

Electoral Security Practice in Taiwan



Central Election Commission, Taiwan ROC

2018 Local Election Timeline

Election Day

24 Nov. 2018

Distribute Electoral
Material

23 Nov. 2018

Campaign Period 14 ~23 Nov. 2018

Print Ballot
Paper

10 Nov. 2018 ~

Compile Voters Lists 4 Nov. 2018 ~

Drawing Lots to
determine the order of
candidates

19 Oct. 2018

16 Oct. 2018

Confirm Qualified Candidates

16 Aug. 2018

Electoral Announcement

23 Aug. 2018

Announce Candidate
Registration Period

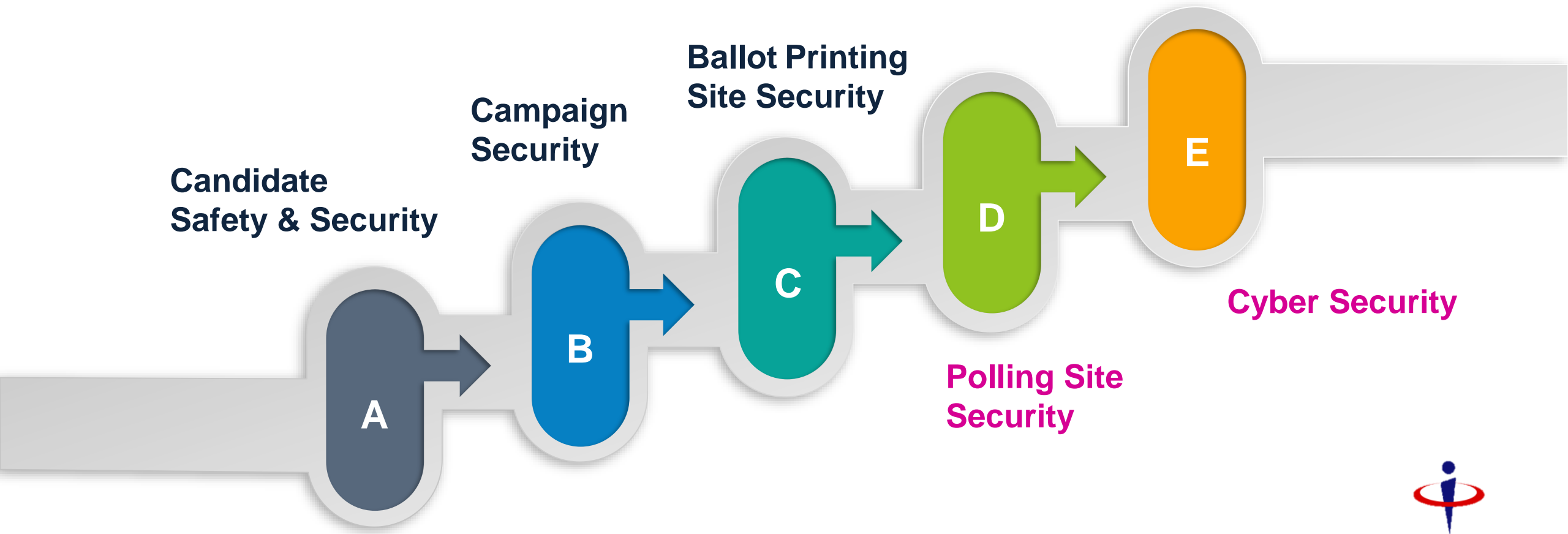
27 Aug~31 Aug
2018

Candidate Registration



Central Election Commission, Taiwan ROC

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Information Systems

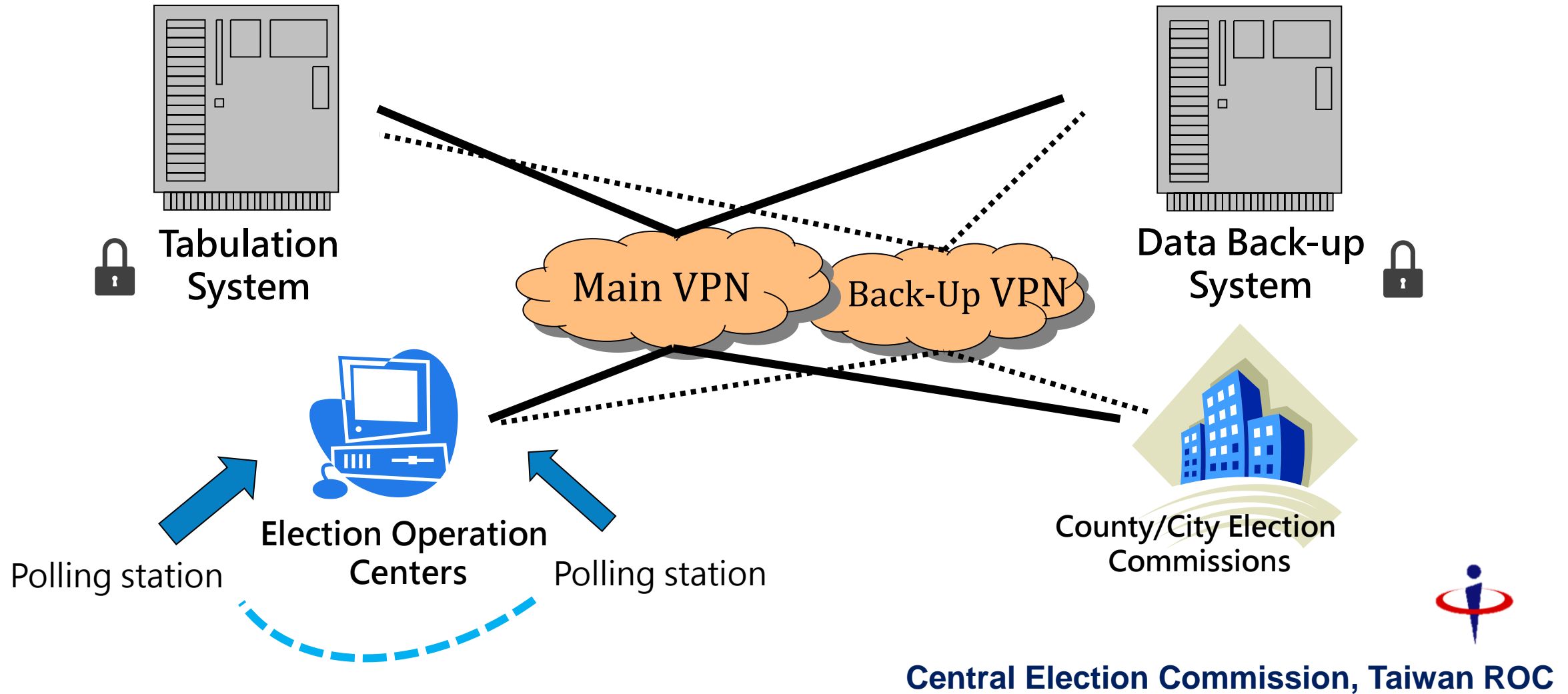
Central Election Commission

- **50 computers and 20 printers**
- Backup systems

County and Township Commissions

- **2,100 computer and 768 printers**
- **Backup systems for each county and township commission**

Cyber Security



Cyber Security: County and Township Computers

Security Oversee Center (SOC): Monitor Communication of Election

County and township computers are not on Internet

No USB on county and township computers

Only certified computers can be connected to intranet

No malicious software

Real-time monitor of DDoS attack

時間	異常屬性	受害 IP	所在介面	介面敘述	使用量 (Mbps)	使用量 (pps)	詳情	人口
2014-11-17 23:32	pps			#501(3,4)],[Lih-Yahoo-TPDT]	311.43	329250		
