

N2WS Backup & Recovery (CPM)

Quick Start Guide

V2.7.0



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1 Introduction

1.1 Launching the instance

You can quickly start using the N2WS Backup & Recovery (CPM) enterprise-class backup solution to fully protect your AWS cloud deployment.

To launch N2WS as part of a 30-day free trial or as a BYOL edition:

- 1. Go to https://aws.amazon.com/marketplace/
- 2. Search for 'n2ws'.
- 3. Select N2WS Backup & Recovery (CPM) Free Trial & BYOL Edition.
- 4. Click Continue to Subscribe.
- 5. In the AWS logon page, enter your AWS account information, and click **Continue to Configuration**.
- 6. Under Configure this software, select the relevant version in the Software Version list.
- 7. Click Continue to Launch.
- 8. In the Choose Action list, select Launch through EC2.

1.2 CloudFormation

CloudFormation (CF) is an AWS service that allows you to treat a collection of AWS resources as one logical unit. CloudFormation provides a common language for you to describe and provision all the infrastructure resources in your cloud environment, across all regions and accounts in an automated and secure manner.

The IAM role will automatically contain the required permissions for N2WS operations.

See section 5 How to Configure N2WS with CloudFormation.

1.3 N2WS Server Instance Connectivity

In order for the configuration process to work, as well as N2WS's normal operations, N2WS needs to be able to "talk" with AWS APIs. Thus, it needs to have outbound connectivity to the Internet. Verify that the N2WS instance has Internet connectivity; this can be achieved by placing the instance in a public subnet with a public IP address, by assigning an Elastic IP to the instance, using a NAT instance or by using an Internet Gateway. You also need to make sure DNS is configured properly and that HTTPS protocol is open for outbound traffic in the VPC security group settings. It is by default.



2 N2WS Server Instance Configuration

N2WS has a browser-based management console. N2WS supports Mozilla Firefox, Google Chrome, Safari and IE (Version 9+).

Note: For N2WS to work, Java Script needs to be enabled on your browser.

After launching the N2WS AWS instance, use AWS Management Console or any other management tool to obtain the address of the new instance:

Description	Status Checks	Monitoring Tags		
	Instance ID	i-0b99675617115678F	Public DNS (Pv4)	ec2-54-147-118-77 compute-1 amazonaws con
	instance state	running	THE PUBLIC P	04:147.118.17
	Instance type	12 micro	IPv6 IPs	5.53
	Elastic IPs		Private DNS	ip-172-31-37-18 ec2 internal
	Availability zone	us-east-1c	Private IPs	172.31.37.18
	Security groups	recover, view inbound rules	Secondary private IPs	

Figure 2-1

Note: Use the address provided to you by N2WS to connect to the N2WS Server using the HTTPS protocol in your browser (https://<server address>).

When a new N2WS Server boots for the first time, it will automatically create a self-signed SSL certificate. After initial configuration, it is possible to upload a different certificate. Since the certificate is unique to this server, it is perfectly safe to use. However, since the certificate is self-signed, you will need to approve it as an exception for the browser. To add an exception for the default certificate in Chrome and Firefox, see Appendix B – Adding Exception for Default Browser (page 40).

After adding the exception, you get the first screen of the N2WS configuration application.

2.1 N2WS Server Configuration

At the first screen you will be asked to type or paste the instance ID of this new N2WS instance. This step is required in order to verify that you are indeed the owner of this instance:

CN2WS	N2WS Backup & Recovery (CPM) Server Configuration v2.7.0	
To proceed, please	type the instance ID of this instance	
		nex

Figure 2-2

On the next screen the 5-step N2WS configuration procedure begins.



Step 1: Approve the N2WS license agreement

Review the user license terms, select the check box and click **next**.





Step 2: Configure the N2WS "root" account password and user information

tep 1 ss Step 2 ss	Step 3 ** Step 4 ** Step 5 **	
license:	This account is already licensed 🔹	
Jser name:	demo	
Email (optional):		
Password:	•	
Password (Again):	(I	



To start a free trial, leave the **License** list with the default. If you purchased a license directly from N2W Software, choose one of the **License** options, according to the instructions you received.

Note:	If anyone in your organization already installed a N2WS Free Trial in the past on the same AWS account, you may receive an error message when connecting to N2WS. Contact support@n2ws com to resolve
Note:	If you are using one of the N2WS paid products on AWS Marketplace, you will not see the License field.

CN2WS

Additionally, you will need to enter a user name, an optional valid email address, and enter a password and verify it. If this is an upgrade, the username must remain as it was prior to the upgrade, but the password can be modified.

When you have completed entering the details for Step 2, click next.

Step 3: Time zone, new volume, force recovery mode, and web proxy settings



*

next



1. Select your time zone.

Back

Connect via web proxy:

2. Choose whether to create a new data volume or use an existing one.

Disabled

3. To configure an additional N2WS server, in recovery mode only, choose an existing data volume and select **Force Recovery Mode**. In Step 4, you will be presented with a list of existing CPM data volumes.

Note: The N2WS server configured for recovery mode will NOT:

- Perform backups.
- Copy to S3.
- Have Resource Control management.
- Perform any scheduled operations.
- 4. Click next.

Note: Passwords: N2WS does not enforce password rules. However, it is recommended to use passwords that are difficult to guess and to change them regularly.



Step 4: Data volume, Web Server settings, and anonymous usage reports

anacity (GIR):	<i>c.</i>	
apacity (Gib).	5	
Listen Port for the Web Server:	443	
SSL Server Certificate File (leave empty to use the default):	Choose File No file chosen	
SSL Server Private Key leave empty to use the lefault):	Choose File No file chosen	
Allow Anonymous Jsage Reports:	Allow	*
Allow CPM to send anon AWS credentials and no us product. This setting can b CPMs main screen	ymous usage reports from time to tim ser identification. This data will be use e changed at any time by clicking the	e. These reports will include no object names or ids, no ed by N2W Software for the sole purpose of improving the link "disable anonymous usage reports" at the bottom of

Figure 2-6

1. If you chose a new data volume, you have an option to encrypt CPM user data.



N2WS Backup & Recovery (CPM) Server Configuration v2.7.0

apacity (GIB):	5	0
3\$ volume type:	General Purpose SSD (gp2)	•
ncrypt Volume:	Not Encrypted	•
sten Port for the Web	443	
SL Server Certificate ile (leave empty to use he default):	Choose File No file chosen	
SL Server Private Key eave empty to use the efault):	Choose File No file chosen	
Allow Anonymous	Allow	*
Allow CPM to send anony WS credentials and no us roduct. This setting can b	mous usage reports from time to tin er identification. This data will be us e changed at any time by clicking the	te. These reports will include no object names or ed by N2W Software for the sole purpose of impr t link "disable anonymous usage reports" at the b

• Select **Encrypted** in the **Encrypt Volume** drop-down list and choose a key in the **Encryption Key** list. You have the option to use a custom ARN.

