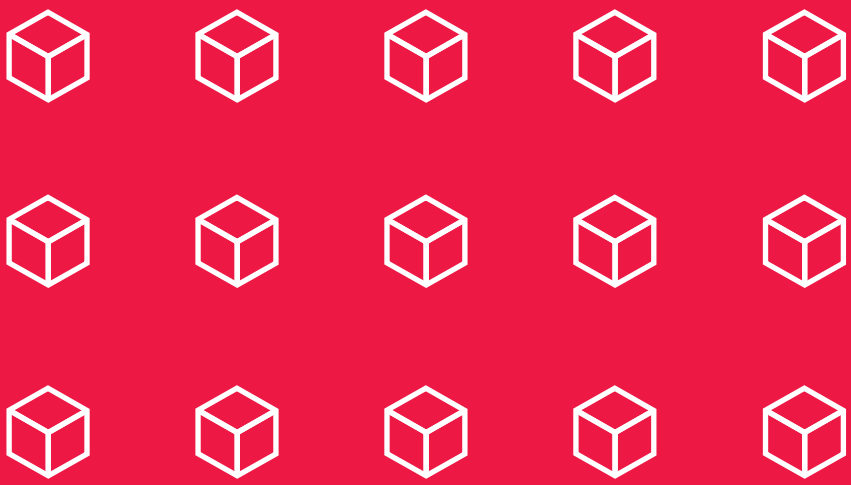
Tintri

HOW-TO GUIDE



TINTRI MAXIMIZES PERFORMANCE FOR YOUR APPLICATIONS

AND THE PEOPLE WHO MANAGE THEM.

We do that through a line-up of all-flash storage and software that controls each application automatically, **so you don't have to.**

This how-to guide shows how easy it is to complete tasks and make better decisions with Tintri.

HOW TO:

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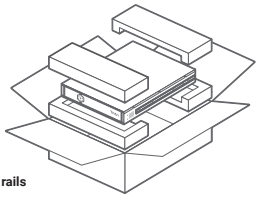
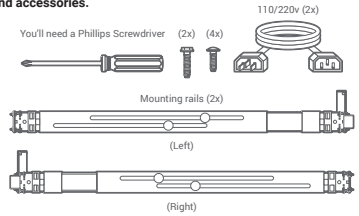
INSTALL YOUR TINTRI

1

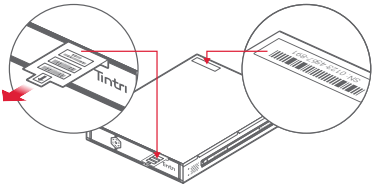
Unbox it.



Grab the included rails and accessories.

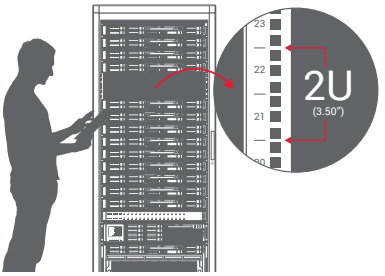


Write down (a) the serial number located on either the back or front of your system, and (b) the Admin IP address you plan to use. It's easier to find them now, and you'll need them later.



2

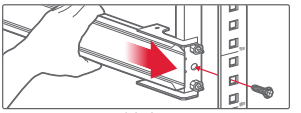
Identify 2U of rack space where you'll be installing your shiny, new Tintri EC6000 system.



3

Time to get handy. Install the outer rails. Start with the right front, making sure to use one of the four provided screws to secure rail to rack post.

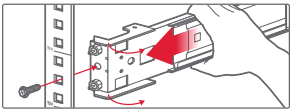
3a.



Right front

Repeat the process for the right rear. One down and one to go. Now complete the left front and back, using screws to secure rail to the rack.

3b.



Right rear

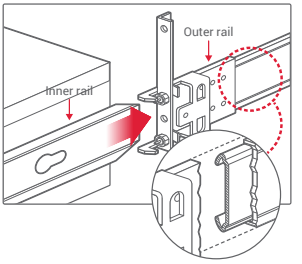
Ensure they are completely vertically aligned (step back and close one eye like a pirate to be absolutely sure).

3c.

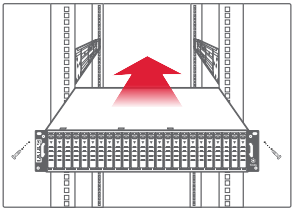
Front of rack

4

Ensure inner rail fits into channel of outer rail on both sides of EC6000 chassis.

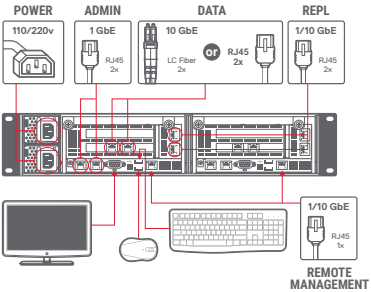


Insert your EC6000 into the outer rails, install the two longer screws to keep it in place, one on each side, then attach the bezel. Stand back and admire your handiwork.



