



Experiment 12

Amazon AWS

Open Source SW Development
CSE22300



Amazon AWS 가입



Amazon AWS 가입

Sign In or Create an AWS Account


What is your email (phone for mobile accounts)?

E-mail or mobile number:

☒ I am a new user.

☐ I am a returning user
and my password is:

☐ Keep me signed in. [Details](#)

Sign in using our secure server 

[Forgot your password?](#)



AWS Accounts Include
12 Months of Free Tier Access

Including use of Amazon EC2,
Amazon S3, and Amazon DynamoDB

Visit aws.amazon.com/free for full offer terms

Amazon AWS 가입

Login Credentials

Use the form below to create login credentials that can be used for AWS as well as Amazon.com.

My name is:

My e-mail address is:

Type it again:

note: this is the e-mail address that we will use to contact you about your account

Enter a new password:

Type it again:

Amazon AWS 가입

연락처 정보

☐ 회사 계정 ☒ 개인 계정

* 필수 필드

전체 이름*

국가*

주소*

구/군/시*

시/도*

우편 번호*

전화 번호*

보안 확인 ?



[이미지 다시 고침](#)

위에 보이는 문자를 입력하십시오.

AWS 고객 동의



여기를 클릭하면 [AWS 고객 동의](#)의 조건을 읽고 동의하는 것을 의미합니다.

계정을 만들고 계속 진행

Amazon AWS 가입

결제 정보

아래에 결제 정보를 입력하십시오. 프리 티어를 통해 무료로 다양한 AWS 제품을 사용해볼 수 있습니다. 프리 티어의 적용을 받지 않는 서비스를 사용할 경우에만 신용카드나 직불카드로 결제하시면 됩니다.

▶ [FAQ](#)

신용/직불 카드 번호

만료 날짜

01 ▼

2016 ▼

카드 소유자 이름

☒ 내 연락처 주소 사용

(27, Samseong-ro 95-gil YoungChang Building 4th floor, KIWIPUS
Gangnam-gu Seoul 06159 KR)

☐ 새 주소 사용

계속

체크 카드 가능, 사용한만큼 청구됨
무료 기능만 사용할 경우 과금되지 않음
결제 인증을 위해 \$1 지불 발생하나, 취소 됨

Amazon AWS 가입

ID 확인

자동화 시스템을 통해 즉시 전화를 받게 되며 제공된 PIN 번호를 입력하게 됩니다.

1. 전화 번호 제공

아래 정보를 입력하고 "지금 전화하기" 버튼을 클릭하십시오.

보안 확인 ⓘ



[이미지 다시 고침](#)

위에 보이는 문자를 입력하십시오.

국가 코드

대한민국 (+82)

전화 번호

나가기

지금 전화하기

2. 전화 거는 중

3. ID 확인 완료

Amazon AWS 가입

계획 지원

AWS Support는 귀하의 요구를 충족할 수 있는 선별된 계획을 제공합니다. 모든 계획은 고객 서비스, AWS 문서, 백서 및 지원 포럼에 대해 연중무휴 24시간 상시 액세스를 제공합니다. AWS 환경을 계획, 배포, 최적화하는 데 도움이 되는 기술 지원 및 추가 리소스에 액세스하려면 귀하의 AWS 사용에 가장 적합한 지원 계획을 선택하실 것을 권장합니다.

하나를 선택하십시오.

● 기본

설명: 계정 및 과금 관련 질문 및 AWS 커뮤니티 포럼 액세스에 대한 고객 서비스.

요금: 포함됨

● 개발자

사용 사례: AWS 체험

설명: 1차 접촉자는 지원 센터를 통해 기술 관련 질문을 하고 12~24시간 내(해당 지역 업무 시간 중)에 그에 대한 응답을 받을 수 있습니다.

요금: 29 USD/월부터 시작(사용량에 따른 등급)

● 비즈니스

사용 사례: 생산 용도로 AWS 사용하기

설명: 전화 및 채팅을 통한 연중무휴 24시간 지원, 긴급 지원 상황에 대한 1시간 내 응답 및 일반 타사 소프트웨어 지원, AWS 인프라 최적화 용도의 AWS Trusted Advisor에 대한 완전한 액세스 권한, 그리고 지원 사례 자동화 및 Trusted Advisor 결과 조회 용도의 AWS Support API에 대한 액세스 권한.

요금: 100 USD/월부터 시작(사용량에 따른 등급)

● 기업

사용 사례: 미션 크리티컬 용도로 AWS 사용하기

설명: 비즈니스 지원 플랜의 모든 기능뿐만 아니라 다음과 같은 기능이 있음 - 1) 사전 안내 및 모범 사례를 제공하여 AWS 솔루션의 플랜, 개발, 실행을 지원하는 할당된 기술 계정 관리자 (TAM), 2) 청구, 계정 분석 및 지원을 제공하는 지원 컨시어지, 3) 인프라 이벤트 관리에 액세스하여 제품 출시, 계절별 프로모션/이벤트 및 마이그레이션 지원, 4) 우선 순위에 따른 사례 처리 방식으로 중요 지원 사례에 15분 내 응답

요금: 15,000 USD/월부터 시작(사용량에 따른 등급)

이 옵션을 선택하면 고객 지원 부서에서 48시간 내에 귀하에게 연락해 귀하의 요구 사항을 논의하고 가입 절차를 완료할 것입니다. 지원 리소스는 가입 완료 시 사용할 수 있고 그때까지는 요금이 발생하지 않습니다.

계획 비교 및 요금 예시를 비롯한 AWS Support의 모든 기능과 혜택을 알아보시려면 [여기를 클릭하십시오.](#)

계속

Amazon AWS 가입



Welcome to Amazon Web Services,

You can get started by accessing the [AWS Management Console](#), launching [an Amazon EC2 Instance](#), or exploring popular software optimized for Amazon EC2 on [AWS Marketplace](#). For the next 12 months, you will have free access to compute, storage, database, and application services. Learn more by visiting our [Free Tier](#) page.

Getting Started Resources

[Step-by-Step Instructions on How to Deploy Your Application](#)

[Quick Start Tutorials for Developers](#)

[Tool Downloads](#)

[Billing Alerts](#)

Account Management & Credentials

If you interact with AWS programmatically using the SDKs, Command Line Interface (CLI), or APIs, you must provide access keys to verify who you are and whether you have permission to access the resources you're requesting. To manage your account's access keys, go to the [Security Credentials](#) page in the AWS Management Console. If you want to allow other users to access resources in your account, use the [Identity and Access Management \(IAM\) console](#) to create credentials and assign permissions to each user.

At Amazon Web Services, we focus on continually improving our customer experience. Let us know how we can improve by taking this [brief survey](#).


Thank you for your participation in the Amazon Web Services community.


Sincerely,


The Amazon Web Services Team

가입 완료 후 활성화되면 Email 도착


Amazon AWS 가입




Services ▾ Resource Groups ▾ 


 Seongwook Jin ▾ Seoul ▾ Support ▾


AWS services


Find a service by name (for example, EC2, S3, Elastic Beanstalk). 


Recently visited services

 DynamoDB

 RDS


 S3

 SQS

 IAM


[All services](#)

Featured next steps



Manage your spend

Get real-time billing alerts based on your usage budgets. [Start now](#)




Get best practices

Use AWS Trusted Advisor for security, performance, cost and availability best practices. [Start now](#)


Build a solution

Get started with simple wizards and automated workflows.




Launch a virtual machine

With EC2
~1 minutes



Build a web app


With Elastic Beanstalk
~6 minutes



Deploy a serverless microservice

With Lambda, API Gateway
~2 minutes

Announcements



11

AWS Freetier

- AWS는 처음 가입 후 12개월 동안 주요 서비스에 대한 무료 서비스를 제공
- 주요 서비스에 대해 기본적인 테스트와 블로그 같은 작은 서비스 운영이 가능
 - EC2 서버: 월 **750시간 t2.micro** 운영 가능 (윈도, 리눅스 각각)
 - S3 스토리지: **5GB** (다운로드 2만회, 업로드 2천회)
- 프리 티어를 초과하지 않으면 이용요금이 부과되지 않음
 - 자세한 정보: <https://aws.amazon.com/ko/free/>

결제 알림

- <https://console.aws.amazon.com/billing/home?#/preferences>

대시보드

청구서

비용 탐색기

예산

보고서

비용 할당 태그

결제 방법

결제 내역

통합 결제

기본 설정

크레딧

세금 설정

DevPay

기본 설정

☐ 이메일로 PDF 인보이스 받기

이 기능을 설정하면 이메일로 PDF 버전의 인보이스가 발송됩니다. 인보이스는 보통 매달 처음 3일 이내에 제공됩니다.