2014-11-17 21:49	bps				1552.13	221150		
2014-11-17 21:48	pps	1.161.111.119	RTKZ-ROUTER-3312 xe-2/2/1	HB10700094_RTKZ-BRAS-2010,Te14/0/0,10G,static,20111025.	5695.57	735232		
2014-11-17 15:39	pps	119.160	RTKZ-ROUTER-3312 xe-2/2/1		530842			
2014-11-17 15:39	pps	119.160			554598			
2014-11-17 14:57	bps	203.66.			100932			
2014-11-17 14:53	bps	203.66.			105574			
2014-11-17 13:55	bps	36.226.			1232998			
2014-11-17 13:55	pps	36.226.			1232998			
2014-11-17 13:54	bps	36.226.			1273003			
2014-11-17 13:54	pps	36.226.			1273003			
2014-11-17 13:53	bps	36.226.			1093461			
2014-11-17 13:53	pps	36.226.			1093461			
2014-11-17 13:51	bps	36.226.			880947			
2014-11-17 13:51	pps	36.226.			880947			
2014-11-17 13:46	pps	36.226.			891665			
2014-11-17 13:45	bps	36.226.			849169			
2014-11-17 13:45	pps	36.226.			849169			
2014-11-17 13:44	bps	36.226.			815753			
2014-11-17 13:44	pps	36.226.			815753			
2014-11-17 13:43	bps	36.226.			626278			
2014-11-17 13:43	pps	36.226.			626278			
2014-11-17 13:42	pps	36.226.			406630			
2014-11-17 13:41	bps	36.226.			559002			
2014-11-17 13:41	pps	36.226.			559002			
2014-11-17 13:35	pps	36.226.			762231			
2014-11-17 13:30	bps	36.226.			938462			
2014-11-17 13:30	pps	36.226.			938462			
2014-11-17 13:29	bps	36.226.			963311			
2014-11-17 13:29	pps	36.226.			963311			
2014-11-17 13:28	bps	36.226.						

