

ESCALATION MANAGEMENT WITH THE HELP OF OPEN SOURCE TOOLS

NETTIES 2005

St. Poelten, October 14, 2005

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GENERAL MOTORS CORPORATION

The World's Largest Industrial Group Facts & Figures - Calendar Year 2004

- Revenues 193 billion US \$
- Employees 325.000
- Vehicles 9.1 mio Units
- Market Share Worldwide 14.5 %
- Net Income 3,7 billion US \$

General Motors Powertrain - Austria

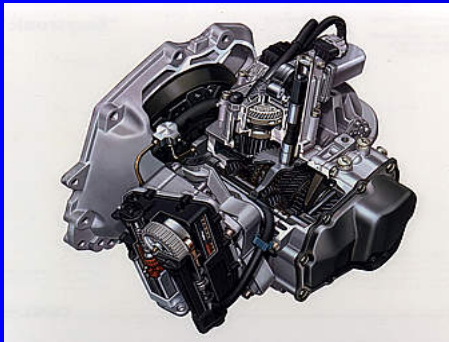
Facts & Figures Calendar Year 2004

- Revenues 700 mio €
- Employees 2.050
- Production 405.000 engines
630.000 transmissions
- Investment cum. 2,1 billion €
- Export Earnings cum. 15 billion €

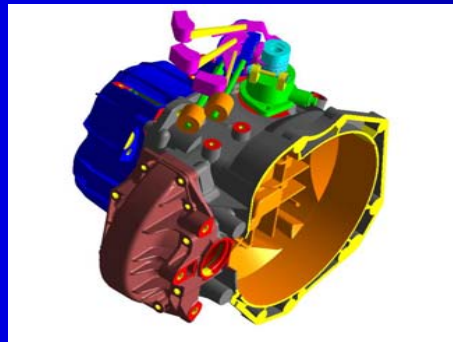
General Motors Powertrain - Austria Products

Transmissions

5 - Speed



6 - Speed



Engines TWINPORT Ecotec



Capacity

621.000

800.000
start of
production
April 04

585.000

Escalation =
Business Process
which will be activated
when an incidence (problem) is not solved
in a pre-defined and agreed timeframe

Management =
Design, Communication and Measurement of
Business Processes

→ Topics:

- Escalation Management Process
 - Measurements / Monitoring

Agenda

1. Existing IT problem handling-processes
2. Improvement on the existing IT Problem handling-processes
3. Existing IT monitoring tools
4. Defining requirements for new monitoring tool
5. Meeting the requirements with NAGIOS
6. Background of Open Source
7. Questions and Answers

On a Monday morning the Microsoft Exchange server has a CPU utilization of 95% due to a virus infection. The business impact is that 80% of all users can not read their emails.



Because there is no monitoring tool, a user is the first to notice the outage, when he can not connect his Outlook client to the Exchange server.



This user calls a friend in another department and asks him if he has the same problem. When the friend confirms, both call the Exchange server administrator.



The administrator now starts to fix the Exchange server and both users tell their colleagues about the problem and that they should utilize the telephone instead of email for communication.



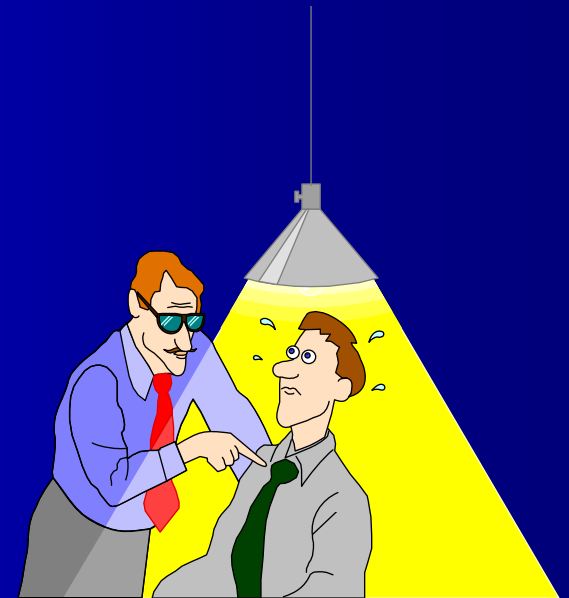
If the problem is fixed (the administrator downloads the newest Anti-Virus patterns from the Internet and cleans the virus from the Exchange server) the users will be informed by the administrator that they can use Outlook again via group-voice-mail functionality of the PBX.



Or: If after a couple of hours the Exchange server administrator fails to clean the server of the virus and the problem still exists the users will ask their supervisors and managers to call the CIO, who is the supervisor of the Exchange server administrator, and tell him very angrily that the problem must be fixed immediately.



