

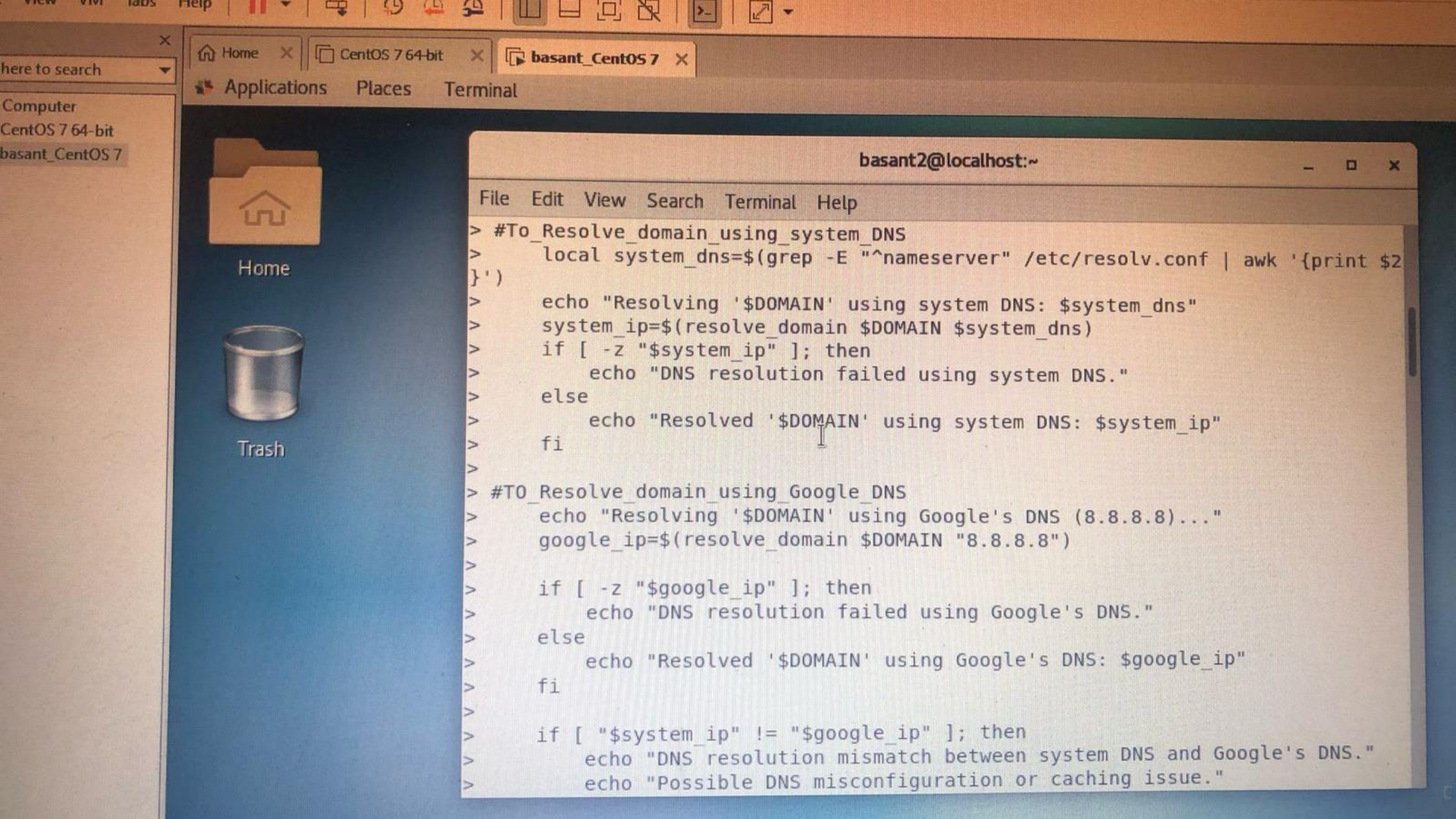


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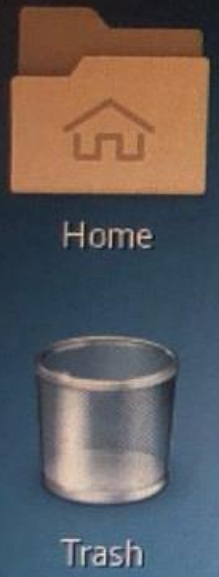
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```
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[basant2@localhost ~]$ #!/bin/bash  
0  
[basant2@localhost ~]$  
[basant2@localhost ~]$ DOMAIN="internal.example.com"  
[basant2@localhost ~]$  
[basant2@localhost ~]$ #Function to resolve the domain using a given DNS server  
t  
[basant2@localhost ~]$ resolve_domain() {  
>     local domain=$1  
>     local dns_server=$2  
>     echo "Resolving $domain using DNS server: $dns_server"  
>     dig @$dns_server $domain +short  
> }  
[basant2@localhost ~]$  
