

In 'control zijn' met monitoringssoftware van PIM+

Wout van Bruchem, Dennis van de Vegt, Stefan
Konijnenberg X-ICT
27 januari 2017

Aventus

De school waar jij 't maakt



Agenda

- Aventus
- Aanleiding
- Zoektocht vervanging
- Traject keuze voor PIM⁺
- Beslis punten
- Resultaat
- En dan verder?...



Aventus

- MBO onderwijs
- Apeldoorn, Deventer, Zutphen
- 6 lokaties, 1 netwerk
- 11.000 MBO studenten
- Training & Educatie
- 1000 medewerkers
- 2500 beheerde werkplekken
- 7000 eigen laptops studenten

Aventus




De school waar jij 't maakt



Aanleiding

- Verouderde NAGIOS inrichting.
- Monitoring alleen reactief, geen trends.
- Rapportage mogelijkheden minimaal
- Geen duidelijkheid in nut en noodzaak.
- Beperkte expertise bij gebruikers
- Alleen op basis IP/MIB



- Monitoring** 
- Tactical Overview
- Host Detail
- Service Detail
- Hostgroup Overview
- Servicegroup Overview
- Status Map
- 3-D Status Map
- Service Problems
- Host Problems
- Network Outages
- Comments
- Downtime
- Process Info
- Performance Info
- Scheduling Queue
- Reporting** 
- Trends
- Availability
- Alert Histogram
- Alert History
- Alert Summary
- Notifications
- Event Log
- Configuration** 
- View Config

Tactical Monitoring Overview

Last Updated: Thu Jan 26 13:47:04 CET 2017
 Updated every 30 seconds
 Nagios® Core™ 3.2.3 - www.nagios.org
 Logged in as nwb
- Notifications are disabled

Network Outages

0 Outages

Hosts

36 Down	0 Unreachable	605 Up	0 Pending
---------	---------------	--------	-----------

36 Unhandled Problems

Services

90 Critical	6 Warning	56 Unknown	1013 Ok	0 Pending
-------------	-----------	------------	---------	-----------

16 Unhandled Problems 6 Unhandled Problems 5 Unhandled Problems
74 on Problem Hosts 51 on Problem Hosts

Monitoring Features

	Flap Detection	Notifications	Event Handlers	Active Checks	Passive Checks
DISABLED	N/A	DISABLED	ENABLED	ENABLED	ENABLED
	N/A	N/A	All Services Enabled All Hosts Enabled	All Services Enabled All Hosts Enabled	All Services Enabled All Hosts Enabled

Monitoring Performance

Service Check Execution Time: 0.01 / 30.38 / 1.397 sec
 Service Check Latency: 0.00 / 0.98 / 0.249 sec
 Host Check Execution Time: 0.01 / 10.31 / 0.574 sec
 Host Check Latency: 0.00 / 2.90 / 0.473 sec
 # Active Host / Service Checks: 641 / 1165
 # Passive Host / Service Checks: 0 / 0

Network Health

Host Health:
 Service Health:



Monitoring

- Tactical Overview
- Host Detail
- Service Detail
- Hostgroup Overview
- Servicegroup Overview
- Status Map
- 3-D Status Map
- Service Problems
- Host Problems
- Network Outages
- Comments
- Downtime
- Process Info
- Performance Info
- Scheduling Queue

Current Network Status
 Last Updated: Thu Jan 28 13:48:38 CET 2017
 Updated every 30 seconds
 Nagios® Core™ 3.2.3 - www.nagios.org
 Logged in as nwb
 - Notifications are disabled

[View History For all hosts](#)
[View Notifications For All Hosts](#)
[View Host Status Detail For All Hosts](#)

Host Status Totals

Up	Down	Unreachable	Pending
807	34	0	0
All Problems		All Types	
34		641	

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
1013	6	56	90	0
All Problems		All Types		
152		1165		

Search ...

Reporting

- Trends
- Availability
- Alert Histogram
- Alert History
- Alert Summary
- Notifications
- Event Log

