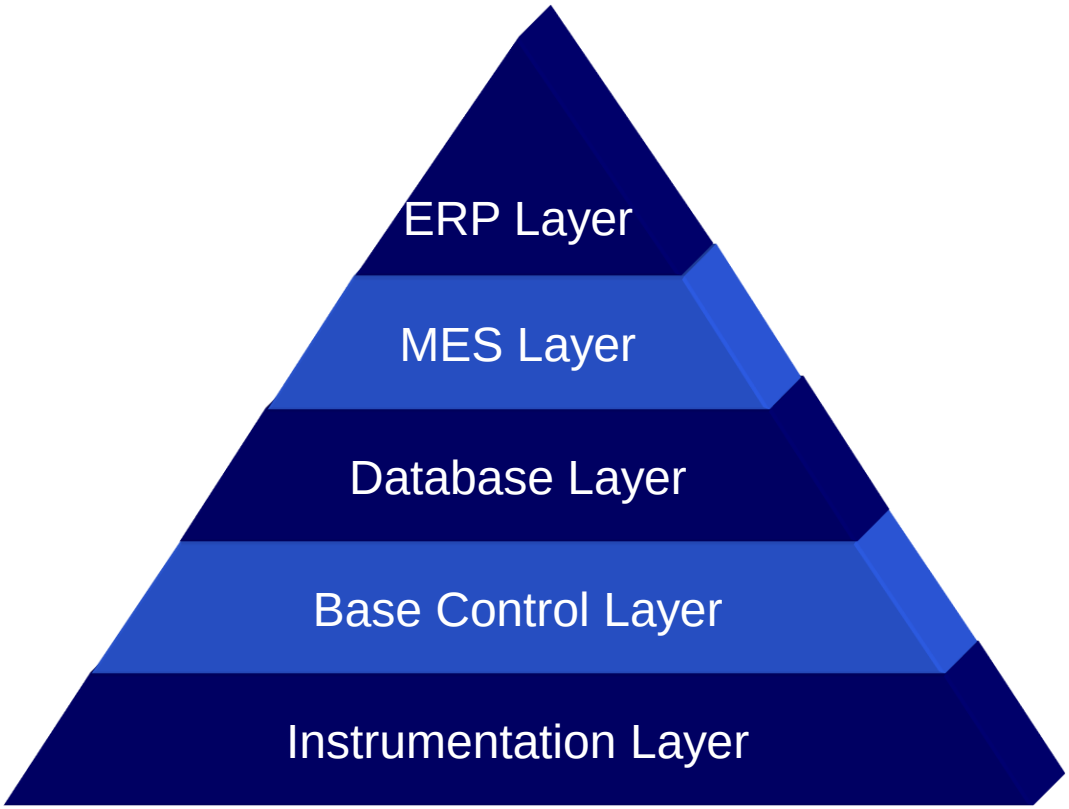
2003
OSISOFT USERS CONFERENCE

Sasol Synfuels' Site-Wide IT Health monitoring

Presenter: Johan de Waal

IT Monitor in Sasol



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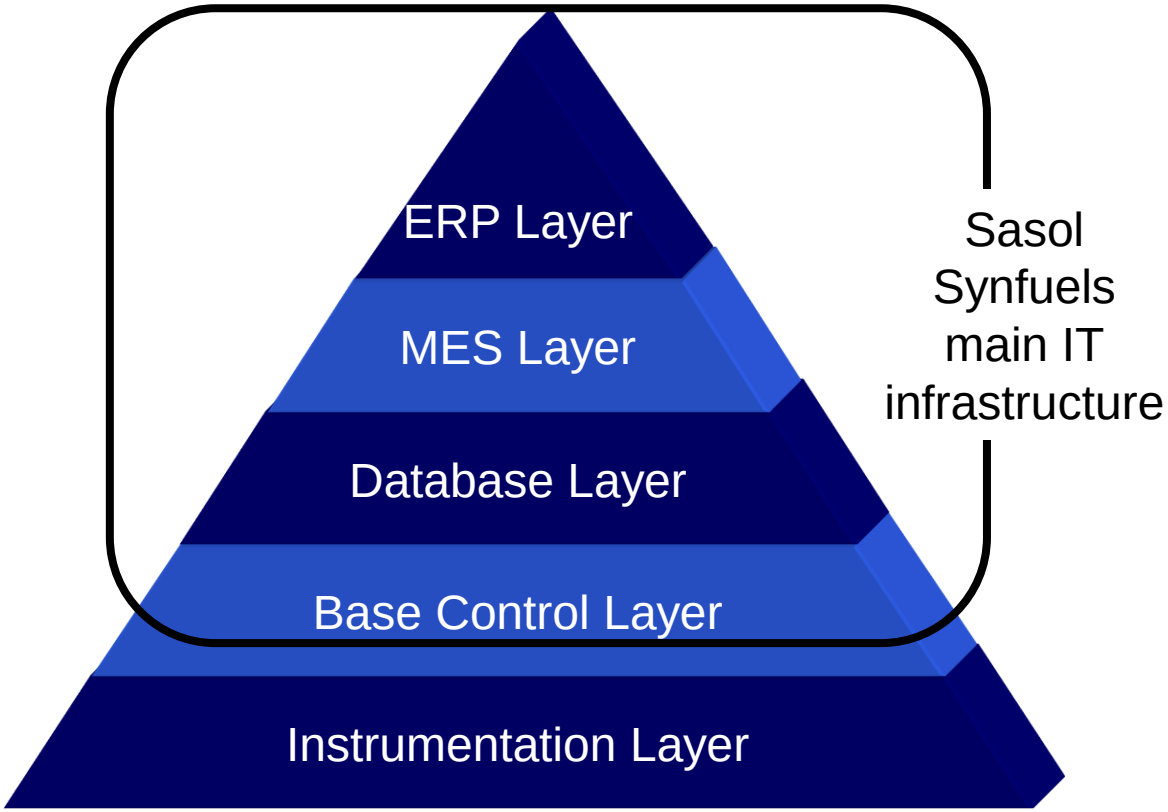
IT Monitor in Sasol



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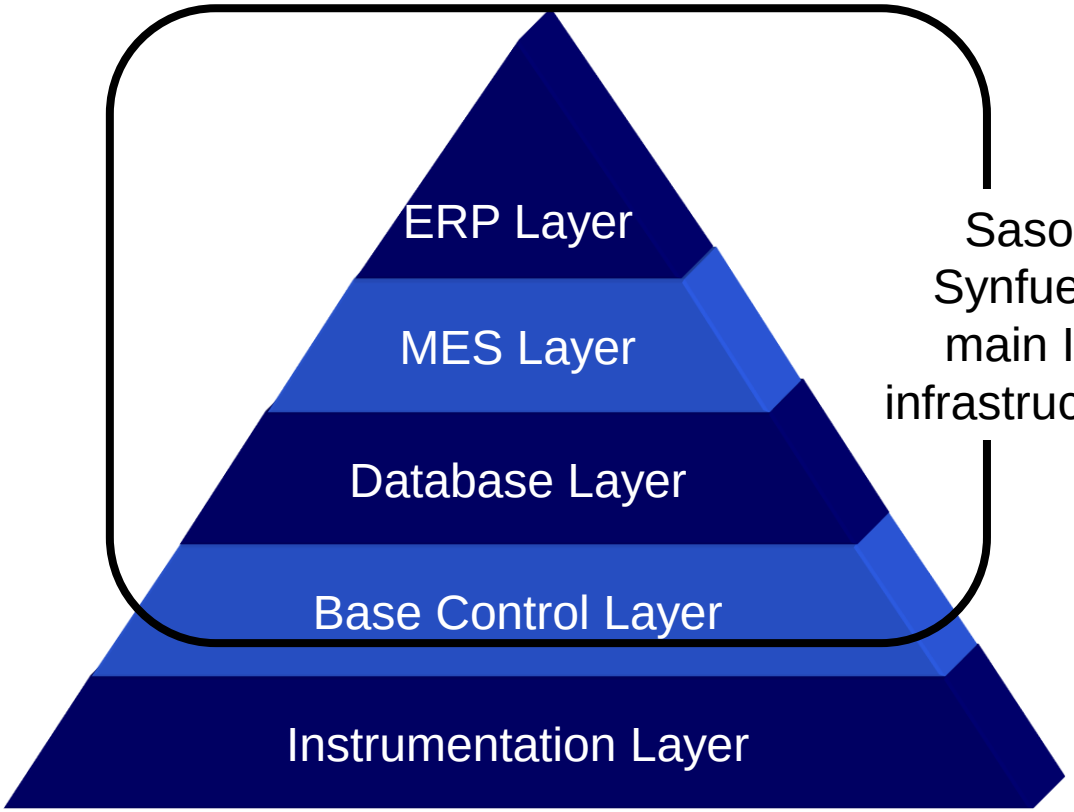

- Monitor System Performance
- Detect Failures
- Manage Service Level Agreements (SLA) with 3rd Party Support Companies
- Enable Preventative Maintenance
- Do Capacity Planning and development

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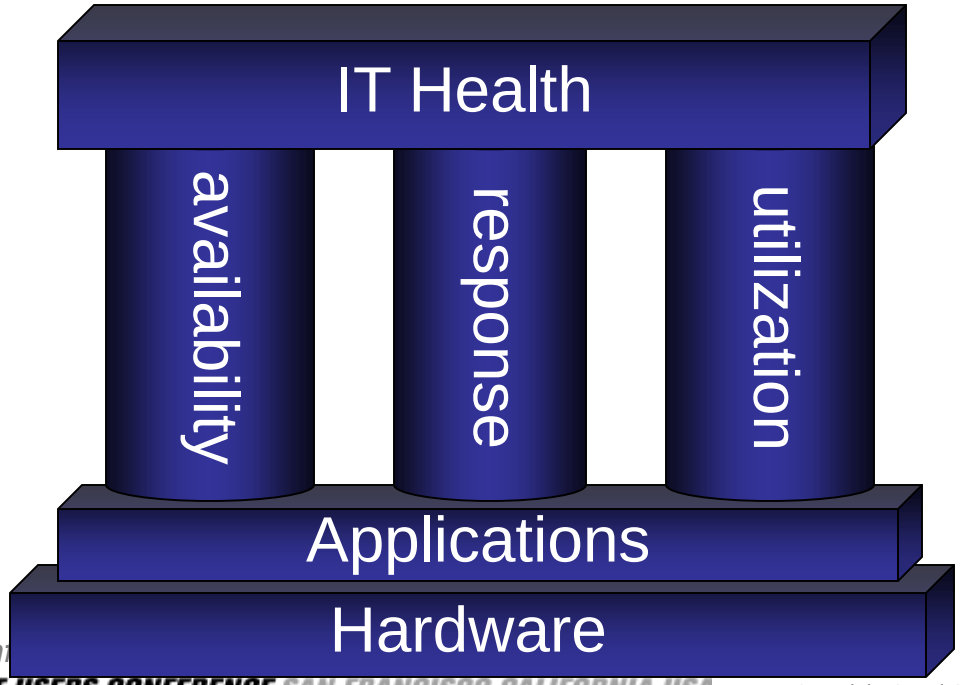
Positioning IT Monitor



