# Responsible Computing

HOW YOUR ORGANIZATION CAN BECOME A RESPONSIBLE TENANT OF PLANET EARTH



## What is Responsible Computing?



responsible.computing() is a systemic approach addressing current and future challenges in computing including sustainability, ethics and professionalism

## We need to start thinking about Technology differently\*:

People Planet Prosperity Participation

- Responsible Computing establishes a cohesive, interconnected framework across six critical domains to allow every organization to educate on their responsibilities, define their goals and measure all their progress against their aspirations.
- Participatory movement of like-minded people and organizations realizing their ambitions and acting upon their responsibilities will have a positive impact on society and the future of technology by sharing:

Engagement Methodologies Sustainability Maturity Models

## https://responsiblecomputing.net



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\* La Fondation | Foundation for Future Generations

There are significant benefits from responsible computing, ranging from increased brand value and commercial advantage to attracting and retaining talent. Responsible computing reduces costs and enhances operational efficiencies while addressing the most pressing challenges of our day for environmental sustainability, efficient infrastructure, secure coding, and ethical and inclusive systems that reflect our diversity. Organizations that prioritize these values are recognized by their customers, employees and shareholders, and differentiate themselves by charting these paths and creating a blueprint for responsible computing.



## **Responsible Computing: Genesis**

In 2019-2020, IBM spoke with hundreds of CTOs reflecting a crosssection of industries for its annual <u>Architecture Decision Points 3.0</u> report. CTOs across several industries and countries agreed:

- A fundamental re-architecting of IT infrastructure was needed to address Environmental, Social and Governance (ESG) concerns.
- No ONE organization could fix this alone.
- RC needed to be founded by these leaders to create a collaborative/open standard model to foster industry-wide cooperation to address business sustainability, systems simplification, and broader business and ESG impacts.



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**RC Principles:** 



## **Responsible Computing: History**

The <u>IBM Academy of Technology</u>, which is an action-oriented society of IBM's leading thinkers and problem solvers, looked at the big question "What does it take to become the most sought-after responsible computing (provider)?"

This brought more than 120 of the best technical IBMers from various business units, to gain an understanding of the current situation and more importantly, the creation of a point of view that will help define IT responsibly, which they called responsible.computing().

The responsible.computing() council was formed in 2021 to further intensify the collaboration and companies from various industries: Banking, Comms, Energy & Utility, Consultancy and a Service Provider joined. These tech leaders agreed no one organization can fix this alone and went on to form responsible.computing() with the Object Management Group® (OMG®).

IBM is proud to be a Founding Member of the consortium and has supported this initiative by licensing use of the responsible computing trademark and donating the manifesto, domains and the self-assessment model created by the IBM Academy of Technology as a starting point for members to determine their position and ambitions in their journey to responsible computing.

#### **RC Addresses:**

Data Center Energy Consumption

Data Security Breaches

Privacy Leakages

Social Media Risks



## **Responsible Computing Timeline**

History	Milestones
April 2020	IBM releases annual <u>IBM Architecture Decision</u> <u>Points 3.0</u> report
November 2020	Responsible Computing Council formed
June 2021 September 2021	OMG joins Council OMG BOD approves creation of Responsible Computing
May 2022	Launch of Responsible Computing

Website: <a href="https://responsiblecomputing.net/">https://responsiblecomputing.net/</a>



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## Who is the Object Management Group?

- An international, open membership, not-forprofit technology standards consortium founded in 1989
- Worldwide Standard Development Organization (SDO), builds communities
- Standards are driven by vendors, endusers, academic institutions and government agencies
- OMG Task Forces develop enterprise integration standards for a wide range of technologies and an even wider range of industries

OMG programs include:





)MG

Object Management

Group











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## **Responsible Computing Members:**

#### Founders



<u>Industry</u>



# Technologies

TRANSFORMA<sub>I</sub>

Academia & Research



College of Engineering









## **Responsible Computing**

### **Current State**

#### What is RC?

We see a series of challenges in the world that impact the future of computing:

- · Sustainability and climate change
- The importance of secure and reliable computing emphasized by the pandemic
- Data security breaches and privacy leakages are making users wary of technology
- It is important to empower IT to surmount these challenges

Responsible Computing is a holistic approach to face these modern challenges around computing

It integrates aspects of Sustainability/Circularity, Ethics, Openness, Privacy, Diversity/ Inclusion and Climate

A framework with 6 key domains provides guidance on Key Performance Indicators and Pathways to become a Responsible Computing provider

### What is different?

Individual initiatives exist, but with the United Nation's Sustainable Development Goals (SDGs), Environmental Social and Governance goals (ESGs),and industry regulation, there is a need to take a holistic approach

Responsible Computing is a series of all-encompassing frameworks around People, Planet, Prosperity and Participation—from Engagement Models to Assessment Models to Sustainability Maturity Models

## **Future State**

To make a difference, we need to work together across multiple organizations

Responsible Computing brings together leading organizations across industries to collaborate and exchange ideas with peers and amplify the impact IT leaders have on the future of computing and sustainability

We are shaping ways to restore trust in IT by responsibly applying technology, and by sharing our experience with others.



