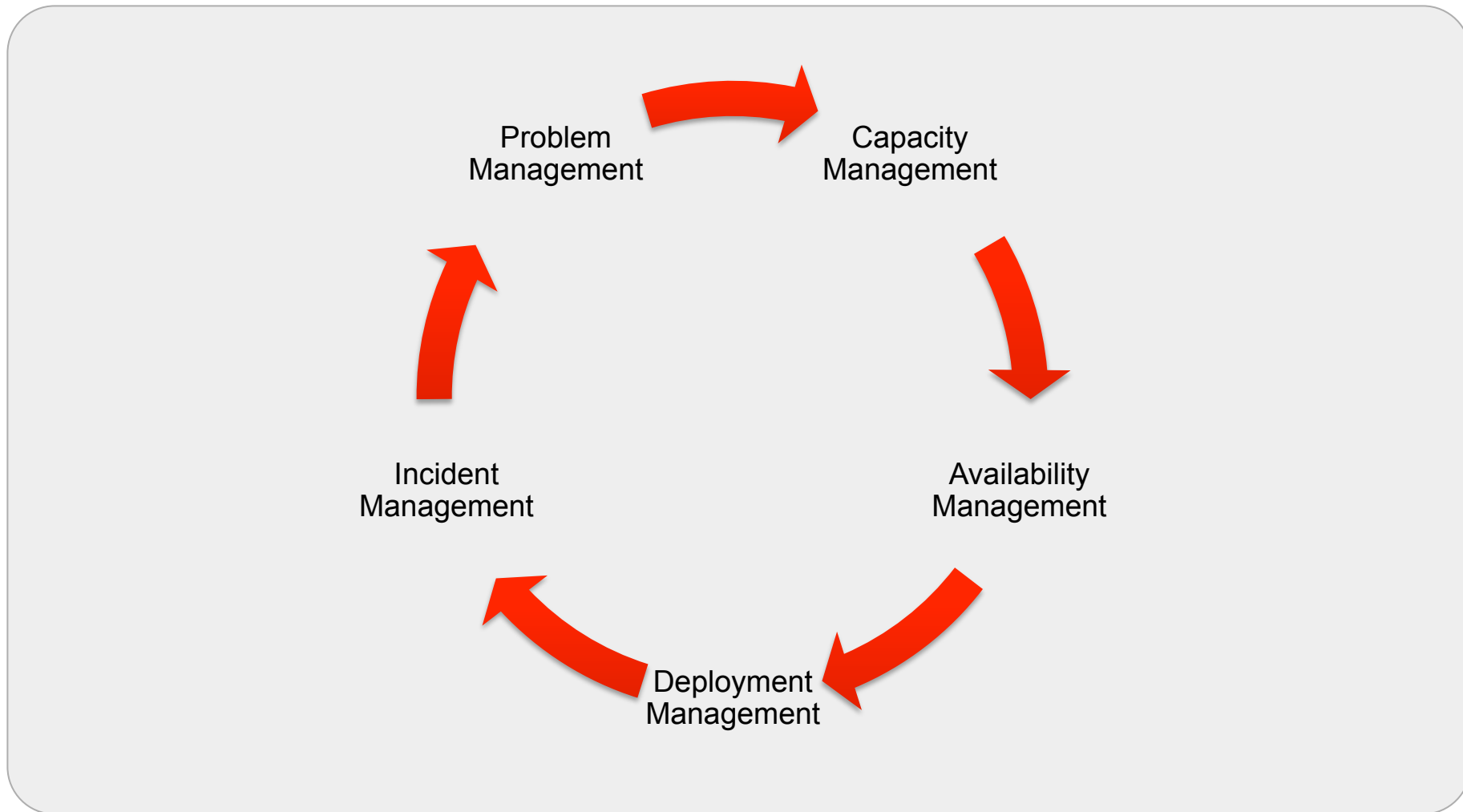


Incident Management – Ticketing-Integration

- Integration w/ monitoring system
 - Create tickets not mails
 - Processing of alerts from monitoring system
 - Resolve tickets if problem goes away
- Monitor ticketing system
 - Availability
 - Monitor service levels and reaction time
 - Escalate tickets with high priority
- Integrate with CMDB
 - Assign Tickets to CIs
 - Integrate tickets into CI history