Configuration

- View Config

Service Status Details For All Hosts

Host	Service	Status	Last Check	Duration	Attempt	Status Information
ACS1	ACSI HTTPS check	OK	05-12-2016 07:12:03	190d 6h 33m 1s	1/4	TCP OK - 0.035 second response time on port 443
	PING	OK	05-12-2016 07:12:20	190d 6h 31m 55s	1/4	PING OK - Packet loss = 0%, RTA = 31.18 ms
	SSH	OK	05-12-2016 07:12:18	190d 6h 32m 58s	1/4	SSH OK - OpenSSH_6.6 (protocol 2.0)
ADFS01	CPU LOAD	OK	05-12-2016 07:12:57	71d 6h 11m 17s	1/4	OK : CPU Load 0%
	DISKSPACE C STATUS	OK	05-12-2016 07:11:34	71d 6h 11m 23s	1/4	OK: hd C in use 20.7934033684886 perc and 47.2516822814941 GB free w-85 c-90
	MEMORY USAGE	OK	05-12-2016 07:12:46	71d 6h 11m 36s	1/4	OK MEM: usage 20.08 perc - 842248 KBytes of 4193780 KBytes -w 80 -c 90
	PING	OK	05-12-2016 07:12:55	71d 6h 11m 10s	1/4	PING OK - Packet loss = 0%, RTA = 4.56 ms
ADFS02	CPU LOAD	OK	05-12-2016 07:12:03	71d 6h 10m 21s	1/4	OK : CPU Load 0%
	DISKSPACE C STATUS	OK	05-12-2016 07:11:38	71d 6h 11m 16s	1/4	OK: hd C in use 19.5932647620941 perc and 47.9676398230957 GB free w-85 c-90
	MEMORY USAGE	OK	05-12-2016 07:12:17	71d 6h 10m 16s	1/4	OK MEM: usage 11.39 perc - 477768 KBytes of 4193780 KBytes -w 80 -c 90
	PING	OK	05-12-2016 07:11:51	71d 6h 10m 37s	1/4	PING OK - Packet loss = 0%, RTA = 3.27 ms
ANYWHERE_USB14	PING	OK	05-12-2016 07:12:52	190d 6h 32m 59s	1/4	PING OK - Packet loss = 0%, RTA = 0.23 ms
ARCHITECTUUR	HTTP	OK	05-12-2016 07:12:21	267d 3h 41m 35s	1/4	HTTP OK - HTTP/1.1 301 Moved Permanently - 0.108 second response time
	PING	OK	05-12-2016 07:12:36	267d 3h 40m 59s	1/4	PING OK - Packet loss = 0%, RTA = 26.70 ms
	SSH	OK	05-12-2016 07:12:03	267d 3h 41m 39s	1/4	SSH OK - OpenSSH_5.1 (protocol 2.0)
BACNET	PING	OK	05-12-2016 06:50:13	108d 2h 17m 0s	1/4	PING OK - Packet loss = 0%, RTA = 6.92 ms
CACT1	HTTP	OK	05-12-2016 07:12:20	267d 3h 41m 15s	1/4	HTTP OK - HTTP/1.1 302 Found - 0.079 second response time
	PING	OK	05-12-2016 07:11:46	267d 3h 41m 20s	1/4	PING OK - Packet loss = 0%, RTA = 9.00 ms
	SSH	OK	05-12-2016 07:12:35	267d 3h 41m 27s	1/4	SSH OK - OpenSSH_5.3 (protocol 2.0)
CCTV01	PING	OK	05-12-2016 07:12:35	120d 17h 44m 26s	1/4	PING OK - Packet loss = 0%, RTA = 8.41 ms
CCTV02	PING	OK	05-12-2016 07:12:55	120d 7h 32m 11s	1/4	PING OK - Packet loss = 0%, RTA = 45.36 ms
DC02	AD-SERVICE	OK	05-12-2016 07:11:22	84d 0h 9m 6s	1/4	1 services active (matching "Active Directory Domain Services") : OK
	CPU LOAD	OK	05-12-2016 07:12:57	84d 0h 9m 2s	1/4	OK : CPU Load 0%
	DISKSPACE C STATUS	OK	05-12-2016 07:11:54	84d 0h 8m 51s	1/4	OK: hd C in use 25.9035969308363 perc and 44.2031326293945 GB free w-85 c-90
	MEMORY USAGE	OK	05-12-2016 07:11:52	84d 0h 8m 52s	1/4	OK MEM: usage 28.90 perc - 1212152 KBytes of 4193780 KBytes -w 80 -c 90
	PING	OK	05-12-2016 07:12:52	84d 0h 10m 18s	1/4	PING OK - Packet loss = 0%, RTA = 34.62 ms
FCSW002	PING	OK	05-12-2016 07:12:55	267d 3h 40m 20s	1/4	PING OK - Packet loss = 0%, RTA = 4.29 ms
FCSW003	PING	OK	05-12-2016 07:12:13	267d 3h 41m 15s	1/4	PING OK - Packet loss = 0%, RTA = 5.14 ms
FCSW004	PING	OK	05-12-2016 07:12:20	267d 3h 41m 15s	1/4	PING OK - Packet loss = 0%, RTA = 7.09 ms
FCSW102	PING	OK	05-12-2016 07:12:11	267d 3h 41m 9s	1/4	PING OK - Packet loss = 0%, RTA = 3.11 ms



Zoektocht vervanging

- Meerdere pakketten bekeken, SCOM, PTRG, NETCRUNCH, NAGIOS.
- Allen waren zichtbaar beter dan huidige oplossing, maar ook kanttekeningen. Soms veel ballast, mindere onderdelen (Windows beheer) of onduidelijke scherm informatie.
- Afvinklijstjes gingen het meest richting SCOM en NETCRUNCH. Prijs was soms schrikken.
- Net toen we het hele traject weer in de koelkast wilden plaatsen, kwamen we bij toeval terecht bij PIM⁺



Traject / keuze voor PIM+

- Eerste DEMO gaf antwoord op aantal vragen.
 - Proactief Windows beheer
 - Multi Dashboard mogelijk
 - Ondersteuning Oracle
 - Koppeling met gebouwbeheer mogelijk (Bacnet, Modbus)

PIM+



Traject / keuze voor PIM+

- Vervolg
 - Punten meegenomen
 - Collega's ingelicht
 - Vinklijsten weer opgezocht
 - Afspraak 2e DEMO
 - Offerte opgevraagd
 - Beslist in 2 dagen



Beslispunten

- Offerte incl. hardware, 3 dagen implementatie.
- Belofte in 3 dagen volledig werkend.
- Alle onderdelen NAGIOS worden meegenomen.
- Geen additionele software nodig op clients.
- Onderhouds contract voor 3 jaar met consultancy.



Windows System Health

Top 10 CPU

Top 10 Memory

Top 10 Disks

lvmscrt1.ventus.local	66.38%
sqlscense01.ventus.local	52.00%
lvmscns2.ventus.local	50.00%
lvzca01.ventus.local	50.00%
lvmdns01.ventus.local	45.45%
dc03.ventus.local	34.88%
sqltopdesk01.ventus.local	32.00%
tscmdp1.test.local	31.45%
sqlapp01.ventus.local	18.87%
tpa01.ventus.local	17.31%

tsqlscm01.test.local	88.10%
soatst01.test.local	87.66%
sccmdb01.ventus.local	86.66%
wsus2.ventus.local	85.81%
lvmap01.ventus.local	84.71%
tsqlfin01.test.local	79.90%
sqltopdesk01.ventus.local	79.48%
smatst01.test.local	78.99%
lvms11.ventus.local	77.78%
tsqltopdesk01.test.local	77.73%

lvms06.ventus.local (I)	91.32%
lvms02.ventus.local (I)	89.71%
lvms01.ventus.local (F)	88.15%
lvms02.ventus.local (C)	87.38%
lvms06.ventus.local (J)	85.68%
sslst01.test.local (C)	85.64%
lvms01.ventus.local (C)	84.84%
lvms05.ventus.local (I)	84.41%
lvms02.ventus.local (C)	84.33%
topdst3.test.local (C)	84.19%