5

Connect VGA monitor cable to VGA port, then attach your keyboard and mouse for local configuration.
Alternatively, if configuring remotely, connect both REMOTE MANAGEMENT ports.



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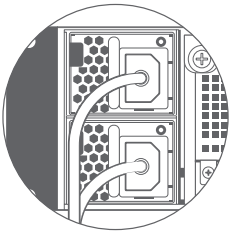
Plug in power cables and stand back - the system will begin the boot process.



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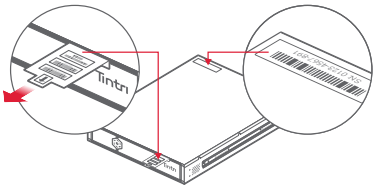
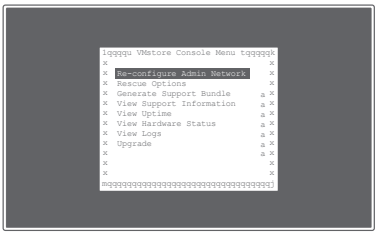
For remote management configuration, please consult full EC6000 Installation Guide (DOC #760-00070). For local setup, login to the system using LOGIN: <admin> and Password: <serial number including hyphens>, then keep chugging along!

P.S. Your serial number is located on either the back or front of the EC6000 chassis.

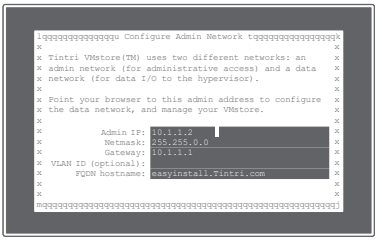


8

Reconfigure the admin network (select the below command).



Enter in three simple fields (top three are required and bottom two are optional). That's it — you're done!



9

Now head back to your desk and use either Internet Explorer or Firefox to access your EC6000 Admin IP address.

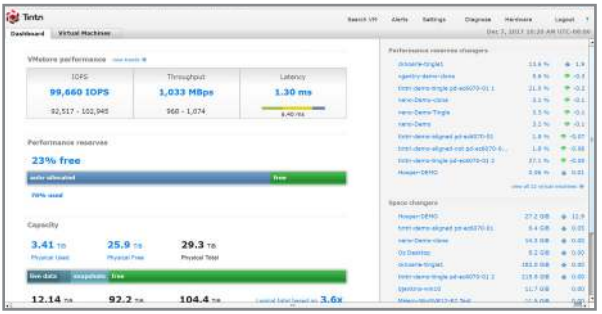
TACKLE BASIC TASKS

Example 1:

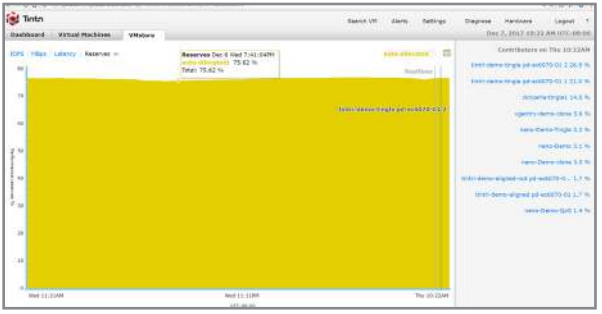
Determine performance headroom

It's easy to see how much performance you have in reserve.

Step 1: Open up your Tintri dashboard and it's right there—you can see the % of performance used/remaining.



Step 2: Go one level deeper. Click on "% free" and drill into the below view so you can see how performance usage is changing over time. On the right side of the screen, you can see the specific VMs that are using the most performance.

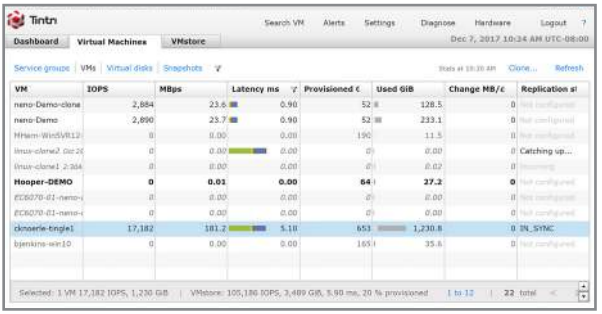


Example 2:

Troubleshoot latency

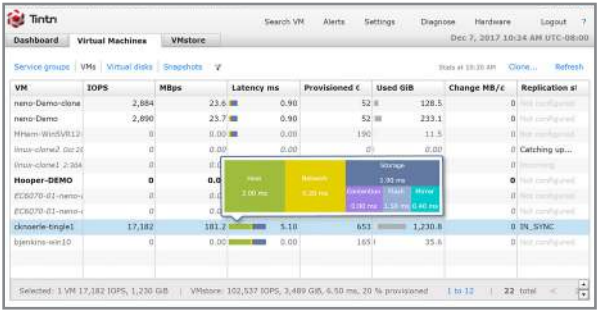
Troubleshooting is no trouble at all.

