



# Configuration Overview

05.10.2010

Gerhard Risse

# Agenda

- ➔ ■ **automatic backup configurator**
- **edititing & loading configuration file from a local PC**
- **network management system**
- **automatic configuration**

# Configuration – ABC configuration

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://192.168.127.253/home.asp

MOXA EtherDevice™ Switch EDS-408A Series Turbo Ring

Model : ED S-408A-1M2S-SC-T IP : 192.168.127.253 MAC Address : 00-90-E9-0A-5F-C6 PWR1  
Name : Managed Redundant Switch 00000 Serial No : 00000 Firmware Version : V2.1 MASTER  
Location : Switch Location

## ABC (Auto-Backup Configurator) Configuration

Auto load ABC's system configurations when system boots up

Save the current configurations to ABC

Load the ABC's configurations to Switch

Main Menu

- Overview
- Basic Settings
  - System Identification
  - Password
  - Accessible IP
  - Port
  - Network
  - Time
  - Turbo Ring DIP Swit
- System File Update
  - Remote TFTP
  - Local Import/Exp
  - Backup Media
  - Restart
  - Factory Default
- SNMP
- Communication Redund
- Traffic Prioritization

goahead  
WEB SERVER  
Best viewed with IE 5 above at resolution  
1024 x 768

Done

- load, save or auto load configuration from ABC



# application sweetspot

- small & medium size remote networks without local IT support e.g. ships
- broken switches can be replaced without having IT people present



# Agenda

- automatic backup configurator
- ➔ ■ editing & loading configuration file from a local PC
- network management system
- automatic configuration

# edit configuration file

- **modify configuration file for current project (e.g. with XML editor, save file from lab test)**
- **send configuration file to installation team**

# configuration from local PC

MOXA EtherDevice™ Switch EDS-408A Series Turbo Ring

Model : EDS-408A-1M2S-SC-T IP : 192.168.127.253 MAC Address : 00-90-E8-0A-5F-C6 PWR1  
Name : Managed Redundant Switch 00000 Serial No : 00000 Firmware Version : V2.1 MASTER  
Location : Switch Location

## Update System Files from Local PC

Configuration File

Log File

Upgrade Firmware

Upload Configure Data

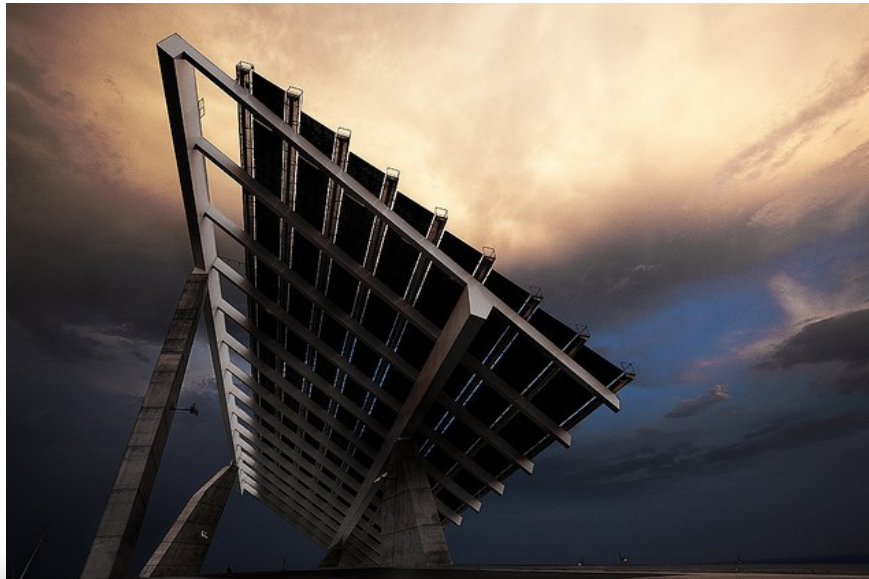
goahead  
WEBSERVER  
Best viewed with IE 5 above at resolution  
1024 x 768

javascript:ChangePages('/goform/LocalSetting')

- export or import configuration files
- import firmware
- export log files

# application sweetspot

- small size remote networks without WAN access e.g. photovoltaic power plants
- network can be configured by non IT staff (e.g. photovoltaic technician)