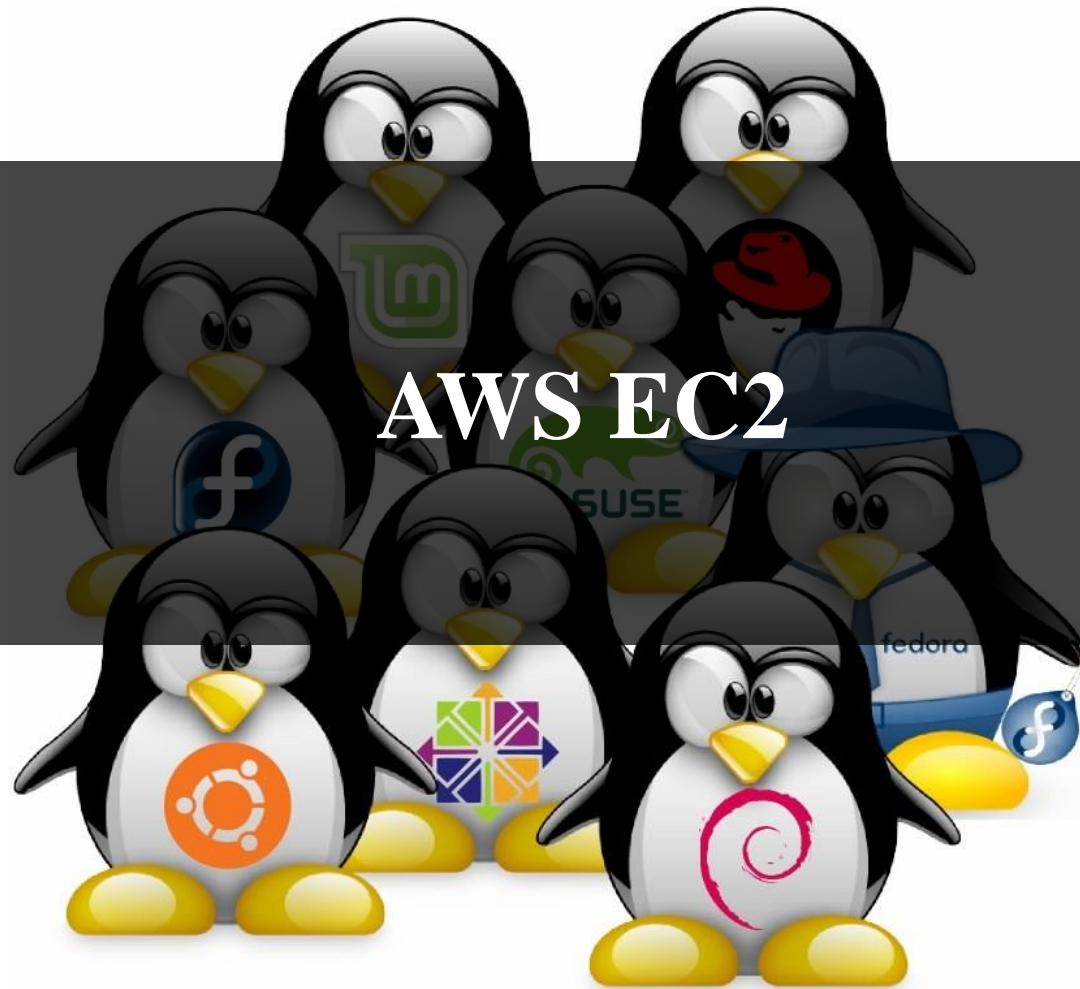
☒ 결제 알림 받기

이 기능을 설정하면 자동으로 AWS 사용 요금 및 기본 요금을 모니터링하여 AWS 관련 소비를 쉽게 추적 및 관리할 수 있습니다. 결제 알림을 설정하면 요금이 특정 임계값에 도달할 때 이메일 알림을 받을 수 있습니다. 이 기본 설정은 한 번 설정하면 해제할 수 없습니다. [결제 알림 관리](#) 또는 [새로운 예산 기능을 사용해 보십시오!](#)

☐ 결제 보고서 받기

이 기능을 설정하면 AWS 요금 관련 최신 보고서가 하루 한 번 또는 그 이상 발송됩니다. AWS는 이러한 보고서를 아래에서 지정하는 위치의 Amazon S3 버킷으로 전달합니다. 통합 결제 고객의 경우 AWS는 지금 계정에 대해서만 보고서를 생성합니다. 연결된 계정은 결제 보고서에 등록할 수 없습니다.

S3 버킷에 저장:



AWS EC2

- **Amazon web services for computing**
 - EC2
 - Elastic Map Reduce (EMR).
- **Data storage solutions (DynamoDB, RDS, S3 or EBS).**
- **Hope to use multiple features for storing input/output files and perform intensive computations.**

AWS EC2

- **A virtual computing environment with a web interface.**
- **Create and configure an “instance” (Amazon Machine Image)**
- **Example: Extra large instance (standard)**
 - 15GB of memory
 - 8 EC2 Compute Units (4 virtual cores)
 - 1690GB of local storage
 - 64 bit platform
- **Also offers cluster compute instances**
- **Example**
 - Cluster Compute Eight Extra large with 60GB memory, 88 EC2 units, 3370 local storage, 64-bit platform, 10 Gigabit Ethernet.

AWS EC2

- **Operating system**
 - **Windows Server**
 - **Ubuntu Linux**
 - **Red Hat Enterprise linux**
 - **Etc.**
- **Currently using AWS's free usage tier (Getting started!)**
 - **Pay for the capacity actually consumed**
(<http://aws.amazon.com/ec2/#pricing>).

AWS EC2

EC2 기초

클라우드 내 가상 서버들

- 한 개에서 수천개의 인스턴스들로 확장
- 모든 공개 AWS 지역 (region)
- 필요에 따라 생성, 시작, 중단, 구성, 모니터링
- 모든 소프트웨어 설치 : 웹, 비즈니스 애플리케이션, 클라이언스/서버, 배치 프로세싱
- 사용한 용량에 대해서만 비용 지불
- 다양한 비용 모델



Amazon EC2

This slide from Amazon AWS Korea

AWS EC2

EC2 기초: 비용 모델

고객은 현재 상황 및 용량 수요 예측에 따라 비용을 최적화하기 위하여 다양한 구매 옵션을 고려할 수 있음

온디맨드 (On-demand)

시간 당 컴퓨팅 용량 비용
지불 장기 계약 필요 없음



증감하는 부하

예약 (Reserved)

1년 또는 3년 예약
온디맨드보다 최대 75% 저렴한
시간 당 비용



확정된 사용량

스팟 (Spot)

사용되지 않는 EC2 용량에 대
하여 비용 입찰



시간 무관한 부하

전용 (Dedicated)

고객 전용 하드웨어 상의 VPC
에 인스턴스 런치



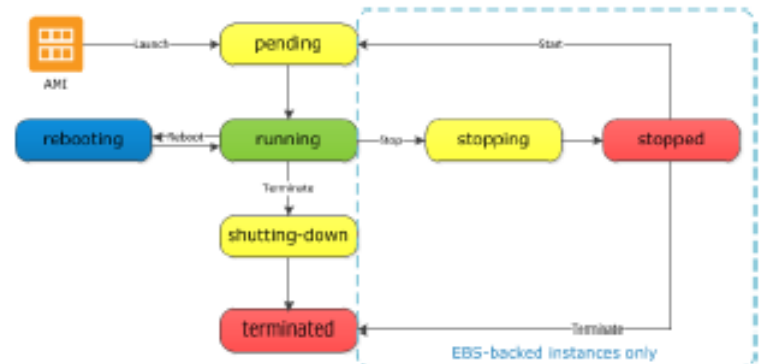
매우 민감한 부하

This slide from Amazon AWS Korea

AWS EC2

프로비저닝 및 수명주기

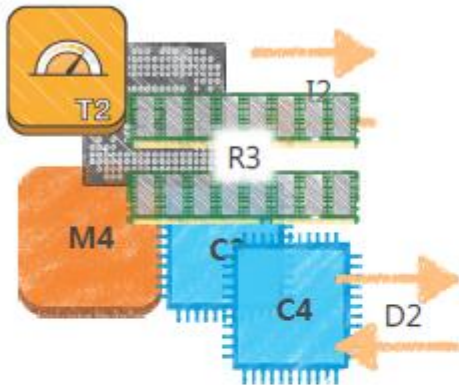
- 생성(Create) -> 시작(Start) -> 중지(Stop) -> 종료(Terminate)
- 콘솔에서 수동관리
- API(또는 기타 툴)로 자동관리
- 디맨드 기반의 자동화 (수요 곡선)



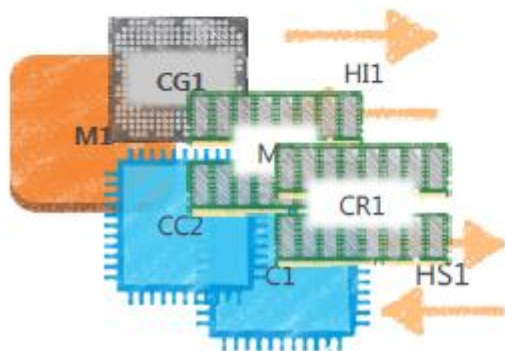
This slide from Amazon AWS Korea

AWS EC2

인스턴스 종류



38개의 “현재 세대” 인스턴스 종류



15개의 “이전 세대” 인스턴스 종류

This slide from Amazon AWS Korea

AWS EC2

다양한 종류의 인스턴스



This slide from Amazon AWS Korea

AWS EC2

AMI(아마존 머신 이미지)