## **Responsible Computing Membership Benefits**

#### **Asset Pooling**

- Get more out of your R&D budget by accessing industry intelligence
- Use consortium experience to shape your corporate responsibility strategy

#### **Influence on Industry Direction**

- Influence development of best practices, requirements development, technology adoption and future directions.
- · Help develop disruptive solutions for the tech industry

#### **Ability to Participate**

- Actively vote in Responsible Computing elections and for deliverables that adhere to RC standards
- Gain industry influence and recognition through involvement in domain-based Working Groups

#### **Access to Resources**

- Access research reports, white papers, guidelines and other material produced by Responsible Computing and our liaisons
- Collaborate with other industry experts to byline and develop critical leadership documents

#### **Marketing Benefits**

- Use of the Responsible Computing logo
- Publish thought leadership pieces on RC Blog, which is peer reviewed and socialized on social media.
- Post your press releases, including the press release announcing you are joining Responsible Computing, on the Member News page



## **Responsible Computing Manifesto: Values**

We are shaping ways to restore trust in IT be responsibly applying technology and by sharing our experience with others.

- 1. Efficient Use of available and future technology
- 2. Data Centers designed and operated with an emphasis on sustainability
- **3. Conscious Code** choices that optimize environmental, social and economic impact over time
- 4. Technologies and Innovations that drive positive impact for society at large
- 5. Inclusive Systems that address bias and discrimination driving equality for all
- **6. Data** that is securely used in ways that drive transparency, fairness and respect for the users

By signing this manifesto, our organization commits to shaping our IT systems' architectures to adhere to responsible computing values in key areas pertaining to infrastructure, code development, and social impact



## **Responsible Computing Manifesto: Principles**

The principles provide a set of cross-cutting beliefs that underpin our values.

- **1. Sustainability:** holistically contributing to the success of the UN SDGs and or ESG concerns
- **2.** *Inclusivity*: trustworthy, inclusive, respectful and ethical at every step—with the team engaged and those impacted by the outcomes
- **3.** *Circularity*: consider full lifecycle, modularity, reusability and circular economy in eliminating waste
- **4. Openness:** being transparent and open to share, consume and learn from the wider community
- **5. Authenticity:** being genuine and true to the values and principles to which you have been committed, be trusted, unbiased and collaborative
- **6. Accountability:** becoming a role model, doing what is right, driving decisions with positive impact through measurable goal-setting

By signing this manifesto, our organization commits to shaping our IT systems' architectures to adhere to responsible computing values in key areas pertaining to infrastructure, code development, and social impact



## **Responsible Computing: Choose your Path**



## **Responsible Computing: Domain Details**



## **Responsible Computing: Data Center**

#### Goals:

- Reduce environmental impact with more efficient strategy and design
- Migrate to renewable energy sources
- Monitor consumption and carbon footprint
- Optimize re-use of waste from cooling and production
- Strive to be net zero by 2030 in compliance with UN SDGs

#### Approach:

- Reducing energy consumption
   with accurate measurements
- Strategizing for technology refreshes
- Implementing renewable energy sources
- Identifying cooling considerations based on location
- Focusing on cooling, power, distribution, UPS service, generators, cables and racks with emphasis on use and re-use of materials

#### **Benefits:**

- Increased operational efficiency with environmental considerations
- Reduced energy consumption
- Decreased CO<sup>2</sup> emissions
- Less reliance on rare metals and toxic materials



Responsible Data Center

## **Responsible Computing: Infrastructure**

#### Goals:

- Realize greater efficiencies with infrastructure designed to deliver high performing sustainable operations
- Consolidate workloads that peak at different times to compliment each other and increase efficient use of resources
- Obtain high levels of utilization (which can be improved by consolidation) to deliver more efficient use of energy and resources

#### Approach:

- Establish a baseline measurement on Energy usage and material/asset lifecycle
- Improve analysis and reporting based on experience and established baseline
- Request each IT infrastructure vendor to provide information and reports on energy usage and product lifecycle