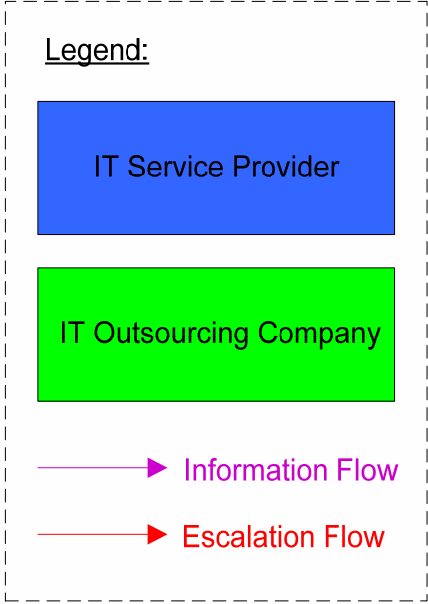
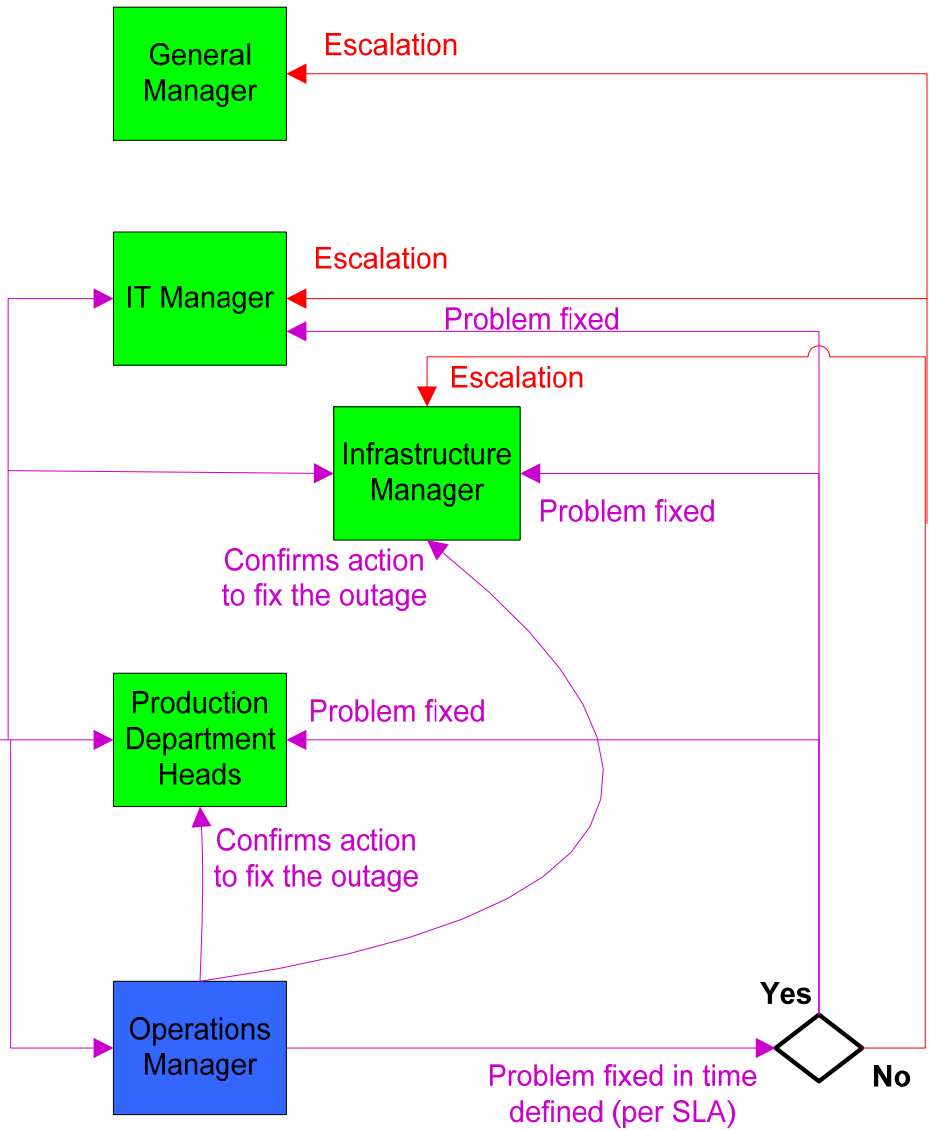
An embarrassing problem would be if the CIO was not informed about the Exchange server problem because he was in meetings all morning.



