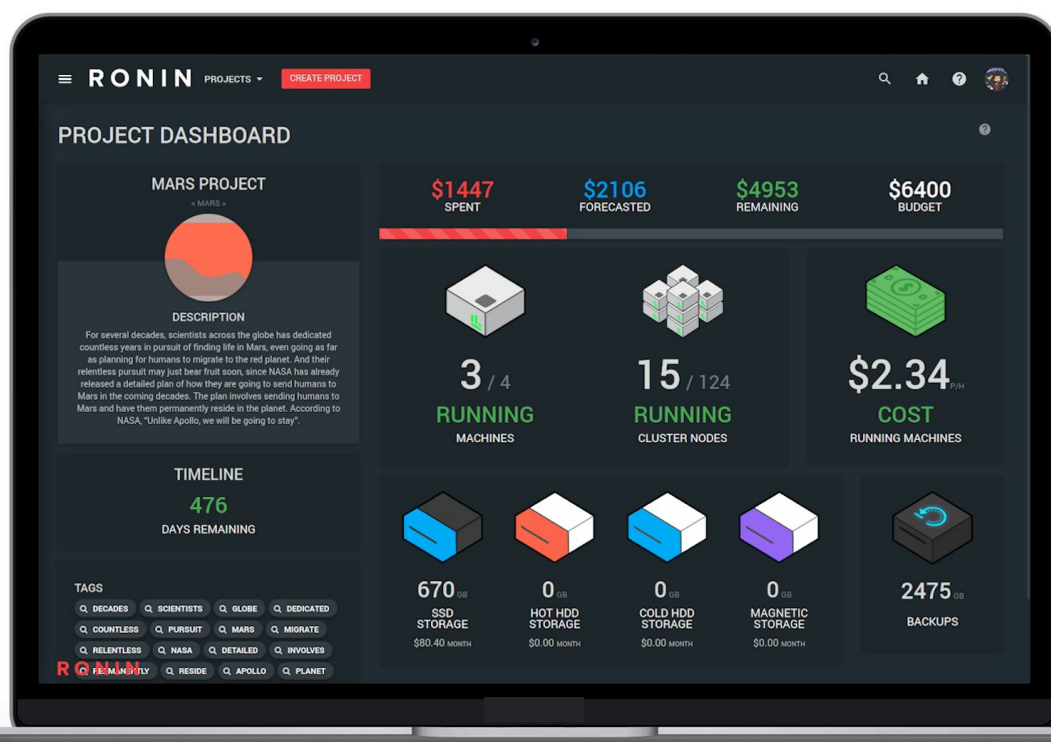


RONIN

ISOLATE (TRE/SDE)

< SELF-SERVICE RESEARCH COMPUTING IN A BUBBLE >



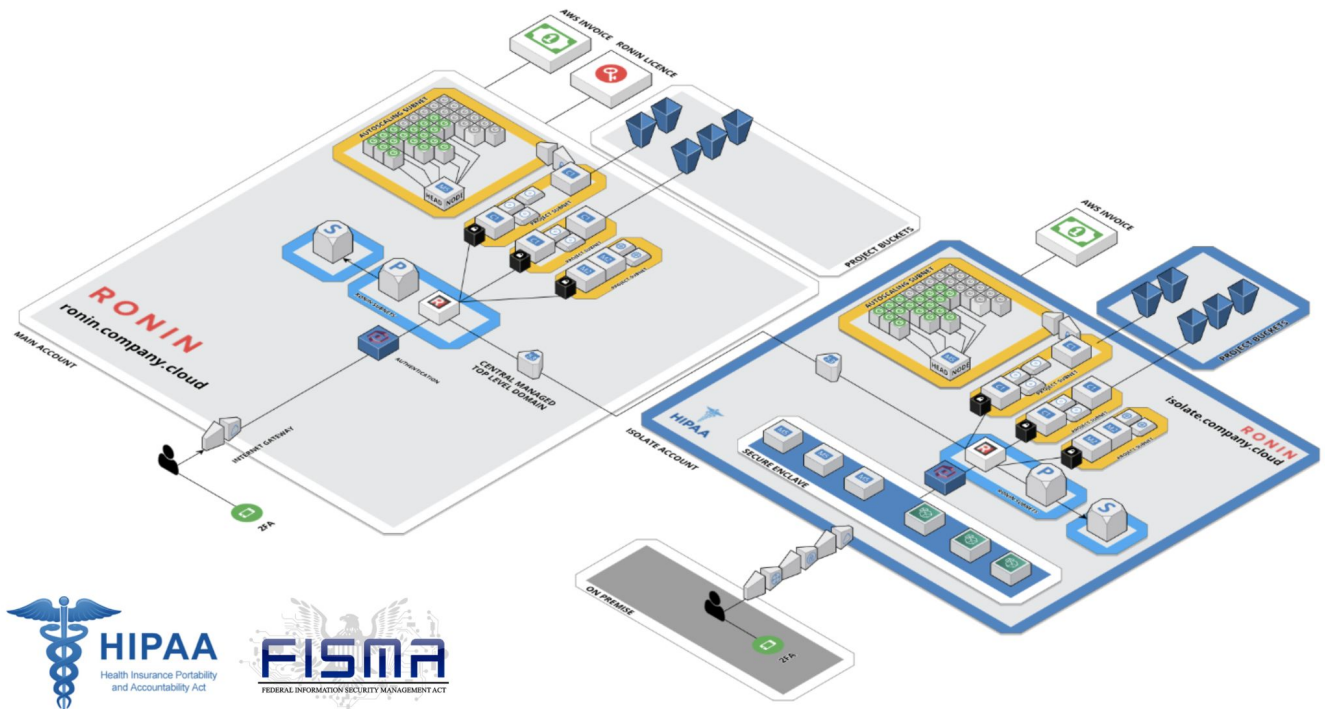
THE USER EXPERIENCE YOU LOVE, WITH THE COMPLIANCE YOU NEED

RONIN Isolate is a Trusted Research Environment (TRE) and Secure Data Environment (SDE) designed to meet the security and compliance demands of our most security-conscious customers, while providing users the same experience as **RONIN** Core. **RONIN** Isolate is configurable to be completely locked down and isolated from the outside environment to be eligible for HIPAA, FISMA and beyond.

