

# TCPWave IP Address Management System®

# Quick Start Guide IPv4 Management

Version 11.32P4





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## Contents

Document Change History	5
Key Terms	5
Scope and Purpose	6
About TCPWave	6
TCPWave DNS, DHCP, and IP Address Management	6
Get Started	6
Obtain Licenses	6
l og In to TCPWave IPAM	6
Update License Kevs	6
Dashboard	7
Executive Dashboard	7
Capacity Planning Dashboard	7
Custom Dashboard	8
	•
Lighter Mode	٥ و
Darker Mode	
	9
Change Password	9
Set Up IPv4 Management	
Create Organization	10
Create Admin Role	
Create Admin Group	
Create Admin User	
Add Location (Optional)	
Create Contact (Optional)	
Create Domain	
Create IPV4 Network	
Create Subnet Group (Optional)	
Create IPv4 Subnet	14
	15
Create DNS Acc	15
Create DNS Log Chamics (Optional)	
Create DNS Option Template	
Create DNS Appliance	19
Create DNS Zone Template	
Create DNS Zone	
Create DNS Root Zone (Optional)	
Create DHCP IPv4 Option Template	21
Create DHCP Policy Template	23
Create DHCP IPv4 Appliance	24
Create DHCP IPv4 Scope	26



Verify DNS and DHCP Setup	
Verify DNS Setup	
Verify DHCP Setup	



## **Document Change History**

Revision Date	Summary of Changes
August 2022	Added Capacity Planning Dashboard
February 2022	Added Custom Dashboard feature.
	UI supports two modes – lighter mode and darker mode.
April 2021	Added DNS TSIG Keys details
January 2021	Added DNS Views details
February 2021	Updated format slightly and clarified content
September 2020	Added License Details
January 24, 2020	Updated document to new format
August 07, 2019	Updated document to the new format
June 24, 2019	Updated few sections with screenshots
May 9, 2018	Updated all the sections with navigation and screenshots
October 2, 2017	Updated all the sections. Modified the navigation
May 2, 2017	Updated all the sections. Changed the navigation from DNS & DHCP to Network
	Management
November 22, 2016	Updated the following sections: Creating Object, Creating DNS Appliance, and Creating
	DHCP Appliance
October 6, 2016	Updated the following section: Creating DNS Appliance
August 24, 2016	Updated the Login information

## **Key Terms**

Term	Description
ACL	Access Control List
BIND	Berkeley Internet Name Domain
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DNSSEC	Domain Name System Security Extensions
FADM	Functional Administrator
GUI	Graphical User Interface
IPAM	Internet Protocol Address Management
SNMP	Simple Network Management Protocol



UADM

User Administrator

## Scope and Purpose

This guide provides instructions to set up IPv4 Management, including creating a Domain Name System (DNS) Appliance and a Dynamic Host Configuration Protocol (DHCP) Appliance in the TCPWave Internet Protocol Address Management (IPAM) system. Emphasis is placed on critical operational tasks to configure TCPWave IPAM quickly and verify the basic setup of IPv4 Management.

## **About TCPWave**

TCPWave is committed to securely developing the highest quality software solutions, products, and services for our customers. Our Infrastructure-as-a-Service (IaaS) design can manage and monitor large, complex environments, including cloud- and on-premise-based environments.

TCPWave has global customers in every primary market and serves them with a dedicated staff who work at the highest level of professionalism and help customers succeed in their ventures. Furthermore, TCPWave has strategic partnerships with leading appliance providers who maintain appliances in over 100 countries worldwide.

## **TCPWave DNS, DHCP, and IP Address Management**

TCPWave's IP Address Management (IPAM) enables network administrators to efficiently and intelligently automate the allocation and de-allocation of IP address resources. The system dynamically manages available IP address space by complying with organizations' address and security policies. Also, the system provides an intuitive GUI through which users can manage Domain Name System (DNS) and Dynamic Host Configuration Protocol (DHCP) services. TCPWave's IPAM has a rich feature set built using modern technology. It is a single, agile solution for IP, DNS, and DHCP Management for many organizations' constantly changing IT needs.

## **Get Started**

To start using TCPWave IPAM, get needed licenses, log in to it, update license keys, and then change the password.

#### **Obtain Licenses**

TCPWave IPAM and Remote Appliances are licensed products. To request licenses, contact TCPWave Support (<u>support@tcpwave.com</u>) or visit the customer portal (<u>https://www.tcpwave.com/portal</u>).

#### Log In to TCPWave IPAM

Log in to TCPWave IPAM by first navigating to the URL https://<your-fully-qualified-hostname>or<IP Address>:7443/tims (Example, https://10.1.1.10:7443/tims). Then log in to the IPAM GUI using the default credentials provided by TCPWave.