N2WS Server	Backup Configu	& Rec iration	overy v2.7.((CPM))	
p3 »» Step 4	 Step 5 ** 				
5		:			
General Purp	iose SSD (gp2)	•			
Encrypted		*			
123456789	•				
123456789 Shared		Ĵ			
abc aws/eb	to file chosen				
Custom ARN	o file chosen				
Allow		*			
	N2WS Server	N2WS Backup Server Configu p3>> Step4>> Step5>> 5 General Purpose SSD (gp2) Encrypted 123456789 Shared abc o file chosen aws/eb Custom ARN o file chosen	N2WS Backup & Rec Server Configuration	N2WS Backup & Recovery Server Configuration v2.7.(p3>> Step4>> Step5>> 5 5 General Purpose SSD (gp2) * Encrypted * 123456789 Shared abc offic chosen avs/eb Custom ARN offic chosen	N2WS Backup & Recovery (CPM) Server Configuration v2.7.0

- 2. If you chose to use an existing volume or selected **Force Recovery Mode** in Step 3, you will see a drop-down volume selection box.
- 3. Complete the Web Server settings. The default port 443 is used by the N2WS manager.

Allowing anonymous usage reports will enable N2WS to improve the product. The usage reports are sent to N2WS with no identifying details in order to maintain customer anonymity.

4. Click **next** when finished.



Step 5: Register the account with N2W Software

lep 1 »» Step 2 »» St	ep 3 »» Step 4 »» Step 5 »»	
Please register th	is account	
	<u> </u>	
ull Name:		
imail:		
Company:		
Country:	Please choose your country +	
tip Code:		
Ref Code (optional):		

Figure 2-7

Registration is mandatory for free trials and optional for paid products. N2W Software recommends that all customers register, as it will enable us to provide faster support. N2W Software guarantees not to share your contact information with anyone.

If you have a Reference Code, enter it in the **Ref Code** box.

WARNING: Use English characters only in registration. Non-English characters (e.g. German, French) will cause the operation to fail.

Click Configure System when finished.



The registration operation takes approximately 30 seconds after which the success screen appears:





CPM was configured successfully

Click here to start using CPM

If the screen does not automatically refresh, please open the browser again on the main page

Figure 2-8

When you see the screen in



Figure 2-8, you know that the system was configured successfully. You can then click the link to start using the system. It will take a few seconds for the application to start. If, for any reason, you are not directed automatically to the application logon screen, reboot the instance from the management console:



CN2WS N2WS	Backup & Recovery (CPM)	
User: Password:		
	Sign In	
	License Agreement	

Figure 2-9

You are now ready to log on with the credentials you created in the first screen and begin using N2WS.

Note: Logging on for the first time with a trial edition can take up to 5 minutes as N2WS must connect and get approved by our licensing service.

CNZW	N2V	VS Backup &	& Recovery (CPN 1 33 Repositories (CPN)) Control Disotricutions	A Users	root 23.00 O General Settings	Kos.col 02/05/2019 Reports (preview)
😔 Backup Monitor	Falces		April	Freezer	History	ry Monday	
Fitter by Account (All)+	Filter by Policy (Al) +	Filter by Status (All)	+ 20 records/page +	0			
Search for Resource							
Start Time 🐱 Fin	lish Time Policy	Account Status	DR Status \$3 Copy	Status Snapshot	E Log	Actions	

Figure 2-10

The "Please wait ..." message should go away in a few minutes. Allow 4-5 minutes and then refresh the screen.



3 Creating a Simple Backup Policy

3.1 Adding an AWS Account

After logging on to the system for the first time, you will see the main screen:

CNZW	S N2V	VS Backup	& Recove	ry (CPM)	Notications	A there	root 23:00 O General Settings	Mos.coli 02/05/2019 Reports (preview)
😧 Backup Monitor	Falces		~			Ritzon	ny Mareter	
Fiter by Account (All)+	Filter by Policy (Al) =	Filter by Status (A)	l) + 20 records	ipapa - Ioo				
Search for Resource								
Start Time 🐱 Fin	lish Time Policy	Account Statu	IS DR Status	\$3 Copy Status	Snapshote	s Log	Actions	

Figure 3-1

It is currently empty. The first thing you will need to do is to associate an AWS account so you can start backing up EC2 instances. Depending on the edition of N2WS you registered to, you can associate one or more AWS accounts. Click the **Accounts** button in the top panel and then click **Add New Account**.

0	~	N2WS B	ackup & Red	covery (CPM)			root 100.0ut
C N	2WS	None P	Accounts SJ Repo	isitories 🕐 Resource Coo	erol 🔄 Notifications	& Users O General	Settings Reports
O Add New A	lecount	Account	ts for user	root	age - Tupey	o Search	
Narte	Account Type	Authentication	Account Policies	Num Frozen Rems	Actions	Reports	
Bool CEM BRD	Backup	CPM Instance IAM Row	Boot CPM_P1	•	india. India seconari Andi Onta ya Inank AWII Previnsionaria	Endected Resources Uncritected Resources Electroseco Succesery	



Add New Account		×
User:	demo	-
Name:		
Account Type:	Backup	-
Authentication:	CPM Instance IAM Role	• •
Scan Resources:	Disabled	•
Capture VPCs:	Enabled	-
	Close	Add

Figure 3-3

In the Add New Account screen (Figure 3-3):



- 1. In the **Name** box, type the name you would like to associate to your primary AWS account.
- 2. In the **Account Type** list, select **Backup**. DR accounts relate to cross-account backup and recovery and are out of the scope of this guide. See the *N2WS Backup and Recovery (CPM) User Guide*.
- 3. In the **Authentication** list, select your desired type of authentication. You can either choose to use your AWS access key and secret key or **N2WS Instance IAM Role**, which is recommended. These credentials are saved in the N2WS database. However, the secret key is kept in an encrypted form. There is no way these credentials will ever appear in clear text format anywhere. See "Security Concerns and Best Practices" in the N2WS Backup & Recovery (CPM) User Guide.
- 4. In the Scan Resources, select **Enabled** to turn on the capability for this account to scan resources.
- 5. In the **Capture VPCs** list, select **Disabled** to turn off automatic capturing of VPCs for this account.