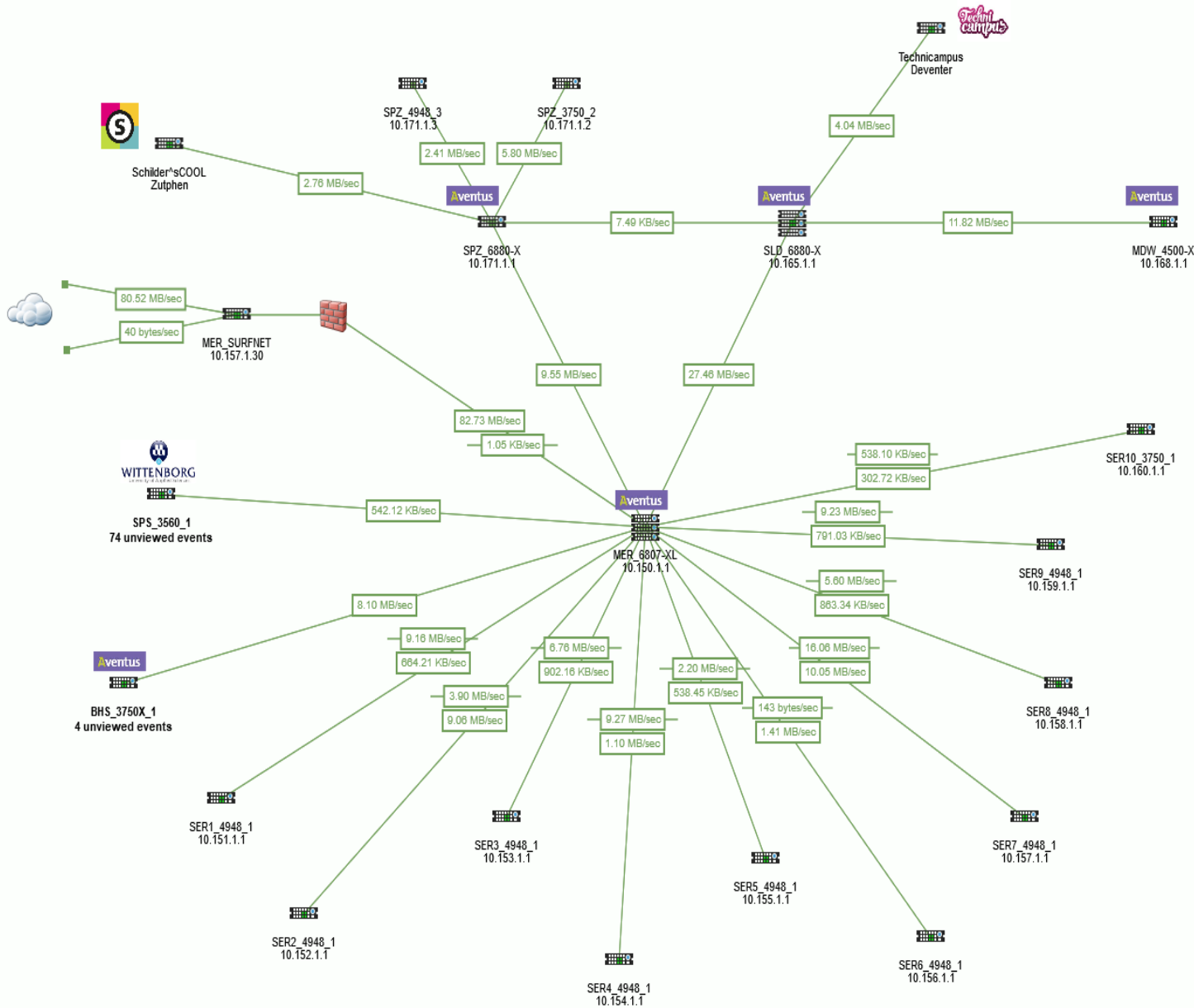
Top 10 Ping

Top 10 Bandwith

stucmm1.ventus.local	2.0 ms
xenweb02.ventus.local	0.0 ms
xenweb01.ventus.local	0.0 ms
xenapp12.ventus.local	0.0 ms
xenapp11.ventus.local	0.0 ms
xenapp05.ventus.local	0.0 ms
xenapp04.ventus.local	0.0 ms
xenapp03.ventus.local	0.0 ms
wsustst1.test.local	0.0 ms
wsus2.ventus.local	0.0 ms

lvms03.ventus.local	16.7 MB/sec
lvms01.ventus.local	8.8 MB/sec
lvms06.ventus.local	4.5 MB/sec
lvms04.ventus.local	4.4 MB/sec
print01.ventus.local	2.8 MB/sec
sql08vmware.ventus.local	2.0 MB/sec
sql08corsa.ventus.local	1.8 MB/sec
lvmscns2.ventus.local	1.4 MB/sec
dc01.ventus.local	1.3 MB/sec
sql08rostar.ventus.local	1.2 MB/sec





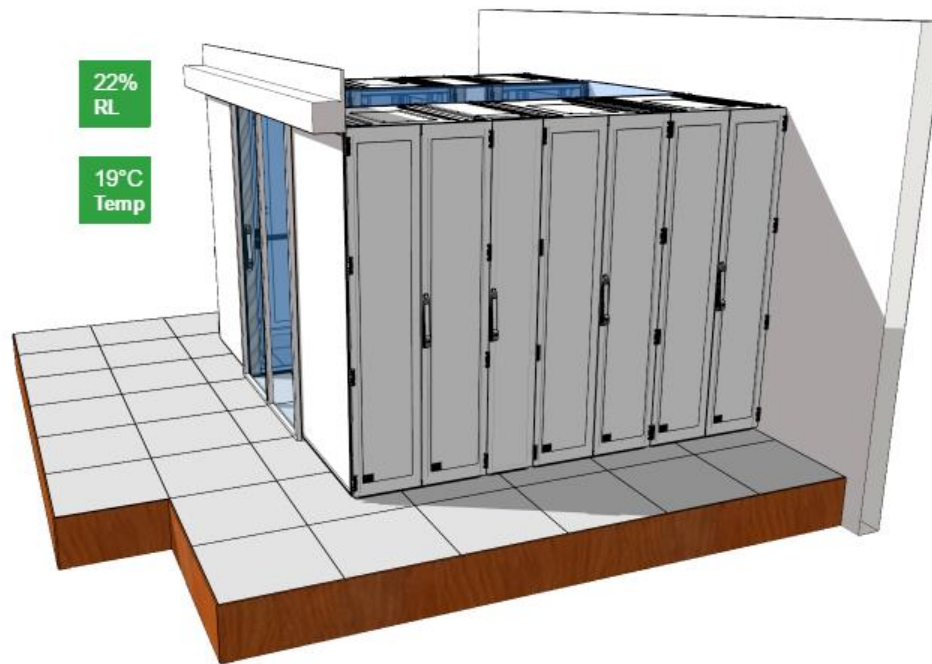
Resultaat

- Meerdere dashboards met relevante informatie.
- Tevreden beheerders, monitoring ondersteund.
- Keten monitoring ingericht.
- Elke beheerder kan zelf onderdelen toevoegen.
- Pakket heeft groei mogelijkheden.
- Leverancier pakt wijzigingsverzoeken op, en neemt deze mee in de volgende release.
- Goede afspiegeling van het nut tot monitoring.