#### **Update License Keys**

To update the license keys in TCPWave IPAM, do the following:

- 1. Navigate to Administration >> Configuration Management >> License Management.
- 2. On each of the IPAM, DNS, and DHCP tabs, do the following:
  - a. Click on Update License.



Result: The Update License dialog box is displayed.



- b. Enter the license key.
- c. Click OK.

#### **Dashboard**

TCPWave offers the following Dashboards:

- Predefined Dashboard
  - Executive Dashboard
  - Capacity Planning Dashboard
- Custom Dashboard

#### **Executive Dashboard**

It presents an overview of network infrastructure metrics. It displays counters, statistics, alerts, graphical summary reports, and other information organized in nine widgets.

#### **Capacity Planning Dashboard**

It provides a comprehensive snapshot of DNS, DHCP, and IPAM parameters in various widgets. It helps the organizations make informed decisions that might impact business performance. For more details, refer to *TCPWave Administrators Guide* 





#### **Custom Dashboard**

The TCPWave's Custom Dashboard enables you to analyze a set of comprehensive data from across the entire application in a single pane of glass on the home screen. After the patch deployment, users must click the Reset icon to load the latest dashboard changes. The Reset icon is present next to the Dashboard >> Executive

TCPWave Blosshboard • Zuick Tasks 🖾 Network Management • 🗃 Intrastr	icture Management • 🖉 Reports • 👹 Administration •						≜ <u>All</u>	<u>- q ? 0 0</u>
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#### **UI Modes**

The UI supports two modes across the entire application – One is a lighter mode, and the other is the darker mode. The following figures illustrate the examples of both the modes of the Quick Tasks page.

#### **Lighter Mode**

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	8		- <b>A</b>	
	IPv4 Network		IPv4 Subnet	
	Create or delete an IPv4 network in the IPAM.		Create or delete a subnet in an existing IPv4 network.	
	IPv4 Object		IPv4 DHCP Scope	
	Create or delete an object in existing IPv4 subnet.		Create or delete an IPv4 DHCP scope.	
	A Resource Record		CNAME Resource Record	
	Create or delete A record for an existing object.		Create or delete alias of an existing object.	
1				
	MX Resource Record		TXT Resource Record	
	Create or delete Mail Exchanger record of an existing object.		Create or delete TXT record of an existing object.	-
- <sup>-</sup>			·	0
Session Exp	ms to 00 59 47 TMS IPAM Software 8 2013-2022	TCPWave Inc., All R	ohls Reserved. January 12th 2022, 6:20:50 AM GMT	C Lizense Expires in 333 Dava



#### **Darker Mode**



#### **Change Password**

After logging in, immediately change the password of the Functional Administrator (FADM), which is named twcadm.

1. In the **Profile** section, click **Change Password**.

**Result**: A validation message is displayed to check if you want to proceed.

2. Click Yes.

Result: The Change Password screen is displayed.

- 3. Enter the Current Password.
- 4. Populate New Password and Re-enter Password.
- 5. Click **OK**.

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	Change	Passwor	d		×
Login Name* twcadm					
Current Password	×.				
New Password*					
Re-enter Passwor	rd*				
			ок	CANCEL	ĺ



You can create a User Admin (UADM) account and lock out the FADM (twcadm) account for improved security. See <u>Create Admin User</u> below for information on creating a UADM.



## Set Up IPv4 Management

To set up IPv4 Management, including creating a DNS Appliance and DHCP Appliance, complete one or more steps in each of the following areas in the stated sequence:

- 1. Organization
- 2. Administrator
- 3. Domain
- 4. Network
- 5. Subnet
- 6. Object
- 7. DNS Appliance
- 8. DHCP Appliance

The details of the steps in these areas are provided in the table below. Note that some steps are optional and can be skipped or done later.

Step	Procedure	Screenshot
1	<pre>Create Organization To create an Organization, navigate to Administration &gt;&gt; Configuration Management. a. Click  . b. Enter the organization Name and, optionally, a     Description. c. Click OK.</pre>	Organization       Create Organization         Organization Details
	<ul> <li>There is a default Organization called Inter Organization.</li> <li>If Root Zone is enabled, you can create a re</li> </ul>	nal. However, it is recommended that you create your own oot zone in an Organization.







