

PROJECT: V1.1

INFRASTRUCTURE AS CODE

Jamal Tadrous

TOPICS COVERED

TOPIC 1:

WHAT IS V1_0 AND WHAT IS
EXCPECTED OF V1.1?

TOPIC 2:

WHAT_HOW_WHY
WHAT WAS MY APPROACH?

TOPIC 3:

WHAT DO I HAVE?

- DIAGRAMS
- CODE

DEMO TIME

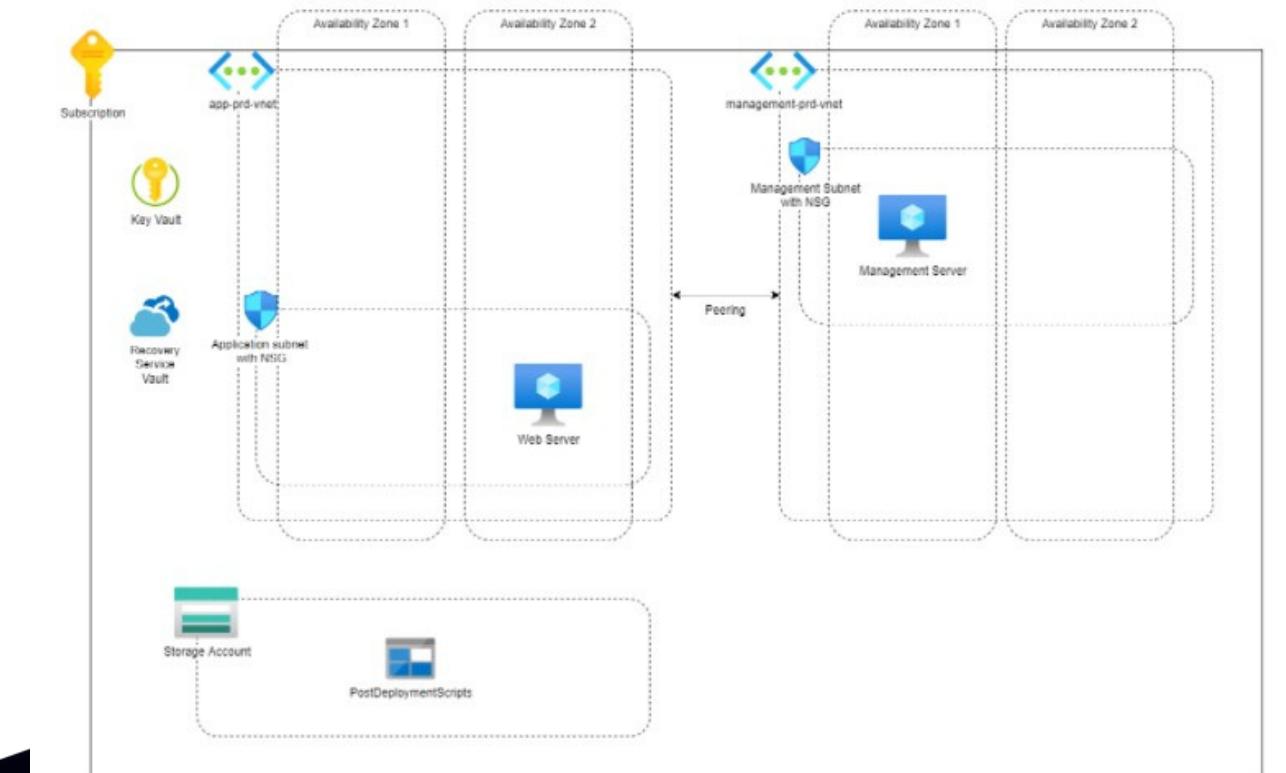
TOPIC 4:

DIRECTION & CONCLUSION

AGENDA

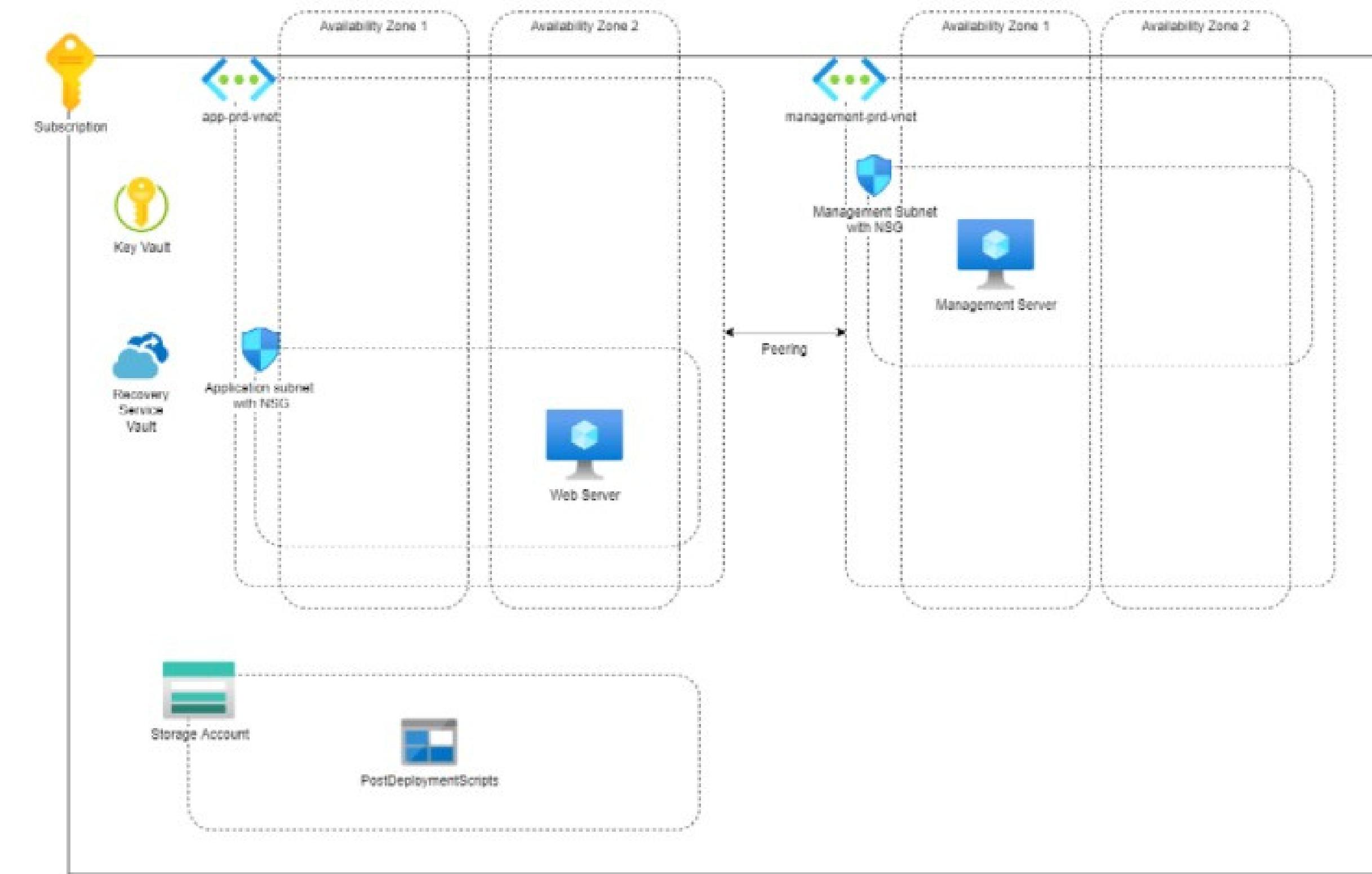
WHAT IS V1.0?