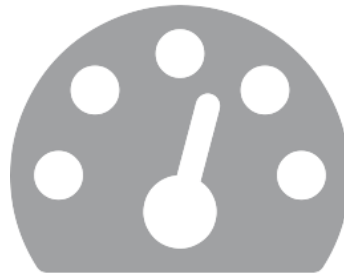


PIM+

Life is too short for complicated monitoring tools.



Stefan Konijnenberg



You can't improve what you can't measure





De 4 Pilaren van ontwikkeling



Keep it simple and clean



Geen agent software benodigd



Universal protocol support



Luisteren naar de input van onze klanten

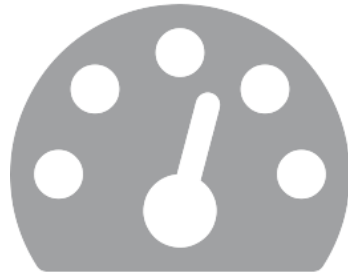


Waar is PIM+ toe in staat?

PIM+ is de unified solution voor alle apparatuur.

- ⚙ Servers
- ⚙ Switches
- ⚙ Routers
- ⚙ Werkstations
- ⚙ Printers
- ⚙ UPS'en
- ⚙ PDU's
- ⚙ HVAC systems
- ⚙ Smart Building Controls
- ⚙ IP-Camera's
- ⚙





Dashboards





Switching



Parkeerplaats



Kantoren



Service ruimte





WiFi Overview

De Vallei

5 Ghz

23

Magic Forest

2,4 Ghz

5 Ghz

18

152

Land van Toos

2,4 Ghz

5 Ghz

38

88

Troy Gebied

2,4 Ghz

5 Ghz

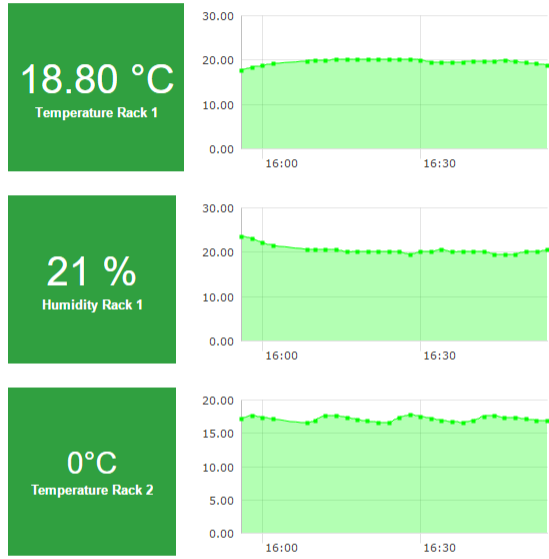
106

40

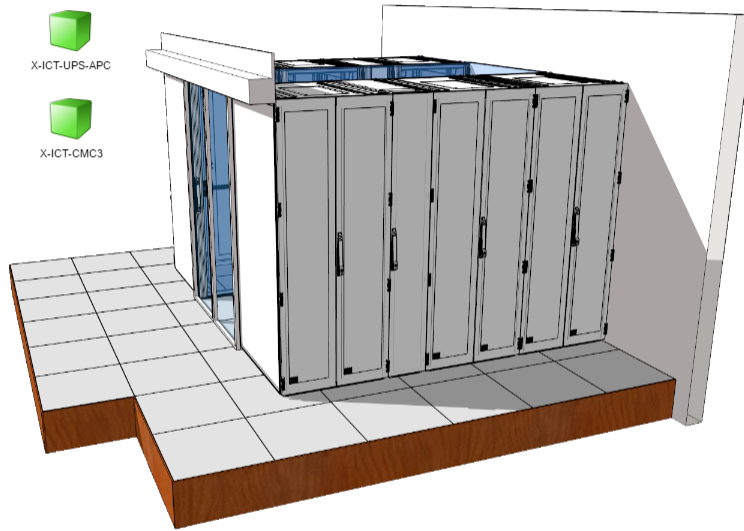


0 Critical	0 Errors	0 Warnings	33 Success	1 Paused
---------------	-------------	---------------	---------------	-------------