WHY RONIN ISOLATE?

RONIN ISOLATE HELPS PROTECT YOUR SENSITIVE DATA

Supporting self-service research on AWS using protected information is challenging. **RONIN** Isolate is a research environment designed to meet the security and compliance demands of our most security-conscious customers, while providing users with an intuitive self-service platform that is as easy to work in as a laptop.



HOW DOES RONIN ISOLATE DIFFER FROM RONIN CORE?

The main characteristic of **RONIN** Isolate in contrast to our flagship product **RONIN** Core is that **RONIN** Isolate is deployed in an AWS account that is, by default, isolated from the outside world. All AWS resources must be accessed through a secure enclave. By default the secure enclave will contain Amazon workspaces for the users to access the environment. These can be restricted to IP addresses, approved devices, transit gateway connections and more..

RONIN Isolate additionally provides a configurable baseline of policies, controls and guardrails required to best position your organization to meet both regulatory and institutional IT security requirements.

- ✓ Restricted Access via Secure Enclave
- ✓ Machine Restricted Storage Keys
- ✓ Data Encrypted in Transit and at Rest

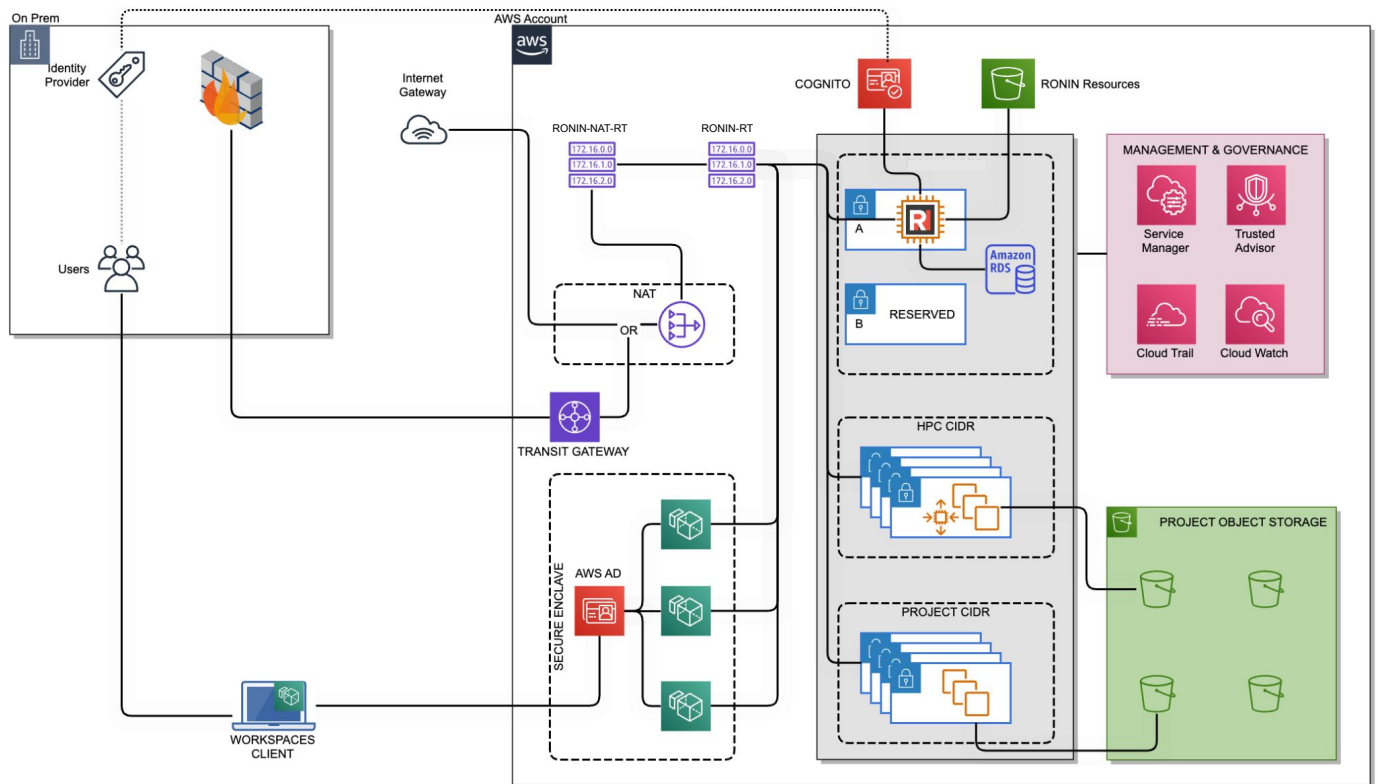
- ✓ Comprehensive Logging and Auditing
- ✓ Custom Network Isolation Rules
- ✓ All the features of RONIN Core

RONIN ISOLATE FEATURES

A SECURE ARCHITECTURE

RONIN Isolate is installed within your organization's AWS account (“self-hosted”). It is not Software as a Service (SaaS). This self-hosted deployment model provides your organization complete visibility and control over every aspect of the underlying AWS infrastructure and also means data never needs to leave your custody or be copied to a third party.