Step	Procedure	Screenshot
	<ul> <li>e. Select the default Admin Role.</li> <li>Note: The system selects a default Organization based on the selected role.</li> <li>f. Click OK.</li> <li>Add Location (Optional)</li> <li>To add a Location, navigate to Administration &gt;&gt; Location Management.</li> <li>a. Click <sup>(1)</sup>.</li> </ul>	TCPWaye     Bl Dashboard     Quick Tasks     B Network Management *     Is industructure Management *     It Reports *     It Administration *       Search pages     Consiguration MANAGEMENT     Constact MANAGEMENT     Ogeneration*     Internal     •       Constact MANAGEMENT     Search *     Search *     Search *     Search *     Search *
5	<ul> <li>b. Choose an Organization from the drop-down menu.</li> <li>c. Enter Street 1, City, State, Zip Code, and Country.</li> <li>d. Click OK.</li> </ul>	COLORIN MANAGEMENT     SECURITY MANAGEMENT     CIG/*     CHANGE MANAGEMENT     DISASTER RECOVERY     DISASTER RECOVERY     PATCH MANAGEMENT     Zp Codx*     Contry*     Contry*     Contry*     Contry*     CONTRY*     CANCEL
6	<ul> <li>Create Contact (Optional)</li> <li>To create a Contact, navigate to Administration &gt;&gt;</li> <li>Contact Management.         <ul> <li>a. Click •</li> <li>Result: The Create Contact page is displayed.</li> <li>b. Choose an Organization from the drop-down menu.</li> <li>c. Enter First Name, Last Name, and Email.</li> <li>d. Click OK.</li> </ul> </li> </ul>	III Dashboard       2 Datk Tasks       E Network Management       Infastructure Management       In







Step	Procedure	Screenshot
9	<ul> <li>Create Subnet Group (Optional)</li> <li>To add an IPv4 Subnet Group, navigate to Network</li> <li>Management &gt;&gt; IPv4 Address Space &gt;&gt; IPv4 Subnet</li> <li>Groups.</li> <li>a. Click •.</li> <li>Result: The Create Subnet Group page is displayed.</li> <li>b. Choose an Organization from the drop-down menu.</li> <li>c. Enter the Name of the subnet group and, optionally, a Description.</li> <li>d. Click OK.</li> </ul>	If Dashboard       2 Outek Tasks       1 Network Management       1 Infrastructure Management       2 Reports       2 Adm         If Dashboard       Cutek Tasks       1 Network Management       1 Infrastructure Management       2 Reports       2 Adm         If Dashboard       If Dashboard       SubtretGroups       Create SubmetGroups       Infrastructure Management       2 Reports       2 Adm         If PV4 ADDRESS SPACE       If PV4 Network       If Infrastructure Management       If
	network hierarchy are inherited by lower-lev or Subnet Group applies to the underlying Su	s to administrators. Privileges assigned at a higher level in the el network elements. For example, a Read privilege in a Network bnets and Objects.
10	<ul> <li>Create IPv4 Subnet</li> <li>To create an IPv4 Subnet, navigate to Network</li> <li>Management &gt;&gt; IPv4 Address Space &gt;&gt; IPv4 Networks.</li> <li>a. Select the network in which you want to create the subnet.</li> <li>b. Click .</li> <li>c. Click .</li> <li>c. To Create multiple subnet page is displayed.</li> <li>c. To Create multiple subnets, select Yes.</li> <li>d. Select the desired mask length by using the Mask slider.</li> <li>e. Select Show available subnets to view the available subnets for the selected mask.</li> <li>f. Choose the desired subnets from the Available Subnets list.</li> <li>g. Enter a Subnet Name.</li> <li>h. Choose Primary Domain and Primary Router values from the respective drop-down menus.</li> <li>i. Click OK.</li> </ul>	

## TCPWave





	the blackhole option. DNS Zone Templates	and DNS Option Templates apply to DNS Managed Zones and
	DNS Appliances.	
13	<ul> <li>DNS Appliances.</li> <li>Create DNS Log Channels (Optional)</li> <li>To create DNS log channels, navigate to Network</li> <li>Management &gt;&gt; DNS Management &gt;&gt; DNS</li> <li>Configuration &gt;&gt; DNS Log Channels.</li> <li>a. Click •.</li> <li>b. Choose a Channel Type from the drop-down menu.</li> <li>c. Enter a name for the Channel.</li> <li>Note: This name can later be associated with one or more BIND categories, such as lame-servers or RPZ, in the Loggers section of a DNS Appliance Template.</li> <li>d. If the Channel Type was left at the default of File, then do the following: <ul> <li>i. Enter the File Name for the log.</li> <li>ii. Enter the number of log file Versions to keep before the files are rotated.</li> <li>iii. Enter the Size of each log file in MB before it is rotated.</li> </ul> </li> <li>e. If the Channel Type is SYSLOG, choose the SYSLOG Facility from the drop-down menu.</li> <li>f. Choose the desired Severity, such as Info, from the drop-down menu. This controls the level of detail in the log, and it will contain the chosen level and higher.</li> <li>g. Select Print Time, Print Severity, and Print Category as needed for the information desired in the log.</li> <li>h. Click OK.</li> </ul>	Image: Store all appliance types, but user-created log channels can br associated with BIND