[basant2@localhost ~]$ #To_Verify_DNS_Resolution  
v  
[basant2@localhost ~]$ check_dns_resolution() {  
>     echo "Verifying DNS resolution..."  
> }
```

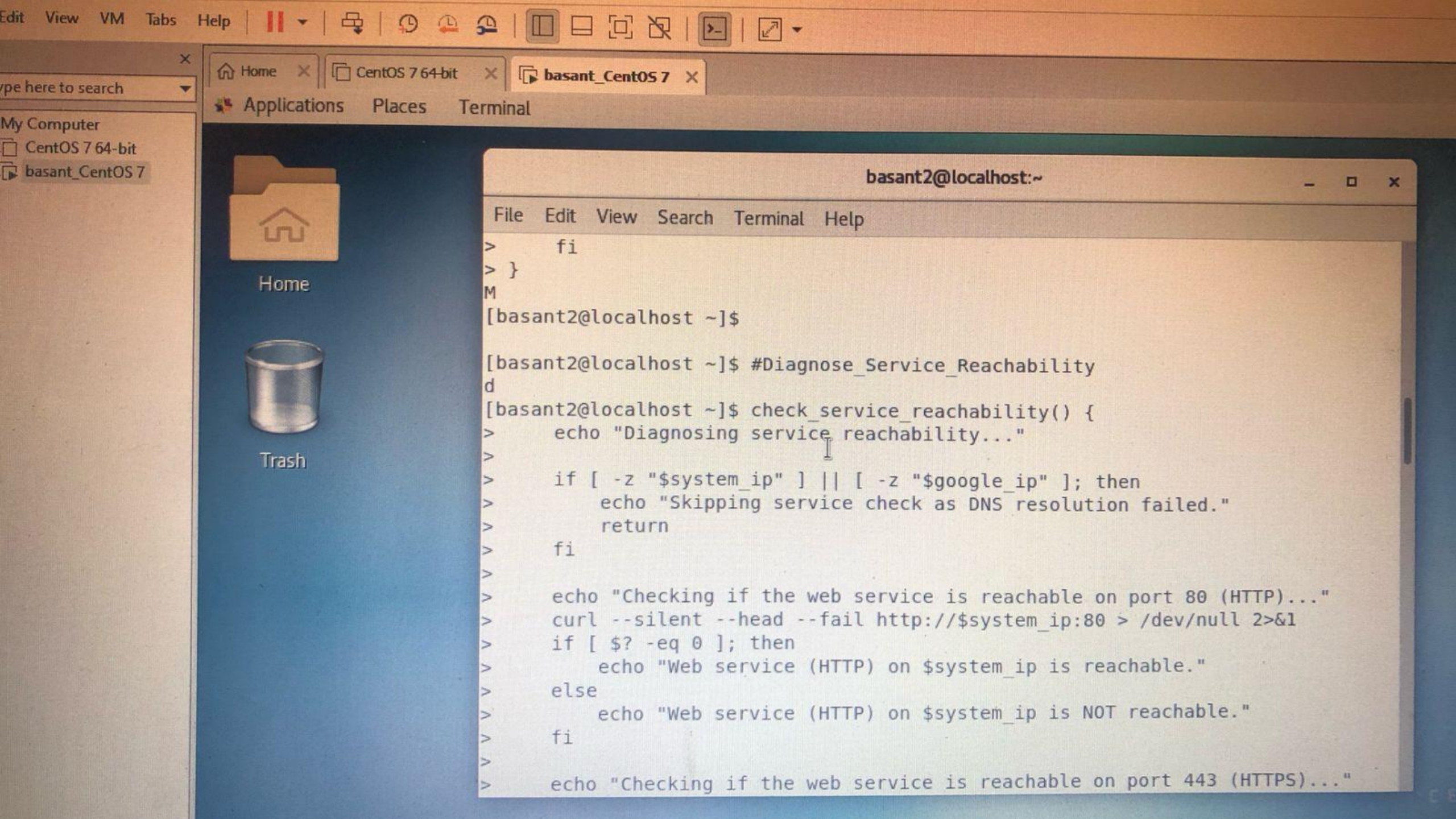



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```
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> #To Resolve_domain_using_system_DNS
> local system_dns=$(grep -E "^nameserver" /etc/resolv.conf | awk '{print $2}'')
> echo "Resolving '$DOMAIN' using system DNS: $system_dns"
> system_ip=$(resolve_domain $DOMAIN $system_dns)
> if [ -z "$system_ip" ]; then
>     echo "DNS resolution failed using system DNS."
> else
>     echo "Resolved '$DOMAIN' using system DNS: $system_ip"
> fi