RONIN Isolate creates an Amazon Virtual Private Cloud (VPC) service, which allows RONIN to launch AWS resources in a virtual network. To isolate this VPC from public network access, it must be connected to your secure enclave and a NAT gateway. RONIN Isolate is architected to only allow access to the resources from the secure enclave. Machines created in **RONIN** have no inbound network connectivity except through the secure enclave. Outbound traffic goes via the NAT gateway and can be directed to an internet gateway, Firewall, or transit gateway to go via your on prem firewalls.



RONIN ISOLATE FEATURES

LOGGING AND AUDITING

RONIN Isolate also helps customers address compliance requirements related to in-depth auditing capabilities. **RONIN** Isolate supports granular protection of data by user and machine to limit data access according to the principle of least privilege and separation of duties. Every action that a user makes within **RONIN** Isolate is logged and can be audited.

Together, **RONIN** Isolate logging for UI actions and AWS CloudTrail logging for AWS infrastructure actions provide clear audit trails for who accessed data, when they accessed it, who created which machines, who created keys, and who granted access to machines and keys. These audit trails support HIPAA regulations for monitoring and auditing use of electronic protected health information (ePHI) or identifying accidental exposure.



ENCRYPTION

Within the environment, **RONIN** Isolate ensures that all data is encrypted at rest and in transit to meet industry standard best practice guidelines defined by the CIS (Center for Internet Security). All access within **RONIN** Isolate private networks is encrypted in transit through the use of SSH and HTTPS protocols only.

All data that is stored on drives or S3 buckets created with **RONIN** are encrypted at rest and bucket policies are enforced to ensure object access is only available to allowlisted machines within **RONIN** Isolate private subnets over internal HTTPS.



BACKUP AND DISASTER RECOVERY

Institutions and projects often require fine-grained control over data backup and disaster recovery mechanisms to trade off cost versus risk. **RONIN** Isolate automates complex security capabilities such as access key regeneration and backup of data, machines and clusters to highly durable storage. These features support implementation of policies that minimize risk of accidental loss and a variety of automated or non-automated backup procedures.



RONIN ISOLATE FEATURES

ADDITIONAL AWS ACCOUNT SECURITY BEST PRACTICES

Because **RONIN** Isolate is installed within your organization's AWS account, the shared responsibility model established between AWS and the customer applies. **RONIN** configures the organization's account to be in the best position for addressing security and compliance requirements; however, organizations may tighten or relax constraints to serve their needs.

AWS provides multiple services to implement additional security controls that **RONIN** Isolate is fully compatible with including:



AWS Trusted Advisor: an AWS service that can perform checks (dependent upon your AWS Support Plan) to help with security based on AWS best practices.

AWS GuardDuty: a threat detection service that continuously monitors for malicious activity and unauthorized behavior to protect your AWS accounts, workloads, and data stored in Amazon S3.

If you have questions about how **RONIN** Isolate can provide a secure research environment, please contact us to discuss your specific requirements.

DON'T BE SHY..

CONTACT US TO GET UP AND **RONIN**.



[HTTPS://RONIN.CLOUD](https://ronin.cloud)



CONTACT@RONIN.CLOUD

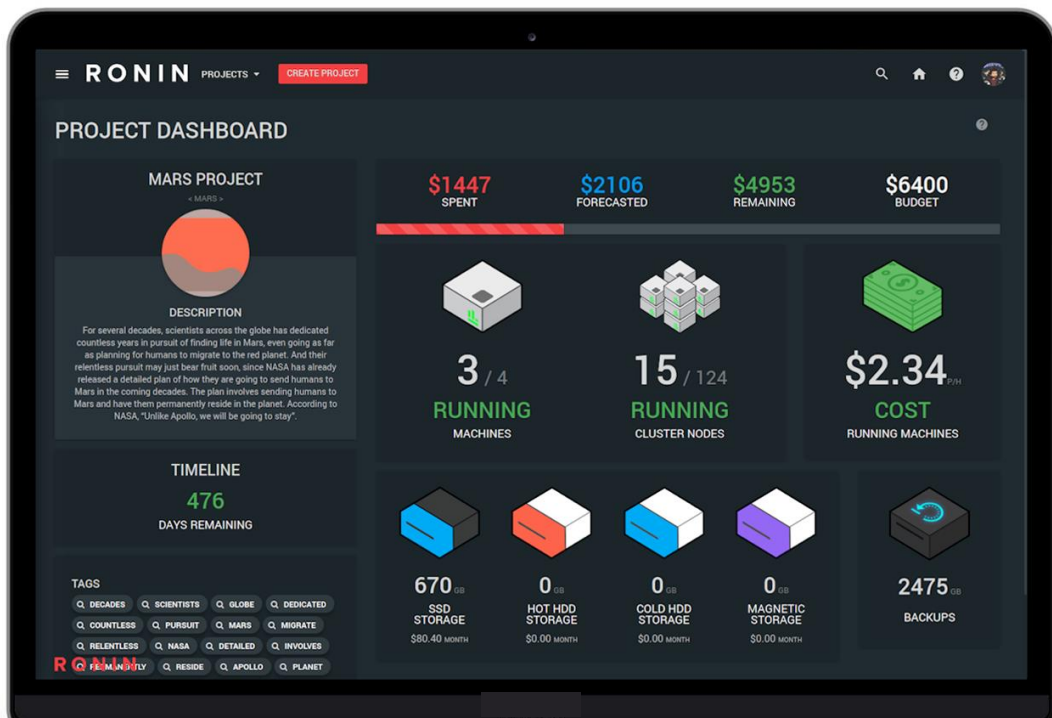
OR STALK US...



RONIN

CLOUD, SIMPLIFIED.