Step	Procedure	Screenshot
14	<ul> <li>Create DNS Appliance Template</li> <li>To create a DNS Appliance Template, navigate to Network Management &gt;&gt; DNS Management &gt;&gt; DNS</li> <li>Templates &gt;&gt; DNS Appliance Templates.</li> <li>a. Click </li> <li>b. Choose a DNS Appliance Type from the drop- down menu.</li> <li>c. Enter a Template Name.</li> <li>d. If automatic updates of IPAM, DNS, and DHCP Appliances are desired, select Enable Dynamic Updates.</li> <li>e. If logging of DNS queries and responses is desired, select Enable DNSTAP Logs.</li> <li>f. If the DNS Appliance Type is ISC BIND Authoritative or DNS Proxy, then the TSIG Algorithms section is displayed. In this case, click</li> <li>o, and choose an Algorithm from the drop- down menu, enter the Bit Size, and then click OK. Note: Transaction Signatures (TSIG) are a mechanism used to secure DNS messages and provide secure appliance-to-appliance communication.</li> <li>g. If the DNS Appliance Type is ISC BIND Authoritative, ISC BIND Cache, or DNS Proxy, then the Loggers section is displayed. Loggers are used to log messages to different log channels. If this section is shown, click </li> <li>and do the following: <ul> <li>i. Choose a Category from the drop-down menu. The choices are based on the logging categories in BIND DNS.</li> <li>ii. Choose a Channel from the drop-down menu. The choices are the default log channels in TCPWave plus any that were</li> </ul> </li> </ul>	



Step		Procedure	Screenshot
		created in the step Create DNS Log Channels	
		(Optional).	
	Procedure         created in the step Create DNS Log Channels (Optional).         h. (Optional) Under certain conditions, configure information in the DNS Forwarders tab. This tab is enabled for both Internal Cache appliances and BIND Authoritative and Cache appliances.         Appliances with an internal cache can resolve zones that are in TCPWave IPAM. If a user wants to resolve to external zones using an appliance with an internal cache, then the user should add the external zones in the DNS Forwarders tab.         Note that it is not possible to create DNS		
	infor	mation in the <b>DNS Forwarders</b> tab. This tab	
	is en	abled for both Internal Cache appliances and	
	BIND	Authoritative and Cache appliances.	
	Appl	iances with an internal cache can resolve	
	zone	s that are in TCPWave IPAM. If a user wants	
	to re	solve to external zones using an appliance	
	with	an internal cache, then the user should add	
	the e	external zones in the <b>DNS Forwarders</b> tab.	
	Note	that it is not possible to create DNS	
	forw	arders when DNS Views are enabled in IPAM.	
	i. Click	ОК.	
		TCPWave IPAM provides default DNS Applian Appliance Templates can be used instead of c Templates are applied to DNS Appliances at t	ce Templates for all appliance types, but user-created DNS lefault ones to customize template values. DNS Appliance he server level.
	Create I To create Managem	DNS Option Template a DNS Option Template, navigate to Network nent >> DNS Management >> DNS Templates	TO/Wyr Rinner Zothin Anneheument Stendebrauet (Fran Vienager ) 12. 4 Q ? 0 0 B
	>> DNS O	ption Templates.	
	a. Click	<b>O</b> .	Name         Registration         Registration <thregistration< th="">         Registration</thregistration<>
	b. Choc	ose an <b>Organization</b> from the drop-down	A Advisor     A Advisor     A Advisor     A Advisor
15	meni	u.	May be appendixed         May         May         May           10 May and May
	c. Enter	r a <b>Template Name.</b>	
	d. Enter	r additional information, such as in the <b>Rate</b>	Million Advance & Particul Transfer & Advanced
	Limit	section, as needed	
	e. Click	ОК.	
		DNS Option Templates are applied to DNS Ap configuration files.	pliances in order to set values in the options blocks of DNS