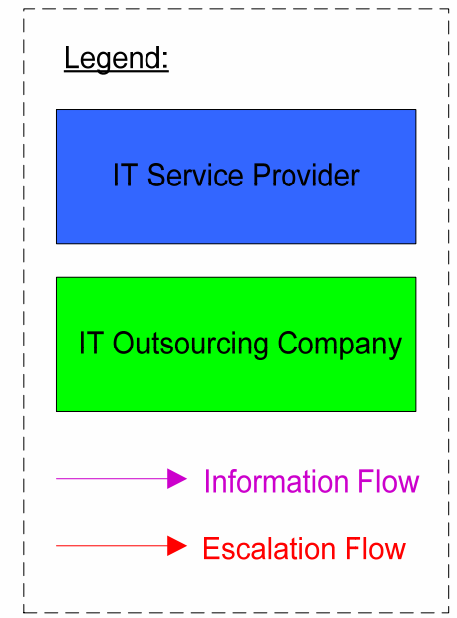
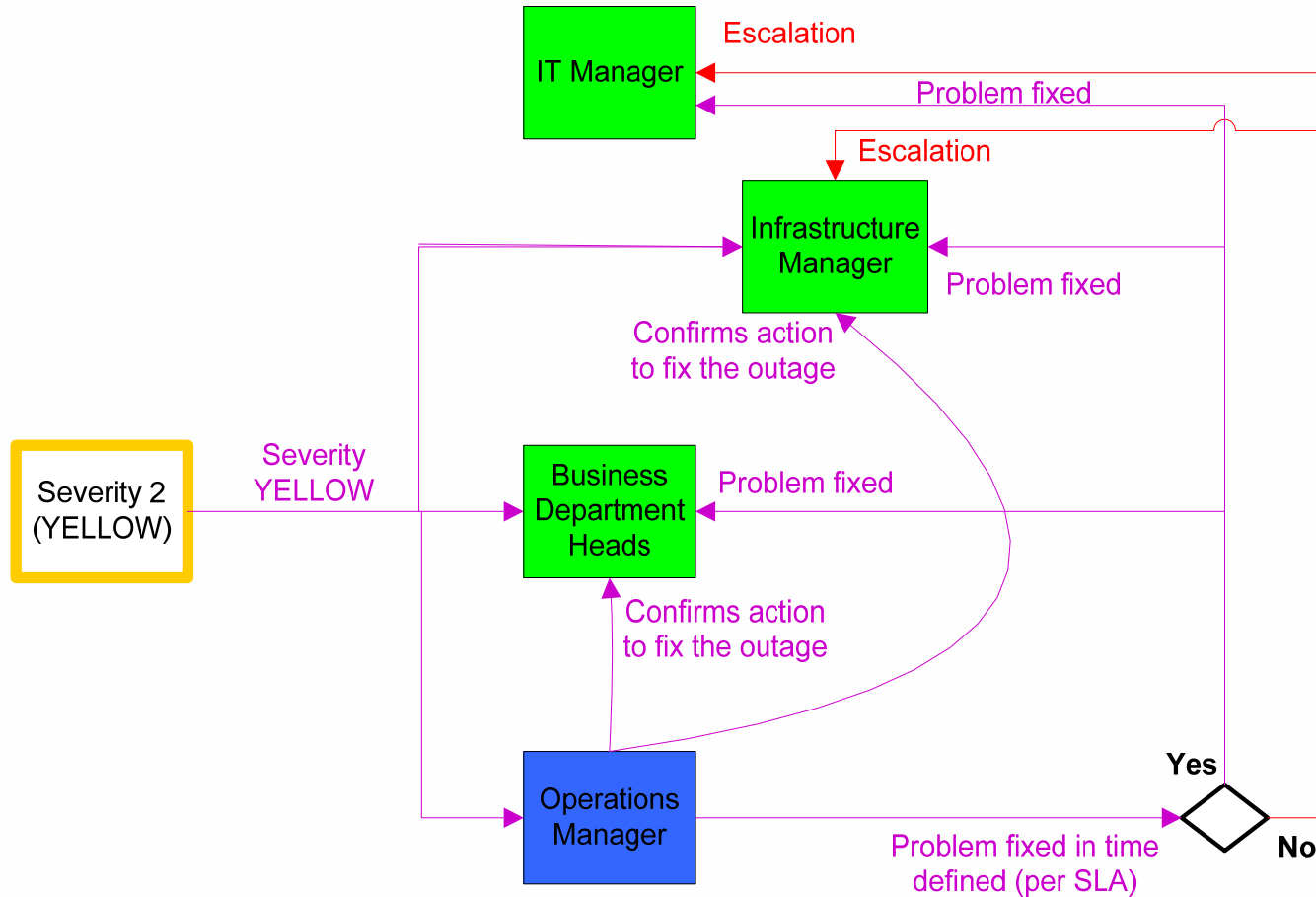
- Problems must be grouped in *severity levels*, dependent on their business impact.
- A system must *determine the outage* by comparing parameters with defined thresholds.
- Groups of employees – *stakeholders* –, who need the same information at the same time must be defined.