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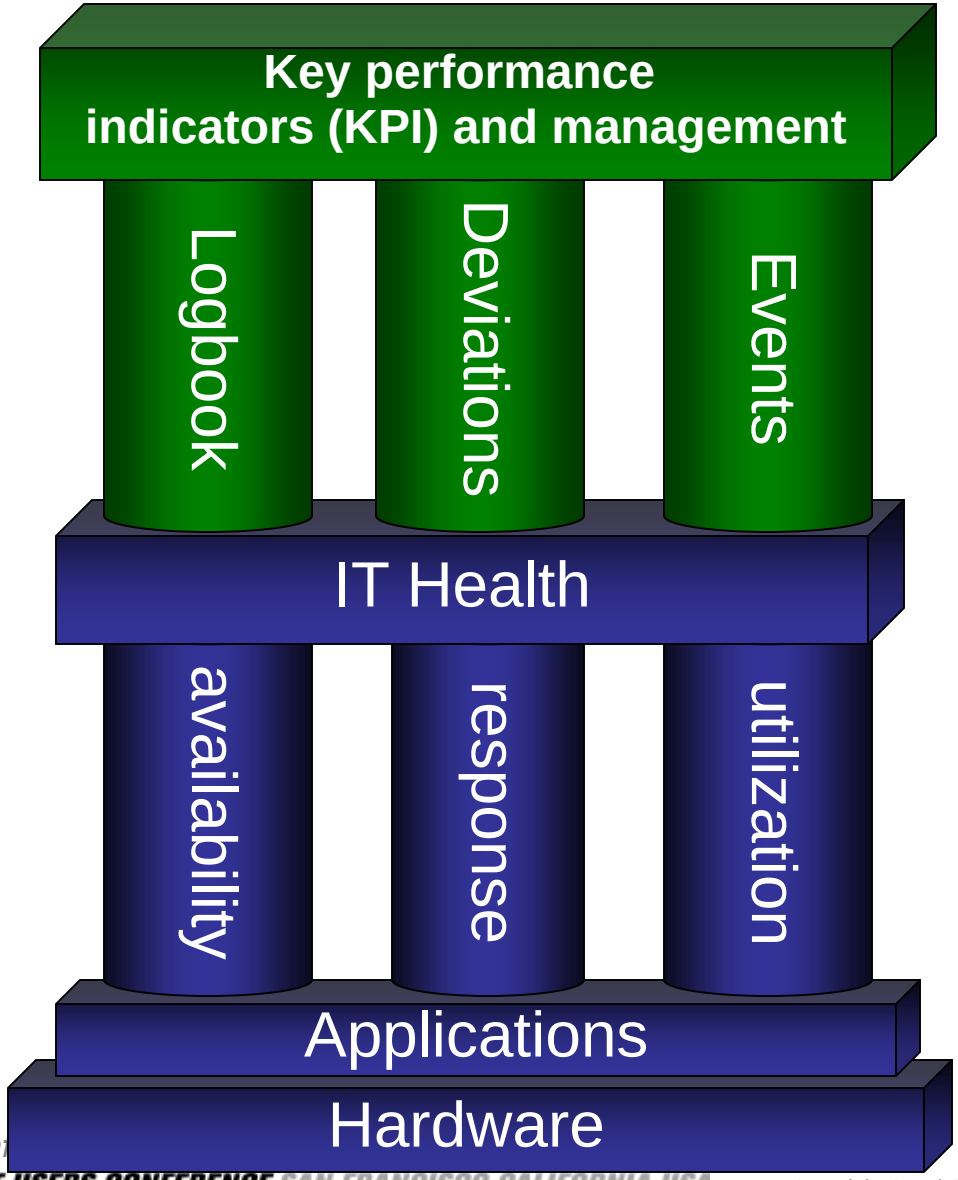
Positioning IT Monitor



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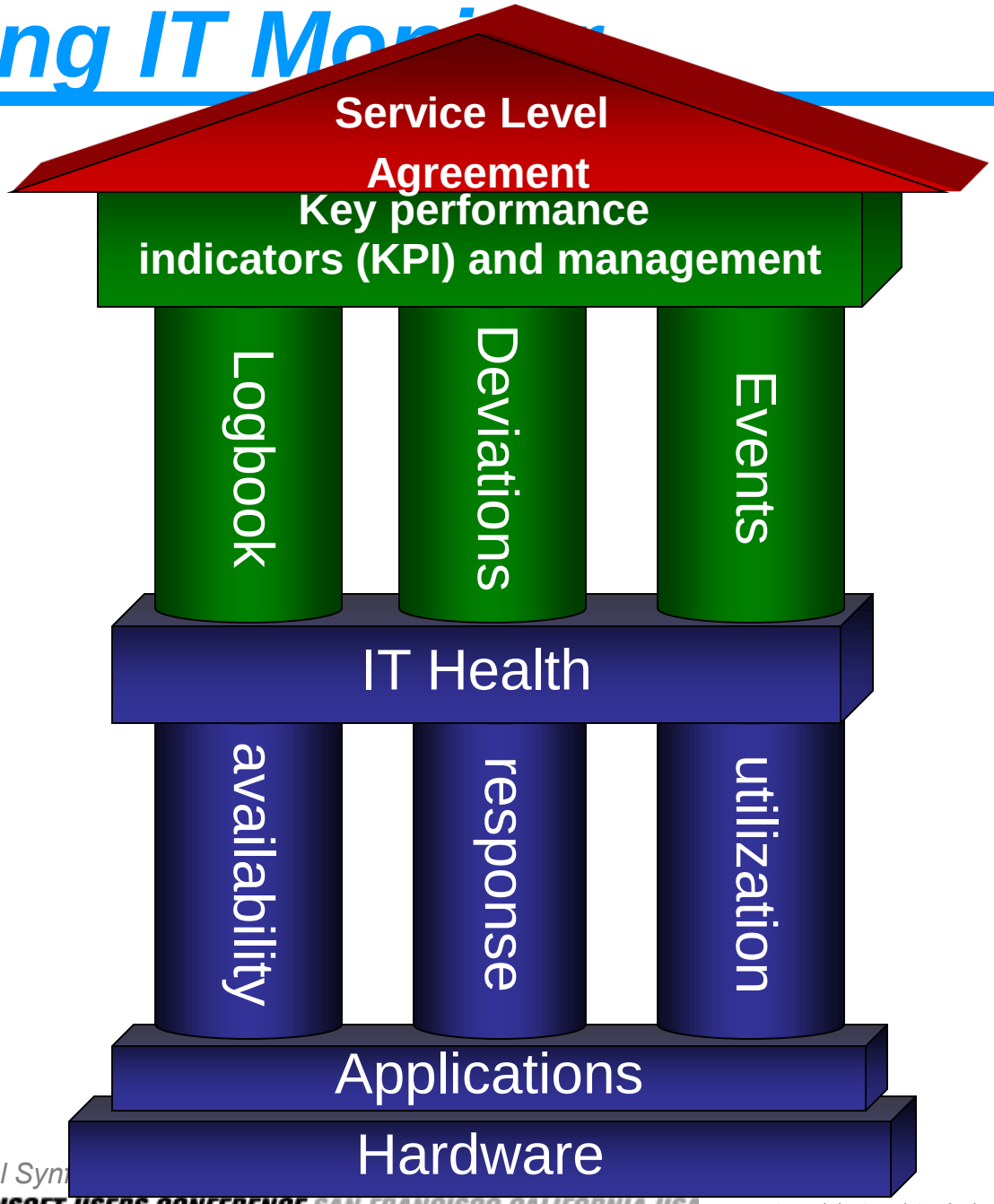
Positioning IT Monitor



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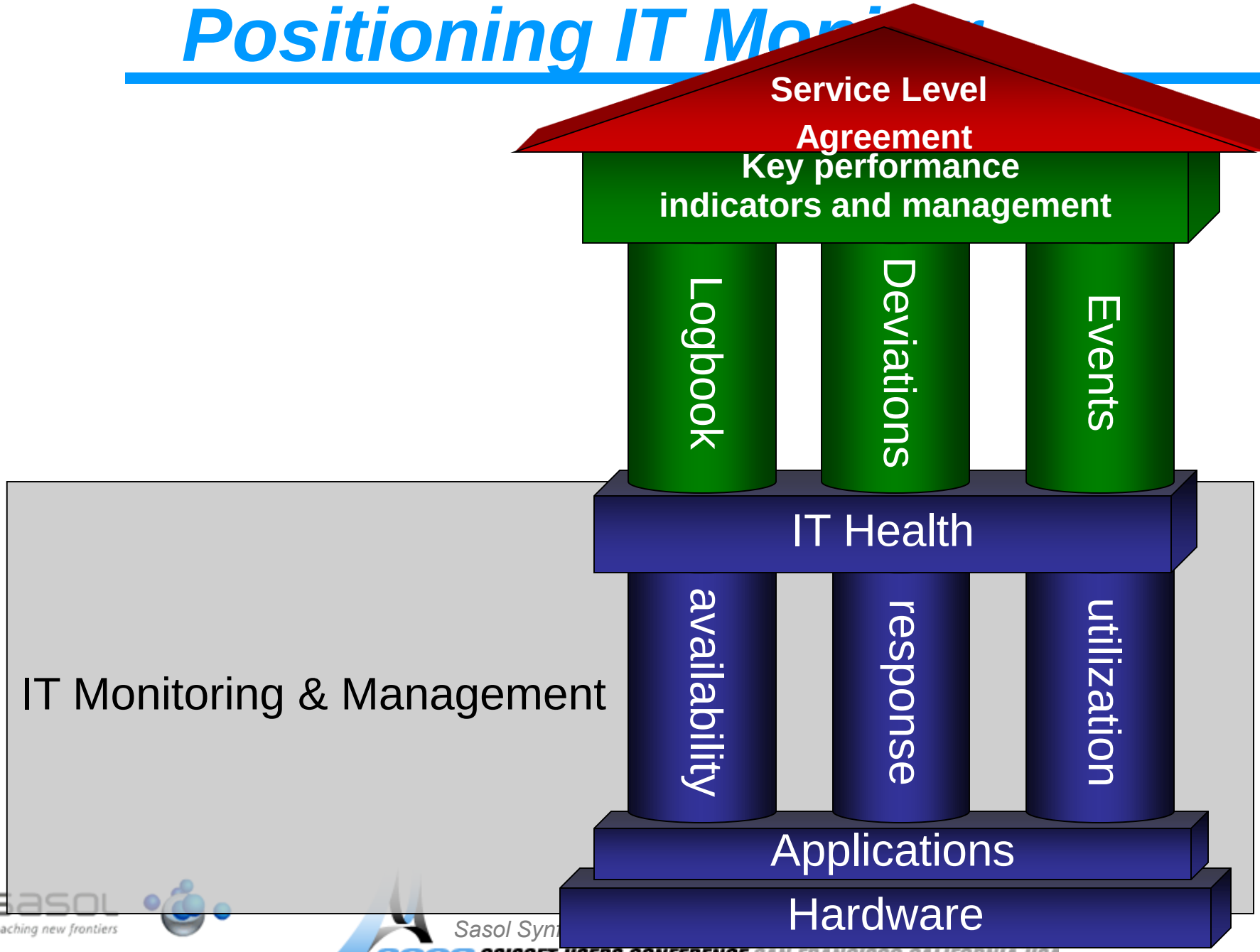
Positioning IT Monitor