Problem Management





Problem Management - Datasources

Monitoring

Nagios
Icinga
OpenNMS
Zabbix

Ticketing

Request Tracker
OTRS
Mantis

CMDB

iDoIT
OCS Inventory
GLPI

Updates

Updian
YaST
RedHat Satellite

Accounting

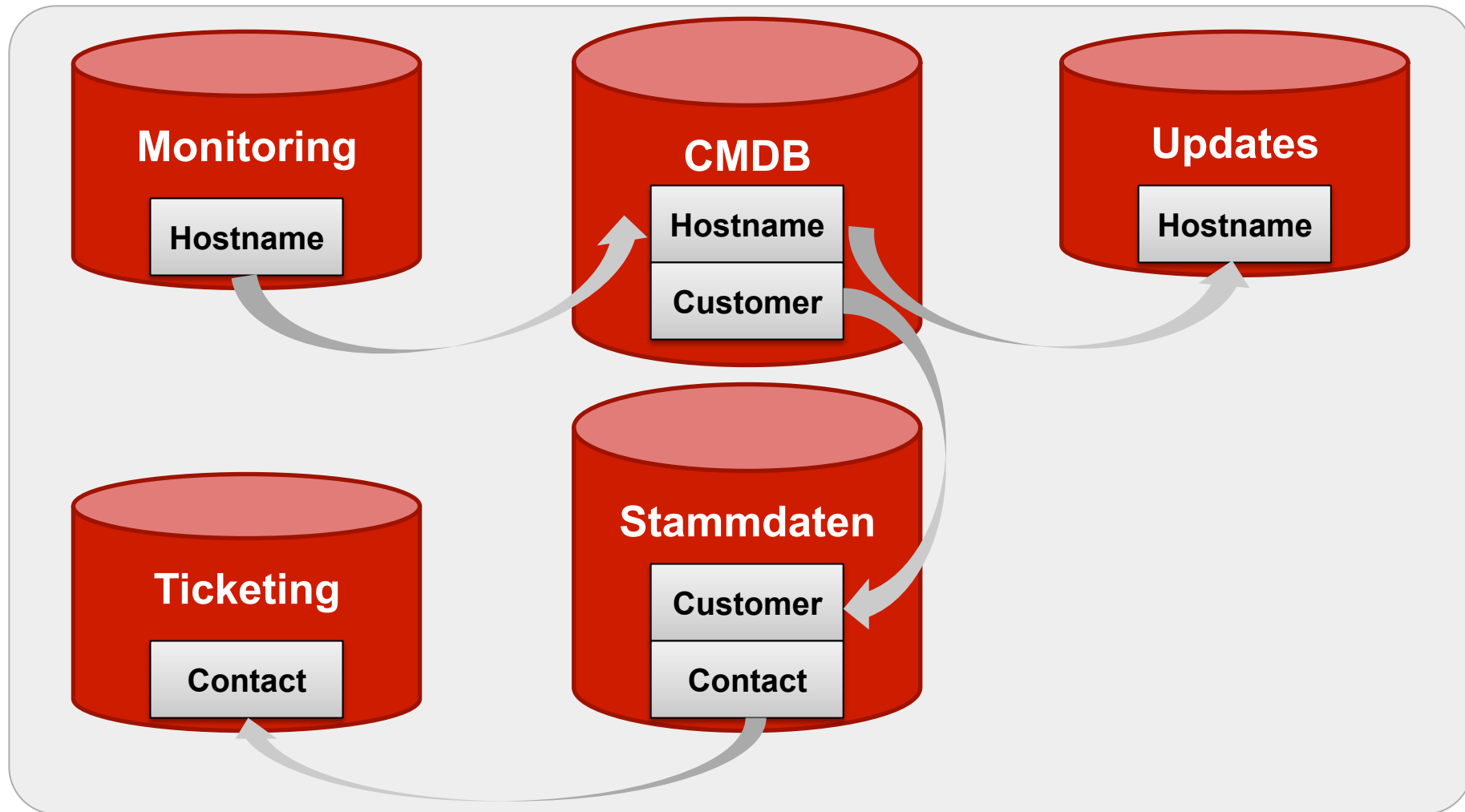
Traffic
Bacula Backup

Customerdata

SugarCRM
OpenBravo

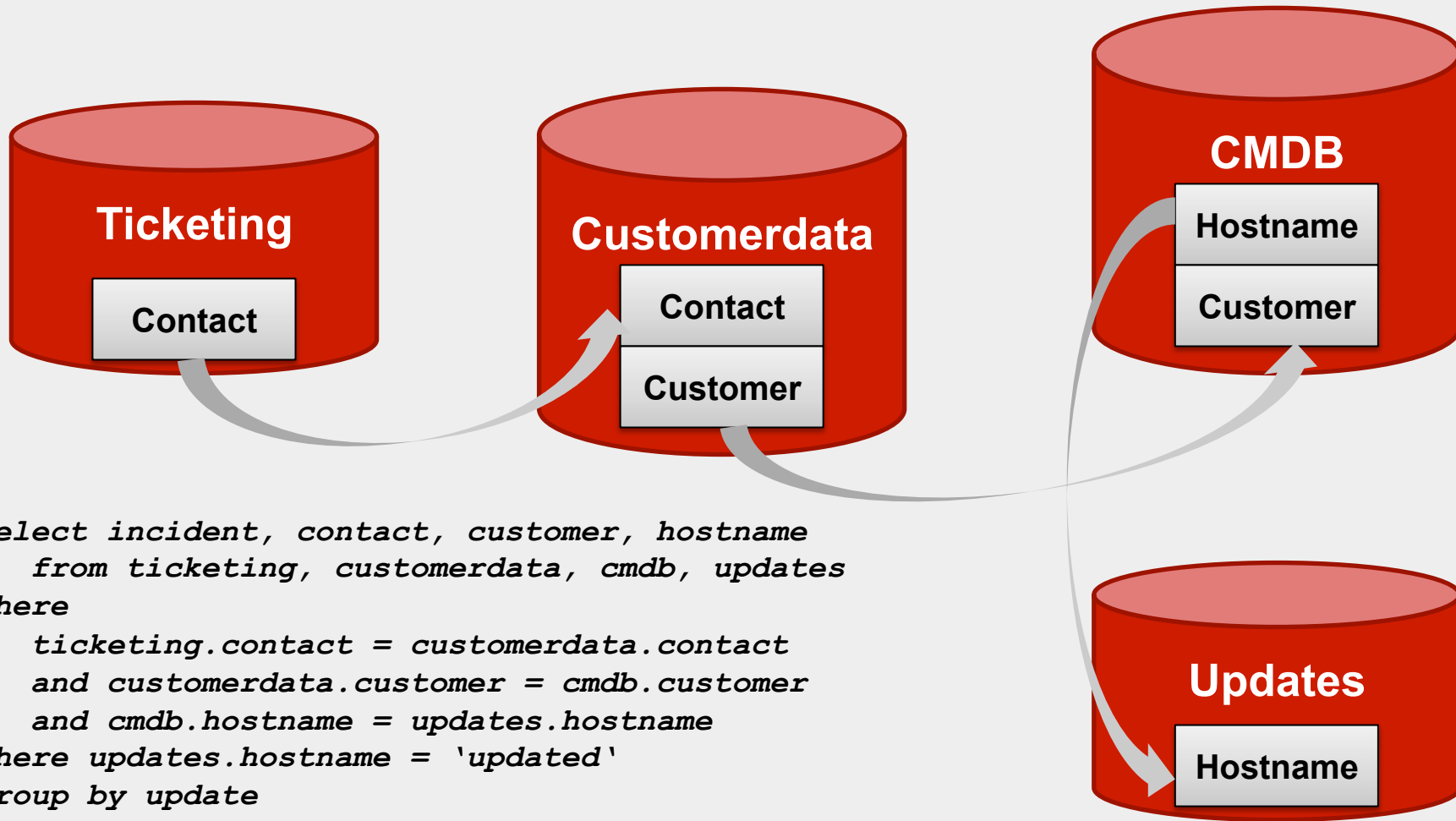


Problem Management - Key-Relations





Example – Incidents after update





Problem Management - Reporting

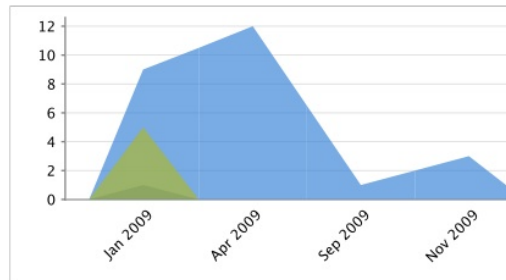
- Report generation using Open Source Tools
 - Jasper
 - Pentaho
 - Birt
- Advantages
 - Automatic report generation and distribution
 - Data aggregation using different datasource
 - Multiple formats out of the box