>
> #TO Resolve_domain_using_Google_DNS
> echo "Resolving '$DOMAIN' using Google's DNS (8.8.8.8)..."
> google_ip=$(resolve_domain $DOMAIN "8.8.8.8")
>
> if [ -z "$google_ip" ]; then
>     echo "DNS resolution failed using Google's DNS."
> else
>     echo "Resolved '$DOMAIN' using Google's DNS: $google_ip"
> fi
>
> if [ "$system_ip" != "$google_ip" ]; then
>     echo "DNS resolution mismatch between system DNS and Google's DNS."
>     echo "Possible DNS misconfiguration or caching issue."
```

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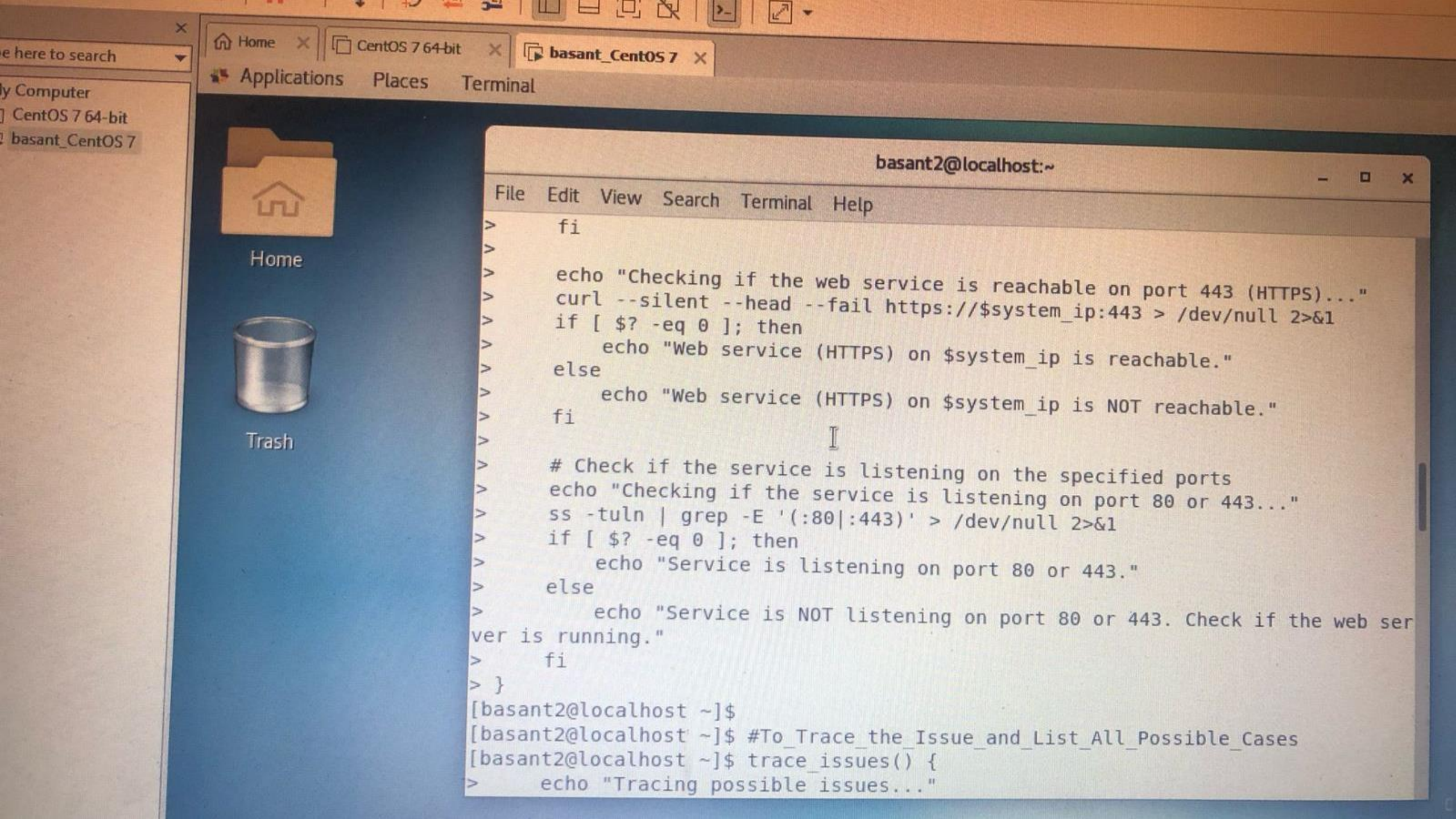


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```
> fi
> }
M
[basant2@localhost ~]$

[basant2@localhost ~]$ #Diagnose_Service_Reachability
d
[basant2@localhost ~]$ check_service_reachability() {
>     echo "Diagnosing service reachability..."
>
>     if [ -z "$system_ip" ] || [ -z "$google_ip" ]; then
>         echo "Skipping service check as DNS resolution failed."
>         return
>     fi
>
>     echo "Checking if the web service is reachable on port 80 (HTTP)..."
>     curl --silent --head --fail http://$system_ip:80 > /dev/null 2>&1
>     if [ $? -eq 0 ]; then
>         echo "Web service (HTTP) on $system_ip is reachable."
>     else
>         echo "Web service (HTTP) on $system_ip is NOT reachable."
>     fi
>
>     echo "Checking if the web service is reachable on port 443 (HTTPS)..."