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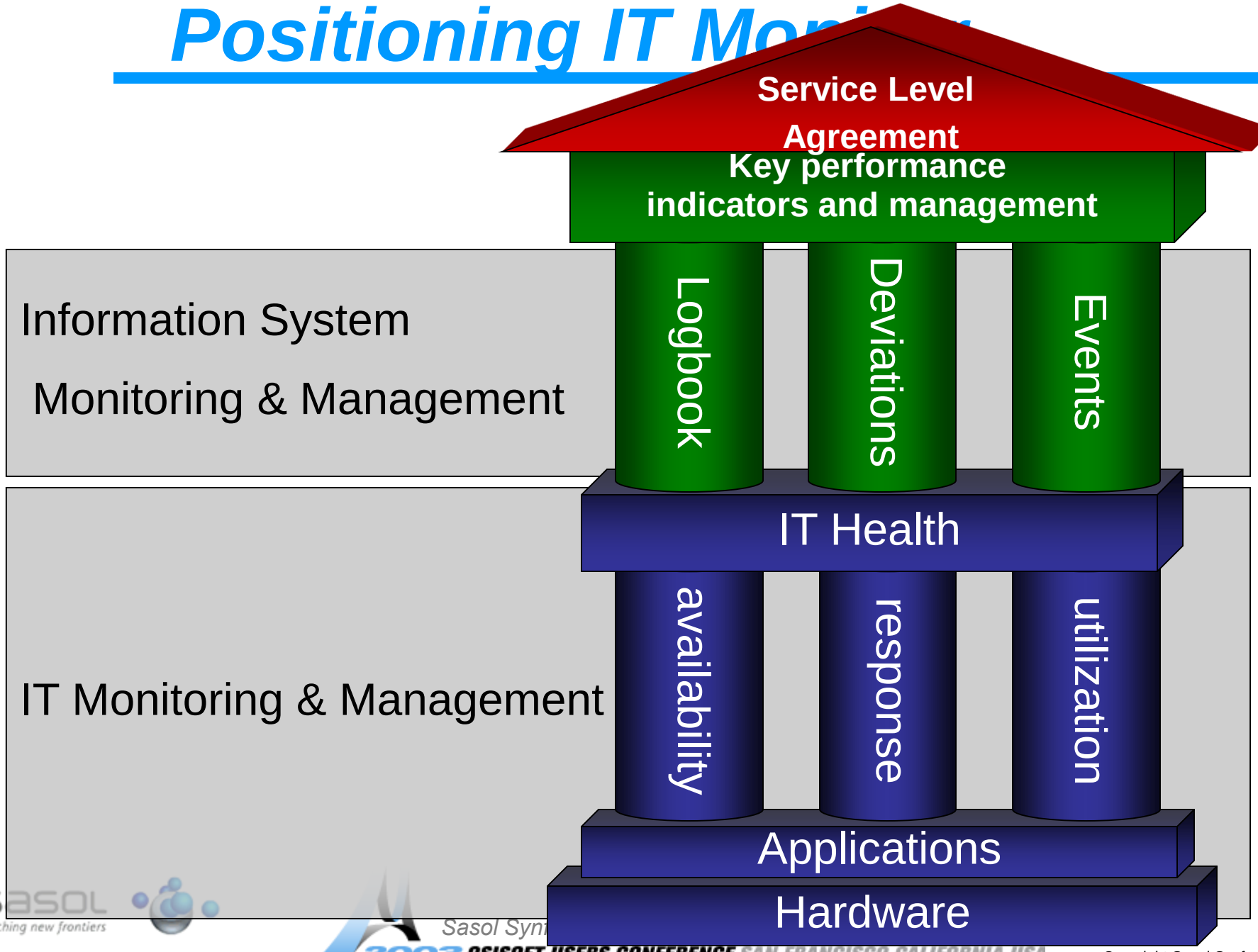
Positioning IT Monitor



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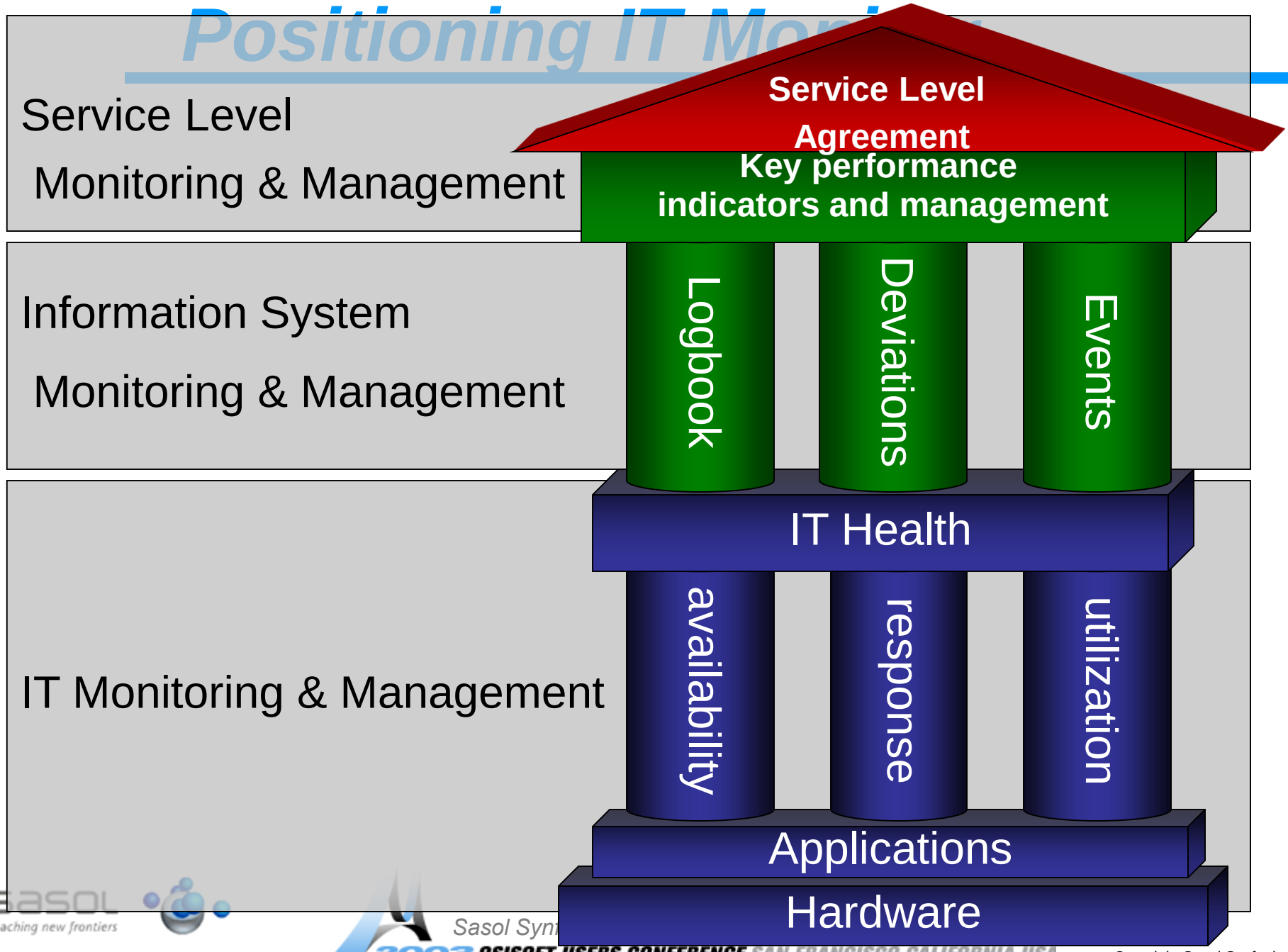
Positioning IT Mon



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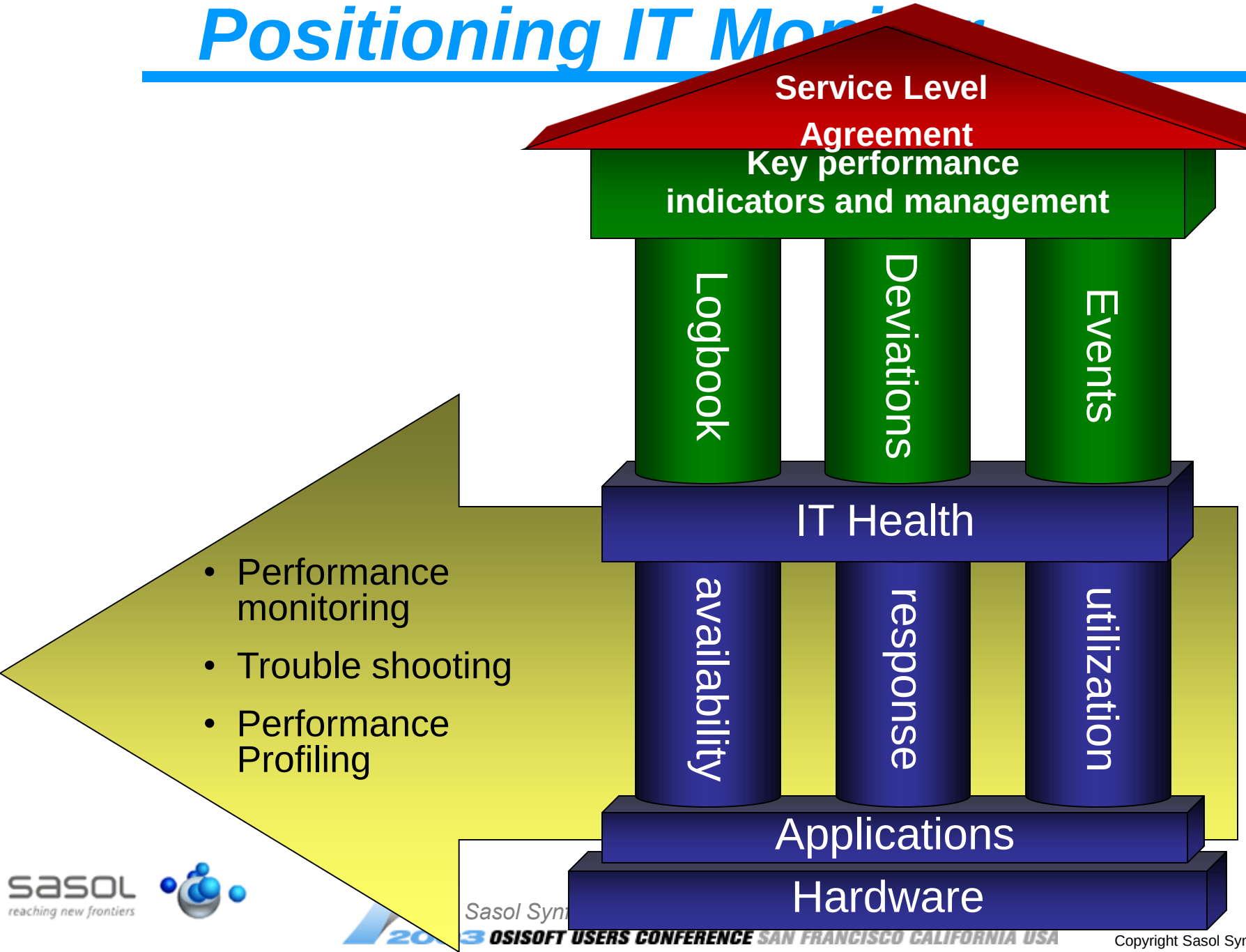