Amazon 관리

각 지역에서 Amazon에 의해 관리되는 Linux 및 Windows 이미지들

커뮤니티 관리

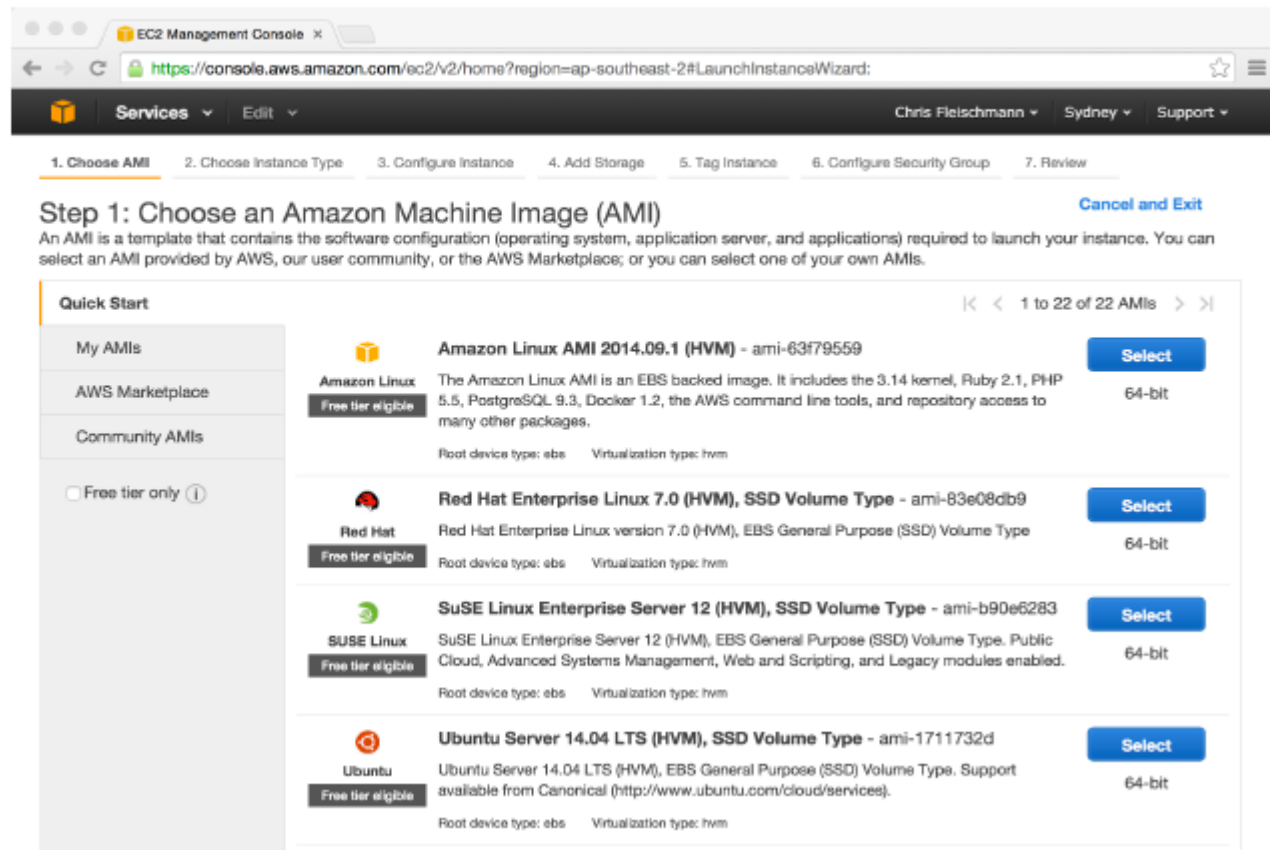
다른 AWS 사용자 및 마켓플레이스 파트너에 의해 관리되고 유지되는 공개 이미지들

사용자 머신 이미지

사용자가 EC2 인스턴스로부터 생성한 AMI로 다른 계정에 공개 가능

AWS EC2

AMI(아마존 머신 이미지)



EC2 Management Console x

https://console.aws.amazon.com/ec2/v2/home?region=ap-southeast-2#LaunchInstanceWizard:

Services Edit Chris Fleischmann Sydney Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Tag Instance 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI) [Cancel and Exit](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start 1 to 22 of 22 AMIs

| My AMIs | Amazon Linux | Red Hat | SUSE Linux | Ubuntu |
|--|--|--|---|---|
| <input type="radio"/> Free tier only ⓘ | Amazon Linux AMI 2014.09.1 (HVM) - ami-63f79559 The Amazon Linux AMI is an EBS backed image. It includes the 3.14 kernel, Ruby 2.1, PHP 5.5, PostgreSQL 9.3, Docker 1.2, the AWS command line tools, and repository access to many other packages. Root device type: ebs Virtualization type: hvm Select 64-bit | Red Hat Enterprise Linux 7.0 (HVM), SSD Volume Type - ami-83e08db9 Red Hat Enterprise Linux version 7.0 (HVM), EBS General Purpose (SSD) Volume Type Root device type: ebs Virtualization type: hvm Select 64-bit | SUSE Linux Enterprise Server 12 (HVM), SSD Volume Type - ami-b90e6283 SuSE Linux Enterprise Server 12 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled. Root device type: ebs Virtualization type: hvm Select 64-bit | Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-1711732d Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services). Root device type: ebs Virtualization type: hvm Select 64-bit |

This slide from Amazon AWS Korea

EC2 생성

- EC2로 검색 후 클릭

The screenshot shows the AWS Management Console interface. At the top, there's a navigation bar with 'Services', 'Resource Groups', and a search icon. Below this, the 'EC2 Dashboard' is visible on the left sidebar, with options like 'Events', 'Tags', 'Reports', 'Limits', 'INSTANCES', 'IMAGES', 'ELASTIC BLOCK STORE', 'NETWORK & SECURITY', and 'LOAD BALANCING'. The main content area is titled 'Resources' and shows a summary of EC2 resources in the Asia Pacific (Seoul) region: 0 Running Instances, 0 Elastic IPs, 0 Dedicated Hosts, 0 Snapshots, 0 Volumes, 0 Load Balancers, 0 Key Pairs, 1 Security Groups, and 0 Placement Groups. A blue box with a close icon contains the text: 'Build and run distributed, fault-tolerant applications in the cloud with Amazon Simple Workflow Service.' Below this, the 'Create Instance' section is visible, with a red box highlighting the 'Launch Instance' button. The 'Service Health' section shows 'Asia Pacific (Seoul):' with a green checkmark and the text 'This service is operating normally'. The 'Scheduled Events' section shows 'Asia Pacific (Seoul):' with 'No events'. On the right, the 'Account Attributes' section lists 'Supported Platforms' (VPC), 'Default VPC' (vpc-5744303e), and 'Resource ID length management'. The 'Additional Information' section includes links for 'Getting Started Guide', 'Documentation', 'All EC2 Resources', 'Forums', 'Pricing', and 'Contact Us'. The 'AWS Marketplace' section mentions a 'free software trial' and provides links for 'EC2 Launch Wizard' and 'Cisco Cloud Services Router (CSR) 1000V - Direct Conn'.

EC2 생성

- Amazon Linux AMI 선택

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

[Cancel and Exit](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start


My AMIs

AWS Marketplace

Community AMIs

☐ Free tier only ⓘ

1 to 29 of 29 AMIs


**Amazon Linux**
Free tier eligible

Amazon Linux AMI 2016.09.0 (HVM), SSD Volume Type - ami-983ce8f6

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs Virtualization type: hvm

Select


**Red Hat**
Free tier eligible

Red Hat Enterprise Linux 7.2 (HVM), SSD Volume Type - ami-44db152a

Red Hat Enterprise Linux version 7.2 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm

Select


**SUSE Linux**
Free tier eligible

SUSE Linux Enterprise Server 12 SP2 (HVM), SSD Volume Type - ami-4b76a225

SUSE Linux Enterprise Server 12 Service Pack 2 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm

Select

**Ubuntu**
Free tier eligible

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-8fed39e1

Ubuntu Server 16.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

64-bit

Select

EC2 생성

- t2.micro 선택

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation [Show/Hide Columns](#)

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

| | Family | Type | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance |
|-------------------------------------|-----------------|--------------------------------|-------|--------------|-----------------------|-------------------------|---------------------|
| <input type="checkbox"/> | General purpose | t2.nano | 1 | 0.5 | EBS only | - | Low to Moderate |
| <input checked="" type="checkbox"/> | General purpose | t2.micro Free tier eligible | 1 | 1 | EBS only | - | Low to Moderate |
| <input type="checkbox"/> | General purpose | t2.small | 1 | 2 | EBS only | - | Low to Moderate |
| <input type="checkbox"/> | General purpose | t2.medium | 2 | 4 | EBS only | - | Low to Moderate |

EC2 생성

- Review and Launch 선택

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation Show/Hide Columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

| | Family | Type | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance |
|-------------------------------------|-----------------|--------------------------------|-------|--------------|-----------------------|-------------------------|---------------------|
| <input type="checkbox"/> | General purpose | t2.nano | 1 | 0.5 | EBS only | - | Low to Medium |
| <input checked="" type="checkbox"/> | General purpose | t2.micro Free tier eligible | 1 | 1 | EBS only | - | Low to Medium |
| <input type="checkbox"/> | General purpose | t2.small | 1 | 2 | EBS only | - | Low to Medium |
| <input type="checkbox"/> | General purpose | t2.medium | 2 | 4 | EBS only | - | Low to Medium |
| <input type="checkbox"/> | General purpose | t2.large | 2 | 8 | EBS only | - | Low to Medium |
| <input type="checkbox"/> | General purpose | t2.xlarge | 4 | 16 | EBS only | - | Medium |
| <input type="checkbox"/> | General purpose | t2.2xlarge | 8 | 32 | EBS only | - | Medium |
| <input type="checkbox"/> | General purpose | m4.large | 2 | 8 | EBS only | Yes | Medium |
| <input type="checkbox"/> | General purpose | m4.xlarge | 4 | 16 | EBS only | Yes | High |
| <input type="checkbox"/> | General purpose | m4.2xlarge | 8 | 32 | EBS only | Yes | High |

Cancel

Previous

Review and Launch

Next: Configure Instance Details

EC2 생성

- Launch

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.



Improve your instances' security. Your security group, launch-wizard-1, is open to the world.

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only.