Step	Procedure	Screenshot
<b>Step</b>	Procedure         Create DNS Appliance         To create a DNS Appliance, navigate to Network         Management >> DNS Management >> DNS         Appliances.         a. Click •         a. Click •         Result: A page is displayed on which BIND Authoritative, BIND Cache, NSD, Unbound, and DNS Proxy appliances can be created.         b. Enter an IPv4 Address of an existing object that has an Object Type of TCPWave Remote.         Result: A lookup is done, and values for Host Name and Domain Name are retrieved.         c. Choose values for the DNS Appliance Template and DNS Option Template from the respective drop-down menus.         d. Click the NTP and DNS Resolver tab, and then enter the IP address of an NTP server.         Note: A TCPWave appliance requires a time server for synchronization. If there is not an NTP server, such as a Domain Controller, in your network, you can do a search on the internet to find a public NTP server to use.         e. Also on the NTP and DNS Resolver tab, in Name Appliance enter the IP address of another DNS server that can be used for DNS resolution during server startup. This can be a DNS server on your network or a public DNS server, such as 8.8.8.8.         Up to four other DNS servers can be entered in case one or more are unavailable.         f. Click the Monitoring tab, and then enter values for Trap Sink-1, Trap Sink-2, Community String, and Processes to be Monitored. The trap sink values are IP addresses that are destinations for sending SNMP traps. Also, select at least one	



Step	Procedure	Screenshot
	processes to be monitored.	
	g. Click <b>OK</b> .	
17	<ul> <li>Create DNS Zone Template</li> <li>To create a DNS Zone Template, navigate to Network</li> <li>Management &gt;&gt; DNS Management &gt;&gt; DNS Templates</li> <li>&gt;&gt; DNS Zone Templates.</li> <li>a. Click •.</li> <li>b. Choose an Organization from the drop-down menu.</li> <li>c. Enter a Template Name.</li> <li>d. In the SOA Record Attributes section, enter the Email Address of the administrator responsible for the zone.</li> <li>e. Click the TCPWave DNS Appliances tab, and then select master and slave DNS appliances.</li> <li>f. Click OK.</li> </ul>	<complex-block><complex-block><complex-block></complex-block></complex-block></complex-block>
	Microsoft DNS Master Appliances tab: When Template page, all the zones associated with Cloud DNS Providers tab: This tab displays th template.	L a Microsoft DNS master appliance is selected in the Zone the template are updated in the Microsoft DNS appliances. e list of cloud DNS providers that are associated with the zone
18	<ul> <li>Create DNS Zone</li> <li>To create a DNS Zone, navigate to Network</li> <li>Management &gt;&gt; DNS Management &gt;&gt; DNS Zones &gt;&gt;</li> <li>Managed DNS Zones.</li> <li>a. Click <sup>(1)</sup>.</li> <li>b. Choose an Organization from the drop-down menu.</li> <li>c. Choose a zone template from the Apply Template drop-down menu.</li> <li>d. Enter a valid Zone Name, for instance example.com.</li> <li>e. (Optional) Enter a Contact, a Description, or both.</li> <li>f. (Optional) Select the options Enable DNSSEC,</li> </ul>	Image: Control of the second secon



Step	Procedure	Screenshot
	<ul> <li>Restrict Zone, Monitoring Service, DMZ Visibility, and Enable Active Directory Updates as needed.</li> <li>g. (Optional) Click the Resource Records tab, and then add any resource records that are needed at the zone level. Supported record types are A, AAAA, CNAME, MX, SRV, TXT, NAPTR, and NS.</li> <li>h. Click OK.</li> </ul>	
19	<ul> <li>Create DNS Root Zone (Optional)</li> <li>To create a DNS Root Zone, navigate to Network</li> <li>Management &gt;&gt; DNS Management &gt;&gt; DNS Zones &gt;&gt;</li> <li>DNS Root Zone.</li> <li>a. Click •.</li> <li>b. Choose an Organization from the drop-down menu.</li> <li>c. (Optional) Select Enable DNSSEC, and then choose an NSEC Option from the drop-down menu.</li> <li>d. Enter a Default TTL value, and choose an associated time unit from the drop-down menu.</li> <li>e. For Allow Query, enter an IP address or ACL.</li> <li>f. (Optional) Enter a Contact, a Description, or both.</li> <li>g. Click the Root Appliances tab, and then select a Root Server.</li> <li>h. Click OK.</li> </ul>	
20	Create DHCP IPv4 Option Template To create a DHCP IPv4 Option Template, navigate to Network Management >> DHCP Management >> DHCP Templates >> IPv4 Option Templates. Note that this step is required to create a DHCP IPv4 Scope. a. Click •. b. Enter an Option Template Name. c. Choose an Organization from the drop-down menu.	Town       Town       Control       <