- Creation of infrastructure
- Automation
- Templates



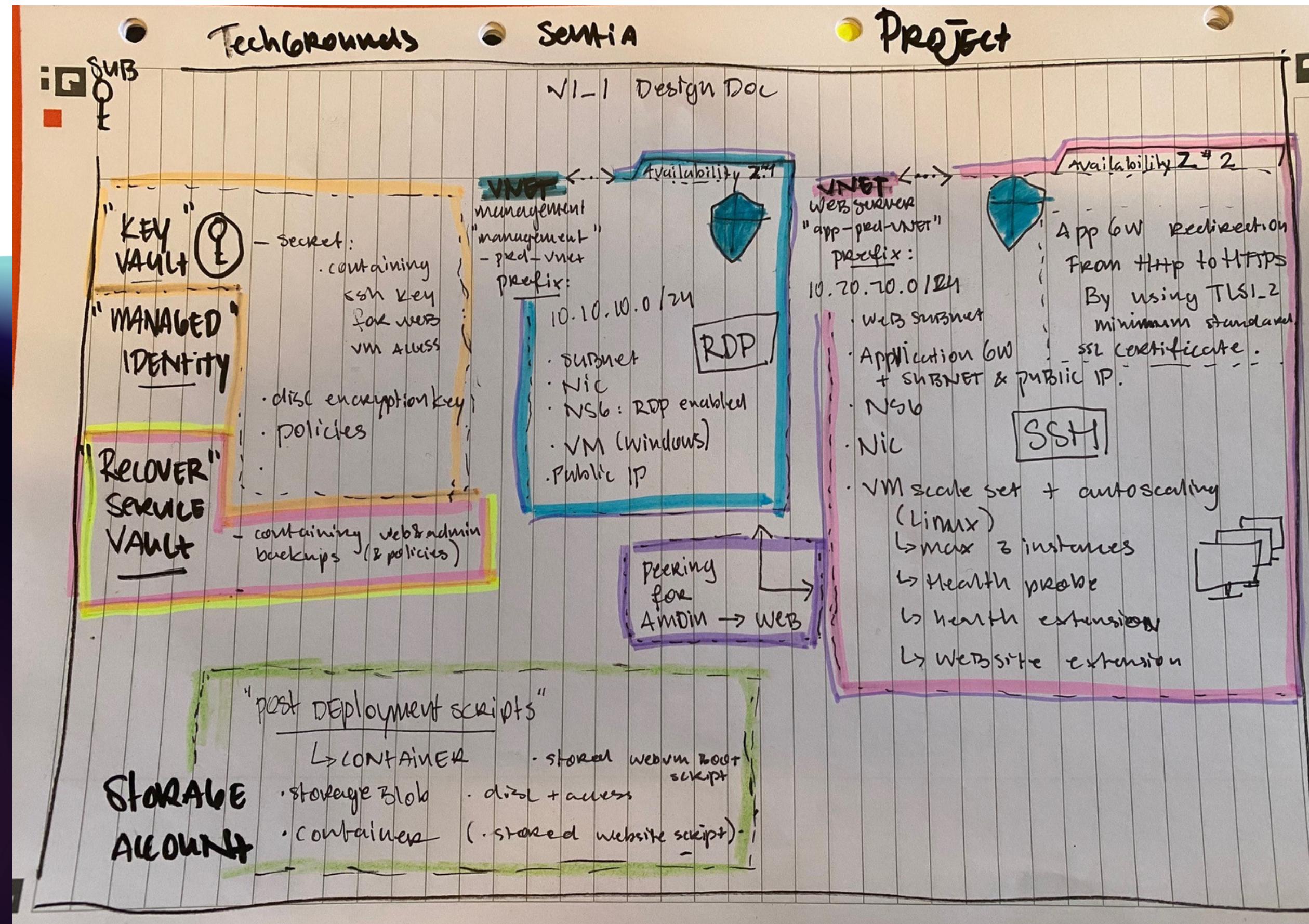
TOPIC 1:

V1.0 SCOPE



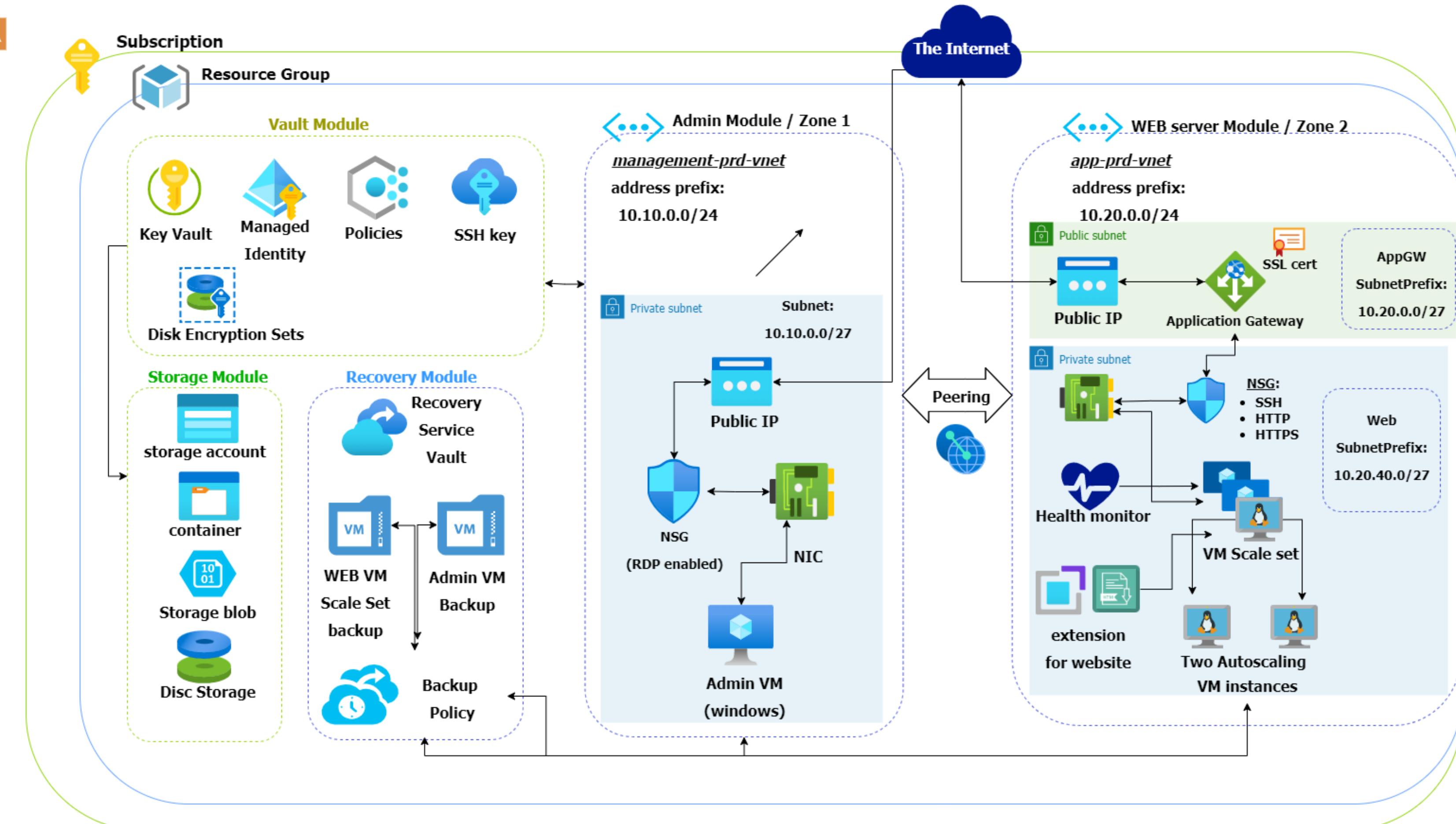
V1.1 SCOPE // DESIGN DIAGRAM

1:

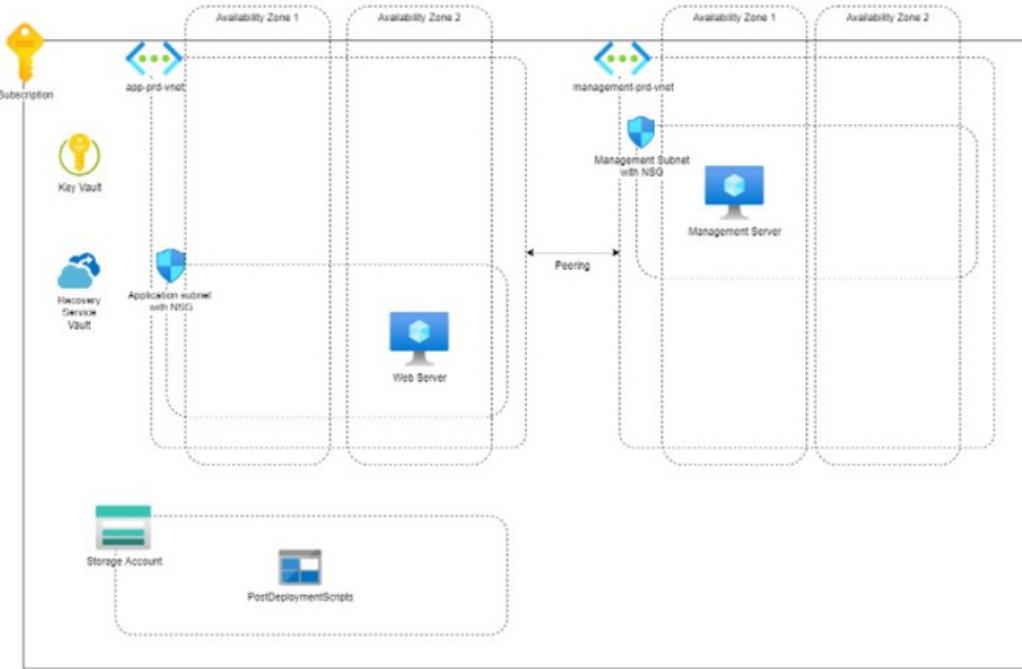


V1.1 SCOPE // DESIGN DIAGRAM

2:



WHAT_HOW_WHY



```

PROJECT > BicepTemplates > main.bicep
PROJECt > BicepTemplates > main.bicep > accessPolicies
165     <resource> vnet1Config: 'Microsoft.Network/virtualNetworks@2020-05-01' = {
166         addressSpacePrefix: '10.20.20.0/24'
167         subnetName: 'subnet2'
168         subnetPrefix: '10.20.20.0/24'
169     }
170
171     <resource> vnet1: 'Microsoft.Network/virtualNetworks@2020-05-01' = {
172         dependsOn: [
173             ProjectStorage
174         ]
175         name: vnet1Name
176         location: location
177         properties:
178             addressSpace: [
179                 <resource> vnet1Config.addressSpacePrefix
180             ]
181             subnets: [
182                 <resource> vnet1Config.subnetName
183                 properties: {
184                     addressPrefix: vnet1Config.addressPrefix
185                 }
186             ]
187         }
188     }
189
190     <resource> vnet2Config: 'Microsoft.Network/virtualNetworks@2020-05-01' = {
191         dependsOn: [
192             ProjectStorage
193         ]
194         name: vnet2Name
195         properties:
196             parent: vnet1
197             name: '${vnet1Name}-${vnet2Name}'
198             properties: {
199                 allowVirtualNetworkAccess: true
200                 allowForwardedTraffic: false
201                 allowGatewayTransit: false
202                 useRemoteGateways: false
203                 remoteVirtualNetwork: {
204                     id: vnet2.id
205                 }
206             }
207     }
208
209     <resource> vnet2: 'Microsoft.Network/virtualNetworks@2020-05-01' = {
210         dependsOn: [
211             vnet1Config
212             vnet2Config
213         ]
214         name: vnet2Name
215         location: location
216         properties:
217             addressSpace: [
218                 <resource> vnet2Config.addressSpacePrefix
219             ]
220             subnets: [
221                 <resource> vnet2Config.subnetName
222                 properties: {
223                     addressPrefix: vnet2Config.addressPrefix
224                 }
225             ]
226         }
227     }
228
229     <resource> VnetPeering1: 'Microsoft.Network/virtualNetworks/virtualNetworkPeering@2020-05-01' = {
230         dependsOn: [
231             vnet1
232             vnet2
233         ]
234         name: 'vnet1Name-$vnet2Name'
235         properties: {
236             allowVirtualNetworkAccess: true
237             allowForwardedTraffic: false
238             allowGatewayTransit: false
239             useRemoteGateways: false
240             remoteVirtualNetwork: {
241                 id: vnet2.id
242             }
243         }
244     }
245
246     <resource> VnetPeering2: 'Microsoft.Network/virtualNetworks/virtualNetworkPeering@2020-05-01' = {
247         dependsOn: [
248             vnet2
249             vnet1
250         ]
251         name: '$vnet1Name-vnet2Name'
252         properties: {
253             allowVirtualNetworkAccess: true
254             allowForwardedTraffic: false
255             allowGatewayTransit: false
256             useRemoteGateways: false
257             remoteVirtualNetwork: {
258                 id: vnet1.id
259             }
260         }
261     }
262
263     <resource> NSG: 'Microsoft.Network/networkSecurityGroups@2020-05-01' = {
264         name: 'app-prod-vnet'
265         location: location
266         properties:
267             securityRules: [
268                 <resource> NSGRule1: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
269                     name: 'NSGRule1'
270                     properties: {
271                         direction: 'Inbound'
272                         priority: 100
273                         protocol: 'All'
274                         sourceAddressPrefix: 'VirtualNetwork'
275                         sourcePortRange: '*'
276                         destinationAddressPrefix: 'VirtualNetwork'
277                         destinationPortRange: '*'
278                         action: 'Allow'
279                     }
280                 }
281             ]
282         }
283     }
284
285     <resource> NSGManagement: 'Microsoft.Network/networkSecurityGroups@2020-05-01' = {
286         name: 'management-prod-vnet'
287         location: location
288         properties:
289             securityRules: [
290                 <resource> NSGRule2: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
291                     name: 'NSGRule2'
292                     properties: {
293                         direction: 'Inbound'
294                         priority: 100
295                         protocol: 'All'
296                         sourceAddressPrefix: 'VirtualNetwork'
297                         sourcePortRange: '*'
298                         destinationAddressPrefix: 'VirtualNetwork'
299                         destinationPortRange: '*'
300                         action: 'Allow'
301                     }
302                 }
303             ]
304         }
305     }
306
307     <resource> NSGRule3: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
308         name: 'NSGRule3'
309         properties: {
310             direction: 'Inbound'
311             priority: 100
312             protocol: 'All'
313             sourceAddressPrefix: 'VirtualNetwork'
314             sourcePortRange: '*'
315             destinationAddressPrefix: 'VirtualNetwork'
316             destinationPortRange: '*'
317             action: 'Allow'
318         }
319     }
320
321     <resource> NSGRule4: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
322         name: 'NSGRule4'
323         properties: {
324             direction: 'Inbound'
325             priority: 100
326             protocol: 'All'
327             sourceAddressPrefix: 'VirtualNetwork'
328             sourcePortRange: '*'
329             destinationAddressPrefix: 'VirtualNetwork'
330             destinationPortRange: '*'
331             action: 'Allow'
332         }
333     }
334
335     <resource> NSGRule5: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
336         name: 'NSGRule5'
337         properties: {
338             direction: 'Inbound'
339             priority: 100
340             protocol: 'All'
341             sourceAddressPrefix: 'VirtualNetwork'
342             sourcePortRange: '*'
343             destinationAddressPrefix: 'VirtualNetwork'
344             destinationPortRange: '*'
345             action: 'Allow'
346         }
347     }
348
349     <resource> NSGRule6: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
350         name: 'NSGRule6'
351         properties: {
352             direction: 'Inbound'
353             priority: 100
354             protocol: 'All'
355             sourceAddressPrefix: 'VirtualNetwork'
356             sourcePortRange: '*'
357             destinationAddressPrefix: 'VirtualNetwork'
358             destinationPortRange: '*'
359             action: 'Allow'
360         }
361     }
362
363     <resource> NSGRule7: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
364         name: 'NSGRule7'
365         properties: {
366             direction: 'Inbound'
367             priority: 100
368             protocol: 'All'
369             sourceAddressPrefix: 'VirtualNetwork'
370             sourcePortRange: '*'
371             destinationAddressPrefix: 'VirtualNetwork'
372             destinationPortRange: '*'
373             action: 'Allow'
374         }
375     }
376
377     <resource> NSGRule8: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
378         name: 'NSGRule8'
379         properties: {
380             direction: 'Inbound'
381             priority: 100
382             protocol: 'All'
383             sourceAddressPrefix: 'VirtualNetwork'
384             sourcePortRange: '*'
385             destinationAddressPrefix: 'VirtualNetwork'
386             destinationPortRange: '*'
387             action: 'Allow'
388         }
389     }
390
391     <resource> NSGRule9: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
392         name: 'NSGRule9'
393         properties: {
394             direction: 'Inbound'
395             priority: 100
396             protocol: 'All'
397             sourceAddressPrefix: 'VirtualNetwork'
398             sourcePortRange: '*'
399             destinationAddressPrefix: 'VirtualNetwork'
400             destinationPortRange: '*'
401             action: 'Allow'
402         }
403     }
404
405     <resource> NSGRule10: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
406         name: 'NSGRule10'
407         properties: {
408             direction: 'Inbound'
409             priority: 100
410             protocol: 'All'
411             sourceAddressPrefix: 'VirtualNetwork'
412             sourcePortRange: '*'
413             destinationAddressPrefix: 'VirtualNetwork'
414             destinationPortRange: '*'
415             action: 'Allow'
416         }
417     }
418
419     <resource> NSGRule11: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
420         name: 'NSGRule11'
421         properties: {
422             direction: 'Inbound'
423             priority: 100
424             protocol: 'All'
425             sourceAddressPrefix: 'VirtualNetwork'
426             sourcePortRange: '*'
427             destinationAddressPrefix: 'VirtualNetwork'
428             destinationPortRange: '*'
429             action: 'Allow'
430         }
431     }
432
433     <resource> NSGRule12: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
434         name: 'NSGRule12'
435         properties: {
436             direction: 'Inbound'
437             priority: 100
438             protocol: 'All'
439             sourceAddressPrefix: 'VirtualNetwork'
440             sourcePortRange: '*'
441             destinationAddressPrefix: 'VirtualNetwork'
442             destinationPortRange: '*'
443             action: 'Allow'
444         }
445     }
446
447     <resource> NSGRule13: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
448         name: 'NSGRule13'
449         properties: {
450             direction: 'Inbound'
451             priority: 100
452             protocol: 'All'
453             sourceAddressPrefix: 'VirtualNetwork'
454             sourcePortRange: '*'
455             destinationAddressPrefix: 'VirtualNetwork'
456             destinationPortRange: '*'
457             action: 'Allow'
458         }
459     }
460
461     <resource> NSGRule14: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
462         name: 'NSGRule14'
463         properties: {
464             direction: 'Inbound'
465             priority: 100
466             protocol: 'All'
467             sourceAddressPrefix: 'VirtualNetwork'
468             sourcePortRange: '*'
469             destinationAddressPrefix: 'VirtualNetwork'
470             destinationPortRange: '*'
471             action: 'Allow'
472         }
473     }
474
475     <resource> NSGRule15: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
476         name: 'NSGRule15'
477         properties: {
478             direction: 'Inbound'
479             priority: 100
480             protocol: 'All'
481             sourceAddressPrefix: 'VirtualNetwork'
482             sourcePortRange: '*'
483             destinationAddressPrefix: 'VirtualNetwork'
484             destinationPortRange: '*'
485             action: 'Allow'
486         }
487     }
488
489     <resource> NSGRule16: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
490         name: 'NSGRule16'
491         properties: {
492             direction: 'Inbound'
493             priority: 100
494             protocol: 'All'
495             sourceAddressPrefix: 'VirtualNetwork'
496             sourcePortRange: '*'
497             destinationAddressPrefix: 'VirtualNetwork'
498             destinationPortRange: '*'
499             action: 'Allow'