You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details

[Edit AMI](#)

Free tier
eligible

Amazon Linux AMI 2016.09.0 (HVM), SSD Volume Type - ami-983ce8f6

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root Device Type: ebs Virtualization type: hvm

Instance Type

[Edit instance type](#)

| Instance Type | ECUs | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance |
|---------------|----------|-------|--------------|-----------------------|-------------------------|---------------------|
| t2.micro | Variable | 1 | 1 | EBS only | - | Low to Moderate |

Security Groups

[Edit security groups](#)

Security group name

launch-wizard-1

Description

launch-wizard-1 created 2016-12-04T15:57:17.911+09:00

Type ⓘ

Protocol ⓘ

Port Range ⓘ

Source ⓘ

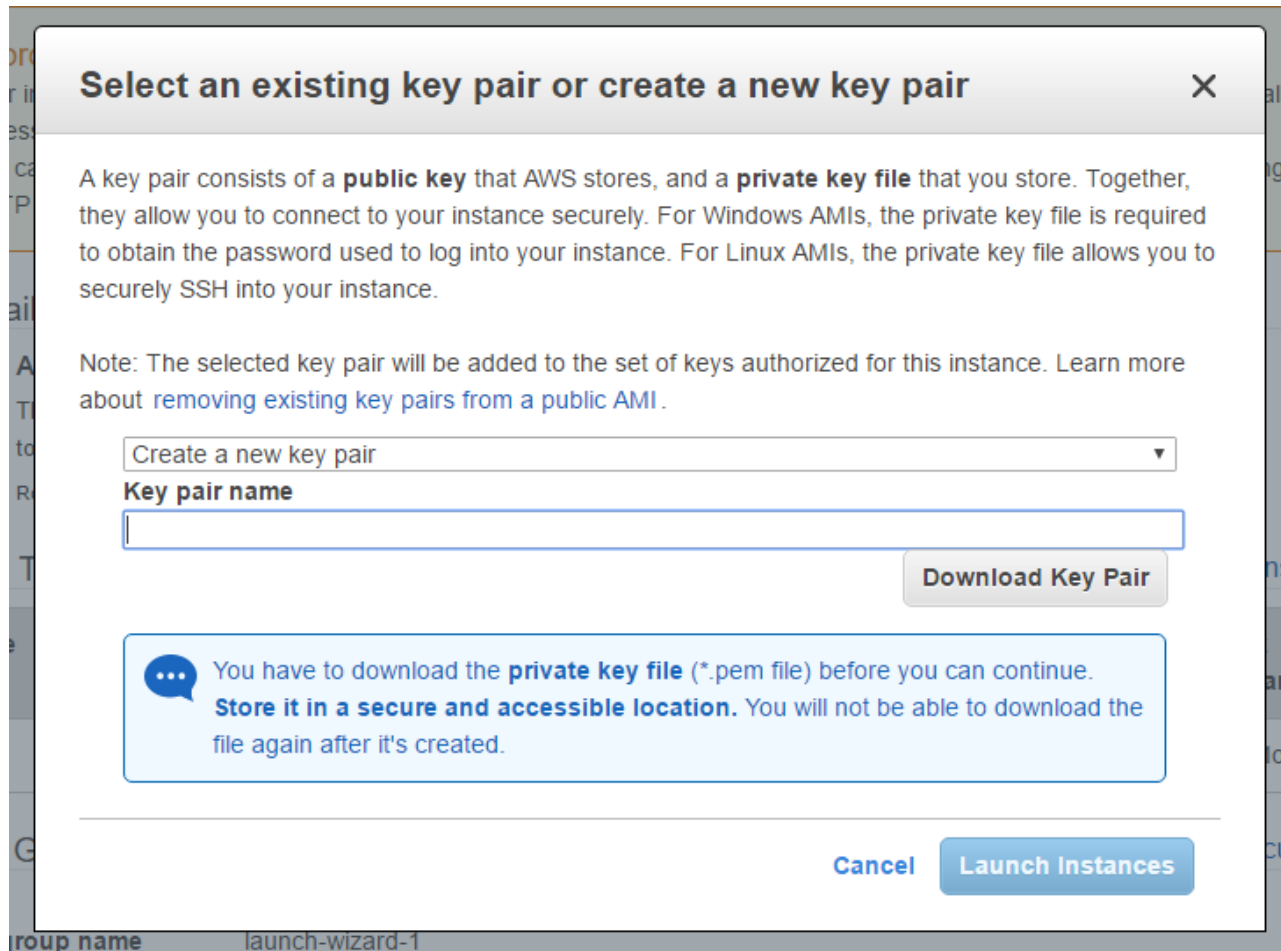
Cancel

Previous

Launch

EC2 생성

- 키 생성 및 다운로드 (ssh 접속 시 필수)



Select an existing key pair or create a new key pair [X]

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair [v]

Key pair name

[Text Input Field]

Download Key Pair

You have to download the private key file (*.pem file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after it's created.

Cancel Launch Instances

EC2 생성

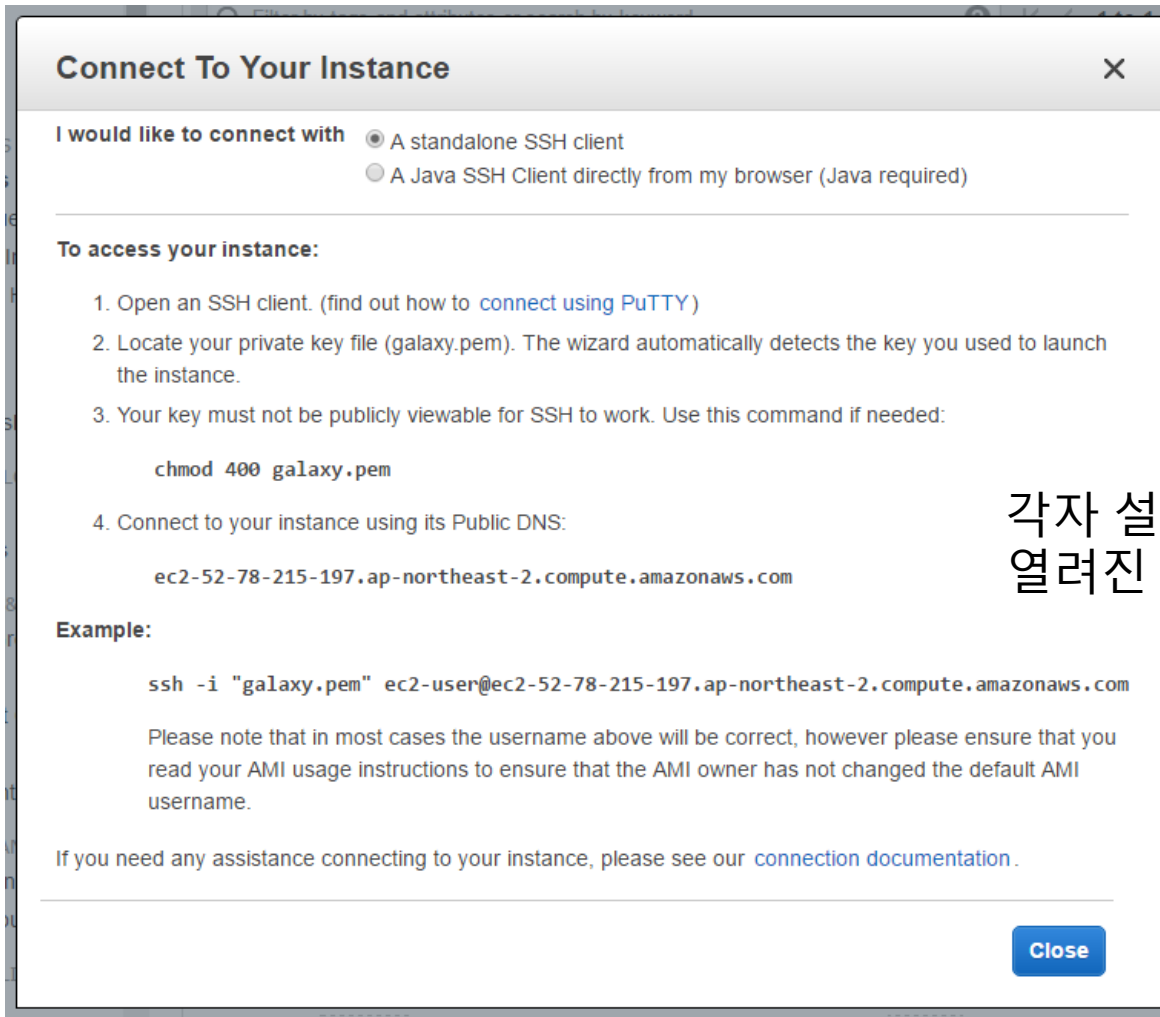
- 접속

The screenshot displays the AWS Management Console interface for an EC2 instance. The top navigation bar includes 'Services', 'Resource Groups', and user information. The left sidebar shows the navigation menu with categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING, and AUTO SCALING. The main content area shows the 'Launch Instance' and 'Connect' buttons, with 'Connect' highlighted by a red box. Below the buttons is a table listing instances, with the instance 'i-0a3fe85a79e8d0aa7' in the 'running' state. The instance details panel shows the following information:

| Instance ID | Instance state | Instance type | Private DNS | Private IPs | Secondary private IPs | VPC ID | Public DNS | Public IP | Elastic IPs | Availability zone | Security groups | Scheduled events | AMI ID |
|---------------------|----------------|---------------|---|--------------|-----------------------|--------------|--|---------------|-------------|-------------------|-------------------------------------|---------------------|---|
| i-0a3fe85a79e8d0aa7 | running | t2.micro | ip-172-31-15-63.ap-northeast-2.compute.internal | 172.31.15.63 | | vpc-5744303e | ec2-52-78-215-197.ap-northeast-2.compute.amazonaws.com | 52.78.215.197 | | ap-northeast-2a | launch-wizard-1. view inbound rules | No scheduled events | amzn-ami-hvm-2016.09.0.20161028-x86_64-gp2 (ami-983ce8f6) |