3.2 **Creating a simple backup schedule**

Click the **Home** button to go back to the main screen and then click the **Schedules** tab. Currently, the list of schedules is empty.

CN2WS	S. N2WS	Backup	& Recove	ry (CPM) O Resource Contr	ol Mostfeations	A Dars	root 23-07 O General Settings	Epo out 02/05/2019 Reports
Data p Norder	Polan	Schedules	-	es	Pressor	Recover	y Mandar	
O New Schedule				20 recorde/pa	pe + Type to	Search	P	
Name Create a Ne	w Backup Schedule	Start Dat	te End Date	Policies	Disabled Times	is Day	Delete	
Name Account	t Type Authenticatio	n Accou	nt Policies Num	Frozen Bents	Actions		leports	
Hore CPM BHU Back	CPM Instance IAM	Role Boot.CE	BR.JEL	0	entra en accessed and fails in an AMS Parmanents	Erotectu Unerotecture Perman	ed Resources No. Resources Ion Summary	

Figure 3-4

You will now create the first schedule. Click **New Schedule** and then enter a schedule name and description:



Schedule		×
Name:		
User:	admin 👻	
Repeats Every:	1 * Days *	
Start Time:	Mon 06/04/2018 21 -	
End Time:	never (click to modify)	
Enabled on:	 Monday Tuesday Wednesday Thursday Friday Saturday 	
Description:		
	Close	oply

Figure 3-5

You can also set the start time of this schedule and the frequency. Available units are minutes, hours, days, weeks and months. The default End Time is never. Click the **End Time** link to modify.

3.3 Creating a simple backup policy

Click the **Home** button to go back to the main screen and then click the **Policies** tab. Currently, the list of policies is empty. You will now create the first policy. Click **New Policy**.

CN2V	VS N2V	VS Backup & I	Recovery (C Reportances 🕲 Re	CPM)	antications 🛔 De	root 23 1 ers O General Settings	l log out 0 02/05/2014 Reports
· Data Merika	🕑 Potem	Schulars	April	(Freedo	- 1-	covery Mentilia	
O New Policy		Filter by A	ccount (AI) = 2	О несонойраде	Type to Bearch	P	
Rod CPM P1 Root_CPI	unt Enabled Num Ger W_BKU Yes 1	backup timese	Backup Agent	Configure Sector Sector Sector Sector Sector 13	Opera Densis Policy Tuer ASSAT	boes	



In the **Policy** page, enter a policy name and description:

Policy		×
Name:		
User:	admin	*
Account:	(account1	*
Auto Target Removal:	No	*)
Generations to Save:	30 🌲	
Status:	Enabled	*)
Schedules:	🔲 s1	
Description:		
	<u>.</u>	



Other fields in this screen (Figure 3-6) include:

- Account Each policy can be associated with one AWS account.
- Auto Target Removal Whether to auto-remove resources that no longer exist.
- Generations to Save Number of backups of this policy you want to keep. Older backups will be automatically deleted.
- Status By default a policy is enabled.
- Schedules Select the schedule you just created.

When finished, click **Apply** and select the **Policies** tab.

ADING	N2WS Backup	& Recovery (CPM) essurre Cantal (Statifications)	23 10	0 02/05/201 Reports
112005					
i Dachag Monter 🥑 Pales	n Schulan	4000	(freezer)	Recovery Months	
O New Policy	Fe	ter by Account (Ail) +	20 reconsistage + Type to	Bearch 🖉	
Name - Account Enable	ed Num Generations Sche	dules Backep Agent	Configure	Operations	
Root CPM P1 Root_CPM_BRU Yes	3 Deckie	trouter None	Dente Tagets Dente Pala	Colors Transmitte	

Figure 3-7

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When looking at this screen, you can see there are several things you can do with a policy. To edit the basic policy definition, click the link of the policy's name.

To configure the policy, you have three buttons:

- Backup Targets Defines the actual resource objects this policy will back up.
- **More Options** Defines Linux scripts and settings for the definition of a successful backup and retry parameters.
- **DR** Defines disaster recovery options.

Click the **Backup Targets** button:

Instances: 🤝	🔒 Add Insta	🕂 Add Instances							
Name	Instance	Region	AMI ID	Root Device	Туре	Status	Actions		
Volumes: 🕨	🕂 Add Volu	mes							
RDS Databases:	🕂 Add RDS Databases								
Aurora Clusters:	•					🕂 Add Aurora Clusters			
Redshift Clusters	s: 🕨					🔂 Add Redshift Clusters			
DynamoDB Table	es: 🕨					🚹 Add Dyna	🕂 Add DynamoDB Tables		
Elastic File Syste	Add Elastic File Systems								



As you can see in Figure 3-8, there are numerous types of objects you can back up:

- **Instances** Back up EC2 instances, including their metadata, and optionally some or all of their data volumes. This is the most common backup target.
- Volumes Back up EBS volumes independently, whether or not they are attached to an instance, and regardless of which instance they are attached to. This can be useful to back up volumes which are not always attached to an instance, or volumes that move between instances, like cluster volumes.
- RDS Databases Back up RDS DB instances. This will use RDS snapshots and can be useful for backing up RDS databases together with other types of objects, or for anyone who wishes to backup RDS databases using N2WS, in addition to or instead of using AWS automatic backup.
- Aurora Clusters Aurora is similar to RDS but handles Aurora clusters.
- Redshift Clusters Manage Redshift Cluster snapshots.
- **DynamoDB Tables** Back up DynamoDB Tables.

To add an instance, for example, to the policy:

Click **Add Instances.** The list of instances (see Figure 3-9) you have in the policy's account appears. The **Choose Region** list allows you to switch between different regions. You can use

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the free text search, column-based sorting, or pagination if there are a lot of instances and you are seeking a specific one.

Note:	Although you can add backup objects from different regions in the same policy,
	in many cases it is not a good practice to do so.