- *A communication method including the format of the information must be defined.*
- *It must be defined who is to be informed at what time – Information Flow.*
- *Escalation in the hierarchy must be defined.*
- *A business contingency process must be defined.*

Red



Yellow



IT supplier utilizes state-of-the-art tools for monitoring.

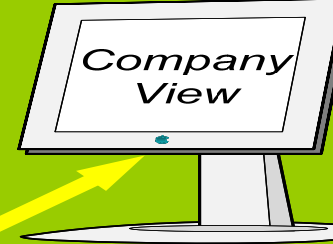
Customer gets only a subset of the information from these tools.

Form of reports are dictated by IT supplier, changes are difficult.

Measurement of services (SLAs) is done by the supplier, who also delivers the service.

Company Getting the IT Service

IT department of the Company



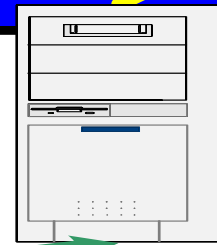
View from the supplier's Monitoring System for the MPLS - Cloud, provided by the supplier

Supplier Providing the IT Service

Company:
Point A



Data from
MPLS Cloud



Monitoring System for
the MPLS Cloud



Company:
Point B



LSR

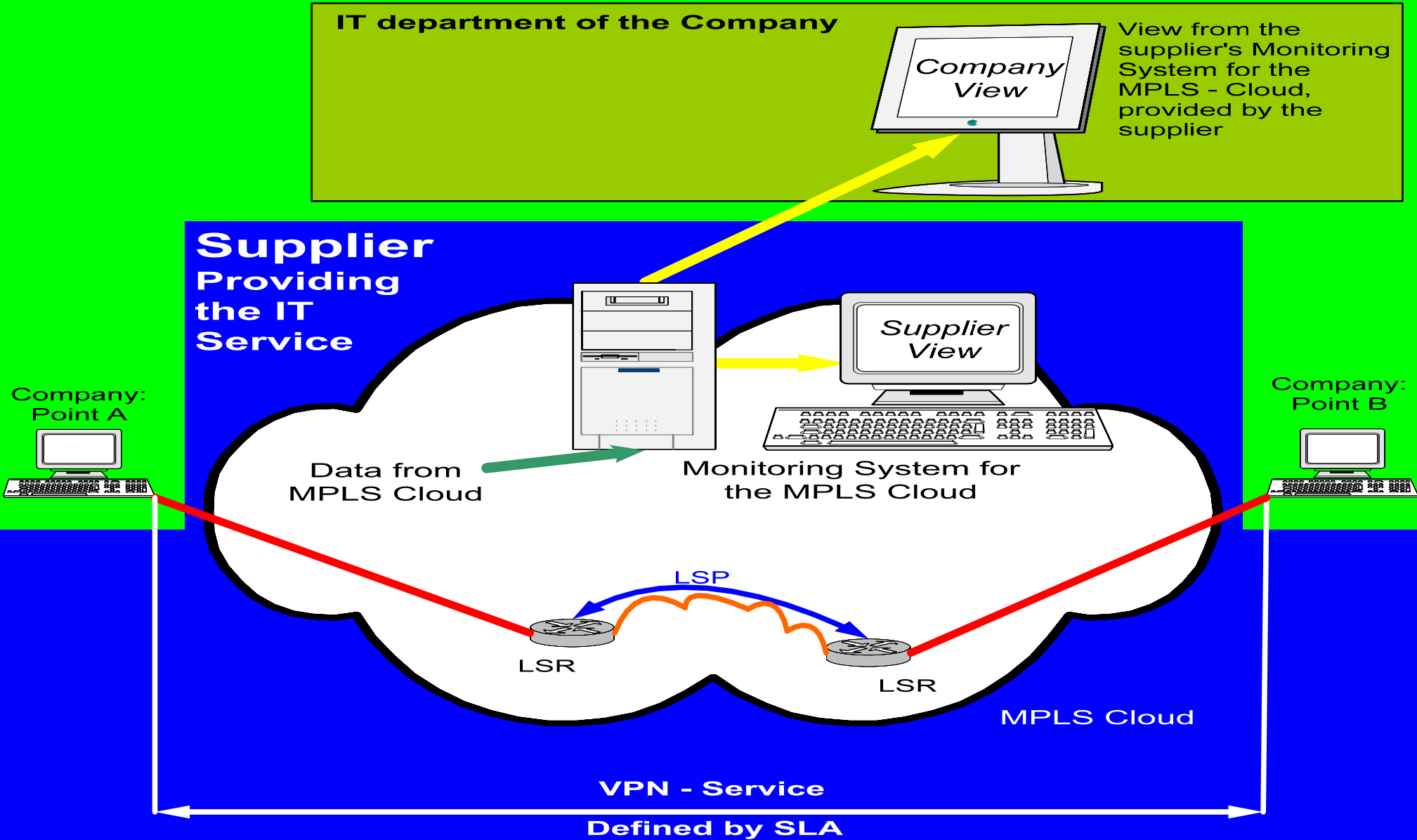
LSP

LSR

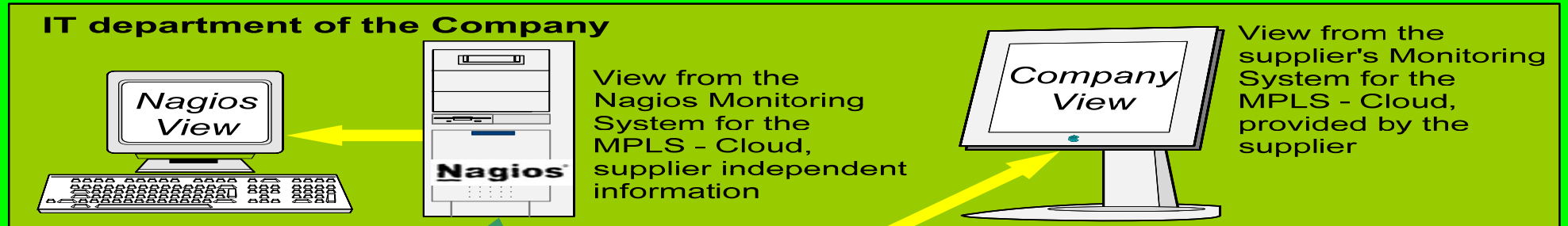
MPLS Cloud

VPN - Service

Defined by SLA



Company Getting the IT Service

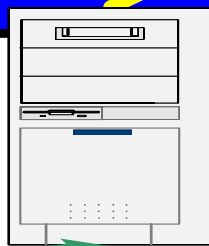


Supplier Providing the IT Service

Company:
Point A



Data from
MPLS Cloud



Monitoring System for
the MPLS Cloud



Company:
Point B



LSR

LSP

LSR

MPLS Cloud

VPN - Service

Defined by SLA



Current Network Status

Last Updated: Tue Mar 22 17:28:33 CET 2005
 Updated every 60 seconds
 Nagios® - www.nagios.org
 Logged in as vz6bpv

- [View Service Status Detail For All Host Groups](#)