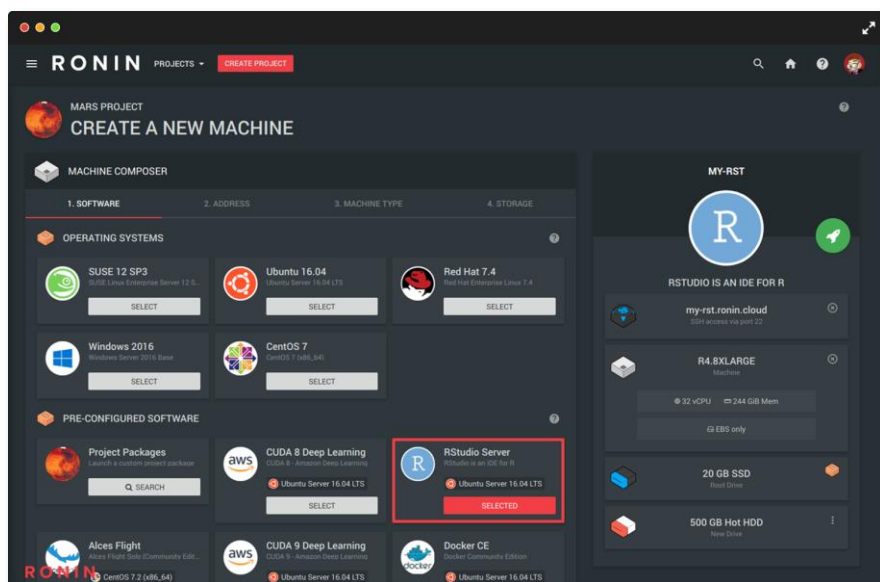
< UNLEASH YOUR CLOUD >



CLOUD MADE EASY

RONIN is an incredibly simplistic web application that allows its users to launch complex compute resources within minutes, without the nerding.

CREATE A MACHINE IN SECONDS



CREATE A MACHINE (EC2) RONIN INTUITIVE DESIGN

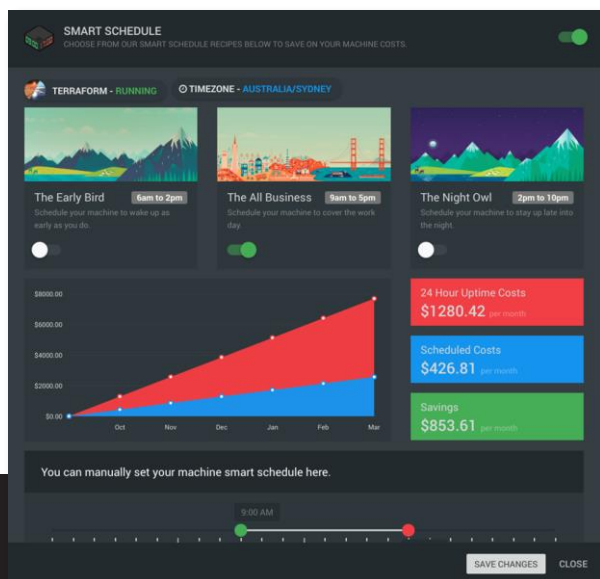
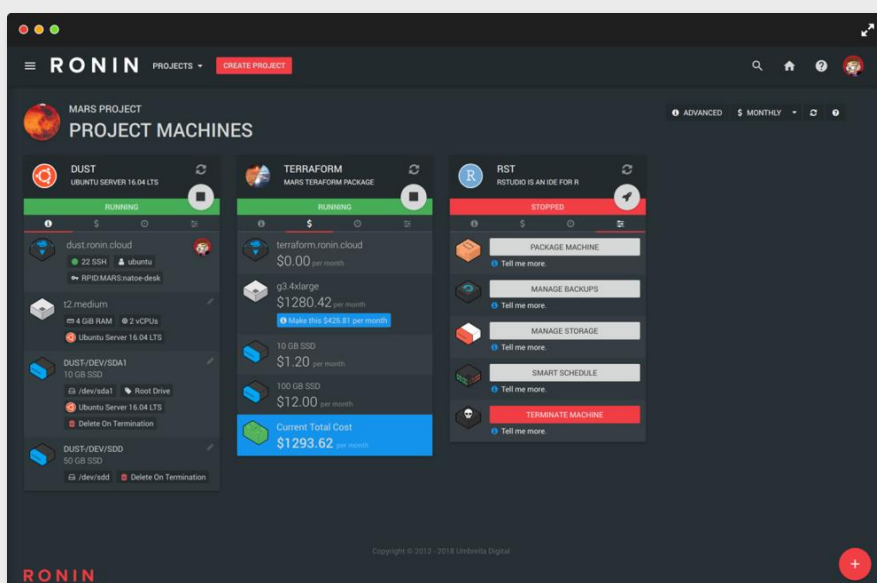
One of the biggest benefits of cloud for research is the ability to completely customise your computing resources for each analysis. The intuitive "shopping cart" design of **RONIN** enables researchers to build their desired cloud resources with just a few simple clicks.

Cloud computing at your fingertips!

TOTAL CONTROL RONIN MACHINE & COST MANAGEMENT

When moving to the cloud we understand that cost management becomes... well... cloudy...

With a single click you can see a detailed breakdown of cost for individual machines or across your entire project. We'll also send you notifications when you've reached 25%, 50%, 75% and 100% of your project budget.



SMART SCHEDULE

RONIN NEVER SLEEPS, NEVER FORGETS

Are you human? Us too!

One of the real drawbacks to being a human is we have the capacity to forget things, like turning things off when we don't need them.

The **RONIN** Smart Schedule remembers for you so your budget doesn't run away while you aren't looking.

CREATE A CLUSTER IN MINUTES

CREATE A CLUSTER RONIN LAUNCHES YOUR PERSONAL CLUSTER.

Sharing is not as much fun as it seems. Why wait for wall-time when you can create your own auto-scaling cluster and shut it down when you are done?

RONIN offers all of the popular schedulers and operating systems. We take care of key management, networking, storage mounts and even offer spot market bids for your compute nodes, stretching those precious resource funds further than ever.