EC2 생성

- 접속



각자 설정이 다르므로
열려진 페이지를 확인 후 접속

EC2 생성

- 접속

```
ec2-user@ip-172-31-15-63:~  
File Edit View Search Terminal Help  
fota.log          wcdma.log  
freeze.log       workspace  
galaxy.pem        workspaces  
jin@DexterDeskTop:~|⇒ chmod 400 galaxy.pem  
jin@DexterDeskTop:~|⇒ ssh -i "galaxy.pem" ec2-user@ec2-52-78-215-197.ap-northeast-2.compute.amazonaws.com  
The authenticity of host 'ec2-52-78-215-197.ap-northeast-2.compute.amazonaws.com (52.78.215.197)' can't be established.  
ECDSA key fingerprint is SHA256:/K9yKNbiIqe+6CnhD27ap4Zg77sk/TA9w8DuPXqkzVE.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added 'ec2-52-78-215-197.ap-northeast-2.compute.amazonaws.com,52.78.215.197' (ECDSA) to the list of known hosts.  
  
  _ | _ | _ )  
  _ | ( _ | /  Amazon Linux AMI  
  _ | \ _ | _ |  
  
https://aws.amazon.com/amazon-linux-ami/2016.09-release-notes/  
6 package(s) needed for security, out of 11 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-15-63 ~]$
```



AWS S3

- **S3 – The simple Storage Service**
- **S3 is an infinitely-large, web-accessible storage service**
- **Data is stored in “buckets” as (key, value) pairs**
 - **Effectively (server, filename) → file mapping**

AWS S3

- **Names must be globally unique**
 - (Since they are addressable as DNS entries)
- **Can hold an unlimited number of keys**
- **Each key can have up to 5 GB of value**

AWS S3

- **PUT request to a URL with data uploads the data as the value bound to the key specified by the URL**
- **GET request to the URL retrieves the value (file) or “404 Not Found”**

AWS S3

AWS 스토리지 선택 옵션



Amazon S3

모든 타입에 대한
내구성 높은 개체
스토리지 서비스

경제적 활용

사용한 만큼만
지불하고, 미리
선타자가 필요 없으며
용량 계산 필요 없음



Amazon Glacier

자주 접근하지 않는
데이터에 대한 백업
서비스

백업 편의성

손쉽게 혼자 관리 가능
데이터 생명 주기에
따라 관리 가능



Amazon EBS

Amazon EC2에
사용할 수 있는 블록
스토리지

활용 용이성

내구성 및 보안성이
높으며, 가상 서버에서
데이터 처리 가능



Amazon EFS

Amazon EC2에 대한
네트워크 스토리지

손쉬운 확장성

블록 스토어 관리 비용
절감 및 공유 스토리지
관리 불필요

(현재 Preview로 제공)

This slide from Amazon AWS Korea

AWS S3



Amazon
S3

Simple Storage Service

Secure, durable, highly-scalable

99.999999999%

사용한만큼만 지불

Static 웹서버로 사용

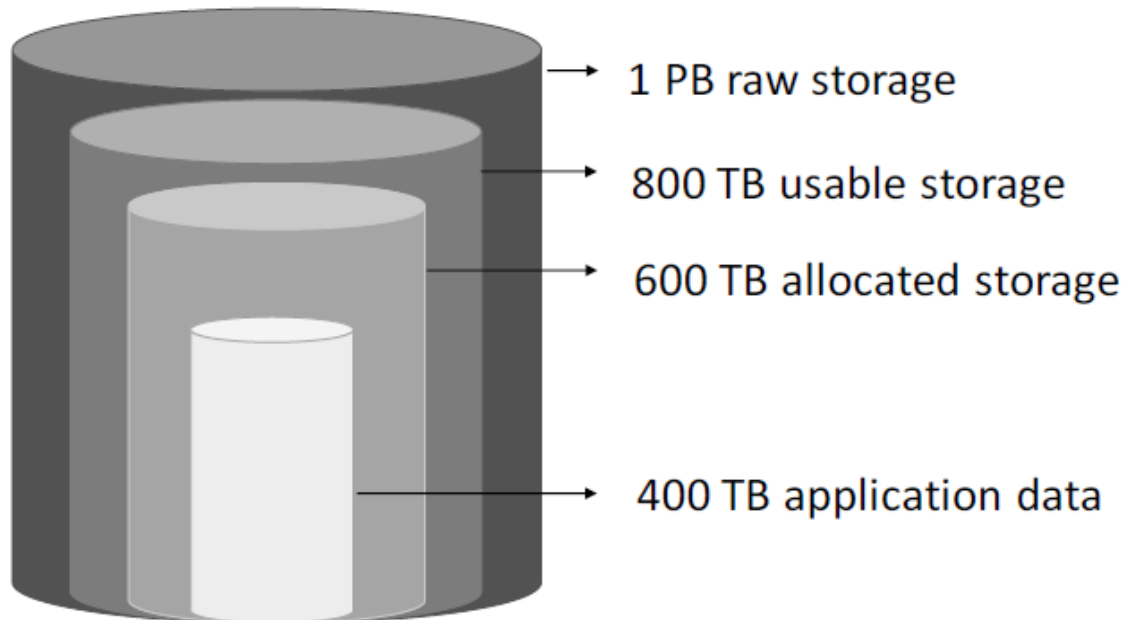


This slide from Amazon AWS Korea

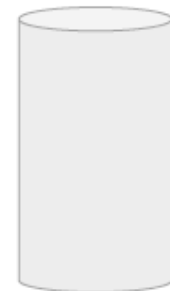
AWS S3

Amazon S3 스토리지 비교

기존 스토리지



Amazon S3



This slide from Amazon AWS Korea

AWS S3

Simple Storage Service(S3)

1GB 1개월 \$0.033

1TB 1개월 \$33.8

1TB 1년 \$405.8

This slide from Amazon AWS Korea

AWS S3

Amazon S3 활용 분야



웹 사이트



백업 및 복구



보관



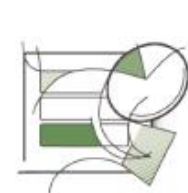
재해 복구



빅 데이터



엔터프라이즈 IT



비즈니스 애플리케이션



콘텐츠 전송



금융 서비스



고성능 컴퓨팅



디지털 마케팅



전자 상거래



미디어 및 엔터테인먼트

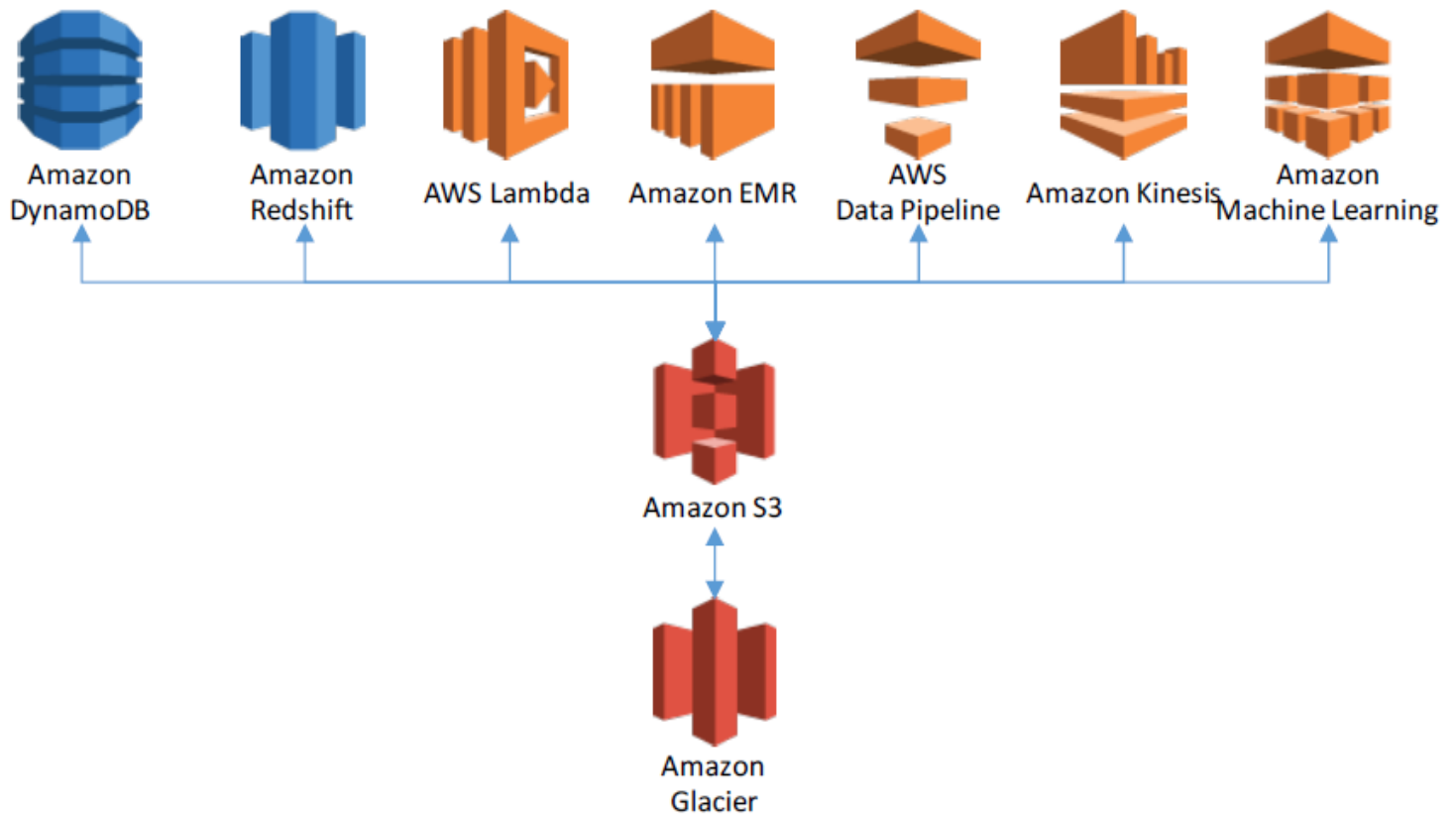


모바일 서비스

This slide from Amazon AWS Korea

AWS S3

Amazon S3 as primary store



This slide from Amazon AWS Korea

S3 사용

- 버킷 생성

Welcome to Amazon Simple Storage Service

Amazon S3 is storage for the Internet. It is designed to make web-scale computing easier for developers.