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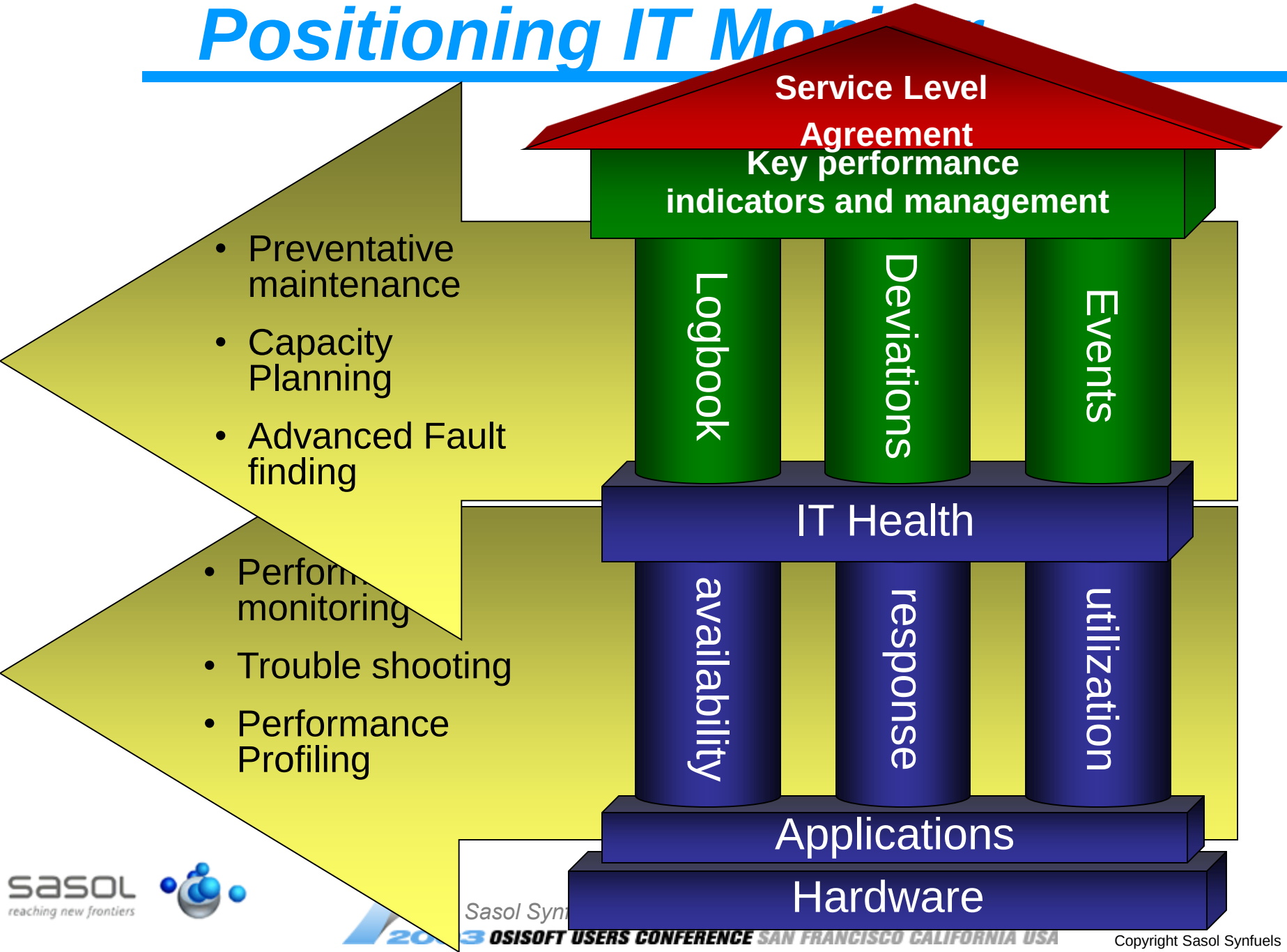
Positioning IT Monitor



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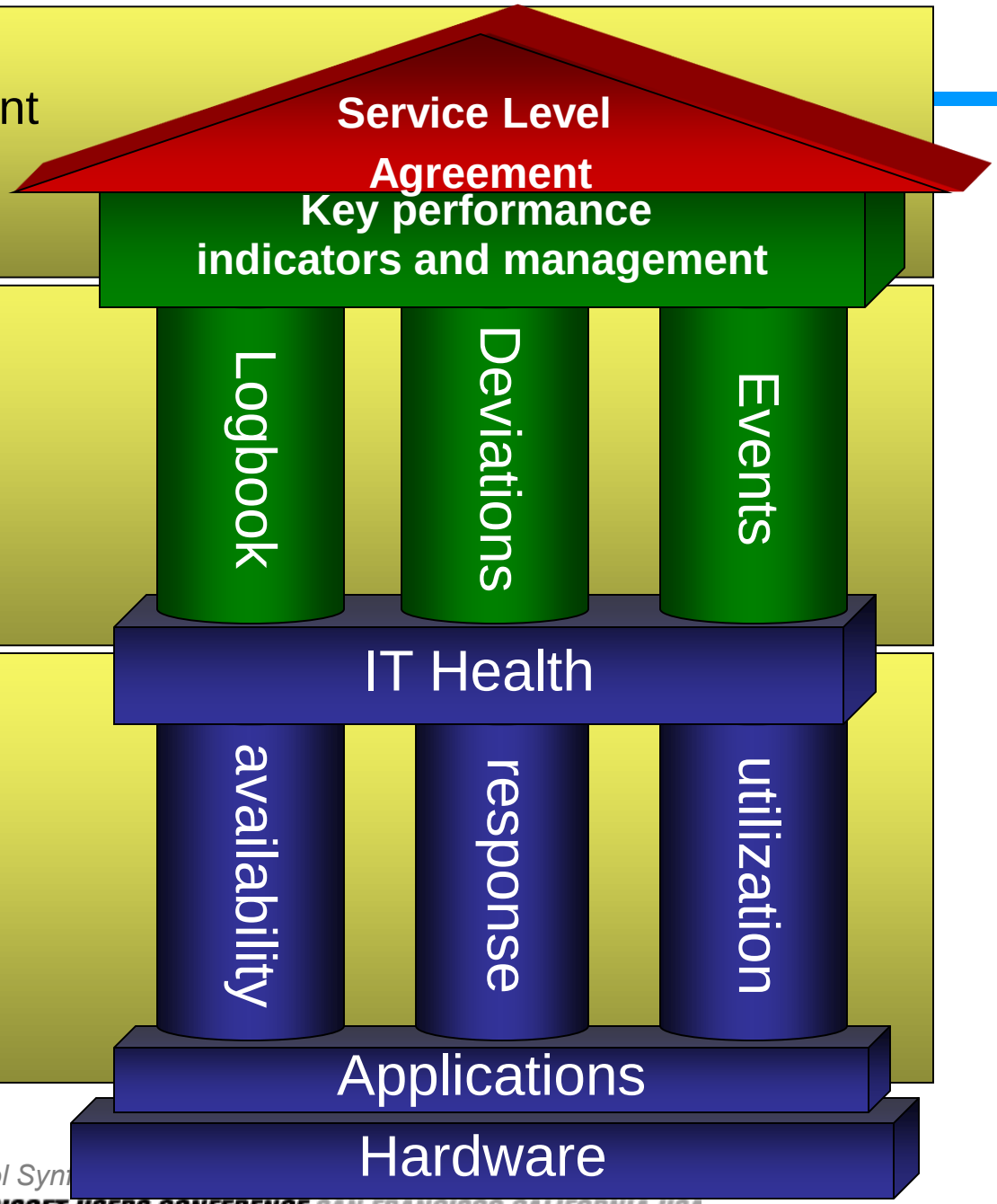
- Incentive based SLA management
- Service Optimization
- Preven… maintenance
- Capacity Planning
- Advanced Fault finding
- Perform… monitoring
- Trouble shooting
- Performance Profiling



sasol reaching new frontiers

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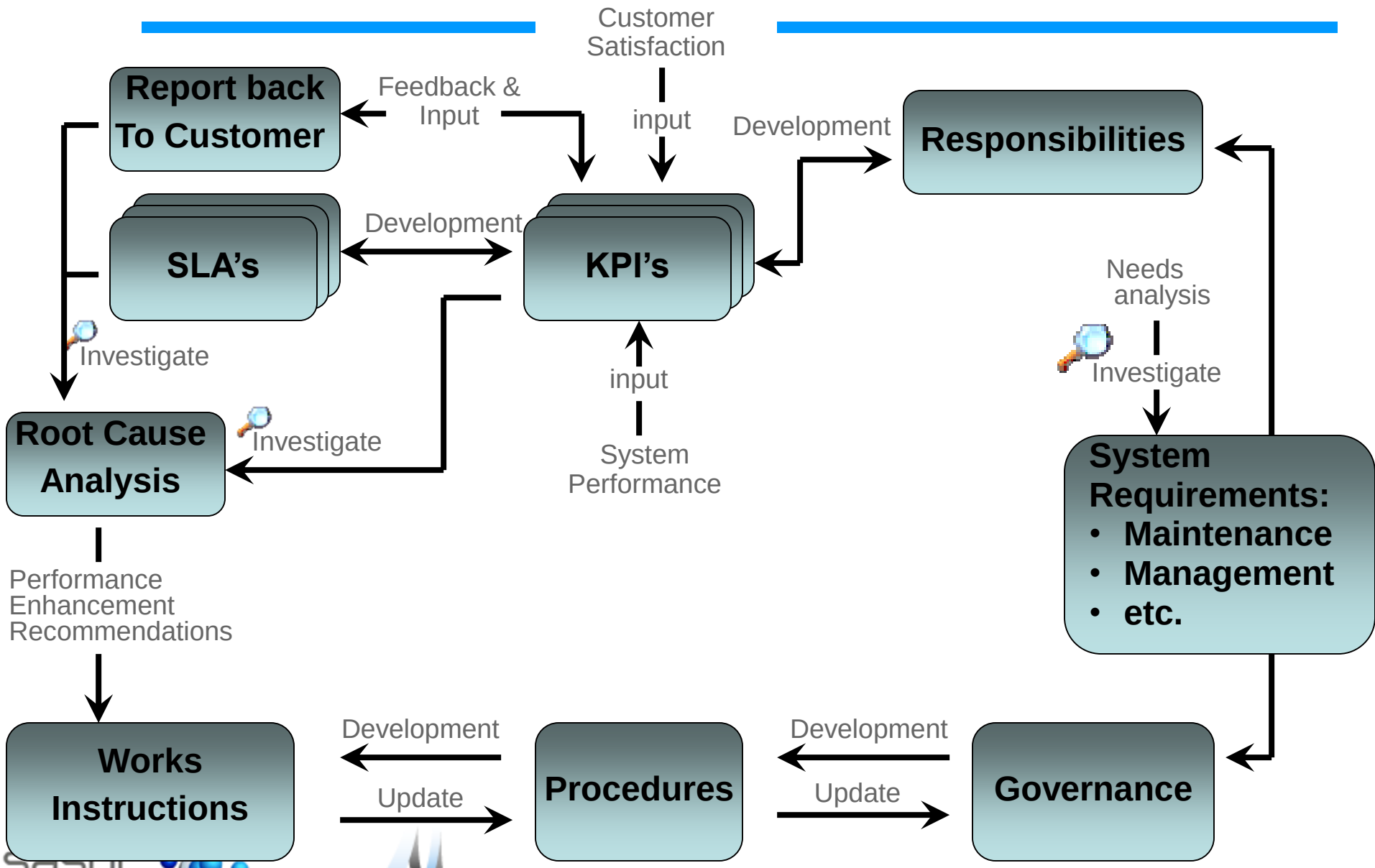
IT Monitoring in SLA management



