In einem Hotel erhält jeder Bereich aus Sicherheitsgründen ein eigenes Subnetz. Zur Feststellung in welchem Subnetz sich Quell- und Ziel-Host befindet, werden die Subnetz-Maske und die jeweilige IP-Adresse des Quell- bzw. Ziel-Hosts über eine **AND**-Operation miteinander verknüpft.

Ermitteln Sie im folgendem Schema, ob sich Quell-Host und Ziel-Host im gleichen Subnetz befinden und tragen Sie das Ergebnis als Binärwert und in dezimaler Punktnotation in die Tabelle ein.

Hinweis zur Lösung: Wenn die AND-Verknüpfungen nicht gleich sind, befinden sich Quell- und Ziel-Host auch nicht im gleichen Subnetz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | IP-Adresse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | dezimal | binaer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Quell-Host** | 192.168.2.17 | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **.** | **1** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **.** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **.** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | |
| Subnet-Maske | 255.255.255.240 | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **.** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **.** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **.** | **1** | **1** | **1** | **1** | **0** | **0** | **0** | **0** | |
| Ergebnis AND | 192.168.2.16 | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **.** | **1** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **.** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **.** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | |
| **Ziel-Host** | 192.168.2.35 | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **.** | **1** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **.** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **.** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **1** | |
| Subnet-Maske | 255.255.255.240 | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **.** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **.** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **1** | **.** | **1** | **1** | **1** | **1** | **0** | **0** | **0** | **0** | |
| Ergebnis AND | 192.168.2.32 | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **.** | **1** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **.** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **.** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | |

= IP-Adresse nicht im selben Subnetz

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | IP-Adresse | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | dezimal | binaer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Quell-Host** | 192.168.2.17 |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  |
| Subnet-Maske | 255.255.255.240 |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  |
| Ergebnis AND |  |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  |
| **Ziel-Host** | 192.168.2.21 |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  |
| Subnet-Maske | 255.255.255.240 |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  |
| Ergebnis AND |  |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  | **.** |  |  |  |  |  |  |  |  |