```

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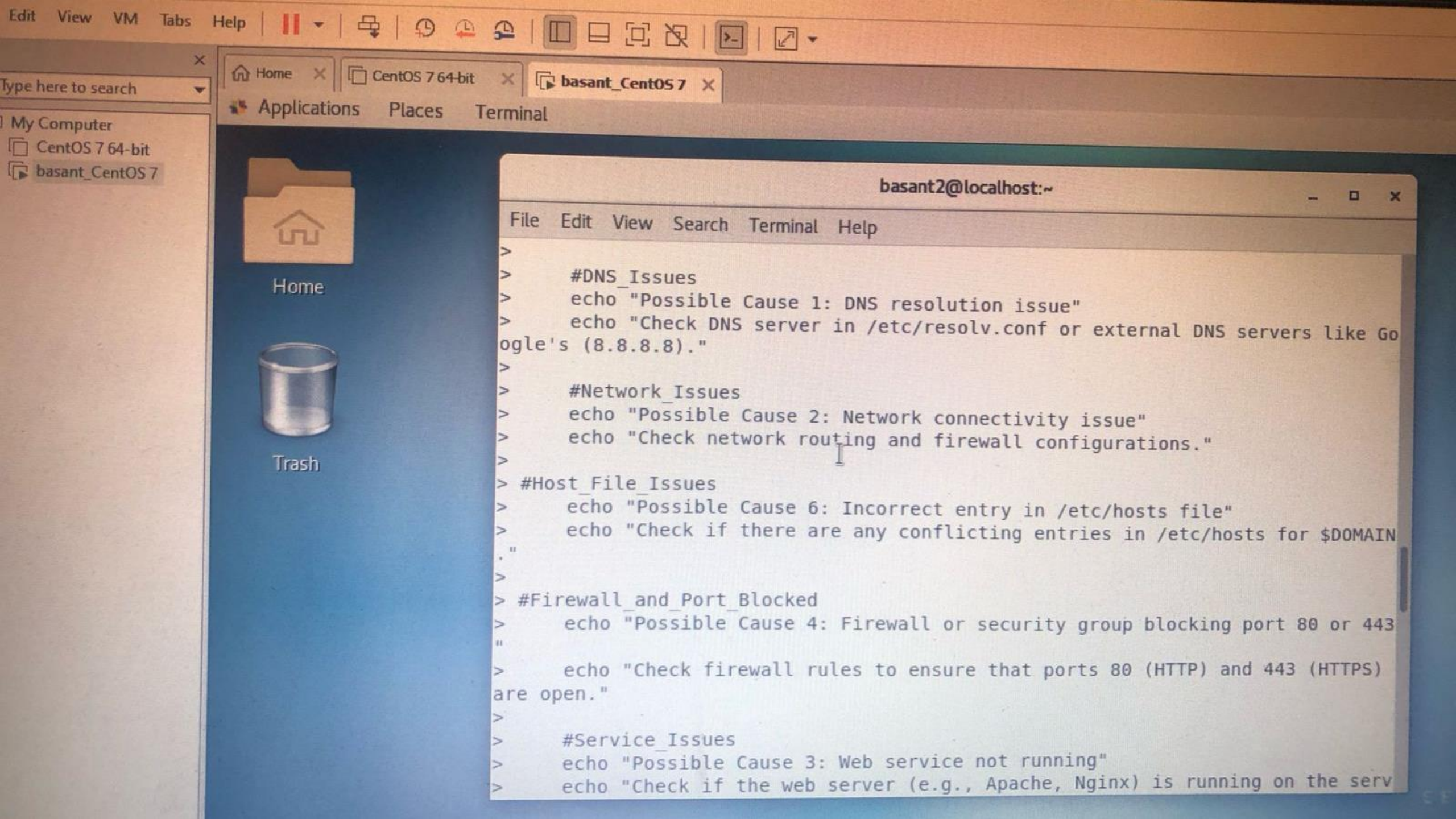


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```
> fi
>
> echo "Checking if the web service is reachable on port 443 (HTTPS)..."
> curl --silent --head --fail https://$system_ip:443 > /dev/null 2>&1
> if [ $? -eq 0 ]; then
>     echo "Web service (HTTPS) on $system_ip is reachable."
> else
>     echo "Web service (HTTPS) on $system_ip is NOT reachable."
> fi
>
> # Check if the service is listening on the specified ports
> echo "Checking if the service is listening on port 80 or 443..."