- [View Host Status Detail For All Host Groups](#)
- [View Status Overview For All Host Groups](#)
- [View Status Grid For All Host Groups](#)

Host Status Totals

Up	Down	Unreachable	Pending
252	0	0	4

All Problems	All Types
0	256

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
590	1	0	5	0

All Problems	All Types
6	596

Monitoring

- [Tactical Overview](#)
- [Service Detail](#)
- [Host Detail](#)
- [Status Summary](#)
- [LAN M20/32 View](#)
- [Service Problems](#)
- [Host Problems](#)
- [Network Outages](#)

- [Comments](#)
- [Downtime](#)
- [Process Info](#)
- [Performance Info](#)
- [Scheduling Queue](#)

Reporting

- [Trends](#)
- [Availability](#)
- [Alert History](#)
- [Alert Summary](#)
- [Notifications](#)
- [Event Log](#)

Configuration

- [View Config](#)

Status Summary For All Host Groups

Host Group	Host Status Totals	Service Status Totals
LAN Campus Routers (lan-campusrouters)	2 UP	2 OK
LAN FGP Office Access Switches (lan-fgp-office-access-switches)	54 UP	54 OK
LAN FGP Office Access-Points (lan-fgp-office-accesspoints)	1 UP	1 OK
LAN FGP Office Core Switches (lan-fgp-office-core-switches)	12 UP	12 OK
LAN M20 Access Switches (lan-m20-access-switches)	25 UP	48 OK
LAN M20 Core Switches (lan-m20-core-switches)	2 UP	20 OK
LAN M20 Routing Engines (lan-m20-router)	6 UP	6 OK
LAN M20 wLAN Access Points (lan-m20-wlan-ap)	5 UP	5 OK
LAN NSC Access Switches (lan-nsc-access-switches)	2 UP	2 OK
LAN NSC Core Switches (lan-nsc-core-switches)	2 UP	2 OK
LAN Prodnet (prodnet)	23 UP 4 PENDING	26 OK 3 CRITICAL
SAP F1 (sap-f1)	4 UP	5 OK