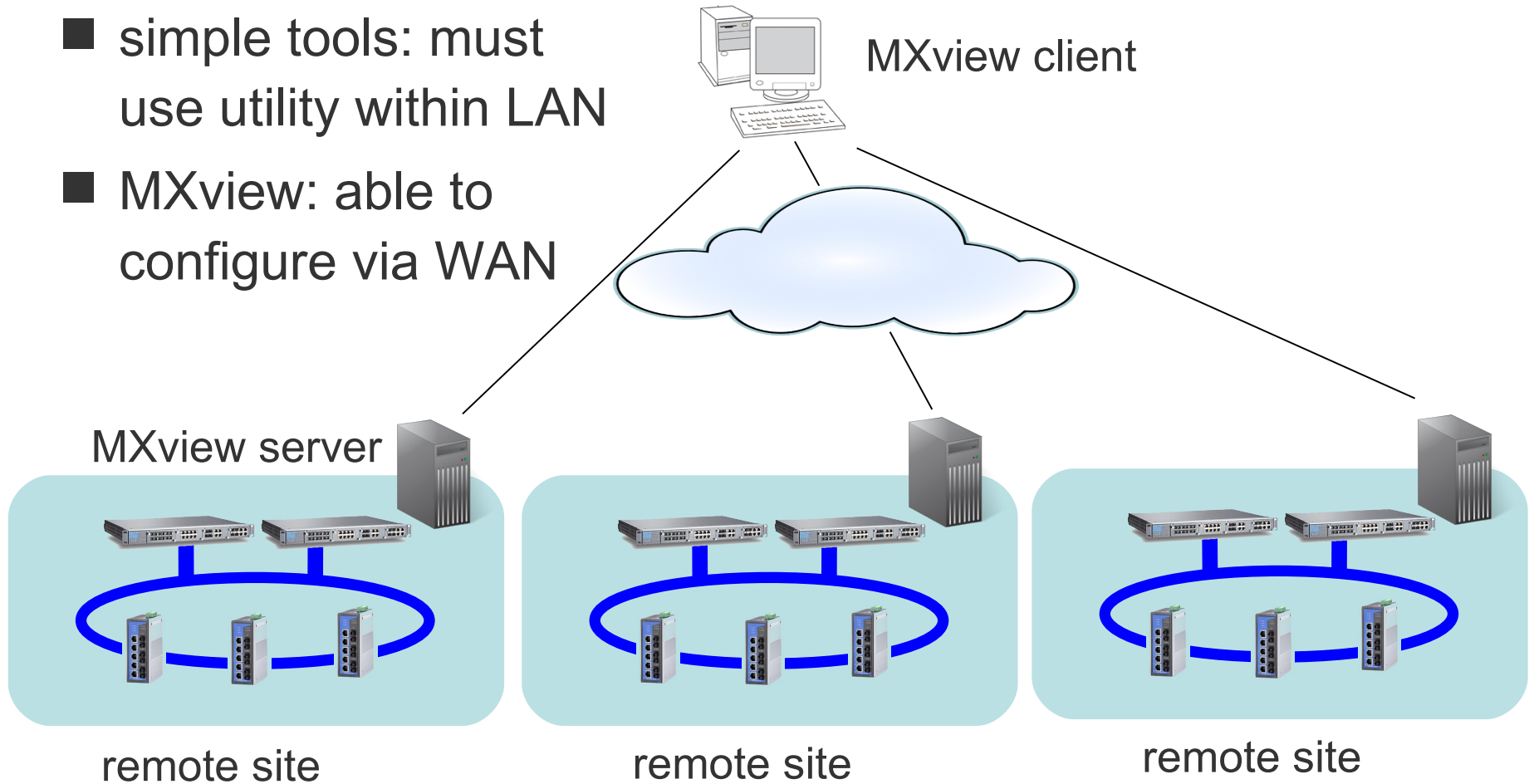


# Agenda

- automatic backup configurator
- editing & loading configuration file from a local PC
- ➔ ■ network management system
- automatic configuration