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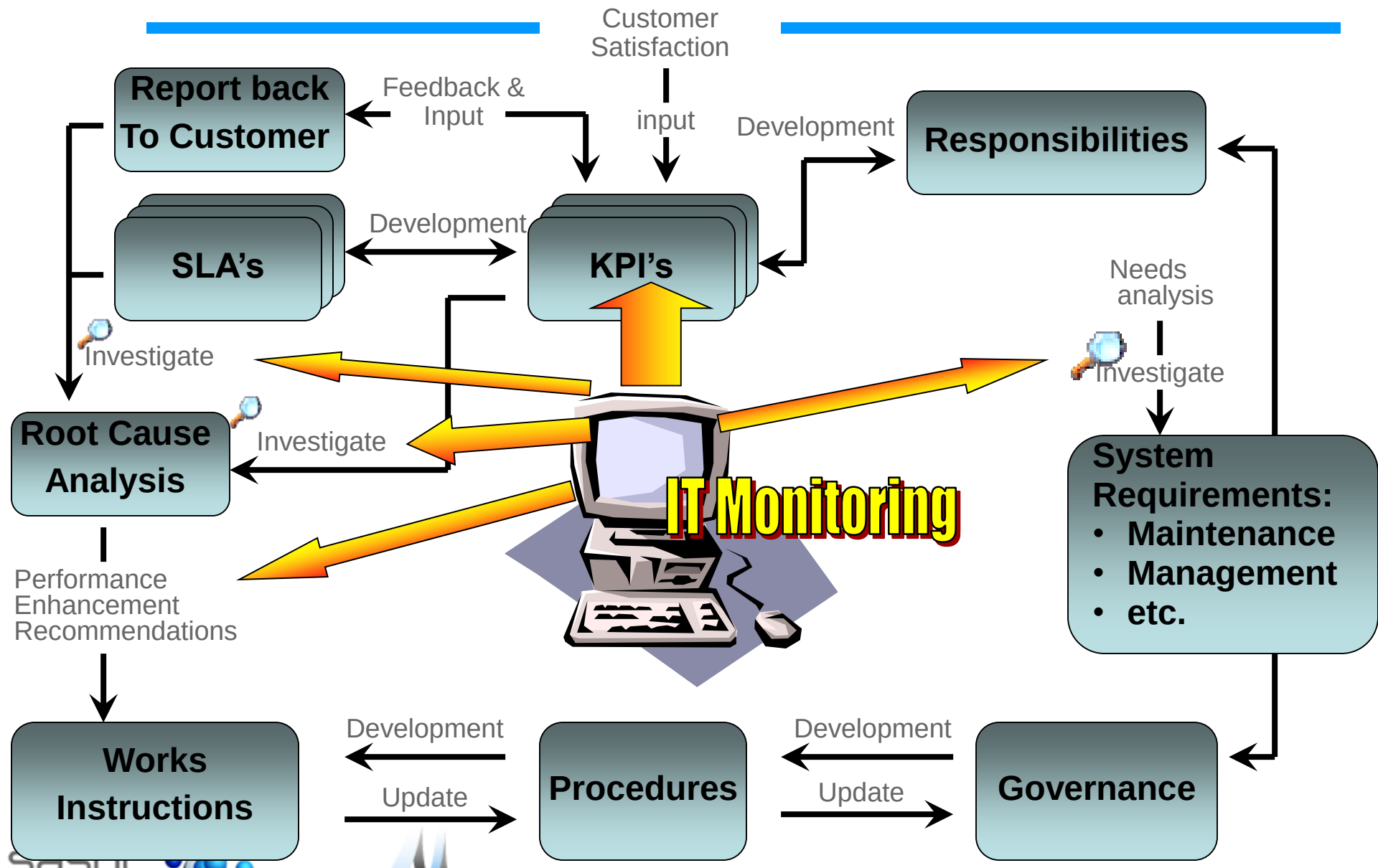
IT Monitoring in SLA management



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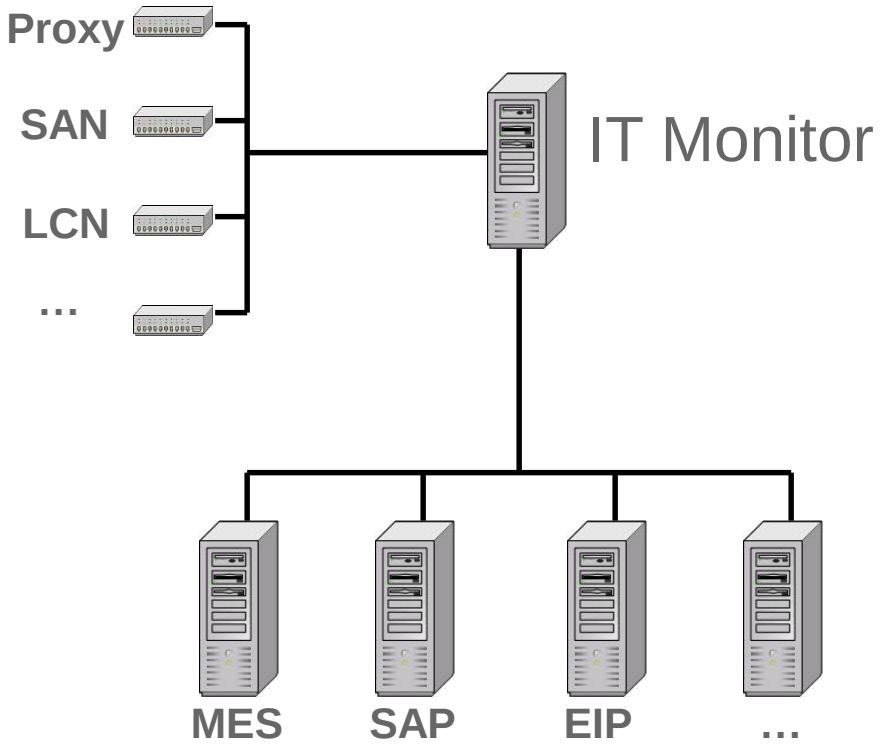
Current IT Monitor implementation
(and growing daily)

- Monitoring of the following applications:
  - 42 MES servers
  - 7 SAP servers
  - 8 SAP portal servers
  - 2 ADS servers
  - 37 switches
  - 9 applications
  - 14 LCNs



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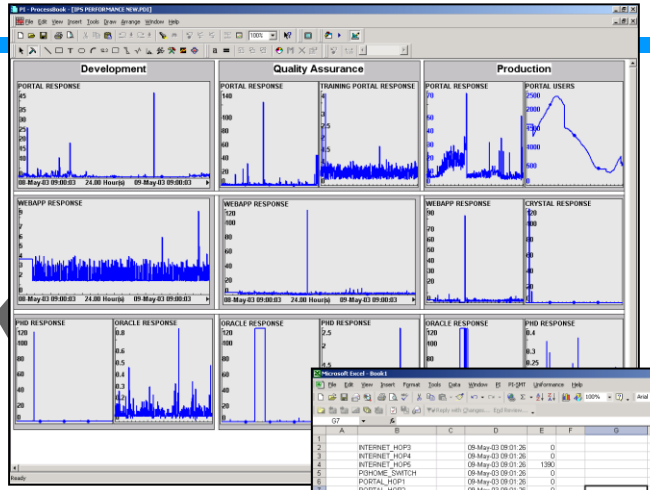
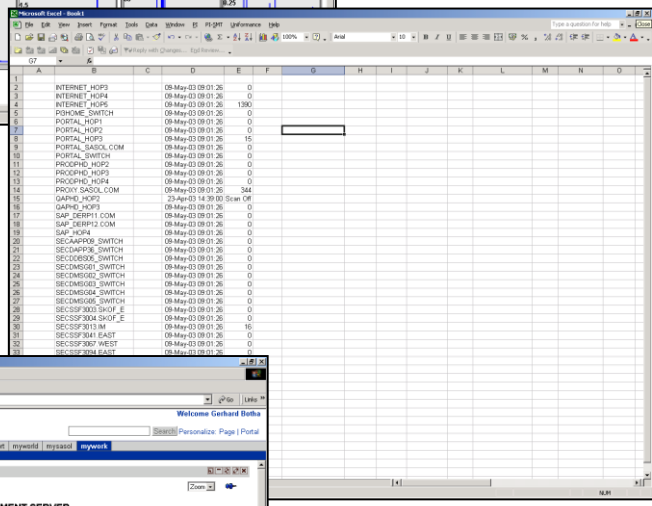
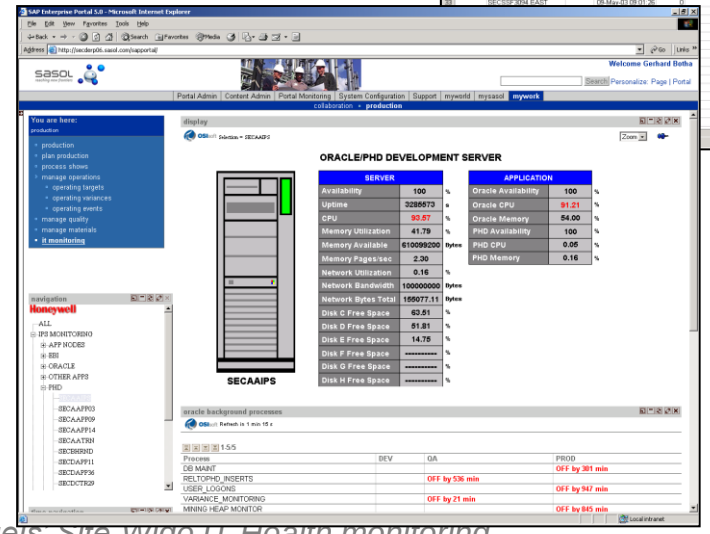
Access to Data