Network Map For All Hosts
 Last Updated: Tue Mar 22 17:29:17 CET 2005
 Updated every 60 seconds
 Nagios@ - www.nagios.org
 Logged in as vz6bpv

[View Status Detail For All Hosts](#)
[View Status Overview For All Hosts](#)

Layout Method:
 User-supplied coords

Drawing Layers:
 LAN Campus Routers
 LAN FGP Office Access Switches
 LAN FGP Office Access-Points
 LAN FGP Office Core Switches

Supress popups:

Scaling factor:
 0.0

Layer mode:
 Include
 Exclude

Monitoring

- Tactical Overview
- Service Detail
- Host Detail
- Status Summary
- LAN M20/32 View

- Service Problems
- Host Problems
- Network Outages

- Comments
- Downtime

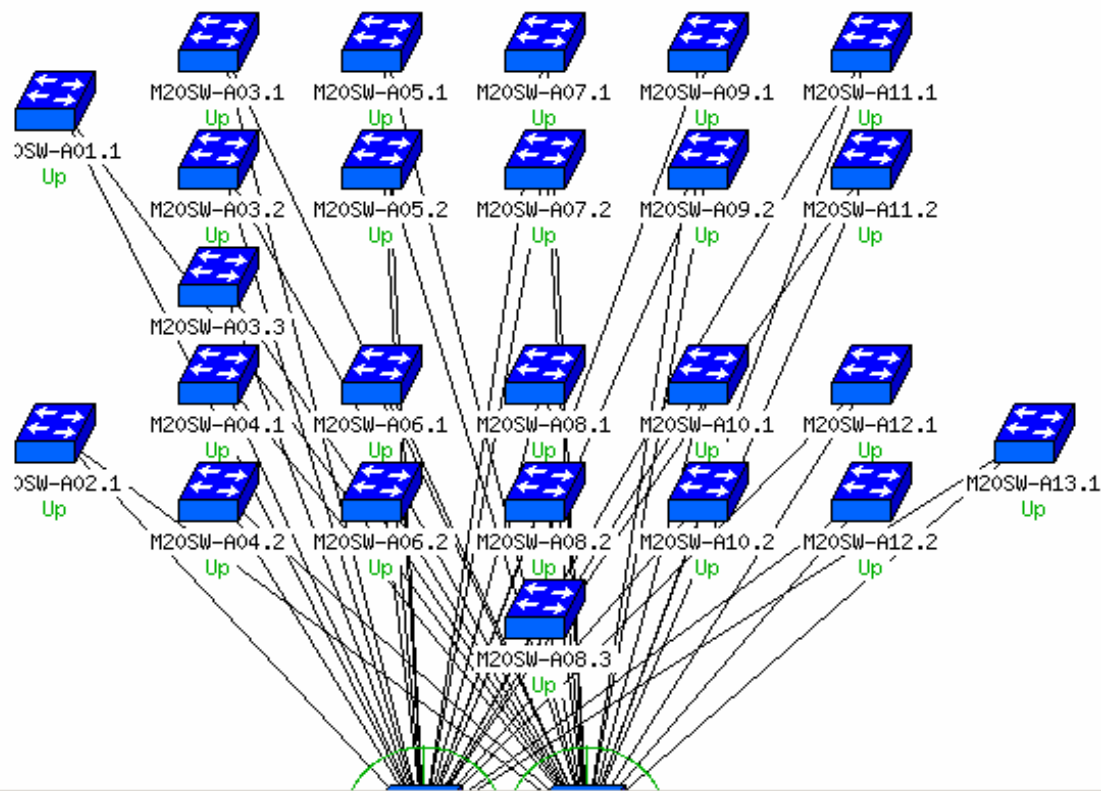
- Process Info
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Reporting