Alarming message

DDoS stream

RTKZ-ROUTER-3312 xe-2/2/1

訊務 In Src In Dst Out Src Out Dst Netflow

bps pps bps diff pps diff v6 bps v6 pps

IPv4 (168.95.173.10), MTU (4484)
HB10700094,RTKZ-BRAS-2010,Te14/0/0,10G,static,20111025,

Traffic (bps) graph created on Tue 2014/11/18 16:38:15

Input Max: 501.81 M Avg: 335.51 M Current: 385.06 M
 Output Max: 3.39 G Avg: 1.20 G Current: 1.24 G

Traffic (bps) graph created on Tue 2014/11/18 16:38:15

Input Max: 574.41 M Avg: 373.70 M Current: 405.03 M
 Output Max: 3.39 G Avg: 1.49 G Current: 1.15 G

Traffic (bps) graph created on Tue 2014/11/18 16:38:15

DDoS entrance

2014-11-17 21:48

RTKZ-ROUTER-3312 (1.161.111.119)

- **RTKZ-ROUTER-3312 / xe-2/0/0 (99.00%)**
 - 223E-93447,TPDT-ROUTER-3012,Te2/6/0/10,10G,area0,20120528,
- **SKC1-ROUTER-4031 / xe-0/0/1 (12.00%)**
 - 72D-97715,LA-R11,xe-1/0/0,10G,BGP,201403x,[TW-USA #35 10G,APCN2+JPUS]
- **SKC1-ROUTER-4031 / xe-2/0/0 (11.00%)**
 - 72D-97673,LA-R11,xe-1/0/2,10G,BGP,20130718,[TW-USA #25 10G,APCN2+Unity]
- **SKC1-ROUTER-4031 / xe-0/0/0 (11.00%)**
 - 72D-97686,LA-R11,xe-2/0/0,10G,BGP,20130829,[TW-USA #30 10G,APCN2+JPUS]
- **PA-R12 / ae11 (10.00%)**
 - HB50100140,PA-R11,ae11,80G,OSPF,20130717
- **LA-R12 / xe-1/0/4 (9.00%)**
 - HB50300070,Upstream UUNet AS701,BGP,5G,20121012,[UUNet ckt id:MWX00877, Xconnect id:5816177]
- **SKC1-ROUTER-4031 / so-1/0/2 (9.00%)**
 - 72D-97589,LA-R11,so-5/1/0,10G,BGP,20120725,[TW-USA #21 10G,APCN2+UNITY]
- **SKC1-ROUTER-4031 / so-1/0/1 (9.00%)**
 - 72D-97545,LA-R11,so-5/0/0,10G,BGP,20120118,[TW-USA #17 10G,TPE]
- **PA-R11 / xe-6/1/1 (8.00%)**
 - HB50100151,Upstream,AT&T Worldnet AS7018,10G,EBGP,20140806,[ATT circuit ID:BFEC501978, Xconn No.: 15661634]
- **LA-R11 / ae11 (5.00%)**
 - HB50300080,LA-R12,ae11,60G,OSPF,20130712,
- **LA-R11 / et-1/1/0 (5.00%)**
 - HB50300092,LA-R12,et-1/1/0,100G,OSPF,20130712
- **TPDT-ROUTER-4005 / so-3/1/0 (5.00%)**
 - 223D-92086,CN,CU,10G,BGP,20130730,[CU 10G#3, via CSCN,Guangzhou,DTDT#515(33,34)]
- **LA-R11 / xe-1/0/4 (4.00%)**
 - HB50300093,Upstream,Verizon(UUNet) AS701,5G,BGP,20130910,[verizon LA 10GE#2, circuit id:mwx00903]
- **LA-R11 / xe-2/0/4 (4.00%)**
 - HB50300094,Upstream,Verizon(UUNet) AS701,5G,BGP,20130910,[verizon LA

訊息通知

Drills

First exercise (Nov. 8)

- Internet speed

Second exercise (Nov. 12)

- Manual counting

Third exercise (Nov. 15)

- Backup system test

Fourth exercise (Nov. 23)

- Press conference

Thank You



中央選舉委員會
Central Election Commission