Step	Procedure	Screenshot
	d. Click the expand icon in the upper left part of the	Des ortan reune outor     Des unternet outore     Des anternet outore
	screen to see the available DHCP options, which	Exhibit Sourdiversal     Know     Know     Source
	are defined in Internet RFCs. The options are	upun3.44         The relation ring.           upun3.48         The relation ring.           upun4.48         The relation ring.           upun4.40         The relation ring.
	grouped based on the RFC in which they were	spine 85     Inser a transmer union trans in fans     upper 48     The first and final transmer union transmer (final transmer)
	introduced. Also, at the bottom of the page are	blut typer Second
	custom-defined DHCP options.	
	Many of the options that are blank, such as Name	An Antworkship Protocol Copys
	Server (5), are seldom used in modern networks.	SP Farenes     AF Ansat Quints     Af Ansat Quints     Of Control Office     Of Control Office
	Others are used for only special kinds of DHCP	Bits         Victor         None           Name         Name and in submer profile           Detert/Next/11         Same and in submer profile
	clients.	Tex CPME (2)         Tex CPME (2)           Moder (2)         Tex CPME (2)           Moder (3)         Tex as its addree profile           Tex Store (4)         Tex Store gains quadra to file (1) for some and/off to the dec.
	Some option values in the group RFC 1497	Next Show(1)         The came wave aver splitting specifies a fit of some waves available to the closet.           Decars Some (b)         The decard wave some splitting specifies a fit of Decard Tames (pointer same waves available to the closet.
	Vendor Extensions cannot be changed. Subnet	Lig Source (7)         The lug more reprint particles in a far dd M-2(, SU SD up more addre tarbit de the dise.)           Outres Source (8)         The quant Source reprint spacefuls for all Particulus in Part Advenue.           Life Source (8)         The lug more reprint spaceful for advenues to reprintspaceful for advenues to reprintspaceful for advenues
	Mask (1) and Router (3) are populated with Same	Pepeer New (5) Per Pepeer and and a set of magnet representation of the closes. Ref. Secure (5) Ref. Secure (5
	as in Subnet Profile, and these cannot be	Refri Ser (5) In coince guestion the length in 13, coint laterals of the adduct team ways for the determined on a cointernal of the adduct team ways for the determined on a cointernal of the adduct team ways for the determined on a cointernal of the adduct team ways for the adduct team ways fore
	changed or removed. Domain Name (15) is set to	
	Same as the primary domain in subnet profile	
	and also cannot be changed or removed.	PerFektpins Imple: Too
	e. Enter values for <b>Option 1</b> , <b>3</b> , <b>6</b> , and <b>15</b> , since	Open         Interval         Encode           Image:
	these are required for almost all DHCP clients.	Non         Mail           0         SO CRAMIN GROUP           0         So CRAMIN GROUP           0         So CRAMIN GROUP
	f. Enter a value for the Domain Server (6) option. It	TO Parama
	is not defined by default, but at least one DNS IP	New         Year           Barry Who ()         Barry and analysis/phil           Sec (Marc)()         Participation (in the failer office
	address is needed in order for this template to be	Nate:         Description           Section 24         Fract scher participation and scher participation an
	useful for Windows, Apple, Android, and most	
	other DHCP clients. This option specifies the DNS	
	appliance(s) that DHCP clients use for DNS	
	queries.	
	One or more IP addresses (not names) are	
	required for this server option. If you do not	
	remember the IP address of a DNS appliance, you	
	can open another IPAM window and do a Global	
	Search using a DNS appliance name. For multiple	
	IP addresses, separate them with commas. For	
	example, "192.168.1.27,196.168.0.5". An IP	
	address does not necessarily have to be a	
	TCPWave-managed IP address. For example, you	



Step	Procedure	Screenshot
	can enter "8.8.8.8," which is for one of Google's	
	public DNS servers.	
	g. Populate other options as needed. Some of the	
	more commonly used options are highlighted in	
	green. Some options use a specific type of value,	
	such as a numeric, boolean, IP address, or text	
	string. There is a drop-down list for Domain	
	Search (119). Some options are used just for	
	special DHCP clients (such as PXE clients, clients	
	running old Windows versions, and certain phone	
	models) that need to receive these options from	
	DHCP appliances. DHCP option values are null by	
	default and are only used if values are assigned to	
	them.	
	h. Click <b>OK</b> .	
	DHCP IPv4 Option Templates are applied to D	HCP IPv4 Scopes to configure the DHCP options that DHCP
	servers send to clients.	
	Create DHCP Policy Template	
	To create a DHCP Policy Template, navigate to <b>Network</b>	
	Management >> DHCP Management >> DHCP	
	Templates >> Policy Templates. Note that this step is	
	required to create a DHCP IPv4 Appliance.	
		Oct2 May Tanguta         Collad Oct2 Play Tanguta           Yang Tenada Mark         Department           Deckub Dick Play Play Tanguta         E.0111
		ochhies
	b. Enter a <b>Policy Template Name</b> .	Kore Autors     Kore     Actoria     Agence     Strender     Stre
	c. Choose an <b>Organization</b> from the drop-down	ia faily
21	menu.	Anyobashari Varian Varian Angeleta Ang
	d. (Optional) Enter a <b>Description</b> .	Network         Other and/or sectors 15:000           Rever Appr Open         Even and/or sectors 15:0000           Rev Appr Open         Even star or file
	e. Click DHCP Policies to expand the folders named	User-Holing Assess
	Global Parameters, DHCP Client-Server	
	Communications Parameters, and Client	
	Handling Parameters.	
	f. In the Global Parameters folder, enter values for	
	Authoritative (yes or no), DB Time Format, and	
	Log Facility as needed.	