AUTO SCALE CLUSTER
CREATE A NEW AUTO SCALE CLUSTER FOR ALL OF YOUR HPC AND CLUSTER NEEDS.

1. SELECT AN OPERATING SYSTEM

alcesflight (COMING SOON) | ubuntu (UBUNTU 14.04 (LTS), UBUNTU 16.04 (LTS)) | CentOS (CENTOS 6 (X86_64), CENTOS 7 (X86_64)) | aws (AMAZON LINUX)

2. SELECT A HPC SCHEDULER

SLURM Scheduler (SELECT) | SGE Scheduler (SELECT) | Torque (SELECT)

3. ADDRESS YOUR CLUSTER

TYPE IN A WEB ADDRESS BELOW
Cluster URL, eg. my-cluster | my-cluster.ronin.cloud (Address is available) | SELECT

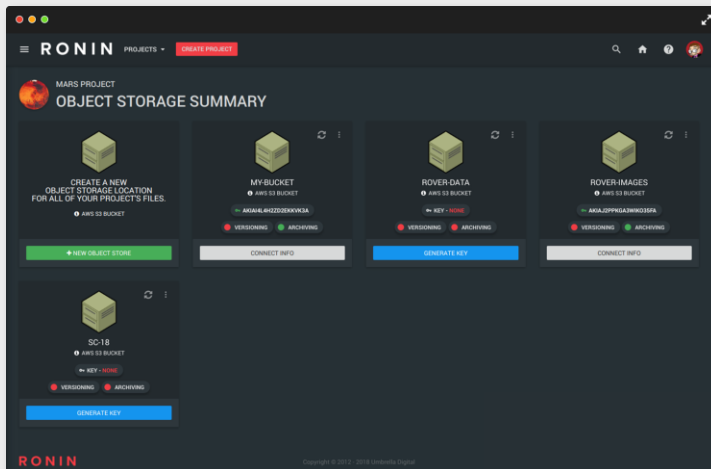
4. SELECT YOUR MASTER NODE

t2.large (2 vCPUs, 8 GiB RAM) | CHANGE

5. SELECT YOUR COMPUTE NODES

c4.xlarge (36 vCPUs, 60 GiB RAM) | CHANGE

LAUNCH MY CLUSTER



OBJECT STORAGE (S3)

RONIN WRITES YOUR POLICY

No more S3 bucket policies with your keys exposed to the world. We take care of how you access and share your greatness and make it very simple to manage.

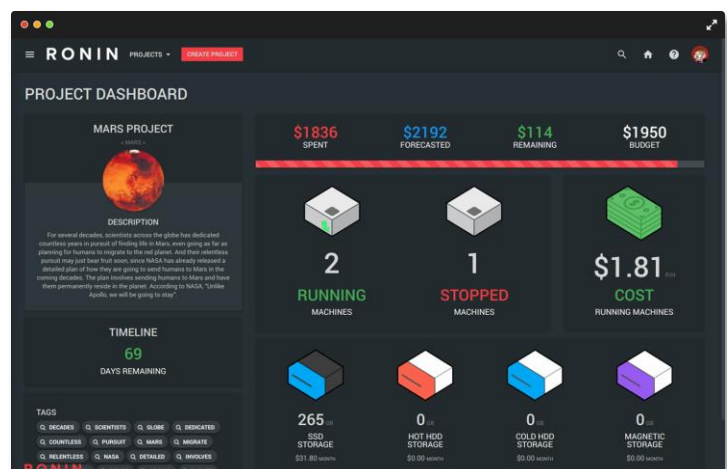
RONIN offers all key functions of object storage like key management, versioning, data lifecycling to long term storage, without the worry of permissions and networking and writing those darn bucket policies.

PROJECT FOCUSED

RONIN, FOCUSED ON RESEARCH

We have made everything project centric, keeping researchers focused on research and in control of their consumption.

We keep administrators and financial managers in the loop too, storing and feeding metadata to our human-consumable Administration console.