Step 1: In the Tintri UI, select the "Virtual Machines" tab to see a list of ALL the VMs and containers on your Tintri system.



Step 2: Click on the "Latency" column to sort by latency, from highest to lowest. You can see the total latency for each VM and container.

Step 3: Hover over the latency data in any row and a pop-up visual will show you the source of latency across compute, network and storage.



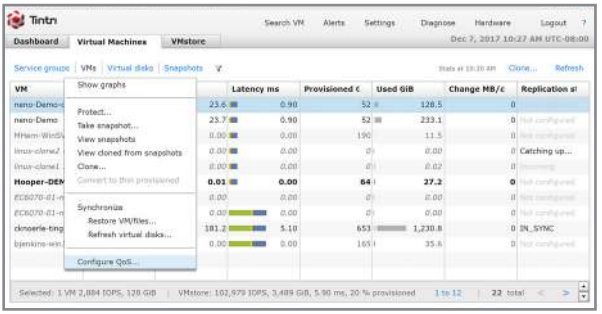
Example 3:

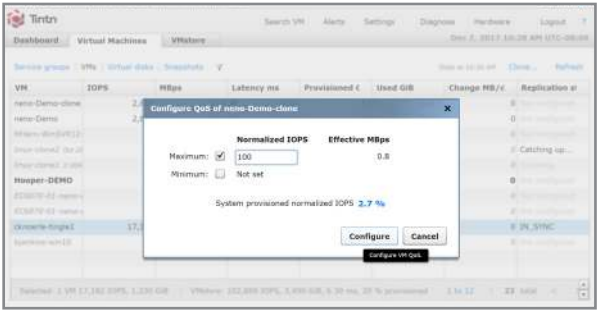
Set Quality of Service

Tintri's machine learning automatically manages quality of service (QoS) for your applications, but sometimes you'll want to make adjustments—for example, to put a QoS "ceiling" on a rogue application that is using too many resources.

Step 1: On your Tintri dashboard, you'll see the VMs that are using the most performance. You can drill into any one with a single click.

Step 2: Right-click on the VM and select "Configure QoS". Select the minimum IOPS you want to guarantee or (in this case) the maximum ceiling to set. Done.





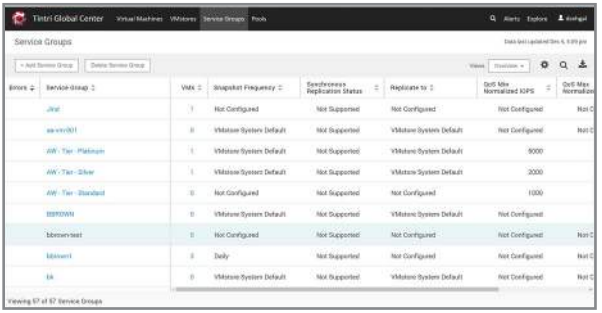
MANAGE MULTIPLE SYSTEMS

Example 1:

Establish service groups

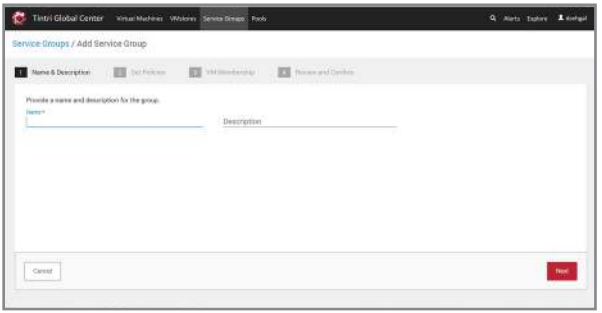
Tintri lets you manage your entire virtual footprint from one central console. To keep things simple, you can create Service Groups made up of multiple VMs, then apply QoS and policies at the group level.

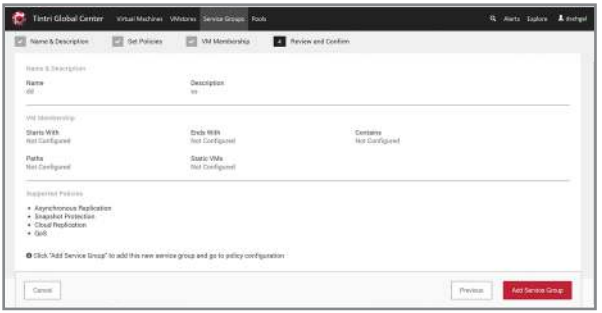
Step 1: Select “Service Groups” from the top navigation menu. Click on the “ ... “ menu in the top right to see all available actions. Select “Add Service Group”.



Step 2: Now you’ve got to associate the right VMs with this group. Define membership by clicking on “Add Rule”.

Step 3: Select the VMs you want to include, or use “contains” to find VMs based on naming conventions. Your Service Group is all set.