Choose Region: US East (N.		N. Virginia)	√irginia) ▼		Type to Search	<u>م</u>	
Add	Name	Instance	AMI ID	Root Device	Туре	Status	Policies
	empty	i-Off2e29ecc02	ami-2757f631	ebs	t2.micro	running	0
	CPM-Recover-Linu	i-02614c8c1a4	ami-0bfe3580l	ebs	t2.micro	running	0
	Win-Instance-Huge	i-0953f9b0940	ami-3633b149	ebs	t2.micro	stopped	0
	Quick-Guide-2.3	i-0d37a308ed(ami-1b70f964	ebs	t2.small	running	0
	cpm-S3-Int	i-0b97a73f34f!	ami-08663aed	ebs	t2.micro	stopped	0
	documenting-with-,	i-067d015d87	ami-1b70f964	ebs	t2.micro	running	0
	win-remore-proxy-;	i-081c2c066b€	ami-838b53fc	ebs	t2.micro	stopped	0
	CPM-Last-Drop	i-Od69c1f0f5ba	ami-03d47e59	ebs	t2.micro	stopped	0

Figure 3-9

Select an instance you want to back up and click **Add Selected**. This will add the requested instance to the screen in the background and remove it from the popup window, although it does not close the popup. You can add as many instances as you want up to the limit of your licence. Click **Close** when finished.

Back in the **Backup Targets** screen, you can see the instance on the list of instances. You have buttons to remove it from the policy and a **Configure** button.

By default, all EBS volumes which are attached to this instance will be backed up. If a volume gets detached from or attached to the instance, it will not interfere with the normal operations of the policy. In every backup, N2WS will check which volumes are attached to the instance and take snapshots of them. Click **Home** and go to the **Policies** tab again. In the **Schedules** column of the policy, click the **backup times** link. You will see the planned backups for this policy.

The backups will start automatically at the time configured previously in the schedule.

If you want to initiate an immediate backup, click **run ASAP** in the Operations column.

(N2W)	S							
News	N2WS Bac	:kup & R mms ∎ s1 m	ecovery (CPM) Internet Control	🕑 Kanfeatars	2 Users	toot 23.10 O General Settings	log out 02/05/2015 Hepots
Balas Maria	-	44M	Apreni		(militar I	Record	y Monta	
O New Policy		Fitter by Act	tourt (Ail) +	20 несоталуроря	 Type to 	Bearch	P	
Name - Account Enabled	Num Generations	Schedules	Backep Agent	Configure		Operation	•	

N2WS will report that the backup policy will now run. The process can be monitored in **Status** column of the **Backup Monitor** tab.

5	2W	S	N2WS B	ackup & R	ecover	y (CPM) O Resource Cont	rot 🕑 Note	ficationa	& Osera	O General G	tool 00.15 minga	Reports
			Back	up of policy 82 will r	itart in a New 1	econda					Ê.	
🙆 Gickup M	unitor 👔	Potent		chadules 1	-				Recovery	Mandar		
Fitter by Acco	ount (Alt) =	Filter by Policy (/	Al) • Fitter b	x 95604 (Alf) =	20 records	cage - O						
Search for Res	ource											
Start Time -	Finish Time	Policy	Account	Stellus	DR Status	53 Copy Status	Snapshots	Log	Acu	oris		
05.#e6, 2010 12.14.AM		82	Root_CPM_BKU	in Proyenti	N/A	N/A	1000	-	NA			
05 Feb. 2019 11:20 PM	05 Feb. 2019 11.21 PM	ROOM CPM (P)	Root_CPM_BKU	Bachup SuccessM	N/A	NA	1000	Cor.		e.Talineare		
05 Feb. 2018 11,16 PM	05 Feb. 2019 11.16 PM	Rost_CEM_P1	Root_CPM_BKU	Bacing Successful	NA	N/A.	8000	0 mm	Dennet Mar	a Ta firman		

Consult the *N2WS Backup* & *Recovery* (*CPM*) *User Guide* to see how to create application consistency for Linux and Windows servers.

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4 Performing a Basic Recovery

N2WS backs up the requested objects at the requested times. When you return to the main console after a while, you can view the backups in the **Backup Monitor** tab:

6	2WS	S	N2WS Bi	ackup & R	ecover	y (CPM)	ol 🗹 Notif	lcations	A Users	2 O General Settin
📀 Backup M	onitor	Potces	6	heduies	Ager	- 1			Recover	y Mootur
Fider by Acco	unt (Ali)+	Filter by Policy (/	All) - Fitter b	er by Status (All) + 20 records/page +		page - igo				
Search for Res	ource									
Start Time -	Finish Time	Policy	Account	Status	OR Status	\$3 Copy Status	Snapshots	Log	Ac	Dons
05 Feb. 2019 11:20 PM	05 Feb. 2019 11 21 PM	Root_CPM_P1	Root_CPM_BKU	Backup Successful	N/A	N/A	Mee	Dies	finner M	on to Court
05 Feb. 2019 11:16 PM	05 Peb. 2019 11:16 PM	Root CPM P1	Root_CPM_BKU	Backup Successful	N/A	N/A	Ver	Que:	Parature M	ten Ta finnent

Figure 4-1

For each backup, you can see exact start and finish times, and status. Click **View** in the **Snapshots** column and see the individual EBS snapshots of all the volumes. Click **Open** in the **Log** column to view the log of this backup with all the details. In order to recover from a particular backup (typically the most recent successful backup), click the **Recover** button in the **Actions** column:

G	2WS	S	N2WS Ba	ackup & R	ecover	y (CPM) むResource Cont	ol 🗹 Notif	lcations	& Users	10 21 O General Setting
📀 Backup M	onitor	Polces	1 8	chedules	Ager				Recover	y Montur
Filter by ALCO	unt (Ali)+	Filter by Policy (All) + Fitter b)	/ Status (All) +	20 records/	page - 👩				
Search for Res	ource									
Start Time -	Finish Time	Policy	Account	Status	OR Status	\$3 Copy Status	Snapshots	Log	Ac	DONS
05 Feb. 2019 11:20 PM	05 Feb. 2019 11 21 PM	Root_CPM_P1	Root_CPM_BKU	Backup Successful	N/A	N/A	Mee	Dien	theory is	con la Constan
05 Feb, 2019 11:16 PM	05 Peb. 2019 11:16 PM	Root CPM P1	Root_CPM_BKJ	Backup Successful	N/A	N/A	Ver	Quer.	Parcent M	ten Ta freezer



In the **Recovery Panel** screen (Figure 4-3), you can see all the instances that this backup contains. Should this policy include also EBS volumes, RDS databases, Redshift Clusters or DynamoDB Tables, you will have a link to recover them as well. In order to recover an instance, click the **Instance** button. The **Volumes Only** button is for recovering only the EBS volumes of the instance without actually creating a new instance.