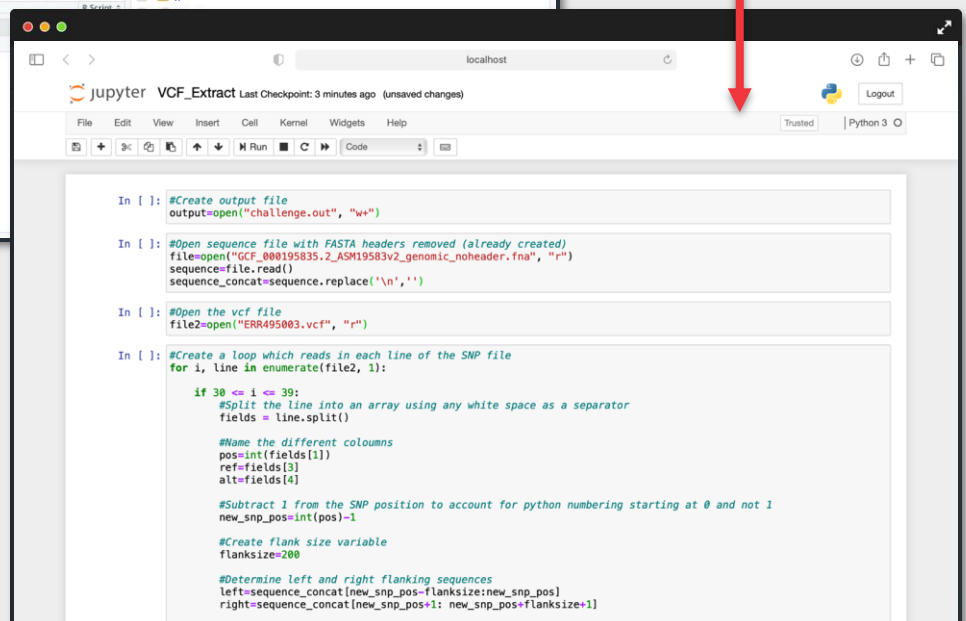
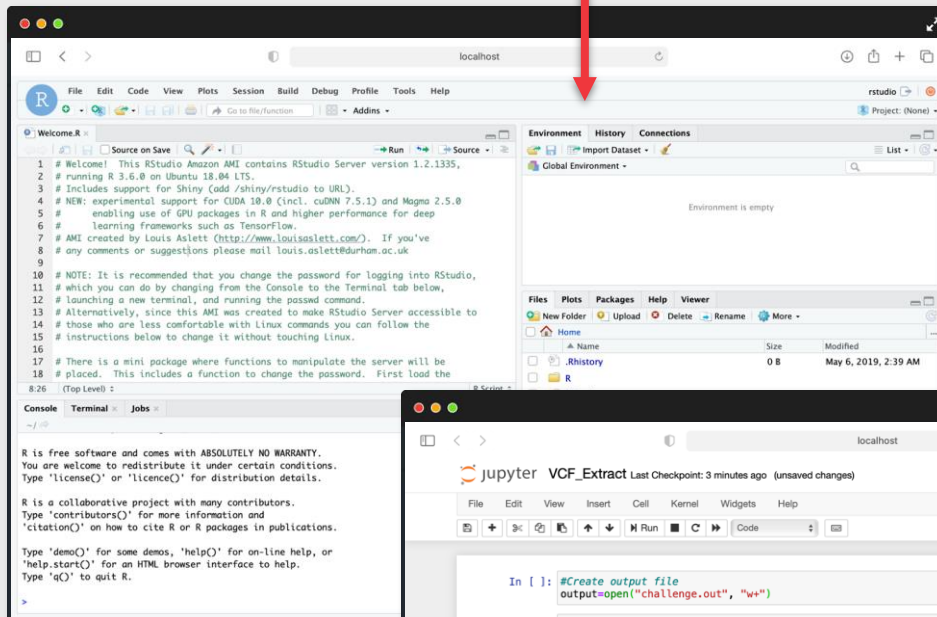
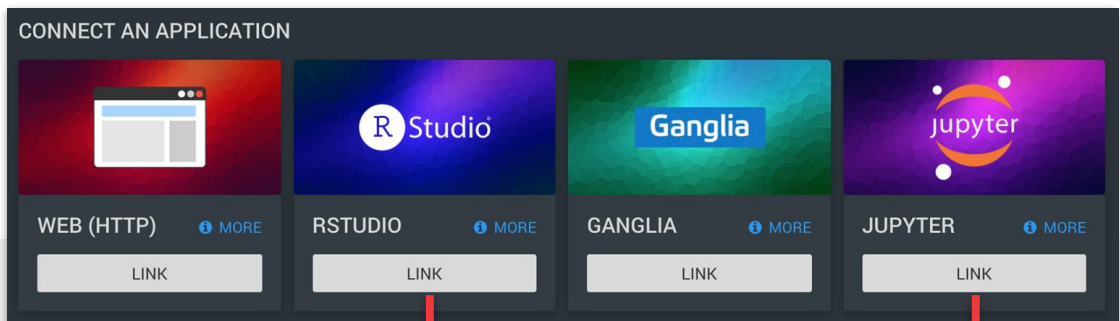
LAUNCH AN IDE WITH ONE CLICK

PRECONFIGURED IDE ENVIRONMENTS

RONIN MAKES CODING IN THE CLOUD A BREEZE

Have some Python or R code that needs to be run on a larger machine? Or want to develop and test some new code in a fresh environment?

RONIN provides pre-configured machine packages for the most popular IDEs so that users can feel at home in the cloud. With our desktop application, users can securely connect to RStudio or a Jupyter notebook with a single click. No need to worry about software installation or port forwarding, we take care of the tricky bits so you can simply focus on running your code.