Step	Procedure	Screenshot
	g. In the DHCP Client-Server Communications	Charlondy Durants
	Parameters folder, populate values as needed.	Advication for Advice State         Directing priority (State State           Biological Conduction         Directing priority (State State State           Biological Conduction         Directing priority (State State St
	h. In the Client Handling Parameters folder,	Maximum         Description           Bases and T         Bases and T
	populate values as needed. Note that <b>Default</b>	Brisland         021 100 2019           Brisland         Dirawa Uta           Ryalak         Dirawa Uta           Ryalak         Dirawa Uta           Ryalak         Dirawa Uta
	Lease Time is prepopulated with a default value.	Between Altho         Devices the file           Between Althout         Provision of althout           Between Althout         Provision of althout           Between Althout         Provision of althout
	i. Click <b>OK</b> .	By Catate Name         Description           Marce State State         Description
	DHCP Policy Templates are applied to DHCP A	L Appliances to set server-level policies.
	Create DHCP IPv4 Appliance	
	To create a DHCP IPv4 Appliance, navigate to Network	
	Management >> DHCP Management >> DHCP	
	Appliances >> DHCP IPv4 Appliances. The following	
	configuration options are available for DHCP	
	Appliances:	
	Primary DHCP Appliance	
	Primary DHCP Appliance with no failover	
	Primary DHCP Appliance with a failover	ТОНууд Влимет Уликала Алакаланананан Эликаланананан Элик Фаналан — Фал. + G 7 Ø 0
	Complete the steps below on the following tabs:	
	Appliance Configuration tab:	A CAN BERNARDER *         Ment         Normal           A CAN BERNARDER *         Ment         Normal Network         Normal Network           C MENDARDER *         Ment         Normal Network         Normal Network
22	a. Click 🕒.	
	b. Choose an <b>Organization</b> from the drop-down	KOV XXVL      Marchae     Kov XXVL
	menu.	TO TA L SAN AGREE     Market Mar
	c. Enter the IPv4 Address of an existing object that	Automatical and a constraint of the second sec
	has an Object Type of TCPWave Remote.	
	Result: The Name of the DHCP Appliance and its	
	Domain Name are automatically populated.	
	d. Select a DHCP Policy Template from the drop-	
	down menu.	
	e. Select a time zone from the Time Zone Settings	
	drop-down menu.	
	f. Click <b>OK</b> .	
	MAC Exclusion tab (Optional):	



Step	Procedure	Screenshot
	a. Enter MAC addresses of clients that should not	
	receive DHCP information from the Appliance.	
	Banner tab (Optional):	
	a. Enter a message to display after a user logs in to	
	the DHCP Appliance.	
	NTP and DNS Resolver tab:	
	a. Enter one or more IP addresses in NTP	
	Appliances.	
	b. In the Name Appliances section, enter an IP	
	address in NS Appliance-1.	
	Monitoring tab (Optional):	
	a. In the SNMP Configuration section, enter values	
	for Trap Sink-1, Trap Sink-2, and Community	
	String. The trap sink values are IP addresses that	
	are destinations for sending SNMP traps.	
	b. In the Process Monitored by SNMP section,	
	select processes as needed.	
	c. In the TCPWave Watchdog Configuration section,	
	click 🍄 to automatically populate default	
	values.	
	Other tabs (Optional):	
	a. Enter values in other tabs, such as PAM Settings,	
	Network Configuration, and SYSLOG-NG, as	
	needed.	