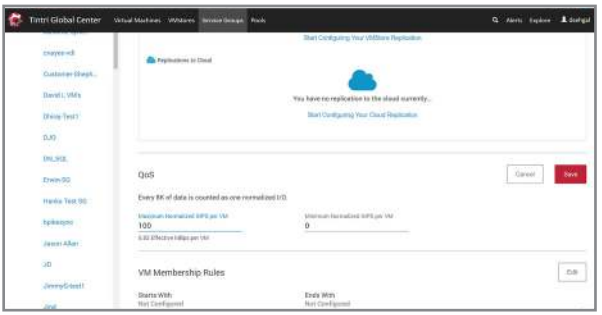


Example 2:

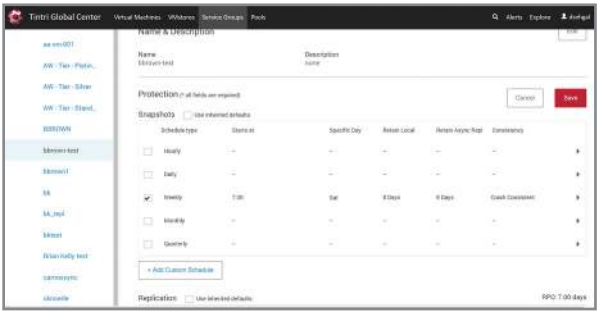
Set group policies

Once the Service Group is created, you can apply policies.

Step 1: Select "Configure Qos". If these VMs are going to be rogue resource hogs, set a maximum ceiling to contain them. If they are mission critical, then guarantee them a minimum level of performance.



Step 2: Set a data protection policy. Click on the "Protection" policy box. You can choose hourly, daily or weekly. For important VMs, set a frequent snapshot schedule.



Good to know

These policies will be applied automatically to any VM that is added to this Service Group. And the policies will follow those VMs if you move them to other Service Groups.

PROTECT YOUR DATA

Example 1:

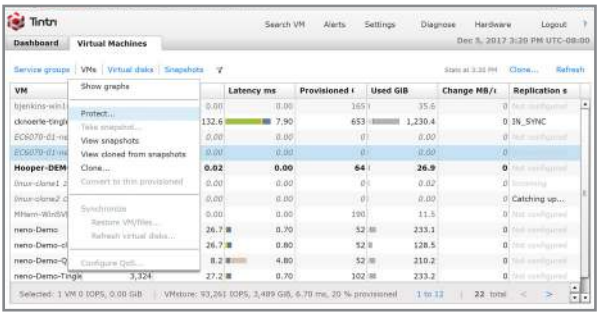
Replicate a virtual machine

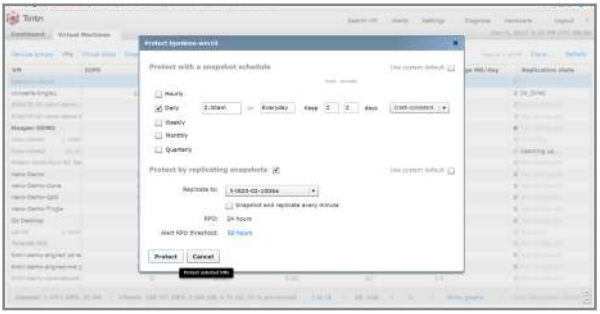
With Tintri you don't have to waste resources by replicating an entire LUN or volume—you can replicate an individual virtual machine in just three clicks.

Step 1: Right-click on the VM in the Tintri UI and select "Protect."

Step 2: Select your snapshot schedule—weekly, daily, hourly, etc.

Step 3: Set your replication destination and you're done. You can choose replication paths of one-to-one, many-to-one, and one-to-many locations (up to four locations).





Good to know

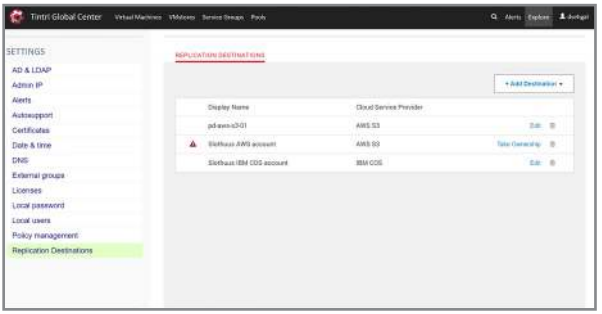
The above steps can also be easily applied to replication of a Service Group.

Example 2:

Connect to AWS and/or IBM Cloud Object Storage

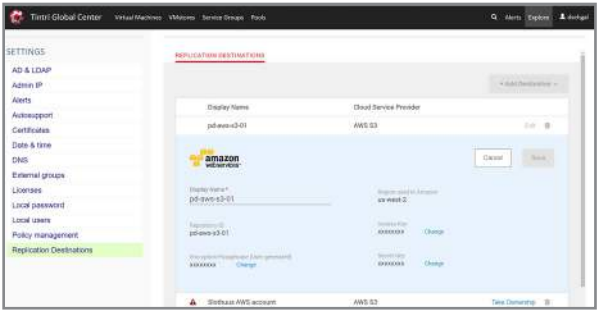
Tintri Cloud Connector unites on-premises infrastructure with AWS and IBM Cloud Object Storage.