Amazon S3 provides a simple web services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web. It gives any developer access to the same highly scalable, reliable, secure, fast, inexpensive infrastructure that Amazon uses to run its own global network of web sites. The service aims to maximize benefits of scale and to pass those benefits on to developers.

You can read, write, and delete objects ranging in size from 1 byte to 5 terabytes each. The number of objects you can store is unlimited. Each object is stored in a bucket with a unique key that you assign.

Get started by simply creating a bucket and uploading a test object, for example a photo or .txt file.

Create Bucket

S3 at a glance

Create



Create a bucket in one of several Regions. You can choose a Region to optimize for latency, minimize costs, or address regulatory environments.

Add



Upload objects to your bucket. Amazon S3 durably stores your data in multiple facilities and on multiple devices within each facility.

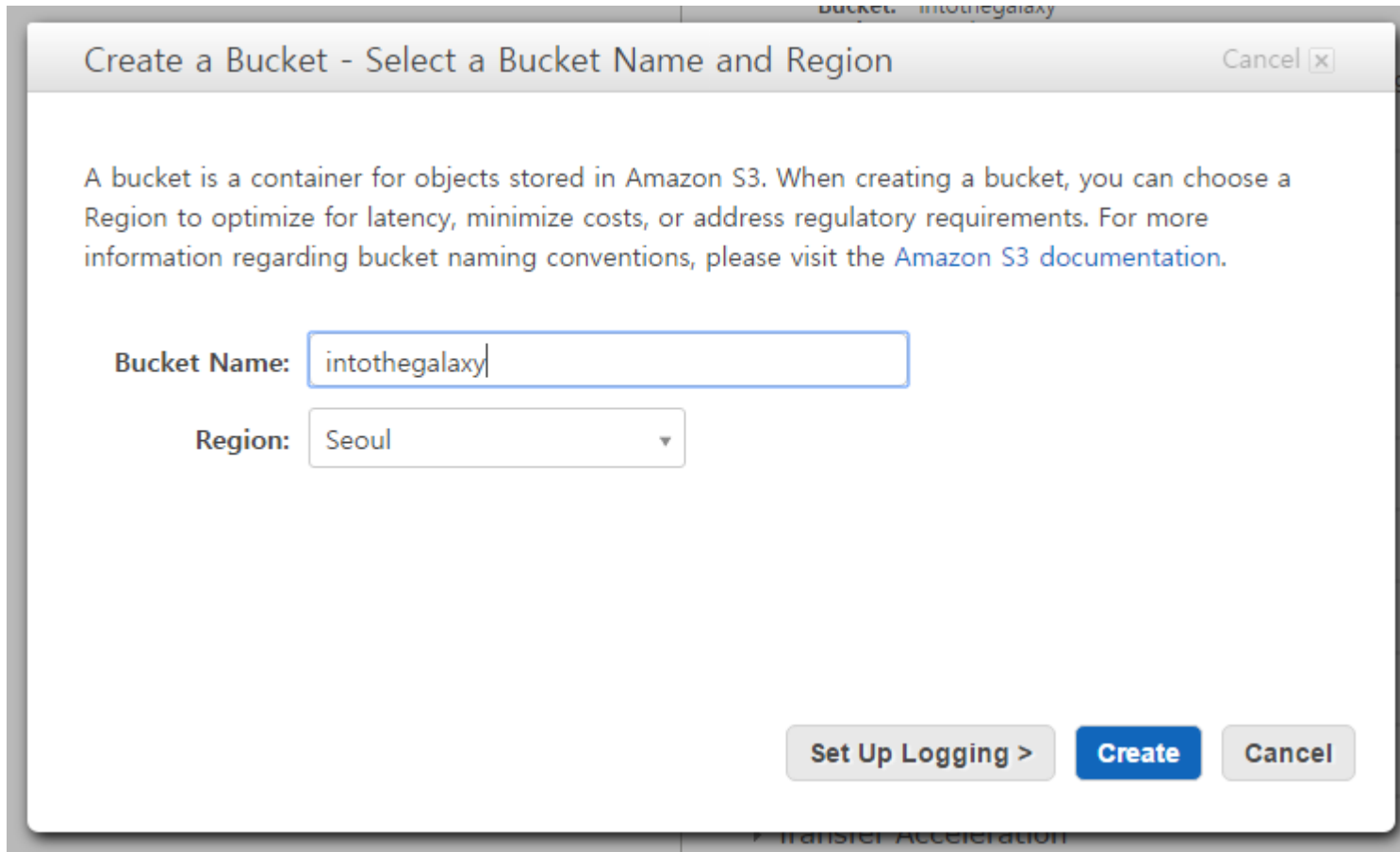
Manage



Manage your data with Amazon S3's lifecycle management capabilities, including the ability to automatically archive objects to even lower cost storage options.

S3 사용

- 버킷 생성



The screenshot shows the 'Create a Bucket' dialog box in the AWS S3 console. The title bar reads 'Create a Bucket - Select a Bucket Name and Region'. Below the title bar, there is a paragraph explaining that a bucket is a container for objects and that users can choose a region to optimize for latency, minimize costs, or address regulatory requirements. It also provides a link to the Amazon S3 documentation. The 'Bucket Name' field is a text input containing 'intothegalaxy'. The 'Region' field is a dropdown menu currently set to 'Seoul'. At the bottom right, there are three buttons: 'Set Up Logging >', 'Create' (highlighted in blue), and 'Cancel'.

Create a Bucket - Select a Bucket Name and Region Cancel

A bucket is a container for objects stored in Amazon S3. When creating a bucket, you can choose a Region to optimize for latency, minimize costs, or address regulatory requirements. For more information regarding bucket naming conventions, please visit the [Amazon S3 documentation](#).

Bucket Name:

Region:

Set Up Logging > Create Cancel

S3 사용

- 버킷 확인

The screenshot displays the AWS S3 console interface. At the top, there's a navigation bar with 'Services', 'Resource Groups', and user information 'Seongwook Jin'. Below this, a 'Create Bucket' button and an 'Actions' dropdown are visible. The main area is divided into two panels. The left panel, titled 'All Buckets (1)', contains a table with one entry: 'intothegalaxy'. The right panel, titled 'Bucket: intothegalaxy', shows detailed information about the bucket. It lists the bucket name, region (Seoul), creation date (Sun Dec 04 16:35:00 GMT+900 2016), and owner ID. Below this, a list of features is shown with expandable sections: Permissions, Static Website Hosting, Logging, Events, Versioning, Lifecycle, Cross-Region Replication, Tags, Requester Pays, Transfer Acceleration, and Storage Management.

Services ▾ Resource Groups ▾ ☆

Seongwook Jin ▾ Global ▾ Support ▾

Create Bucket Actions ▾

All Buckets (1)

| Name |
|---------------|
| intothegalaxy |

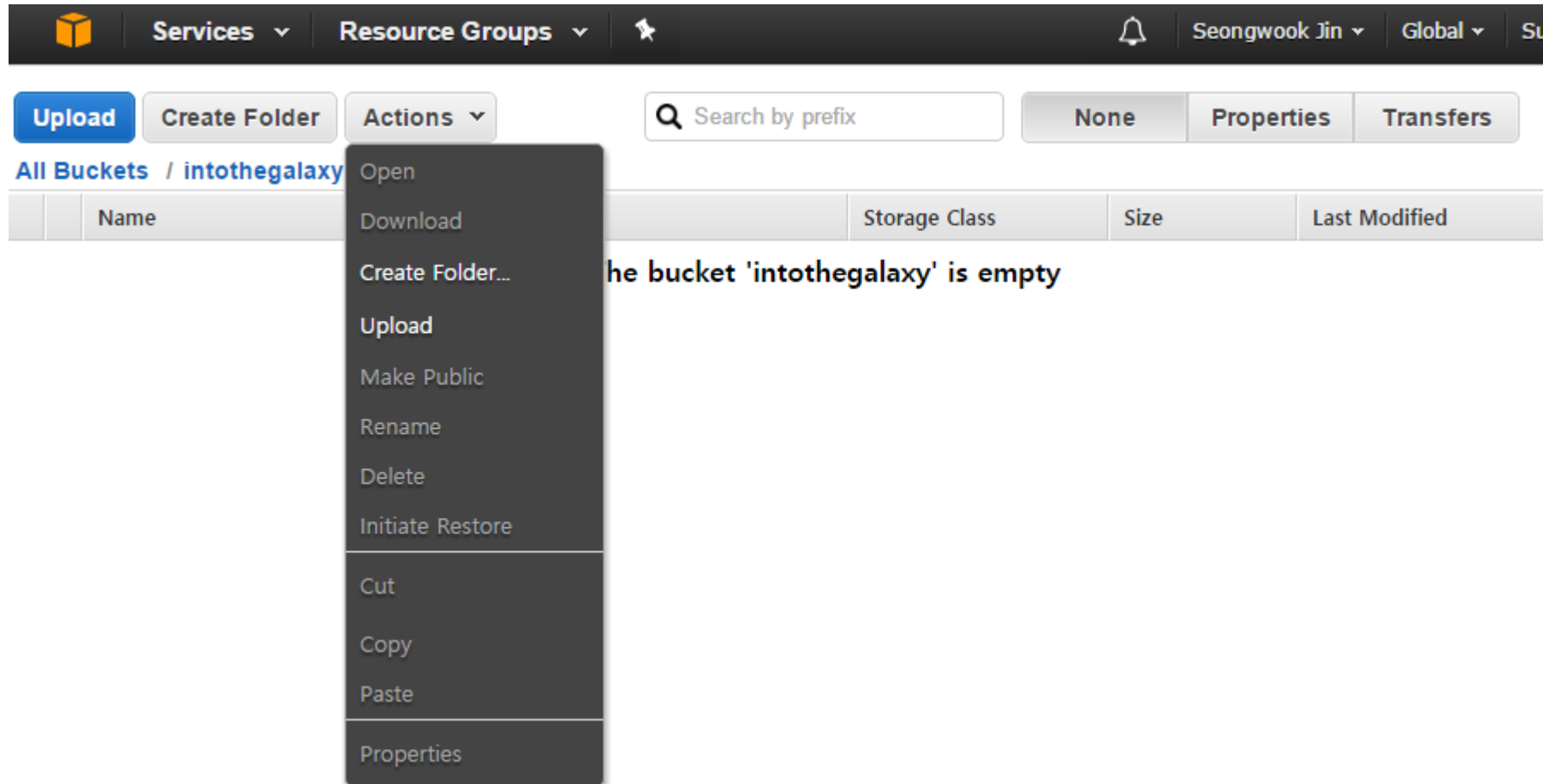
Bucket: intothegalaxy ✕

Bucket: intothegalaxy
Region: Seoul
Creation Date: Sun Dec 04 16:35:00 GMT+900 2016
Owner: 1e444708a31881b5035bf1fe2106396e3ae361918185491ecdbf6d
dfeef640