Samplereport

Hostname: f1-switch
 Address: 10.10.100.10
 Current State: ■

This graph displays the notifications for given host
 0 = Up
 1 = Down
 2 = Unreachable



Services for host: **f1-switch**

Service name	Display name	Current State	Command
f1-switch	PING	■	check-ping-vnd110!20

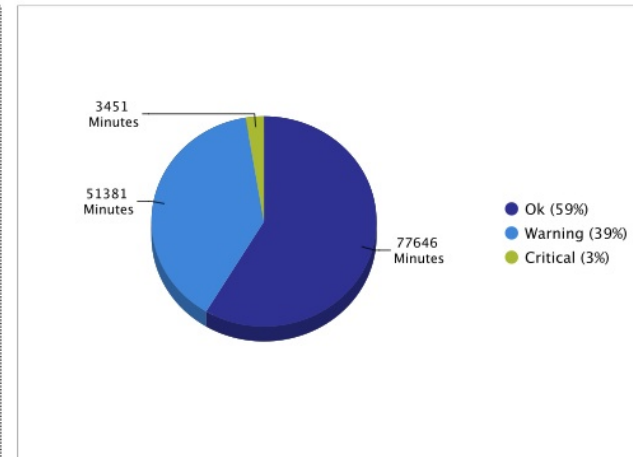
Hostgroups for host: **f1-switch**

Hostgroup
Firma1

Hostname: f1-db1
 Availability for service: MySQL

This graph displays the availability for given service

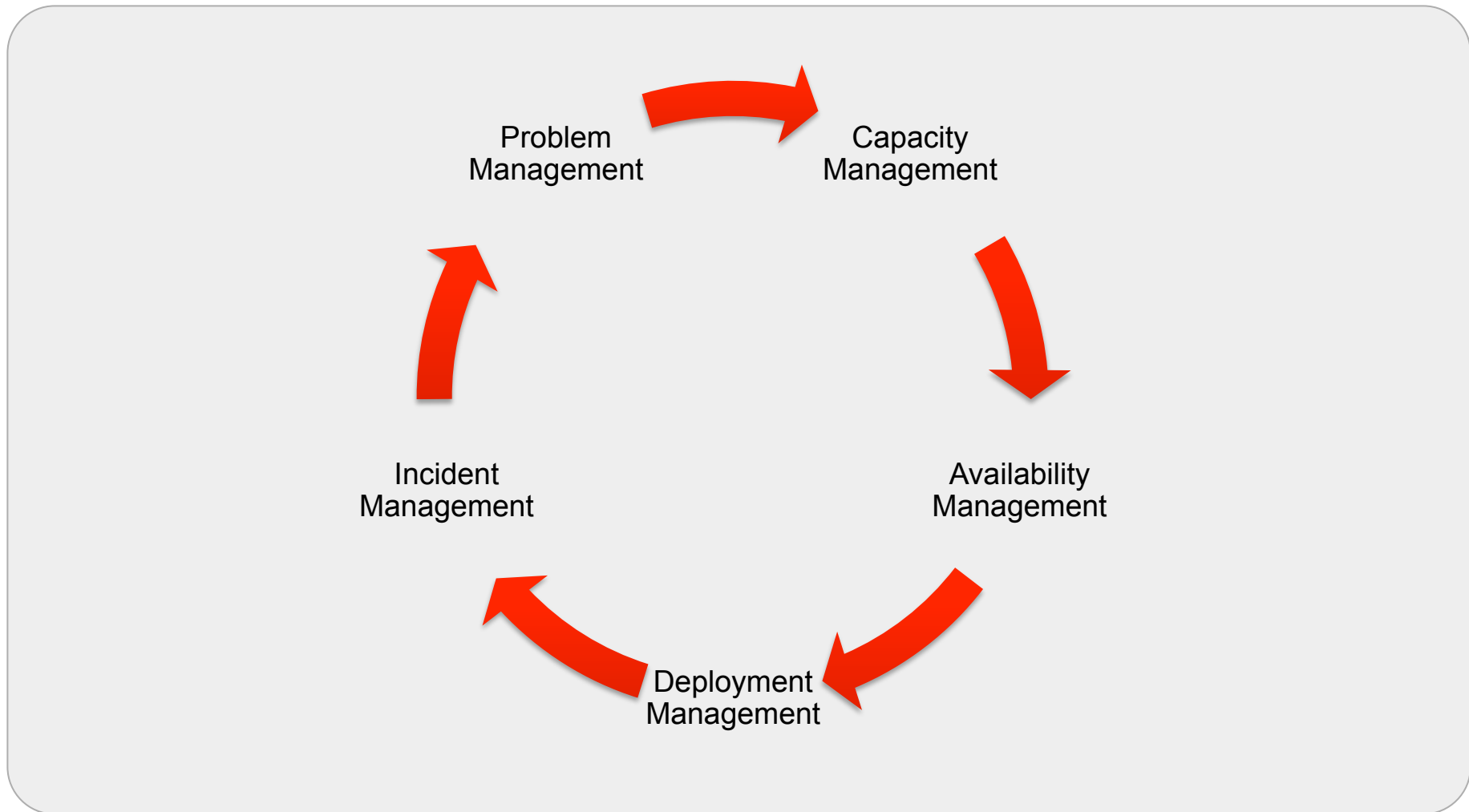
Start: 20090601
 End: 20090901
 Period in minutes: 7948800