Step 1: Configure cloud destinations with passphrases and key management all in one secure place.



Step 2: Select your destination for replication and snapshots. Now set your snapshot schedule—weekly, daily, hourly, etc.

Step 3: Download snapshots from cloud to any Tintri storage system and restore back on-premises as needed.



Example 3:

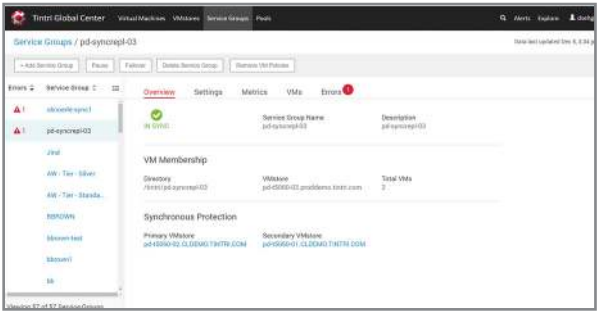
Synchronous Replication

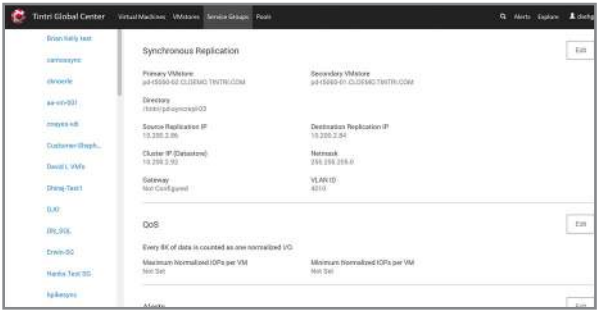
Tintri synchronous replication can be set up in minutes by an IT generalist and offers zero-minute RPO with single-click failover.

Step 1: Configure a synchronous replication relationship for a group of mission critical applications with zero RTO.

Step 2: Monitor and troubleshoot with end-to-end visualization of latency—including the replication component.

Step 3: If needed, you can failover for manual testing or planned events with a single click.





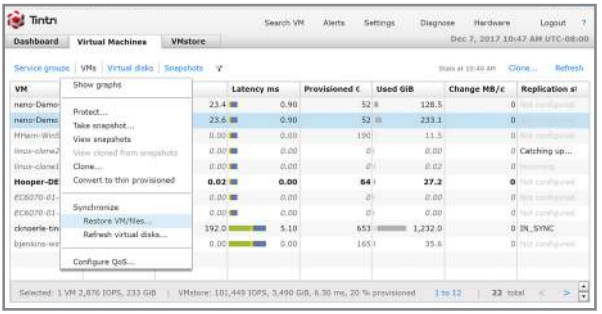
COPY DATA MANAGEMENT

Example 1:

Restore an unstable VM

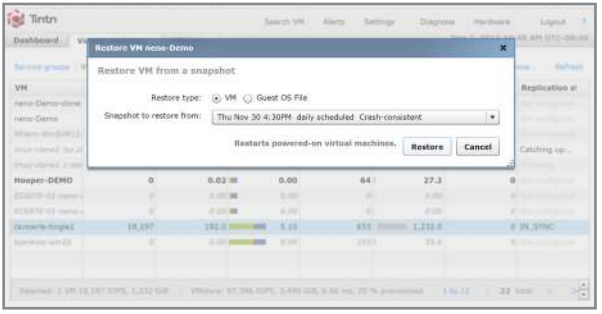
With conventional storage, restoring VMs and files can be a complicated task – with Tintri SyncVM, it's simple. SyncVM can also be used to keep child VMs up-to-date based on a master VM, well suited for DevOps environments. Here's how to restore an unstable VM.

Step 1: Click on the "Virtual Machines" tab in the top left corner of the Tintri UI.



Step 2: Search for and then right-click on the unstable VM. Select "Restore VM/files". You have a chance to restore the VM or the Guest OS file. Make sure to select VM in the dialog box.

Step 3: In the dropdown, revert to a stable instance of this VM. Tintri has retained all performance history and snapshots.



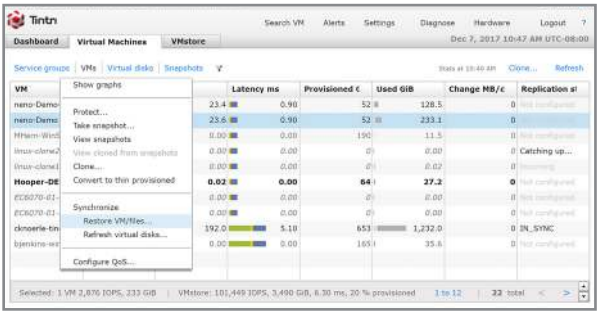
Example 2:

Doing a file-level restore

If someone mistakenly deleted a key file from a VM, you can easily restore it - here's how to do it.