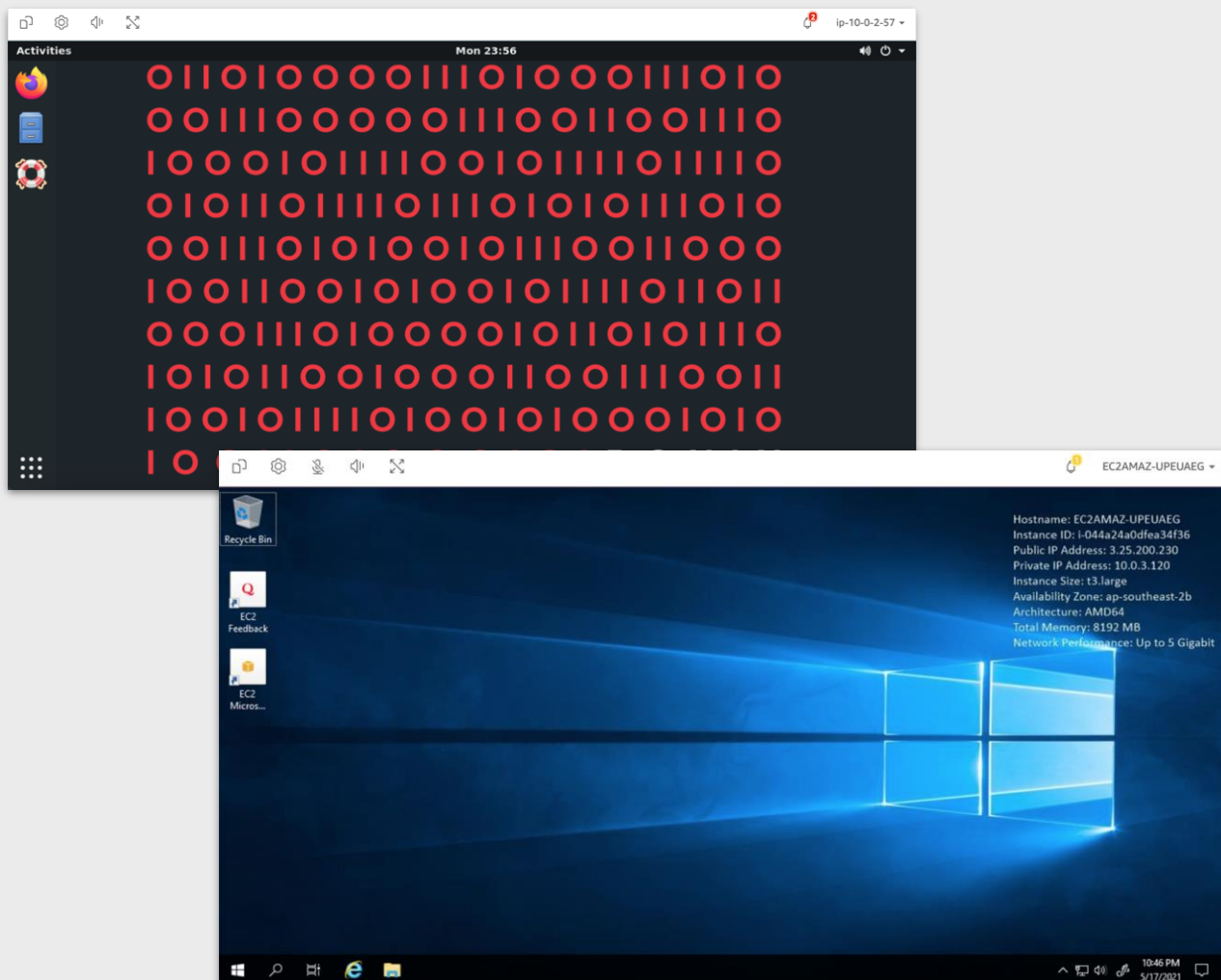
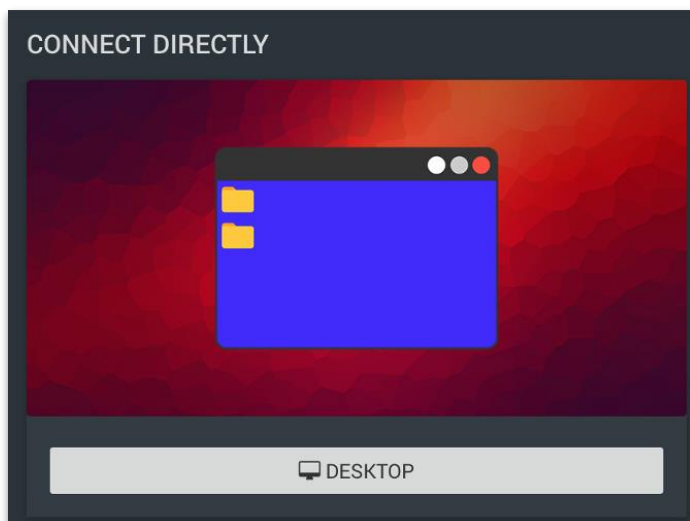
YOUR DESKTOP IN THE CLOUD

REMOTE DESKTOPS

RONIN REIMAGINES YOUR PERSONAL COMPUTER

Imagine being able to instantly scale up the computational power of your personal computer whenever you need it. Well, with **RONIN** you can.

RONIN leverages Amazon's own DCV software to provide you with a low latency, secure Linux or Windows desktop on the cloud. Simply select a Linux or Windows operating system during machine creation and launch your remote desktop with a single click in the **RONIN** Link desktop application.



MANAGE YOUR ENVIRONMENT

MACHINE PACKAGES

RONIN ENABLES REPRODUCIBLE RESEARCH

We know reproducible research is important, so we made it simple and easily achievable in **RONIN**.

RONIN allows users to package up their entire compute environment (even whole clusters) so that the same software and datasets can be rapidly deployed again. Machine packages are also a great way to make common software such as MATLAB, TensorFlow, or Anaconda easily available across your institution.

CREATE A NEW MACHINE PACKAGE
CREATE A REUSABLE PACKAGE FROM YOUR MACHINE.

PACKAGE DETAILS

New Package Name * Required
Team-Rstudio

Package Description * Required
This R-Studio install has the customisation we need to do our Research. Including the Raw data-set.



MACHINE TO PACKAGE

 MY-RST
UBUNTU SERVER 16.04 LTS

RUNNING

STORAGE TO INCLUDE IN YOUR PACKAGE

 MY-RST-/DEV/SDA1
20 GB SSD

/dev/sda1

Root Drive

RStudio is an IDE for R

Delete On Termination

INCLUDE

 RAW_DATA
100 GB SSD

/dev/sdb

Delete On Termination

INCLUDE

CLOSE

CREATE MACHINE PACKAGE

GENOMICS
DRIVE STORAGE

CREATE A NEW BLANK THIS PROJECT
AWS ELASTIC BLOCK

CREATE DRIVE

MYBACKUPDRI
AWS ELASTIC BLOCK
25GB SSD
AVAILABLE
MYMACHINE.RONIN
\$3.00 / MONTH

QUICK BACKUP

GENOMICS
DRIVE BACKUPS

 MYBACKUP
AWS EBS SNAPSHOT
25GB
1 VERSION
MYMACHINE.RONIN.CLOUD
14/03/2021 - 10:53:15 PM
QUICK RESTORE

NEW DRIVE NAME
MYBACKUPDRIVE



DRIVE TYPE
SSD

SIZE IN GB
25

CREATE NEW DRIVE

STORAGE DRIVES AND BACKUPS RONIN MAKES DATA MANAGEMENT SIMPLE

We know that data management is the bane of every researcher's existence. So we wanted to make sure it is a breeze with **RONIN**.