- PI Processbook
- PI Datalink (Excel)
- SAP Portal







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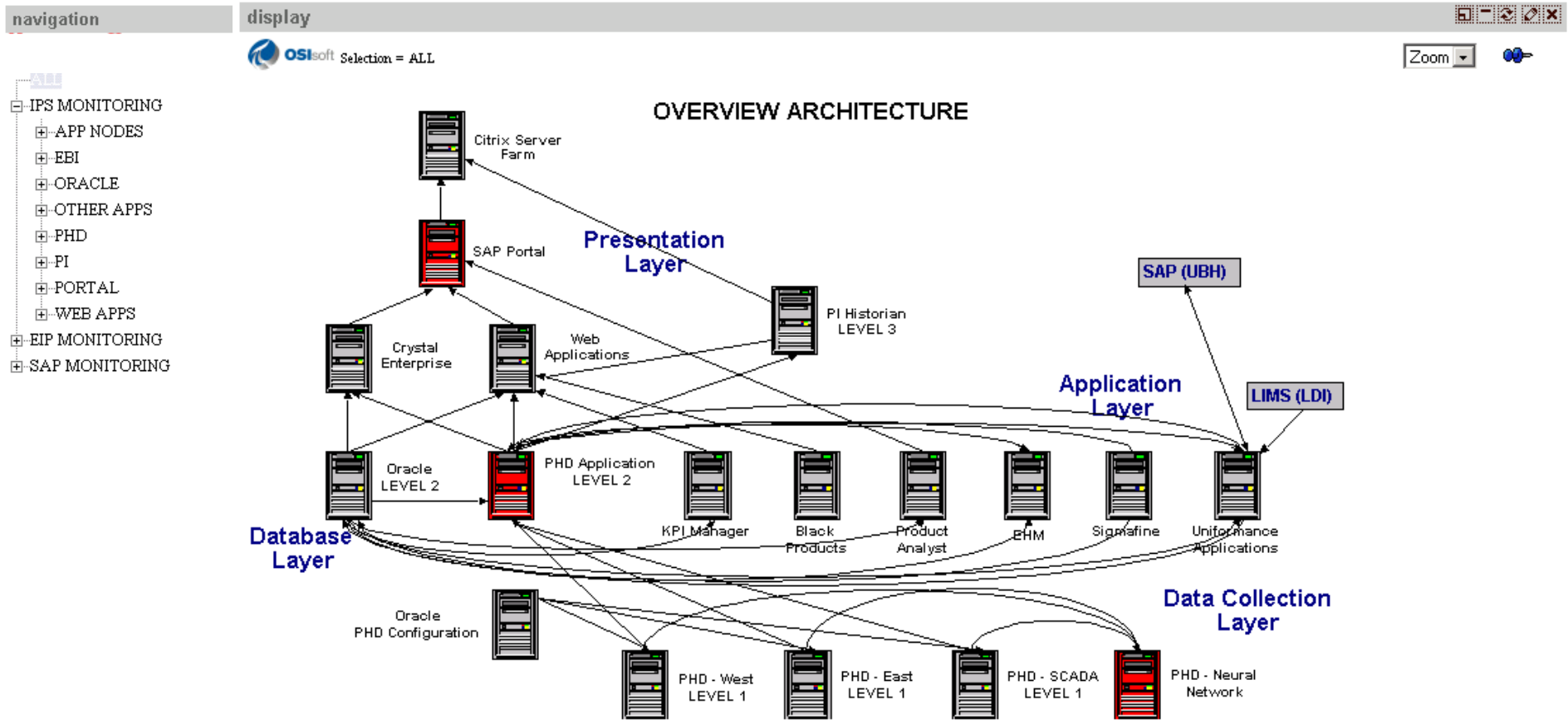
IT Monitoring integration into Portals



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IT Monitoring integration into Portals

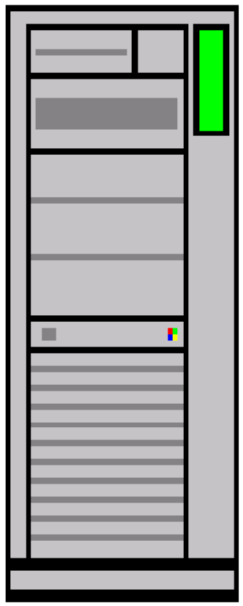
navigation

- IPS MONITORING
  - APP NODES
  - EBI
  - ORACLE
  - OTHER APPS
  - PHD
  - PI
  - PORTAL
  - WEB APPS
- EIP MONITORING
- SAP MONITORING

display

OSIsoft Selection = SECAAIPS

Zoom



SECAAIPS

ORACLE/PHD DEVELOPMENT SERVER

SERVER		
Availability	100	%
Uptime	3284733	s
CPU	80.54	%
Memory Utilization	40.52	%
Memory Available	623382528	Bytes
Memory Pages/sec	1.70	
Network Utilization	0.03	%
Network Bandwidth	100000000	Bytes
Network Bytes Total	27393.09	Bytes
Disk C Free Space	63.51	%
Disk D Free Space	51.81	%
Disk E Free Space	14.76	%
Disk F Free Space	----------	%
Disk G Free Space	----------	%
Disk H Free Space	----------	%

APPLICATION		
Oracle Availability	100	%
Oracle CPU	12.90	%
Oracle Memory	53.73	%
PHD Availability	100	%
PHD CPU	0.00	%
PHD Memory	0.16	%

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IS Monitoring & Management - Portal

oracle background processes

OSIsoft Refresh in 1 min 52 s

1-5/5

Process	DEV	QA	PROD
DB MAINT			OFF by 292 min
RELTOPHD_INSERTS		OFF by 527 min	
USER_LOGONS			OFF by 938 min
VARIANCE_MONITORING		OFF by 13 min	
MINING HEAP MONITOR			OFF by 837 min

variance list

Equipment = SECAAIPS, Start Time = TODAY-2D, End Time = NOW

1-2/2

Variance	Equipment	Tag	Unit	Type	Deviated
SECAAIPS.CPU_VAR	SECAAIPS	SECAAIPS.CPU	%	PERFORMANCE	Yes
SECAAIPS.DISK_E_VAR	SECAAIPS	SECAAIPS.DISK_E	%	PERFORMANCE	Yes

variance detail

Variance = SECAAIPS.CPU_VAR, Start Time = TODAY-2D, End Time = NOW

1-4/4

Start Date/Time	End Date/Time	Duration (Hours)	Actual	Deviation	Min	Max	Running Cost
09-MAY-2003 00:05:00		8.58	99.31	+49.31	0	50	R
08-MAY-2003 00:05:00	09-MAY-2003 00:00:00	24	97.92	+47.92	0	50	R
07-MAY-2003 00:05:00	08-MAY-2003 00:00:00	24	99.39	+49.39	0	50	R
06-MAY-2003 00:05:00	07-MAY-2003 00:00:00	24	98.8	+48.8	0	50	R

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IS & SLA Monitoring & Management - Portal

oracle background processes

OSIsoft Refresh in 1 min 52 s

1-5/5

Process	DEV	QA	PROD
DB MAINT			OFF by 292 min
RELTOPHD_INSERTS		OFF by 527 min	
USER_LOGONS			OFF by 938 min
VARIANCE_MONITORING		OFF by 13 min	
MINING HEAP MONITOR			OFF by 837 min

variance list

Equipment = SECAAIPS, Start Time = TODAY-2D, End Time = NOW

Operational & SLA Targets

1-2/2

Variance	Equipment	Tag	Unit	Type	Deviated
SECAAIPS.CPU_VAR	SECAAIPS	SECAAIPS.CPU	%	PERFORMANCE	Yes
SECAAIPS.DISK_E_VAR	SECAAIPS	SECAAIPS.DISK_E	%	PERFORMANCE	Yes

variance detail

Variance = SECAAIPS.CPU_VAR, Start Time = TODAY-2D, End Time = NOW

Operational & SLA Deviations

1-4/4

Start Date/Time	End Date/Time	Duration (Hours)	Actual	Deviation	Min	Max	Running Cost
09-MAY-2003 00:05:00		8.58	99.31	+49.31	0	50	R
08-MAY-2003 00:05:00	09-MAY-2003 00:00:00	24	97.92	+47.92	0	50	R
07-MAY-2003 00:05:00	08-MAY-2003 00:00:00	24	99.39	+49.39	0	50	R
06-MAY-2003 00:05:00	07-MAY-2003 00:00:00	24	98.8	+48.8	0	50	R

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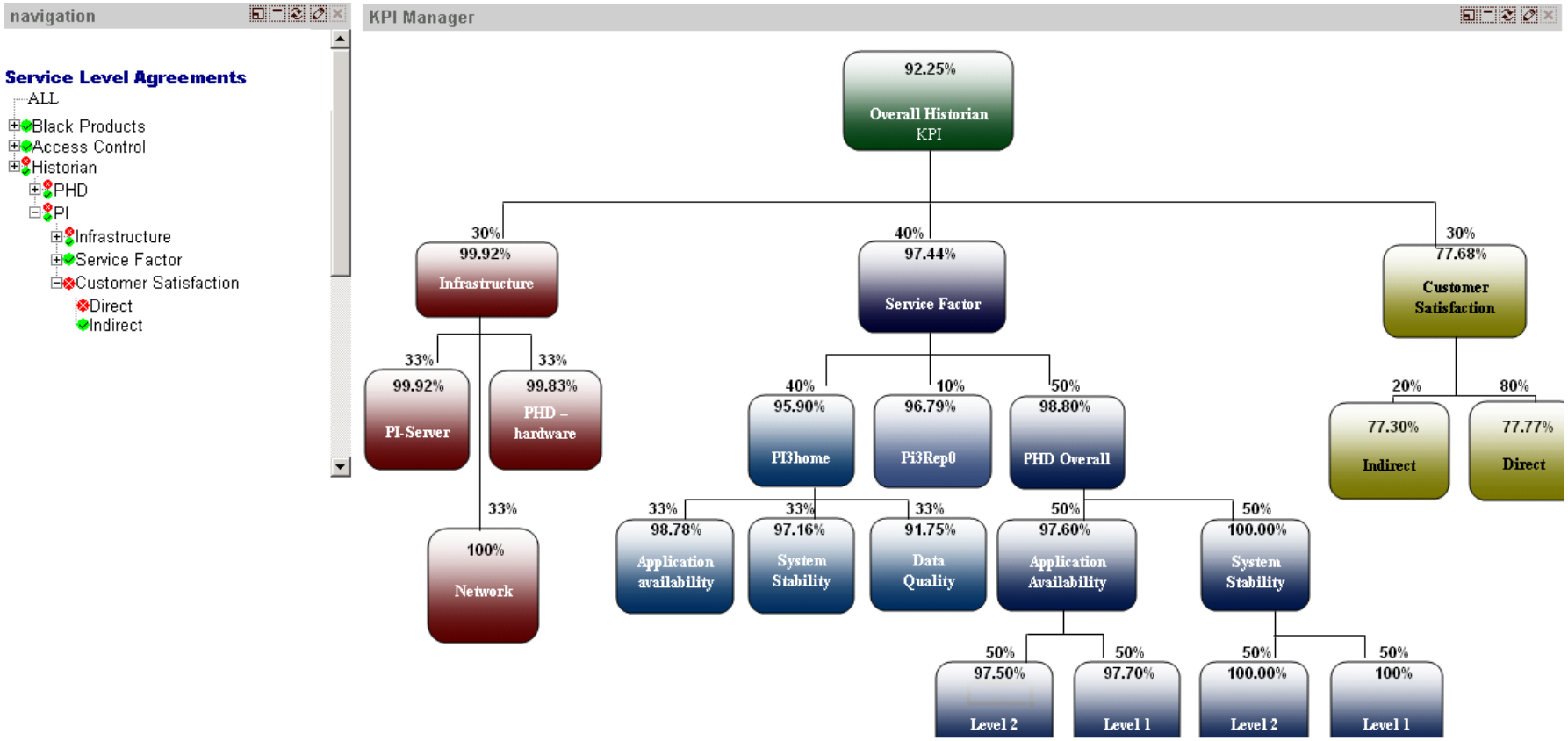
SLA Monitoring and Management - Portal



