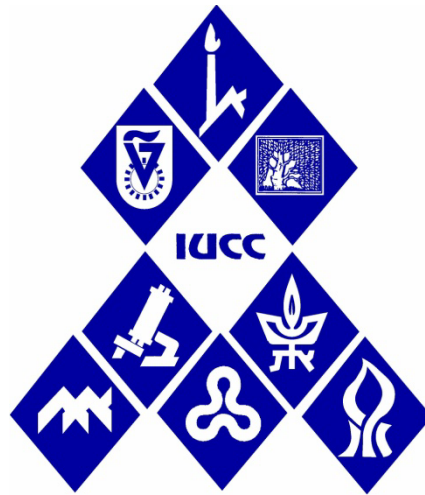


How to Build a 24x7 NOC Cheaply

Hank Nussbacher
IUCC

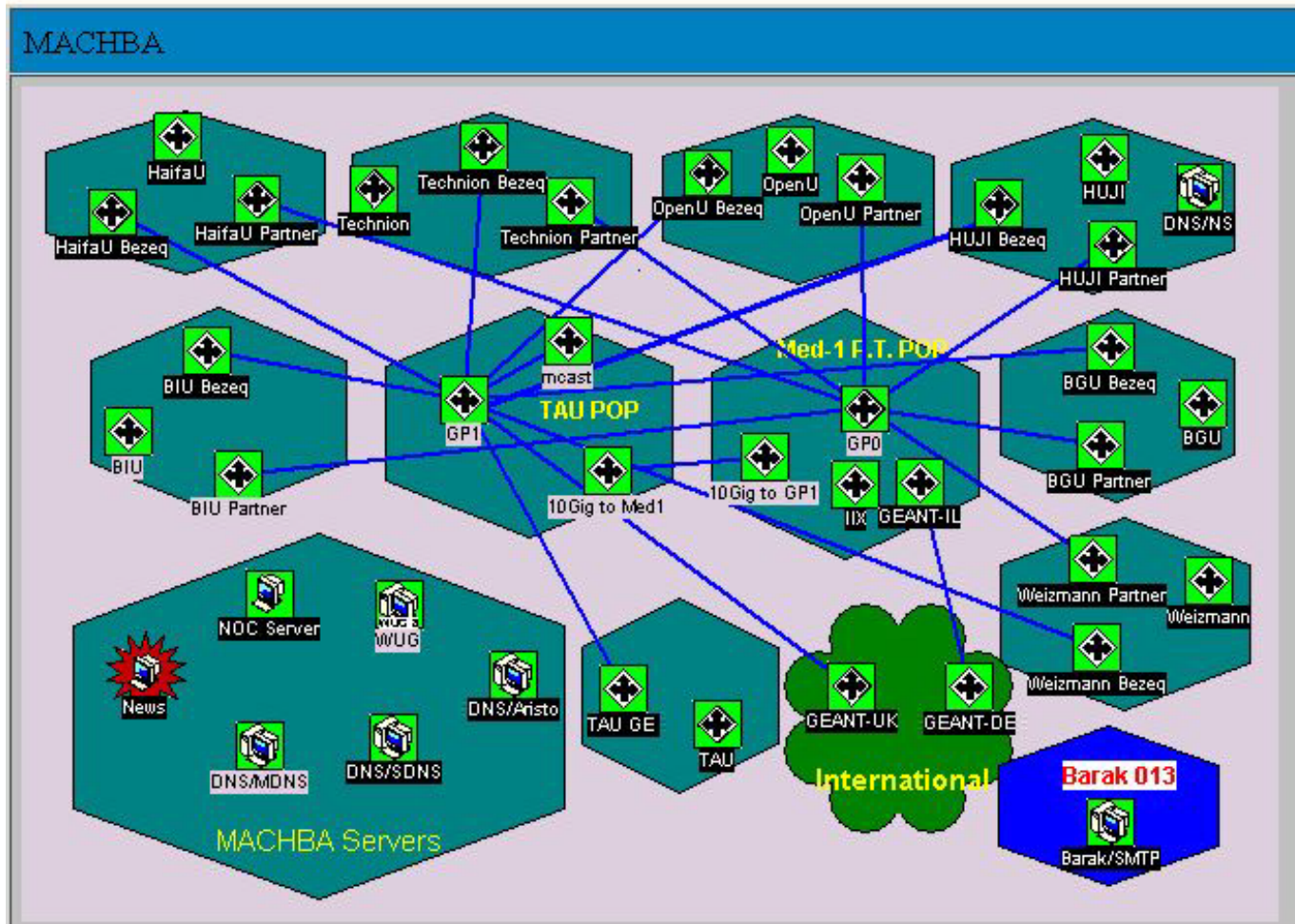


Terena TF-NOC - Zurich
June 29, 2011

Tier-1 Tender

- **1999 – issue tender to all ISPs in Israel**
- **24x7x365 coverage**
- **Detail all services**
 - **Routers and links**
 - SNMP R/O access
 - **Servers**
 - Services – DNS, SMTP, WWW, etc.
- **Allow colocation of ISP server inside our network**
 - **Winning ISP decided on WuG in 1999**
 - Probably today it would be Nagios
- **1000 Euro/month**
 - **The ISPs have 24x7 monitoring and we become just one additional screen in their NOC**

WuG



Tier-2

- ISP Tier-1 only handles identifying a problem – they are **not** mandated to resolve the issue
- Our engineering and NOC staff are one and the same
- All work fulltime at their universities as sysadmin and/or netadmins
- Need to somehow design a payment system
 - 100Euro per weekday coverage
 - 200Euro per weekend and holiday coverage
 - Full quarter costs about 13KEuro (62 weekdays and 31 weekends)
- “On call” NOCer has to be available at work or at home during his shift
 - Each NOCer earns an additional 750 Euro/month for 5 shift days

NOC scheduling

June 2011 NOC Schedule

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Yaron	2 Ariel	3 Ariel	4 Simon
5 Dani	6 Simon	7 Dani	8 Rafi	9 Rafi	10 Yehavi	11 Yaron
12 Yehavi	13 Yaron	14 Ariel	15 Dani	16 Simon	17 Ariel	18 Dani
19 Yehavi	20 Rafi	21 Dani	22 Ariel	23 Yaron	24 Simon	25 Rafi
26 Simon	27 Rafi	28 Yehavi	29 Yaron	30 Ariel		

Total yearly costs

- **Tier-1**
 - 1000 Euro x 12 = 12,000 Euro
- **Tier-2**
 - 13000 Euro x 4 = 52,000 Euro
- **Total – 64,000 Euro per year and you have a 24x7x365 NOC**
 - **Less than 1FTE in Israel!!!**



Your netadmins might be the same as ours