Want to securely backup your data from a machine? There's a button for that! Or how about quickly restoring a backup to a drive so that it can be attached back onto a machine? Yep, there's a button for that too.

With additional click'n'go options to easily resize drives and manage versions, **RONIN** makes data management seamless and satisfying!

RONIN FOR GENOMICS

RONIN CASE STUDY

AUSTRALASIAN WILDLIFE GENOMICS GROUP AT THE UNIVERSITY OF SYDNEY

The analysis of genomic data often relies upon a series of bioinformatic workflows whereby each workflow can have vastly different computing requirements. For example, genome assembly usually requires a single high-memory instance or node, whereas variant calling workflows can often be highly parallelised across many nodes. Genomic workflows are therefore highly suited for cloud infrastructure where computational resources can be customised for each analysis. However, the accessibility of cloud computing for researchers is often limited due to the complexity of standard cloud consoles.

The intuitive design of **RONIN** paired with the power of AWS enabled researchers at the University of Sydney to migrate their genomic workflows to the cloud, allowing the Australasian Wildlife Genomics Group (AWGG) to complete over 50 genetic analyses in just twelve weeks. “Our lab’s productivity has skyrocketed since being introduced to **RONIN**” commented an AWGG researcher. “We were able to employ single machines to test, run and optimise our pipelines and could then launch auto-scaling clusters to run multiple samples in parallel, significantly improving our time to research.”

AWGG researchers showed just how effective cloud computing can be for genomics: “Having complete control over our computing resources meant that we were able to set up our desired environment and closely monitor our workflows to make sure we were running things as efficiently and cost-effectively as possible. With **RONIN** we were able to optimise one of our most commonly employed conservation genomic pipelines to run in under 10 hours and cost just \$20. The same workflow used to take up to one week on our locally shared HPC infrastructure.”

RONIN allows anyone to take advantage of the power and scalability of cloud resources, facilitating accelerated innovation and real-world implications. “The increased speed in which we can accomplish our genomic analyses with **RONIN** and AWS means that we have a much faster turnaround time to deliver crucial conservation recommendations to our industry partners. The real time integration of genomic data into conservation efforts is vital for preserving our native wildlife.”

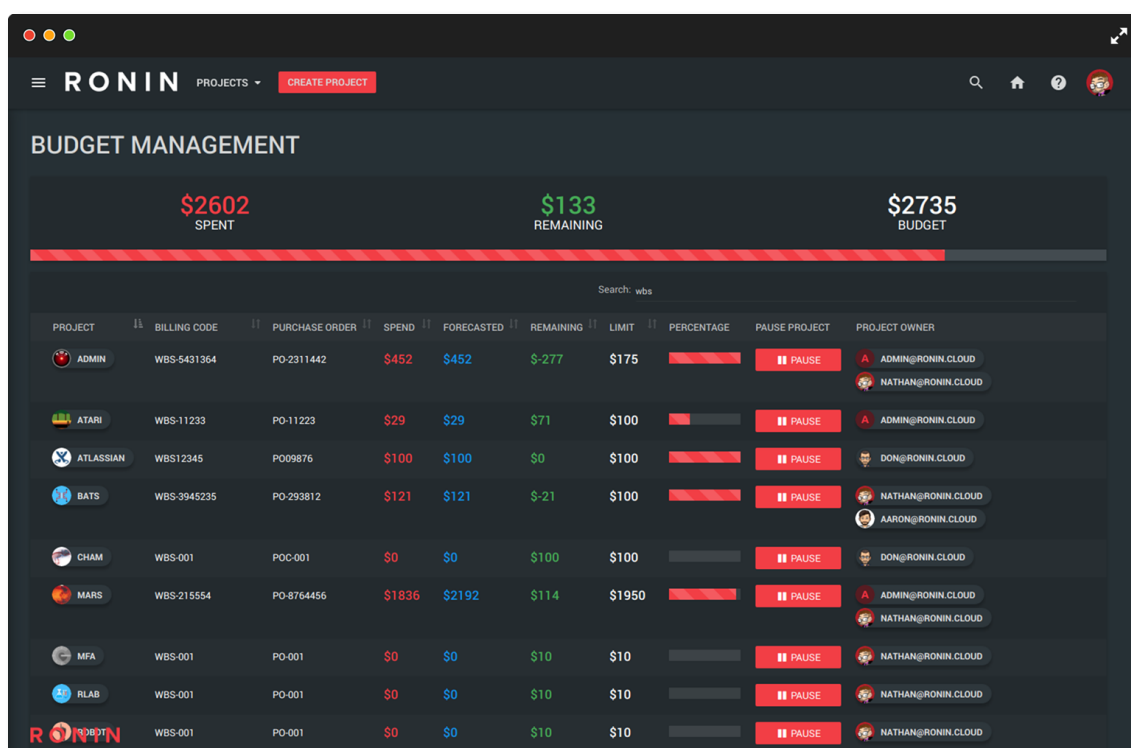


RONIN provides the missing link between researchers and cloud computing.

ENTERPRISE BUDGET CONTROL

ONE ACCOUNT, PROJECT CENTRIC BILLING.

Of course, with such grand pursuits, it's critical we have the tools and controls in place to ensure we're not creating more problems than we solve. This is why **RONIN** has enterprise grade management tools and best practices baked into all services and resources it makes available. We give organisations the ability to set and enforce security, user policies and budgets across multiple cloud resources from a central console.



DON'T BE SHY..

CONTACT US TO GET UP AND RONIN.



 [HTTPS://RONIN.CLOUD](https://ronin.cloud)



@ CONTACT@RONIN.CLOUD

OR STALK US...



www.ocf.co.uk