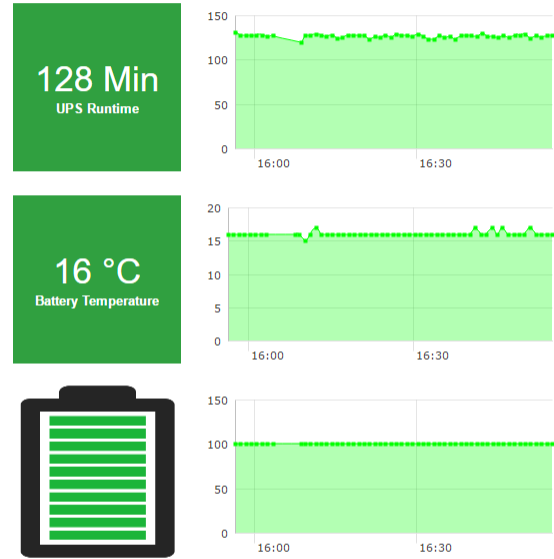
CMC Information



- X-ICT-ATS-APC
- X-ICT-UPS-APC
- X-ICT-CMC3



UPS Information



CMC Event Monitors

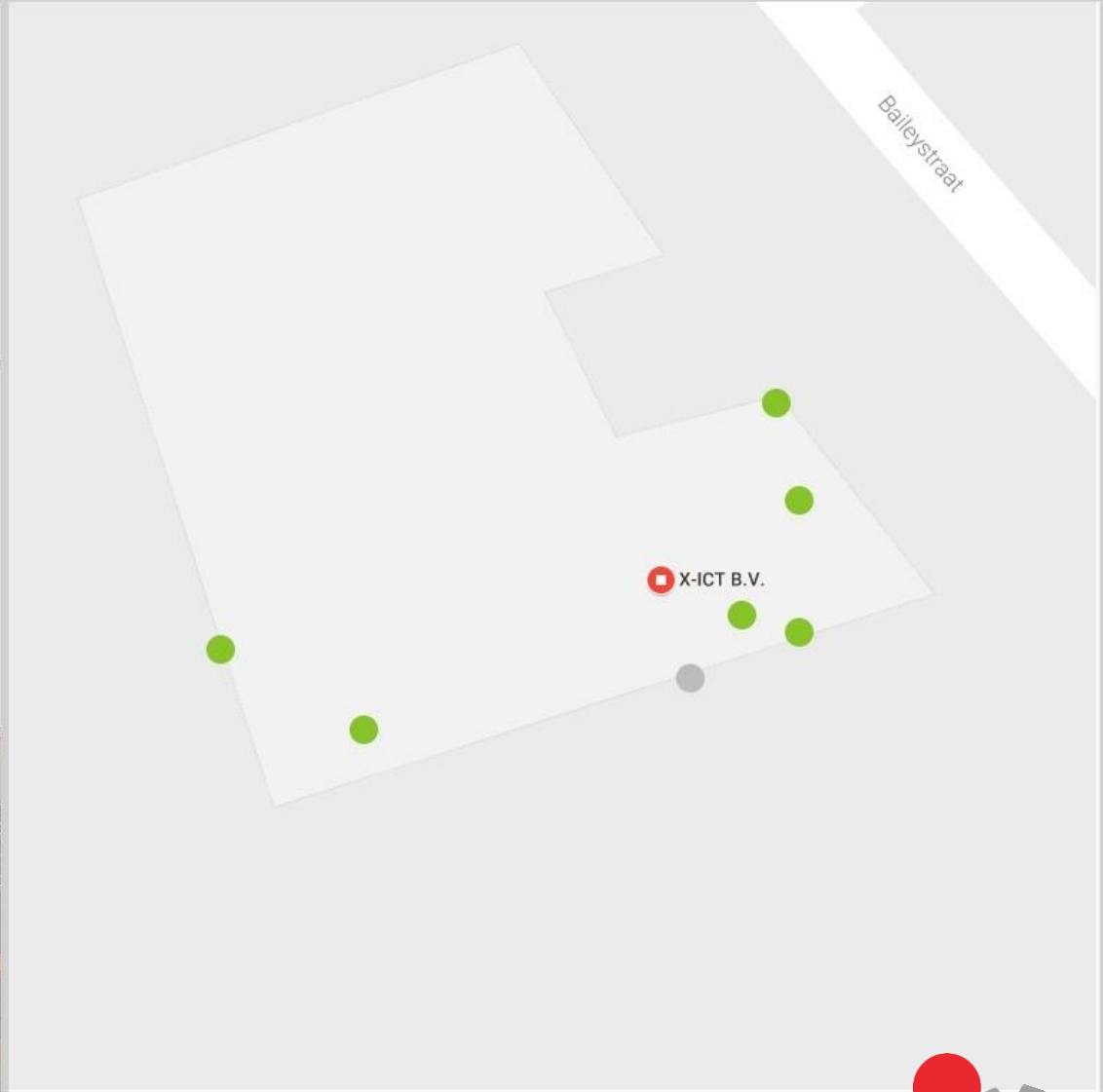
- Success 26-01-2017 16:54:00 SNMP Event Monitor x-ict-cmc3 Successful Events:
- Success 26-01-2017 16:54:33 Ping Event Monitor cmc3.showroom.lan Successful Events:



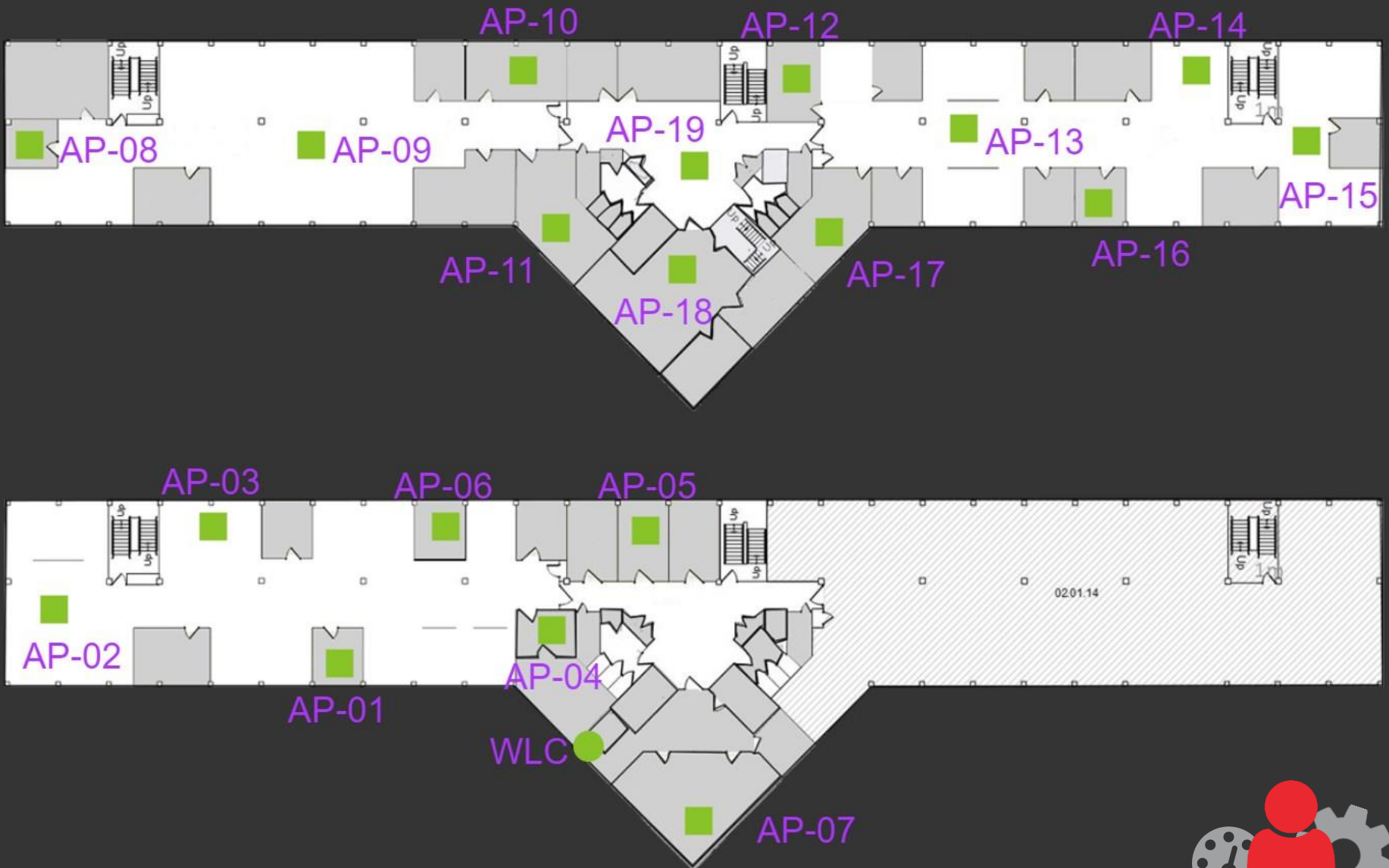
UPS Event Monitors

- Success 26-01-2017 16:53:20 SNMP Event Monitor x-ict-ats-apc.network.lan Successful Events:
- Success 26-01-2017 16:54:33 Ping Event Monitor x-ict-ats-apc.network.lan Successful Events:





PIM+ Lancom WiFi Tactial Map



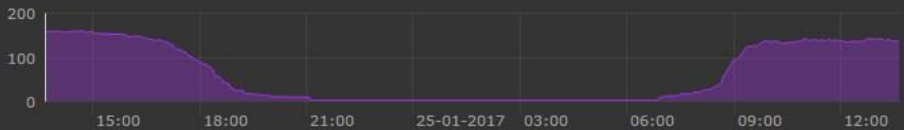
0
Critical

0
Errors

0
Warnings

101
Success

WLC - Client Count (24 hours)



135
ClientCountTotal

1%
CPULoad

39°C
Temperature

6
Licenses Remaining

AP-1 - 2nd floor Castor

15 TotalUsers -170 TotalNoise 13% CPULoad 41°C Temperature

AP-5 - 2nd floor Vega

1 TotalUsers -169 TotalNoise 12% CPULoad 48°C Temperature

AP-9 - 2nd floor De

23 TotalUsers -165 TotalNoise

AP-2 - 2nd floor Pegasus

7 TotalUsers -171 TotalNoise 15% CPULoad 46°C Temperature

AP-6 - 2nd floor Canopus

10 TotalUsers -163 TotalNoise 14% CPULoad 50°C Temperature

AP-10 - 2nd floor C

2 TotalUsers -174 TotalNoise

AP-3 - 2nd floor Lyra

8 TotalUsers -174 TotalNoise 12% CPULoad 49°C Temperature

AP-7 - 2nd floor Sirius

2 TotalUsers -166 TotalNoise 10% CPULoad 48°C Temperature

AP-11 - 2nd floor A

5 TotalUsers -171 TotalNoise

AP-4 - 2nd floor Hydra

1 TotalUsers -164 TotalNoise 13% CPULoad 49°C Temperature

AP-8 - 2nd floor Sol

12 TotalUsers -172 TotalNoise 10% CPULoad 46°C Temperature

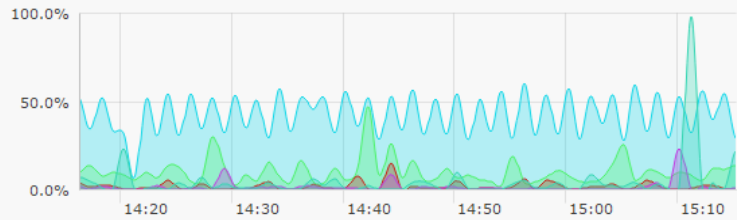
AP-12 - 2nd floor A

2 TotalUsers -172 TotalNoise



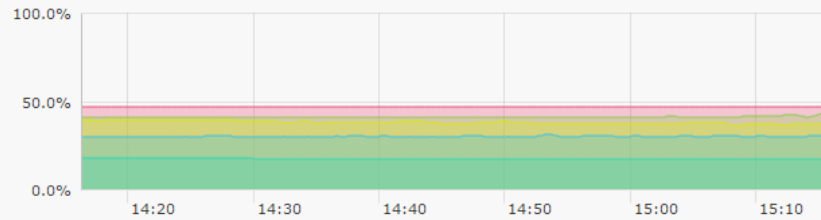
CPU Usage

⚙ x-ict-pim.network.lan	<div style="width: 28.74%;"></div>	28.74%
⚙ x-ict-dc1.network.lan	<div style="width: 21.65%;"></div>	21.65%
⚙ x-ict-rds1.network.lan	<div style="width: 13.58%;"></div>	13.58%
⚙ x-ict-vcenter.showroom.lan	<div style="width: 3.10%;"></div>	3.10%
⚙ x-ict-vak1.network.lan	<div style="width: 0.58%;"></div>	0.58%
⚙ x-ict-tel1.network.lan	<div style="width: 0.10%;"></div>	0.10%



Memory Usage

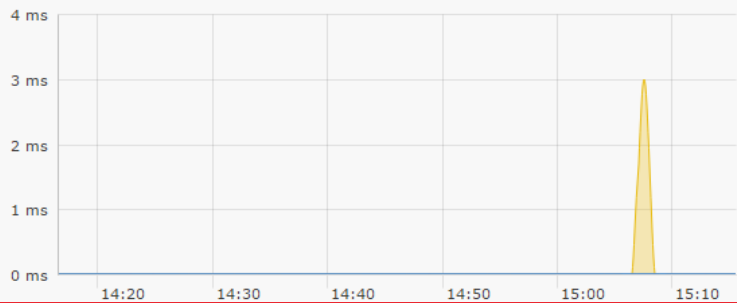
⚙ x-ict-vcenter.showroom.lan	<div style="width: 65.51%;"></div>	65.51%
⚙ x-ict-tel1.network.lan	<div style="width: 46.78%;"></div>	46.78%
⚙ x-ict-dc1.network.lan	<div style="width: 42.98%;"></div>	42.98%
⚙ x-ict-rds1.network.lan	<div style="width: 37.04%;"></div>	37.04%
⚙ x-ict-pim.network.lan	<div style="width: 30.48%;"></div>	30.48%
⚙ x-ict-vak1.network.lan	<div style="width: 17.14%;"></div>	17.14%