500         }
501     }
502
503     <resource> NSGRule17: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
504         name: 'NSGRule17'
505         properties: {
506             direction: 'Inbound'
507             priority: 100
508             protocol: 'All'
509             sourceAddressPrefix: 'VirtualNetwork'
510             sourcePortRange: '*'
511             destinationAddressPrefix: 'VirtualNetwork'
512             destinationPortRange: '*'
513             action: 'Allow'
514         }
515     }
516
517     <resource> NSGRule18: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
518         name: 'NSGRule18'
519         properties: {
520             direction: 'Inbound'
521             priority: 100
522             protocol: 'All'
523             sourceAddressPrefix: 'VirtualNetwork'
524             sourcePortRange: '*'
525             destinationAddressPrefix: 'VirtualNetwork'
526             destinationPortRange: '*'
527             action: 'Allow'
528         }
529     }
530
531     <resource> NSGRule19: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
532         name: 'NSGRule19'
533         properties: {
534             direction: 'Inbound'
535             priority: 100
536             protocol: 'All'
537             sourceAddressPrefix: 'VirtualNetwork'
538             sourcePortRange: '*'
539             destinationAddressPrefix: 'VirtualNetwork'
540             destinationPortRange: '*'
541             action: 'Allow'
542         }
543     }
544
545     <resource> NSGRule20: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
546         name: 'NSGRule20'
547         properties: {
548             direction: 'Inbound'
549             priority: 100
550             protocol: 'All'
551             sourceAddressPrefix: 'VirtualNetwork'
552             sourcePortRange: '*'
553             destinationAddressPrefix: 'VirtualNetwork'
554             destinationPortRange: '*'
555             action: 'Allow'
556         }
557     }
558
559     <resource> NSGRule21: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
560         name: 'NSGRule21'
561         properties: {
562             direction: 'Inbound'
563             priority: 100
564             protocol: 'All'
565             sourceAddressPrefix: 'VirtualNetwork'
566             sourcePortRange: '*'
567             destinationAddressPrefix: 'VirtualNetwork'
568             destinationPortRange: '*'
569             action: 'Allow'
570         }
571     }
572
573     <resource> NSGRule22: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
574         name: 'NSGRule22'
575         properties: {
576             direction: 'Inbound'
577             priority: 100
578             protocol: 'All'
579             sourceAddressPrefix: 'VirtualNetwork'
580             sourcePortRange: '*'
581             destinationAddressPrefix: 'VirtualNetwork'
582             destinationPortRange: '*'
583             action: 'Allow'
584         }
585     }
586
587     <resource> NSGRule23: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
588         name: 'NSGRule23'
589         properties: {
590             direction: 'Inbound'
591             priority: 100
592             protocol: 'All'
593             sourceAddressPrefix: 'VirtualNetwork'
594             sourcePortRange: '*'
595             destinationAddressPrefix: 'VirtualNetwork'
596             destinationPortRange: '*'
597             action: 'Allow'
598         }
599     }
599
600     <resource> NSGRule24: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
601         name: 'NSGRule24'
602         properties: {
603             direction: 'Inbound'
604             priority: 100
605             protocol: 'All'
606             sourceAddressPrefix: 'VirtualNetwork'
607             sourcePortRange: '*'
608             destinationAddressPrefix: 'VirtualNetwork'
609             destinationPortRange: '*'
610             action: 'Allow'
611         }
612     }
612
613     <resource> NSGRule25: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
614         name: 'NSGRule25'
615         properties: {
616             direction: 'Inbound'
617             priority: 100
618             protocol: 'All'
619             sourceAddressPrefix: 'VirtualNetwork'
620             sourcePortRange: '*'
621             destinationAddressPrefix: 'VirtualNetwork'
622             destinationPortRange: '*'
623             action: 'Allow'
624         }
625     }
625
626     <resource> NSGRule26: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
627         name: 'NSGRule26'
628         properties: {
629             direction: 'Inbound'
630             priority: 100
631             protocol: 'All'
632             sourceAddressPrefix: 'VirtualNetwork'
633             sourcePortRange: '*'
634             destinationAddressPrefix: 'VirtualNetwork'
635             destinationPortRange: '*'
636             action: 'Allow'
637         }
638     }
638
639     <resource> NSGRule27: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
640         name: 'NSGRule27'
641         properties: {
642             direction: 'Inbound'
643             priority: 100
644             protocol: 'All'
645             sourceAddressPrefix: 'VirtualNetwork'
646             sourcePortRange: '*'
647             destinationAddressPrefix: 'VirtualNetwork'
648             destinationPortRange: '*'
649             action: 'Allow'
650         }
651     }
651
652     <resource> NSGRule28: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
653         name: 'NSGRule28'
654         properties: {
655             direction: 'Inbound'
656             priority: 100
657             protocol: 'All'
658             sourceAddressPrefix: 'VirtualNetwork'
659             sourcePortRange: '*'
660             destinationAddressPrefix: 'VirtualNetwork'
661             destinationPortRange: '*'
662             action: 'Allow'
663         }
664     }
664
665     <resource> NSGRule29: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
666         name: 'NSGRule29'
667         properties: {
668             direction: 'Inbound'
669             priority: 100
670             protocol: 'All'
671             sourceAddressPrefix: 'VirtualNetwork'
672             sourcePortRange: '*'
673             destinationAddressPrefix: 'VirtualNetwork'
674             destinationPortRange: '*'
675             action: 'Allow'
676         }
677     }
677
678     <resource> NSGRule30: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
679         name: 'NSGRule30'
680         properties: {
681             direction: 'Inbound'
682             priority: 100
683             protocol: 'All'
684             sourceAddressPrefix: 'VirtualNetwork'
685             sourcePortRange: '*'
686             destinationAddressPrefix: 'VirtualNetwork'
687             destinationPortRange: '*'
688             action: 'Allow'
689         }
690     }
690
691     <resource> NSGRule31: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
692         name: 'NSGRule31'
693         properties: {
694             direction: 'Inbound'
695             priority: 100
696             protocol: 'All'
697             sourceAddressPrefix: 'VirtualNetwork'
698             sourcePortRange: '*'
699             destinationAddressPrefix: 'VirtualNetwork'
700             destinationPortRange: '*'
701             action: 'Allow'
702         }
703     }
703
704     <resource> NSGRule32: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
705         name: 'NSGRule32'
706         properties: {
707             direction: 'Inbound'
708             priority: 100
709             protocol: 'All'
710             sourceAddressPrefix: 'VirtualNetwork'
711             sourcePortRange: '*'
712             destinationAddressPrefix: 'VirtualNetwork'
713             destinationPortRange: '*'
714             action: 'Allow'
715         }
716     }
716
717     <resource> NSGRule33: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
718         name: 'NSGRule33'
719         properties: {
720             direction: 'Inbound'
721             priority: 100
722             protocol: 'All'
723             sourceAddressPrefix: 'VirtualNetwork'
724             sourcePortRange: '*'
725             destinationAddressPrefix: 'VirtualNetwork'
726             destinationPortRange: '*'
727             action: 'Allow'
728         }
729     }
729
730     <resource> NSGRule34: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
731         name: 'NSGRule34'
732         properties: {
733             direction: 'Inbound'
734             priority: 100
735             protocol: 'All'
736             sourceAddressPrefix: 'VirtualNetwork'
737             sourcePortRange: '*'
738             destinationAddressPrefix: 'VirtualNetwork'
739             destinationPortRange: '*'
740             action: 'Allow'
741         }
742     }
742
743     <resource> NSGRule35: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
744         name: 'NSGRule35'
745         properties: {
746             direction: 'Inbound'
747             priority: 100
748             protocol: 'All'
749             sourceAddressPrefix: 'VirtualNetwork'
750             sourcePortRange: '*'
751             destinationAddressPrefix: 'VirtualNetwork'
752             destinationPortRange: '*'
753             action: 'Allow'
754         }
755     }
755
756     <resource> NSGRule36: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
757         name: 'NSGRule36'
758         properties: {
759             direction: 'Inbound'
760             priority: 100
761             protocol: 'All'
762             sourceAddressPrefix: 'VirtualNetwork'
763             sourcePortRange: '*'
764             destinationAddressPrefix: 'VirtualNetwork'
765             destinationPortRange: '*'
766             action: 'Allow'
767         }
768     }
768
769     <resource> NSGRule37: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
770         name: 'NSGRule37'
771         properties: {
772             direction: 'Inbound'
773             priority: 100
774             protocol: 'All'
775             sourceAddressPrefix: 'VirtualNetwork'
776             sourcePortRange: '*'
777             destinationAddressPrefix: 'VirtualNetwork'
778             destinationPortRange: '*'
779             action: 'Allow'
780         }
781     }
781
782     <resource> NSGRule38: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
783         name: 'NSGRule38'
784         properties: {
785             direction: 'Inbound'
786             priority: 100
787             protocol: 'All'
788             sourceAddressPrefix: 'VirtualNetwork'
789             sourcePortRange: '*'
790             destinationAddressPrefix: 'VirtualNetwork'
791             destinationPortRange: '*'
792             action: 'Allow'
793         }
794     }
794
795     <resource> NSGRule39: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
796         name: 'NSGRule39'
797         properties: {
798             direction: 'Inbound'
799             priority: 100
800             protocol: 'All'
801             sourceAddressPrefix: 'VirtualNetwork'
802             sourcePortRange: '*'
803             destinationAddressPrefix: 'VirtualNetwork'
804             destinationPortRange: '*'
805             action: 'Allow'
806         }
807     }
807
808     <resource> NSGRule40: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {
809         name: 'NSGRule40'
810         properties: {
811             direction: 'Inbound'
812             priority: 100
813             protocol: 'All'
814             sourceAddressPrefix: 'VirtualNetwork'
815             sourcePortRange: '*'
816             destinationAddressPrefix: 'VirtualNetwork'
817             destinationPortRange: '*'
818             action: 'Allow'
819         }
820     }
820
821     <resource> NSGRule41: 'Microsoft.Network/networkSecurityGroups/securityRules@2020-05-01' = {