Step	Procedure	Screenshot
		IPv4 Networks     2.0.0.024     Subnets     2.0.0.024       Properties     DHCP Scopes     History     Extensions       Subnet Attributes     Subnet Name     Internal-767718       Internal-767718     DHCP-Enabled       Primary Domain*     Primary Route*       test.com     2.0.0.1       Subnet Group     Contact       Location     Image: Contact       VLAN     VRF
		DHCP Attributes DHCP Tamplata* Primary DHCP Appliance* TCPWave-Production  DHCP Follower Peer  Discovery-Reclaim Attributes  Enable Discovery CANCEL  OK CANCEL



## Verify DNS and DHCP Setup

#### **Verify DNS Setup**

To verify that the DNS service functions correctly, do the following:

- 1. Navigate to Network Management >> DNS Management >> DNS Appliances.
- 2. Right-click on an appliance, select **DNS**, and then select **Dig**.

TCPWave Dashboard	200	ick Tasks		lichwork M	anagement •		frastructure	Managen	ent =	Repo	da 🔹 🕯	Administr	ration •										Q ?
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			0	Appl	iance Name			10	Status	100	IPV4 Add	ress 1	Domain	16	Organization	Appliance Type	Auth+Cache	Option Template	Last Sync Time	Monitoring	Remote Debugging	Central Logging	DNS Over TL
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IFAM MANAGEMENT	*						Delete	okmark															
Character and	_									_													

- 3. In the **Dig Output** screen, enter the hostname and domain of an IPv4 object that was created in the step above on <u>Create IPv4 Object</u>, for example, server1.company.com.
- 4. Choose a DNS Record Type.
- 5. Click Run.

Dig C	utput	×
dig @localhost	Record Type	
google.com	A T RUN	
# dig @localhost google.com A		
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 916		
;; QUESTIONS:		
;; google.com., type = A, class = IN		
:: ANSWERS:		
google.com. 140 IN A 172.217.167.142		
·· AITDORTTV RECORDE-		
,, AUTHORITY RECORDS.		
;; ADDITIONAL RECORDS:		
:: Message size: 44 bytes		
		1
	CLOS	E

6. Verify that the Dig output matches the object's information in TCPWave IPAM.

#### **Verify DHCP Setup**

To verify that the DHCP configuration is correct, do the following:

1. Navigate to Network Management >> DHCP Management >> DHCP IPv4 Appliances.



- 2. Select an appliance, and then click the **Download Configuration** icon, as shown highlighted in the upper part of the screenshot below.
- 3. In the dialog box, click **Download**.

Result: A dump file is downloaded with the scopes created from the DHCP Scopes page.

- 4. Rename the file using a ".zip" extension, and then unzip it to view the configuration files in it.
- 5. Verify that the configuration information in the file matches the DHCP information in TCPWave IPAM.

TCPWaye III Dashboard P Quick Tasks III Network Management •			Q ? 🕄		
DHCP IPv4 Appliances					
20 • 🖸 🖉	* ★ # = & = 2 % ₽				
Appliance Name	1 Status 1 IPV4 Address 1 Domain 1	Organization 1 Policy Template 11	Last Sync Time 11 Monitoring 11		
Applance Groups					
🛆 BULK DATA OPERATIONS 👻 💿 🕃 🗮		Internal TCPW-DHCP-STD-POL 2	1:31:43 08-13-2019 🛛 📿		
○ □ Ξ ··································	A	Internal TCPW-DHCP-STD-POL 2	1.31.43 08-13-2019 🛛		
CLOUD MANAGEMENT Showing 1 to 2 of 2 entries 1 row:	•		HE HE 1 19 191		
DHCP MANAGEMENT	Download Configuration has been completed successfully on selected appliance:				
DHCP APPLIANCES	Click here to Download				
TCPWave DHCP IPv4 Applances					
TOPWave DHCP IPv6 Appliances	OK				
Microsoft DHCP IPv4 Appliances					
DHCP SCOPES					
DHCP SETTINGS					
DHCP TEMPLATES			E		
DHCP CLASSES					
subnet netmask (	DHCP IPv4 Scopes				
failover peer ' ange : ' ' 7 100; doww memorys of "BLACKLISTED";	20 • 💿 🛱 🦐	a 2 < 🗗 …			
) default-lease-time 120; max-lease-time 120;	🗋 🛛 Address Range 🕅	DHCP Appliance	Template î. Subnet Address	1 Network Address	1 Organization Name
option domain-name " .topwave.com"; option domain-name-servers					
option local-proxy-config " option routers ]		and the second second second		1	Internal
option submet-mask host wonage(	0 👊	states and a second		2	Internal
	o 🛱			2	Internal
hardware ethernet su:Serbb:94:c4:dd; fixed-address					

For complete information on using TCPWave IPAM, see the TCPWave IP Address Management System Administrator Reference Guide.