0		N2WS Ba		very (Ci	PM)	Notications	2. Users	root 23.2 O General Settings	02/05/201
	2005								
Decourse Day	at .								
Recovery Par	el								
Recovery Par	el : Source: Root, CPM_B	(U. Policy: Root_CPM	.P1 From Tue, Feb 05, Independent Volumes I N	2019 11:20 PM o Databases I No	Instance S	inapshots in 1 No Recent Ci	usters No Dv	namoD8 Tables	
Recovery Par Backup for User ree Name	el t Source Root_CPM_B	KU. Post; Root <u>, CPM</u> No Region	P1 From Tae, Feb 05, Independent Volumes (N Image (D)	2019 11:20 PM o Databases No Root Device	Instance 5 e RDS Clubs Platform	inapshots rs (No Redshift Cr Architecture	usters No Dy Reco	namoDB Tables	

You will now see the **Instance Recovery** page:

Instance I	Recovery									
From Accoun	nt: Root_CPM_B	KU To A	.ccount: Root_CPM	_BKU	To Region: U	S East (N.	∨irginia)			
										AMI Assistant
Basic Option	ns: —									
Launch from:		enansho	ł)					
AMI Handling	AMI Handling: De-register after Recovery)						
Image ID:		ami-Oac	019f4fch7ch7e6)					
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Instance Volu	umos:	Invirginia)					
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Recover	Original volu		Capacity (GIB)		Туре	IOPS	Encrypted	Device	Fleative laga	
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Click Advanced Options for additional recovery parameters.



Advanced Options:	
Ephemeral Storage:	
Architecture:	x86_64 💌
Placement:	By VPC -
VPC:	vpc-1a4e8062 (172.31.0.0/16) 🔻
VPC Subnet ID:	subnet-43110f6f (172.31.80.0/20),- us-east-1d
VPC Assign IP:	172.31.83.25
Auto-assign Public IP:	Subnet Default 👻
Additional NICs:	
Security Groups:	Type to filter Security Groups
	Cloud Protection Manager Fre
Enable User Data:	
Preserve Tags:	
Instance Type:	t2.micro 💌
Shutdown Behavior:	stop 💌
API Termination:	Disabled 💌
Kernel:	
RAM disk:	
Allow Monitoring:	
Instance Profile ARN:	arn:aws:iam::726541571499:insta
EBS Optimized:	
ENA Support:	Image: A state of the state
Tenancy:	Shared -
 Use account AV 	VS
Credentials:	

Figure 4-3

Most of the options when launching EC2 instances are available here and may be modified. The currently selected defaults are exactly the options the original backed-up instance had at the time of the backup, including the tags associated with it. Clicking the **Recover Instance** button will recover an instance exactly like the original one.

Important: If you intend to test the recovery of an instance in the same region as the originally backed up instance, you will need to change the IP in order to avoid an IP conflict. This can be mitigated by leaving the VPC Assign IP box blank:



VPC:	vpc-1a4e8062 (172.31.0.0/16) 🔻
VPC Subnet ID:	subnet-43110f6f (172.31.80.0/20),- us-east-1d
VPC Assign IP:	
Auto-assign Public IP:	Subnet Default 👻
Additional NICs:	
Security Groups:	Type to filter Security Groups
	Cloud Protection Manager Fre My-Proxy

A further option worth mentioning here is **Launch from**. This sets the option for the image the new instance will be launched from. In case of an instance-store-based instance, the only option would be to launch from an image. The default will be the original image, although it can be changed. In case it is a Linux EBS-based instance, as in this example, and the backup includes the snapshot of the boot device, you can choose between launching from an image (the original image or another), and launching from the snapshot, which is the default. If you choose to launch from a snapshot, a new image (AMI) will be created, and you can choose whether you want to keep the image after the recovery is complete or deregister it. You can even choose not to perform the recovery now, and only create the image, to recover from it later.

If Capture VPC Environments was enabled in **General Settings**, the **Advanced Options** section will also contain a **Clone Original VPC** option next to the **VPC** box.



The **Clone Original VPC** option allows you to recover the instance to a clone of a selected VPC environment. See the *N2WS Backup & Recover (CPM) User Guide* for details on "Recovering to a Cloned Original VPC".

After you click **Recover Instance** and confirm, you will be directed back to the recovery panel page, and will get a message about the operation success:





Figure 4-4

The message will include the instance ID of the new instance, and now you can go and verify the successful recovery in the AWS Management Console. The recovered instance is exactly the same as the original one, with all its EBS volumes.



5 How to Configure N2WS with CloudFormation

The process to configure N2WS to work with CloudFormation is a single stream that starts with subscribing to N2WS on the Amazon Marketplace and ends with configuring the N2WS server.

- N2WS provides a number of editions all of which support CloudFormation.
- An IAM role will automatically be created with minimal permissions and assigned to the N2WS instance.
- 1. Go to https://aws.amazon.com/marketplace/pp/B00UI08514/ref= ptnr qsg
- 2. Click Continue to Subscribe.

VeeAM	N2WS Ba Edition	ckup & Recove	ry (CPM) Free Tria	al & BYOL	Continue to Subscribe
N2WS	By: N2W Softwa N2W5 Cloud Pro for thousands of Show more Linux/Unix	re Latest Version: 2.4 tection Manager is the AV customers worldwide. Co	.0 W5 backup and disaster recove ombining the agility of the clo BYOL Free Tier	ery solution of choice urd with the	Typical Total Price \$0.023/hr Total oriding per instance for services hoated on z2mall in US East (N. Virginia). View Details
Overview		Pricing	Usage	5upport	Reviews

Product Overview

TRY OUT This leading AWS backup, recovery and DR solution purpose-built for AWS workloads - N2WS Cloud Protection Manager 30-DAY FREE TRIAL & BYOL Edition. After trial ends, N2WS automatically converts into a FREE version that still protects you! (limited to protecting up to 5 instances)

By leveraging native snapshot technology N2WS provides an additional layer of security within your AWS environment and supports your EC2, NoSQL and serverless workloads. N2WS enables you to fully automate backup of EC2, EBS, ROS, Redshift, Aurora and DynamoDB - and leverage 1-click recovery to restore a single file or your entire environment in less than 30 seconds.

With support for different storage tiers: native AWS backups and archive to Amazon 53, N2WS enables cost reduction for data retained long term.