- Permissions
- Static Website Hosting
- Logging
- Events
- Versioning
- Lifecycle
- Cross-Region Replication
- Tags
- Requester Pays
- Transfer Acceleration
- Storage Management

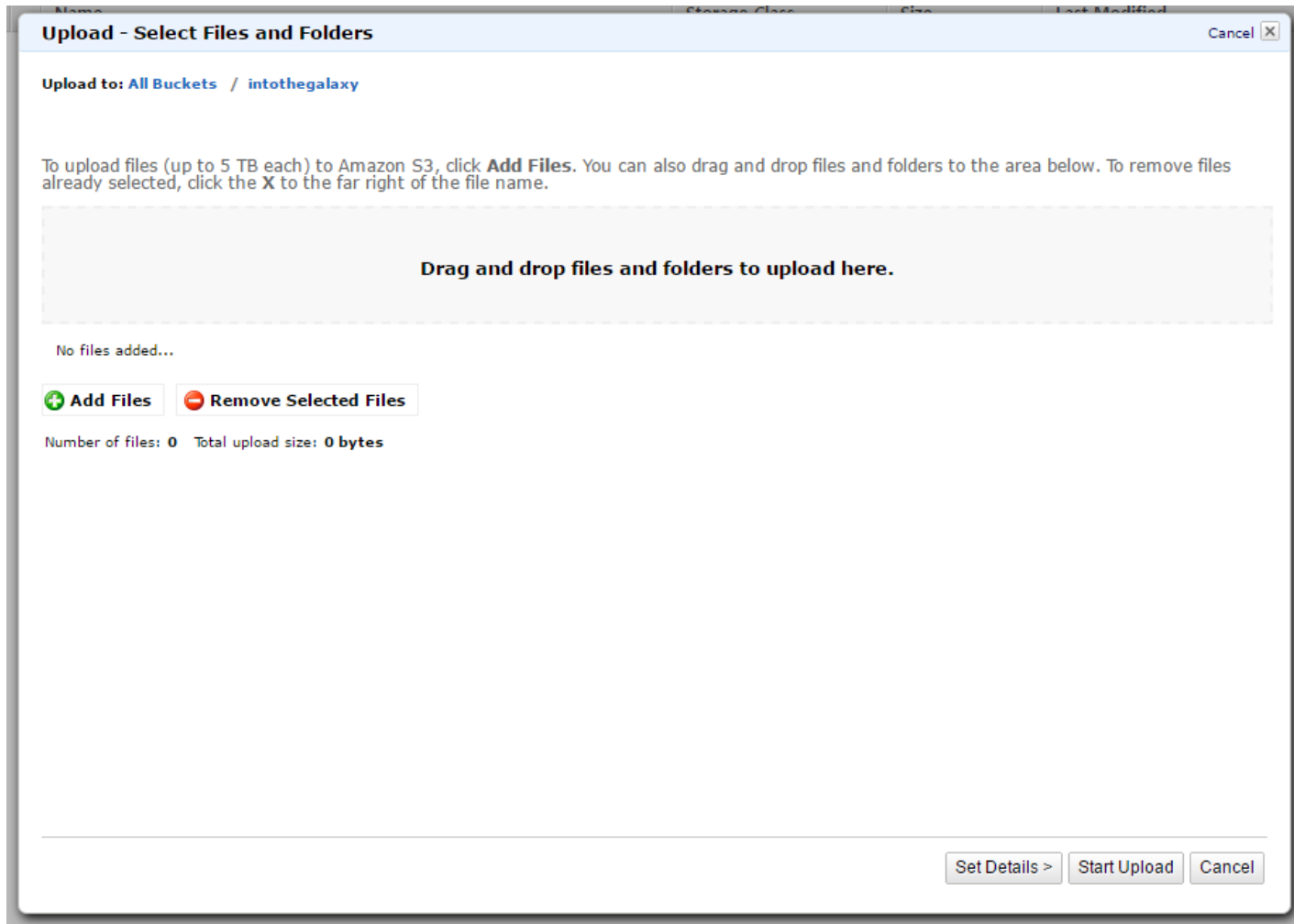
S3 사용

- 업로드 파일



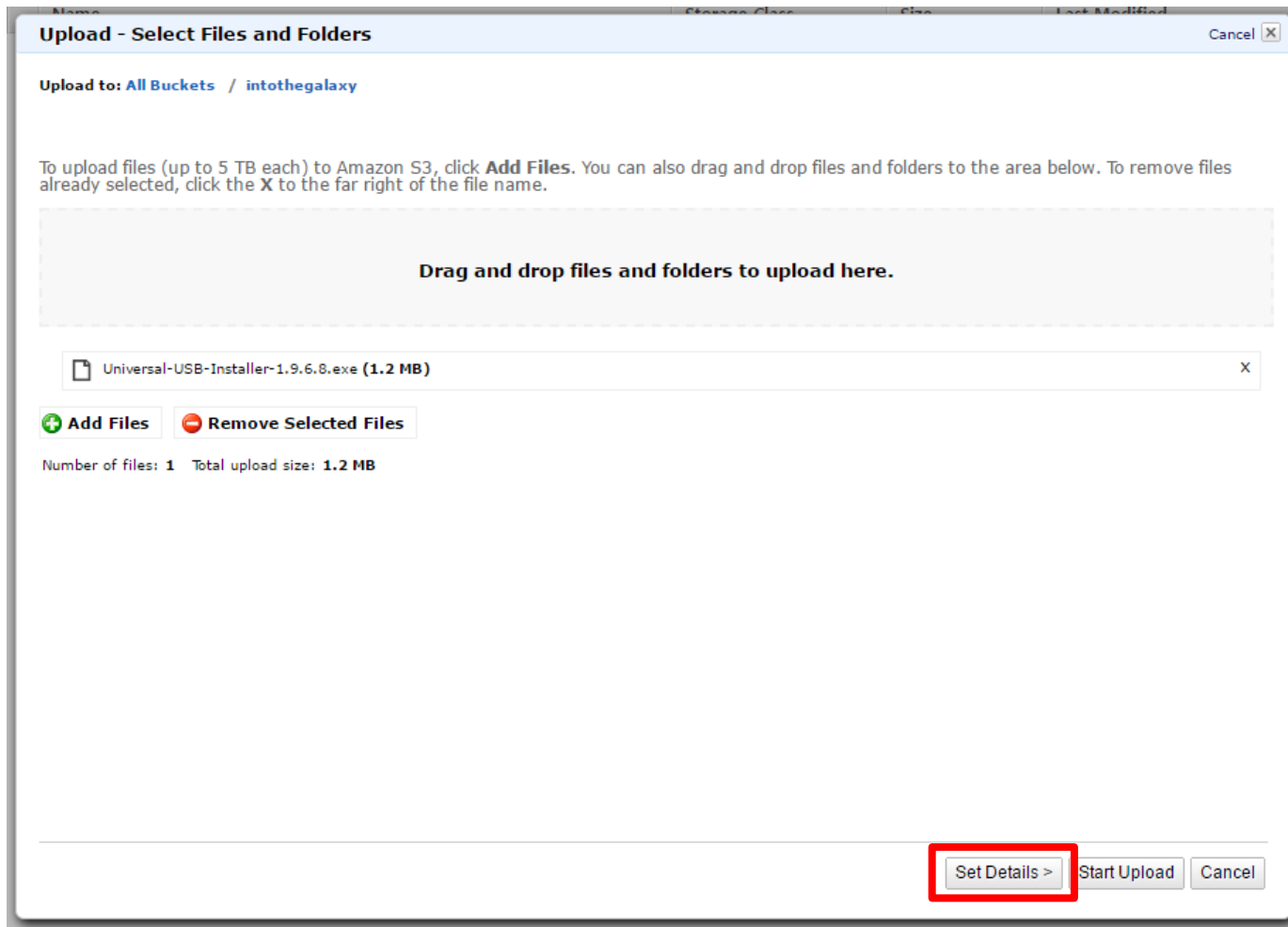
S3 사용

- 업로드 파일



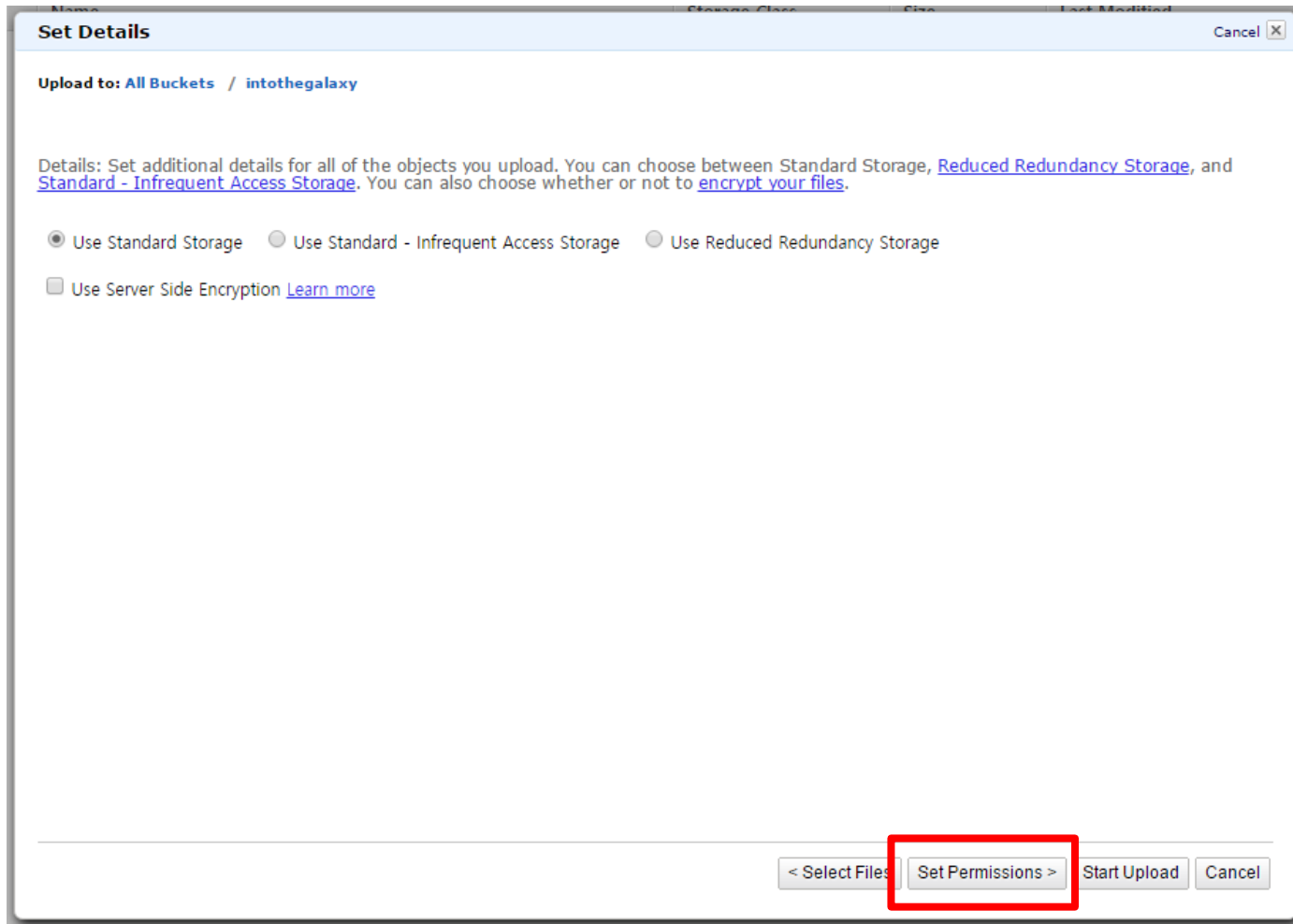
S3 사용

- 업로드 파일



S3 사용

- 업로드 파일



The screenshot shows the 'Set Details' dialog box in the AWS S3 console. The dialog has a title bar with 'Set Details' and a 'Cancel' button. Below the title bar, it says 'Upload to: All Buckets / intothegalaxy'. The main content area contains a paragraph of text: 'Details: Set additional details for all of the objects you upload. You can choose between Standard Storage, [Reduced Redundancy Storage](#), and [Standard - Infrequent Access Storage](#). You can also choose whether or not to [encrypt your files](#).' Below this text are three radio buttons: 'Use Standard Storage' (selected), 'Use Standard - Infrequent Access Storage', and 'Use Reduced Redundancy Storage'. There is also a checkbox for 'Use Server Side Encryption' with a 'Learn more' link. At the bottom of the dialog, there are four buttons: '< Select Files', 'Set Permissions >', 'Start Upload', and 'Cancel'. The 'Set Permissions >' button is highlighted with a red rectangle.

Set Details Cancel X

Upload to: All Buckets / intothegalaxy

Details: Set additional details for all of the objects you upload. You can choose between Standard Storage, [Reduced Redundancy Storage](#), and [Standard - Infrequent Access Storage](#). You can also choose whether or not to [encrypt your files](#).