> ss -tuln | grep -E '(:80|:443)' > /dev/null 2>&1
> if [ $? -eq 0 ]; then
>     echo "Service is listening on port 80 or 443."
> else
>     echo "Service is NOT listening on port 80 or 443. Check if the web ser
ver is running."
> fi
> }
[basant2@localhost ~]$
[basant2@localhost ~]$ #To Trace the Issue and List All Possible Cases
[basant2@localhost ~]$ trace_issues() {
>     echo "Tracing possible issues..."
```

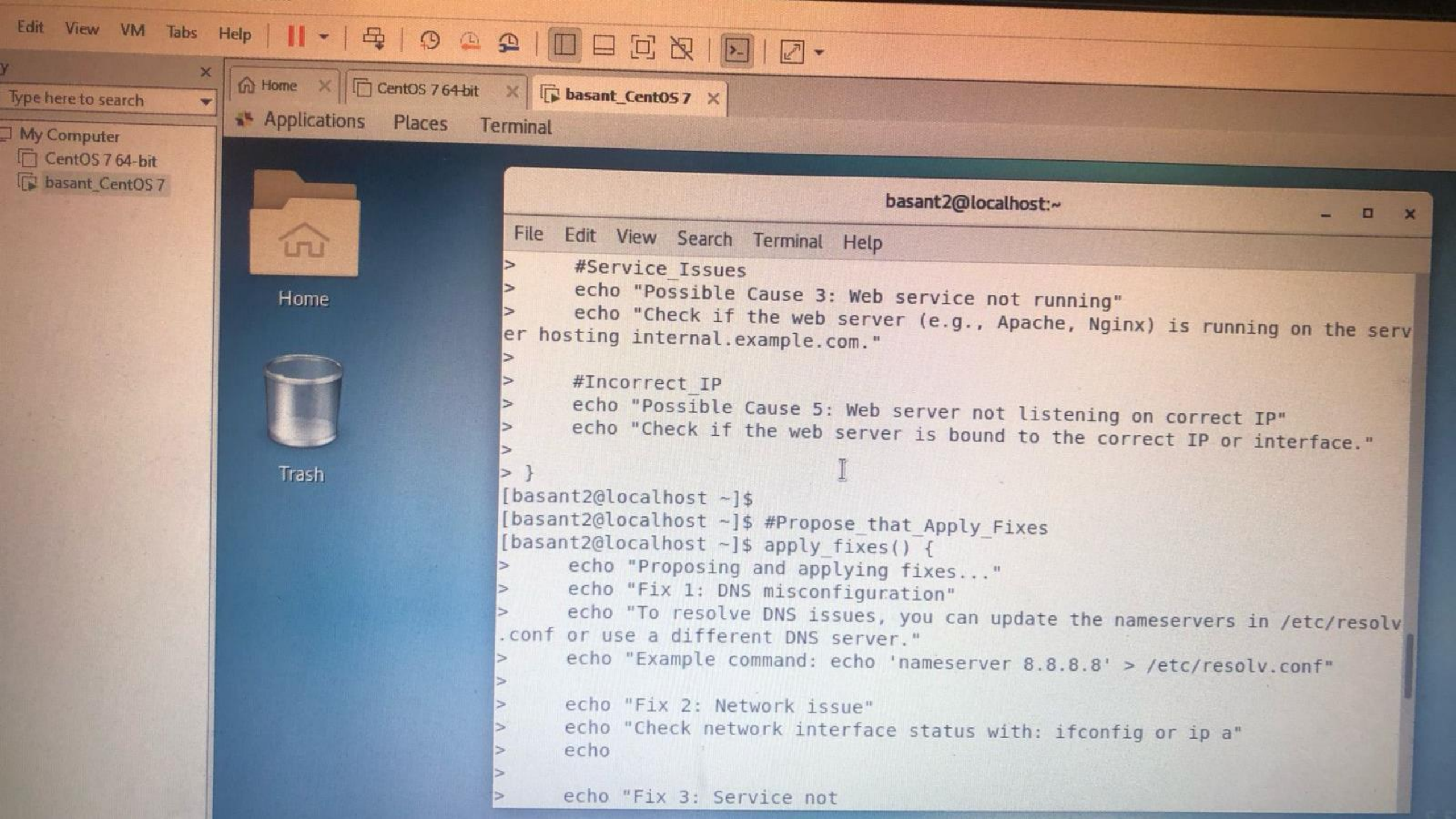



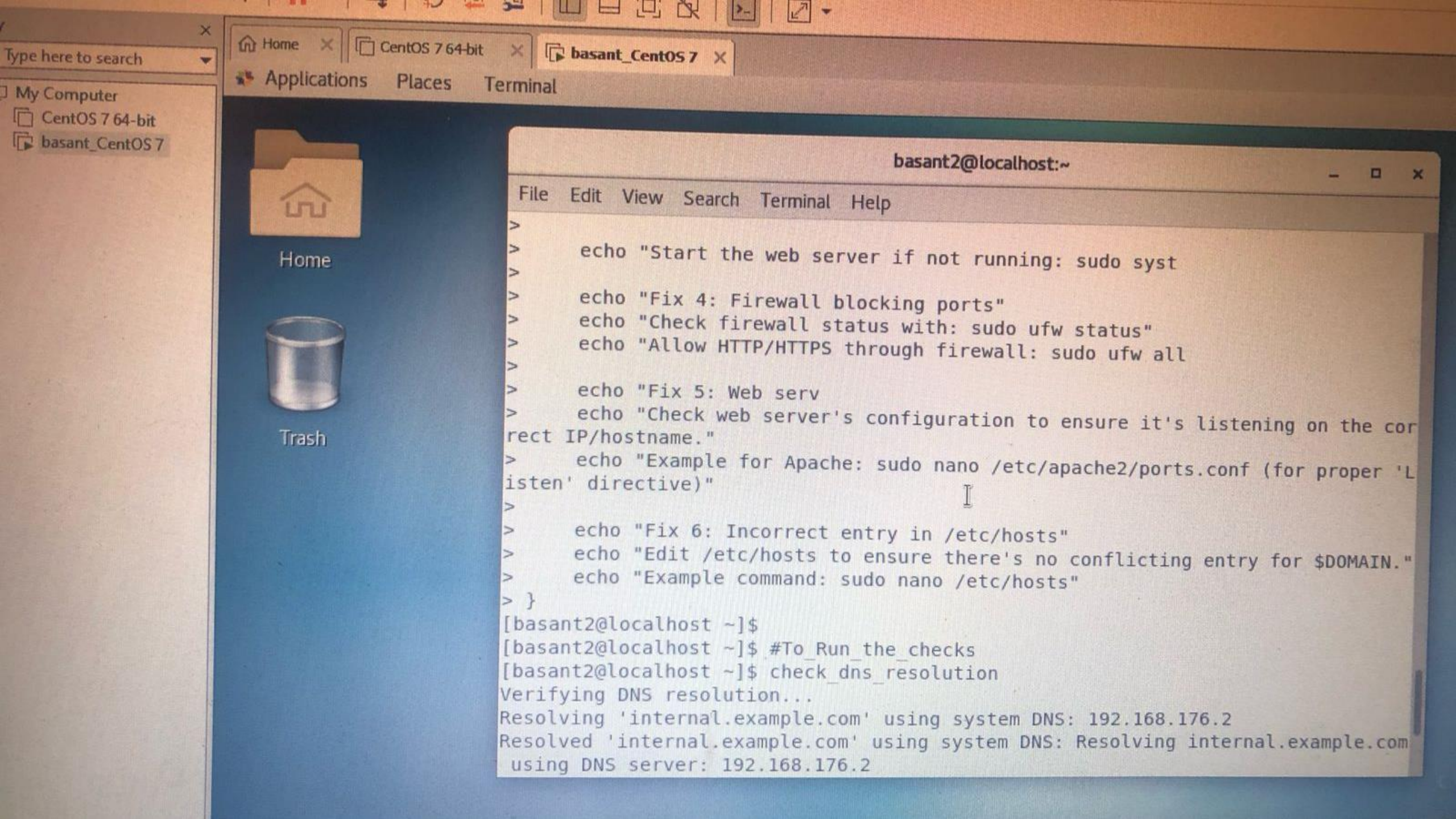
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```
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>  
> #DNS_Issues  
> echo "Possible Cause 1: DNS resolution issue"  
> echo "Check DNS server in /etc/resolv.conf or external DNS servers like Google's (8.8.8.8)."  