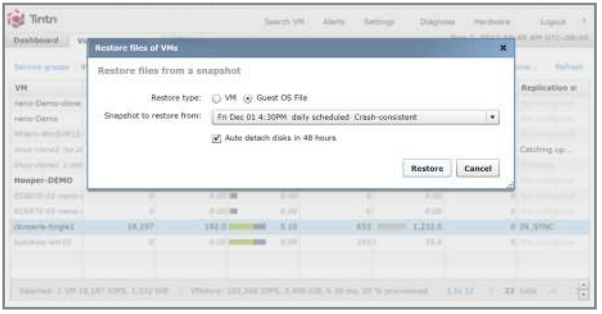
Step 1: Start by clicking on the virtual machines tab in the Tintri UI.

Step 2: Search for and then right-click on the VM in question. Select "Restore VM/files". Then select the "Guest OS file" radio button in the dialog box.



Step 3: In the dropdown select the most recent snapshot to restore the Guest OS to a previous snapshot.

Step 4: Now pop into Disk Management (from within the Guest OS) to bring the restored snapshot online and perform the file restore.



Step 5: Copy over the missing file to the parent drive from within the Guest OS.

SCALE YOUR INFRASTRUCTURE

Example 1:

Scale-up your all-flash array

Tintri makes it easy to add capacity to your all-flash footprint. If you have a partially populated all-flash system you can add capacity one drive at a time with our FlexDrive technology.

Step 1: Use the expansion estimator that is part of your Tintri UI to model your capacity needs and the impact of additional drives.

Step 2: Slide your drive(s) into any open slot in your Tintri all-flash system.

Step 3: Return to your Tintri UI and click the big "EXPAND" button. Your additional capacity is immediately deployed and available to use.

Good to know

This process requires **no additional rack space or cabling,** is non-disruptive and takes only a few minutes. And you never have to over-buy disks to accommodate RAID groups—it's a simpler, more efficient way to expand capacity.

Example 2:

Scale-out your Tintri footprint

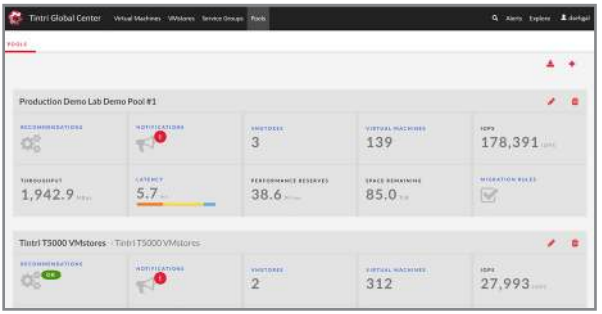
Tintri VM Scale-out technology (part of Tintri Global Center Advanced) treats all your systems as one federated pool, so adding another system is a breeze.

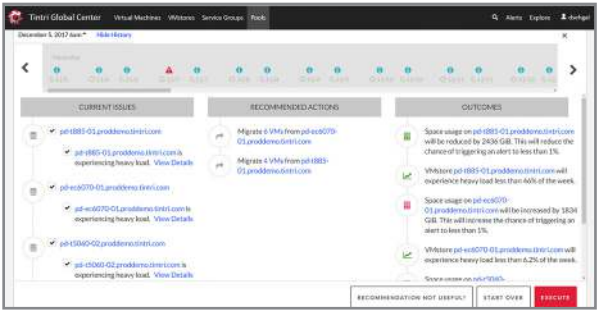
Step 1: Rack and configure your Tintri system. Tintri Global Center automatically recognizes your system.

Step 2: Select "Pools" from the top-level navigation and you can add the system to your existing pool or define one or more pools as self-managing units.

Step 3: The Tintri UI will highlight any pools for which it has NEW recommendations. Click on such a pool.

Step 4: VM Scale-out will have already run algorithms that identify the optimal placement for every one of your VMs across your newly expanded pool. You can manually modify the recommendation or simply hit "Execute" and Tintri will make all the changes for you.





PREDICT THE FUTURE

Example 1:

Trend storage and compute needs

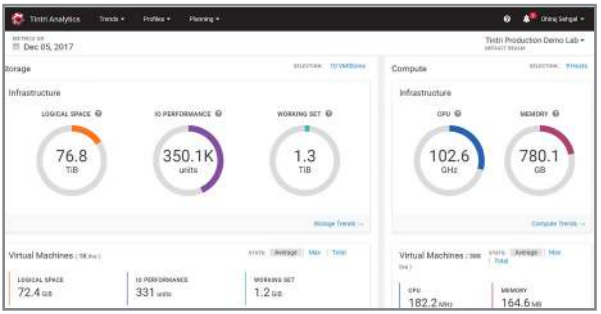
Use Tintri Analytics to forecast your storage future—and answer questions like: Do I have the resources to add more instances of an application? When will my storage and compute run out of capacity or performance? How are my applications' resource usages changing over time?