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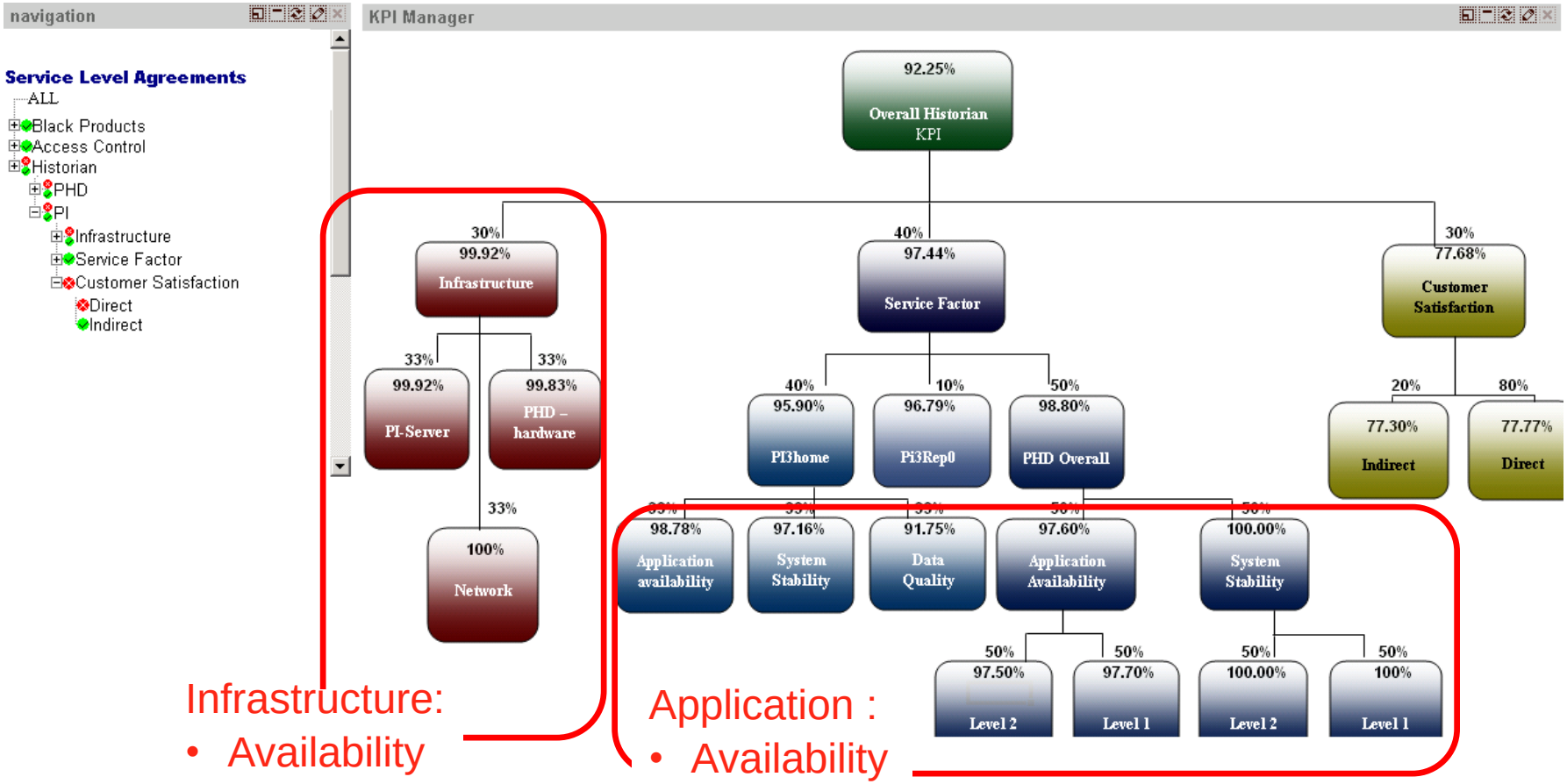
SLA Monitoring and Management - Portal



Infrastructure:

- Availability

Application :

- Availability
- Response
- Utilization

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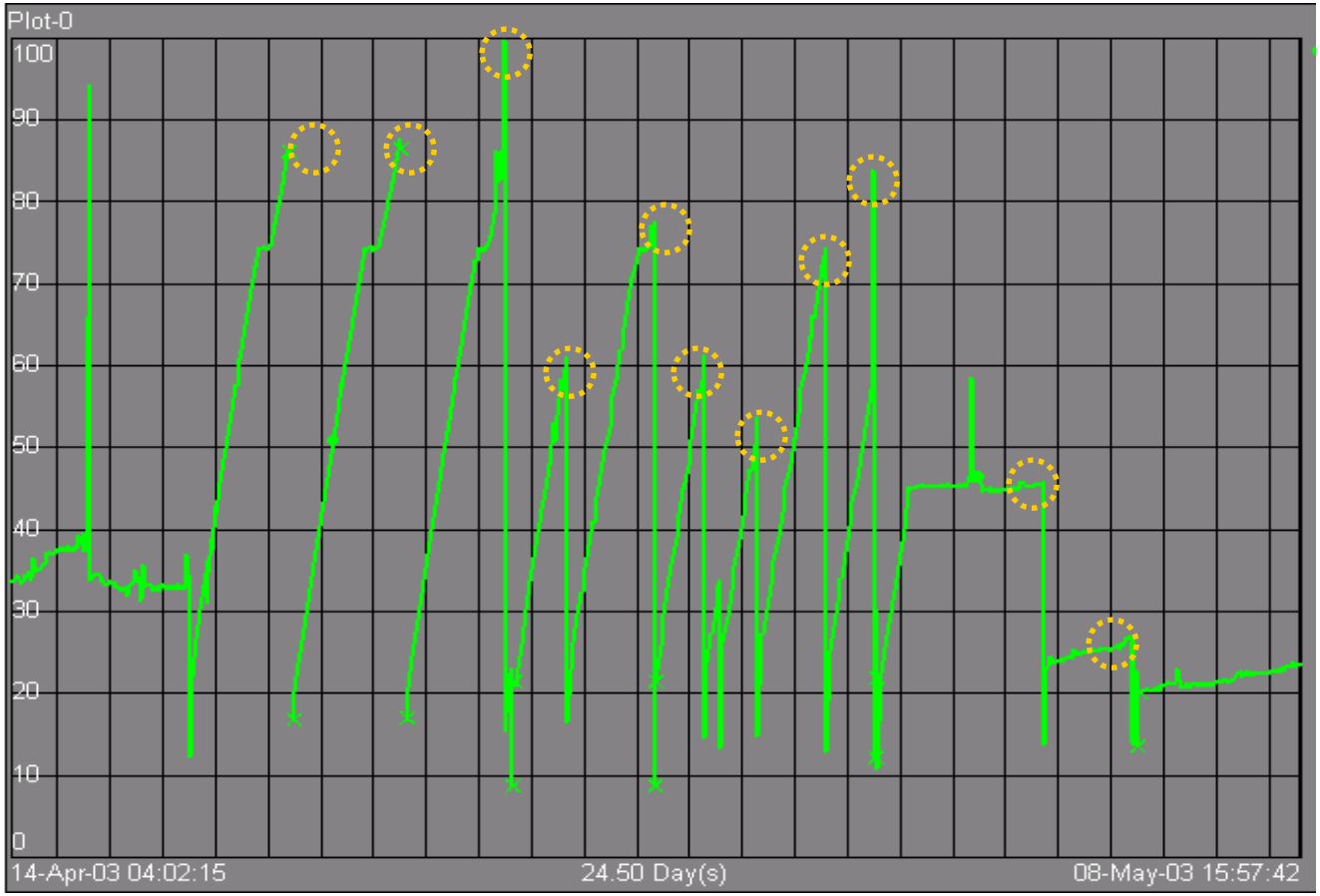
Case Study – Memory Leak

Memory leak on Application



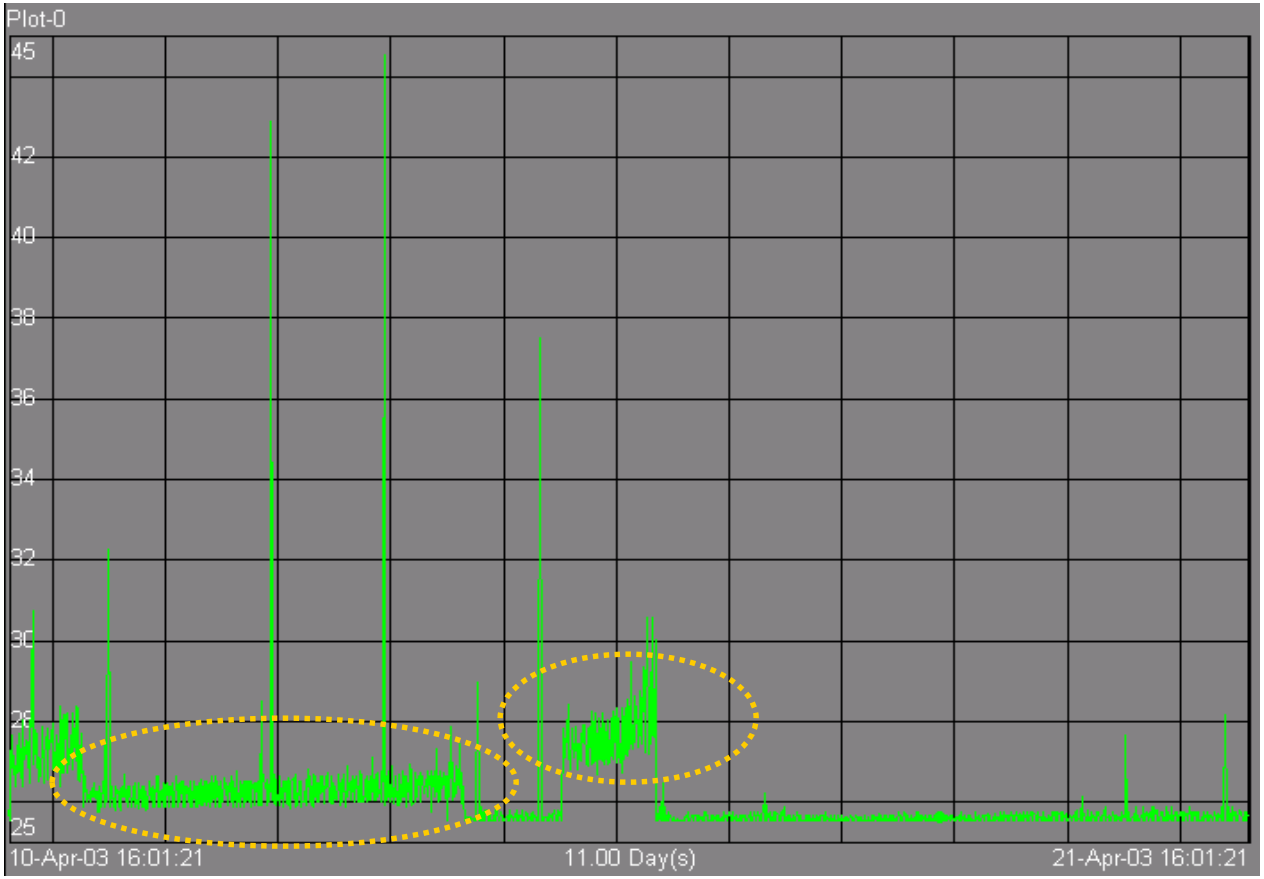
Potential impact:

- **Data loss due to application failure**
- **Plant trip on critical applications**

Typical Monitoring system

Case Study – Response deterioration

Production Portal slow response time problems

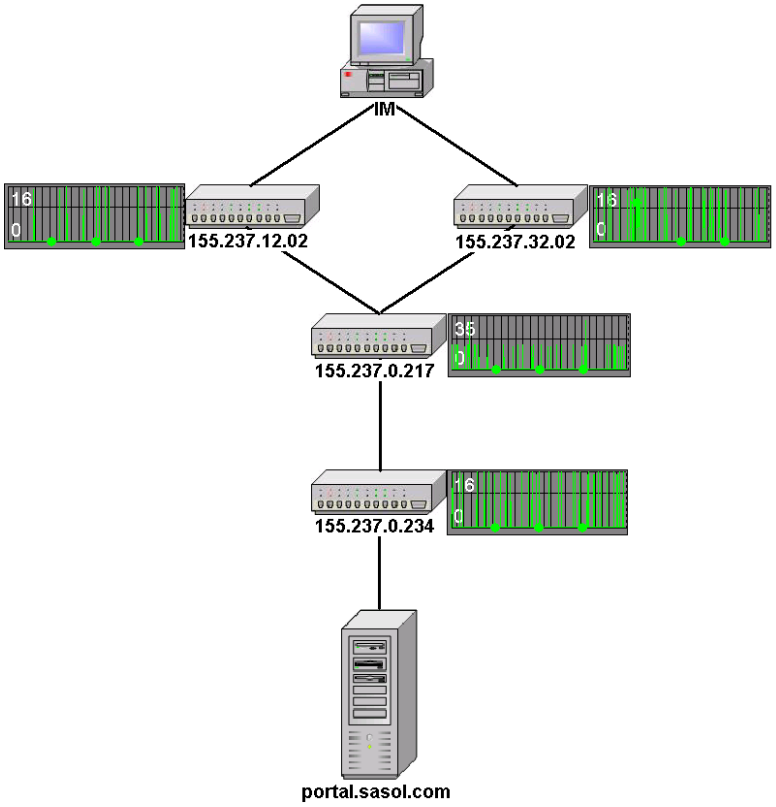


Problem Detected:

- **Slow increase in response time**
- **Settings changed**
- **Patch applied**
- **Settings changed**

Case Study – Bottleneck detection / Capacity Planning

Client network path to the portal servers

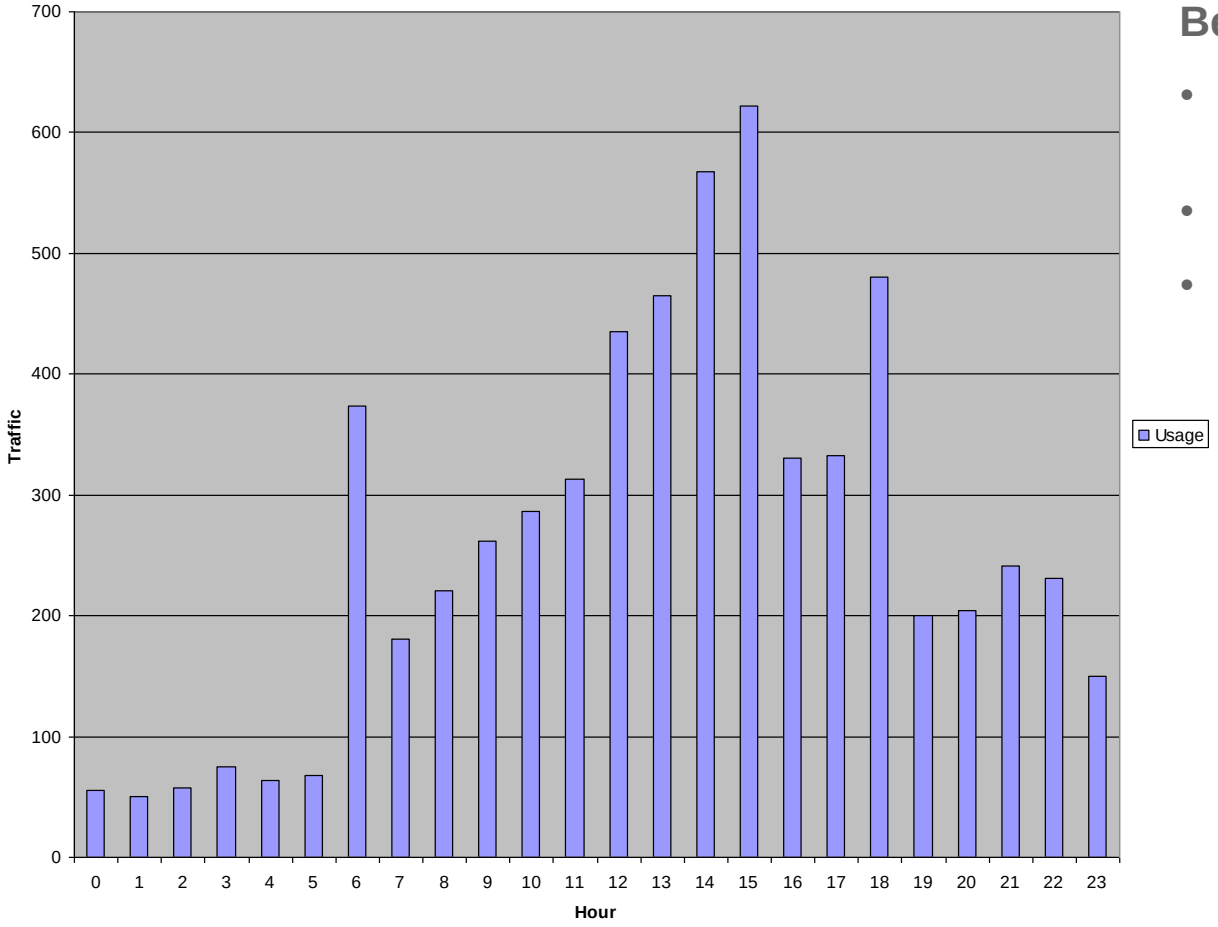


Benefits:

- **Track network performance**
- **Identify bottleneck (PC, Network, Server, Application) without using expensive network instruments**
- **Do capacity planning**

Case Study – Application Utilization

Application Usage monitoring

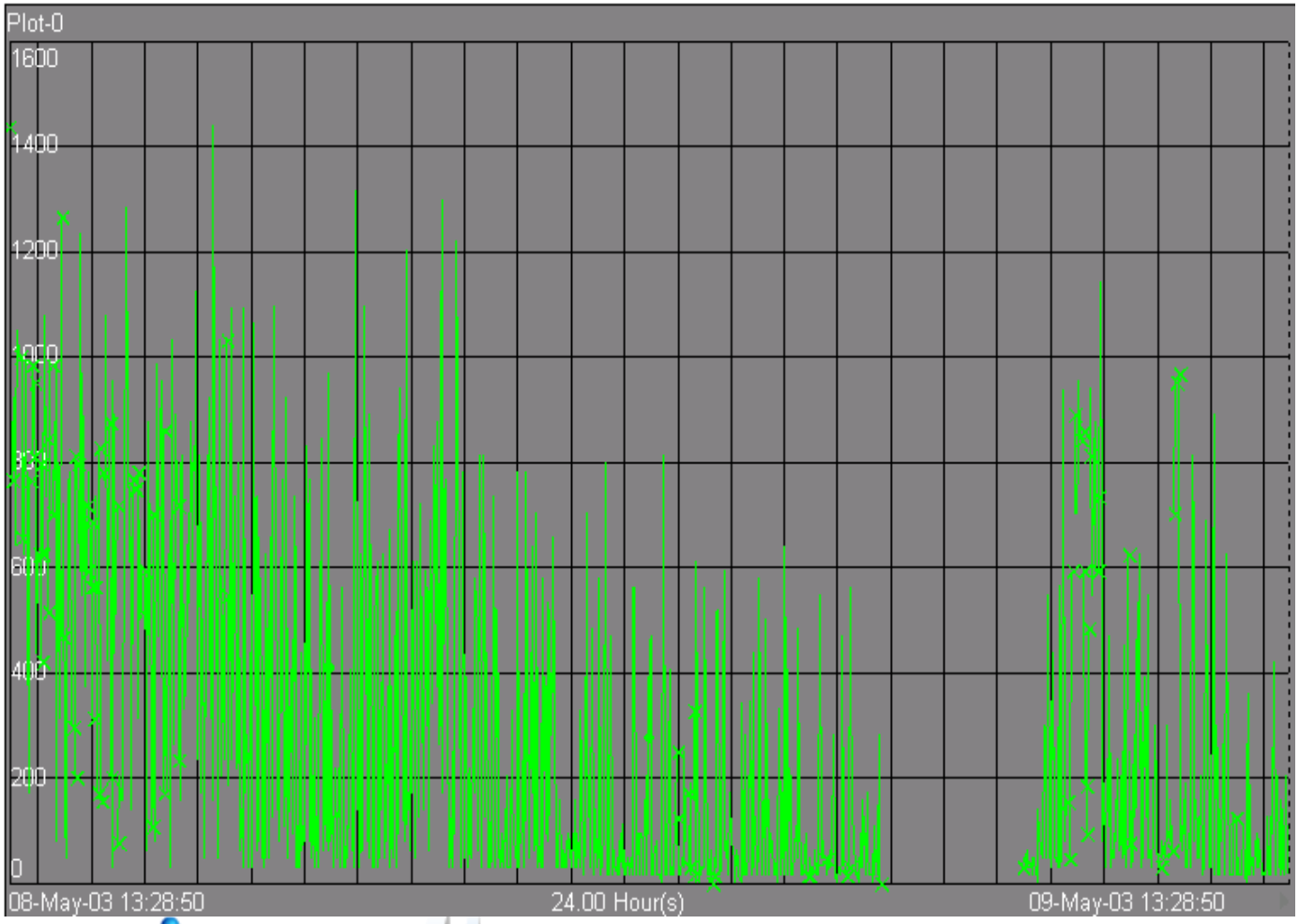


Benefits:

- **Utilization profile of any application**
- **Do capacity planning**
- **Preventative Maintenance**

Case Study – Preventative Maintenance

WAN downtime (2h 40min) due to failure



Benefits:

- **Early problem detection - preventative maintenance**
- **Minimized Downtime**

Benefits thus far

- Real-time Performance Monitoring
- Preventative Maintenance strategies
- Advanced trouble shooting and fault finding system
- Incentive Based Service Level Agreements (SLA), based on Key Performance indicators (KPI)
- Integration into Synfuels Portal as Monitoring, Fault finding, operations and Management tool
- Single Site-wide monitoring system

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Q & A

Questions?