



Kaunas University of Technology
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Networks

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Kaunas, 2024



configuration of schools network						IP ranges		
Jpg No	1	2	3	4	5	Public networks	Administration networks	Server Relations
180	17v	22v	12v+14a	10v	20v+R	172.16.64.0/23	192.168.5.0/27	10.10.10.128/27
	KVE	ZAD	KAL	BIL	UPY			

LAN	Number of interfaces	Subnet type	Subnet size	Prefix	Mask	Address range from - to
Rsil-Rkve	1+1	Server-R	4	/30	255.255.255.252	10.10.10.128-10.10.10.131
Rkve-Rzad	1+1	Server-R	4	/30	255.255.255.252	10.10.10.132-10.10.10.135
Rzad-Rkal	1+1	Server-R	4	/30	255.255.255.252	10.10.10.136-10.10.10.139
Rkal-Rupy	1+1	Server-R	4	/30	255.255.255.252	10.10.10.140-10.10.10.143
New	1+1	Server R	4	/30	255.255.255.252	10.10.10.144-10.10.10.147
KVE	17+1	Public	32	/27	255.255.255.224	172.16.64.0-172.16.64.31
ZAD	22+1	Public	32	/27	255.255.255.224	172.16.64.32-172.16.64.63
UPY	20+1	Public	32	/27	255.255.255.224	172.16.64.64-172.16.64.95
BIL	10+1	Public	16	/28	255.255.255.240	172.16.64.96-172.16.64.111
KAL-v	12+1	Public	16	/28	255.255.255.240	172.16.64.112-172.16.64.127

KAL-a	14+1	Admin	32	/27	255.255.255.224	192.168.5.0-192.168.5.31
Ssil-Rsil	1+1	Admin	4	/30	255.255.255.252	192.168.5.32-192.168.5.35

In the last column, we are going to write the beginning and the end addresses of the address segment:

According to the task provided:

Public School Networks	172.16.64.0/23
For administrative networks	192.168.5.0/27
Server Relation networks	10.10.10.128/27

It's useful to know when addressing addresses that the address segments are left unused so that we can expand the network by performing tasks specified in the job defense.

Purpose	Given segment	Used	Left free
Public School Networks	172.16.64.0/23	172.16.64.0-172.16.64.127	172.16.64.128-172.16.65.255
For administrative networks	192.168.5.0/27	192.168.5.0-192.168.5.35	192.168.5.36-192.168.5.223
Server Relation networks	10.10.10.128/27	10.10.10.128-10.10.10.147	10.10.10.148-10.10.10.159

In order not to make mistakes in calculating the Gateway addresses manually and by assigning IP addresses to computers, we create an additional table:

LAN	Number of interfaces	Mask	Address range from - to	Gateway (Router connection) address	Computer Addresses
KVE	17	255.255.255.224	172.16.64.0-172.16.64.31	172.16.64.30	172.16.64.1-17
ZAD	22	255.255.255.224	172.16.64.32-172.16.64.63	172.16.64.62	172.16.64.33-54
UPY	20	255.255.255.224	172.16.64.64-172.16.64.95	172.16.64.94	172.16.64.65-84
BIL	10	255.255.255.240	172.16.64.96-172.16.64.111	172.16.64.110	172.16.64.97-106
KAL-v	12	255.255.255.240	172.16.64.112-172.16.64.127	172.16.64.126	172.16.64.113-124

KAL-a	14	255.255.255.224	192.168.5.0- 192.168.5.31	192.168.5.30	192.168.5.1-14
Ssil-Rsil	1	255.255.255.252	192.168.5.32- 192.168.5.35	192.168.5.34	192.168.5.33

Rsil:

<i>Marking</i>	<i>Network IP Address</i>	<i>Network Mask</i>	<i>Through which router</i>	<i>The next hop address</i>
<i>sat</i>	<i>172.16.0.192</i>	<i>255.255.255.240</i>	<i>Rsat</i>	
<i>not</i>	<i>172.16.0.160</i>	<i>255.255.255.224</i>	<i>Rsat</i>	
<i>bar</i>	<i>172.16.0.64</i>	<i>255.255.255.192</i>	<i>Rbar</i>	
<i>Ylak-v</i>	<i>172.16.0.0</i>	<i>255.255.255.192</i>	<i>Rylak</i>	
<i>Ylak-a</i>	<i>192.168.0.0</i>	<i>255.255.255.248</i>	<i>Rylak</i>	