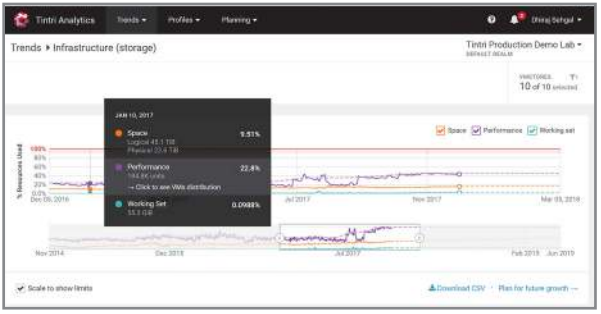
Step 1: Log-in to your Tintri Analytics account (every Tintri customer has free access to analytics).

Step 2: Click on "Trends" in the top navigation. You'll see up to three years of historical trends, as well as projections 18 months into the future for your core resources: capacity, performance, working set, CPU, and memory.

Step 3: Adjust the time ranges that are driving your forecasts (e.g. to focus on more recent data that better reflects the current direction of your data center).

Step 4: Filter the results by Tintri systems, isolating individual systems or pools to forecast their needs.





Example 2:

Create application profiles

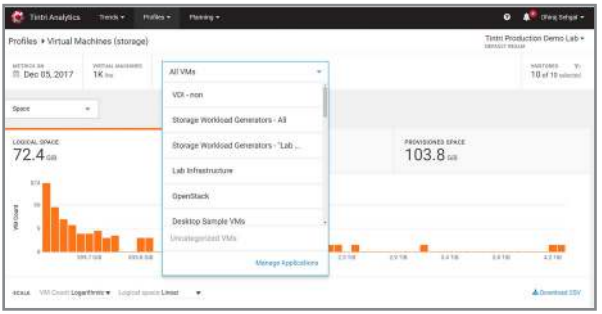
Your Tintri footprint probably includes large numbers of similar virtualized workloads. For example, virtual desktops and/or SQL servers. It can be useful to monitor (and model) the behavior of these categories of applications to see how they are changing and consuming resources over time.

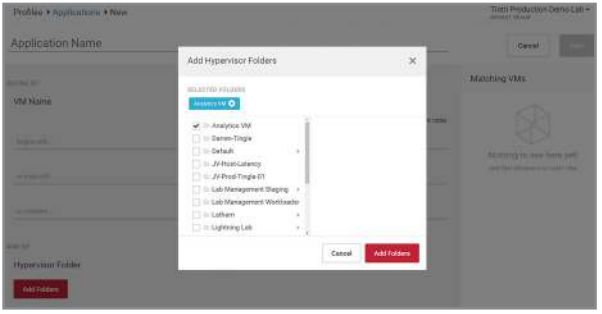
Step 1: Log-in to your Tintri Analytics account and click on "Profiles" in the top navigation.

Step 2: In the dropdown menu, click on "Manage Applications." Here you'll be able to create filters to organize your VMs into applications. Name your application profile—for example, "Virtual Desktops" or "SQL Server Databse."

Step 3: Search for VMs that fit this category based on naming convention. You add them directly to your newly created profile.

Step 4: You can also add hypervisor folders that your VMs live in by clicking "Add Folders." Check off the relevant folders and hit save.



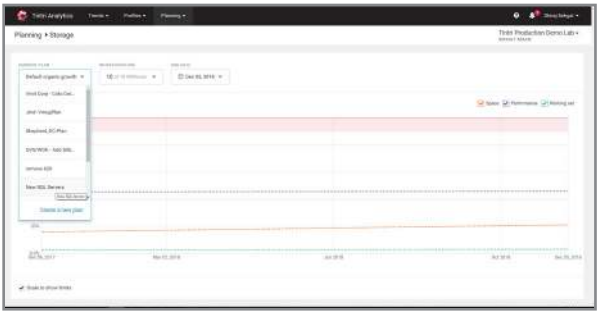


Example 3:

Model new deployments

Now that you've created application profiles, you can very accurately model the impact of adding MORE of that type of application. So, the next time a colleague asks you if your footprint can support another 100 SQL server VMs, the answer is right in front of you.

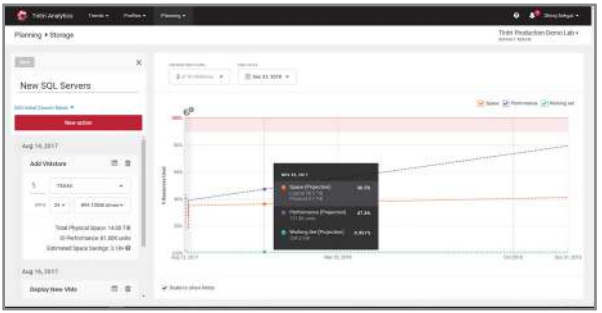
Step 1: Log-in to your Tintri Analytics account and select "Planning" in the top navigation.



Step 2: Click the dropdown menu in the upper-left corner and select "Create a new plan." The body of the screen has two portions.

Step 3: Left—Toggle the number of applications to add, set the target systems where they will reside, and define the average capacity and performance you expect each application to use.