⚙ x-ict-rds1.network.lan (C)
⚙ x-ict-rds1.network.lan (E)
⚙ x-ict-dc1.network.lan (E)
⚙ x-ict-dc1.network.lan (C)
⚙ x-ict-dc1.network.lan (F)
⚙ x-ict-dc1.network.lan (A)
⚙ x-ict-vcenter.showroom.lan (DE)
⚙ x-ict-vak1.network.lan (C)
⚙ x-ict-tel1.network.lan (C)
⚙ x-ict-vcenter.showroom.lan (DE)
⚙ x-ict-pim.network.lan (C)
⚙ x-ict-vcenter.showroom.lan (DE)

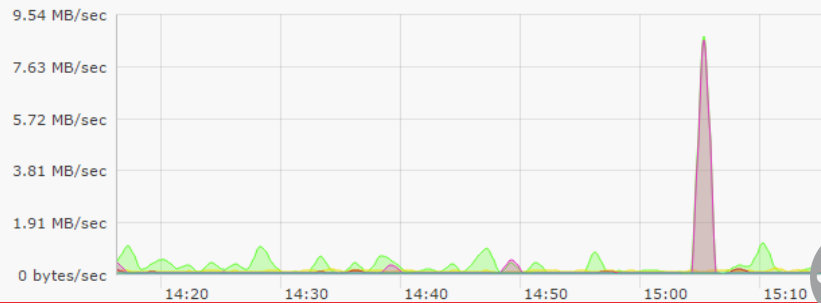
Ping Response

⚙ x-ict-vcenter.showroom.lan	1.0 ms
⚙ x-ict-vak1.network.lan	0.0 ms
⚙ x-ict-tel1.network.lan	0.0 ms
⚙ x-ict-rds1.network.lan	0.0 ms
⚙ x-ict-pim.network.lan	0.0 ms
⚙ x-ict-dc1.network.lan	0.0 ms



Bandwidth

⚙ x-ict-vcenter.showroom.lan	196.9 KB/sec
⚙ x-ict-rds1.network.lan	150.3 KB/sec
⚙ x-ict-dc1.network.lan	134.7 KB/sec
⚙ x-ict-pim.network.lan	84.8 KB/sec
⚙ x-ict-vak1.network.lan	35.4 KB/sec
⚙ x-ict-tel1.network.lan	25.7 KB/sec













⚙ x-ict-tel1.network.lan S
⚙ x-ict-rds1.network.lan S
⚙ x-ict-dc1.network.lan S
⚙ x-ict-vak1.network.lan S
⚙ x-ict-pim.network.lan S



Web interface PIM+

PIM+

Search: 

-  Home
-  Sites
-  Dashboards
-  Network Devices
-  Event Monitors
-  Event History
-  Reports
-  Tools
-  Settings
-  Portal

PIM+ DEMO

PIM+ Multi-Site v2016.7 - Build 3960
Licensed to X-ICT Multi-Site Test License - 30/50 devices
Copyright (c) 2016, FrameFlow Software - All rights reserved.





Krachtige Community





PIM+ Portal

Announcement: PIM+ says farewell to 32 Bits Dec 20, 2016

PIM+ Information

PIM+ Site

X-ICT Site

Submit Ticket

Ideas Questions Thanks

Enter your idea...

- ### Ideas
- Netapp Event Monitor**
Under Consideration Diagnostiek.v. • Comments: 1 • Reply 1 week ago by Raymond.K. 2 votes
 - Create dashboard with string data point values**
Under Consideration Diagnostiek.v. • Comments: 1 • Reply 2 weeks ago by Remco.v. 1 vote
 - Ability to add dependencies (relations) between devices**
Planned Waterschap.N. • Comments: 2 • Reply 1 month ago by Stefan.K. 2 votes
 - link to http site similar to RDP button**
Planned Loparex. • Comments: 1 • Reply 1 month ago by Remco.v. 1 vote

Welcome Message

Welcome to the PIM+ Support Portal!

Links

- [Visit the X-ICT Site!](#)
- [Visit the PIM+ Site!](#)

Statistics

Announcements	4
Ideas	104
Questions	1
Thanks	0

Live Chat

Klanten Portal





Vragen





PRETTIG KENNISMAKEN



U maakt kennis met een uniek bedrijf. Dé specialist voor uw ICT infrastructuur; netwerkbekabeling, computerruimtes en datacenters, IP oplossingen en producten, service en onderhoud. Verschillende disciplines die wij feilloos aan elkaar verbinden.