#### **Benefits:**

- Savings in physical space
- Reduced waste and consumption
- Manage ESG impact of the hardware, software and networks required to develop, test, deliver, monitor, control and support IT services
- Consolidation and rationalization that enables individuals and organizations to have a positive impact on the world



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## **Responsible Computing: Code**

#### Goals:

- Align teams on software architecture, technology, programming language and platform
- Anticipate and monitor the total costs of running, supporting and maintaining applications
- Balance the trade-off between accuracy, speed and cost, including energy consumption of systems
- Address the hidden energy impact
   of code
- Reduce data duplication and improve cyber security

#### Approach:

- Implement sustainability maturity assessment tools and KPIs to accelerate decision-making and pinpoint areas requiring more scrutiny during software development
- Utilize tools and methods to apply to develop applications more responsibly
- Heighten team awareness by setting up on-going training and workshops to reinforce shared sustainability goals

#### **Benefits:**

- Conscious design choices reflecting accessibility, energy consumption and economic sustainability
- Improved cybersecurity
- Increased awareness of the responsibility that comes with writing code and the impacts on users' lives and the planet
- Expose the hidden energy impact of code and decreasing the digital divide





#### Goals:

- Certify that the data used, processes and people are trusted and high quality
- Reduce errors and misinterpretation of data from manual handling by deploying intelligent workflows
- Remain competitive and nimbly respond to quality data while embracing innovation from applying artificial intelligence and machine learning

#### **Approach:**

**Responsible Computing: Data Usage Working Group** 

- More robust policies, guidelines and practices for the governance of data (e.g., maintaining lineage and explain-ability)
- · Ongoing data usage riskassessment and risk mitigation with responsible computing in mind
- Managing the lifecycle of data with accountable data-retention and destruction practices
- Incident response and data breach remediation

#### **Benefits:**

- Minimal errors in the data that • could lead lead to financial losses. wrong executive decisions or destroy the integrity of individuals, enterprises or even markets
- Effective and efficient use of data
- Heightened collaboration between the business and IT





## **Responsible Computing: Systems Working Group**

#### Goals:

- Ensure the "systems" employ an integrated set of technologies to provide a service to human beings. It can be composed of hardware, data, code, models and services
- Build systems that are ethical, privacy-preserving, secure and resilient. Systems will be designed with the environment, individuals, society and the future taken into consideration in IT decisions

#### Approach:

Responsible Systems are designed with a <u>3-layered</u> approach:

- 1. A cultural ethos across the entire supporting organization
- 2. The use of forensic technology that can monitor, detect issues to enable trust
- 3. Governance requirements to which the entire organization adheres

#### **Benefits:**

- Maintaining integrity of internal systems
- Achieving compliance with internal and external standards
- Ongoing monitoring to ensure companies develop and use responsible systems
- Reinforced corporate social responsibility and closing the digital divide



Responsible Systems

## **Responsible Computing: Impact**

#### Goals:

- Offset the impact on the planet in the categories of ESG – Environmental, Social & Governmental
- Level the playing field through: Sustainability/Circularity, Diversity/Inclusion, Climate, Openness, Ethics



#### Approach:

<u>Six</u> prime and measurable maturity characteristics represent the ability to achieve Responsible Impact:

- 1. Goal Setting
- 2. Scalability
- 3. Replicability
- 4. Socially-responsible business model/strategy
- 5. Measurable
- Traceable to a UN SDG (United Nations Sustainability Design Goal)



#### **Benefits:**

- Improved operational efficiencies
   across the board
- Visibility as a global leader in responsible computing
- Compliance with legislation, governance standards and evolving cultural norms



## Responsible Computing: Sustainability Maturity Models

Self-Assessment Maturity Assessment Model, 3-4 questions and recommendations for each of 6 Responsible Computing domains:

	Stop neglecting the infrastructure domain
Responsible nfrastructure	responsible.computing (infrastructure) considers the ESG (Environmental, Social and Governance) of the hardware, software and networks required to develop, test, deliver, monitor, control or support IT services and provides an actionable framework to reduce waste and consumption, promote consolidation and rationalization and enable individuals and companies to have a positive impact on the world around us.
	responsible.computing (infrastructure)
	<ol> <li>When you acquire the technology and the products for your own infrastructure, or choose a Cloud Service Provider, what are the main criteria you consider? *</li> </ol>
	Aside from price and functionality, we care about the carbon footprint, and the quality of the supply chain, how and where the equipment is produced and delivered.
	We consider the social impact, local regulations and evaluate suppliers accordingly.
	We apply this evaluation process when acquiring technology for our own infrastructure, as well, as when we select a Cloud Service Provider.
	We use a Hybrid Cloud approach and Edge computing paradigm to effectively distribute usage of computing resources.
	2. How do you manage usage of your own infrastructure and the infrastructure provided by any Cloud Service Provider? *
	We monitor and optimize usage of the infrastructure and have proper management systems and KPIs to support the process.
	The teams are educated on the efficient usage of the infrastructure, including environmental and social aspects.
	We actively work with our Cloud Service Provider on monitoring and optimizing usage of the provided infrastructure.
	<ul> <li>We monitor offers from other Cloud Providers, considering rehosting our workloads, if the competitive offerings are more sustainable.</li> </ul>
	3. How would you describe your infrastructure decommissioning process? *
	We renew only the equipment that really needs to be replaced and keep the rest as long, as its relevant.
	We have a decommissioning process that cares, how the equipment is reused (main goal) or recycled, both from environmental and security points of view; the process follows all local laws and regulations and recommendations.
	We have a process in place to reset the equipment and securely erase all data.
	We do care about the disposal supply chain and audit decommissioning done by the partners and Cloud Service Providers.

Help companies to understand, where they are now and what could be the next steps in the responsible computing journey

Full Maturity Assessment Model, 10-15 questions and recommendations for each of Responsible Computing domains:



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## Joining Responsible Computing demonstrates that you:

- Meet sustainability goals so that your organization will become more operationally efficient as well as <u>demonstrate ROI</u> on those efforts, including:
  - Reduced power consumption
  - Waste reduction for packaging
  - Cost-effective heating and cooling solutions
  - Supply chain accountability
- Achieve milestones and measure your progress in the immediate future and through 2030, so your organization will constantly evolve, and sustainability will become part of your organization's DNA.



## **Membership Tiers & Fees**

#### **Founding Members**

- \$150,000/year
- Acquire a leadership position governing Responsible Computing.

#### **Contributing Members**

- \$150,000/year
- Contributing Members join later than Founders.
- Elected by the Founders and existing Steering Committee members.
- Same benefits of Founders plus a 4-year commitment.

#### **Extra Large Industry Members**

- \$50,000/year
- Organizations with revenues of US\$200 million or higher

#### Large Industry Members

- \$25,000/year
- Organizations with revenues between US\$50 million and \$200M

#### **Medium Industry Members**

- \$10,000/year
- Organizations with revenues between US\$5M and \$50M



## **Membership Tiers & Fees (Continued)**

#### **Small Industry Members**

- \$5,000/year
- Organizations with revenues up to US\$5 million

#### **Government and Research Members**

- \$7,500/year
- Government Members represent town, city, county, state, and federal organizations.
- Research Members represent organizations committed to market research and education.

#### **Academia and Non-Profit Members**

- \$2,500/year
- Represent universities and companies who are registered as tax exempt organizations.



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## **Founding Members & Contributing Members Programs**

Founder Members have no membership commitment past year one. Contributing Members have a four-year commitment.

All Founding Members receive:

- Guaranteed seats on the Steering Committee.
- Acknowledgment as Founding Members on the Responsible Computing website, collateral, conference presentations, analysts & media interviews and all other public and internal membership materials.

- Enhanced event marketing support including promotion of your events on the Responsible Computing Events Page, Tweets and RTs from our social platform.
- Ability to co-brand and host a use-case-centric or thought leadership style Webinar on BrightTALK, the Responsible Computing Webinar platform.
- Receive lead opportunities from Responsible Computing co-branded / co-hosted events.
- Cross participation in Object Management Group sibling programs.
- All of the general membership benefits.



## **Responsible Computing Benefits**

- By joining Responsible Computing you will ensure that your IT organization assumes a leadership position as a responsible pacesetter in the 6 domains.
- Membership guarantees you a seat at the table, working alongside the leading advocates and experts for realizing the planet's sustainable development goals.
- By leveraging their combined technical expertise in a neutral environment, you can solve larger problems that transform IT teams into responsible computing organizations.
- Our member activities yield results that can influence go-tomarket solutions and strategies and impact business's bottom line.

#### Resources and Tools:

Engagement Methodologies Sustainability Maturity Models

- <u>ResponsibleComputing.net</u>
- Business Case Scenarios
- ROI Calculators
- Risk Assessments
- Use Cases
- Best Practices
- Benchmarking
- Though Leadership
- White Papers





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