Step 4: Right—See a responsive graph that visualizes the impact of your changes.



Good to know

Adjust and tinker as you like. Learn how many instances of your application type you can add before you exceed 100% of your capacity, performance, CPU or memory.

NEXT STEPS

Try it yourself—and test your skills

Now it's time to get hands-on. We've created a mock-up of the Tintri UI, so you can see how easy it is to guarantee performance, scale-out, replicate and more. Just visit: **explore.tintri.com**

Contact us for a demo

Want to know exactly how Tintri can save you time and money? Then schedule a 30-minute demo to get your questions answered and see us in action. Just complete the form at: **tintri.com/contact-us**

SOFTWARE

Analytics

Real-time & Predictive

Get visibility into your applications now, so you can troubleshoot in seconds. Tintri machine learning algorithms model your storage and compute needs up to 18 months into the future.

SecureVM

System Encryption

Tintri meets the highest security standards, encrypting each application with AES-256 bit algorithms without impacting capacity or performance. Rotate keys right from your dashboard.

SyncVM

Copy Data Management

Automatically ensure each developer works from up-to-date production data, helping them effortlessly move between snapshots to keep DevOps in constant motion.

Cloud Connector

Public Cloud Integration

Integrate your on-premises private cloud with your AWS or IBM Cloud Object Storage footprint. Move any application between clouds with unmatched speed and efficiency.

ReplicateVM

2-Click Replication

Tintri replicates individual applications in clicks, with application-level RPOs of any level. Set policies and walk away—Tintri automatically applies your policies to new applications.

VM Scale-out

Automated Optimization

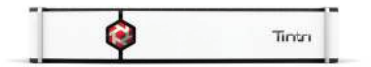
Tintri treats its systems as a federated pool of storage. Add more capacity one drive at a time, or add another Tintri system—scale-out software optimizes the location of every single application.

HARDWARE

Tintri Global Center (TGC)
Manage your entire virtual footprint from a single pane of glass. Tintri Global Center lets you control each of your applications automatically across 64 Tintri systems. Set policies for quality of service, cloning, snapshots and replication: all at the application level.

T800 Hybrid-Flash

The Tintri Hybrid-Flash Array delivers 99% of IO from flash, automatically controlling each of your applications and giving you total visibility of your footprint.

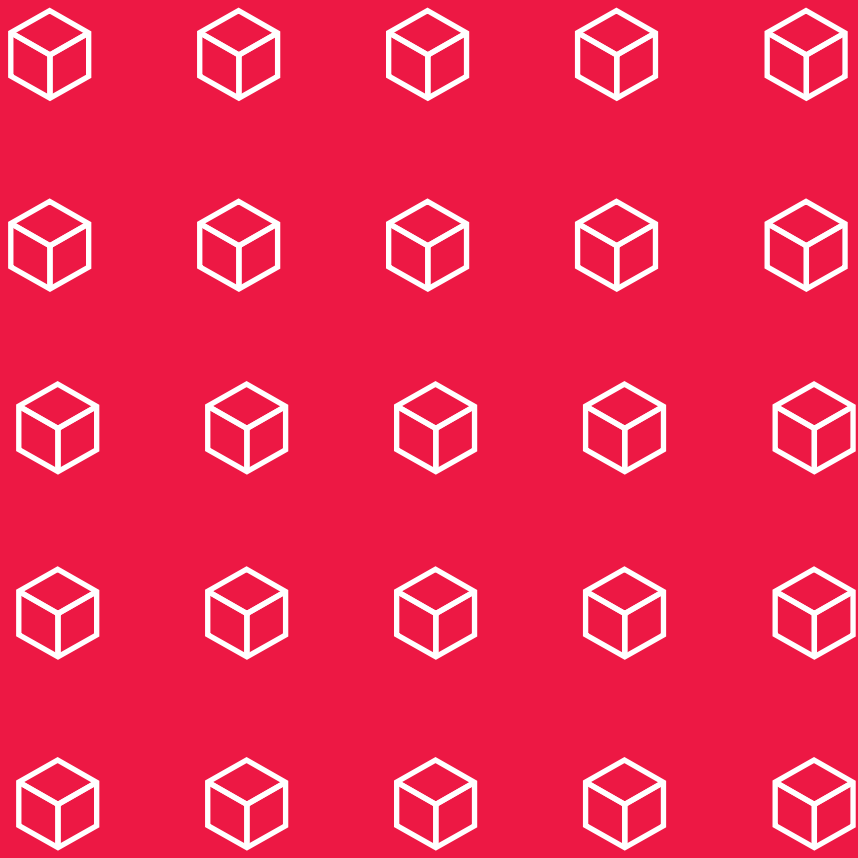


EC6000 All-Flash

The Tintri EC6000 All-Flash Array offers the best performance for all your applications. Expand capacity from 19 TB up to 645 TB one drive or one system at a time.

T1000 All-Flash

Give your remote offices the same powerful tech as HQ, without the management headache. The T1000 All-Flash Array controls each of your applications automatically.



Tintri