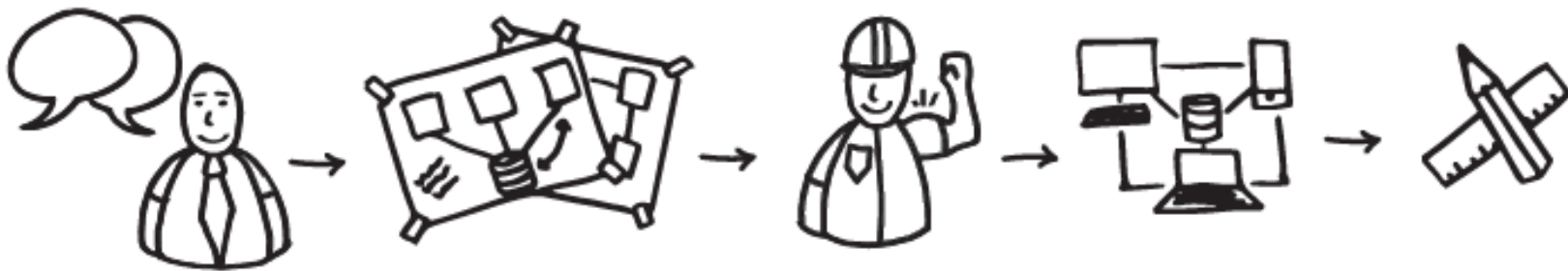


VOOR FEILLOZE
VERBINDINGEN



INFRASTRUCTUUR

STRAK WERK IS VAKWERK



Netwerkbekabeling, alle categorieën

Backboneverbindingen Testen en rapportages

Glasvezel (Conventioneel, Blown fiber) Service en onderhoud

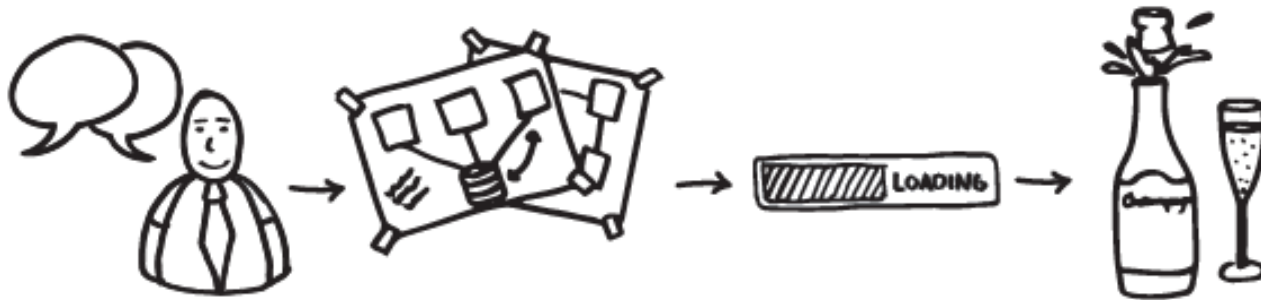
Certificeringen / fabrieksgaranties Advies





COMPUTERRUIMTES

MET ONS EN OP ONS BOUWEN!



Computervloer Koeling Monitoring
UPS Noodstroomaggregaat Serverracks Projectmanagement
Consultancy Stroomverdeling Inspectie
Bekabeling Brandbeveiliging Onderhoud, service, support
Netwerkbekabeling / backboneverbindingen





SERVICE EN ONDERHOUD

PERSOONLIJK, BEREIKBAAR EN DICHTBIJ!

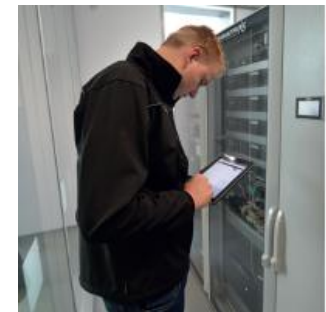


Service- en onderhoudscontracten

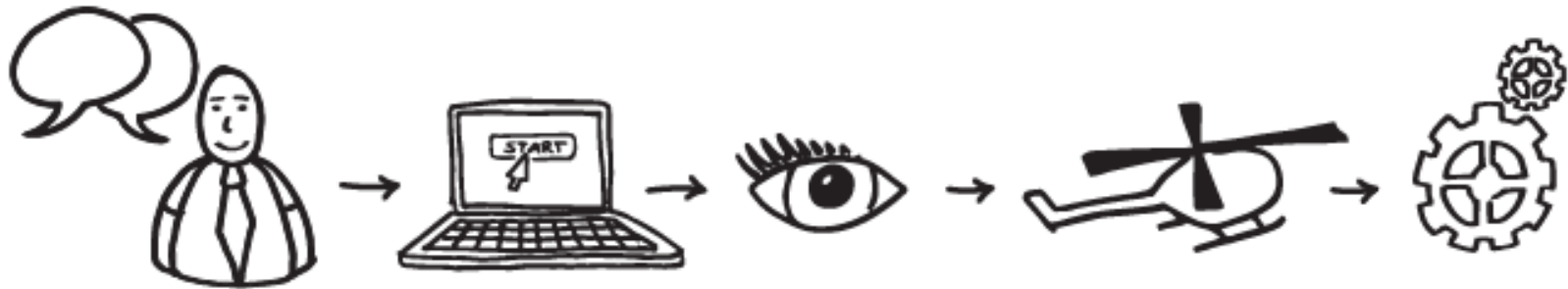
Storingsdienst 24x7 bereikbaar

Inspectie, rapportage en advies Consultancy

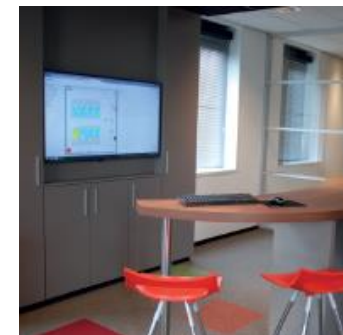
Support door klantgerichte, ervaren en gekwalificeerde technici



IS DE BASIS GELEGD? DAN GAAN WIJ VERDER!



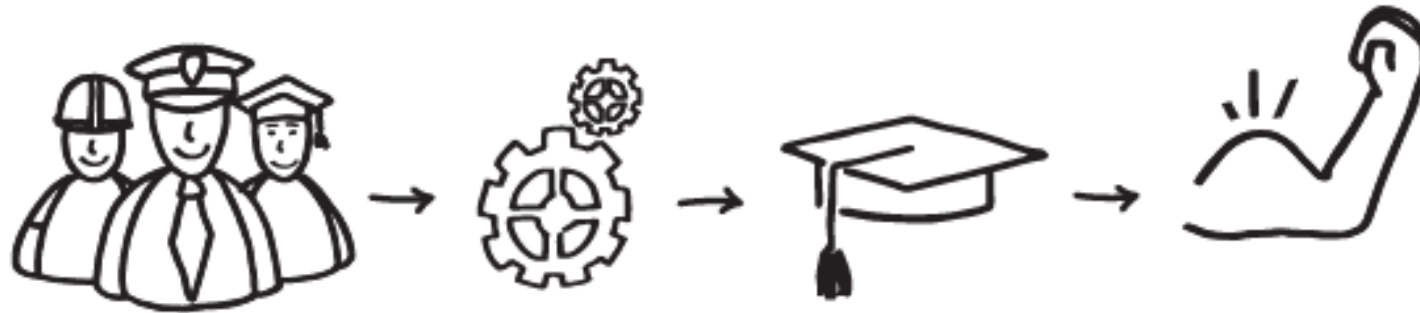
Configuratie
Implementatie **Training** **Advies**
Consultancy **Updates**
Support





IP ADVIES

DE SCHAKEL TUSSEN INSTALLATEUR EN AUTOMATISEERDER!




Camerasystemen Videodistributie
Toegangscontrole Zorgoproepsystemen
Domotica WiFi netwerken / Access points
Consultancy Configuratie




PRETTIG CONTACT



 Volg ons op LinkedIn

 op Twitter

 ...of op Facebook

Meld u aan voor onze nieuwsbrief!



Welkom! Bezoek onze showroom:

X-ICT
Baileystraat 14
8013 RV Zwolle
T. 038-4552755

X-ICT Zuid Nederland
Esp 110
5633 AA Eindhoven
T. 040-2640100

info@x-ict.nl
www.x-ict.nl