N2WS enables you to build effective disaster recovery plans and recover data

- Highlights

 Automate backup of EC2 instances, EBS, RDS, DynamoDB, Aurora and Redshift using flexible policies/schedules. Perform DR across AWS accounts or regions. Implements cross-region DR of VPC settings. Protect your environment from outages and data loss
 Perform application consistent backups of your critical data, eliminating the need for maintenance windows and unnecessary downtime. Rapidly recover single files without having to restore the entire instance.
 Easy to use interface with real-time alerts, reporting
 - and integration with other services via the N2WS CLI and RESTful API. N2WS is also designed for multitenancy allowing you to manage multiple accounts from one console
- 3. Click Continue to Configuration and then click Accept Terms.



N2WS Backup & Recovery (CPM) Free Trial & BYOL Edition Continue to Configuration You must first review and accept terms

< Product Detail Subscribe

/eeam

N2WS

Subscribe to this software

To create a subscription, review the pricing information and accept the terms for this software.

Terms and Conditions

N2W Software Offer



4. In the **Fulfilment Option** drop-down list, select **CloudFormation**.

N2WS Backup & Recovery (CPM N2WS Edition	ee Trial & BYOL Continue to Launch You must first configure the software
< Product Detail Subscribe <u>Configure</u>	
Configure this software	Pricing Information
Choose a fulfillment option below to select how you wish to deploy th required to configure the deployment.	ware, then enter the information Choose and configure a delivery method to see an estimate of typical software and infrastructure costs.
Fulfillment Option	
Select a fulfillment option * Am Dec (AM	<mark>schine Image</mark> Indor-provided Amazon Machine Image nazon EC2
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5. Select the relevant Software Version and Region and then click Continue to Launch.



N2WS Backu N2WS Edition	o & Recovery (CPM) Free	PTrial & BYOL	Continue to Launch
Product Detail Subscribe <u>Configure</u> Configure this softwa Choose a fulfillment option below to sele equired to configure the deployment.	'e t how you wish to deploy the softwa	are, then enter the information	Pricing information This is an estimate of typical software and infrastructure costs based on your configuration. Your actual charges for
Fulfillment Option CloudFormation Cloud Protection Manager Free Trial & BY	CloudFormatio Deploy a comp CloudFormatio DL Edition	on Nete solution configuration using a In template	each statement period may differ from this estimate. Software Pricing N2WS Backup & S0/hr Recovery (CPM) Free Trials & Bryot, Edition BYOL conting on t2 snall
Software Version 2.4.0 (Nov 19, 2018)	Whats in This Version N2WS Backup & Recovery (CPM) Free Tr Autonig on 12.unoil Learn more	rial & BYOL Edition	
Region			

6. In the Launch this software page, select Launch CloudFormation in the Choose Action list and then click Launch.

N2WS	N2WS Backup & Recovery (CPM) Free Trial & BYOL Edition
Configuration D	etails
Fulfillment Option	Cloud Protection Manager Free Trial & BYOL Edition N2WS Backup & Recovery (CPM) Free Trial & BYOL Edition running on t2.small
Software Version	2.4.0
Region	US East (N. Virginia)
Usage Instru	
Usage Instrue	

The Create stack/Select Template page opens.



Select the template that descr	bes the stack that you want to create. A stack is a group of related resources	s that you manage as a single unit.
Design a template	Use AWS CloudFormation Designer to create or modify an existing templa Design template	ate. Learn more
Choose a template	A template is a JSON/YAML-formatted text file that describes your stack's Select a sample template	resources and their properties. Learn more.
	Upload a template to Amazon S3 Choose File No file chosen	
	 Specing an Amazon 35 tempare URL https://s3 amazonaws.com/awsmp-fulfiliment-cf-templates-prod/14807ff7 	View/Edit template in Designer

7. Under **Choose a template**, choose **Specify an Amazon S3 template URL**. Select an Amazon S3 template URL and click **Next**. The **Specify Details** page opens.

ecify a stack name and para	meter values. You can use or change the de	fault p	parameter values, which are defined in the AWS CloudFormation template. Learn more.
Stack name			
arameters			
stance Configuration			
Instance Type	t2.small		Instance type for CPM
etworking and Security	Configuration		
Key Pair	Search	•	
	Name of an existing EC2 KeyPair		
VPC	Search by ID, or Name tag value		
	The VPC in which you want to Launch CPM		
Subnet	Search by ID, or Name tag value	•	
	Subnetid in VPC		
Inbound Access CIDR			CIDR for Security Groups source IP

- 8. Complete the **Stack Details** and **Parameters**. For **Inbound Access CIDR**, security groups act as a firewall for associated instances, controlling both inbound and outbound traffic at the instance level. Configuring **Inbound Access CIDR** allows you to add rules to a security group that enable you to connect to your Linux instance from your IP address using SSH:
 - If your IPv4 address is 203.0.113.25, specify 203.0.113.25/32 to list this single IPv4 address in CIDR notation. If your company allocates addresses within a range, specify the entire range, such as 203.0.113.0/24.
 - If you specify 0.0.0.0/0, it will enable all IPv4 addresses to access your instance using SSH.



• For further details, refer to "Adding a Rule for Inbound SSH Traffic to a Linux Instance" at

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/authorizing-accessto-an-instance.html

Specify Details		
Specify a stack name and para	meter values. You can use or change the defa	ult parameter values, which are defined in the AWS CloudFormation template. Learn more,
Stack name	CF1	
Parameters		
Instance Configuration		
Instance Type	12.small	Instance type for OPM
Networking and Security	Configuration	
Key Pair	Ophir-Dec2017	
	Name of an existing EC2 KeyPair	
VPC	vpc-81efa835 (12.31.0.0/16)	
	The VPC in which you want to Launch CPM	
Subnet	subnet-3035556c (172.31.32.0/20) Subnetid in VPC	•
	[
Inpound Access CIDR	0.0.0.000	Clurk for Security Groups source in
		Cancel Previous Next

9. Click Next. The Options page opens.

Tags						
'ou cai	n specify tags (key-value	e pairs) for resources in your sta	ack. You can add up	to 50 unique key-value pairs for each stack. L	earn more.	
	Key (127 characters max	dmum)		Value (255 characters maximum)		
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10. Complete the **Options** and click **Next**. The **Review** page opens.



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apabilities	
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11. Select the I acknowledge that AWS CloudFormation might create IAM resources check box. Click Create. The CloudFormation Create Stack Events page opens.