# remote configuration with MXview

- simple tools: must use utility within LAN
- MXview: able to configure via WAN

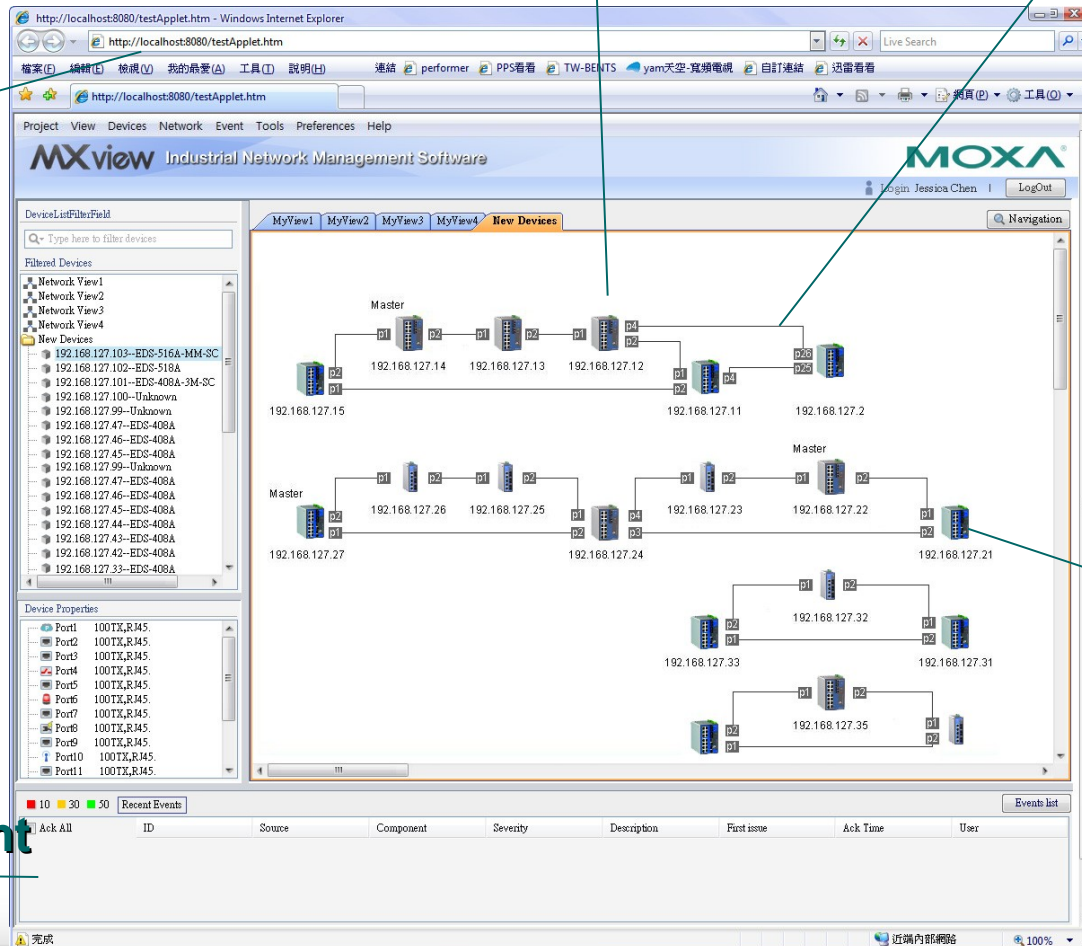


# MX view – key features

remote control

topology visualization

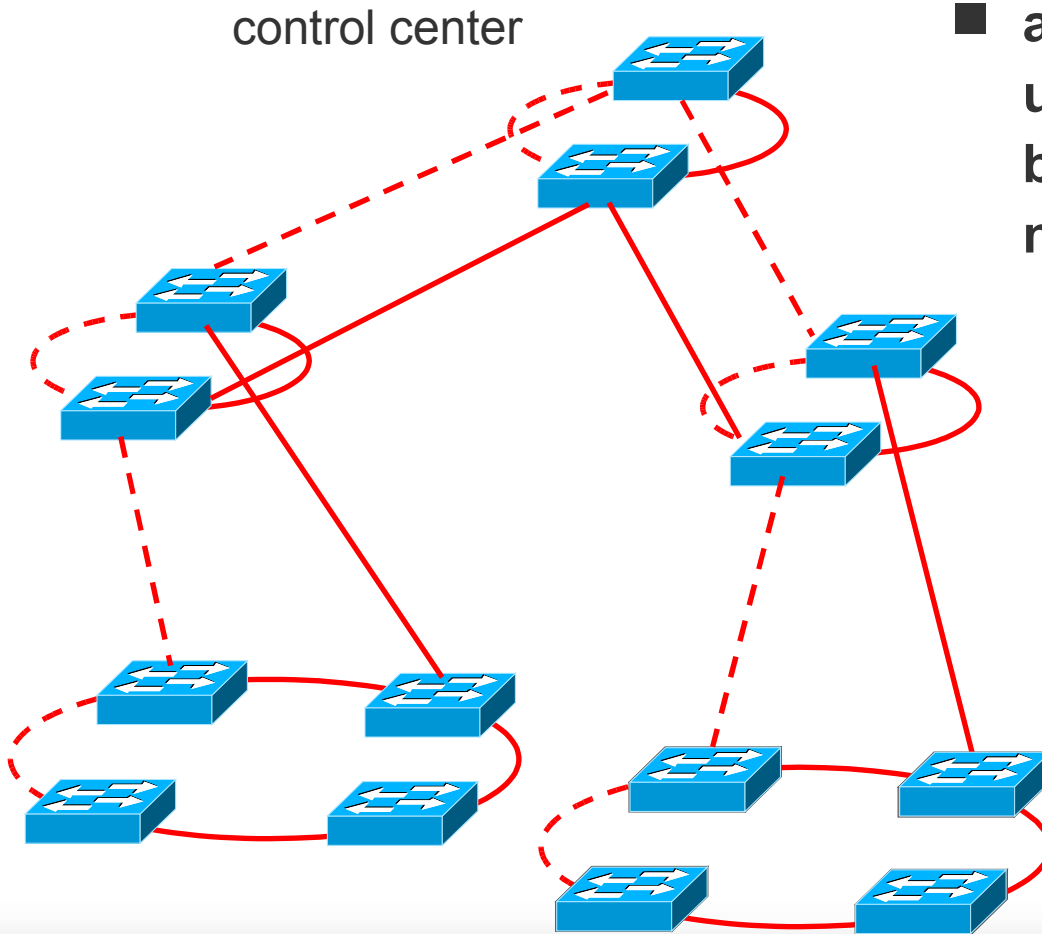
traffic monitoring



device configuration

event management / notification

# add new TurboRings



- an additional TurboRing with unconfigured switches has to be integrated in a running network

1. deploy switches without closing the ring and second ring coupling link
2. configure TurboRing starting with the most remote switch
3. close the ring and the ring coupling link

# application sweetspot

- medium & large networks with control center  
e.g. infrastructure networks (power distribution, pipelines, traffic control, railway track networks)