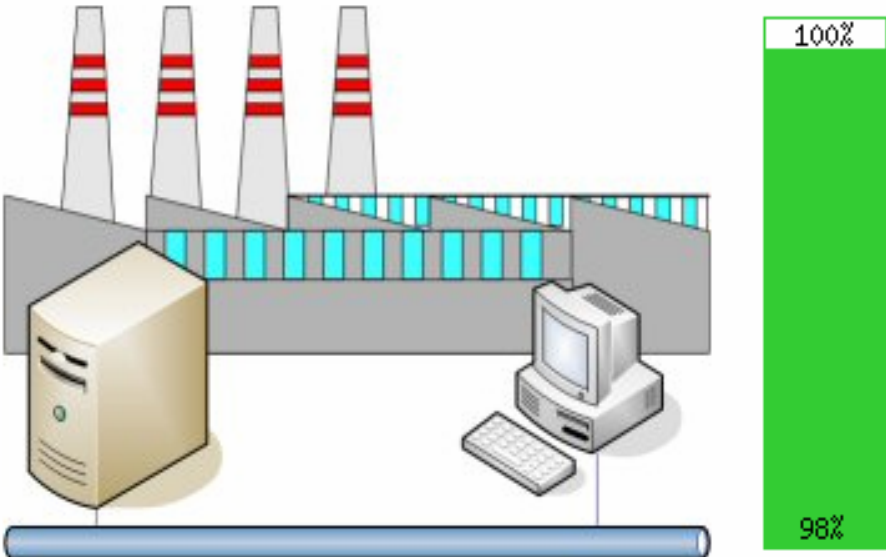
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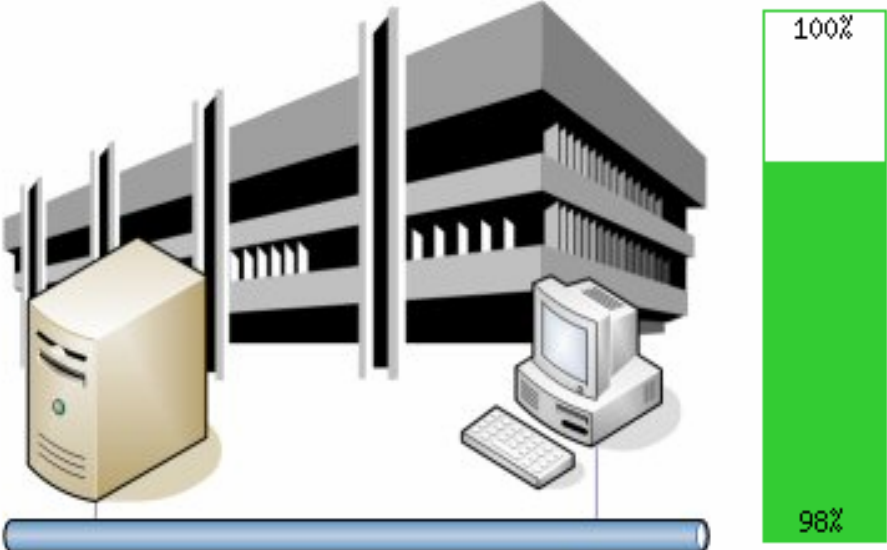