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12. Select the new stack. The **Instances** page opens.



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- 13. Select the instance. Copy the **Instance ID** value shown in the **Description** tab and click **Launch Instance**. The **N2WS Server Configuration** page opens.
- 14. Continue as from section 2.1.

This concludes the *Quick Start Guide*. Consult the *N2WS Backup & Recovery (CPM) User Guide* for more details.

CN2WS

Appendix A – AWS Authentication

In order for N2WS to perform its backup and restore management functions, it needs to have the correct permissions assigned.

N2WS supports two different types of AWS authentication during setup:

- AccessKey / SecretKey
- Role based authentication (recommended)

The permissions necessary have been combined into a JSON file for convenience and can be downloaded from the N2WS Knowledge Base:

https://support.n2ws.com/portal/kb/articles/what-are-the-required-minimal-awspermissions-roles-for-cpm-operation

1. At the top of your AWS console, select the **Services** tab. In the **Security Identity & Compliance** section, select **IAM**.



2. In the left menu, select Policies.



aws Services - Resource	Groups 🗸 🖌	
Search IAM Dashboard Groups Users Roles Policies Identity providers Account settings	Welcome to Identity and Access Management IAM users sign-in link: https: .aws.amazon.com/console @1 IAM Resources Users: Groups: Customer Managed Policies: Security Status	Roles: Identity Providers: 7
Credential report	Delete your root access keys	
Encryption keys	 Activate MFA on your root account Create individual IAM users Use groups to assign permissions Apply an IAM password policy 	

3. Click the Create policy button.

aws	Service	s v	R	esource Groups 🗸 🤸	
Search IAM		Cre	eate p	Policy actions 🔻	
Dashboard		Filte	er po	licies 🗸 🔍 Q Search	
Groups				Policy name 💌	Туре
Users					Joh Kunsting
Roles		0	•	AdministratorAccess	JOD TUNCTION
Policies		0	•	AlexaForBusinessDeviceSetup	AWS manage
Identity providers		0	÷	AlexaForBusinessFullAccess	AWS manage
Account settings		0	•	AlexaForBusinessGatewayExecution	AWS manage
Credential report		0	•	AlexaForBusinessReadOnlyAccess	AWS manage
		0	•	AmazonAPIGatewayAdministrator	AWS manage

4. Select the JSON tab.

Create policy
A policy defines the AWS permissions that you can assign to a user, group, or role. You can create and edit a policy in the visua Visual editor JSON Expand all Collapse all
✓ Select a service
Service Choose a service

5. Delete the default contents and copy and paste the contents of the JSON file downloaded from our Knowledge Base (see above).



Create policy

A policy defines the AWS permissions that you can assign to a user, group, or role. You can create and edit a policy in the

This po IAM Po	olicy validation failed and might have er olicies	rors converting to JSON : The policy must have at least one statement.
Visual e	ditor JSON	
1 { 2 3	"Version": "2012-10-17", "Statement": []	

6. At the bottom of the screen, click **Review Policy**.



7. Type a Name for the policy and click Create policy.

	Use alphanumeric and '++@	' characters. Maximum 128 characters.		
Description				
	Maximum 1000 characters. U	se alphanumeric and '+=,@' characters.		
Summary	Q Filter			
	Service 👻	Access level	Resource	Request condition
	Allow (1 of 169 servic	es) Show remaining 168		
			All resources	None
	Cloud Directory	Full: List, Read		
	Cloud Directory	Full: List, Read		

Next, create a role, and then assign the policy you just created to that role.

8. In the left menu, select **Roles** and click **Create role**.



aws Serv	ices 🗸 Resource Groups 🦆 🛊
Search IAM	Roles
Dashboard Groups Users Roles Policies Identity providers Account settings Credential report	 What are IAM roles? IAM roles are a secure way to grant permissions to entities that you trust. Examples of entities include the following: IAM user in another account Application code running on an EC2 instance that needs to perform actions on AWS resources An AWS service that needs to act on resources in your account to provide its features Users from a corporate directory who use identity federation with SAML IAM roles issue keys that are valid for short durations, making them a more secure way to grant access.
Encryption keys	Additional resources: IAM Roles FAQ IAM Roles Documentation Tutorial: Setting Up Cross Account Access Common Scenarios for Roles Create role Delete role

9. In the list of type of trusted entity, select **AWS service** and then select **EC2**. Click **Next: Permissions**.



Create role				1 2 3 4
Select type of trus	ted entity			
AWS service EC2, Lambda and oth	ners Another A Belonging to	WS account you or 3rd party We	b identity Inito or any OpeniD Ider	SAML 2.0 federation Your corporate directory
Allows AWS services to perfo	orm actions on your behalf. Lea	im more		
Choose the service	e that will use this ro	ble		
EC2 Allows EC2 instances to cal	II AWS services on your behalf.			
Lambda Allows Lambda functions to	call AWS services on your beh	alf.		
API Gateway	CodeBuild	EKS	Lambda	SMS
AWS Backup	CodeDeploy	EMR	Lex	SNS
AWS Support	Config	ElastiCache	License Manager	SWF
Amplify	Connect	Elastic Beanstalk	Machine Learning	SageMaker
AppSync	DMS	Elastic Container Service	Macie	Security Hub
Application Auto Scaling	Data Lifecycle Manager	Elastic Transcoder	MediaConvert	Service Catalog
Application Discovery	Data Pipeline	ElasticLoadBalancing	OpsWorks	Step Functions
Service	DataSync	Glue	RAM	Storage Gateway
Auto Scaling	DeepLens	Greengrass	RDS	Transfer
Batch	Directory Service	GuardDuty	Redshift	Trusted Advisor
CloudFormation	DynamoDB	Inspector	Rekognition	VPC
CloudHSM	EC2	IoT	S3	WorkLink
CloudTrail	EC2 - Fleet	Kinesis		
CloudWatch Events				
* Required				Cancel Next: Permissions