State	Duration in seconds	Duration in minutes	Duration in hours
Ok	4658797	77646	1294
Warning	3082893	51381	856
Critical	207110	3451	57

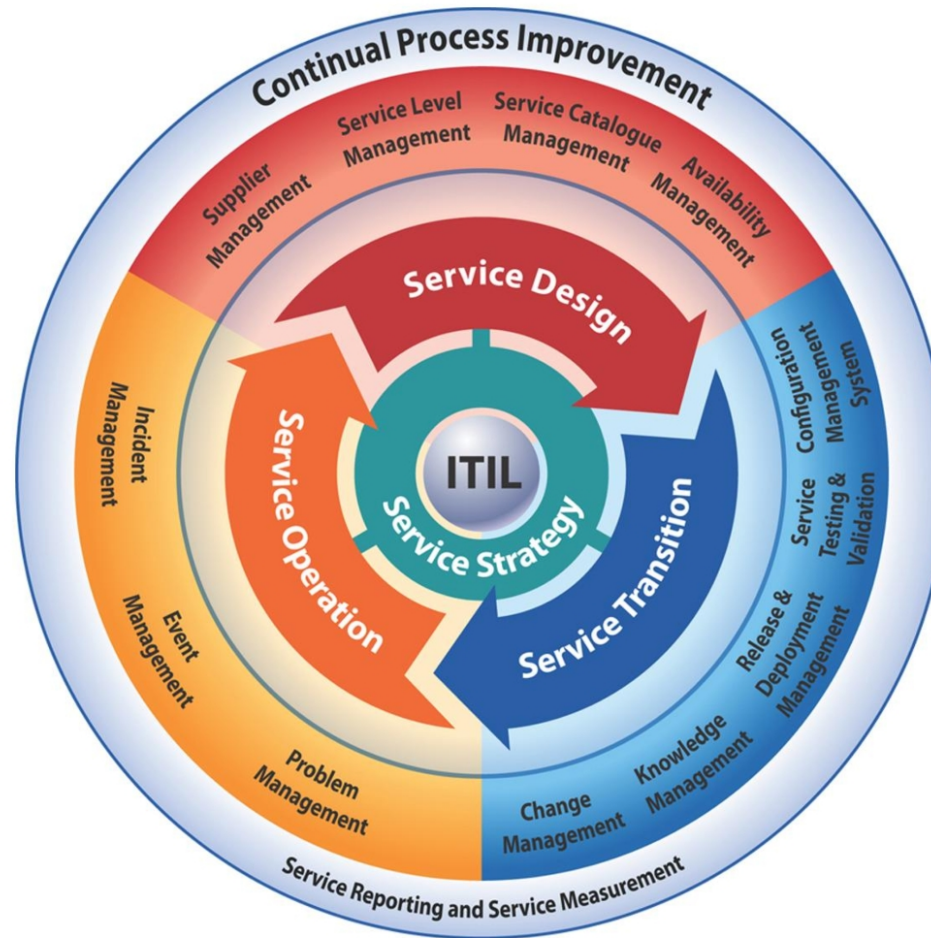


Big Picture





ITIL Lifecycle





Questions & Answers



Q&A



Question & Answer

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