```

WHAT WAS MY APPROACH?



What is
Bicep?
declarative coding

How do i
write the
code?

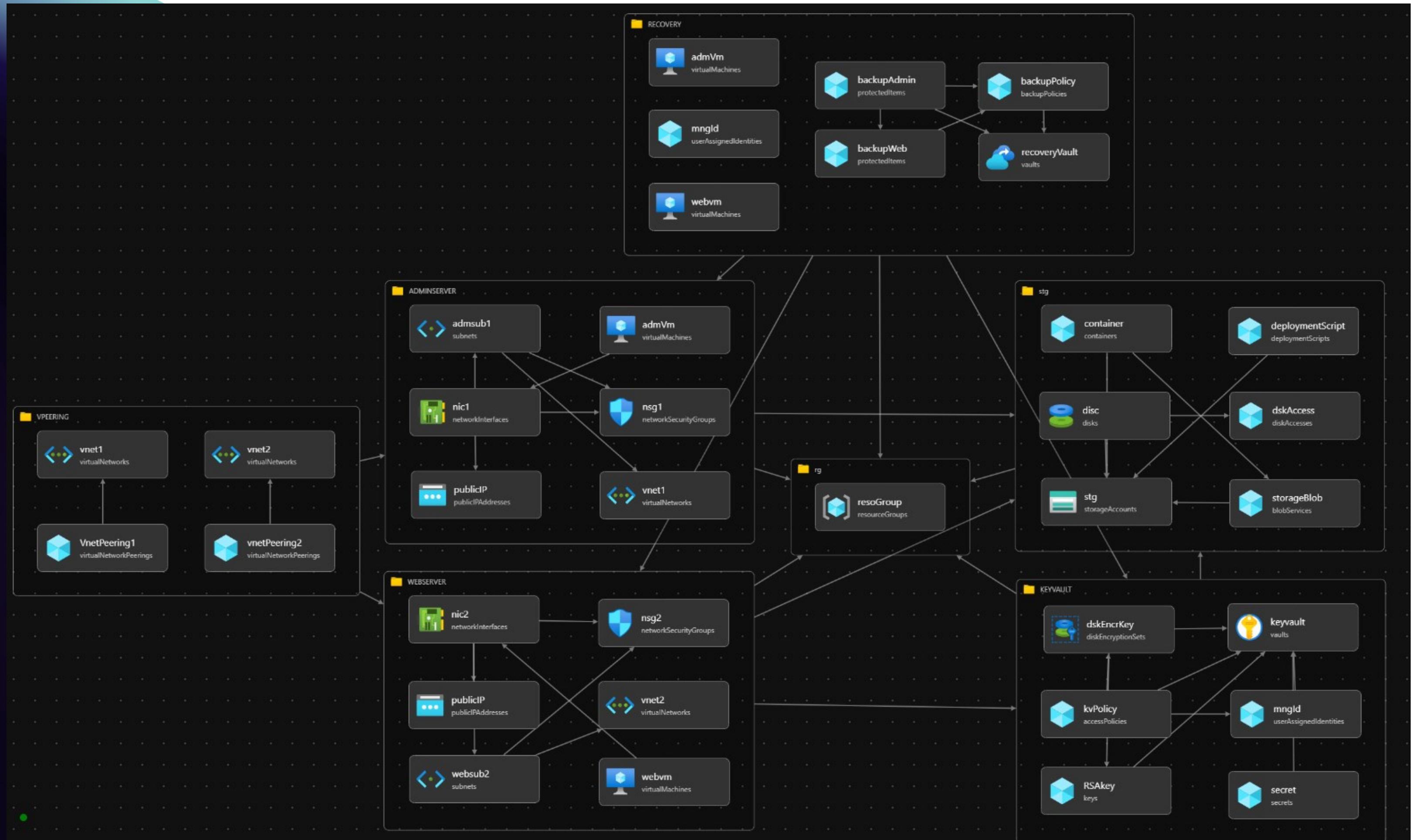
How do i
make the
template?

How do i
deploy the
template?

WHAT DO I HAVE?