10. In the AWS services list, select **EC2** again and click **Next: Permissions**.



Allows EC2 instances to call	I AWS services on your behalf.			
Lambda Allows Lambda functions to	call AWS services on your beh	alf.		
API Gateway	CodeBuild	EKS	Lambda	SMS
AWS Backup	CodeDeploy	EMR	Lex	SNS
AWS Support	Config	ElastiCache	License Manager	SWF
Amplify	Connect	Elastic Beanstalk	Machine Learning	SageMaker
AppSync	DMS	Elastic Container Service	Macie	Security Hub
Application Auto Scaling	Data Lifecycle Manager	Elastic Transcoder	MediaConvert	Service Catalog
Application Discovery	Data Pipeline	ElasticLoadBalancing	OpsWorks	Step Functions
Service	DataSync	Glue	RAM	Storage Gateway
Auto Scaling	DeepLens	Greengrass	RDS	Transfer
Batch	Directory Service	GuardDuty	Redshift	Trusted Advisor
CloudFormation	DynamoDB	Inspector	Rekognition	VPC
CloudHSM	EC2	юТ	S3	WorkLink
	EC2 - Fleet	Kinesis		
Cloudwatch Events				
Select your use ca	ise			
EC2 Allows EC2 instances to call	I AWS services on your behalf.			
EC2 - Scheduled Instances Allows EC2 Scheduled Insta	s ances to manage instances on	your behalf.		
EC2 - Spot Fleet Allows EC2 Spot Fleet to law	unch and manage spot fleet ins	tances on your behalf.		
EC2 - Spot Fleet Auto Scal Allows Auto Scaling to acces	ling ss and update EC2 spot fleets	on your behalf.		
EC2 - Spot Fleet Tagging Allows EC2 to launch spot in	nstances and attach tags to the	launched instances on your be	half.	
EC2 - Spot Instances Allows EC2 Spot Instances	to launch and manage spot ins	tances on your behalf.		
EC2 Role for Simple Syste Allows EC2 instances to call	ems Manager I AWS services like CloudWatc	h and SSM on your behalf.		
EC2 Spot Fleet Role Allows EC2 Spot Fleet to rea	quest and terminate Spot Insta	nces on your behalf.		
* Required				Cancel Next: Permissions

11. Search for the previously created policy, select its check box, and click Next: Review.



 Attach permissions policies 			
Choose one or more policies to attach to your n Create policy	Create policy		
Filter policies - Q. od_		Showing 1 re	
Policy name 🗸	Used as	Description	
CD_RO	None		
 Set permissions boundary 			

13. Name the **Role** and select **Create Role**.

Cleate Ible		
Review		
Provide the required information below and review	this role before you oreate it.	
Role name*		
	Use alphanumeric and '++, @' characters. Maximum 64 characters.	
Role description	Allows EC2 instances to call AWS services on your behalf.	
	Maximum 1000 characters. Use alphanumeric and '++, @+_' characters.	
Trusted entities	AWS service: ec2.amazonaws.com	
Policies	CD_RO 🖉	
Permissions boundary	Permissions boundary is not set	
No lags were added.		

14. Assign the resulting role to the N2WS trial instance by:

- a. Select the N2WS instance name.
- b. In the Actions menu, select Instance Settings and then Attach/Replace IAM Role.



aws	Services	v Resource Groups	~ \$		
EC2 Dashboard	A	Launch Instance 🔻	Connect	Actions A	
Tags		Q. Filter by tags and attribute	es or search	Connect Get Windows Password	
Reports		Name - Inst	ance ID	Create Template From Instance	ility Zone 👻 Instance State 👻 Status
Limits		N2WS 2.5.0 Trial +0a3	3e18669e8a	Instance State	-1d 🕒 running 🖾 In
INSTANCES	11			Instance Settings	Add/Edit Tags Attach to Auto Scaling Group
H IMAGES				Networking	Attach/Replace IAM Role
ELASTIC BLOCK STORE				CloudWatch Monitoring	Change Termination Protection
E NETWORK & SECURITY					ViewiChange User Data Change Shutdown Behavior Change T2/T3 Unlimited
LOAD BALANCING					Get System Log Get Instance Screenshot
AUTO SCALING					Modify Instance Placement
SYSTEMS MANAGER SERVICES					Modity Capacity Reservation Settings
SYSTEMS MANAGER SHARED RESOURCE	s	Instance: i-0a3e18669e8a	a91d23 (N2	WS 2.5.0 Trial) Public DNS: ec	2-3-95-39-1.compute-1.amazonaws.com
		Description Status Cl	hecks N	Nonitoring Tags Usage Ins	structions
		Insta	nce ID i-0a	a3e18669e8a91d23	
		Instance	e state run se type t2.r	ning nicro	
		Elas	atic IPs	east-1d	i
		Security g	groups N2	WS Backup - Recovery -CPM- Free	Trial - BYOL Edition-2-4-0-AutogenByAWSMF



Appendix B – Adding Exception for Default Browser

For Chrome:

Your connection is not private
Attackers might be trying to steal your information from 54.162.251.161 (for example, passwords, messages, or credit cards). <u>Learn more</u>
NET::ERR_CERT_AUTHORITY_INVALID
Help improve Safe Browsing by sending some <u>system information and page</u> <u>content</u> to Google. <u>Privacy policy</u>
Advanced Back to safety

- 1. Open the Chrome browser. In top right, click **More**
- 2. Click Settings, Advanced, and then in the System section, click Open proxy settings.



3. Choose the **Security** tab and then click **Trusted Sites**.



internet Prope General Security	Privacy Co	ontent Connections	? × Programs Advanced
Select a zone to	view or chang	e <u>security settinos</u> . V Trusted sites Re	Stricted sites
Security level 4	et ne is for Interr those listed in ed zones.	net websites, trusted and	Sites
Allowed level	s for this zone dium-high Appropriate fi Prompts befor ontent Unsigned Acti Protected Mode	: Medium to High or most websites re downloading poten veX controls will not b e (requires restarting	tially unsafe e downloaded Internet Explorer)
		Reset all zone	es to default level
	[ОК С	ancel Apply

- 4. Click the **Sites** button.
- 5. Type the CPM server's IP address in the **Add this website to the zone** box and then click **Add, Close**. and **OK**.



Internet Properties		? ×
👫 Trusted sites		X
You can add and r this zone will use t	emove websites from this he zone's security setting	s zone. All websites in js.
Add this website to the zon	e:	
https://54.162.251.		Add
Websites:		
43a		Remove
Require server verification	on (https:) for all sites in	this zone
Enable Protected M	lode (requires restarting	Internet Explorer)
☐ Enable Protected №	lode (requires restarting Custom level	Internet Explorer) Default level
☐ Enable Protected №	tode (requires restarting Custom level Reset all zon	Internet Explorer) Default level es to default level

You should not get the warning on the certificate again.

For Firefox:

The example is from Firefox Quantum. Click **Advanced** (1) and **Add Exception** for this server (2).