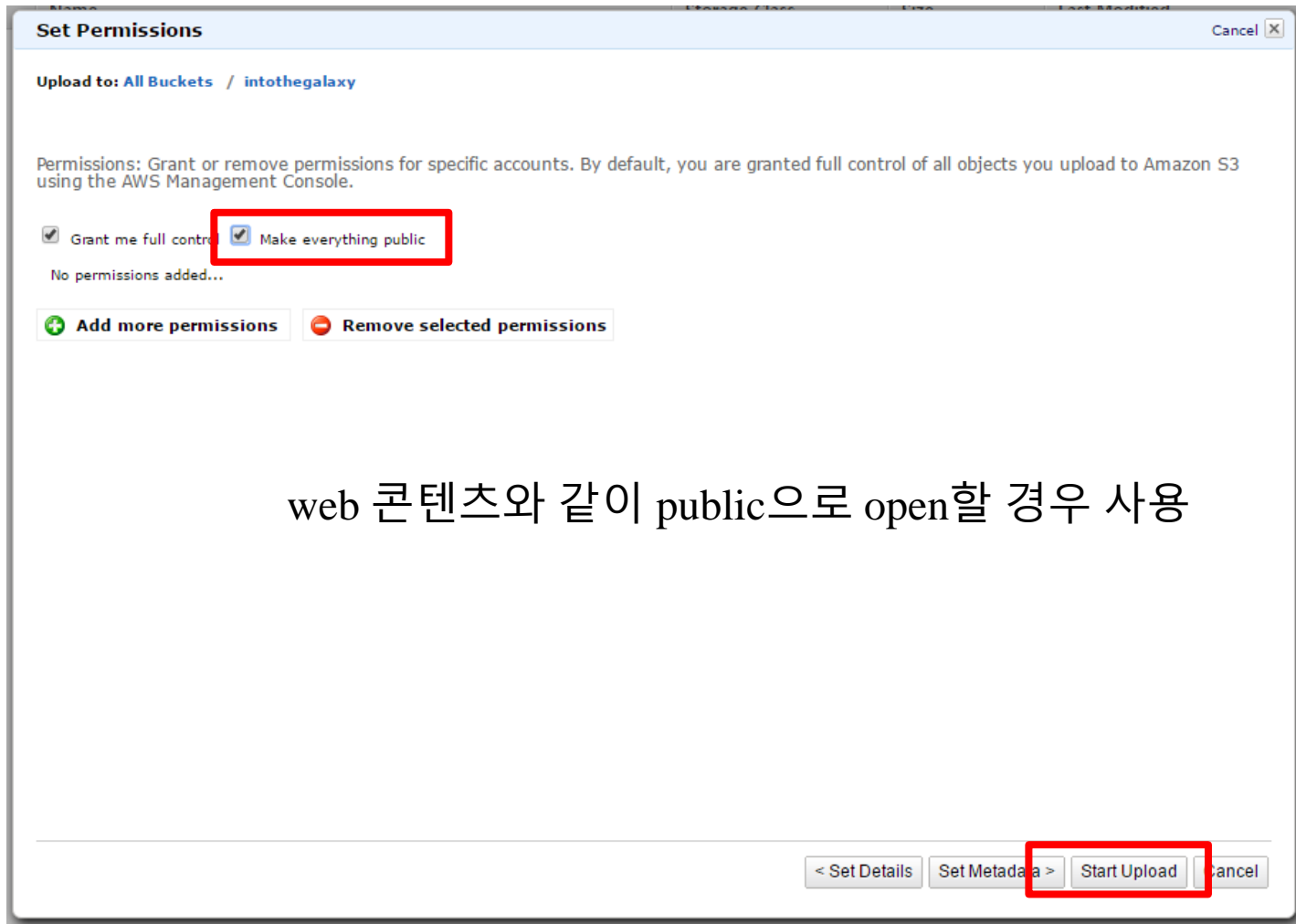
☒ Use Standard Storage ☐ Use Standard - Infrequent Access Storage ☐ Use Reduced Redundancy Storage

☐ Use Server Side Encryption [Learn more](#)

< Select Files **Set Permissions >** Start Upload Cancel

S3 사용

- 업로드 파일



web 콘텐츠와 같이 public으로 open할 경우 사용

S3 사용

- 다운로드 및 확인

The screenshot displays the AWS S3 console interface. At the top, the navigation bar includes 'Services', 'Resource Groups', and a search icon. The main header shows 'All Buckets / intothegalaxy'. Below this, there are buttons for 'Upload', 'Create Folder', and 'Actions'. A search bar labeled 'Search by prefix' is also present. The 'Actions' dropdown menu is open, with 'Open' highlighted by a red rectangle. The menu options include 'Download', 'Create Folder...', 'Upload', 'Make Public', 'Rename', 'Delete', 'Initiate Restore', 'Cut', 'Copy', 'Paste', and 'Properties'. In the background, a file named 'Universal-USB-Installer-1.9.6.8.exe' is listed with a size of 1.2 MB. On the right side, the 'Transfers' panel shows a progress bar for the upload of the file, with a green checkmark and the status 'Done'.

Assignment

- **S3 file upload with node.js**
 - <http://khuhub.khu.ac.kr/Prof.JinSeongwook/OSS-2017-02>
 - Local Upload → S3 Upload (Implementation Needed!)
- **Add IAM account**
 - http://docs.aws.amazon.com/ko_kr/IAM/latest/UserGuide/introduction.html
 - awsconfig.json