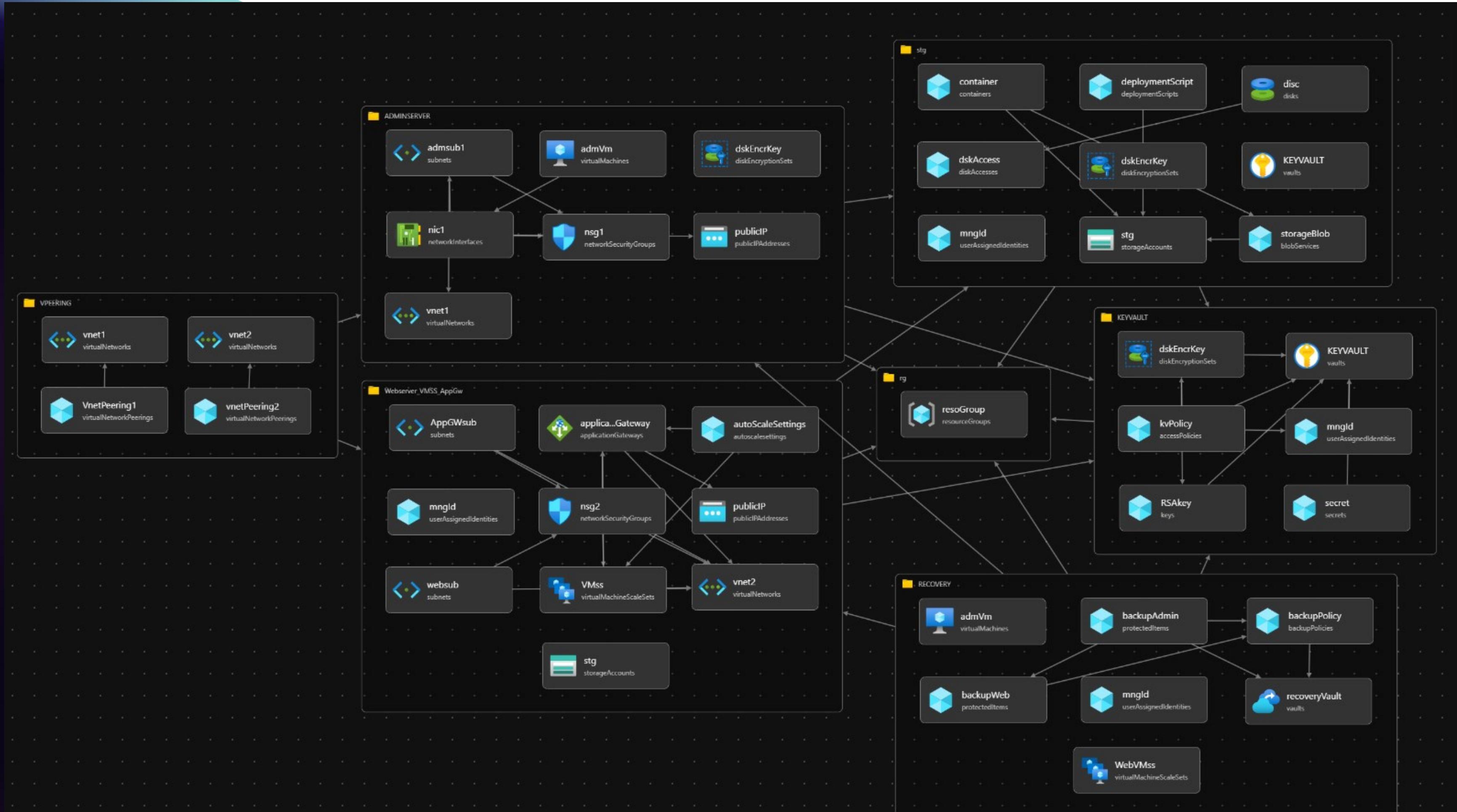
- DIAGRAM V1_O
- DIAGRAM V1_1

DIAGRAM V1_O



TOPIC 3:

DIAGRAM V1_1



/Main.bicep

containing:

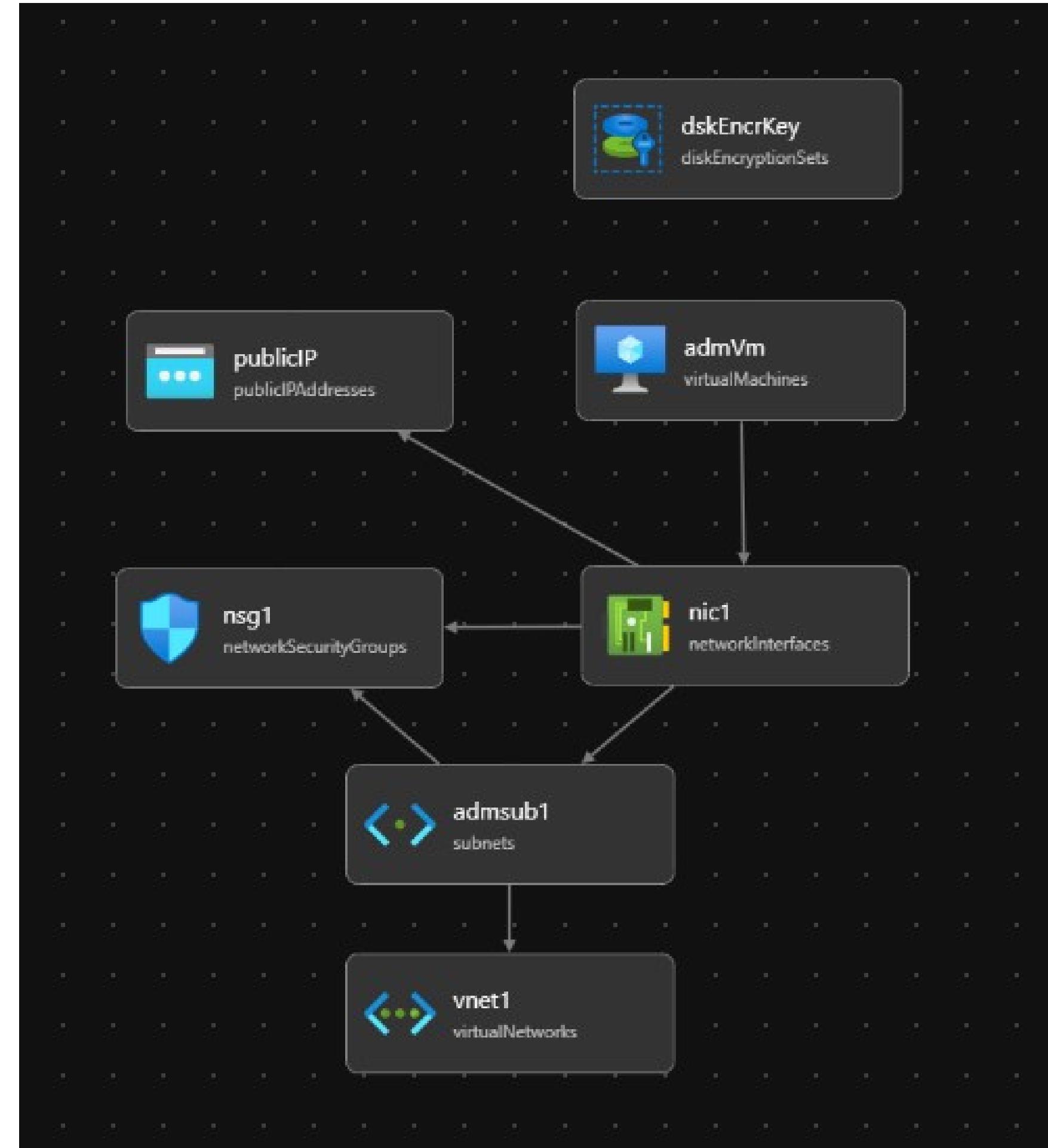
- RESOURCEGROUP
- STORAGE ACCOUNT
- ADMINSERVER
- WEBSERVER
- PEERING
- KEYVAULT
- RECOVERY SERVICE VAULT

MODULES

ADMIN SERVER

MODULE

TOPIC 3:



ADMIN SERVER

MODULE

TOPIC 3:

management-prd-vnet | Virtual network

Search (Ctrl+ /) → Move Delete Refresh Give feedback JSON View

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings Address space Connected devices Subnets Bastion DDoS protection Firewall Security Network manager DNS servers Peerings Service endpoints Private endpoints Properties

Resource group (move) : ZenTia Address space : 10.10.0.0/16 Location (move) : West Europe DNS servers : Azure provided DNS service Subscription (move) : Jamal Tadrous Flow timeout : Configure Subscription ID : 214bb771-fd30-4f8e-9dfc-7195f7b165ff BGP community string : Configure Virtual network ID : cb2d4dcf-86b4-41f8-b33e-7227fe39369b

Tags (edit) : Click here to add tags

Topology Capabilities (5) Recommendations Tutorials

management-prd-vnet | Address space

The address space for a virtual network is composed of one or more non-overlapping address ranges that are specified in CIDR notation. The address range you define can be public or private (RFC 1918). Learn more

Address space	Address range	Address count
10.10.0.0/16	10.10.0.0 - 10.10.255.255	65536

Add additional address range

Peered virtual network address space

Peering name	Peered to	Address space	Address range
management-prd-vnet-app-prod-vnet	app-prod-vnet	10.20.0.0/16	10.20.0.0 - 10.20.255.255

ADMIN SERVER

MODULE

TOPIC 3:

adminserv | Networking

Virtual machine

Search (Ctrl+ /)

Attach network interface Detach network interface Feedback

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Settings

Networking Connect Windows Admin Center (preview) Disks Size Security Advisor recommendations Extensions + applications Continuous delivery

adminnic

IP configuration ipconfig1 (Primary)

Network Interface: adminnic Effective security rules Troubleshoot VM connection issues Topology

Virtual network/subnet: management-prd-vnet/admsubnet NIC Public IP: 13.80.97.55 NIC Private IP: 10.10.0.4 Accelerated networking: Disabled

Inbound port rules Outbound port rules Application security groups Load balancing

Network security group adminNSG (attached to subnet: admsubnet)
Impacts 1 subnets, 1 network interfaces