>  
> #Network_Issues  
> echo "Possible Cause 2: Network connectivity issue"  
> echo "Check network routing and firewall configurations."  
>  
> #Host_File_Issues  
> echo "Possible Cause 6: Incorrect entry in /etc/hosts file"  
> echo "Check if there are any conflicting entries in /etc/hosts for $DOMAIN"  
>  
> #Firewall_and_Port_Blocked  
> echo "Possible Cause 4: Firewall or security group blocking port 80 or 443"  
>  
> echo "Check firewall rules to ensure that ports 80 (HTTP) and 443 (HTTPS) are open."  
>  
> #Service_Issues  
> echo "Possible Cause 3: Web service not running"  
> echo "Check if the web server (e.g., Apache, Nginx) is running on the server"
```

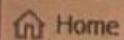


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```
>
> echo "Start the web server if not running: sudo syst
>
> echo "Fix 4: Firewall blocking ports"
> echo "Check firewall status with: sudo ufw status"
> echo "Allow HTTP/HTTPS through firewall: sudo ufw all
>
> echo "Fix 5: Web serv
> echo "Check web server's configuration to ensure it's listening on the cor
rect IP/hostname."
> echo "Example for Apache: sudo nano /etc/apache2/ports.conf (for proper 'L
isten' directive)"
>
> echo "Fix 6: Incorrect entry in /etc/hosts"
> echo "Edit /etc/hosts to ensure there's no conflicting entry for $DOMAIN."
> echo "Example command: sudo nano /etc/hosts"
> }
[basant2@localhost ~]$
[basant2@localhost ~]$ #To_Run_the_checks
[basant2@localhost ~]$ check_dns_resolution
Verifying DNS resolution...
Resolving 'internal.example.com' using system DNS: 192.168.176.2
Resolved 'internal.example.com' using system DNS: Resolving internal.example.com
using DNS server: 192.168.176.2
```




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```
>
> echo "Fix 6: Incorrect entry in /etc/hosts"
> echo "Edit /etc/hosts to ensure there's no conflicting entry for $DOMAIN."
> echo "Example command: sudo nano /etc/hosts"
> }
[basant2@localhost ~]$
[basant2@localhost ~]$ #To_Run_the_checks
[basant2@localhost ~]$ check_dns_resolution
Verifying DNS resolution...
Resolving 'internal.example.com' using system DNS: 192.168.176.2
Resolved 'internal.example.com' using system DNS: Resolving internal.example.com
using DNS server: 192.168.176.2
Resolving 'internal.example.com' using Google's DNS (8.8.8.8)...
Resolved 'internal.example.com' using Google's DNS: Resolving internal.example.c
om using DNS server: 8.8.8.8
DNS resolution mismatch between system DNS and Google's DNS.
Possible DNS misconfiguration or caching issue.
[basant2@localhost ~]$ check_service_reachability
Diagnosing service reachability...
Checking if the web service is reachable on port 80 (HTTP)...
Web service (HTTP) on Resolving internal.example.com using DNS server: 192.168.1
76.2 is NOT reachable.
Checking if the web service is reachable on port 443 (HTTPS)...
```