IT Infrastructure Environment Availability Scorecard 2 / 2005



Manufacturing IT Environment

Target: 99.300%
Actual: 99.873%
Downtime: 0 h, 54 min



Office and Business IT Environment

Target: 99.000%
Actual: 99.426%
Downtime: 4 h, 7 min

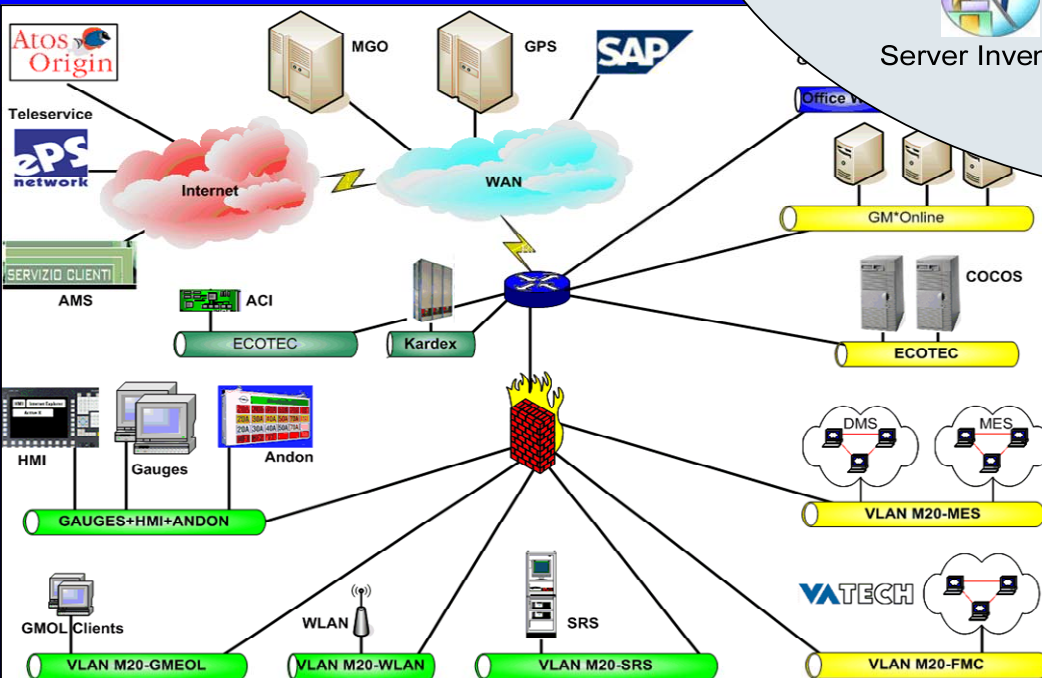
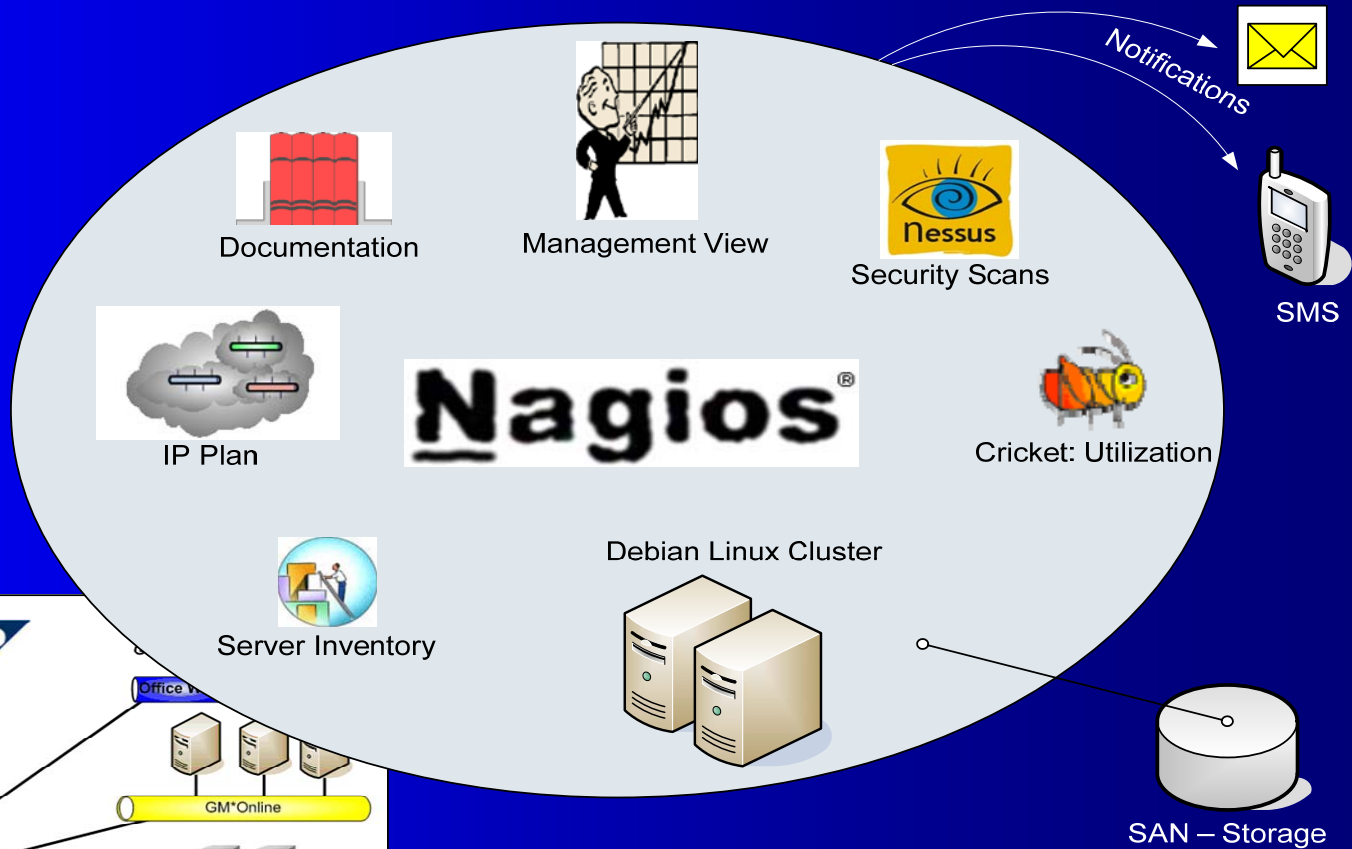
- ✓ Traffic light monitoring
- ✓ Automatic information flow triggered by outages
- ✓ Visual management
- ✓ Captures trends (and utilizations)
- ✓ Fully web-based
- ✓ Open Source
 - Inexpensive
 - Full control of form and behaviour



“No traditional developer can match the pool of talent the Linux community can bring to bear on a problem. Very few could afford even to hire the e.g. 800 people who have contributed to Open Source projects.”

“Hewlett-Packard is hosting a number of Open Source software projects that run on various Hewlett-Packard systems.”

Monitoring and Managing ...



... the IT Environment