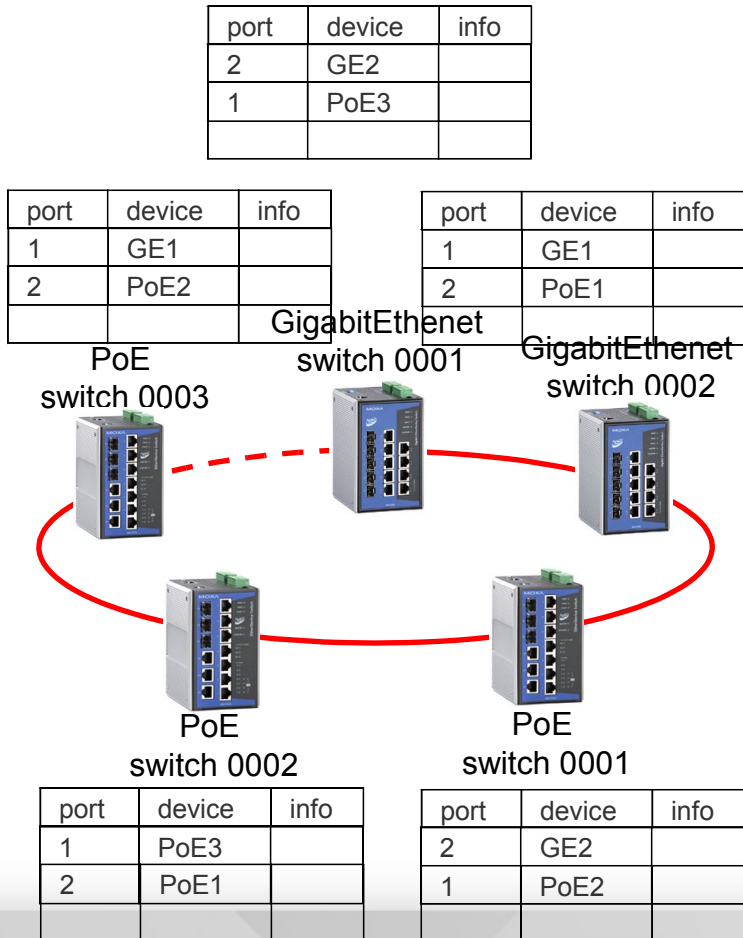


# Agenda

- automatic backup configurator
- editing & loading configuration file from a local PC
- network management system
- ➔ ■ automatic configuration

# LLDP – link layer discovery protocol

## IEEE 802.1AB



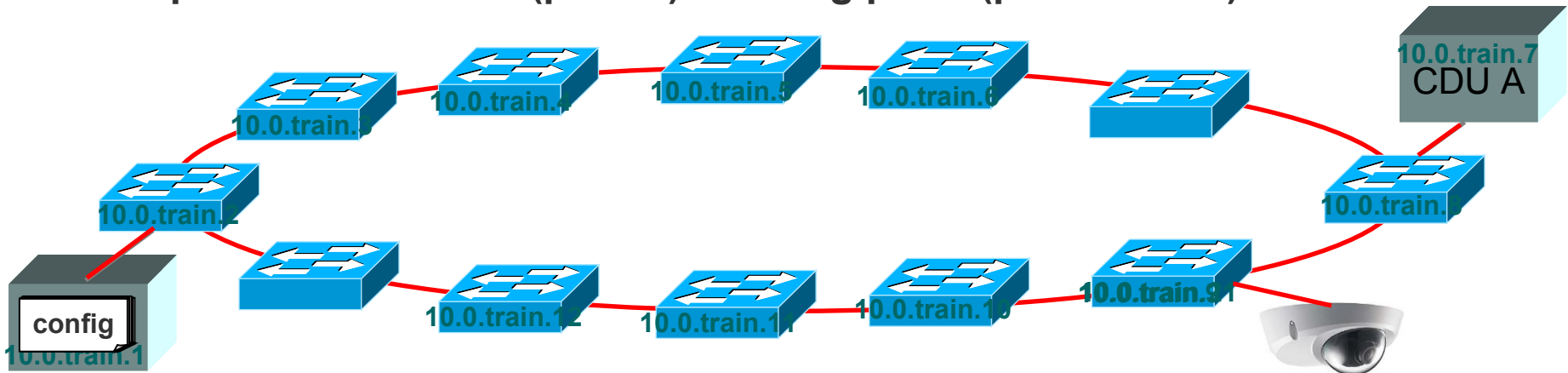
- link layer discovery of adjacent neighbors
- LLDP packets are sent to adjacent neighbors (also through blocked ports)
- information is stored in LLDP MIBs (chassis ID, port ID, optional)
- LLDP time to live defines the duration how long the information is valid

# dynamic host configuration protocol - DHCP

- protocol to deliver host specific configurations and temporary or permanent host addresses
- DHCP client can ask for:
  - IP address
  - subnet mask
  - DNS server
  - NetBIOS name server
  - default TTL
  - source routing option
  - MTU
  - max. fragment size
  - broadcast address
  - list of default gateways and preferences
  - static routes
  - ARP cache timeout
  - TCP keepalives
  - Ethernet encapsulation
  - path MTU recovery (RFC1191)
  - router discovery (RFC1256)

# automatic configuration - overview

- CDU (central diagnosis units) are equipped with DHCP server and TFTP/SCP server
  - TFTP/SCP server: configuration files of the switches and the end devices
- port towards CDU (port14) and ring ports (port 15 & 16) are fixed



- switches connected to CDU get their IP addresses from CDU
- all other switches get their IP addresses from adjacent switch
- all switches retrieve their configuration from TFTP/SCP server
- end devices get their IP address from adjacent switch

# application sweetspot

- medium size remote networks in serial production e.g. train manufacturing
- some effort to setup DHCP & TFTP server
- broken equipment (switches, IP cameras etc.) can be replaced without having IT people present



# summary

- industrial networks differ from IT networks and among each other in terms of their configuration requirements
- a wide range of solutions is necessary to serve different industries



Thank You  
Questions?

