# launch the instance

```ruby
instance = image.run_instance(
  :key_pair => key_pair,
  :security_groups => group
)

sleep 1 until instance.status != :pending
puts "Launched instance #{instance.id}, status: #{instance.status}"

exit 1 unless instance.status == :running
```

# port 22 might not be available immediately after the instance finishes launching

```ruby
sleep 1
retry
end
```

ensure

```ruby
# clean up
[instance,
 group,
 key_pair].compact.each(&:delete)
end
```
Map of scientific collaborations from 2005 to 2009
Computed by Ollivier H. Beauchesne @ Science-Metrix, Inc.
Data from Scopus, citing books, trade journals and peer-reviewed journals
Plus hundreds of other sites around the world for Co-Is and Colleagues
Data Locality Challenges
Data Locality Challenges

Scientist 1 retrieves data from L.A.
Data Locality Challenges

Scientist 1 retrieves data from L.A.
Scientist 1 returns data to L.A.
Data Locality Challenges

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Data Locality Challenges

Scientist 1 retrieves data from L.A.
Scientist 1 returns data to L.A.
Scientist 2 retrieves data from L.A.
Scientist 2 returns data to L.A.
AWS Global Infrastructure

9 regions
25 availability zones
38 edge locations
Data Locality Challenges
Data Locality Challenges

Researcher in L.A. uploads data to the cloud
Researcher in L.A. uploads data to the cloud
Scientist 1 uses cloud resources to process data
Data Locality Challenges

Researcher in L.A. uploads data to the cloud
Scientist 1 uses cloud resources to process data
Scientist 2 uses cloud resources to process data
Data Locality Challenges

- Researcher in L.A. uploads data to the cloud
- Scientist 1 uses cloud resources to process data
- Scientist 2 retrieves data products from edge network
- Scientist 2 uses cloud resources to process data
Data Locality Challenges

Researcher in L.A. uploads data to the cloud
Scientist 1 uses cloud resources to process data
Scientist 2 uses cloud resources to process data
Scientist 2 retrieves data products from edge network
Global collaboration
AWS Public Data Sets

Public Data Sets on AWS provides a centralized repository of public data sets that can be seamlessly integrated into AWS cloud-based applications. AWS is hosting the public data sets at no charge for the community, and like all AWS services, users pay only for the compute and storage they use for their own applications. Learn more about Public Data Sets on AWS and visit the Public Data Sets forum.

Featured Public Data Sets

Common Crawl Corpus
A corpus of web crawl data composed of over 5 billion web pages. This data set is freely available on Amazon S3 and is released under the Common Crawl Terms of Use.

1000 Genomes Project
The 1000 Genomes Project, initiated in 2008, is an international public-private consortium that aims to build the most detailed map of human genetic variation available.

Google Books Ngrams
A data set containing Google Books n-gram corpora. This data set is freely available on Amazon S3 in a Hadoop-friendly file format, and is licensed under a Creative Commons Attribution 3.0 Unported License. The original dataset is available from http://books.google.com/ngrams/.

1000 Genomes
A Deep Catalog of Human Genetic Variation

aws.amazon.com/datasets
National Database for Autism Research

http://ndar.nih.gov/cloud_overview.html

All autism research funded by NIMH must be publicly accessible

NDAR provides a web interface to query the aggregate data set
1/2 Development of a Screening Interview for Research Studies of ASD

Investigators: Christopher Monk, Somer Bishop and Cathy Lord (Owner: Lord, Catherine)

Collection Description: This collection contains phenotypic data on subjects diagnosed with ASD and subjects with non-ASD diagnoses.

Download Data

3/3 Multisite RCT of Early Intervention for Spoken Communication in Autism

Investigators: Dr. Rebecca Landa (Owner: Landa, Rebecca)

Collection Description: School-Age Children with Autism with Limited Expressive Language Skills: An Intervention Study

Download Data

AGRE - U24 Collection

Investigators: Clara Lajonchere (Owner: Lajonchere, Clara)

Collection Description: AGRE is a DNA repository and family registry, housing a database of genotypic and phenotypic information that is available to autism researchers worldwide.

Download Data
Data Associated With a Particular Laboratory
### Investigators:

### Study Abstract:
The objectives of this study were to characterize gastrointestinal dysfunction (GID) in autism spectrum disorder (ASD), to examine parental reports of GID relative to evaluations by pediatric gastroenterologists, and to explore factors associated with GID in ASD. One hundred twenty-one children were recruited into three groups: co-occurring ASD and GID, ASD without GID, and GID without ASD. A pediatric gastroenterologist evaluated both GID groups. Parents in all three groups completed questionnaires about their child's behavior and GI symptoms, and a dietary journal. Functional constipation was the most common type of GID in children with ASD (85.0%). Parental report of any GID was highly concordant with a clinical diagnosis of any GID (92.1%). Presence of GID in children with ASD was not associated with distinct dietary habits or medication status. Odds of constipation were associated with younger age, increased social impairment, and lack of expressive language (adjusted odds ratio in nonverbal children: 11.98, 95% confidence interval 2.54-56.57). This study validates parental concerns for GID in children with ASD, as parents were sensitive to the existence, although not necessarily the nature, of GID. The strong association between constipation and language impairment highlights the need for vigilance by health-care providers to detect and treat GID in children with ASD. Medications and diet, commonly thought to contribute to GID in ASD, were not associated with GID status. These findings are consistent with a hypothesis that GID in ASD represents pleotropic expression of genetic risk factors.

### Study Cohorts:
- **Test - ASD-GID (40 subjects)**
  - Age: 60 to 215 months
  - Gender: Both
  - Autism-like Developmental Disorders: Affected, Mildly Affected, Severely Affected

- **Control - GID-only (28 subjects)**
  - Age: 60 to 215 months
  - Gender: Both
  - Non-ASD Control: Typical

- **Control - ASD-only (44 subjects)**
  - Age: 60 to 215 months
  - Gender: Both
  - Autism-like Developmental Disorders: Affected, Mildly Affected, Severely Affected

### Study Measures:
- **Primary Measures (2)**
  - Clinical Assessments: Questionnaire on Pediatric GI Symptoms: Rome III Parent - v01, Social Responsiveness Scale (SRS) - v02

- **Secondary Measures (5)**
  - Clinical Assessments: Autism Diagnostic Observation Schedule - Module 1 - v02, Autism Diagnostic Observation Schedule - Module 2 - v02, Autism Diagnostic Observation Schedule - Module 3 - v02, Autism Diagnostic Observation Schedule - Module 4 - v02, Diet Diary - v02

### Data Analysis:
- **Statistical**
  - Method: ANOVA, Chi-square test, Regression analysis
  - Significance: p-value < 0.05
  - Software: SPSS

### Results:
Results published in Autism Research
Direct access to the NDAR Collection for users with access to the NDAR portal

List of project investigators

Study abstract

Link to study results/publication

Investigators:
- Levitt, Pat
- Gorindo, Phillip Williams
- Kent C. Lee
- Evon B. Walker
- Lynn S. McGrew
- Susan G. Levitt

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Results:
Results published in Autism Research
Gastrointestinal Dysfunction in Autism: Parental Report, Clinical Evaluation, and Associated Factors

Phillip Gorrindo, Kent C. Williams, Evon B. Lee, Lynn S. Walker, Susan G. McGrew, Pat Levitt

Article first published online: 9 JAN 2012
DOI: 10.1002/aur.237
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Results published in Autism Research
Subjects defined to a cohort

Outcome measures

Analysis methods defined

<table>
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