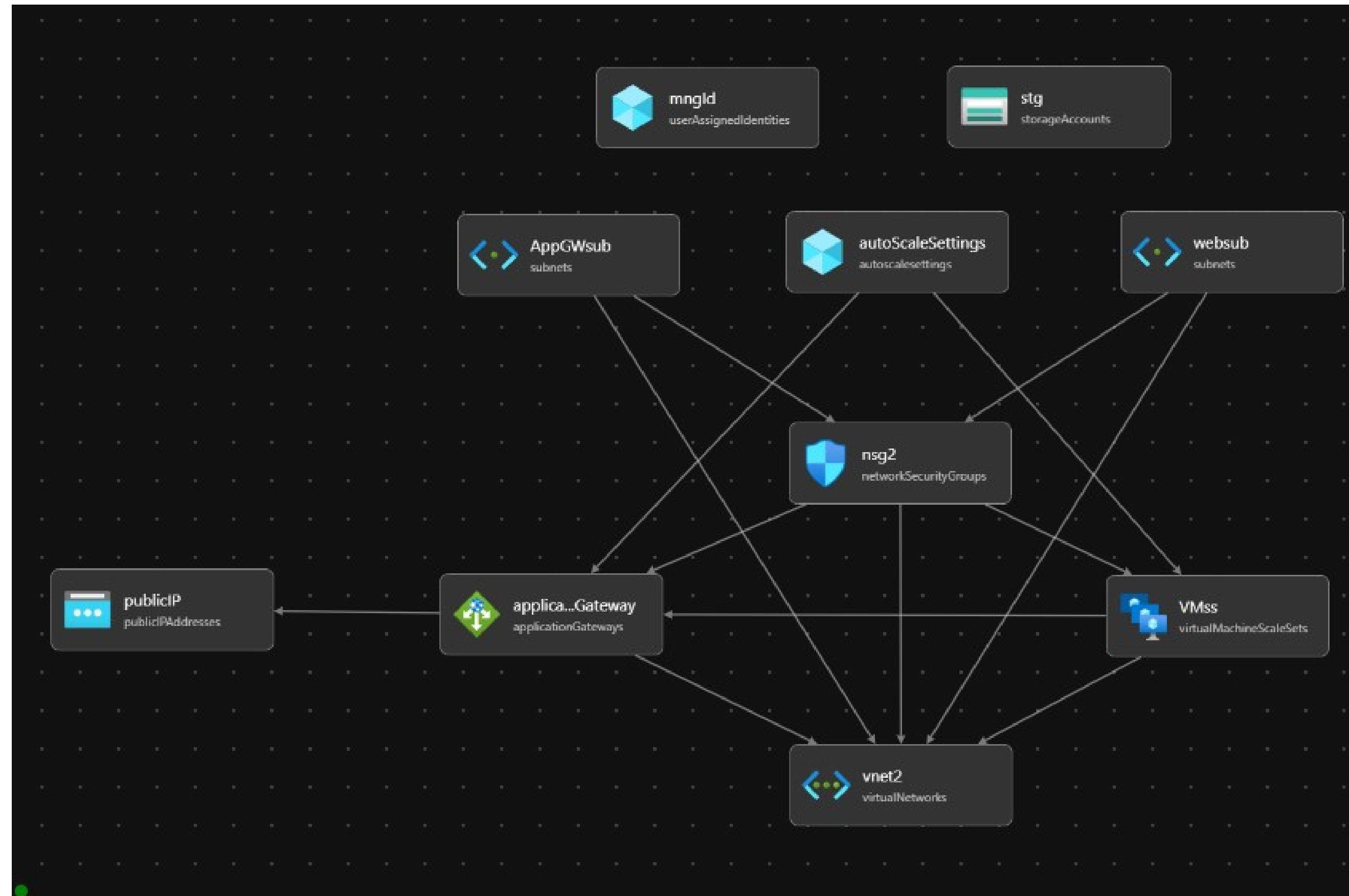
Add inbound port rule

Priority	Name	Port	Protocol	Source	Destination	A
300	RDP	3389	TCP	84.83.9.144	Any	✓
1000	SSH	22	TCP	84.83.9.144	Any	✓
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	✓
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	✓
65500	DenyAllInBound	Any	Any	Any	Any	✗

WEB SERVER

MODULE

TOPIC 3:



WEB SERVER

MODULE

TOPIC 3:

WebVMss Virtual machine scale set

Search (Ctrl+ /) Move Start Restart Stop Delete Refresh Feedback JSON View

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Resource group (move) : ZenTia Status 1 out of 1 succeeded Location West Europe Subscription (move) : Jamal Tadrous Subscription ID 214bb771-fd30-4f8e-9dfc-7195f7b165ff Tags (edit) Click here to add tags

Operating system : Linux Size : Standard_B1s (1 instance) Public IP address : - Public IP address (IPv6) : - Virtual network/subnet : app-prod-vnet/WebSubnet Orchestration mode : Uniform

Properties Monitoring Capabilities (6) Recommendations Tutorials

Virtual machine profile

Operating system	Linux
Publisher	Canonical
Offer	UbuntuServer
Plan	18.04-LTS
Capacity reservation group	-

Networking

Public IP address	-
Public IP address (IPv6)	-
Virtual network/subnet	app-prod-vnet/WebSubnet

Availability + scaling

Availability zone	-
Proximity placement group	-
Colocation status	-
Host group	-

Size

Size	Standard_B1s
vCPUs	1
RAM	1 GiB

Disk

OS disk	Standard SSD LRS
Encryption at host	Disabled
Ultra disk compatibility	Disabled

app-prod-vnet | Subnets

Virtual network

Search (Ctrl+ /) Subnet Gateway subnet Refresh Manage users Delete

Search subnets

Name ↑↓	IPv4 ↑↓	IPv6 ↑↓	Available IPs ↑↓	Delegated to ↑↓	Security group ↑↓
WebSubnet	10.20.40.0/27	-	25	-	webNSG
AppGWSubnet	10.20.0.0/27	-	availability dependent on dynamic use	-	webNSG

WEB SERVER

MODULE

TOPIC 3:

webAppGW Application gateway

Search (Ctrl+ /) Delete Refresh

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Settings Configuration

webNSG Network security group

Search (Ctrl+ /) Move Delete Refresh Give feedback

Resource group (move) ZenTia Virtual network/subnet app-prod-vnet/AppGWSubnet

Location West Europe Frontend public IP address 20.224.107.19 (webAppGW-pip)

Subscription (move) Jamal Tadrous Frontend private IP address -

Subscription ID 214bb771-fd30-4f8e-9dfc-7195f7b165ff Tier Standard V2

Tags (edit) Click here to add tags

Custom security rules 4 inbound, 2 outbound Associated with 2 subnets, 0 network interfaces

Location : West Europe Subscription (move) : Jamal Tadrous Subscription ID : 214bb771-fd30-4f8e-9dfc-7195f7b165ff Tags (edit) : Click here to add tags

Filter by name Port == all Protocol == all Source == all Destination == all Action == all

Priority ↑	Name ↑	Port ↑	Protocol ↑	Source ↑	Destination ↑	Action ↑
100	HTTPIn	80	Tcp	Internet	Any	<input checked="" type="checkbox"/> Allow
120	HTTPSSin	443	Tcp	Internet	Any	<input checked="" type="checkbox"/> Allow
160	sshin	22	Tcp	84.83.9.144	Any	<input checked="" type="checkbox"/> Allow
180	GatewayManager	65200-65535	Tcp	Any	Any	<input checked="" type="checkbox"/> Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	<input checked="" type="checkbox"/> Allow
65001	AllowAzureLoadBalanc...	Any	Any	AzureLoadBalancer	Any	<input checked="" type="checkbox"/> Allow
65500	DenyAllInBound	Any	Any	Any	Any	<input checked="" type="checkbox"/> Deny
▼ Inbound Security Rules						
200	sshowt	22	Tcp	84.83.9.144	Any	<input checked="" type="checkbox"/> Allow
220	HTTPSSout	443	Tcp	Internet	Any	<input checked="" type="checkbox"/> Allow
65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	<input checked="" type="checkbox"/> Allow
▼ Outbound Security Rules						

WEB SERVER

MODULE

TOPIC 3:

Home > All resources > WebVMss >

WebVMss_0

Scale set instance

Search (Ctrl+ /) <>

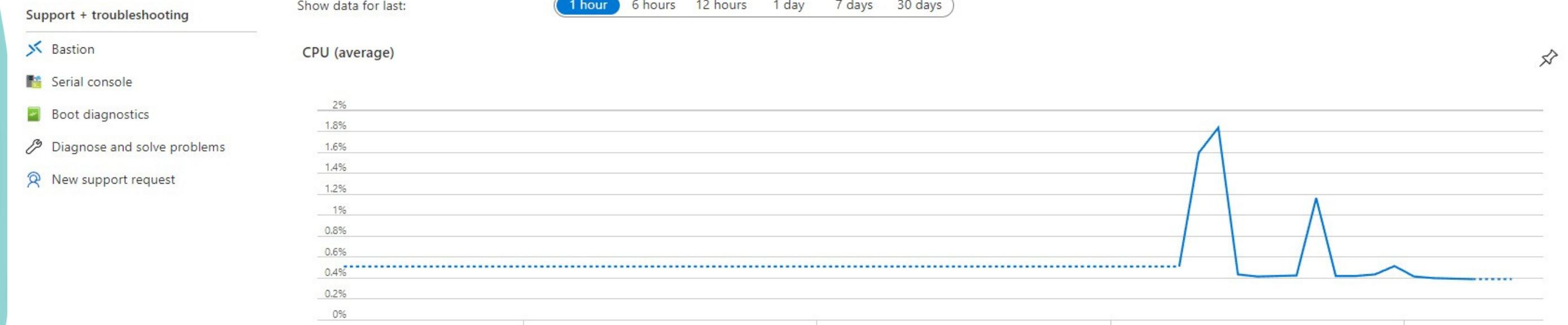
Connect Start Restart Stop Reimage Delete Refresh Protection Policy

Overview

^ Essentials

Settings	Instance ID : 0	Public IP address : -
Networking	Status : Running_1 more	Private IP address : 10.20.40.4
Connect	Location : West Europe (Zone 2)	Public IP address (IPv6) : -
Disks	Provisioning state : Succeeded	Private IP address (IPv6) : -
Properties	Latest model applied : Yes	Virtual network/subnet : app-prod-vnet/WebSubnet
Monitoring	Computer name : WebVM000000	Disk : WebVMss_WebVMss_0_OsDisk_1_1ba77f7421f94ec8962f40f865f28833
Insights	Fault domain : 1	Protection Policy : -
Metrics	SKU : Standard_B1s	Health state : Healthy
Tags (edit)	Click here to add tags	

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days



All resources

Standaardmap

+ Create Manage view <>

Filter for any field...

Name	Computer name	Status	Health state	Provisioning state
WebVMss_0	WebVM000000	Running	Healthy	Succeeded

WebVMss | Instances

Virtual machine scale set

Search (Ctrl+ /) <>

Start Restart Stop Reimage Delete Refresh Protection Policy

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Instances

Networking

Search virtual machine instances

Name Computer name Status Health state Provisioning state

WebVMss_0	WebVM000000	Running	Healthy	Succeeded
-----------	-------------	---------	---------	-----------

When an instance returns 200 (OK) on the port configured for health probes, then the "Health state" in table above shows Healthy.

ADMIN peering WEB

TOPIC 3:

The screenshot shows a Windows desktop environment with the following elements:

- PowerShell Window:** An Administrator: Windows PowerShell window titled "Administrator: Windows PowerShell" is open. It displays the following command and output:

```
PS C:\Users\jamaltadrous> ^C
PS C:\Users\jamaltadrous> ping 10.20.40.4

Pinging 10.20.40.4 with 32 bytes of data:
Reply from 10.20.40.4: bytes=32 time=2ms TTL=64
Reply from 10.20.40.4: bytes=32 time<1ms TTL=64
Reply from 10.20.40.4: bytes=32 time=1ms TTL=64
Reply from 10.20.40.4: bytes=32 time=1ms TTL=64

Ping statistics for 10.20.40.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 1ms
PS C:\Users\jamaltadrous> Test-NetConnection -ComputerName 10.20.40.4 -Port 22
>>

ComputerName      : 10.20.40.4
RemoteAddress     : 10.20.40.4
RemotePort        : 22
InterfaceAlias   : Ethernet
SourceAddress     : 10.10.0.4
TcpTestSucceeded  : True

PS C:\Users\jamaltadrous> ssh jamaltadrous@10.20.40.4
The authenticity of host '10.20.40.4 (10.20.40.4)' can't be established.
ECDSA key fingerprint is SHA256:I8AQ/uxfaL+WUBtI0n7wG/kQPxPk+FibwQJiqJx6QIs.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.20.40.4' (ECDSA) to the list of known hosts.
jamaltadrous@10.20.40.4: Permission denied (publickey).
PS C:\Users\jamaltadrous>
```
- Browser Tab:** A Microsoft Edge browser window is visible in the background, showing a network configuration page with tabs like "What", "Web", "Apache", "Down", "ATES", "Whizlabs", "draw.io", "CODING", and "Try". The main content area shows network interface details and a protection policy section.
- Status Bar:** At the bottom of the screen, there is a status bar with icons for "New support request" and a graph showing a sharp peak in usage or error rate.

TOPIC 3:

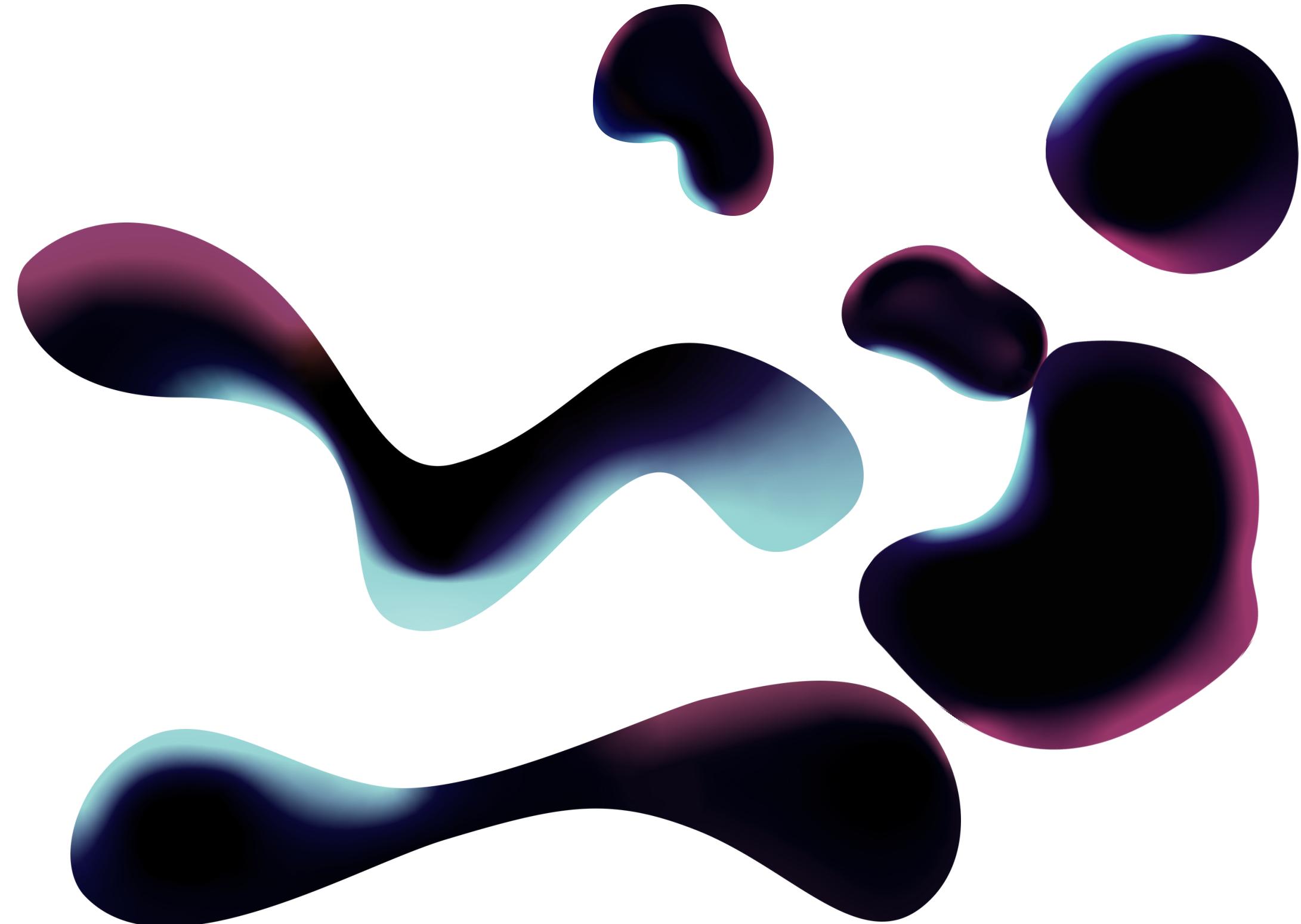
LET ME SEE YOUR CODE !

DEMO
TIME

LETS SWITCH OVER TO VS CODE!

TOPIC 4:

Learnings, & Conclusion





THANK YOU!

Any Questions?